CONFERENCE CHAIRS

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National Engineering Research Centre for Magnesium Alloys
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E-MRS 2019
PLENARY SESSION 01

TUESDAY MAY 28 from 11:15 to 12:30
Room APOLLON (level 2)

11:15 - 11:20

Welcome address

George Kiriakidis
E-MRS President

11:20 - 12:00

How to lead fundamental materials research to innovation

Hiroshi Amano
(Nobel Laureate in Physics 2014)
Director, Center for Integrated Research of Future Electronics (CIRFE), Institute of Materials and Systems for Sustainability (IMaSS), Akasaki Research Center, Venture Business Laboratory, Nagoya University, Nagoya 484-8603, Japan

12:00 - 12:30

2019 EU-40 Materials Prize winner
Dynamic plasmonics

Laura Na Liu
Kirchhoff Institute for Physics University of Heidelberg
Im Neuenheimer Feld 227
69120 Heidelberg, Germany

E-MRS 2019
PLENARY SESSION 02

THURSDAY MAY 30 from 11:15 to 12:40
Room APOLLON (level 2)

11:15 - 11:20

Welcome address

Anke Weidenkaff,
Conference chair 2019

11:20 - 12:00

Our new international systems of units

Klaus von Klitzing
(Nobel Laureate in Physics 1985)
Max Planck Institute for Solid State Research
D-70569 Stuttgart, Germany

12:00 - 12:30

2019 MRS Mid-Career Award winner
Self-assembly of functional nanoscale materials

Hongyon Fan
Sandia National Laboratories and University of New Mexico
Albuquerque, New Mexico, USA

12:30 - 12:40

IUMRS Global Award Ceremony
in honor of **Carlos Moedas,**
European Commissioner for Research, Science and Innovation

& Robert Chang,
first President and Founder of IUMRS

Importance of Innovation in the 21st Century

Peter Dröll
Director DG Resaerch and Innovation European Commission

CONFERENCE PROGRAM

SYMPO	TITLE	ROOM	LEVEL
MATERIALS FOR ENERGY			
A	Latest advances in solar fuels	GALLIENI 7	2
B	Emerging photovoltaics: strategies for more stable devices	MED 3	1
C	Batteries and supercapacitors: fundamentals, materials and devices	HERMES	2
D	Advances in silicon-nanoelectronics, -nanostructures and high-efficiency Si-photovoltaics	MED 12	1
E	Earth-abundant next generation materials for solar energy - III	RISSO 7	2
F	Advanced materials, components & processes for integrated autonomous micro-power sources	MED C4	1
G	Halide perovskites: low dimensions for devices	RHODES 9-1	2
H	Materials for applications in photocatalysis and photoconversion	CLIO	3
I	Recent developments in thermoelectric materials and applications	RHODES 9-2	2
J	Nuclear materials	GALLIENI 12	2
BIO- AND SOFT MATERIALS			
K	Organic bioelectronics	MED 5	1
L	New strategies for smart bio interfaces	MED B12	1
M	Advanced carbon materials: electrochemical aspects	MED A12	1
NANO-FUNCTIONAL MATERIALS			
N	Nano-engineered coatings and thin films: from design to applications	ATHENA	2
O	Synthesis, processing and characterization of nanoscale multifunctional oxide films VII	RISSO 6	2
P	Dielectric nanocomposites for energy, environment and health: from fundamental to devices	RHODES 10	2
Q	Polar oxides: synthesis, science and applications	GALLIENI 3	2
R	Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment	GALLIENI 5	2
S	ANIM 3: advances and enhanced functionalities of anion-controlled new inorganic materials	MED C4	1
2 DIMENSIONAL MATERIALS			
T	2D semiconductors: applications and perspectives	THALIE	3
U	Hybrid composites incorporating low dimension materials for sensors and clean energy applications	GALLIENI 4	2
MATERIALS, ELECTRONICS AND PHOTONICS			
V	Laser interactions with materials: from fundamentals to applications	MED C123	1
W	Semiconductor nanostructures towards electronic and opto-electronic device applications - VII	ERATO	3
X	Silicon carbide and related materials for energy saving applications	MED 5	1
MODELLING AND CHARACTERIZATION			
Y	Studying the materials chemistry in solution utilizing X-ray spectroscopic and scattering studies	GALLIENI 3	2
Z	Advanced quantitative transmission electron microscopy: materials research in several dimensions	MED A3	1
AA	Computations for materials – discovery, design and the role of data	RISSO 8	2
BB	Cultural heritage – science, materials and technologies	GALLIENI 6	2
SATELLITE EVENTS			
Tutorial - Thin-film synthesis from the vapor phase: fundamentals of processes, growth evolution and applications (Mon. May 27 + Tue. May 28)		ATHENA	2
5th EU-Korea Bilateral Workshop on Materials for Energy Applications (Thu. May 30)		GALLIENI 12	2
Workshop for Juniors - Top level Science and Technology from Young Researchers (Thu. May 30)		MED A3	1
France-Japan joint workshop on molecular technology for advanced sensors (Fri. May 31)		GALLIENI 12	2
PETMEM Workshop 2019: PiezoElectronic Transduction devices (Fri. May 31)		MED 3	1
OTHER			
PLENARY SESSIONS		APOLLON	2
EXHIBITION		RHODES + AGORA 2	2
POSTER SESSIONS			
MONDAY MAY 27	SYMPOSIUM A to S	AGORA 3	3
	SYMPOSIUM V to AA	MUSES	3
TUESDAY MAY 28	SYMPOSIUM B to G	AGORA 3	3
	SYMPOSIUM I to Z	MUSES	3
WEDNESDAY MAY 29	SYMPOSIUM L to N	AGORA 3	3
	SYMPOSIUM O to BB	MUSES	3
THURSDAY MAY 30	SYMPOSIUM C to K	AGORA 3	3
	SYMPOSIUM N to V	MUSES	3
SOCIAL EVENT / GRADUATE STUDENT AWARDS CEREMONY		MUSES	3
LUNCH		MUSES	3
		RHODES	2
		MED	1
COFFEE BREAK		MUSES	3
		RHODES	2
		MED	1
REGISTRATION DESK		AGORA 1	1

SUMMARY TIMETABLE

O : ORAL - P : POSTER
S.1 - SESSION 1: 08:00 to 10:00 / **S.2** - SESSION 2: 10:00 to 12:00
S.3 - SESSION 3: 14:00 to 16:00 / **S.4** - SESSION 4: 16:00 to 18:30
PLENARY SESSION

	MATERIALS FOR ENERGY
A	Latest advances in solar fuels
B	Emerging photovoltaics: strategies for more stable devices
C	Batteries and supercapacitors: fundamentals, materials and devices
D	Advances in silicon-nanoelectronics, -nanostructures and high-efficiency Si-photovoltaics
E	Earth-abundant next generation materials for solar energy - III
F	Advanced materials, components & processes for integrated autonomous micro-power sources
G	Halide perovskites: low dimensions for devices
H	Materials for applications in photocatalysis and photoconversion
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P	Dielectric nanocomposites for energy, environment and health: from fundamental to devices
Q	Polar oxides: synthesis, science and applications
R	Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment
S	ANIM 3: advances and enhanced functionalities of anion-controlled new inorganic materials
	2 DIMENSIONAL MATERIALS
T	2D semiconductors: applications and perspectives
U	Hybrid composites incorporating low dimension materials for sensors and clean energy applications
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V	Laser interactions with materials: from fundamentals to applications
W	Semiconductor nanostructures towards electronic and opto-electronic device applications - VII
X	Silicon carbide and related materials for energy saving applications
	MODELLING AND CHARACTERIZATION
Y	Studying the materials chemistry in solution utilizing X-ray spectroscopic and scattering studies
Z	Advanced quantitative transmission electron microscopy: materials research in several dimensions
AA	Computations for materials – discovery, design and the role of data
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	SATELLITE EVENTS
	Tutorial - Thin-film synthesis from the vapor phase: fundamentals of processes, growth evolution and applications (Mon. May 27 + Tue. May 28)
	5th EU-Korea Bilateral Workshop on Materials for Energy Applications (Thu. May 30)
	Workshop for Juniors - Top level Science and Technology from Young Researchers (Thu. May 30)
	France-Japan joint workshop on molecular technology for advanced sensors (Fri. May 31)
	PETMEM Workshop 2019: PiezoElectronic Transduction devices (Fri. May 31)

	MONDAY				TUESDAY				WEDNESDAY				THURSDAY				FRIDAY	
	MORNING		AFTERNOON		MORNING		AFTERNOON		MORNING		AFTERNOON		MORNING		AFTERNOON		MORNING	
	S.1	S.2	S.3	S.4	S.1	S.2	S.3	S.4	S.1	S.2	S.3	S.4	S.1	S.2	S.3	S.4	S.1	S.2
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B			0	0	0		0	P	0	JOINT G	0	0	0		0			
C	0	0	0	0	0		0	P	0	0	0	0	0		0	P	0	0
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X	0	0	0	P	0		0	0										
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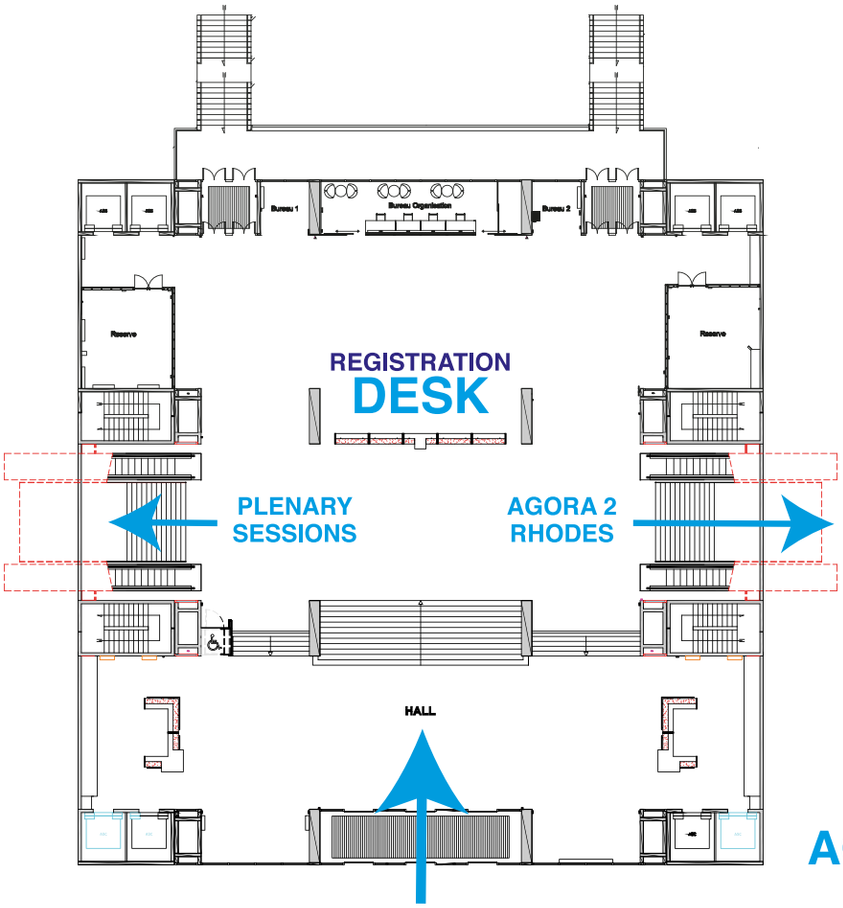
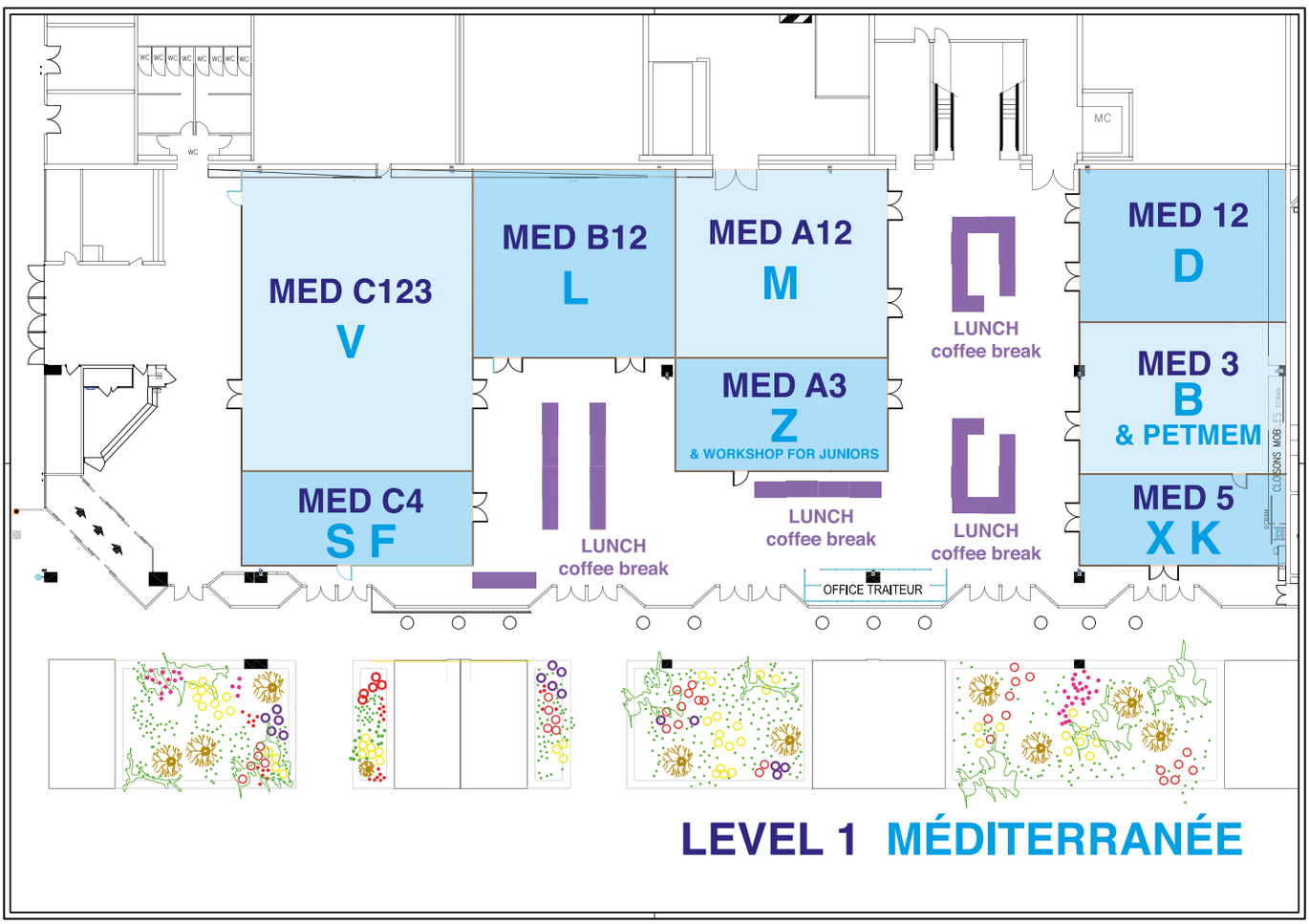
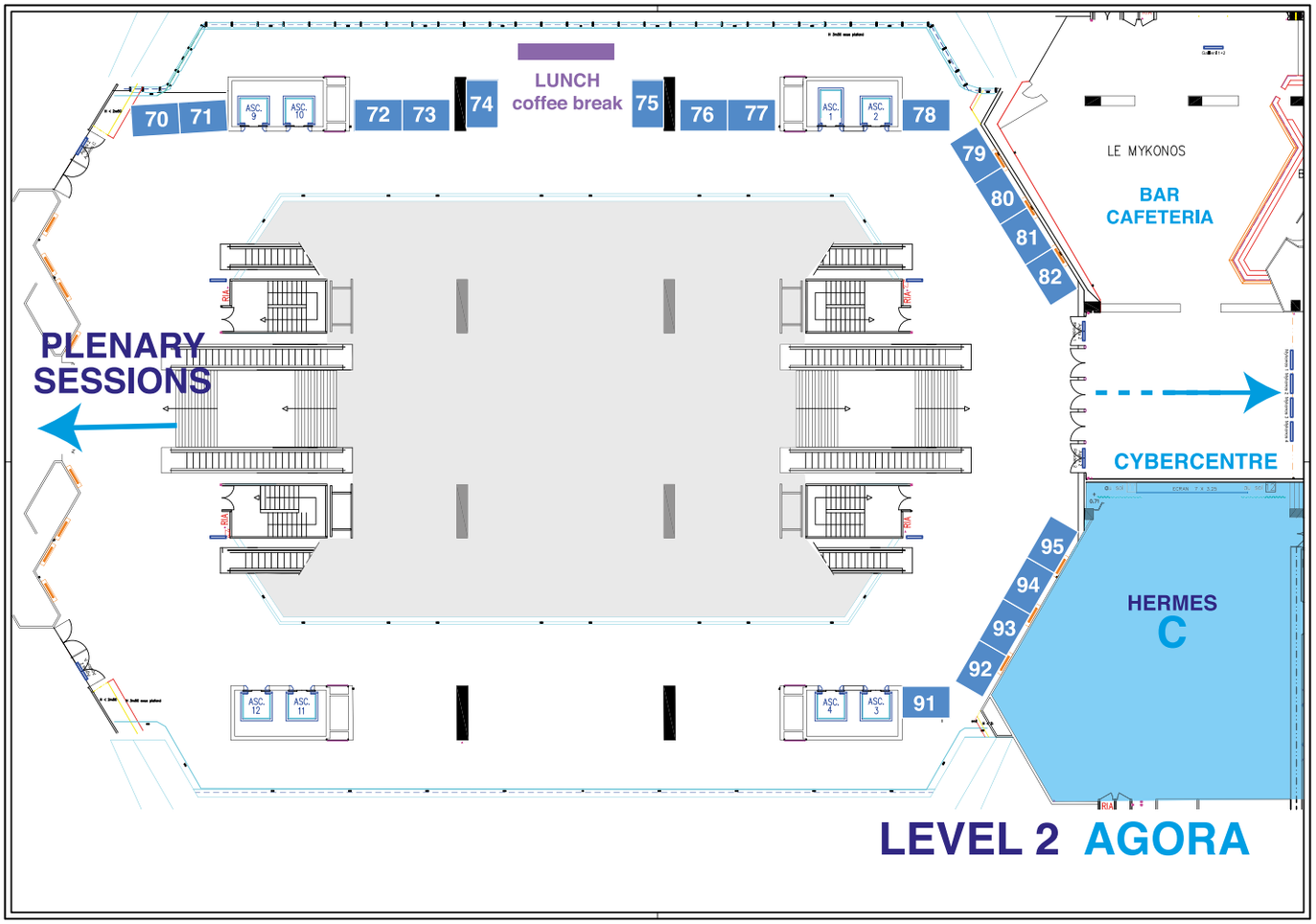


ACCESS
TO MEDITERRANEE (LEVEL 1)
THROUGH EXHIBITION/RHODES
(LEVEL 2)

LEVEL 1
AGORA - ENTRANCE



LEVEL 1 MÉDITERRANÉE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HERMES
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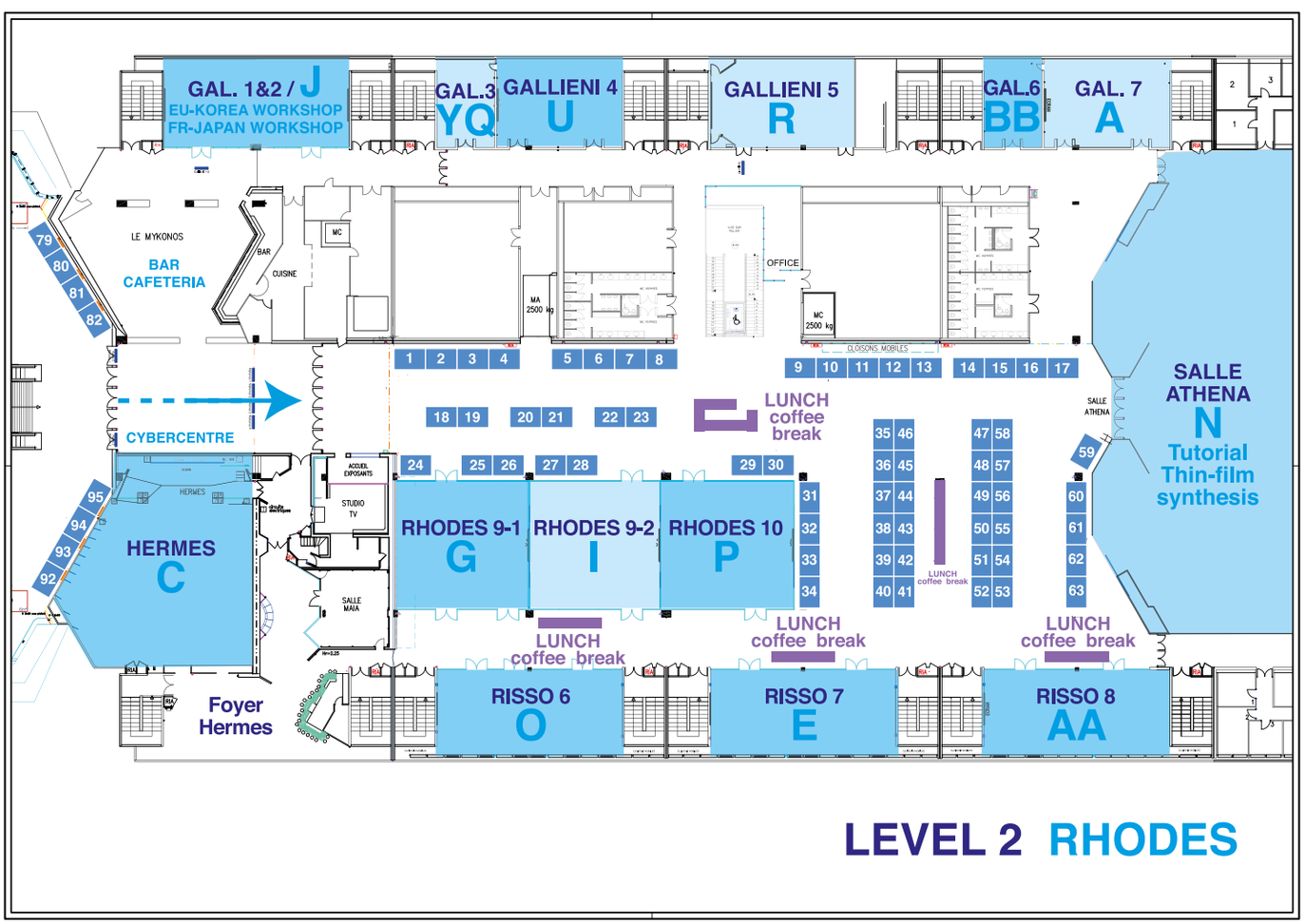
LEVEL 2 AGORA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EU-KOREA WORKSHOP
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SALLE
ATHENA
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Tutorial
Thin-film
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RHODES 9-1
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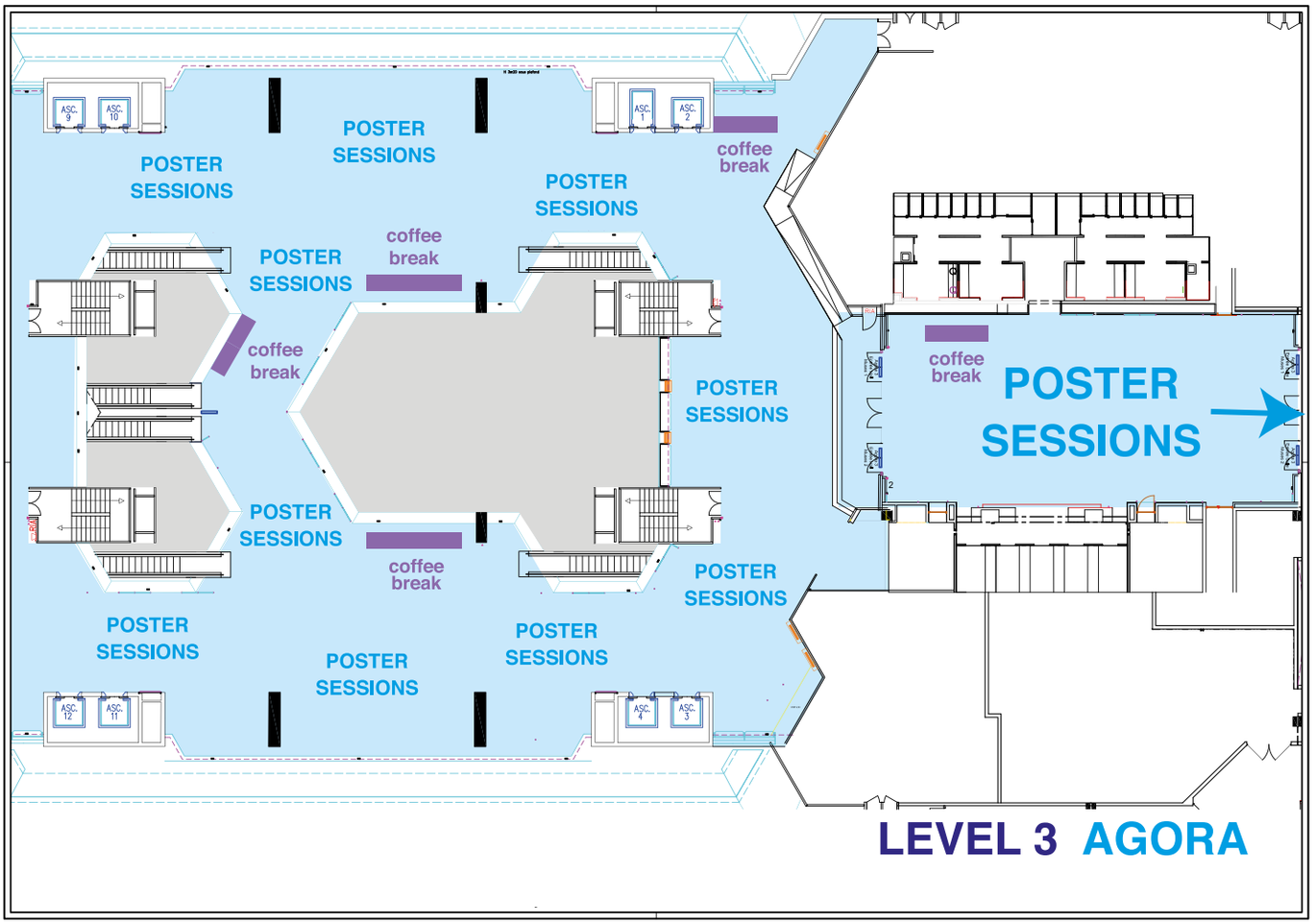
LEVEL 2 RHODES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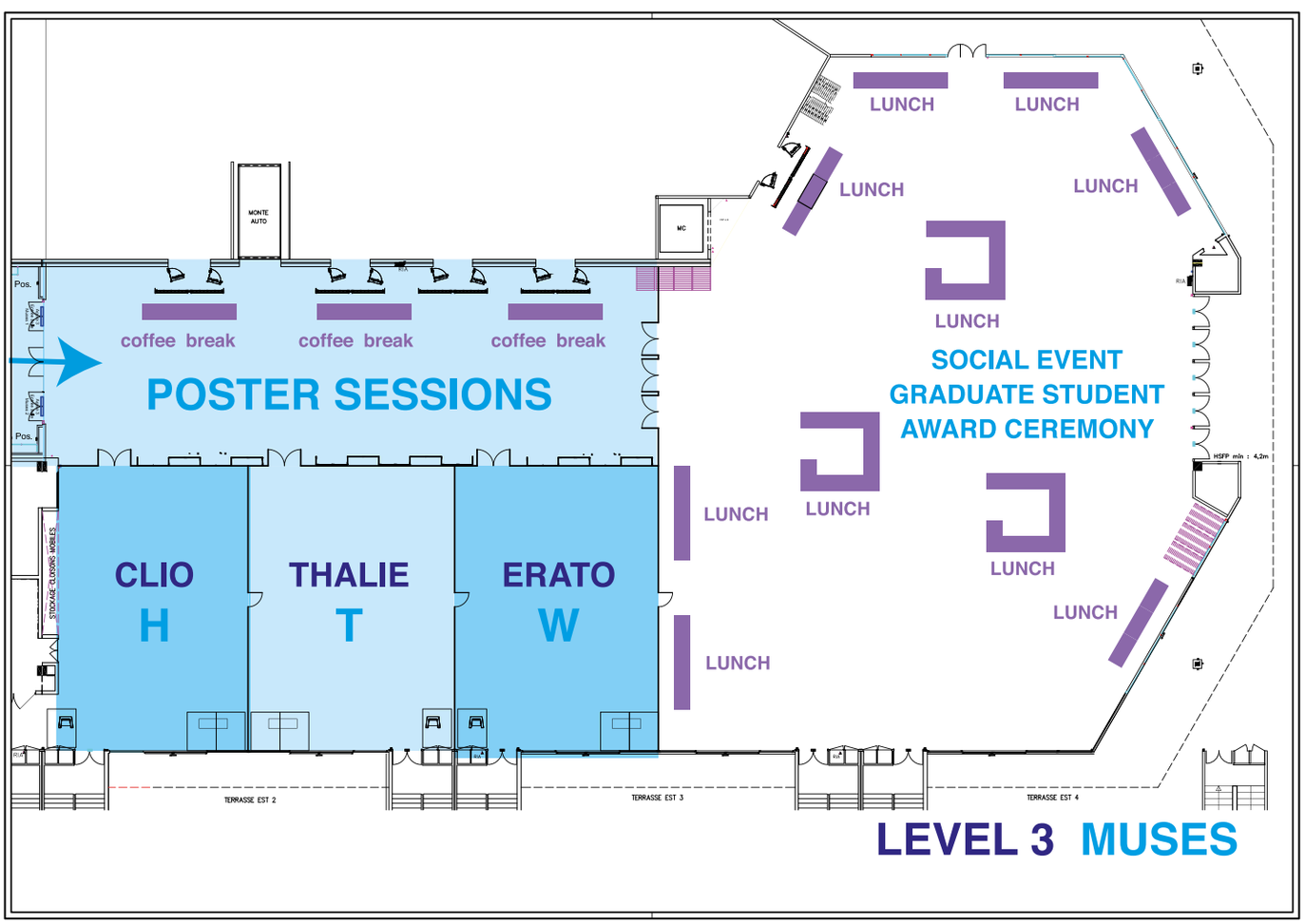
LEVEL 3 AGORA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LEVEL 3 MUSES

Exhibition

Around 80 international exhibitors will display a full spectrum of equipment, instrumentation, products, software, publications and services.

To be held on May 28 – 30 at the Acropolis Convention Centre of Nice, the exhibit will be convenient to the technical session rooms and scheduled to coincide with the technical program. For exhibitors, it will mean an excellent opportunity to meet just the right customers and disseminate information effectively.

For meeting attendees, the E-MRS exhibition will offer the convenience of visiting with multiple vendors all under one roof. So, pick up some literature, enjoy a hands-on product demonstration or meet face-to-face with company representatives.

E-MRS sponsorship can help you raise awareness of your company, promote brand image and visibility, publicize a new product or generate quality sales leads. Be sure to plan early for the best availability and exposure. A wide range of promotional opportunities are available to help companies boost their visibility during the 2019 E-MRS Spring Meeting:

- exhibition space
- event advertising and related advertising opportunities

the following exhibitors are confirmed
for the E-MRS 2019 Spring Meeting in Nice: (05/04/2019)

1-MATERIAL Inc ..... booth 10
ACS Publications ..... booth 32
AIP Publishing ..... booth 20
aixACCT Systems ..... booth 33
AJA International ..... booth 01
ANNEALSYS - KEMSTREAM ..... booth 45
ASAHI SPECTRA ..... booth 09
BITTMANN APPLIED TECHNOLOGIES ..... booth 16
BRUKER NANO SURFACES ..... booth 12-13
BRUKER / SYNERGIE4 ..... booth 11
CAMBRIDGE UNIVERSITY PRESS ..... booth 46
CELLINK ..... booth 91
CHEMPUR ..... booth 17
CTECHnano ..... booth 94
DE GRUYTER ..... booth 25
DIGITAL SURF ..... booth 14
Dr. Eberl MBE-KOMPONENTEN ..... booth 36
EDINBURGH INSTRUMENTS ..... booth 59
EDP SCIENCES ..... booth 95
EMRS TV ..... booth 62
ESTEEM3 Project ..... booth 93
FIZ Karlsruhe Leibniz Institute for Information Infrastructure ..... booth 06
FOM TECHNOLOGIES ..... booth 15
FRAUNHOFER IWKS ..... booth 61
FRONTIERS ..... booth 63
GOODFELLOW ..... booth 08
HORIBA ..... booth 56-57
HTDS ..... booth 74
IMRA Europe ..... booth 58
IONAUTICS ..... booth 51
IOP Publishing ..... booth 48
KAGAKU ANALYS ..... booth 50
KP TECHNOLOGY ..... booth 21
KURT J LESKER ..... booth 29-30
LSA ..... booth 92
LINKAM SCIENTIFIC INSTRUMENTS ..... booth 19
M. BRAUN INERTGAS-SYSTEME ..... booth 34
MATECK ..... booth 05
MELEC ..... booth 73
MICROWORLD ..... booth 43
NANJING UNIVERSITY ..... booth 71
NEASPEC ..... booth 49
NEXTRON ..... booth 27
NEYCO ..... booth 53
NOVASIC ..... booth 75
NT-MDT Europe ..... booth 78
Nuclear Science User Facilities NSUF ..... booth 81
ORSAY PHYSICS ..... booth 31
PLASMATERIALS ..... booth 18
PARK SYSTEMS Europe ..... booth 28
PI- KEM ..... booth 26
PLOS The Public Library of Science ..... booth 80
RADIATE - Surrey Ion Beam Centre ..... booth 82
RAITH ..... booth 40
RIGAKU Europe ..... booth 79
ROYAL SOCIETY PUBLISHING ..... booth 44
SCIENTA OMICRON ..... booth 76
SCM Software for Chemistry & Materials ..... booth 04
SENTECH ..... booth 22
SIGMA-MERCK ..... booth 23
SiMBiT Project CSGI ..... booth 24
SMARTMEMBRANES ..... booth 54
SPECS ..... booth 52
SPECTRUM INSTRUMENTS NT-MDT ..... booth 55
SPRINGER NATURE ..... booth 02-03
STANDARD GRAPHENE ..... booth 72
STREM CHEMICALS ..... booth 60
SURFACE ..... booth 38
SURFACE SYSTEMS + TECHNOLOGIE ..... booth 37
SYNOPSYS QUANTUM ATK ..... booth 42
TAYLOR AND FRANCIS ..... booth 07
TECUUM AG ..... booth 35
THERMO FISHER ..... booth 77
VIGOR TECH USA ..... booth 39
WITEC ..... booth 41
WPI ..... booth 47

NICE ACROPOLIS WIFI

E-MRS is pleased to provide complimentary wireless access to internet for all conference attendees:

Network name : emrs19
Login and password : emrs19

Instructions for Wireless connexion

1. **View available wireless network**
2. **Connect to emrs19**
3. **Login should appear**
4. **Enter password and click go**

MOBILE APPLICATION FOR 2019 SPRING MEETING

Instruction for participants

1. Download Meeting Application E-MRS

from storeGoogle Play (Android)

https://play.google.com/store/apps/details?id=us.appswith.meetingapplication

from Apple AppStore (iOS)

https://itunes.apple.com/app/id773192307

2. Scan QR code or input event name to enter

E-MRS 2019 Fall Meeting

Conference and exhibition will be held
at the Main Campus
of the Warsaw University of Technology
Plac Politechniki 1 - Warsaw, Poland

16th - 19th September 2019

Contact
Information
Conference
Secretariat:

phone: +48 22 234 87 94
fax: +48 22 234 85 14
e-mail: emrs@pw.edu.pl

SCHEDULED SYMPOSIA

INFORMATION AND COMMUNICATION TECHNOLOGIES

- A Ion-related phenomena in nanoscale oxide systems: from fundamentals to applications
- B Integration of advanced materials on silicon: from classical to quantum applications
- C Fabrication and characterization of emerging transparent conductive materials
- D Materials for nanoelectronics and nanophotonics
- E Caloric materials for efficient heat management applications: advances and challenges
- F Novel approaches for neuromorphic computing: materials, concepts and devices
- G Diamond for electronic devices IV
- H New materials for photonics

ENERGY AND ENVIROMENT

- I Materials for energy applications: Li-ion, Na-ion batteries, supercapacitors and beyond, perovskite-type Solar cells and beyond
- J Computational materials science for sustainable energy using nanocatalysts from abundant elements
- K Nuclear materials under extreme conditions
- L Beyond hydrogen storage – Metal hydrides as multifunctional materials for energy storage and conversion
- M Metal oxide- and oxyhydride-based nanomaterials for energy and environment-related applications
- N Advanced catalytic materials for (photo)electrochemical energy conversion

MANUFACTURING

- O Towards a green strategy for materials recycling. two focusing domains: high added materials & CO2 for innovative applications
- P 3D printing and additive manufacturing for the industry of the future

FUNDAMENTALS

- Q Nanoparticles: advances in synthesis, characterization, theoretical modelling, and applications
- R Surface and Interfaces of Nanocarbons
- S New frontiers for the in-situ and operando spectroscopic investigation of interfaces applied to catalysis and electrochemistry
- T Nanomaterial thermal transport properties and nanothermodynamics
- U X-ray based techniques for sustainable energy related materials
- V Bioinspired and biointegrated materials as new frontiers nanomaterials IX

The conference will include:

22 parallel symposia, one plenary session, one exhibition and much more

www.european-mrs.com

WILEY

Editor Meet & Greet

Join us for drinks

Let's celebrate Wiley's authors, referees and readers

Tuesday, May 28, 3.30 - 4.30pm

Exhibition Hall (Level 2), Entrance Area

WILEY-VCH

SATELLITE EVENTS

TUTORIAL
Thin-film synthesis from the vapor phase: fundamentals of processes, growth evolution, and applications

May 27 - 28, 2019 | Room Athena - level 2

General description:

The tutorial aims at providing an overview of: (i) thin-film vapor-based synthesis techniques, (ii) fundamental atomic-scale processes and phenomena encountered during vapor-based film deposition, (iii) theoretical and computational tools used for thin-film design, and (iv) modern and emerging applications of nanoengineered thin films and coatings. The primary audience of the tutorial is Ph.D. and M.Sc. students working in the field, but also scientists and engineers. Lectures will be given by the organizers of the Symposium "Nano-engineered coatings and thin films: from design to applications" but also by experts in the field, as detailed in the following.

Schedule and modules:

Date/time	Lecture topic	Lecturer
Monday, May 27, 2019/16:00-17:00	**Physical vapor deposition and reactive sputtering**	**Tomas Kubart** Uppsala University, Sweden.
Monday, May 27, 2019/17:00-18:00	**Chemical vapor deposition**	**Panos Patsalas** Thessaloniki University, Greece
Monday, May 27, 2019/18:00-19:00	**Thin film nucleation and growth**	**Kostas Sarakinos** Linköping University, Sweden
Tuesday, May 28, 2019/16:00-17:00	**Stress generation and evolution during film growth**	**Gregory Abadias** University of Poitiers, France
Tuesday, May 28, 2019/17:00-18:00	**Optical properties of thin films and plasmonic materials**	**Panos Patsalas** Thessaloniki University, Greece
Tuesday, May 28, 2019/18:00-19:00	**Computational tools for design of thin films**	**David Holec** Montanuniversität Leoben, Austria

Lecturers:

Gregory Abadias, Department of Physics, University of Poitiers, France
David Holec, Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, Austria
Tomas Kubart, Department of Solid State Electronics, Uppsala University, Sweden
Panos Patsalas, Department of Physics, Aristotle University of Thessaloniki, Greece
Kostas Sarakinos, Department of Physics, Chemistry and Biology, Linköping University, Sweden

5th EU-Korea Bilateral Workshop on Materials for Energy Applications

May 30, 2019 | Room Gallieni 12 - level 2

The Korea-Europe (EU) relationship has developed rapidly in the past decade, expanding from an almost exclusive focus on trade issues to a much broader spectrum of activities both on the bilateral and global fronts. To further facilitate networking and collaborations between materials researchers in Korea and EU, the1st EU-Korea Workshop on Advanced Functional Materials was organized by E-MRS during the 2015 E-MRS Spring Meeting in Lille, France.

The 2nd Korea-EU Workshop on Advanced Functional Materials was organized by MRS-K during IUMRS-ICAM 2015 which was held on 25th Oct 2015 in Jeju, Korea. The 3rd EU-Korea Workshop on Advanced Materials for Energy was jointly organized by E-MRS and MRS-K during the 2016 E-MRS Fall Meeting in Warsaw, Poland. The 4th Korea-EU Workshop on Advanced Functional Materials was organized by MRS-K during ICAE 2017 and held on 24th Nov 2017 in Jeju, Korea.

We are now planning to hold the **5th Joint Workshop on 30th May 2019 during the 2019 E-MRS Spring Meeting in Nice, France.**

We are seeking for scientific contributions to this EU-Korea workshop. We invite you to be a part of this bilateral workshop. To fit with the spirit of the event, it is recommended that the papers presented are collaborative works between partners (academia, industries) from Korea and EU or works that will be good topics for future collaborations. The workshop concerns any topics of Energy research.

For more information, please contact:
Hyacinthe Randriamahazaka, Univ. Paris Diderot, hyacinthe.randria@univ-paris-diderot.fr
Byungha Shin, KAIST, byungha@kaist.ac.kr

5th EU- Korea Bilateral Workshop Organizing Committee:

EU	South Korea
George Kiriakidis (President of E-MRS) **IESL-FORTH** **kiriakid@iesl.forth.gr**	**Jeon-Kook Lee (President of MRS-K)** **KIST** **jkleemc@kist.re.kr**
Abdelilah Slaoui (E-MRS) **CNRS-Univ Strasbourg (FR)** **abdelilah.slaoui@unistra.fr**	**Woo-Gwang Jung (MRS-K)** **Kookmin Univ.** **wgjung@kookmin.ac.kr**
Hyacinthe Randriamahazaka **Univ. Paris-Diderot (FR)** **hyacinthe.randria@univ-paris-diderot.fr**	**Donghwan Kim (MRS-K)** **Korea Uni.** **donghwan@korea.ac.ke**
Ian Boyd (E-MRS) **Univ Brunel, UK** **Ian.Boyd@brunel.ac.uk**	**Byungha Shin (MRS-K)** **KAIST** **byungha@kaist.ac.kr**

WORKSHOP FOR JUNIORS
«Top level Science and Technology from Young Researchers»

May 30, 2019 | Room Med A3 - level 1

Scope:

This one-day symposium aims to bring together top level sub-40 researchers working at academia and industry, sharing not only the science and technology behind their work but also their career paths to reach excellence and scientific independence. Speakers include ERC and Marie Curie laureates, as well as specialists from grant management and technology transfer offices. The event seeks to inspire and guide young researchers at the later stages of their PhD studies or holding a postdoctoral position, seeking also to trigger networking on material science throughout Europe.

Organizers:

Vassilios Binas / FORTH, Crete (Greece)
Pedro Barquinha (ERC Laureate) / UNINOVA (Portugal)
Thomas Fisher / University of Cologne (Germany)
Teresa Andreu / IREC, Barcelona (Spain)

PETMEM Workshop 2019:
PiezoElectronic Transduction devices

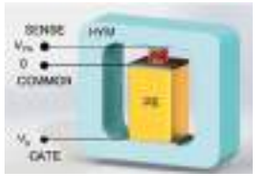
WORKSHOP OPEN TO ALL PARTICIPANTS

Friday May 31 from 8:30 to 13:00 | Room Med 3 - level 1

About the PETMEM project

Computer clock speeds have not significantly increased since 2003, creating a challenge to invent a successor to CMOS technology able to resume the improvement in clock speed and power performance. The key requirements for a viable alternative are scalability to nanoscale dimensions – following Moore's Law – and simultaneous reduction of line voltage in order to limit switching power. Achieving these two aims for both transistors and memory allows clock speed to again increase with dimensional scaling, a result that would have great impact across the IT industry. PETMEM is a European partnership amongst Universities, Research Institutions, SMEs and a large company that will focus on the development of new materials and characterization tools to enable the fabrication of an entirely new low-voltage memory element. This element makes use of internal transduction in which a voltage state external to the device is converted to an internal acoustic signal that drives an insulator-metal transition.

Modelling based on the properties of known materials at device dimensions on the 15nm scale predicts that this mechanism enables device operation at voltages an order of magnitude lower than CMOS technology (power is reduced two orders) while achieving 10GHz operating speed. Additional, possibly earlier development applications include ultralow power RF switches for telecommunications devices and low voltage several GHz logic devices especially for portable equipment.



The principle behind the piezoelectric transistor.
A voltage driven piezoelectric element creates high stresses in a piezoresistive element changing its electrical resistance from an insulator to a conductor.

PETMEM partners

The consortium that will develop PETMEM technologies comprises 11 partners: Bio Nano Consulting (London UK), IBM Research (Zurich, Switzerland), Max Planck Institute (Dresden and Halle, Germany), Solmates (Enschede, The Netherlands), SINTEF (Oslo, Norway), National Physical Laboratory (Teddington UK), University of Gent (Gent, Belgium), EMPA (Switzerland), Aixacct (Aachen Germany), Electrosciences (Surrey, UK) and DCA (Turku, Finland).

For more information contact the consortium at: www.petmem.eu

Scopes

Advance modelling of piezo-devices | Piezoelectric materials | Piezoresistive materials
Piezo-material characterization and metrology | Tools development for the piezo industry
Processes for piezo-device fabrication | Novel application of the PET technology

Contact

Dr Abiola Oladipo, (Bio Nano Consulting Ltd, UK): abiola.oladipo@bio-nano-consulting.com

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 688282.

FRANCE-JAPAN JOINT WORKSHOP
on molecular technology for advanced sensors

May 31, 2019 | Room Gallieni 12 - level 2

Introduction

Sensors have become indispensable in many domains of the society including health, technology, environment, and biological research. Recently, “Molecular Technology” as an emerging research discipline, involves the incorporation of synthetic molecular building blocks including electronic, optical, mechanical, and biological components into function systems. The workshop focuses on the cutting-edge sensors development for biomaterials, ions, gas, light that include the concept of «molecular technology».

Scopes:

Molecular, gas, light and bio detection
Organic field effect transistors
Organic and polymeric based device
Electrical, electrochemical and optical transduction

List of invited speakers:

M. Bouvet, Institut de Chimie Moléculaire de l’Université de Bourgogne (ICMUB), Dijon, France
C. Branger, MAPIEM, University of Toulon, France
J. Brunet - Université Blaise Pascal, Clermont-Ferrand, France
S. Ishihara – NIMS, Japan
N. Jaffrezic-Renault, ISA, Claude Bernard University, Lyon, France
J. Kawakita – NIMS, Japan
V. Kilinc - CINaM, CNRS, Aix Marseille Université, France
A. Kumatani, WPI-AIMR, Tohoku University, Japan
J. Labuta – NIMS, Japan
C. Videlot, CINaM, Aix-Marseille Université, France

Conference Chairpersons

Anne CHARRIER
Center for Interdisciplinary Nanoscience of Marseille (CINaM)
CNRS, Aix-Marseille Université, Campus de Luminy, Marseille, France
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National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba 305-0044, Japan
Phone : +81 29 860 4403
Mail : WAKAYAMA.Yutaka@nims.go.jp

PROGRAM

Time	Speaker	Presentation Title
8:30 – 8:45	Y. Wakayama & A. Charrier	Workshop Introduction
8:45 – 9:15	J. Brunet	Suitability of metallophthalocyanines MPc as sensitive molecular materials for the development of sensor-systems dedicated to
9:15 – 9:45	S. Ishihara	Carbon nanotube based toxic gas sensor : Improved sensitivity and selectivity using molecular/polymeric selectors
9:45 – 10:15	C. Videlot-Ackermann	Functional materials involved in opto-electronic devices for gas sensor, photodetectors and photovoltaic conversion
10:15 – 10:45	Coffee Break	
10:45 – 11:15	V. Kilinc	Innovative organic dielectric/semiconductor interface: Application to ISFET sensors for the detection of Cesium
11:15 – 11:45	J. Labuta	Multi-responsive porphyrins for sensing applications
11:45 – 12:15	M. Bouvet	Modulation of the organic heterojunctions behavior, from electrografting to enhanced sensing properties
12:15 – 13:45	Lunch Break	
13:45 – 14:15	N. Jaffrezic-Renault	Synergistic effect of polyoxometalate and single walled carbon nanotubes on peroxidase-like mimics and highly sensitive
14:15 – 14:45	J. Kawakita	Moisture Sensor for supersensitive detection of dew condensation
14:45 – 15:15	A. Kumatani	Nanoscale electrochemical imaging on electrode functional materials by scanning electrochemical cell microscopy
15:15 – 15:45	C. Branger	Molecularly imprinted polymers for the design of electrochemical or fluorescent sensors
15:45 – 16:00	Y. Wakayama & A. Charrier	Concluding remarks

CONFERENCE RECEPTION SOCIAL EVENT

Wednesday May 29 (19:00 - 22:00)

Les Muses - level 3

All participants are invited to attend the Conference reception.
Enjoy drinks and food while listening to live music!
It is a chance to meet and renew relationships with colleagues.

The Graduate Student Award ceremony
will be held at the beginning of the social event.

SYMPOSIA

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM A

Latest advances in solar fuels

Symposium Organizers :

Flavio DE SOUZA, Universidade federal do ABC, Brazil

Lionel VAYSSIERES, Xi'an Jiaotong University, China

Samuel MAO, University of California, Berkeley, USA

Sanjay MATHUR, University of Cologne, Germany

To be published in Solar Energy Materials and Solar Cells and in Journal of Materiomics, Elsevier

Monday 27 may 2019

Latest Advances in Solar Fuels I : Lionel Vayssieres

08:30 INV **Photocatalytic water splitting for large scale solar hydrogen production** — A 1.1
Kazunari DOMEN
Shinshu University The University of Tokyo

09:00 INV **Photoelectrochemical Water Splitting Towards Practical Solar Hydrogen Production: A Perspective** — A 1.2
Jae Sung Lee
School of Energy and Chemical Engineering, Ulsan National Institute of Science and Technology (UNIST), Ulsan 44919 Korea

09:30 **Coffee Break**

10:00 INV **Photo/Electro-Catalytic Fuel Production from First Principles** — A 1.3
Emily A. Carter
School of Engineering and Applied Science, Princeton University, Princeton, New Jersey 08544-5263, United States

10:30 INV **Intermediates in PEC water oxidation - how they come and how they go** — A 1.4
Artur Braun
Empa

11:00 INV **Solar Hydrogen Production through Sea Water Splitting at Semiconductor Metal Oxide Electrodes** — A 1.5
Jan Augustynski
Centre for New Technologies, University of Warsaw, Poland

11:30 INV **Comprehensive kinetic study of photocatalytic water oxidation and reduction at TiO2 and Pt- TiO2 surface** — A 1.6
Yasuhiro Tachibana
1 School of Engineering, RMIT University, Bundoora, VIC 3083, Australia 2 Project Research Center for Fundamental Sciences, Faculty of Science, Osaka University

12:00 **Lunch**

Latest Advances in Solar Fuels II : Lionel Vayssieres

14:00 INV **Transition Metal Oxide Photoelectrodes: From Materials Physics to Device Integration** — A 2.1
Ian D. Sharp
Walter Schottky Institute and Physics Department, Technical University of Munich

14:30 INV **Design of Nanostructured Materials for Photo/Photothermal Catalysis, Evaporation and Energy Generation** — A 2.2
Minmin Gao, Liangliang Zhu, Connor Kangnuo Peh, Min-Quan Yang, Ghim Wei Ho*
Department of Electrical and Computer Engineering, National University of Singapore, Singapore 117576, Singapore. Engineering Science Programme, National University of Singapore, 4 Engineering Drive 3, 117576, Singapore

15:00 **From charge carrier generation to water oxidation in WO3 photoanodes** — A 2.3
Sacha Corby, Ernest Pastor, Laia Francas, Michael Sachs, Shababa Selim, Andreas Kafizas and James R. Durrant
Imperial College London

15:15 **Exploring thermal stresses on substrate and hematite-substrate interface** — A 2.4
Andre L M Freitas, Renato V Gonçalves, Flavio L Souza
Universidade Federal do ABC-UFABC, Universidade de São Paulo - USP - IFSC, Universidade Federal do ABC - UFABC

15:30 **Coffee Break**

16:00 INV **Enhancing Charge Carrier Delocalization and Conduction in Perovskite Quantum Dots Using Conductive Aromatic Ligands** — A 2.5
Jin Zhong Zhang
Department of Chemistry and Biochemistry, University of California, Santa Cruz, California 95064, United States

16:30 INV **Advanced Photoconversion with Engineered Quantum Dots** — A 2.6
Victor I. Klimov
Center for Advanced Solar Photophysics, Los Alamos National Laboratory, Los Alamos, NM 87545, USA

17:00 **Charge Accumulation Studies for Multi-Redox Catalysis** — A 2.7
Carlota Bozal-Ginesta(a), Laia Francàs(a), Camilo A. Mesa(a), A. Reynal(c), Daniel Antón García(b), Erwin Reisner(b), James R. Durrant(a)
(a) Department of Chemistry, Imperial College London, Exhibition Road, London SW7 2AZ, UK, (b) Christian Doppler Laboratory for Sustainable SynGas, Department of Chemistry, University of Cambridge, Cambridge CB2 1EW, UK

Latest Advances in Solar Fuels Poster Session : Flavio de Souza / Sanjay Mathur / Samuel Mao

17:15 **Efficient solar-driven electrocatalytic CO2 reduction in a redox-medium-assisted system** — A 3.1
Yuhang Wang, Junlang Liu, Yifei Wang, Yonggang Wang, Gengfeng Zheng
Laboratory of Advanced Materials, Department of Chemistry and Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Collaborative Innovation Center of Chemistry for Energy Materials, Fudan University, Shanghai, China

17:15 **Homogeneous or heterogeneous? – Exploring the dual role of copper-diglycyl-glycine in water oxidation** — A 3.2
Dávid Lukács, József S. Pap, Miklós Németh, Levente Illés
Dávid Lukács, Surface Chemistry and Catalysis Department, Centre for Energy Research, Hungarian Academy of Sciences H-1121 Budapest, Konkoly-Thege street 29-33, József S. Pap, Surface Chemistry and Catalysis Department, Centre for Energy Research, Hungarian Academy of Sciences H-1121 Budapest, Konkoly-Thege street 29-33, Miklós Németh, Surface Chemistry and Catalysis Department, Centre for Energy Research, Hungarian Academy of Sciences, H-1121 Budapest, Konkoly-Thege street 29-33, Levente Illés, Institute of Technical Physics and Material Science, Centre for Energy Research, Hungarian Academy of Sciences, H-1121 Budapest, Konkoly-Thege street 29-33

17:15 **Optimisation of Electron Transport Layer in Perovskite Solar Cell** — A 3.3
Xue Han
Xue Han, Imperial College London

17:15 **Copper decorated graphene plates for electrochemical CO2 reduction: Prediction from the first principles** — A 3.12
Sergei Piskunov, Maxim Sokolov, Aleksejs Gopejenko, Janis Kleperis
Institute of Solid State Physics, University of Latvia, 8 Kengaraga str., Riga LV-1063, Latvia

17:15 **Organic nanoparticles for generating hydrogen** — A 3.4
Lingyu Zou
Hyojung Cha, James R Durrant

17:15 **Silicon photovoltaic module recycling method using FTO delamination** — A 3.5
Jongwon Ko, Se Jin Park, Hyomin Park, Soohyun Bae, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim
Department of Materials Science and Engineering, Korea University, Seoul, Korea,Department of Materials Science and Engineering, Korea University, Seoul, Korea,Department of Materials Science and Engineering, Korea University, Seoul, Korea,Department of Materials Science and Engineering, Korea University, Seoul, Korea,KU·KIST Green School, Graduate School of Energy and Environment, Korea University, Seoul, Korea,KU·KIST Green School, Graduate School of Energy and Environment, Korea University, Seoul, Korea,Department of Materials Science and Engineering, Korea University, Seoul, Korea

17:15 **SUNRISE - Solar energy for a circular economy** — A 3.6
Carina Faber, Vincent Artero, Antoni Llobet, Artur Braun, Huub De Groot
Carina Faber, UCLouvain, Belgium, Vincent Artero, University of Grenoble, CEA & CNRS, France, Antoni Llobet, ICIQ, Spain, Artur Braun, Empa, Switzerland, Huub de Groot, Leiden University, Netherlands,

17:15 **Silicon photoanode with RuO2 stabilized by TiO2 protection layer for water splitting** — A 3.7
Filip Chymo 1, Karol Fröhlich 2,3, Kristína Hušeková 2,3, Ivan Kundrata 2,3, Ladislav Harmatha 1, Miroslav Mikolášek 1
1 Institute of Electronics and Photonics, Slovak University of Technology, Ilkovičova 3, 812 19 Bratislava, Slovakia 2 CEMEA SAS, Dúbravská cesta 5807/9, 841 04, Bratislava, Slovakia 3 Institute of Electrical Engineering SAS, Dúbravská cesta 9, 841 04, Bratislava, Slovakia

17:15 **Synthesis, Characterization, and Photoelectrochemical activity of electrodeposited Cu2O photoelectrodes** — A 3.8
Prangya P. Sahoo, Peter Cendula
Institute of Aurel Stodola, Faculty of Electrical Engineering, University of Zilina, Liptovsky Mikulas, kpt. Nalepku 1390, 03101, Slovakia

17:15 **Hydrothermal synthesis of transition metal doped ZnO nanoparticles and their electrocatalytic activity for water oxidation** **A 3.9**
He Sun 1.3, Nobuyuki Nishiumi 1, Hidenobu Shiroishi 2, Yuta Matsushima 1, Philipp Stadler 3, Tsukasa Yoshida 1
1 Department of Chemistry and Chemical Engineering, Faculty of Engineering, Yamagata University, Jonan 4-3-16, Yonezawa. Yamagata 992-8510, Japan, 2 Department of Chemical Science and Engineering, National Institute of Technology, Tokyo College, 1220-2 Kunugida-machi, Hachioji, Tokyo 193-0997, Japan, 3 Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University Linz, Altenbergerstraße 69, A-4040 Linz, Austria,

17:15 **Ni-modified β-FeOOH(Cl) nanorod for water oxidation toward solar-driven CO2 reduction system combined with Mn-complex catalyst** **A 3.10**
Tomiko M. Suzuki, Takeo Arai, Shunsuke Sato, Keita Sekizawa, *Takeshi Morikawa
Toyota Central R&D Labs., Inc.

17:15 **Application of water-insoluble Fe(II) complexes with hydrophobic bidentate N-donor ligands in electrocatalytic water oxidation** **A 3.11**
Sahir M. Al-Zuraiji, Tímea Benkó, József S. Pap
Sahir M. Al-Zuraiji, Surface Chemistry and Catalysis Department, Centre for Energy Research, Hungarian Academy of Sciences, H-1121, Konkoly-Thege street 29-33, Budapest, Hungary, Doctoral School on Materials Sciences and Technologies, Óbuda University, Bécsi út 96/B, 1034 Budapest, Hungary, Tímea Benkó, Surface Chemistry and Catalysis Department, Centre for Energy Research, Hungarian Academy of Sciences, H-1121, Konkoly-Thege street 29-33, Budapest, Hungary, József S. Pap, Surface Chemistry and Catalysis Department, Centre for Energy Research, Hungarian Academy of Sciences, H-1121, Konkoly-Thege street 29-33, Budapest, Hungary

Tuesday 28 may 2019

Latest Advances in Solar Fuels III : Sanjay Mathur

08:30 INV **Efficient Electrocatalytic and Photoelectrochemical Conversion of Energy and Chemicals Using Earth-Abundant Nanomaterials** **A 4.1**
Song Jin
Department of Chemistry University of Wisconsin-Madison

09:00 INV **New oxide photoelectrodes and catalysts for photoelectrochemical water splitting** **A 4.2**
Yanfa Yan
University of Toledo

09:30 **Coffee Break**

10:00 **Engineering Interfaces on Hematite Electrodes for Sunlight Assisted Water Oxidation** **A 4.3**
Dereck N. F. Muche1*, Saulo A. Carminati2, Maurício A. Melo2, Renato V Gonçalves3, Ana F. Nogueira2, Flavio L Souza1*,
1Universidade Federal do ABC, Santo André-São Paulo, Brazil. 2Universidade de Campinas, Instituto de Quimica, Campinas, SP, Brazil 3Universidade de São Paulo, Instituto de Física de São Carlos, São Carlos, SP, Brazil

10:15 **Multihole catalysis of water oxidation on hematite photoanodes: Insights from in operando light-induced spectroelectrochemistry** **A 4.4**
Camilo A. Mesa1*, Laia Francàs1*, Ke Yang2, Pablo Garrido2,3, Ernest Pastor1, Yimeng Ma1, Andreas Kafizas1, Timothy E. Rosser4, Matthew Mayer5, Erwin Reisner4, Michael Grätzel5, Victor Batista2 and James Durrant1
1 Department of Chemistry, Imperial College London, London SW7 2AZ, United Kingdom 2 Department of Chemistry and Energy Sciences Institute, Yale University, New Haven, Connecticut 06520-8107, United States 3 Institute of Chemical Research of Catalonia (ICIQ), Avinguda Països Catalans 16, E-43007 Tarragona, Spain 4 Christian Doppler Laboratory for Sustainable SynGas Chemistry, Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge CB2 1EW, United Kingdom 5.Laboratory of photonics and interfaces, EPFL, CH-1015, Laussane, Switzerland *These authors contributed equally.

10:45 **A novel approach to study the water oxidation reaction using operando IR spectroscopy** **A 4.5**
Aafke C. Bronneberg, Richard van de Sanden, Anja Bieberle-Hütter
Dutch Institute for Fundamental Energy Research (DIFFER), Eindhoven, 5612AJ, The Netherlands

11:15 **PLENARY SESSION**

12:30 **lunch**

Latest Advances in Solar Fuels IV : Sanjay Mathur

14:30 INV **In situ synchrotron x-ray spectroscopies gear up for energy science** **A 5.1**
Chung-Li Dong
Department of Physics, Tamkang University, Taiwan

15:00 **Cell for the operando X-ray absorption spectroscopy on photoelectrochemical thin films** **A 5.2**
P. Jäker (1,2), D. Aegerter (1), T. Kyburz (1), D. Koziej (1,2),
1 ETH Zurich, Department of Materials, Laboratory for Multifunctional Materials, 8093 Zurich, Switzerland 2 University of Hamburg, Institutes of Nanostructure and Solid State Physics, Center for Hybrid Nanostructures, LuruperChaussee149, 22607 Hamburg, Germany

15:15 **The electronic structure of iridium-oxide based electrocatalysts for water splitting** **A 5.3**
Woong Hee Lee, Yun Jeong Hwang, Byoung Koun Min, Hyung-Suk Oh
Clean Energy Research Center, Korea Institute of Science and Technology (KIST), Hwarangro 14-gil 5, Seongbuk-gu, Seoul 02792, Republic of Korea

15:30 **Coffee Break**

16:00 INV **Chemical and Electronic Surface Structure of Chalcopyrites and other Compound Semiconductors for Solar Water Splitting** — **A 5.4**
Clemens Heske
Institute for Photon Science and Synchrotron Radiation (IPS) and Institute for Chemical Technology and Polymer Chemistry (ITCP), Karlsruhe Institute of Technology (KIT), Hermann-v.-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany, Department of Chemistry and Biochemistry, University of Nevada, Las Vegas (UNLV), 4505 Maryland Parkway, Las Vegas, NV 89154-4003, USA

16:30 INV **Novel band-gap engineered III-V Alloys for Unassisted Water Photoelectrolysis** — **A 5.5**
Mahendra K. Sunkara 1,2 Hank Paxton 2 Sonia Calero-Barney 1 Madhu Menon 2 James Young 4 Todd Deutsch 4
1. Chemical Engineering Department, University of Louisville, Louisville, KY 40292 2. Conn Center for Renewable Energy Research, University of Louisville, 216 Eastern Parkway, Louisville, KY 40292 3. Center for Computational Sciences, University of Kentucky, Lexington, KY 40506 4. National Renewable Energy Laboratory, Golden, CO 80401-3305

17:00 INV **Wide Bandgap Chalcopyrite-based Photoelectrodes for Renewable Hydrogen Production** — **A 5.6**
Nicolas Gaillard
University of Hawaii

Latest Advances in Solar Fuels V : Flavio de Souza

08:30 INV **Engineering semiconductor materials for robust photoelectrochemical solar fuel production** — **A 6.1**
Kevin Sivula
EPFL

09:00 INV **Development of Efficient Water Oxidation Catalysts in Nobel-Metal Atom Economy** — **A 6.2**
Giordano Gatto, Lucia Fagiolari, Gabriel Menendez Rodriguez, Cristiano Zuccaccia, and Alceo Macchioni
Department of Chemistry, Biology and Biotechnology, University of Perugia, Via Elce di Sotto, 8 – 06123 Perugia, Italy

09:30 **Coffee Break**

10:00 INV **Hybrid Molecular Photoanodes for Water Splitting** — **A 6.3**
Antoni Llobet
Institute of Chemical Research of Catalonia (ICIQ), Barcelona Institute of Science and Technology (BIST), Av. Països Catalans 16, E-43007 Tarragona, Spain

10:30 INV **Structure Design of Graphitic Carbon Nitride for Photocatalytic Water Splitting** — **A 6.4**
Shaohua Shen, Tingting Kong
Xi'an Jiaotong University, Xi'an Shiyou University

11:00 INV **Behavior of Cu-Peptides under Water Oxidation Conditions – Molecular Electrocatalysts or Precursors to Nanostructured CuO Films?** — **A 6.5**
József S. Pap, Dávid Lukács, Miklós Németh, Łukasz Szyrwiel, Levente Illés, Béla Pécz, Shaohua Shen, Lionel Vayssieres
József S. Pap, Surface Chemistry and Catalysis Department, Centre for Energy Research, Hungarian Academy of Sciences, H-1121, Konkoly-Thege street 29-33, Budapest, Hungary, Dávid Lukács, Surface Chemistry and Catalysis Department, Centre for Energy Research, Hungarian Academy of Sciences, H-1121, Konkoly-Thege street 29-33, Budapest, Hungary, Miklós Németh, Surface Chemistry and Catalysis Department, Centre for Energy Research, Hungarian Academy of Sciences, H-1121, Konkoly-Thege street 29-33, Budapest, Hungary, Łukasz Szyrwiel, European XFEL, Albert-Einstein-Ring 19, 22761 Hamburg, Germany, Levente Illés, Institute of Technical Physics and Materials Science, Centre for Energy Research, Hungarian Academy of Sciences, H-1121, Konkoly-Thege street 29-33, Budapest, Hungary, Béla Pécz, Institute of Technical Physics and Materials Science, Centre for Energy Research, Hungarian Academy of Sciences, H-1121, Konkoly-Thege street 29-33, Budapest, Hungary, Shaohua Shen, International Research Center for Renewable Energy, State Key Laboratory of Multiphase Flow in Power Engineering, Xi'an Jiaotong University, Xi'an 710049, China, Lionel Vayssieres, International Research Center for Renewable Energy, State Key Laboratory of Multiphase Flow in Power Engineering, Xi'an Jiaotong University, Xi'an 710049, China

11:30 INV **Solar Photoelectrochemical Fuel Generation: Heterostructured Electrodes Using Advanced Materials** — **A 6.6**
Oomman K. Varghese, Ram Neupane, Maggie Paulose
Nanomaterials and Devices Laboratory, Department of Physics, University of Houston, Houston, TX 77204, USA.

12:00 **lunch**

Latest Advances in Solar Fuels VI : Flavio de Souza

14:00 INV **An Efficient Acid-Stable N2-Plasma Treated Hafnium Oxyhydroxide Electrocatalyst for Hydrogen Evolution and Oxidation Reactions** — **A 7.1**
Bruce E. Koel
Department of Chemical and Biological Engineering, Princeton University, Princeton, NJ 08544-5263, USA

14:30 INV **Membrane-Coated Electrocatalysts and Photoelectrodes for Solar Fuels Production** — **A 7.2**
Daniel V. Esposito
Columbia University

15:00 **Solar hydrogen generation from ambient humidity using functionalized porous photoanodes** **A 7.3**
G. Zafeiropoulos1, H. Johnson2, S. Kinge2, M.C.M. van de Sanden1, M.N. Tsampas1
1 Dutch Institute For Fundamental Energy Research - DIFFER, Eindhoven, 5612AJ, the Netherlands 2 TOYOTA MOTOR EUROPE NV/SA, Hoge Wei 33, 1930 Zaventem, Belgium

15:15 **Understanding hydrogen evolution activity of linear polymer photocatalysts** **A 7.4**
Michael Sachs, Reiner Sebastian Sprick, Drew Pearce, Sam J. Hillman, Adriano Monti, Anne A. Y. Guilbert, Nick J. Brownbill, Stoichko Dimitrov, Frédéric Blanc, Martijn A. Zwijnenburg, Dave J. Adams, Jenny Nelson, James R. Durrant, and Andrew I. Cooper
M. Sachs, S. Dimitrov, J. R. Durrant: Department of Chemistry and Centre for Plastic Electronics, Imperial College London, U.K. R. S. Sprick, N. J. Brownbill, F. Blanc, D. J. Adams, A. I. Cooper: Department of Chemistry and Materials Innovation Factory, University of Liverpool, U.K. D. Pearce, S. J. Hillman, A. A. Y. Guilbert, J. Nelson: Department of Physics and Centre for Plastic Electronics, Imperial College London, U.K. A. Monti, M. A. Zwijnenburg: Department of Chemistry, University College London, U.K.

15:30 **Coffee Break**

16:00 INV **Time resolved spectroscopy of charge carriers in TiO2 anatase and rutile single crystals. Effect of oxygen defects and electrons** **A 7.5**
K. Katsiev, H. Idriss
SABIC-Corporate and Research Center (CRD), King Abdullah University for Science and Technology (KAUST), Saudi Arabia

16:30 INV **Insight into catalyst materials for a circular economy of the CO2** **A 1.6**
J.R.Morante
1 Institut de Recerca en Energia de Catalunya (IREC), E-08930 Sant Adrià del Besòs, Spain, 2 Universitat de Barcelona, Barcelona, Spain

17:00 **Enhancing the photocatalytic O2 evolution with Fe2TiO5 through nanoscaling and cocatalyst loading** **A 7.7**
Mauricio A. Melo, Jr.,(1) Dereck N. F. Muche,(2) Flavio L. Souza,(2) Renato V. Gonçalves(1)
(1) São Carlos Institute of Physics, University of São Paulo, São Carlos, São Paulo, Brazil, (2) Centro de Ciências Naturais e Humanas, Universidade Federal do ABC, Santo André, São Paulo, Brazil.

17:15 **Efficient photocatalytic and photoelectrocatalytic generation of hydrogen peroxide by organic semiconductor catalysts** **A 7.8**
Maciej Gryszel, Eric D. Głowacki
Linköping University

17:30 **Residual Pd in Conjugated Polymers and its Impact on Photocatalytic Hydrogen Evolution** **A 7.9**
Jan Kosco, Michael Sachs, Robert Godin, Mindaugas Kirkus, Laia Francas, Matthew Bidwell, Muhammad Qureshi, Dalaver Anjum, James R. Durrant, Iain McCulloch
J. Kosco, Dr. M. Kirkus, Prof. I. McCulloch Department of Physical Sciences and Engineering KAUST Solar Centre (KSC) 4700 KAUST, 23955 Thuwal, Saudi Arabia M. Sachs, Dr. R. Godin, Dr. L. Francas, M. Bidwell, Prof. J. R. Durrant, Prof. I. McCulloch Department of Chemistry and Centre for Plastic Electronics Imperial College London South Kensington Campus, London SW7 2AZ, UK M. Qureshi, Dr. D. Anjum Department of Physical Sciences and Engineering KAUST Catalysis Centre (KCC) 4700 KAUST, 23955 Thuwal, Saudi Arabia

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Latest Advances in Solar Fuels VII : Samuel Mao

08:30 INV **Photo-driven kinetics in solar energy harvesting & converting semiconducting systems** **A 8.1**
Renata Solarska
Centre of New Technologies University of Warsaw

09:00 INV **Silicon Carbide Photoanode for Enhanced Photoelectrochemical Water Splitting** **A 8.2**
Jianwu Sun,* Hao Li, Jingxin Jian, Yuchen Shi, Mikael Syväjärvi, Rositsa Yakimova
Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-58183, Linköping, Sweden. *E-mail: jianwu.sun@liu.se

09:30 **Coffee Break**

10:00 **Modulating the defect redox state occupancy in BiVO4: impact on charge carrier kinetics and photocatalysis** **A 8.3**
Shababa Selim,* Ernest Pastor,* Michael Sachs,* Laia Francàs,* Sacha Corby,* Miguel García-Tecedor,** Benjamin Moss,* Sixto Gimenez,** Andreas Kafizas,*** Artem Bakulin,* James R. Durrant*
*Imperial College London, Department of Chemistry, South Kensington Campus, London, SW7 2AZ, UK. **Institute of Advanced Materials (INAM), Universitat Jaume I, 12006, Castelló de la Plana, Spain. ***The Grantham Institute, Imperial College London, South Kensington, London SW7 2AZ, UK

10:15 **Comprehensive Investigations on the Dynamics of BiVO4 Photoanodes for Water Oxidation** **A 8.4**
Abdullah Kahraman,1,2,3* Mahsa Barzgar Vishlaghi,1,2,3 Işınsu Baylam,3,4 Alphan Sennaroglu,1,2,3,4 and Sarp Kaya1,2,3,5
1 Material Science and Engineering, Koç University, Istanbul 34450, Turkey 2 Koç University TUPRAS Energy Center (KUTEM), Koç University, Istanbul 34450, Turkey 3 KoçUniversity Surface Science and Technology Center(KUYTAM), Koç University, Istanbul 34450, Turkey 4 Physics Department, Koç University, Istanbul 34450, Turkey 5 Chemistry Department, Koç University, Istanbul 34450, Turkey

10:30 **Discovery of Effective Metal Doping in FeVO4 for Photoelectrochemical Water Splitting by Combinatorial Synthesis** **A 8.5**
Thi Hiep Nguyen, Mengyuan Zhang, Wilman Septina, Joel Ming Rui Tan, Lydia H. Wong
School of Materials Science & Engineering, Nanyang Technological University, 639798, Singapore

10:45 **Investigating the influence of iron on nickel oxide nanosheets for enhanced overall water splitting through in-situ Raman and im** **A 8.6**
Zhen Qiu, Gunnar A Niklasson, Tomas Edvinsson
Department of Engineering Sciences, Solid State Physics, Uppsala University, Box 534, 75121 Uppsala, Sweden

11:00 **Looking Forward: Non-Covalent Molecular Assemblies for Photoelectrochemical Water Oxidation on Dye-Sensitized Photoanodes** **A 8.7**
Giulia Alice Volpato, Francesco Rigodanza, Serena Berardi, Stefano Caramori, Marcella Bonchio, Maurizio Prato, Andrea Sartorel
Dipartimento di Scienze Chimiche, University of Padova, CNR-ITM, Department of Chemistry and Pharmaceutical Sciences and CNR-ISOF, University of Ferrara, Department of Chemistry and Pharmaceutical Sciences and CNR-ISOF, University of Ferrara, CNR-ITM and Dipartimento di Scienze Chimiche, University of Padova, Center of Excellence for Nanostructured Materials (CENMAT) and INSTM, Department of Chemical and Pharmaceutical Sciences, University of Trieste, CNR-ITM and Dipartimento di Scienze Chimiche, University of Padova

11:15 **PLENARY SESSION**

12:15 **lunch**

Latest Advances in Solar Fuels VIII : Samuel Mao

14:15 **Unravelling design concepts behind the efficient, low-cost ?photocatalyst sheet? Z-scheme water splitting architecture** — A 9.1
Benjamin Moss, Qian Wang, Andreas Kafizas, Robert Godin, Takashi Hisatomi, Anna Regoutz, David Payne, Kazunari Domen, Ludmilla Steier and James Durrant
Imperial College London, Cambridge University, Imperial College London, University Of British Columbia, Shinshu university, Imperial College London, Imperial College London,

14:30 **Copper oxide based photoelectrodes and electrocatalysts for water splitting and CO2 reduction** — A 9.2
Matthew T. Mayer
Helmholtz-Zentrum Berlin für Materialien und Energie

14:45 **Tandem photoelectrochemical cell for hydrogen evolution based on a new nanostructured dithiothiophene conjugated porous polymer** — A 9.3
Mariam Barawi, Elena Alfonso, Alba García, Carmen G López-Calixto, Marta Liras and V. A. de la Peña O´ Shea.
Photoactivated Proceses Unit IMDEA Energy Institute, Móstoles Technology Park, Av. Ramón de la Sagra 3, 28935 Móstoles, Madrid, Spain.

15:00 **Design of tandem photoelectrochemical cells based on Cu2-xTe nanocrystals for water splitting** — A 9.4
Elena Alfonso González a, Mengjiao Wang b, Luca De Trizio b, Mariam Barawi a, Marta Liras a, Víctor A. de la Peña O'Shea a
a, IMDEA Energy Institute, b, Instituto Italiano di Tecnologia

15:15 **High Voc Hybrid Photocathodes and Their Implementation in Organic Based Tandem Systems for Hydrogen Evolution** — A 9.5
Antonio Alfano, Alessandro Mezzetti, Francesco Fumagalli, Chen Tao, Annamaria Petrozza, Fabio Di Fonzo
Politecnico di Milano Physics Department, Center for Nano Science and Technology Istituto Italiano di Tecnologia, Center for Nano Science and Technology Istituto Italiano di Tecnologia, EU Joint Research Center Institute for Energy, Center for Nano Science and Technology Istituto Italiano di Tecnologia, Center for Nano Science and Technology Istituto Italiano di Tecnologia, Center for Nano Science and Technology Istituto Italiano di Tecnologia

15:30 **Coffee Break**

16:00 **Strategies towards Efficient and Cost-Effective Bias-Free Solar CO2 Reduction Using Earth-Abundant Catalysts and Thin-Film Silic** — A 9.6
Félix Urbain1*, Ruifeng Du1, Pengyi Tang1,2, Vladimir Smirnov3, Katharina Welter3, Teresa Andreu1,4, Friedhelm Finger3, A. Cabot1,5, Jordi Arbiol2,5, and Joan Ramón Morante1,6
1 IREC, Catalonia Institute for Energy Research, Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs, Barcelona, Catalonia, Spain 2 Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain 3 IEK-5 Photovoltaik, Forschungszentrum Jülich, D-52425, Jülich, Germany 4 Universitat Politècnica de Catalunya, Jordi Girona 1–3, 08034 Barcelona, Catalonia, Spain 5 ICREA, Pg. Lluís Companys 23, 08010 Barcelona, Catalonia, Spain 6 Universitat de Barcelona, Martí i Franquès, 1, 08028 Barcelona, Catalonia, Spain

16:15 **Electrochemical CO2 Conversion Assisted by Photovolatic Cell toward Solar-to-Chemical Production Application** — A 9.7
Hyeong-Suk Oh, Da Hye Won, Yun Jeong Hwang
Clean Energy Research Center, Korea Institute of Science and Technology, Hwarangno 14-gil 5, Seongbuk-gu Seoul, 136-791, Republic of Korea

16:30 **Engineering heterostructure of 1-D materials using reduced TiO2/g-C3N4 for the application of CO2 reduction/water splitting** — A 9.8
Suhee Kang1, Joonyoung Jang1, Hyunsoo Nam1, Sung-Hoon Ahn2 and Caroline Sunyong Lee1,†
1.Department of Materials and Chemical Engineering, Hanyang University, Ansan, South Korea , 2.Department of Mechanical and Aerospace Engineering, Seoul National University, Seoul, South Korea

16:45 **Fullerene as a photo-electron transfer promoter enabling stable TiO2-protected Sb2Se3 photocathodes for PEC water splitting** — A 9.9
Jeiwan Tan(1), Wooseok Yang(1), Yunjung Oh(1), Hyungsoo Lee(1), Jaemin Park(1), Joosun Kim(2), Jooho Moon(1)*
(1)Department of Materials Science and Engineering, Yonsei University, Seoul 03722, Korea, (2)High-Temperature Energy Materials Research Center, Korea Institute of Science and Technology Seoul 02792, Korea

17:00 **Multi-Scale Engineering of Efficient Earth-Abundant Photo- and Electrocatalyst Layers by Scalable Flame Synthesis** — A 9.10
Professor Antonio Tricoli
Nanotechnology Research Laboratory, College of Engineering and Computer Science, Australian National University

17:15 **Functional Nanoscale Materials for Solar Fuels and Chemical Energy Conversion** — A 9.11
Dr. Khurram S. Joya
Department of Chemistry, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia

Latest Advances in Solar Fuels IX :
Sanjay Mathur / Lionel Vayssieres / Flavio de Souza / Samuel Mao

08:30 INV **In-situ/operando soft x-ray spectroscopy of energy materials and catalysis** — **A 10.1**
Jinghua Guo
Advanced Light Source, Lawrence Berkeley National Laboratory, CA, USA

09:00 INV **The Role of Heterojunctions on the Water Oxidation Performance in Mixed MOx/□-Fe2O3 Nanocomposite Structures** — **A 10.2**
Jennifer Leduc, Thomas Fischer, Sanjay Mathur
Institute of Inorganic Chemistry, University of Cologne, Cologne, Germany

09:30 **Coffee Break**

10:00 **Understanding the role of graphene as overlayer on hematite photoanodes** — **A 10.3**
Saulo Amaral Carminati, André do Nascimento Barbosa, André Luiz Martins de Freitas, Fernando Lázaro Freire Júnior, Flávio Leandro de Souza, Ana Flávia Nogueira
University of Campinas, Pontifical Catholic University of Rio de Janeiro, Federal University of ABC

10:15 **Enhanced charge carrier transport in sulfurized Sb2Se3 investigated by in-situ potential sensing and time-resolved spectroscopy** — **A 10.4**
Rajiv Ramanujam Prabhakar1, Dennis Friedrich2, Thomas Moehl1 , Wei Cui1 and David Tilley1
1. University of Zurich , Institute for Chemistry , Zurich , Switzerland 2. Helmholtz Zentrum, Institute for solar fuels , Berlin , Germany

10:30 **Solution-Phase Deposited Tin Sulfide (SnS) Thin Films For Water Splitting** — **A 10.5**
Jihye Suh, David Tilley
University of Zurich

10:45 **Unveiling Copper Oxide role in CO2 photoreduction process – catalyst or reactant?** — **A 10.6**
André E. Nogueira (a), Gelson T. S. T. Silva (a,b), Jéssica A. Oliveira (a,c), Juliana A. Torres (a), Mitchell Silva (b), Marcelo Carmo (d), Caue Ribeiro (a,d)
(a) Embrapa Instrumentation, Rua XV de Novembro, 1452, CEP: 13560-970, CP 741, São Carlos, SP,Brazil. (b) Department of Chemistry – Federal University of São Carlos, Via Washington Luiz, km 235, CEP: 13565-905, São Carlos, SP, Brazil. (c) Department of Chemical Engineering – Federal University of São Carlos, Via Washington Luiz, km 235, CEP: 13565-905, São Carlos, SP, Brazil. (d) Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research (IEK-3): Electrochemical Process Engineering, 52425 Jülich, Germany

11:00 INV **Influence of the thin film physical configuration on the charge transfer and recombination dynamics of WO3-BiVO4 multilayer systems for photoelectrochemical and solar fuel applications** — **A 10.7**
Ingrid Rodríguez-Gutiérrez 1,2,3, Jinzhan Su 2, Geonel Rodríguez-Gattorno 3, Flavio L. de Souza 1, Gerko Oskam 3
1 Universidade Federal do ABC (UFABC), Centro de Ciências Naturais e Humanas (CCNH), Laboratório de Energia Alternativa e Nanomateriais (LEAN), CEP 09.210-170 Santo André-SP, Brazil. 2 International Research Center for Renewable Energy (IRCRE), State Key Laboratory of Multiphase Flow in Power Engineering, Xi&#8217,an Jiaotong University, Xi&#8217,an, Shaanxi, China. 3 Department of Applied Physics, CINVESTAV-IPN, Ant. Carr. a Progreso km 6, Mérida, Yucatán 97310, México.

11:30 INV **Semiconductor photoelectrodes for solar fuel generation** — **A 10.8**
Lianzhou Wang
Nanomaterials Centre, School of Chemical Engineering and Australian Institute for Bioengineering and Nanotechnology, the University of Queensland, St Lucia, Brisbane, QLD, 4072, Australia

12:00 INV **Studies of PCET in Natural and Artificial Photosynthesis** — **A 10.9**
Victor S. Batista
Yale University, Department of Chemistry, New Haven, CT 06520-8107, U.S.A.
http://www.chem.yale.edu/~batista/

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM B

Emerging photovoltaics strategies for more stable devices

Symposium Organizers :

Artem BAKULIN, Imperial College London, U.K.

Baoquan SUN, Soochow University, China

Yana VAYNZOF, Heidelberg University, Germany

Zhuoying CHEN, CNRS – ESPCI Paris, France

To be published in Applied Energy Materials, ACS

Strategies for More Stable Perovskite Solar Cells : Y. Vaynzof/A. Bakulin/B. Sun/Z. Chen

13:45 INV **Low dimensional Tin perovskite solar cells** — B 1.1
Fei Wang, Yuqin Liao, Xianyuan Jiang, and Zhijun Ning*
School of Physical Science and Technology, ShanghaiTech University, Shanghai, 201210, China

14:15 **Diffusion mechanisms behind photoinduced halide segregation in mixed-halide perovskite solar cells** — B 1.2
Terry Chien-Jen Yang1, Peter Fiala1, Fan Fu1, Florent Sahli1, Matthias Bräuninger1, Ricardo A.Z. Razera1, Quentin Jeangros1, and Christophe Ballif1,2
1. Ecole Polytechnique Federale de Lausanne (EPFL), Institute of Microengineering (IMT), Photovoltaics and Thin-Film Electronics Laboratory (PV-Lab), Rue de la Maladiere 71b, Neuchatel 2002, Switzerland. 2. CSEM, PV-Center, Jaquet-Droz 1, Neuchatel 2002, Switzerland

14:30 **Phase diagram of MAxFA1-xPbI3 hybrid perovskites and shallow-defect stability from temperature dependent PL and Raman** — B 1.3
Adrián Francisco-López (1), Bethan Charles (2), Oliver J. Weber (2), M. Isabel Alonso (1), Miquel Garriga (1), Mariano Campoy-Quiles (1), Mark T. Weller (2), Alejandro R. Goñi (1,3)
(1) Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, 08193 Bellaterra, Spain (2) Dept. of Chemistry & Centre for Sustainable Chemical Technologies, University of Bath, Claverton Down, Bath BA2 7AY, UK (3) ICREA, Passeig Lluís Companys 23, 08010 Barcelona, Spain

14:45 **Understanding site-specific contributions to band gap and phase stability in hybrid halide perovskite alloys** — B 1.4
Anuj Goyal, Paul Kairys, Vladan Stevanovi?
Colorado School of Mines, Golden, CO 80401, USA, Office of Science, Science Undergraduate Laboratory Internship Program National Renewable Energy Laboratory, Golden, CO 80401, USA,

15:00 **Development of Growth Techniques for High Performance Organometallic Halide Perovskite Based Solar Cells** — B 1.5
Annie Ng1, Zhiwei Ren2, and Charles Surya3
1 Department of Electrical and Computer Engineering, School of Engineering, Nazarbayev University, 53 Kabanbay batyr ave., Astana, 010000, Kazakhstan 2 Department of Electronic and Information Engineering, The Hong Kong Polytechnic University, Hong Kong, P.R. China 3 School of Engineering, Nazarbayev University, 53 Kabanbay batyr ave., Astana, 010000, Kazakhstan

15:15 **Ion Migration in Triple-Cation Mixed-Halide Perovskite Solar Cells with Potassium Passivation** — B 1.6
Moritz Futscher, Lucie McGovern, Kangyu Ji, Sandy Sanchez, Sam Stranks, Bruno Ehrler
Moritz Futscher, Lucie McGovern, Bruno Ehrler AMOLF, Center for Nanophotonics, Science Park 104, 1098 XG Amsterdam, The Netherlands Kangyu Ji, Sam Stranks Cavendish Laboratory, University of Cambridge, J.J. Thomson Avenue, Cambridge CB3 OHE, UK Sandy Sanchez Adolphe Merkle Institute, Chemin des Verdiers 4, 1799 Fribourg, Switzerland

15:30 **Coffee Break**

Strategies for More Stable Perovskite Solar Cells : Yana Vaynzof

16:00 INV **Highly stable perovskite solar cells enabled by additives** — B 2.1
Sai Bai,1,2 Feng Gao,2 and Henry J. Snaith1
1Clarendon Laboratory, University of Oxford, Parks Road, Oxford, OX1 3PU, UK 2Department of Physics, Chemistry and Biology (IFM), Linköping University, Linköping, SE-581 83, Sweden

16:30 INV **Unravelling Bulk and Interfacial Degradation Mechanisms in Perovskite Solar Cells** — B 2.2
Azat F. Akbulatov (1) Olga Yamilova (2,1), Mohamed Elnaggar (1-3), Alexandra Boldyreva (2), Moneim Elsobaki (2), Sergey Tsarev (2), Lyubov A. Frolova (2,1), Keith Stevenson (2) and Pavel A. Troshin (2,1)
1) Institute for Problems of Chemical Physics of RAS, Semenov ave. 1, Chernogolovka, Moscow region, 142432, Russia. (2) Skolkovo Institute of Science and Technology, Skolkovo Innovation Center, Nobel st. 3, Moscow, 143026, Russian Federation (3)Moscow Institute of Physics and Technology, Dolgoprudny, Moscow, Russia

17:00 **Interfaces in efficient and stable organic-inorganic hybrid perovskite solar cells** — B 2.3
Ying-Chiao Wang,1 Takaaki Taniguchi 2 and Kazuhito Tsukagoshi 2
1. International Center for Young Scientists (ICYS), National Institute for Materials Science (NIMS), Tsukuba, Ibaraki 305-0044, Japan 2. International Centre for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Tsukuba, Ibaraki 305-0044, Japan

17:15 **Interface-induced degradation effects in perovskite solar cells** — B 2.4
Aleksandra G. Boldyreva1, Sergey A.Tsarev1, Moneim Ismail1, Azat A. Akbulatov2, Sergey Yu. Luchkin1, Lyubov A. Frolova2, Keith J. Stivenson1 and Pavel A. Troshin1,2
1-Skolkovo Institute of Science and Technology, 2-Institute for Problems of Chemical Physics of the Russian Academy of Sciences

17:30 **Investigation of degradation at perovskite surfaces by in situ X-ray photoelectron spectroscopy at realistically humid condition** — B 2.5
Jack Chun-Ren Ke (1,2), Alex S. Walton (2,4), David J. Lewis (3), Jacob Tse-Wei Wang (5), Ben F. Spencer (3), Qian Chen (3), Claudia L. Compean-Gonzalez (2,3), Aleksander A. Tedstone (3), Paul O'Brien (3,4,#), Andrew G. Thomas (2,3), Wendy R. Flavell (1,2).
1 School of Physics and Astronomy, the University of Manchester, Manchester M13 9PL, UK 2 The Photon Science Institute, the University of Manchester, Manchester M13 9PL, UK 3 School of Materials, the University of Manchester, Manchester M13 9PL, UK 4 School of Chemistry, the University of Manchester, Manchester M13 9PL, UK 5 CSIRO Energy, Mayfield West, NSW 2304, Australia # Deceased

17:45 **Photonic-enhanced Perovskite solar cells: New avenues for Efficiency and Stability improvement** — B 2.6
Manuel J. Mendes, Sirazul Haque, Miguel Alexandre, Manuel Chapa, Olalla S. Sobrado, Hugo Aguas, Elvira Fortunato, Rodrigo Martins
i3N/CENIMAT, Department of Materials Science, Faculty of Science and Technology, Universidade NOVA de Lisboa and CEMOP/UNINOVA, Campus de Caparica, 2829-516 Caparica, Portugal

18:00 **BODIPY-Containing Polymers for Use as Dopant-Free Hole Transporting Materials for Durable Perovskite Solar Cells** — B 2.7
Minkyu Kyeong, Jinho Lee, Kwanghee Lee*, and Sukwon Hong*
Minkyu Kyeong, Kwanghee Lee, Sukwon Hong: School of Materials Science and Engineering, Gwangju Institute of Science and Technology, 123 Cheomdan-gwagiro, Buk-gu, Gwangju 61005, Republic of Korea Jinho Lee, Kwanghee Lee: Heeger Center for Advanced Materials, Gwangju Institute of Science and Technology, 123 Cheomdan-gwagiro, Buk-gu, Gwangju 61005, Republic of Korea Kwanghee Lee, Sukwon Hong: Research Institute for Solar and Sustainable Energies, Gwangju Institute of Science and Technology, 123 Cheomdan-gwagiro, Buk-gu, Gwangju 61005, Republic of Korea Sukwon Hong: Department of Chemistry, Gwangju Institute of Science and Technology, 123 Cheomdan-gwagiro, Buk-gu, Gwangju 61005, Republic of Korea

18:15 **Roles of charge transfer layers on the microstructure and stability of hybrid perovskite solar cells** — B 2.8
Manon Spalla 1-2, Lara Perrin 1, Emilie Planes 1, Muriel Matheron 2, Solenn Berson 2, Lionel Flandin 1
1- Univ. Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, Grenoble INP, LEPMI, 38000 Grenoble, France, 2- Univ. Grenoble Alpes, CEA, LITEN, INES, F-73375 Le Bourget du Lac, France,

Tuesday 28 may 2019

Colloidal Nanocrystals: Towards Stable Solar Cells : Zhuoying Chen

08:30 INV **Infrared solution processed photovoltaics based on colloidal quantum dots** B 3.1
Gerasimos Konstantatos
ICFO

09:00 **Photodegradation of Organometal Hybrid Perovskite Nanocrystals: Clarifying the Role of Oxygen by Single-dot Photoluminescence** B 3.2
Ilya Sychugov, Lige Liu*, Luogen Deng*, Sheng Huang*, Pei Zhang, Jan Linnros, Haizheng Zhong*
KTH - Royal Institute of Technology, Stockholm, Sweden *Beijing Institute of Technology, China

09:15 **Why exposure to air improves the performance of PbS quantum dot solar cells prior to their degradation?** B 3.3
David Becker-Koch, Miguel Albaladejo Siguan, Vincent Lami, Hengyang Xiang*, Zhuoying Chen*, Yana Vaynzof
Kirchhoff Institut für Physik, Centre for Advanced Materials, Ruprecht-Karls-Universität, Heidelberg, 69120 Heidelberg, Germany, * LPEM, ESPCI Paris, PSL Research University, Sorbonne Université, CNRS, 10 Rue Vauquelin, 75005 Paris, France

09:30 **Lattice Anchoring Stabilizes Solution-Processed Semiconductors** B 3.4
Mengxia Liu, Yuelang Chen, Chih-Shan Tan, Rafael Quintero-Bermudez, Andrew H. Proppe, F. Pelayo García de Arquer, Edward H. Sargent*
Department of Electrical and Computer Engineering, University of Toronto, 35 St George Street, Toronto, Ontario M5S 1A4, Canada

09:45 **Efficient, stable and flexible transparent electrodes based on metallic nanowire networks for emerging photovoltaics.** B 3.5
Dorina T. Papanastasiou[1], Joao Resende[1,2], Thomas Sannicolo[1], Viet Huong Nguyen[1], Carmen Jiménez[1], David Muñoz-Rojas[1], Daniel Bellet[1]
[1] Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, 38000 Grenoble, France , [2] Univ. Grenoble Alpes, Université Savoie Mont Blanc, CNRS, Grenoble INP, LEPMI, 38000 Grenoble, France

10:00 **Coffee Break**

11:15 **PLENARY SESSION 1**

12:30 **Lunch**

Strategies for More Stable Perovskite Solar Cells : Thomas Riedl

13:45 INV **Understanding Surface Passivation of Methylammonium Lead Tribromide Single Crystals** B 4.1
Maria Antonietta Loi
PhotoPhysics & OptoElectronics, Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG Groningen, The Netherlands.

14:15 **What can be learned from the Self-Healing in Halide Perovskites?** B 4.2
Davide Raffaele Ceratti1*, Y. Rakita1, L. Cremonesi2, R.Tenne1, V. Kalchenko1, M. Elbaum1, D. Oron1, M. A. C. Potenza2, G. Hodes1, D. Cahen1
1 Weizmann Institute of Science, 7610001, Rehovot, Israel. 2 Department of Physics and CIMAINA, University of Milan, 20133, Milan, Italy.

14:30 **The Role of defects in determining the stability of lead halide perovskite solar cells** B 4.3
Katelyn P. Goetz, Paul Fassl, Qingzhi An, David Becker-Koch, Joshua Kress, Yana Vaynzof
Kirchhoff Institute of Physics, University of Heidelberg, 69120 Heidelberg, Germany

14:45 **Investigation of Instability Issues Associated with Perovskite Solar Cells** B 4.4
M. Ibrahim Dar
Cavendish Laboratory, Department of Physics, University of Cambridge, JJ Thomson Avenue, Cambridge CB3 0HE, UK. Email: id338@cam.ac.uk

15:00 **Insight of stoichiometric dependent local degradation mechanism of MAPbI3 perovskite materials** B 4.5
Vikas Kumar1, Nicola Stehling1, Jérémy Barbé2, Colin L. Freeman1, Ian M. Reaney1, Wing C. Tsoi2, David Lidzey3, Cornelia Rodenburg1
1Department of Materials Science and Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD, UK 2SPECIFIC, College of Engineering, Swansea University, Bay Campus, Fabian Way, Swansea, SA1 8EN, UK 3Department of Physics and Astronomy, University of Sheffield, Hounsfield Road, Sheffield, S3 7RH, UK

15:15 **Spontaneous Enhancement of Power Conversion Efficiency in Multi-Cation Perovskite Solar Cells** B 4.6
S. Moghadamzadeh,a,b I. M. Hossain,a,b B. Abdollahi Nejand,a,b Marius Jackoby,a,b D. Rueda-Delgado,a S. Gharibzadeh,a,b J. A. Schwenzer, a T. Abzieher, a Ian A. Howard,a,b A. A. Haghighirad,c B. S. Richards,a,b U. Lemmer,a,b U. W. Paetzold.a,b
a Light Technology Institute, Karlsruhe Institute of Technology, Engesserstr. 13, 76131 Karlsruhe, Germany b Institute of Microstructure Technology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany c Institute for Solid-State Physics, Karlsruhe Institute of Technology, Hermann-von-Helmholtz Platz 1, D-76344 Eggenstein-Leopoldshafen, Germany

15:30 **Coffee Break**

Poster session : Y. Vaynzof/A. Bakulin/B. Sun/Z. Chen

16:00 **Additive strategies for more stable perovskite solar cells** B 5.1
Corentin Paillassard, Zhelu Hu, Laurent Billot, Lionel Aigouy, Zhuoying Chen
Laboratoire de Physique et d'Etude des Matériaux (LPEM), ESPCI Paris, PSL Research University, Sorbonne Université, CNRS, 10 Rue Vauquelin, 75005 Paris, France

16:00 **Origin of extended UV stability of 2D atomic layer titania-based perovskite solar cells unveiled by ultrafast spectroscopy** B 5.2
P. T. Anusha(1), Jia-Xing Li(1), Tzu-Pei Chen(2), Shao-Sian Li(3), Chun-Wei Chen(2), Po-Chun Chen(4), Minoru Osada(5), Kazuhito Tsukagoshi(6), Atsushi Yabushita(1), Kaung-Hsiung Wu(1), Chih-Wei Luo(1)
(1)Department of Electrophysics, National Chiao Tung University, Hsinchu 30010, Taiwan, (2)Department of Materials Science and Engineering, National Taiwan University, Taipei 10617, Taiwan, (3)Graduate Institute of Biomedical Optomechatronics, Taipei Medical University, Taipei 110, Taiwan, (4)Department of Materials & Mineral Resources Engineering, National Taipei University of Technology, Taiwan, (5)Institute of Materials and Systems for Sustainability (iMaSS), Department of Materials Chemistry, Nagoya University, Nagoya 464-8603, Japan, (6)The International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science, Tsukuba 305-0044, Japan

16:00 **Unveiling the Nanoparticle-Seeded Catalytic Nucleation Kinetics of Perovskite Solar Cells by Time-Resolved GIXS** B 5.3
Chung-Yao Lin(1), Shao-Sian Li(2), Hao-Chung Chia(1), Yu-Yun Hsiao(3), Po-Chun Chen(4), Jiashing Yu(5), Je-Wei Chang(6), Chun-Jen Su(6), Di-Yan Wang(7), An-Chung Su(1), Chun-Wei Chen(3), U-Ser Jeng(1)(6)
(1)Department of Chemical Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan, (2)Graduate Institute of Biomedical Optomechatronics, Taipei, Medical University, Taiwan, (3)Department of Materials Science and Engineering, National Taiwan University, Taipei 10617, Taiwan, (4)Department of Materials & Mineral Resources Engineering, National Taipei University of Technology, Taiwan, (5) Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan, (6)National Synchrotron Radiation Research Center, Hsinchu 30076, Taiwan, (7)Department of Chemistry, Tunghai University, Taichung 40704, Taiwan

16:00 **Work Function Tuning through Self-Assembling Monolayers of Fluorinated Molecules** B 5.4
Laura Canil, Antonio Abate
Helmholtz Zentrum Berlin

16:00 **Titania/Absorber Interface Engineering in Perovskite Solar Cells Using a Metallated Porphyrin** B 5.5
Konstantina E. Gkini 1,2, Nikolaos Balis 1, Apostolis Verykios 1, Maria Antoniadou 1, Athanassios G. Kontos 1, Athanasios G. Coutsolelos 1, Maria Vasilopoulou 1, Polycarpos Falaras 1
1 Institute of Nanoscience and Nanotechnology, NCSR Demokritos, 15341, Agia Paraskevi Attikis, Athens, Greece, 2 Physics Department, School of Natural Sciences, University of Patras, 26504, Greece

16:00 **High-Performance Small Molecules via Tailoring Fused Aromatic Bridges for Organic Solar Cells** — B 5.6
Sora Oh, Won Suk Shin, Jong-Cheol Lee, Chang Eun Song, Sang Kyu Lee
Korea Research Institute of Chemical Technology (KRICT)

16:00 **Stable additive-free perovskite and polymer solar cells by using green-solvent processable semiconducting polymers** — B 5.7
Junwoo Lee, Guan-Woo Kim, Sang Ah Park, Taiho Park
Department of Chemical Engineering Pohang University of Science and Technology (POSTECH) 77 Cheongam-Ro, Nam-gu, Pohang, Gyoungbuk, South Korea 37673

16:00 **Precise determination of residual DMSO in CH3NH3PbI3 by high-resolution continuum source absorption spectrometry** — B 5.8
Mao Dong Huang1, Karsten Hinrich1, Qin Tan2, Jörg Rappich2, Norbert Nickel2, Thomas Dittrich2
1. Leibniz-Institut für Analytische Wissenschaften – ISAS – e.V., Department Berlin, Schwarzschildstr. 8, 12489 Berlin, Germany, 2. Helmholtz Zentrum Berlin für Materialien und Energie GmbH, Institut für Silizium-Photovoltaik, Kekuléstr. 5, 12489 Berlin, Germany

16:00 **Hybrid nanocontainers to tailor the electron donor:acceptor architecture in organic photovoltaics** — B 5.9
Miriam Sousa,1 Maykel de Miguel,2 Hermenegildo Garcia,2 Carlos Baleizão1
(1) Centro de Química Estrutural, Instituto Superior Técnico, Av. Rovisco Pais, 1049-001 Lisboa, Portugal. (2) Chemistry Department and ITQ-CSIC, Universidad Politecnica de Valencia, 46022 Valencia, Spain.

16:00 **From solution to a thin perovskite layer: In-situ film formation studies** — B 5.10
Katrin Hirselandt (1), Rahim Munir (1), Florian Mathies (1), Aboma Merdasa (1), Emil J. W. List-Kratochvil (2), Eva Unger (1) (3)
(1) Young Investigator Group Hybrid Materials Formation and Scaling, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Kekulé Strasse 5, 12489 Berlin, Germany, (2) Institut für Physik, Institut für Chemie & IRIS Adlershof, Humboldt-Universität zu Berlin, Brook-Taylor Straße 6, 12489 Berlin, Germany, (3) Institut für Chemie, Humboldt-Universität zu Berlin, Brook-Taylor Straße 6, 12489 Berlin, Germany

16:00 **Impact of oxide electron transport layer passivation coatings on stability of perovskite solar cells** — B 5.11
Sergey Tsarev, Tatiana S. Dubinina , Sergey Yu. Luchkin , Keith J. Stivenson and Pavel A. Troshin
Sergey Tsarev 1, Tatiana Dubinina 2, Sergey Yu. Luchkin 1, Keith J. Stivenson 1 and Pavel A. Troshin 1,3 1-Skolkovo Institute of Science and Technology, 2-Faculty of Fundamental Physical and Chemical Engineering, Lomonosov Moscow State University 3-Institute for Problems of Chemical Physics of the Russian Academy of Sciences

16:00 **Impact of lead substitution in MAPbI3 on the efficiency and stability of perovskite solar cells** — B 5.12
Marina I.Ustinova1, Nadezhda N. Dremova2, Keith J. Stevenson1, Pavel A. Troshin1,2
1 Skolkovo Institute of Science and Technology, Moscow, Russia 2 Institute for Problems of Chemical Physics of RAS, Chernogolovka, Moscow region, Russia

16:00 **Characteristics of V2O5-InZnO combined electrodes with hole transport and hole extraction layer for perovskite solar cells** — B 5.13
Hae-Jun Seok, Sunyoung Yoon, Jae-Hoon Lee, and Han-Ki Kim*
School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Gyeonggi-do, 16419, Repubic of Korea

16:00 **Light-catching plasmon-active silver window electrodes for high performance organic photovoltaics** — B 5.14
Jaemin Lee, Steven Huband and Ross A. Hatton
Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK, Department of Physics, University of Warwick, Coventry, CV4 7AL, UK, Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK

16:00 **Parallel coaxial heterojunctions deposited by ALD on self-ordered nanostructures for solar cells applications.** — B 5.15
Ignacio Mínguez-Bacho, Xiaodan Wang, Katharina Dehm, Pascal Büttner and Julien Bachmann.
Department of Chemistry and Pharmacy, Friedrich-Alexander University of Erlangen-Nürnberg, Egerlandstr. 1, 91058 Erlangen, Germany.

16:00 **Significant Broadband Photocurrent Enhancement by Epsilon-Near-Zero Gold Nanostructures Photocathodes** — B 5.16
Shih-Hsuan Huang, Jian-Ming Chiu, Yian Tai
Department of Chemical Engineering, National Taiwan University of Science and Technology, 10607 Taipei, Taiwan.

16:00 **High efficiency and good stability CNT-Si solar cells realized by metal chlorides optimization** — B 5.17
Huaisheng Wu, Anyuan Cao, Liusi Yang, Mingchu Zou
Peking University, College of Engineering

16:00 **Vacuum deposited wide bandgap perovskite solar cells** — B 5.18
Michele Sessolo, Jorge Ávila, Lidón Gil-Escrig, Daniel Pérez-del-Rey, Pablo P. Boix, Steve Albrecht, Henk J. Bolink
Michele Sessolo, Jorge Ávila, Daniel Pérez-del-Rey, Pablo P. Boix, Henk J. Bolink, Instituto de Ciencia Molecular, Universidad de Valencia, C/ Beltrán 2, 46980 Paterna, Spain Lidón Gil-Escrig, Steve Albrecht, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Kekuléstraße 5, 12489 Berlin, Germany

16:00 **Porous and Intercrossed PbI2-CsI Nanorod Scaffold for Inverted Planar FA-Cs Mixed-Cation Perovskite Solar Cells** — B 5.19
Xiuwen Xu, Yue-Min Xie, Menglin Li, Yuhui Ma, Sai-Wing Tsang*
Department of Materials Science and Engineering, City University of Hong Kong, Hong Kong SAR, P. R. China

16:00 **Doped Nickel Oxide Nanocrystals for Solution-Processed Hole Extraction Layers in High Efficient and Robust Organic Solar Cells** — B 5.20
Riva Alkarsifi(1), Yatzil Avalos(1), Mats Fahlman(2),Christine Videlot-Ackermann(1), Olivier Margeat(1), Jörg Ackermann(1)
1)Aix Marseille Univ, CNRS, CINAM, Marseille, France. 2)Department of Physics Chemistry and Biology Linkoping University 58183 Linkoping, Sweden

16:00 **Highly stable inverted planar perovskite solar cells with nickel contacts without encapsulation** — B 5.21
Svetlana Sirotinskaya, Roland Schmechel, Niels Benson
Faculty of Engineering, University of Duisburg-Essen and CENIDE, Bismarckstr. 81, 47057 Duisburg, Germany

16:00 **Interlayer Modification Using Conjugated, Amphiphilic and Eco-Friendly Polymers in Polymer Solar Cells** — B 5.22
Yu-An Su, Po-Chen Lin, Chang-En Tsai and Chu-Chen Chueh*
Department of Chemical Engineering, National Taiwan University

16:00 **Electrical modeling of solar cells including time-related degradation effects** — B 5.23
A. Maoucha1, F. Djeffal1,2,*, T. Bentrcia2 and A. Benhaya1
1 LEA, Department of Electronics, University Mostefa Benboulaid-Batna 2, Batna 05000, Algeria. 2 LEPCM, University of Batna 1, Batna 05000, Algeria. *E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

16:00 **Charge Transfer Mechanism in Dilute Donor Organic Solar cells** — B 5.24
Kashif Hussain, Tim Albes, Lakshmi N. S. Murthy, Liang Xu, Julia W. P. Hsu, Alessio Gagliardi
Kashif Hussain, Tim Albes, Alessio Gagliardi, Department of Electrical and Computer Engineering, Technical University of Munich, Arcisstrasse 21, 80333 Munich, Germany. Lakshmi N. S. Murthy, Liang Xu, Julia W. P. Hsu, Department of Materials Science and Engineering, University of Texas at Dallas, 800 West Campbell Road, Richardson, Texas 75080, United States

16:00 **Quantifying loss-mechanisms related to charge carrier collection in thin-film solar cells** — B 5.25
Oskar J. Sandberg, Staffan Dahlqvist, Christian Ahläng, Dorothea Scheunemann, Sebastian Wilken, Mathias Nyman, and Ronald Österbacka
Oskar J. Sandberg, Dept of Physics, Swansea University, and Åbo Akademi University, Staffan Dahlqvist, Christian Ahläng, Dorothea Scheunemann, Sebastian Wilken, Mathias Nyman, and Ronald Österbacka, Physics and Center for Functional Materials, Åbo Akademi University

16:00 **Design of conjugated block-copolymers for organic solar cells** — B 5.26
Irina V. Klimovich1,2, Tatyana A. Derzhavskaya2, Sergey Yu. Luchkin1, Denis V. Anokhin2, Pavel A. Troshin1,2*
1 Skolkovo Institute of Science and Technology, 2 Institute for Problems of Chemical Physics of the Russian Academy of Sciences

16:00 **Effect of doping concentration of hole transport material on overall performance of organic solar cell** — B 5.27
Swarup Biswas1, Jeonghun Kwak2, Hyeok Kim1*
1Department of Electrical Engineering, ERI, Gyeongsang National University, 501 Jinjudaero, Jinju, Gyeongnam 52828, Republic of Korea. 2 Department of Electrical and Computer Engineering, Inter-University Semiconductor Research Center, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 08826, Republic of Korea.

16:00 **Development of High-efficient and Flexible Cu(In,Ga)Se2 Thin-film Photovoltais on Stainless Steel Substrates** **B 5.28**
Donghyeop Shin, Kihwan Kim, Inyoung Jeong, Young-Joo Eo, Soomin Song, Ara Cho, Jinsu Yoo, Seung Kyu Ahn, Jun-Sik Cho, Joo Hyung Park, SeJin Ahn, Yunae Cho, Jae Ho Yun, Jihye Gwak
Photovoltaics Laboratory, Korea Institute of Energy Research, Daejeon, South Korea, 34129

16:00 **Can we make Oxide Perovskite/Halide Perovskite Interfaces Selective?** **B 5.29**
Anat Itzhak, Adi Kama, Shay Tirosh and David Cahen
Bar-Ilan University, Bar-Ilan University, Bar-Ilan University, Weizmann Institute of science

16:00 **New Twisted perylene Diimide Electron Acceptors for High Performance fullerene-free organic solar cells** **B 5.30**
M.L Keshtov a*, S. A.Kuklin a, I. E. Ostapov b, P. V. Komarov a, D. Y.Godovsky a, E. E. Makhaeva b, Y. Zou c, Prateek Malhotra d, Ganesh D. Sharma d*
a Institute of Organoelement Compounds of the Russian Academy of Sciences, Vavilova St., 28, 119991 Moscow, Russian Federation b Department of Physics of Polymers and Crystals, Faculty of Physics, M.V. Lomonosov Moscow State University, Leninskie Gory 1, 119991, Moscow, Russia c College of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China d Department of Physics, The LNM Institute for Information Technology, Jamdoli, Jaipur

16:00 **NANOSTRUCTURED GRANULAR SEMICONDUCTORS AS NEW CLASS OF THERMOELECTRIC MATERIALS** **B 5.31**
B.M.Abdurahmanov, Kh.B. Ashurov, M.M. Adilov, Sh.K. Kuchkanov, S.E. Maksimov, S.J. Nimatov, B.L. Oksengendler
Institute of ion-plasma and lazer technologies, Academy of Scences of the Republic of Uzbekistan, Tashkent, Uzbekistan

16:00 **Strategies for Improving the Efficiency and Stability of Organic Photovoltaic Cells: Cathode Buffer Layer Modification** **B 5.32**
Seung Hun Eom,1 Ju Hyong Jung,1,2 Seumg-Hoon Lee,1 Jaemin Lee,1,2 Jai Kyeong Kim,3 Changjin Lee,1 and Sung Cheol Yoon1,2
1 Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), Daejeon 34114, Republic of Korea 2 Department of Advanced Materials and Chemical Engineering, UST-KRICT School, Daejeon 34114, Republic of Korea 3 National Agenda Research Division, Korea Institute of Science and Technology (KIST), Seoul 02792, Republic of Korea

16:00 **Inorganic-Organic Double-Layer as Hole Transport Layer in Highly Stable Planar Perovskite Solar Cells** **B 5.33**
Guan-Woo Kim, Junwoo Lee, Kyoungwon Choi, Hyuntae Choi, Taiho Park
Department of Chemical Engineering, Pohang University of Science and Technology (POSTECH), 77 Cheongam-Ro, Nam-gu, Pohang, Gyoungbuk, Korea.

16:00 **High-performance non-fullerene based inkjet-printed organic solar cells processed from environmentally friendly solvents** **B 5.34**
Khulud Almasabi, Daniel Corzo, Eloise Bihar, Diego Rosas, Nicola Gasparini and Derya Baran*
King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), Physical Sciences and Engineering Division, Thuwal 23955-6900, Saudi Arabia E-mail: derya.baran@kaust.edu.sa

16:00 **Investigation of the environmental stability of high-efficiency PffBT4T-2OD:PC(71)BM organic solar cells** **B 5.35**
Andreas Weu (1), Joshua A. Kress (1), Fabian Paulus (1), David Becker-Koch (1), Vincent Lami (1), Artem A. Bakulin (2) and Yana Vaynzof (1)
(1) Kirchhoff Institute for Physics & Centre for Advanced Materials, Im Neuenheimer Feld 225-227, 69120 Heidelberg, Germany, (2) Department of Chemistry, Imperial College London, London SW7 2AZ, United Kingdom

16:00 **Worldwide standardization activity on emerging PV devices: toward more reliable characterization techniques for stable devices** **B 5.36**
Giorgio Bardizza, Chris Fell, Toshiro Matsuyama, Harald Müllejans
European Commission, Joint Research Centre (JRC,) Ispra (VA) – Italy, CSIRO Energy Centre, 10 Murray Dwyer Cct, Mayfield West, NSW 2304, Australia, RATO, University of Tokyo 4-6-1 Komaba, Meguro-ku, Tokyo 153-8904, Japan, European Commission, Joint Research Centre (JRC,) Ispra (VA) – Italy

16:00 **Thermal Stability Enhancement of Perovskite Solar Cells via Dye Sensitization of the Titania Compact Layer** **B 5.37**
Alaa A. Zaky 1, 2 Nikolaos Balis 1, Athanassios G. Kontos1, Chrysoula Athanasekou1, Maria Antoniadou 1 and Polycarpos Falaras 1
1 Institute of Nanoscience and Nanotechnology, National Centre for Scientific Research “Demokritos”, 15341, Agia Paraskevi Attikis, Athens, Greece, 2 School of Electrical and Computer Engineering National Technical University of Athens (NTUA), 15780, Athens, Greece

16:00 **Three-in-one approach towards efficient organic dye-sensitized solar cells: anti-aggregation, panchromatic absorption and FRET** **B 5.38**
Jayita Patwari, Samir Kumar Pal
Department of Chemical, Biological and Macromolecular Sciences, S. N. Bose National Centre for Basic Sciences, Block JD, Sector III, Salt Lake, Kolkata 700 106, India

16:00 **An Inverse Relation between Ordering of Bulk and Charge Transfer State in Organic Solar Cell** **B 5.39**
Nakul Jain, Urvashi Bothra, Dhanashree Moghe, Christopher R. McNeill and Dinesh Kabra
Nakul Jain, Dhanashree Moghe, Urvashi Bothra, Dinesh Kabra- Department of Physics, Indian Institute of Technology Bombay, Powai, Mumbai-400076, India Urvashi Bothra- IITB-Monash Research Academy, IIT Bombay, Mumbai-400076, India. Urvashi Bothra, Christopher R. McNeill- Department of Materials Science and Engineering, Monash University, Wellington Road, Clayton, VIC 3800 Australia.

16:00 **Morphological investigation on the device performance of PBDTTT-EFT: PCDTBT: PC71BM ternary blend polymer solar cells** **B 5.40**
Javed Alam Khan, Ajay Singh Panwar and Dipti Gupta*
Department of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, Powai, Mumbai- 400076, India

16:00 **Large columnar perovskite crystals lead to thick inkjet-printed perovskite solar cells with stable power conversion efficiency** **B 5.41**
Helge Eggers a,b,c, Fabian Schackmar a,b,c, Tobias Abzieher a, Gerardo Hernández-Sosa a,b, Uli Lemmer a,b,c, Bryce S. Richards a,c and Ulrich W. Paetzold a,c
a: Karlsruhe Institute of Technology, Light Technology Institute (LTI), Engesserstrasse 13, 76131 Karlsruhe, Germany b: InnovationLab GmbH, Speyerer Straße 4, 69115 Heidelberg, Germany c: Karlsruhe Institute of Technology, Institute of Microstructure Technology (IMT), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany

16:00 **Development of high performance polymer solar cells with high stability** **B 5.42**
Hae Jung Son
Photo-electronic Hybrids research center, Korea Institute of Science and Technology (KIST)

16:00 **To Get Photo-stability and Low Temperature Processibility from Highly Crystalline Photoactive Materials for Polymer Solar Cells** **B 5.43**
Rasool Shafket, Thuy Thi Ho, Chang Eun Song, Hang Ken Lee, Won Suk Shin
Rasool Shafket (Energy Materials Research Center, Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), Daejeon 305-600, Korea and Department of Advanced Materials and Chemical Engineering, University of Science and Technology (UST), Daejeon, 305-350, Korea), Thuy Thi Ho (Energy Materials Research Center, Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), Daejeon 305-600, Korea and Department of Advanced Materials and Chemical Engineering, University of Science and Technology (UST), Daejeon, 305-350, Korea), Chang Eun Song (Energy Materials Research Center, Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), Daejeon 305-600, Korea and Department of Advanced Materials and Chemical Engineering, University of Science and Technology (UST), Daejeon, 305-350, Korea), Won Suk Shin (Energy Materials Research Center, Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), Daejeon 305-600, Korea and Department of Advanced Materials and Chemical Engineering, University of Science and Technology (UST), Daejeon, 305-350, Korea), Hang Ken Lee (Energy Materials Research Center, Advanced Materials Division, Korea Research Institute of Chemical Technology (KRICT), Daejeon 305-600, Korea)

16:00 **Atomic-Scale Degradation Mechanisms of Hybrid Perovskite CH3NH3PbBr3 Surface: An Ab Initio Study** **B 5.44**
Muhammad Ejaz Khan and Yong-Hoon Kim
School of Electrical Engineering, Korea Advanced Institute of Science and Technology, 291 Daehak-ro, Yuseong-gu, Daejeon 34141, Korea

16:00 **Effect of molecular orientation, charge transport of organic solar cell by modulating side chain on the small molecule donor** **B 5.45**

SORA OH, Chang Eun Song, Sang Kyu Lee
1. Advanced Materials and Chemical Engineering, University of Science and Technology (UST), Daejeon 34113, Republid of Korea. 2. Energy Materials Reasearch Center, Korea Research Institute of Chemical Technology (KRICT), Daejeon 34114, Republic of Korea

16:00 **Bismuth doped CH3NH3PbI3 perovskite thin films as nonlinear materials with improved damage threshold** **B 5.46**

Carlos D. Redondo-Obispo(1), Isaac Suárez(1,2), Teresa Ripollés(1), Juan P. Martínez-Pastor(2), Salvador Dueñas(3), Helena Castán(3), Alicia de Andrés(4) and Carmen Coya(1)
1- ETSI de Telecomunicación, Universidad Rey Juan Carlos, 28943, Madrid, Spain 2- UMDO, Instituto de Ciencia de los Materiales, Universidad de Valencia, Valencia 46071, Spain. 3- ETSI de Telecomunicación, Universidad de Valladolid, 47011 Valladolid, Spain. 4- Instituto de Ciencia de Materiales de Madrid (ICMM), Consejo Superior de Investigaciones Científicas (CSIC), 28049 Madrid, Spain,

16:00 **Improving Stability of All-Inorganic CsPbI3 Perovskite Solar Cells via Incorporation of Modifying Additives** **B 5.47**

L.A. Frolova1, 2, N. N. Dremova2, K. J. Stevenson1, P.A. Troshin1,2
1 Skolkovo Institute of Science and Technology, Nobel st. 3, Moscow, Russia 2 Institute for Problems of Chemical Physics of RAS, Chernogolovka, Moscow region, Russia

16:00 **Halide Passivation Methods to Improve Infrared Colloidal Quantum Dot Solar Cells** **B 5.48**

James Fan, Nigel Andersen, Margherita Biondi, Mykhailo Sytnyk, Sjoerd Hoogland, F. Pelayo García de Arquer, Edward H. Sargent
Department of Electrical and Computer Engineering, University of Toronto, Toronto, Ontario, Canada, Materials for Electronics and Energy Technology (i-MEET), Friedrich-Alexander-Universität Erlangen-Nürnberg, Martensstraße 7, 91058 Erlangen, Germany

16:00 **Improvement of interface stability in porous silicon-eumelanin hybrids by controlling physical and chemical properties** **B 5.49**

Aleandro Antidormi1, Giulia Aprile2, Giancarlo Cappellini1, Eleonora Cara2, Roberto Cardia1, Luciano Colombo1-4, Roberta Farris1, Marco d'Ischia3, Mehran Mehrabanian1, Claudio Melis1-4, Guido Mula1-4, Alessandro Pezzella3, Elisa Pinna1-4, Eugenio Redolfi Riva4
1 Dipartimento di Fisica, Università degli Studi di Cagliari, Cittadella Universitaria di Monserrato, S.P. 8 km 0.700, 09042 Monserrato, CA, Italy, 2 Quantum Research Labs & Nanofacility Piemonte, Nanoscience & Materials Division, Istituto Nazionale di Ricerca Metrologica (INRIM), Strada delle Cacce 91, 10135 Turin, Italy, 3 Department of Chemical Sciences, University of Naples, "Federico II" via Cintia 4, 80126 Naples, Italy, 4 Istituto Officina dei Materiali CNR-IOM, Unità di Cagliari SLACS, Cittadella Universitaria di Monserrato, S.P. 8 km 0.700, 09042 Monserrato, Italy

16:00 **Impact of Charge Transport Interlayers on the Electrochemical Stability of Perovskite Solar Cells** **B 5.50**

Olga R.Yamilova [1,2], Yuri S. Fedotov[3], Andrei V. Danilov[4,3], Sergey I. Bredikhin[3], Lyubov A. Frolova [1,2], Keith J. Stevenson[1] and Pavel A. Troshin[1,2].
[1] Skolkovo Institute of Science and Technology, Moscow, Russia, [2] Institute for Problems of Chemical Physics of RAS, Chernogolovka, Russia, [3] Institute of Solid State Physics of RAS, Chernogolovka, Russia, [4] Lomonosov Moscow State University, Moscow, Russia.

16:00 **Towards understanding the interfacial degradation effects in p-i-n perovskite solar cells** **B 5.51**

Mohamed Elnaggar [1-3], M. Elshobaki [1], Sergey Tsarev [1], K. J. Stevenson [1], Yu. Fedotov S.[4], S. I. Bredikhin [4], P. A. Troshin [1-2]
1 Skolkovo Institute of Science and Technology, Moscow, Russia, 2 Institute for Problems of Chemical Physics of RAS, Chernogolovka, Russia, 3 Moscow Institute of Physics and Technology, Dolgoprudny, Moscow, Russia, 4 Institute of Solid State Physics of RAS, Chernogolovka, Russia.

16:00 **5 Electronic properties of mixed Lead - Tin hybrid perovskites studied via magneto - spectroscopy** **B 5.52**

Krzysztof Galkowski, Alessandro Surrente, Michal Baranowski, Baodan Zhao, Aditya Sadhanala, Sebastian Mackowski, Samuel D. Stranks, Paulina Plochocka Laboratoire National des Champs Magn´etiques Intenses, CNRS-UGA-UPS-INSA, Toulouse, France, Cavendish Laboratory, University of Cambridge, JJ Thompson Avenue, Cambridge CB3 0HE, UK, Institute of Physics, Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University, 5th Grudziadzka St., 87-100 Toru´n,

16:00 **Sub-micrometre Line Contacts on SiO2 Layers for Interface Passivation of Ultra-Thin Film Solar Cells** **B 5.53**

S. Bose, J. M. V. Cunha, S. Suresh, J.D. Wild, T. S. Lopes, J. R. S. Barbosa, J. Borme, P.A. Fernandes, B.Vermang, P. M. P. Salomé
S. Bose, J. M. V. Cunha, T. S. Lopes, J. R. S. Barbosa, J. Borme, P.A. Fernandes, P. M. P. Salomé: INL ? International Iberian Nanotechnology Laboratory, Avenida Mestre José Veiga, 4715-330 Braga, Portugal S. Bose: Ångström Laboratory, Solid State Electronics, Ångström Solar Center, Uppsala University, SE-751 21 Uppsala, Sweden P.A. Fernandes: I3N, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal J. M. V. Cunha, P. M. P. Salomé: Departamento de Física, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal P.A. Fernandes: Departamento de Física, Instituto Superior de Engenharia do Porto, Instituto Politécnico do Porto, Rua Dr. António Bernardino de Almeida 431, 4200-072 Porto, Portugal S. Suresh, J.D. Wild, B.Vermang: University of Hasselt ? Partner in Solliance, Diepenbeek 3590, Belgium S. Suresh, J.D. Wild, B.Vermang: IMEC ? Partner in Solliance, Leuven 3001, Belgium S. Suresh, J.D. Wild, B.Vermang: IMOMEC ? Partner in Solliance, Diepenbeek 3590, Belgium

16:00 **Optical Perovskite test for measurement of multiple gas permeation pathways in Perovksite solar modules** **B 5.54**

Stéphane CROS (1), Edward BOOKER (1), Mathis MAJOREL (1), Jean Baptiste BOUTIN (2), Solenn BERSON (1)
(1) Univ. Grenoble Alpes, CEA, LITEN, LMPO, F-73375 Le Bourget du Lac, France
(2) Arkema-CRRA, rue Henri Moissan, 69491 PIERRE-BENITE Cedex, France

16:00 **Methylammonium Lead Iodide Perovskite Solar Cells from direct Co-Evaporation** **B 5.55**

Marcel Roß, Lidón Gil Escrig, Amran Al-Ashouri, Marko Jošt, Steve Albrecht
Helmholtz-Zentrum Berlin, Young Investigator Group for Perovskite Tandem Solar Cells

16:00 **Realizing Uniform Pin-hole Free 1.8 eV Wide-bandgap Perovskites with High Bromide Composition via Solution Engineering** **B 5.56**

Yue-Min Xie, Sai-Wing Tsang
Department of Material Science and Engineering, City University of Hong Kong, Hong Kong SAR, P. R. China

16:00 **Optical and Electronic Property Changes in Lead-free Perovskites by Metal Cation Transmutation** **B 5.57**

Bowon Yoo1, Alex Aziz2, Dibyajyoti Ghosh2, Hyejin Park1, M. Saiful Islam2, Saif A. Haque1
1. Department of Chemistry and Centre for Plastic Electronics, Imperial College London, South Kensington Campus, London SW7 2AZ, UK 2. Department of Chemistry, University of Bath, Bath BA2 7AY, UK

16:00 **Photo-Stable Bismuth Doped MAPbI3 thin films for Optoelectronics Devices** **B 5.58**

Carlos D. Redondo-Obispo(1), Esteban Climent-Pascual(2), Javier Bartolomé Vílchez(4), Alicia de Andrés(3) and Carmen Coya(1)
1-Escuela Técnica Superior de Ingeniería de Telecomunicación (ETSIT), Universidad Rey Juan Carlos, 28933 Madrid, Spain 2-Escuela Técnica Superior de Ingeniería Industrial, Universidad Politécnica de Madrid, C/ José Gutiérrez Abascal 2, 28006 Madrid, Spain. 3-Instituto de Ciencia de Materiales de Madrid (ICMM), Consejo Superior de Investigaciones Científicas (CSIC), Sor Juana Inés de la Cruz 3, 28049 Madrid, Spain, 4-Facultad de CC Físicas, Universidad Complutense de Madrid, Plaza de la Ciencia 1, 28040 Madrid, Spain.

16:00 **Investigation into the mechanisms of light-induced superoxide generation in organic semiconductors** **B 5.59**

Pardis Ahmadi1,2, Ali Salehi-Reyhani2 and Dr Saif A. Haque1
1Department of Chemistry, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom 2Department of Chemistry, Kings College London, Strand, London WC2R 2LS, United Kingdom

16:00 **Lateral structure for stable and highly efficient perovskite photovoltaics** **B 5.60**

Teng Ma1,2, Daisuke Tadaki3, Michio Niwano4, Ayumi Hirano-Iwata1,3
1. WPI-Advanced Institute for Materials Research (WPI-AIMR), Tohoku University, Japan, 2. Core Research Cluster, Tohoku University, Japan, 3. Research Institute of Electrical Communication, Tohoku University, Japan, 4. Kansei Fukushi Research Institute, Tohoku Fukushi University, Japan

16:00 **NOVEL PHOTOACTIVE TELLURIUM HALIDE COMPLEXES FOR ELECTRONIC APPLICATIONS** **B 5.61**

A. V. Novikov [1, 2], A. N. Usoltsev [3], S. A. Adonin [3,4], P. A. Abramov [3,4], M. N. Sokolov[3,4], K. J. Stevenson [1], V. P. Fedin [3,4] and P. A. Troshin [1, 2]
1 Skolkovo Institute of Science and Technology, Moscow, Russia, 2 Institute for Problems of Chemical Physics of RAS, Chernogolovka, Russia, 3 Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia, 4 Novosibirsk State University, Novosibirsk, Russia, *E-mail: artyom.v.novikov@gmail.com

16:00 **Improving the efficiency and stability of perovskite solar cells by TiO2 nanocolumn arrays** **B 5.62**
Zhelu Hu (a), Jose Miguel García-Martín (b), Maria-Ujué González (b), A. García-Martín (b), Lionel Aigouy (a), Zhuoying Chen (a)
a. Laboratoire de Physique et d'Etude des Matériaux (LPEM), ESPCI Paris, PSL Research University, Sorbonne Université, CNRS, 10 Rue Vauquelin, 75005 Paris, France b. Instituto de Micro y Nanotecnología IMN-CNM, CSIC (CEI UAM+CSIC), , Calle de Isaac Newton, 8, 28760 Tres Cantos, Madrid, Spain

16:00 **Low-temperature Atomic Layer Deposition (ALD) of alumina and titania for encapsulation** **B 5.63**
Maïmouna W. Diouf, Maxime E. Dufond, Jacques Kools, Lionel Santinacci
Aix-Marseille Univ - CNRS, Aix-Marseille Univ - CNRS, Encapsulix SAS, Aix-Marseille Univ - CNRS

16:00 **Improving Stability of All-Inorganic CsPbI3 Perovskite Solar Cells via Incorporation of Modifying Additives** **B 5.64**
L.A. Frolova1,2, N. N. Dremova2, K. J. Stevenson1, P.A. Troshin1,2
1 Skolkovo Institute of Science and Technology, Nobel st. 3, Moscow, Russia 2 Institute for Problems of Chemical Physics of RAS, Chernogolovka, Moscow region, Russia

16:00 **Hidden Structure Ordering Along Backbone of Fused-Ring Electron Acceptors Enhanced by Ternary Bulk Heterojunction** **B 5.65**
YIQUN XIAO
XINHUI LU

16:00 **Photovoltaic and thermoelectric indirect coupling for maximum solar energy exploitation** **B 5.66**
M. Hajji (a,b) H. Labrim (b) M. Benaissa (a) A. Laazizi (c) H. Ez-Zahraouy (a) E. Ntsoenzok (d) J. Meot (e) A. Benyoussef (a)
(a) LAMCSCI, Faculty of Sciences, Mohammed V University in Rabat, Morocco (b) CNESTEN (National Centre for Energy, Sciences and Nuclear Techniques), Route de Kenitra – Maamora, Morocco (c) Department of Materials and Process, ENSAM, Moulay Ismail University, Meknes, Morocco (d) CEMHTI-CNRS, Site Cyclotron 3A, rue de la Férollerie, 45071 Orléans, France (e) SOLEMS S.A., 3 Rue Léon Blum, 91120 Palaiseau Paris, France

16:00 **Enhanced performance of FASnI3 solar cells achieved by suppression of Sn2+ oxidation with CuSCN as hole transporting material** **B 5.67**
Jiupeng Cao, Qidong Tai, Peng You, Guanqi Tang, Naixiang Wang, Feng Yan
Department of Applied Physics, The Hong Kong Polytechnic University

16:00 **Performance and Stability Enhancement of SnO2 based Perovskite Solar Cells using Green Antisolvent Treatment** **B 5.68**
Hock Beng Lee, Jihoon Kim, Jae-Wook Kang
Department of Flexible and Printable Electronics, Chonbuk National University, Division of Advanced Materials Engineering, Kongju National University

16:00 **Surface Instability of Sn-based Organic-inorganic Hybrid Perovskite Thin Film Formed by Sequential Vacuum Evaporation Method** **B 5.69**
Young Mi Lee,< sup>1< /sup> Jinwoo Park,< sup>2< /sup> Byung Deok Yu,< sup>3< /sup> Suklyun Hong,< sup>2< /sup> Min-Cherl Jung,< sup>4< /sup> and Masakazu Nakamura< sup>4< /sup>
< sup>1< /sup>Beamline Division, Pohang Accelerator Laboratory, Pohang, 37673, Republic of Korea, < sup>2< /sup>Graphene Research Institute and Department of Physics, Sejong University, Seoul 05006, Republic of Korea, < sup>3< /sup>Department of Physics, University of Seoul, Seoul 02504, Republic of Korea, < sup>4< /sup>Graduate School of Materials Science, Nara Institute of Science and Technology, Nara 630-0192, Japan

16:00 **Application of ZTO nanoparticles and porous silicon layer as an antireflection coating for silicon solar cells efficiency increa** **B 5.70**
Malek Atyaoui , Tayssir Ben Amara , and Hatem Ezzaouia
Laboratoire des nanostructures, des semi-conducteurs et des technologies avancées, Centre des recherches et des technologies de l'énergie, technopole de Borj-Cédria, PB :95,Hammam Lif 2050, Tunisia

16:00 **Ultra high barrier films of SiNx/SiOxNy/SiOx for organic photovoltaic cells and quantum dots light emitting diodes** **B 5.71**
Keun Yong Lim1,2), Hong Hee Kim1), Byung-Il Choi3), Won-Seon Seo4), Jae-Woong Yu2), Won Kook Choi1)
1) Center for Opto-Electronic Materials and Devices, Korea Institute of Science and Technology (KIST), 5, Hwarang-ro 14-gil, Seongbuk-gu, Seoul, 02792, Republic of Korea 2) Department of Advanced Materials Engineering for Information & Electronics, Kyung Hee University,1732 Deogyeong-daro, Giheung-gu, Yongin, Gyeonggi 17104, Korea 3) Korea Research Institute of Standard and Science (KRISS), Daejeon 34113, Korea 4) Energy and Environmental Division, Korea Institute of Ceramic Engineering and Technology (KICET), 101, Soho-ro, Jinju-si, Gyeongsangnam-do, 52851, Republic of Korea

16:00 **Organic-Silicon Heterojunction Solar Cells: Integrating other Energy Harvesting Device beyond Photovoltaic Effect** **B 5.72**
Yuqiang Liu, Yusheng Wang, Ruiyuan Liu, Baoquan Sun
Institute of Functional Nano and Soft Materials Laboratory (FUNSOM), Soochow University, Suzhou 215123, China

Strategies for More Stable Perovskite Solar Cells : Baoquan Sun

09:00 INV **Multilayer Design for Efficient and Stable p-i-n Perovskite Solar Cells** — B 6.1
Christian M. Wolff(A), Laura Canil(B), Ngoc Linh Nguyen(C), Pietro Caprioglio(A), Lukas Fiedler(A), Martin Stolterfoht(A), Antonio Abate(B,D) and Dieter Neher(A)
A. Universität Potsdam, Karl-Liebknecht-Str. 24-25, 14776 Potsdam, Germany B. Helmholtz-Zentrum Berlin für Materialien und Energie, Kekuléstraße 5, 12489 Berlin, Germany C. Institute for Molecular Engineering, The University of Chicago, Chicago, Illinois 60637, USA D. Department of Chemical, Materials and Production Engineering, University of Naples Federico II, Piazzale Tecchio 80, 80125 Fuorigrotta, Naples, Italy

09:30 **Dopant-free hole transporting monolayers for inverted perovskite solar cells** — B 6.2
Artiom Magomedov, Amran Al-Ashouri, Ernestas Kasparavicius, Tadas Malinauskas, Steve Albrecht, Vytautas Getautis
Artiom Magomedov, Ernestas Kasparavičius, Tadas Malinauskas, Vytautas Getautis - Department of Organic Chemistry, Kaunas University of Technology, Radvilenu pl. 19, Kaunas 50254, Lithuania Amran Al-Ashouri, Steve Albrecht - Institute for Silicon Photovoltaics, Helmholtz-Zentrum Berlin, Young Investigator Group for Perovskite Tandem Solar Cells, Kekuléstr. 5, Berlin, D-12489, Germany

09:45 **Sputtered nickel magnesium oxide as inorganic hole transporting layer in perovskite solar cells** — B 6.3
Thierry Moser, Stefano Pisoni, Yan Jiang, Ayodhya N. Tiwari, Stephan Buecheler
Laboratory for Thin Films and Photovoltaics, Empa - Swiss Federal Laboratories for Materials Science and Technology

10:00 **Coffee Break**

Joint session with symposium G:
Strategies for More Stable Perovskite Solar Cells : M. Kovalenko

10:30 INV **Tailoring phase purity, crystallinity and orientation in 2D perovskites for high-efficiency optoelectronic devices** — B 7.1
Aditya D. Mohite,
Department of Chemical and Biomolecular Engineering Rice University, Houston, TX 77005

11:00 INV **Defect Physics and (In)Stability in Metal-halide Perovskite Semiconductors** — B 7.2
Annamaria Petrozza
Center for Nano Science and Technology @Polimi, Istituto Italiano di Tecnologia, via Giovanni Pascoli 70/3, 20133, Milan, Italy.

11:30 **From Multifunctional Molecular Modulation to Layered Two-Dimensional Architectures for Stable Hybrid Perovskite Solar Cells** — B 7.4
Jovana V. Milic (1), Dominik J. Kubicki (1,2), Yang Li (1), Xiong Li (1), Dongqin Bi (1), Lyndon Emsley (2), M. Graetzel (1)
(1) Laboratory of Photonics and Interfaces, EPFL, Lausanne, Switzerland. (2) Laboratory of Magnetic Resonance, EPFL, Lausanne, Switzerland.

11:45 **Ultra-high open circuit voltage beyond the 90% Shockley-Queisser limit in high efficiency wide bandgap perovskite solar cells** — B 7.5
Saba Gharibzadeh,a,b Bahram Abdollahi Nejand,a,b Marius Jakoby,a,b Tobias Abzieher,b Somayeh Moghadazadehe,a,b Jonas A. Schwenzer,b Philipp Brenner,b Raphael Schmager,a,b Uli Lemmer,a,b Bryce S. Richards,a,b Ian A. Howard,a,b Ulrich W. Paetzold a
Institute of Microstructure Technology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Karlsruhe, Germany
Light Technology Institute, Karlsruhe Institute of Technology, Engesserstrasse 13, 76131, Karlsruhe, Germany

12:30 **Lunch**

Strategies for More Stable Perovskite Solar Cells : Wolfgang Tress

13:45 INV **Impermeable charge transport layers for stable perovskite solar cells** — B 8.1
Thomas Riedl
Chair of Electronic Devices, University of Wuppertal, Germany

14:15 INV **Defect Engineering for Highly Stable and Efficient Perovskite Solar Cells** — B 8.2
Xudong Yang, Han Chen, Liyuan Han
State Key Laboratory of Metal Matrix Composites, Shanghai Jiao Tong University, 800 Dong Chuan RD., Shanghai 200240, China.

14:45 **Spatial collection efficiency in quantum dot and perovskite solar cells** — B 8.3
Olivier Ouellette, Antoine Lesage-Landry, Benjamin Scheffel, Sjoerd Hoogland, F. Pelayo Garcìa de Arquer, Edward H. Sargent.
Department of Electrical & Computer Engineering, University of Toronto, 10 King's College Road Toronto, Ontario, M5S 3G4 Canada

15:00 **Advanced characterization of Perovskite systems:Understanding and improving the performance and stability of photovoltaic device** — B 8.4
Pia DALLY (1), Noëlla LEMAITRE (1), Matthieu MANCEAU (1), Stéphane CROS (1), Eric DE VITO (2), Stéphanie POUGET (3), Serge GAMBARELLI (4), Solenn BERSON (1)
1. Univ. Grenoble Alpes, CEA, LITEN, DTS, LMPO, F-73375 Le Bourget du Lac, France , 2. Univ. Grenoble Alpes, CEA, LITEN, DTNM, S2CE, L2N, F-38000 Grenoble, France , 3. Univ. Grenoble Alpes, CEA-MEM, F-38000 Grenoble, France , 4. Univ. Grenoble Alpes, CEA-SyMMES, F-38000 Grenoble, France

15:15 **Towards establishing a manufacturing protocol for efficient mesostructured perovskite solar cells in ambient conditions** — B 8.5
D. Papadatos (1)(2), A. Karavioti (1)(2), D. Sygkridou (1), E. Stathatos (1),
(1) Department of Electrical Engineering, Technological - Educational Institute of Western Greece, 26334 Patras, Greece. (2) Department of Physics, University of Patras, 26500 Patras, Greece.

15:30 **Coffee Break**

Strategies for More Stable Perovskite Solar Cells : Maria Antonietta Loi

16:00 INV **Stability of Perovskite Solar Cells** — B 9.1
Rohit Prasanna, Caleb C. Boyd, Rongrong Cheacharoen, Tomas Leijtens, Sean P. Dunfield, Joseph J. Berry, Michael D. McGehee
Stanford University, Stanford, California, USA

16:30 INV **Response of Perovskite Solar Cells on Timescales of Milliseconds to Days** — B 9.2
Wolfgang Tress
Laboratory of Photomolecular Science, Institute of Chemical Sciences and Engineering, École Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland

17:00 **Ultrathin Films as Cathode Interfaces in Efficient Vacuum Deposited Perovskite Solar Cells** — B 9.3
Maria-Grazia La-Placa, Daniel Pérez-del-Rey, Lidon Gil-Escrig, Michele Sessolo, Henk J. Bolink
Instituto de Ciencia Molecular, Universidad de Valencia, C/J. Beltrán 2, 46980 Paterna, Spain

17:15 **Ionic liquid polymer as an alternative to LiTFSI salt for over 20% efficiency and hysteresis-free perovskite solar cells** — B 9.4
Camille Geffroy,1,2,3 Samy Almosni,3 Takeru Bessho,3 Eric Cloutet,1 Hiroshi Segawa,3 Georges Hadziioannou1 and Thierry Toupance2,*
1Laboratoire de Chimie des Polymères Organiques, LCPO UMR 5629 CNRS, Université de Bordeaux, Bordeaux INP, Allée Geoffroy Saint-Hilaire, B8, F-33607 Pessac, Cédex, France. 2Institut des Sciences Moléculaires, ISM UMR 5255 CNRS, Université de Bordeaux, 351 Cours de la Libération, F-33405 Talence, Cédex, France. 3Research Center for Advanced Science and Technology, University of Tokyo, 3-8-1 Komaba, Meguro-ku, Tokyo 153-8904, Japan.

17:30 **Illuminating Charge-Transfer at the Interfaces of Perovskite Solar Cells** — B 9.5
Robert J. E. Westbrook (1,2), Weidong Xu (1), Dr Tracey M. Clarke (2), Prof James R. Durrant (1), Dr Saif A. Haque (1)
(1) Department of Chemistry and Centre for Plastic Electronics, Imperial College London, South Kensington Campus, London SW7 2AZ, U.K, (2) Department of Chemistry, University College London, Christopher Ingold Building, London WC1H 0AJ, United Kingdom

17:45 **Surface plasma treatment of SnO2 based electron selective contacts and its influence on n-i-p perovskite solar cell performance** — B 9.6
Philipp Tockhorn1, Ganna Chistiakova1, Lukas Kegelmann2, Max Grischek2, Lars Korte1, Steve Albrecht2/3
1 Helmholtz-Zentrum Berlin, Institute Silicon Photovoltaics, Berlin, 12489, Germany, 2 Helmholtz-Zentrum Berlin, Young Investigator Group Perovskite Tandem Solar Cells, Berlin, 12489, Germany, 3 Technische Universität Berlin, Fakultät IV - Elektrotechnik und Informatik, Marchstraße 23, 10587 Berlin, Germany

18:00 **First-principles modeling towards high stability and proper performance of halide-perovskite optoelectronic materials** — B 9.7
Jingrui Li
Department of Applied Physics, Aalto University

18:15 **Enhancing Efficiency and Stability of Perovskite Heterojunction Cells by Using Zr-MOFs as Interlayer and Scaffold** — Ƀ 9.8
Chia-Chen Lee, Chih-I Chen, Yu-Te Liao, Kelvin C.-W. Wu,* and Chu-Chen Chueh*
National Taiwan University

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Strategies for More Stable Organic Solar Cells : Derya Baran

08:30 INV **Interfaces in organic photovoltaic devices: understanding the degradation mechanisms and improvement of the stability** — Ƀ 10.1
Sylvain Chambon, William Greenbank, Aurélien Tournebize, Giorgio Mattana, Hussein Awada, Antoine Bousquet, Guillaume Wantz, Lionel Hirsch
Sylvain Chambon, William Greenbank, Aurélien Tournebize, Giorgio Mattana, Guillaume Wantz, Lionel Hirsch Univ. Bordeaux, IMS, CNRS, UMR 5218, Bordeaux INP, ENSCBP, F-33405 Talence, France Hussein Awada, Antoine Bousquet CNRS/ Univ. Pau & Pays Adour, IPREM, UMR5254, 64000, Pau, France

09:00 **High speed coating method for fabricating organic solar cells with PCE >10%** — Ƀ 10.2
Neha Chaturvedi, H. Hu, Z. Kan, N. Gasparini, A. Amassian, D. Baran, I. McCulloch, F. Laquai
King Abdullah University of Science and Technology

09:15 **Visualising the Energetic Landscape of Organic Photovoltaic Devices and the Effects of Degradation** — Ƀ 10.3
Vincent Lami, Andreas Weu, Jiangbin Zhang, Yongsheng Chen, Zhuping Fei, Martin Heeney, Richard H. Friend and Yana Vaynzof
Vincent Lami - Kirchhoff-Institut für Physik & Centre for Advanced Materials, Ruprecht-Karls-Universität Heidelberg, Im Neuenheimer Feld 227, 69120 Heidelberg, Germany, Andreas Weu - Kirchhoff-Institut für Physik & Centre for Advanced Materials, Ruprecht-Karls-Universität Heidelberg, Im Neuenheimer Feld 227, 69120 Heidelberg, Germany, Jiangbin Zhang - Cavendish Laboratory, University of Cambridge, JJ Thomson Avenue, Cambridge CB3 0HE, United Kingdom, Yongsheng Chen - The Centre of Nanoscale Science and Technology, Key Laboratory of Functional Polymer Materials, State Key Laboratory and Institute of Elemento-Organic Chemistry, College of Chemistry, Nankai University, Tianjin, 300071, China, Zhuping Fei - Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London, SW7 2AZ, UK, Martin Heeney - Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London, SW7 2AZ, UK, Richard H. Friend - Cavendish Laboratory, University of Cambridge, JJ Thomson Avenue, Cambridge CB3 0HE, United Kingdom, Yana Vaynzof - Kirchhoff-Institut für Physik & Centre for Advanced Materials, Ruprecht-Karls-Universität Heidelberg, Im Neuenheimer Feld 227, 69120 Heidelberg, Germany

09:30 **The Importance of P3HT Molecular Weight in Nonfullerene Solar Cells** — Ƀ 10.4
A. Wadsworth, Z. Hamid, E. Rezasoltani, J. Nelson, I. McCulloch
Department of Chemistry and Centre for Plastic Electronics, Imperial College London Exhibition Road, London, SW7 2AZ, United Kingdom, Department of Chemistry and Centre for Plastic Electronics, Imperial College London Exhibition Road, London, SW7 2AZ, United Kingdom, Department of Physics and Centre for Plastic Electronics, Imperial College London Exhibition Road, London, SW7 2AZ, United Kingdom, Department of Chemistry and Centre for Plastic Electronics, Imperial College London and King Abdullah University of Science and Technology (KAUST), Physical Sciences and Engineering Division (PSE), KAUST Solar Center (KSC), Thuwal 23955-6900, Saudi Arabia.

09:45 **The Effect of conjugation breaking of Non-fullerene acceptor (NFA) on highly efficient Organic Solar Cells** — Ƀ 10.5
Sri Harish Kumar Paleti, Nicola Gasparini, Xin Song, Derya Baran
KAUST Solar Center (KSC), King Abdullah University of Science and Technology (KAUST)

10:00 **Coffee Break**

11:15 **PLENARY SESSION 2**

12:30 **Lunch**

Strategies for More Stable Organic Solar Cells : Artem A. Bakulin

13:45 INV **The role of third component in ternary organic solar cells to improve photo- and thermal stability** — Ƀ 11.1
Xin Song, Nicola Gasparini, Derya Baran
King Abdullah University of Science and Technology, Physical Sciences and Engineering Division, KAUST Solar Center, Thuwal, Saudi Arabia

14:15 **INTERMEDIATE EXCITED STATES IN NON-FULLERENE BASED ORGANIC SOLAR CELLS** **B 11.2**

M. S. Kotova, J. Junker, A. Privitera, B. Stähly, A. Baumann, K. Tvingstedt, A. Sperlich, V. Dyakonov
Julius-Maximilian University of Würzburg, 97074 Würzburg, Germany, Julius-Maximilian University of Würzburg, 97074 Würzburg, Germany, University of Oxford, OX1 3PU Oxford, United Kingdom, Julius-Maximilian University of Würzburg, 97074 Würzburg, Germany, Bavarian Center for Applied Energy Research, 97074 Würzburg, Germany, Julius-Maximilian University of Würzburg, 97074 Würzburg, Germany, Julius-Maximilian University of Würzburg, 97074 Würzburg, Germany, Julius-Maximilian University of Würzburg, 97074 Würzburg, Germany, Bavarian Center for Applied Energy Research, 97074 Würzburg, Germany

14:30 **Development of highly efficient and stable organic solar cells by overcoming microstructure instabilities** **B 11.3**

Ning Li, Chaohong Zhang, Xiaoyan Du, Christoph J. Brabec
Institute of Materials for Electronics and Energy Technology (i-MEET), Friedrich-Alexander University Erlangen-Nürnberg, Martensstrasse 7, 91058 Erlangen, Germany

14:45 **Fullerene Additive for Enhanced Efficiency and Stability in Narrow Bandgap Norfullerene Acceptor-based Organic Solar Cells** **B 11.4**

Jinho Lee, Jong-Hoon Lee, Huifeng Yao, Jianhui Hou, Kwanghee Lee
Imperial College London, Department of Chemistry

15:00 **Nanostructure Formation in Eco-Friendly Solvent-Cast BHJ and Nanoparticulate Thin Films for Printed Electronics** **B 11.5**

Natalie P. Holmes, David A.L. Kilcoyne, Lars Thomsen, Ellen Moons, Paul C. Dastoor
Natalie P. Holmes and Paul Dastoor [Centre for Organic Electronics, University of Newcastle, Newcastle (Australia)], David A.L. Kilcoyne [Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley (USA)], Lars Thomsen [Australian Synchrotron, ANSTO, Melbourne (Australia)], Ellen Moons [Department of Engineering and Physics, Karlstad University, Karlstad (Sweden)].

15:15 **Copper Coordination Complexes for Hybrid Solar Cells** **B 11.6**

Marina Freitag
Department of Chemistry, Ångström Laboratory, Uppsala University, Sweden

SYMPOSIUM C

Batteries and supercapacitors : fundamentals, materials and devices

Symposium Organizers :

Alexandre PONROUCH, ICMAB-CSIC, Barcelona, Spain

Alexandru Vlad, Université Catholique de Louvain, Belgium

Bruce Dunn, University of California, Los Angeles, USA

Mathieu Mocrette, Université de Picardie Jules Verne, Amiens, France

To be published in Batteries & Supercaps, a ChemPubSoc Europe journal, Wiley-VCH

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新威 NEWARE

Sustainable Processing : Alexandre Ponrouch

09:00 INV **Approaches to Sustainable Batteries** C 1.1
Stefano Passerini
Karlsruhe Institute of Technology, Helmholtz Institute Ulm, Helmholtzstrasse 11, 89081 Ulm

09:30 **Aqueous processing of Ni-rich NMC electrode for high energy density and low cost Li-ion batteries** C 1.2
Marie Bichon, Dane Sotta, Nicolas Dupré, Eric De Vito, Adrien Boulineau, Willy Porcher, Bernard Lestriez
CEA, LITEN, 17 Rue des Martyrs, Cedex 9, Grenoble, 38054, France Institut des Matériaux Jean Rouxel (IMN), 2 rue de la Houssinière, Nantes Cedex, 44322, France

09:45 **High Energy Li-Ion Electrodes prepared via a Solventless Melt Process** C 1.3
Ksenia Astafyeva, Capucine Dousset, Yannick Bureau, Sara-Lyne Stalmach, Elodie Laouedj, Bruno Dufour
HUTCHINSON SA, Research and Innovation Center, rue Gustave Nourry 45120 Chalette sur Loing, France

10:00 **Coffee Break**

Supercapacitors : Olivier Fontaine

10:30 **Glancing angle deposition of CrN film for supercapacitor application.** C 2.1
E. Haye1, A. Achour1, A. Guerra2,3,8,9, F. Moulai2, T. Hadjersi2, R. Boukherroub3, A. Panepinto4, T. Brousse5,6, J. J. Pireaux1, S. Lucas7
1 Laboratoire Interdisciplinaire de Spectroscopie Electronique (LISE), Namur Institute of Structured Matter (NISM), University of Namur, 61 Rue de Bruxelles, 5000 Namur, Belgium 2 Centre de Recherche en Technologie des Semi-conducteurs pour L'Energétique (CRTSE), Division TESE, 2 Bd. Frantz Fanon, B.P. 140 Alger-7 Merveilles, Alger, Algeria. 3 Univ. Lille, CNRS, Central Lille, ISEN, Univ. Valenciennes, UMR 8520, IEMN, F-59000 Lille, France 4 Chimie des Interactions Plasma-Surface (ChIPS), Université de Mons, 23 Place du Parc, 7000 Mons, Belgium. 5 Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, BP32229, 44322, Nantes Cedex 3, France 6 Réseau sur le Stockage Electrochimique de l'Energie (RS2E), FR CNRS, 3459, France 7 Laboratoire d'Analyse par Réactions Nucléaires (LARN), Namur Institute of Structured Matter (NISM), University of Namur, 61 Rue de Bruxelles, 5000 Namur, Belgium. 8 Université Ferhat Abbas Sétif -1-, El Bez sétif 19000, Algérie. 9 Institut d'Electronique, de Microélectronique et de Nanotechnologie (IEMN), UMR CNRS 8520, Université de Lille 1 Avenue Poincaré – CS 60069 59652 Villeneuve d'Ascq, France

10:45 **Carbon Nanomaterial-Ionic Liquid Hybrids for Ultrahigh Energy Supercapacitors** C 2.2
Daniel Skodvin, De Chen
Department of Chemical Engineering, Norwegian University of Science and Technology(NTNU), Trondheim, NO-7491, Norway

11:00 INV **Capacitive and pseudocapacitive materials for Electrochemical Capacitors** C 2.3
P. Simon
Université Paul Sabatier, CIRIMAT Lab, UMR CNRS 5085, 118 route de Narbonne, 31062 Toulouse - France Réseau sur le Stockage Electrochimique de l'Energie, FR CNRS 3459, France

11:30 **High rate 3D graphene-sponge supercapacitor with hybrid aqueous/ionic liquid dual electrolyte: In situ gas analysis using DEMS** C 2.4
Sethuraman Sathyamoorthi, Poramane Chiochan, Montree Sawangphruk*
Centre of Excellence for Energy Storage Technology (CEST), Department of Chemical and Biomolecular Engineering, School of Energy Science and Engineering, Vidyasirimedhi Institute of Science and Technology, Rayong21210, Thailand. E-mail: montree.s@vistec.ac.th

11:45 **Biredox Ionic Liquids: New Opportunity For High Energy Supercapacitors** C 2.5
Charlotte BODIN, Steven LE VOT, Frédéric FAVIER, Patrice SIMON, Pierre-Louis TABERNA, Olivier FONTAINE
Institut Charles Gerhardt, UMR 5253, Université Montpellier, France - Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS, FR3459, 33 Rue Saint Leu, 80039 Amiens, France , Institut Charles Gerhardt, UMR 5253, Université Montpellier, France - Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS, FR3459, 33 Rue Saint Leu, 80039 Amiens, France , Institut Charles Gerhardt, UMR 5253, Université Montpellier, France - Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS, FR3459, 33 Rue Saint Leu, 80039 Amiens, France , Université Paul Sabatier, CIRIMAT, UMR-CNRS 5085, Toulouse, France Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS, FR3459, 33 Rue Saint Leu, 80039 Amiens Cedex, France , Université Paul Sabatier, CIRIMAT, UMR-CNRS 5085, Toulouse, France Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS, FR3459, 33 Rue Saint Leu, 80039 Amiens Cedex, France , Institut Charles Gerhardt, UMR 5253, Université Montpellier, France - Réseau sur le Stockage Electrochimique de l'Energie (RS2E), CNRS, FR3459, 33 Rue Saint Leu, 80039 Amiens, France

12:00 **The expanded and foamy Mxenes for supercapacitors** C 2.6
Yachao Zhu, Frédéric Favier and Patrice Simon
1 Institut Charles Gerhardt Montpellier, UMR 5253, CC 1502, Université Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, France. 2 Université Paul Sabatier de Toulouse, Inter-University Research and Engineering Center on Materials (CIRIMAT), UMR-CNRS 5085, 31062 Toulouse Cedex 4, France. 3 Réseau sur le stockage électrochimique de l'énergie, RS2E, FR CNRS 3459, 80039 Amiens, France

12:15 **Lunch**

Recycling and Environmental Impact : Matthieu Becuwe

14:00 **Engineering High-Energy-Density Ni-Rich/Li- and Mn-Rich Oxides Cathode Mateirals by Structure Regulation** C 3.1
Ming XU
The Hong Kong Polytechnic University

14:15 INV **BATTERY SEGMENTS: FROM LINEAR ECONOMY TO CIRCULAR ECONOMY THROUGH &#8220,URBAN MINE&#8221,** C 3.2
Farouk TEDJAR
ERI@N Institute, Nanyang Technological University of Singapore

14:45 **Coupling Energy Capture and Storage – Endeavoring to make a solar battery** C 3.3
Yukti Arora and Deepa Khushalani*
Department of Chemical Sciences, Tata Institute of Fundamental Research, Mumbai-400005, India

15:00 INV **Emissions from Li-ion battery cells and associated safety concerns: research and innovation needs** C 3.4
Natalia P. Lebedeva, Franco Di Persio, Theodora Kosmidou, Denis Dams, Andreas Pfrang, Algirdas Kersys, Lois Boon-Brett
European Commission, Joint Research Centre (JRC), Petten, The Netherlands

15:30 **Laser patterning of Li-ion battery electrodes by post-deposition ablation** C 3.5
Jen Manerova, Dominika Gastol, Matthew Capener, Chris Smith, Anna Alvarez-Reguera, James Shaw-Stewart, Emma Kendrick, Vannessa Goodship
University of Warwick, M-Solv Ltd and University of Birmingham

15:45 **Coffee Break**

Organic Batteries : Alexandru Vlad

16:15 **Investigation of the redox chemistry of phenazines using Density Functional Theory.** C 4.1
Carlos de la Cruz, Rebeca Marcilla, Andreas Mavrantonakis
Electrochemical Processes Unit, IMDEA Energy Institute, Spain

16:30 **TOWARD ORGANIC LITHIATED POSITIVE ELECTRODE MATERIALS WITH HIGH REDOX POTENTIALS** **C 4.2**

F. Dolhem, A. Jouhara, A. Lackraychi, N. Dupré, D. Guyomard, M. Bécuwe, P. Poizot
F. Dolhem, A. Lackraychi, Laboratoire de Glycochimie, des Antimicrobiens et des Agroressources (LG2A), UMR CNRS 7378, Université de Picardie Jules Verne, 33 rue Saint-Leu, 80039 Amiens Cedex, France , A. Jouhara, N. Dupré, D. Guyomard, P. Poizot, Institut des Matériaux Jean Rouxel (IMN), UMR CNRS 6502, Université de Nantes, 2 rue de la Houssinière, B.P. 32229, 44322 Nantes Cedex 3, France , M. Bécuwe, Laboratoire de Réactivité et Chimie des Solides (LRCS), UMR CNRS 7374, Université de Picardie Jules Verne, 33 rue Saint-Leu, 80039 Amiens Cedex 1, France.

16:45 INV **Further Insights into SEI Formation for Organic Electrode Materials for Li-ion batteries** **C 4.3**

Andrew Naylor,a Daniel Brandell,a Stéven Renaultb
a Department of Chemistry &#8211, Ångström Laboratory, Uppsala University, Uppsala Sweden. b IMN, University of Nantes, Nantes, France.

17:15 **Nanotexturation of organic-based negative electrode material using electrochemical lithiation method** **C 4.4**

L. Fédèle 1-3, F. Sauvage 1-3, F. Lepoivre 4, S. Gottis 1-3, C. Davoisne 1-3, J. M. Tarascon 3-4, M. Becuwe1-3
1 Laboratoire de Réactivité et Chimie des Solides (LRCS), UMR CNRS 7314, Université de Picardie Jules Verne (UPJV), Amiens, 33 rue Saint-leu, 80039 Amiens, France 2 Institut de Chimie de Picardie (ICP), FR CNRS 3085, 80039 Amiens, France 3 Réseau sur le Stockage Electrochimique de l'Energie (RS2E), FR CNRS 3459, 80039 Amiens, France 4 Chimie du Solide et Energie, UMR 8260, Collège de France, 11 place Marcelin Berthelot, 75005, Paris, France

17:30 **Thiophene based Organic Electrodes Materials: a theoretical investigation employing first-principles theory** **C 4.5**

Cleber F. N. Marchiori, Rodrigo P. de Carvalho, Daniel Brandell and C. Moyses Araujo
Cleber F. N. Marchiori, Rodrigo P. de Carvalho and C. Moyses Araujo Materials Theory Division, Department of Physics and Astronomy, Uppsala University, Box 516, 75120 Uppsala, Sweden, Daniel Brandell Department of Chemistry - Ångström Laboratory, Uppsala University, Box 538, 751 21 Uppsala, Sweden

Tuesday 28 may 2019

Advanced Electrolytes I : Stefan Freunberger

08:30 **Conductivity enhancement at the thin-film ionic liquid electrolyte/SiO2 interface** **C 5.1**

Simon Hollevoet, Brecht Put, Akihiko Sagara, Nouha Labyedh, Yukihiro Kaneko, Hidekazu Arase, Maarten Mees, Philippe M. Vereecken
imec, Kapeldreef 75, B-3001, Leuven, Belgium and M2S, Centre for Surface Chemistry and Catalysis, KU Leuven?University of Leuven, Celestijnenlaan 200F, B-3001 Leuven, Belgium, imec, Kapeldreef 75, B-3001, Leuven, Belgium, Technology Innovation Division, Panasonic Corporation, 1006, Kadoma, Kadoma City, Osaka 571-8508, Japan, imec, Kapeldreef 75, B-3001, Leuven, Belgium and M2S, Centre for Surface Chemistry and Catalysis, KU Leuven?University of Leuven, Celestijnenlaan 200F, B-3001 Leuven, Belgium, Technology Innovation Division, Panasonic Corporation, 1006, Kadoma, Kadoma City, Osaka 571-8508, Japan, Technology Innovation Division, Panasonic Corporation, 1006, Kadoma, Kadoma City, Osaka 571-8508, Japan, imec, Kapeldreef 75, B-3001, Leuven, Belgium, imec, Kapeldreef 75, B-3001, Leuven, Belgium and M2S, Centre for Surface Chemistry and Catalysis, KU Leuven?University of Leuven, Celestijnenlaan 200F, B-3001 Leuven, Belgium

08:45 **Hydroborates solid electrolyte for Na-ion batteries: chemical and electrochemical compatibility** **C 5.2**

Matteo Brighi, Fabrizio Murgia, Radovan ?erný
DQMP - Université de Genève, Switzerland

09:00 **High-throughput study of Mg compounds as coating materials in Mg batteries** **C 5.3**

Pieremanuele Canepa, Gopalakrishnan Sai Gautam
Department of Materials Science and Engineering, National University of Singapore, Singapore 117575, Singapore, Department of Mechanical and Aerospace Engineering, Princeton University, Princeton, New Jersey 08544, United States.

09:15 INV **Complex Ionic Liquids & Liquid Ionic Complexes** **C 5.4**

Patrik Johansson
Department of Physics, Chalmers University of Technology, SE-41296 Gothenburg, Sweden & Alistore-ERI European Research Institute, CNRS FR 3104, Hub de l?Energie, Rue Baudelocque, 80039 Amiens Cedex, France

09:45 **Nanostructured antimony anode for high-performance rechargeable alkali-ion batteries** **C 5.5**

Wen Luo1, Jean-Jacques Gaumet2, Liqiang Mai3
1 Department of Physics, School of Science, Wuhan University of Technology, Wuhan 430070, China, 2 Laboratoire de Chimie et Physique: Approche Multi-échelles des Milieux Complexes, Institut Jean Barriol, Université de Lorraine, Metz 57070, France, 3 State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Luoshi Road 122, Wuhan, 430070, China

10:00 **Electrodeposition of Manganese Oxide for Zinc-Ion Battery Cathodes** **C 5.6**

Arjun Dhiman, Douglas Ivey
Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta, T6G 1H9, Canada

10:15 **Coffee Break**

11:00 **Plenary Session 1**

12:30 **Lunch**

Advanced Electrolytes II : Claire Villevieille

13:45 **Elucidating the complex ionic conductivity behavior of the Na2(B12H12)0.5(B10H10)0.5 solid-state electrolyte** **C 6.1**

Léo Duchêne (1,2), Sarah Lunghammer (3), Tatsiana Burankova (4), H. Martin R. Wilkening (3), Arndt Remhof (1), Hans Hagemann (2), and Corsin Battaglia (1)
(1) Empa, Swiss Federal Laboratories for Materials Science and Technology, 8600 Dübendorf, Switzerland, (2) Département de Chimie-Physique, Université de Genève, CH-1211 Geneva 4, Switzerland, (3) Christian Doppler Laboratory for Lithium Batteries, Institute for Chemistry and Technology of Materials, NAWI Graz, Graz University of Technology, Stremayrgasse 9, 8010 Graz, Austria, (4) Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institute, 5232 Villigen PSI, Switzerland,

14:00 **Non-Fluorinated Electrolytes for Si-based Li-ion Battery Anodes** **C 6.2**
Guiomar Hernández, Andrew Naylor, Jonas Mindemark, Daniel Brandell, Kristina Edström
Department of Chemistry ? Ångström Laboratory, Uppsala University, Box 538, SE-751 21 Uppsala Sweden

14:15 **Lix(Carbon-dot), New electrolyte salt for lithium ion battery** **C 6.3**
Hong Chul Lim(a, b), Min-Cheol Kimc), EunJi Park(b), Kyung-Won Park(c), Ik-Soo Shin(b)* and Jong-In Hong(a)*
a) Department of Chemistry, Seoul National University, Seoul 08826, Republic of Korea, b) Department of Chemistry, Soongsil University, Seoul 06978, Republic of Korea, c) Department of Chemical engineering, Soongsil University, Seoul 06978, Republic of Korea

14:30 INV **New salts for liquid and polymer electrolytes** **C 6.4**
Michel Armand, Heng Zhang
CIC Energigune. Parque Tecnolo&#769,gico de Alava, Albert Einstein 48, 01510 Min&#771,ano, A&#769,lava, Spain

15:00 **Highly versatile single-ion conducting polymer electrolytes for high-performance lithium and sodium batteries** **C 6.5**
D. Steinle a,b, H.-D. Nguyen c, M. Kuenzel a,b, E. Paillard d, C. Iojoiu c, D. Bresser a,b,*
a Helmholtz Institute Ulm (HIU), 89081 Ulm, Germany b Karlsruhe Institute of Technology (KIT), 76021 Karlsruhe, Germany c Univ. Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, Grenoble INP, LEPMI, 38000 Grenoble, France d Helmholtz Institute Muenster, Forschungszentrum Juelich (IEK 12), 48149 Muenster, Germany

15:15 **Porous PEO-Silica Hybrid Solid Electrolyte for All-Solid-State Lithium Ion Batteries** **C 6.6**
Ephrem Tefere WELDEKIDAN, Virginie HORNEBECQ, Chrystelle LEBOUIN
Aix-Marseille University (AMU), MADIREL (UMR 7246), Electrochemistry of Materials Group (ELMA), Marseille

15:30 **Coffee Break**

Solid-State Batteries I : Pieremanuele Canepa

16:00 **Investigations on lithium-based solid electrolyte thin films in the system Li-P-S-O-N** **C 7.1**
F.Michel, M.Becker, J.Janek, A.Polity
I. Institute of Experimental Physics and Center for Materials Research (LaMa), 35392 Giessen, Germany, I. Institute of Experimental Physics and Center for Materials Research (LaMa), 35392 Giessen, Germany, Institute of Physical Chemistry and Center for Materials Research (LaMa), 35392 Giessen, Germany, I. Institute of Experimental Physics and Center for Materials Research (LaMa), 35392 Giessen, Germany

16:15 **Li-ion conducting crystalline composite solid-state battery electrolytes** **C 7.2**
Adriana M. Navarro-Suárez, Patrik Johansson
Department of Physics, Chalmers University of Technology, 412 96 Gothenburg, Sweden, Department of Physics, Chalmers University of Technology, 412 96 Gothenburg, Sweden ALISTORE ? European Research Institute, CNRS FR 3104, Hub de l?Energie, Rue Baudelocque, 80039 Amiens, France

16:30 INV **Mechanical vs. chemical stability of solid-state-batteries. Which one is the biggest challenge to tackle?** **C 7.3**
Laura Höltschi, Xiaohan Wu, Claire Villevieille
Paul Scherrer Institute, Electrochemistry Laboratory, CH-5232 Villigen PSI, Switzerland

17:00 **Understanding the Context of Batteries through Large Area and Multimodal Lithium Distribution Studies** **C 7.4**
Stefanie Freitag
Carl Zeiss Microscopy GmbH

17:15 **A New Sulfide-Based Composite Solid Electrolyte for All-Solid-State Lithium Ion Batteries** **C 7.5**
Hui Zhang, Xiaohe Li
Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology (CAST)

POSTER SESSION 1 : A. VLAD, A. PONROUCH, B. DUNN, M. MORCRETTE

17:30 **Construction of NiMoO4/Polypyrrole nanocomposites on carbon cloth for high performance flexible supercapacitors** **C 7.6**
Di Zhu, Qi Liu, Jun Wang
College of Material Science and Chemical Engineering, University of Harbin Engineering, Harbin, Heilongjiang Province 150001 PRC

17:30 **Energy on Textiles: Hybrid Supercapacitors? Solution** **C 7.7**
Joana S. Teixeira,1 Rui S. Costa,1,2 André M. Pereira,2 Clara Pereira1
1 REQUIMTE/LAQV, Department of Chemistry and Biochemistry, Faculty of Sciences, University of Porto (FCUP), Portugal. 2 IFIMUP, Department of Physics and Astronomy, FCUP, Portugal.

17:30 **Magnesium Ion Conduction Promotion in Mesoporous Silica-based Solid Nanocomposite Electrolyte** **C 7.8**
Hiroki Yabe, Mitsuhiro Murata, Kazuhide Ichikawa, Hidekazu Arase, Morio Tomiyama
Panasonic Corporation

17:30 **Co-doping SnO2 lithium-ion anodes for enhanced energy and power densities** **C 7.9**
Adele Birrozzi, Jacob Asenbauer, Thomas E. Ashton, Alexandra R. Groves, Jawwad Darr, Dominc Bresser
A. Birrozzi, Helmholtz Institute Ulm (HIU), 89081 Ulm, Germany, Karlsruhe Institute of Technology (KIT), 76021 Karlsruhe, Germany, J. Asenbauer, Helmholtz Institute Ulm (HIU), 89081 Ulm, Germany, Karlsruhe Institute of Technology (KIT), 76021 Karlsruhe, Germany, T. E. Ashton, University College London, Department of Chemistry, London WC1H 0AJ, United Kingdom, A. R. Groves, University College London, Department of Chemistry, London WC1H 0AJ, United Kingdom, J. Darr, University College London, Department of Chemistry, London WC1H 0AJ, United Kingdom, D. Bresser, Helmholtz Institute Ulm (HIU), 89081 Ulm, Germany, Karlsruhe Institute of Technology (KIT), 76021 Karlsruhe, Germany

17:30 **High performing nitrogen-doped hard carbons anode for lithium ion and sodium ion battery** **C 7.10**
Ashutosh Agrawal, Koushik Biswas and Sudipto Ghosh
Indian Institute of Technology

17:30 **?-MnS/S-doped C micro-rods with mesoporous structure as superior anode material for Li-Ion batteries** **C 7.11**
Yuan Ma1,2, Alberto Varzi1,2, Stefano Passerini1,2
[1] Helmholtz Institute Ulm (HIU), Helmholtzstrasse 11, D-89081 Ulm, Germany
[2] Karlsruhe Institute of Technology (KIT), P.O. Box 3640, D-76021 Karlsruhe, Germany

17:30 **Electrochemical intercalation of Ca2+ and Mg2+ ions in TiS2: a fundamental study in alkyl carbonate based electrolytes** **C 7.12**
R.Verrelli1, D. Tchitchekova1, A. Ponrouch1, A. P. Black1, E. Arroyo de Dompablo2, C. Frontera1, M. R. Palacín1
1. Institut de Ciència de Materials de Barcelona (ICMAB-CSIC) Campus UAB, E-08193 Bellaterra, Spain 2. Departamento de Química Inorgánica, Universidad Complutense de Madrid, 28040 Madrid, Spain

17:30 **Enhanced lithium storage property of metal oxide electrodes by introducing massive oxygen vacancies and CNT sponges** **C 7.13**
Mingchu Zou
Peking University

17:30 **CF oxidation time effects on structural and electrochemical analyses of CF/GO binary composites.** **C 7.14**
A. F. Sardinha, D.A.L. Almeida, N.G. Ferreira
Instituto Nacional de Pesquisas Espaciais – INPE

17:30 **Vanadium oxide nanosheets for flexible dendrite-free hybrid Al-Li-ion batteries with excellent cycling performance** **C 7.16**
Xuefei Gong, Pooi See Lee*
School of Materials Science and Engineering, Nanyang Technological University, Singapore

17:30 **Tin Oxide as a High-Performance Electrocatalyst for All-Vanadium Redox Flow Batteries** **C 7.17**
Sheeraz Mehboob, Saleem Abbas, Heung Yong Ha
Sheeraz Mehboob,Saleem Abbas,Heung Yong Ha Division of Energy and Environmental Technology, Korea University of Science and Technology (UST) – KIST School, 217 Gajeong-ro, Yuseong-gu, Daejeon 34113, Republic of Korea. Center for Energy Storage Research, Korea Institute of Science and Technology (KIST), Hawarang-ro 14-gil 5, Seongbuk-gu, Seoul 02792, Republic of Korea.

17:30 **XPS and Raman study of spray-dried Na3V2(PO4)2F3/C as cathode material for sodium ion batteries** — C 7.18

Nicolas Eshraghi, Jérôme Bodart, Abdelfattah Mahmoud, Bénédicte Vertruyen, Rudi Cloots, Cédric Malherbe, Harry M. Meyer III, Jagjit Nanda, Frédéric Boschini
Greenmat- CESAM Research Unit, Department of Chemistry, University of Liège, Sart-Tilman B6, 4000 Liège, Belgium, Greenmat- CESAM Research Unit, Department of Chemistry, University of Liège, Sart-Tilman B6, 4000 Liège, Belgium, Greenmat- CESAM Research Unit, Department of Chemistry, University of Liège, Sart-Tilman B6, 4000 Liège, Belgium, Greenmat- CESAM Research Unit, Department of Chemistry, University of Liège, Sart-Tilman B6, 4000 Liège, Belgium, Greenmat- CESAM Research Unit, Department of Chemistry, University of Liège, Sart-Tilman B6, 4000 Liège, Belgium, Analytic Chemistry and Electrochemistry, Department of Chemistry, University of Liège, Sart-Tilman B6a, 4000 Liège, Belgium, Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37831, USA, Neutron Scattering Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37831, USA, Greenmat- CESAM Research Unit, Department of Chemistry, University of Liège, Sart-Tilman B6, 4000 Liège, Belgium

17:30 **Gas swelling behaviour for different electrolytes in LiFePO4 pouch cells** — C 7.0

Adnana Spinu-Zaulet1, Mihaela Buga1, Alexandru Rizoiu1, Marius Constantinescu1, Alin Chitu1
1National R&D Institute for Cryogenics and Isotopic Technologies - ICSI Energy, Rm. Valcea, Romania

17:30 **Li+-solvent interactions in ternary EC-DEC-TMP electrolyte mixtures by NMR measurements** — C 7.19

Gabriella Barozzino-Consiglio, Bruno Ernould, Louis Sieuw, Jean-François Gohy, Alexandru Vlad
Institute of Condensed Matter and Nanosciences (IMCN), Université Catholique de Louvain, Place L. Pasteur 1, 1348 Louvain-la-Neuve, Belgium.

17:30 **Engineering the anode components for anode-free seawater batteries with high-energy efficiencies** — C 7.20

Soo Min Hwang(1), Dasong Jeong(2), Youngsik Kim(2,3)
(1) SKKU Advanced Institute of Nano Technology (SAINT), Sungkyunkwan University, Suwon 16419, Republic of Korea, (2) Ulsan National Institute of Science and Technology, Ulsan 44919, Republic of Korea, (3) Energy Materials and Devices Lab, 4TOONE Corporation, Ulsan 44919, Republic of Korea.

17:30 **Metal type temperature dependency of electrical resistivity in fast Li ionic conductor Lithium Lanthanum Titanate** — C 7.21

Algimantas Kežionis, Edvardas Kazakevičius, Saulius Kazlauskas, Artūras Žalga
Institute of Applied Electrodynamics and Telecommunications, Faculty of Physics, Vilnius University, Saulėtekio av. 3, Vilnius LT-10257, Lithuania, Institute of Chemistry, Faculty of Chemistry and Geosciences, Vilnius University, Naugarduko str. 24, Vilnius LT-03225, Lithuania.

17:30 **Cobalt-based Oxide as an Anode Material for Lithium-ion Battery** — C 7.22

Chia-Tung Kuo, Tri-Rung Yew*
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan 30013

17:30 **How side chains control conductivity in polycarbonate-based electrolytes** — C 7.23

Therese Eriksson, Mahsa Ebadi, Prithwiraj Mandal, Jonas Mindemark, Daniel Brandell
Department of Chemistry - Ångström Laboratory, Uppsala University, Box 538, 75121 Uppsala, Sweden

17:30 **Study on the crystal alignment of LiFePO4 using a strong magnetic field for enhanced electrochemical performance** — C 7.24

Cham Kim, Yeokyung Yang, Mi Ju Kim
DGIST

17:30 **NiSe-Se nanotubes grown on Nickel foam support as a highly conductive electrode material for Asymmetric Supercapacitor** — C 7.25

Suvani Subhadarshini(1),Dr Narayan Chandra Das(1,2),Dr Dipak Kumar Goswami(1,3)
1 School of Nano Science and Technology,Indian Institute of Technology, Kharagpur, India 2 Rubber Technology Centre, Indian Institute of Technology, Kharagpur, India 3 Department of Physics, Indian Institute of Technology, Kharagpur, India

17:30 **Electrode Materials based on silicon for advanced secondary Batteries** — C 7.26

Charaf Cherkouk, Thomas Köhler, Slawomir Prucnal, Marcel Neubert, Dirk C. Meyer
Institute for Experimental Physics, TU Bergakademie Freiberg, Leipziger Straße 23, 09596 Freiberg, Germany Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden Rossendorf, Bautzner Landstraße 400, 01314 Dresden, Germany ROVAK GMBH, Zum Teich 4, 01723 Wilsdruff, Germany

17:30 **Enhancement of structure stability through cation doping on Nickel-rich cathode materials for Lithium-ion batteries** — C 7.27

Yun-Chae Nam1, Ji-Woong Shin1, Seon-Jin Lee1, Sang-Yong Oh1, Jeong-Heum Han2, Young-Hwan Lee2, Je-Seon Yu2, Tae-Whan Hong2, Bon-Keup Koo3 and Jong-Tae Son1,*
1Department of Nano-Polymer Science & Engineering 2Department of Materials Science & Engineering Korea National University of Transportation, 50, Daehak-ro, Daesowon-myeon, Chungju-si, Chungcheongbuk-do, Republic of Korea 3Advanced Materials Engineering Hanbat National University, 125, Dongseo-daero, Yuseong-gu, Daejeon, Republic of Korea

17:30 **Silicon-based Oxide as an Anode Material for Li-ion Batteries** — C 7.28

Tien-Chi Ji, Tri-Rung Yew*
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan 30013

17:30 **Disordered MnOx Li-ion Cathode through One Step Synthesis** — C 7.29

Christian L. Jakobsen, Christian K. Christensen and Dorthe B. Ravnsbæk
Department of Physics, Chemistry and Pharmacy, University of Southern Denmark, Campusvej 55, 5230 Odense M, Denmark

17:30 **Cu doped hollow CeO2 nanostructured electrode materials for supercapacitor applications** — C 7.30

Debabrata Mandal, Ananya Chowdhury, Amreesh Chandra
School of Nanoscience and Technology, Indian Institute of Technology Kharagpur, Kharagpur-721302, India, Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur-721302, India, Department of Physics and School of Nanoscience and Technology, Indian Institute of Technology Kharagpur, Kharagpur-721302, India

17:30 **Structural Effects on Distinct Spectro-electrochemical Properties of Rhenium-based Metalloprisms** — C 7.31

Deepak Gupta*, Fritz Weisser, Biprajit Sarkar, Malaichamy Sathiyendiran
Department of Chemistry, University of Delhi, Delhi-110007

17:30 **Highly stable Lithium titanium oxide anode by Atomic layer deposited Alumina** — C 7.32

Jae Kook Yoon, Seungmin Hyun, Seunghoon Nam, Hyungcheoul Shim
Korea Institute of Machineray and Materials

17:30 **Electical properties of LLTO thick films** — C 7.33

Edvardas Kazakevičius, Algimantas Kežionis, Saulius Kazlauskas, Artūras Žalga
Institute of Applied Electrodynamics and Telecommunications, Faculty of Physics, Vilnius University, Saulėtekio av. 3, Vilnius LT-10257, Lithuania, Institute of Chemistry, Faculty of Chemistry and Geosciences, Vilnius University, Naugarduko str. 24, Vilnius LT-03225, Lithuania.

17:30 **Investigating electrochemical characteristics of metal oxide-carbon nanospheres nanocomposite for supercapacitor application** — C 7.34

Sonal Singhal, A.K. Shukla
Indian Institute of Technology Delhi

17:30 **Amorphous-to-Microcrystalline Transition of Lead-Free NKN Films Monitored by Change in Optoelectronic Properties** — C 7.35

R. Schwarz1, R. Ayouchi1, P. Sanguino1, U. Mardolcar1, L. Santos2, D. Santos2, N. Franco3, E. Alves3
1 Department of Physics and CeFEMA, Instituto Superior Técnico, P-1049-001 Lisbon, Portugal 2 Department of Chemical Engineering, Instituto Superior Técnico, P-1049-001 Lisbon, Portugal 3 ITN, Instituto Tecnológico e Nuclear, P-2686-953 Sacavém, Portugal

17:30 **The conductive polypyrrole hydrogels with excellent mechanical properties for flexible supercapacitors** — C 7.36

Xun Sun, Di Zhu, Rongrong Chen
Institute of Advanced Marine Materials, Harbin Engineering University, Harbin 150001, PR China

17:30 **Modification of Zn Electrodeposition Morphology Using Graphene** — C 7.37

Tara Foroozan, Soroosh Sharifi-Asl, Reza Shahbazian-Yassar
Mechanical and Industrial Engineering Department, University of Illinois at Chicago, Chicago, IL. 60607, United States

17:30 **The Zn dendrite growth investigation in Zn//LiCl + ZnCl2//LiFePO4 aqueous battery** — C 7.38

Indira Kurmanbayeva1, Raikhan Zakarina2, Orynbay Zhanadilov1, Dauren Batyrbekuly1, Akylbek Adi3,Moulay-Rachid Babaa2, Zhumabay Bakenov1,2
1 National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan 2 School of Engineering, Nazarbayev University, Astana, Kazakhstan 3 Tokyo Institute of Technology, Tokyo, Japan

17:30 **Study of Si and Si/C film on porous current collector as an anode for lithium ion microbatteries** **C 7.39**
Assel Serikkazyeva1, Aliya Mukanova1, Arailym Nurpeissova 1, Sung-Soo Kim 2, Maksym Myronov 3, Zhumabay Bakenov1
1 National Laboratory Astana, School of Engineering, Nazarbayev University, 53 Kabanbay Str., 010000 Astana, Kazakhstan. 2 Graduate School of Energy Science and Technology, Chungnam National University, 99 Daehak ave. , Yuseong-gu, Daejeon, 34134, South Korea. 3 Physics Department, University of Warwick, Coventry CV4 7AL, United Kingdom.

17:30 **Al Batteries: The Role of Cathode Designing in the Battery Development** **C 7.40**
Preeti Bhauriyal, Arup Mahata, Biswarup Pathak
Discipline of Chemistry, Indian Institute of Technology (IIT) Indore, Indore, India
E-mail: preeti.bhauriyal7@gmail.com, biswarup@iiti.ac.in

17:30 **Pyromellitic diimide-based copolymers and their application as cathode active materials in lithium and sodium-ion batteries** **C 7.41**
Nicolas Zindy,† J. Terence Blaskovits,† Catherine Beaumont,† Julien Michaud-Valcourt,† Hamidreza Saneifar,‡ Paul A. Johnson,† Daniel Bélanger‡* and Mario Leclerc†*
†Département de chimie, Université Laval, Québec, QC, Canada, G1V 0A6, ‡Département de chimie, Université du Québec à Montréal (UQÀM), Montréal, QC, Canada, H3C 3P8

17:30 **Novel Li4Ti5O12/Si/c-PAN composite anode for lithium-ion batteries** **C 7.42**
Arailym Nurpeissova, Ayana Sanbayeva, Zhumabay Bakenov
National Laboratory Astana, Nazarbayev University, 53 Kabanbay Batyr Ave., Astana 010000, Kazakhstan School of Engineering, Nazarbayev University, 53 Kabanbay Batyr Ave., Astana 010000, Kazakhstan Institute of batteries, Block 13, 53 Kabanbay Batyr Ave., Astana 010000, Kazakhstan

17:30 **Crystal alignment of LiCoO2 using a magnetic field for improved lithium ion transport led to high electrochemical performance** **C 7.43**
Yeokyung Yang, Mi ju Kim, Cham kim
DGIST

17:30 **Investigation on the effect of phosphate dopant in hard carbon anode material for sodium ion batteries** **C 7.44**
Gi-Hyeok Lee, Jaebum Kim, Feng Zou, Yong-Mook Kang*
Department of Energy and Materials Engineering

17:30 **Steric modulation of Na2Ti2O3(SiO4) · 2H2O for the improved kinetics and reversibility in Na ion batteries** **C 7.45**
Feng Zou, Gi-Hyeok Lee, Jiliang Zhang, Jeyjau Lee, Yue-Lin Yang, Kai Zhang, Jing Zhang and Yong-Mook Kang
Department of Energy and Materials Engineering

17:30 **Sodium Vanadium Fluorophosphates Morphology Effects on Rechargeable Sodium Ion Batteries** **C 7.46**
Robin Chih-Hsing Wang, Sheng-Cheng Chiu, Yu-Wen Yeh, Tai-Feng Hung, Chang-Chung Yang and Wen-Sheng Chang
Industrial Technology Research Institute

17:30 **Electrochemical study of lithiation in Nb18W16O93 electrodes** **C 7.47**
R. Xia, M. Huijben, J.E. ten Elshof
R. Xia, MESA+ Institute for Nanotechnology, University of Twente, 7500 AE Enschede, the Netherlands, M. Huijben, MESA+ Institute for Nanotechnology, University of Twente, 7500 AE Enschede, the Netherlands, J.E. ten Elshof, MESA+ Institute for Nanotechnology, University of Twente, 7500 AE Enschede, the Netherlands.

17:30 **Electrodeposition of pseudocapacitive materials onto platinum porous current collectors for advanced micro-supercapacitors** **C 7.48**
Sai Gourang Patnaik (1), Lotfi Benali Karroubi (1,2), Chau Cam Hoang Tran (1), Daniel Guay (2), David Pech (1)
(1): LAAS-CNRS ,7 Avenue du Colonel Roche 31400 Toulouse, France. (2): INRS-Énergie, Matériaux, Télécommunications 1650 Boulevard Lionel Boulet, Varennes, QC J3X 1S2, Canada.

17:30 **Polymer-MXene Composite Films formed by MXene-facilitated Electrochemical Polymerization** **C 7.49**
Leiqiang Qin, Quanzheng Tao, Johanna Rosen, Fengling Zhang
Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-581 83 Linköping, Sweden

17:30 **High specific energy lithium-ion capacitors utilizing amorphous n-type silicon nanoparticles** **C 7.50**
Samson Y. Lai (1), Hallgeir Klette (2), Dmytro Drobnyi (3), Alexey Koposov (2), Fengliu Lou (3)
(1) Department for Neutron Materials Characterization, Institute for Energy Technology (IFE), Kjeller, Norway, (2) Department of Battery Technology, Institute for Energy Technology (IFE), Kjeller, Norway, (3) Beyonder AS, Stavanger, Norway

17:30 **Study of active material and electrolyte for Alkaline Redox Flow Battery** **C 7.52**
Chanho Noh1, Yongjin Chung2, Yongchai Kwon1*
1 Graduate school of Energy and Environment, Seoul National University of Science and Technology 2 Department of Chemical and Biological Engineering, Korea National University of Transportation

17:30 **Electrochemical activity competition in dicarboxylate-pyrazine bi-redox systems for Li-ion Batteries** **C 7.53**
Alae. Eddine. Lakraychi, Pit. Schwartz, Alexandru. Vlad.
Institute of Condensed Mater and Nanosciences, Université Catholique de Louvain, Belgium

17:30 **Effect of Lithium and Sodium on the electronic properties of porous Germanium: a computational approach** **C 7.54**
A. N. Sosa, A. Trejo, M. Cruz-Irisson
Instituto Politécnico Nacional, ESIME Culhuacán Av. Santa Anna 1000, C. P. 04430 Cd. de México, México.

17:30 **Novel redox-active materials for batteries based on fullerene derivatives and quinizarine** **C 7.55**
O. A. Kraevaya (1,2), A. V. Mumyatov (2), A. F. Shestakov (2), K. J. Stevenson (1), P. A. Troshin (1,2)
(1) Skolkovo Institute of Science and Technology, Nobel St. 3, Moscow, 143026, Russia (2) Institute for Problems of Chemical Physics of Russian Academy of Sciences, Semenov ave 1, Chernogolovka, Moscow region, 142432, Russia

17:30 **N-functionalized graphene quantum dots as a charge transporting layer for high-rate and durable Li4Ti5O12–based Li-ion battery** **C 7.56**
Firoz Khan, Misol Oh, and Jae Hyun Kim*
Smart Textile Convergence Research Group, Daegu Gyeongbuk Institute of Science & Technology, 333, Techno Jungang-Daero, Hyeonpung-Myeon, Dalseong-Gun, Daegu-42988, Republic of Korea

17:30 **Study of Si and Si/C film on porous current collector as an anode for lithium ion microbatteries** **C 7.57**
Assel Serikkazyeva1, Aliya Mukanova1, Arailym Nurpeissova 1, Sung-Soo Kim 2, Maksym Myronov 3, Zhumabay Bakenov1
1 National Laboratory Astana, School of Engineering, Nazarbayev University, 53 Kabanbay Str., 010000 Astana, Kazakhstan. 2 Graduate School of Energy Science and Technology, Chungnam National University, 99 Daehak ave. , Yuseong-gu, Daejeon, 34134, South Korea. 3 Physics Department, University of Warwick, Coventry CV4 7AL, United Kingdom.

17:30 **Study on CuNb2O6, ZnNb2O6, and MnNb2O6 as new anode materials for Li-ion batteries** **C 7.58**
Sukeun Yoon, Jihoon Kim, Kuk Young Cho
Division of Advanced Materials Engineering, Kongju National University, Chungnam 330-717, Republic of Korea Department of Materials Science and Chemical Engineering, Hanyang University, Gyeonggi, 15588, Republic of Korea

17:30 **Na3V2(PO4)2O2xF3-2x/C Nanoparticles for Sodium-Ion Batteries with Superior Rate Capability and Long Cycle Life** **C 7.59**
Jinju Song, Sohyun Park, Jaekook Kim
Jinju Song, Korea Institute of Energy Research Sohyun Park, Chonnam National University Jaekook Kim, Chonnam National University

17:30 **Comparisons of rGO/vanadium oxides nanocomposites with various phases for lithium-ion and sodium-ion batteries** **C 7.60**
Xuelian Liu(1), Sébastien Depaifve(2), Tom Leyssens(1), Sophie Hermans(1) and Alexandru Vlad(1)
(1) Institute of Condensed Matter and Nanosciences (IMCN), Université catholique de Louvain, Place Louis Pasteur 1, B-1348 Louvain-la-Neuve, Belgium (2) Luxembourg Institute of Science and Technology (LIST), 5 rue Bommel, ZAE Robert Steichen, L-4940 Hautcharage, Luxembourg

17:30 **Nanocarbon Based Electrode Materials for Energy Storage Applications** **C 7.61**
Hyun-Kyung Kim
Gwangju Bio/Energy R&D Center, Korea Institute of Energy Research (KIER), Republic of Korea

17:30 **Holey engineered ZnO nanosheets based electrodes for supercapacitor applications** — C 7.62
Manjeet Kumar1, Hong Jin Young2, Hong Jong Wook2, Vishwa Bhatt1, Ha Trang Nguyen1, and Ju-Hyung Yun*1
1Department of Electrical Engineering, Incheon National University, Incheon 406772, South Korea , 2Materials & components Research Institute, Materials Evaluation team, Korea Testing & Research Institute, Gwacheon 13810, South Korea

17:30 **Fabrication of ordered mesoporous MoO2/Mo2C/C composites and its enhanced electrochemical properties** — C 7.63
Zhiyong Zheng, Zhengyang Li, Ye Lim Kwon, Hee Yeon Park, Ji Man Kim
Department of Chemistry, Sungkyunkwan University, Suwon, 16419, South Korea

17:30 **Small Quinone Battery Chemistry with Limited Solubility through H-bond Stabilization** — C 7.64
Louis Sieuw (1), Alia Jouhara (2), Philippe Poizot (2), Alexandru Vlad (1)
(1) Institute of Condensed Matter and Nanosciences (IMCN), Université catholique de Louvain, Place Louis Pasteur 1, B-1348 Louvain la Neuve, Belgique, (2) Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, UMR CNRS 6502, 2 rue de la Houssinière, B.P. 32229, 44322 Nantes Cedex 3, France

17:30 **Synthesis of highly conductive NaTi2(PO4)3-carbon composite for aqueous sodium ion battery** — C 7.65
Jung Hoon Yang
Korea Institute of Energy Research

17:30 **Coupling Ge/LaTiO3 nanostructured systems** — C 7.66
J. M. Cervantes1, E. Zuñiga1, R. Oviedo-Roa2, and E. Carvajal1
1 Instituto Politécnico Nacional, ESIME–Culhuacán Av. Santa Ana 1000, 04440 Ciudad de México, México, 2 Instituto Mexicano del Petróleo, Eje Central Lázaro Cárdenas Norte 152, 07730 Ciudad de México, México.

17:30 **MoS2 nanosheets encapsulated in high-conductivity Polymer as free-standing electrode for durable zinc storage** — C 7.67
Yuwei Zhao, Longtao Ma, Hongfei Li
Department of Materials Science and Engineering, City University of Hong Kong

17:30 **Enhanced rate performance of Au nanoparticle-NiO nanocomposite thin films for supercapacitors** — C 7.68
Hyun Kyu Jung, Seung Han Lee, Tae Cheol Kim, Jeong Heum Mun, Dong Hun Kim
Department of Materials Science and Engineering, Myongji University, Yongin, Republic of Korea

17:30 **Nanoscale characterization of lithium ion concentration and diffusion coefficient in solid-state electrolyte** — C 7.69
Gun Park a, Hongjun Kim a, Jimin Oh a,b, Albina Jetybayeva a, Chungik Oh a, Young-Gi Lee b and Seungbum Hong a*
a Korea Advanced Institute of Science and Technology, b Electronics and Telecommunications Research Institute

17:30 **Synthesis and characterization of V2O5 Micro flower as Advanced Cathode Material for High Performance Lithium-Ion Batteries** — C 7.70
Hemlata, P Das, Mukesh C Bhatnagar
Indian Institute of Technology Delhi, Hauz Khas, New Delhi,India -110016

17:30 **Enhancing the stability of an RT-NaS battery using in situ electrochemical method to form the protective SEI** — C 7.71
Hwon-gi Lee and KwangSup Eom*
School of Materials Sci. & Eng. (SMSE), Gwangju Institute of Science and Technology (GIST), 123 Cheomdangwagi-ro, Buk-gu, Gwangju, 61005, Korea

17:30 **Evolution of lithium dendrite according to separator types, morphology, and interfaces** — C 7.72
Jung Hun Lee, Thuy Hoal Linh Vuong, Thi Cam Duyen Chu,Soo Min Hwang, and Young-Jun Kim
SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Suwon 16419, Republic of Korea

17:30 **Ni-decorated ZnO nanorods array as anodes for Li-ion batteries** — C 7.73
Sun Hwa Park, Han Nah Park, Jeong Ho Shin, Soo-Hwan Jeong, Jae Yong Song
Center for Convergence Property Measurement, Korea Research Institute of Standards and Science, Republic of Korea , Department of Chemical Engineering, Kyungpook National University, Republic of Korea

17:30 **A New Quinone Tetralithium Salt With High Practical Potential** — C 7.74
Louis Sieuw (1), Alia Jouhara (2), Philippe Poizot (2), Alexandru Vlad (1)
(1) Institute of Condensed Matter and Nanosciences (IMCN), Université catholique de Louvain, Place Louis Pasteur 1, B-1348 Louvain la Neuve, Belgique, (2) Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, UMR CNRS 6502, 2 rue de la Houssinière, B.P. 32229, 44322 Nantes Cedex 3, France

17:30 **Phosphorus-containing polymers for solid-state polymer electrolytes** — C 7.75
Lu Bai, Jean-François Gohy
Université catholique de Louvain, IMCN, Place Louis Pasteur 1, B-1348 Louvain-la-Neuve, Belgium

17:30 **Vanadium Redox Flow Batteries Fabricated by 3D Printing and Employing Recycled Vanadium Collected from Ammonia Slag** — C 7.76
He Sun 1.4, Hirotaka Takahashi 2, Yuki, Kamada 2, Kei Sato 3, Kyosuke Nedu 3, Nobuyuki Nishiumi 1, Yuta Matsushima 2, Ajit Khosla 3, Masaru Kawakami 3, Hidemitsu Furukawa 3, Philipp Stadler 4, Tsukasa Yoshida 1*,
1 Research Center for Organic Electronics (ROEL), Yamagata University, Jonan 4-3-16, Yonezawa, Yamagata, 992-8510, Japan, 2 Chemistry and Chemical Engineering, Yamagata University, Jonan 4-3-16, Yonezawa, Yamagata 992-8510, Japan, 3 Mechanical Systems Engineering, Yamagata University, Jonan 4-3-16, Yonezawa, Yamagata 992-8510, Japan, 4 Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry, Johannes Kepler University Linz, Altenberger Strasse 69, A-4040 Linz, Austria,

17:30 **Up-scalable FeOOH/Cyanographene supercapacitor electrode hybrid material for efficient operation in organic electrolytes** — C 7.77
Smita Talande,1 Aristides Bakandritsos,2,* Petr Jakubec,2 Ondrej Malina,1 Radek Zbořil,2 Jiri Tuček1,*
Smita Talande,1, Aristides Bakandritsos,2,*, Petr Jakubec,2, Ondrej Malina,1, Radek Zbořil, 2, Jiri Tuček1,* Regional Centre for Advanced Technologies and Materials, Faculty of Science, Palacký University Olomouc, 17 listopadu 1192/12, 771 46 Olomouc, Czech Republic, 1Department of Experimental Physics, 2Department of Physical Chemistry E-mails: jiri.tucek@upol.cz, aristeidis.bakandritsos@upol.cz

17:30 **Hybrid Organic / Inorganic cathodes to improove the power of Lithium ion batteries** — C 7.78
Dolphijn Guillaume, Fernand Gauthy, Alexandru Vlad, Jean-François Gohy
Université Catholique de Louvain, Solvay, Université Catholique de Louvain, Université Catholique de Louvain.

17:30 **Practical electrochemical stability of lithium thiophosphate solid electrolytes in Li-S cells** — C 7.79
Georg Dewald(a,b), Saneyuki Ohno(a,b), Jürgen Janek(a,b), Wolfgang G. Zeier(a,b)
(a) Institute of Physical Chemistry, Justus-Liebig-University Giessen, Heinrich-Buff-Ring 17, 35392 Giessen, Germany. (b) Center for Materials Research (LaMa), Justus-Liebig-University Giessen, Heinrich-Buff-Ring 16, 35392 Giessen, Germany.

17:30 **4.2 V Wearable Asymmetric Supercapacitor Devices Based on VOx//MnOx Paper Electrode** — C 7.80
Ming-Jay Deng 1,2, Li-Hsien Yeh 2, Jin-Ming Chen 3*, Kueih-Tzu Lu 3
1 Bachelor Program in Interdisciplinary Studies, National Yunlin University of Science and Technology, Yunlin, Taiwan 2 Department of Chemical and Materials Engineering, National Yunlin University of Science and Technology, Yunlin, Taiwan 3 National Synchrotron Radiation Research Center, Hsinchu, 30076 Taiwan

17:30 **Adsorption characteristics of the synthesized levelers with modified structures for Cu electrodeposition** — C 7.81
Yoonjae Lee, Myung Hyun Lee, Namtae Kim, Jae Jeong Kim, Young Gyu Kim
School of Chemical and Biological Engineering, College of Engineering, Seoul National University, Seoul, 08826, Korea

17:30 **Lithium Ion Distribution Study of LSTP-Based Solid Electrolyte in Graphite Composite Electrode by Electrochemical Strain Microsc** — C 7.82
Jimin Oh a,b, Hongjun Kim b, Dong Ok Shin a, Gun Park b, Albina Jetybayeva a, Ju Young Kim a, Jumi Kim a, Kwang Man Kim a, Young-Gi Lee a, and Seungbum Hong b*
a Research Group of Multidisciplinary Sensors, Electronics and Telecommunications Research Institute (ETRI), Daejon 34129, Republic of Korea ,b Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejon 34141, Republic of Korea ,E-mail: seungbum@kaist.ac.kr

17:30 **Combinatorial study on lithium Ion conductivity of amorphous Li-La-Zr-O thin-films with sol-gel processing** — C 7.83
Tan Tan Bui, Boseon Yun, Myung-Gil Kim
Chung Ang University, Seoul, South Korea

17:30 **Graphitic Hollow Carbon as a Promising Conducting Agent for All-Solid-State Lithium Batteries** **C 7.84**
Byung Gon Kim, Sang Wook Park, Jun-Woo Park, Yoon-Cheol Ha, Sang-Min Lee
Korea Electrotechnology Research Institute

17:30 **Microstructure and electrochemical characterization of CaNi5-xMnx (or x=0.2, 0.3, 0.5 and 1) hydrogen storage alloys prepared by** **C 7.85**
1 Youssef Dabak, 1 ChokriKhaldi, 3 Omar ElKedim, 4 NouredineFenineche, 1, 2 Mohamed Tliha ,1 JilaniLamloumi
1:University of Tunis, Laboratory of Mechanics, Materials and Processes, Group of Metal Hydrides, ENSIT, Tunisia 2:Department of Physics, University Faculty, Umm-Alqura University, Al-Qunfudah, Saudi Arabia. 3: IRTES-LERMPS/FR FCLAB, UTBM, Site de Sévenans, 90010 Belfort Cedex, France. 4: FEMTO-ST, MN2S, UTBM, Site de Sévenans, 90010 Belfort Cedex, France.

17:30 **Catching the (not so) Elusive Lithium: Diffusion in Copper** **C 7.86**
Rico Rupp, Alexandru Vlad
Institute of Condensed Matter and Nanosciences (IMCN), UCLouvain E-mail: rico.rupp@uclouvain.be

17:30 **Flexible Self-Charging Asymmetric Supercapacitor Device with Fish Swim Bladder as Natural Bio-Piezoelectric Separator** **C 7.87**
Anirban Maitra and B. B. Khatua*
Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, India

17:30 **DEVELOPMENT OF NOVEL NANOSTRUCTURED TiO2 BASED ANODE MATERIALS FOR LITHIUM - ION BATTERIES** **C 7.0**
Radu-Florian Ene1,2, Cristina Dumitriu2, Radu Dorin Andrei1, Catalin Jianu1, Adnana Spinu-Zaulet1, Elena Carcadea1, Mihaela Buga1, Cristian Pirvu2
1National Institute of Research and Development for Cryogenic and Isotopic Technologies ICSI Râmnicu Vâlcea, 4 Uzinei Street, 240050, Rm.Vâlcea, PO Râureni, PO Box 7, Romania 2Politehnica University of Bucharest, Faculty of Applied Chemistry and Materials Science, Department of General Chemistry, 1-7 Polizu, Bucharest Ro_011061, Romania

Anion Redox : Philipp Adelhelm

08:30 **A reassessment of the charge transfer transition in LiCoO2: standardising ab initio modelling of battery electrodes** **C 9.1**
Christopher N. Savory, Aron Walsh, Benjamin J. Morgan, David O. Scanlon
a) Department of Chemistry, University College London, Christopher Ingold Building, London WC1H 0AJ, United Kingdom, Department of Chemistry, University of Bath, Bath BA2 7AX, United Kingdom, b) Department of Materials, Imperial College London, Exhibition Road, London SW7 2AZ, UK c) Department of Materials Science and Engineering, Yonsei University, Seoul 03722, Korea, a) Department of Chemistry, University College London, Christopher Ingold Building, London WC1H 0AJ, United Kingdom d) Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Didcot OX11 0DE, UK

08:45 **Anionic Redox Activity in a Newly Zn-Doped Sodium Layered Oxide P2-Na2/3Mn1−yZnyO2 (0 < y < 0.23)** **C 9.2**
Xue Bai, Patrick Rozier, Jean-Marie Tarascon
CIRIMAT, UMR CNRS 5085, Université Toulouse 3 – Paul Sabatier, 31062 Toulouse Cedex 9, France,CIRIMAT, UMR CNRS 5085, Université Toulouse 3 – Paul Sabatier, 31062 Toulouse Cedex 9, France,Collège de France, Chimie du Solide et de l'Energie—UMR CNRS 8260, 11 Place Marcelin Berthelot, 75005, Paris, France

09:00 INV **The Intimiate Coupling between Oxygen Redox & Metal Vacancies in Layered Oxides** **C 9.3**
William E. Gent, Jihyun Hong, William C. Chueh
Department of Materials Science & Engineering, Stanford University

09:30 **Anion-Based Redox Pseudocapacitance of the Perovskite Library La1-xSrxBO3-δ (B = Fe, Mn, Co)** **C 9.4**
Keith J. Stevenson1, Caleb Alexander2
1. Skolkovo Institute of Science and Technology, Center for Electrochemical Energy Storage, Moscow, Russian Federation 2. Department of Chemical Engineering, The University of Texas at Austin, Austin, TX USA

09:45 **Stabilization of O-O bonds by d0 cations in Li4+xNi1-xWO6 (0≤x≤0.25) rocksalt oxides as the origin of large voltage hysteresis** **C 9.5**
Zoe N. Taylor (a), Arnaud J. Perez (a), José A. Coca-Clemente (a,b), Filipe Braga (a,b), Nicholas E. Drewett (a,b), Michael J. Pitcher (a), William J. Thomas (a), Matthew S. Dyer (a), Christopher Collins (a), Marco Zanella (a), Timothy Johnson (a), Sarah Day (c), Chiu Tang (c), Vinod R. Dhanak (b,d), John B. Claridge (a), Laurence J. Hardwick (a,b) and Matthew J. Rosseinsky (a)
(a) Department of Chemistry, University of Liverpool, Crown Street, Liverpool, L69 7ZD, United Kingdom, (b) Stephenson Institute for Renewable Energy, University of Liverpool, Chadwick Building, Peach Street, Liverpool, L69 7ZF, United Kingdom, (c) Diamond Light Source, Diamond House, Harwell Oxford, Didcot, Oxfordshire OX11 0DE, United Kingdom, (d) Department of Physics, University of Liverpool, Crown Street, Liverpool, L69 7ZD, United Kingdom

10:00 **Coffee Break**

Advanced Cathodes I - NM(C?) : Mihaela BUGA

10:30 **Layered LiNi1/3Mn1/3Co1/3O2 (NMC) with Optimized Morphology for Li-ion Batteries** **C 10.1**
M. Zukalova, J. Prochazka, B. Pitna Laskova, Arnost Zukal, Ladislav Kavan
J. Heyrovský Institute of Physical Chemistry, v.v.i., CAS, HE3DA, s.r.o

10:45 **Comprehensive Atomic Scale Analysis of the Phase Boundaries in Li-rich Layered Oxide Cathodes** **C 10.2**
Soroosh Sharif-Asl Arturo Gutierrez Mahalingam Balasubramanian Jason R. Croy Reza Shahbazian-Yassar
Mechanical and Industrial Engineering Department, University of Illinois at Chicago, Chicago, IL. Chemical Science and Engineering, Argonne National Laboratory, Argonne, IL Advanced Photon Source, Argonne National Laboratory, Argonne, IL

11:00 INV **Is Cobalt Needed in Ni-rich Positive Electrode Materials for Lithium ion Batteries?** **C 10.3**
Hongyang Li‡, Marc Cormier‡, Ning Zhang, Julie Inglis, Jing Li and J.R. Dahn
Physics and Atmosphere Science, Dalhousie University, Halifax, NS, Canada, B3H 3J5. ‡ These authors contributed equally to this work. J.R. Dahn will present this work.

11:30 **Probing Sn substitution in Li1.2Ni0.13Co0.13Mn0.54-xSnxO2 as a cathode material for Li-ion batteries** **C 10.4**
Andreas Paulus, Mylène Hendrickx, Olesia Karakulina, Maria Kirsanova, Artem Abakumov, Joke Hadermann, Marlies K. Van Bael, An Hardy
Andreas Paulus(a),(b), Mylène Hendrickx(c), Olesia Karakulina(c), Maria Kirsanova(d), Artem Abakumov(c),(d), Joke Hadermann(c), Marlies K. Van Bael(a),(b), An Hardy(a),(b) (a)Hasselt University, Institute for Materials Research (imo-imomec) and imec, division imomec, Inorganic and Physical Chemistry, Agoralaan Gebouw D, 3590 Diepenbeek, Belgium (b)EnergyVille, Thor Park 8320, 3600 Genk, Belgium (c)UAntwerpen, Electron Microscopy for Materials Science (EMAT), Groenenborgerlaan 171, 2020 Antwerpen, Belgium (d)Center for Energy Science and Technology, Skolkovo Institute of Science and Technology, 3 Nobel Street, Moscow 143026, Russia

11:45 **A New Measuring Cell for Operando Neutron Diffraction on Li-Ion Battery Cathode Materials** **C 10.5**
Daniel Risskov Sørensen, Michael Heere, Dorthe Bomholdt Ravnsbæk
University of Southern Denmark, Heinz Maier-Leibnitz Zentrum

12:00 **Understanding the valence spectra in Li-Mn-Ni-O spinel oxides with respect to Mn valence changes during lithiation/delithiation** **C 10.6**
1. M. K. Kinyanjui, 2. P. Axmann, 2. M. Mancini, 2. G. Gabrielli, 2. P. Balasubramanian , 3. F. Boucher , 2. M. Wohlfahrt-Mehrens, and 1. U. Kaiser
1. Central Facility for Electron Microscopy, University of Ulm, Albert Einstein Allee 11, 89081 Ulm, Germany , 2. Centre for Solar Energy and Hydrogen Research, Helmholtzstr. 8, 89081 Ulm, Germany, 3. Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, BP 32229, 44322 Nantes cedex 3, France

12:15 **Lunch**

Advanced Cathodes II : Alexis Grimaud

14:00 **MPOx Coated High-Voltage LiNi0.5Mn1.5O4 with Tailored Morphology for High-Power Lithium-Ion Full-Cells** **C 11.1**
Matthias Kuenzel, Guk-Tae Kim, Dominic Bresser, Stefano Passerini
Helmholtz Institute Ulm (HIU), Helmholtzstrasse 11, 89081 Ulm, Germany
Karlsruhe Institute of Technology (KIT), P.O. Box 3640, 76021 Karlsruhe, Germany

14:15 **Effect of the atomic range structure peculiarities on the electrochemical performance in high energy density insertion cathode m** **C 11.2**
Elena Tchernychova[1], Jean Marcel Ateba Mba[1], Ana Robba[1], Iztok Arčon[2,3], Gregor Mali[1], Ralf Witte[4], Robert Kruk[4], Anna Randon-Vitanova[7], Robert Dominko[1,5,6]
[1]National Institute of Chemistry, Hajdrihova 19, SI-1000 Ljubljana, Slovenia, [2] University of Nova Gorica, Vipavska 13, 5000 Nova Gorica, Slovenia, [3]Institute Jožef Stefan, jamova 39, 1000 Ljubljana, Slovenia, [4]Institute of Nanotechnology, Karlsruhe Institute of Technology, 76344 Eggenstein-Leopoldshafen, Germany, [5] University of Ljubljana, Večna pot 117, SI-1000 Ljubljana, Slovenia, [6]ALISTORE-ERI, FR3104, 80039 Amiens cedex, France, [7]Honda Europe R&D, Germany

14:30 INV **Defects, disorder and electrochemistry in phosphate-based metal-ion battery cathodes.** **C 11.3**
Artem M. Abakumov
Center for Energy Science and Technology, Skolkovo Institute of Science and Technology, Moscow, Russia

15:00 **Investigating the synthesis of Li-rich layered oxides: Controlling cation mixing, stacking faults and electrochemistry** **C 11.4**
Ashok Sreekumar Menon, William Brant, Cesar Pay Gomez, Kristina Edström, Tom Willhammar, Vanessa K. Peterson
Department of Chemistry - Ångström Laboratory, Uppsala University, Sweden, Department of Chemistry - Ångström Laboratory, Uppsala University, Sweden, Department of Chemistry - Ångström Laboratory, Uppsala University, Sweden, Department of Chemistry - Ångström Laboratory, Uppsala University, Sweden, Department of Materials and Environmental Chemistry, Stockholm University, Stockholm University, Sweden, Australian Centre for Neutron Scattering, Australian Nuclear Science and Technology Organization, Sydney, Australia

15:15 **Order-disorder phenomena and structural transitions in battery electrodes studied by operando X-ray scattering** **C 11.5**
Christian K. Christensen, Christian L. Jakobsen, Daniel R. Sørensen, Dorthe B. Ravnsbæk
Department of Physics, Chemistry and Pharmacy, University of Southern Denmark, Campusvej 55, 5230 Odense M, Denmark

15:30 **Coffee Break**

Advanced Cathodes III : Dominic Bresser

16:00 **On the reversibility of transition metal migration and its impact on the performance of layered oxides as cathode for SIBs** **C 12.1**
Begoña Silván, Elena Gonzalo, François Fauth, Damien Saurel
CIC Energigune, Parque Tecnológico de Álava. Albert Einstein 48, Ed. CIC, 01510 Miñano, Spain, CIC Energigune, Parque Tecnológico de Álava. Albert Einstein 48, Ed. CIC, 01510 Miñano, Spain, Experiments Division, CELLS – ALBA, Carrer de la Llum 2-26, 08290 Cerdanyola del Vallés, Barcelona, Spain, CIC Energigune, Parque Tecnológico de Álava. Albert Einstein 48, Ed. CIC, 01510 Miñano, Spain

16:15 **Solution synthesis routes: exploiting strengths and avoiding pitfalls** **C 12.2**
Benedicte Vertruyen*, Thomas Jungers, Nicolas Eshraghi, Jerome Bodart, Frederic Boschini, Abdelfattah Mahmoud
GREENMAT, CESAM Research Unit, Chemistry Institute B6, University of Liège, 4000 Liège, Belgium

16:30 INV **Structural and electrochemical properties of disordered lithium rich oxyfluoride materials** **C 12.3**
Jean-Marcel ATEBA MBA1, Iztok AR?ON2,3, Gregor MALI1, Elena TCHERNYCHOVA1, Robert DOMINKO1, 4, 5
1National Institute of Chemistry, Hajdrihova 19, SI-1000 Ljubljana, Slovenia 2University of Nova Gorica, Vipavska 13, 5000 Nova Gorica, Slovenia 3Institute Jo?ef Stefan, Jamova 39, 1000 Ljubljana, Slovenia 4University of Ljubljana, Ve?na pot 117, SI-1000 Ljubljana, Slovenia 5ALISTORE-ERI, FR3104, 80039 Amiens cedex, France

17:00 **Improved electrochemical performance of lithium cobalt phosphate as a high voltage positive electrode in lithium-ion batteries** **C 12.4**
Eun Jeong Kim, Xiangling Yue, David Miller, Christian Masquelier, John T. S. Irvine, A. Robert Armstrong
School of Chemistry, University of St Andrews, St Andrews, Fife, KY16 9ST, United Kingdom: Eun Jeong Kim, Xiangling Yue, David Miller, John T. S. Irvine, A. Robert Armstrong ALISTORE-ERI, 80039, Amiens Cedex, France: Eun Jeong Kim, Christian Masquelier, A. Robert Armstrong LRCS, 33 Rue Saint-Leu, Université de Picardie Jules Verne, 80039 Amiens, France: Christian Masquelier

17:15 **Amorphization mechanism during Li-ion intercalation in V2O5 electrode materials** **C 12.5**
Christian K. Christensen, Daniel R. Sørensen, Jeanette Hvam, Dorthe B. Ravnsbæk
Department of Physics, Chemistry and Pharmacy, University of Southern Denmark

17:30 **Low-Temperature Synthesis and Electrochemical Performance of Novel Vanadium(V) Sulfate Materials** **C 12.6**
Stephanie F. Linnell, Julia L. Payne, John T. S. Irvine
School of Chemistry, University of St Andrews, North Haugh, St Andrews, KY16 9ST

19:00 **Graduate Student Award ceremony followed by the social event**

Advanced Battery Carbons : Mihaela BUGA

08:30 **New insights into the correlation of microstructure and electrochemical performance of hard carbons for sodium-ion batteries** — C 13.1
A. Gómez-Martín, J. Martinez-Fernandez, M. Ruttert, M. Winter, T. Placke, J. Ramirez-Rico
A. Gómez-Martín, J. Martinez-Fernandez, J. Ramirez-Rico Dpto. Física de la Materia Condensada and Instituto de Ciencia de Materiales de Sevilla, Universidad de Sevilla ? CSIC, Avda. Reina Mercedes SN, 41012 Sevilla, Spain. M. Ruttert, M. Winter, T. Placke University of Münster, MEET Battery Research Center, Institute of Physical Chemistry, Corrensstraße 46, 48149 Münster, Germany

08:45 **Wearable Flexible Supercapacitors Based of Carbon Nanomaterials through Scalable and High-Tech Processes** — C 13.2
R.S. Costa,1,2 A.M. Pereira,2 C. Pereira 1
1 REQUIMTE/LAQV, Department of Chemistry and Biochemistry, Faculty of Sciences, University of Porto, Porto, Portugal, 2 IFIMUP, Department of Physics and Astronomy, Faculty of Sciences, University of Porto, Porto, Portugal

09:00 **Reversible intercalation of solvated Na ions into graphite** — C 13.3
Philipp Adelhelm
Friedrich-Schiller-University Jena, Institute of Technical Chemistry and Environmental Chemistry, Center for Energy and Environmental Chemistry Jena (CEEC Jena)

09:15 INV **Towards Sustainable and High-Performance Energy Storage: Unraveling Charge/Discharge Mechanisms in Dual-Ion Battery Cells** — C 13.4
Tobias Placke, Andreas Heckmann, Bastian Heidrich, Martin Winter
Tobias Placke, Andreas Heckmann, Bastian Heidrich, Martin Winter: University of Münster, MEET Battery Research Center, Institute of Physical Chemistry, Corrensstrasse 46, 48149 Münster, Germany, Martin Winter: Helmholtz Institute Münster, IEK-12, Forschungszentrum Jülich GmbH, Corrensstrasse 46, 48149 Münster, Germany

09:45 **Polypyrrole-based Hybrid Nanostructures Grown on Textile for Wearable Supercapacitors** — C 13.5
Lingchang Wang, Chenguang Zhang*, Xin Jiao, Zhihao Yuan*
School of Materials Science and Engineering, Tianjin University of Technology, Tianjin, 300384, PR China

10:00 **Nanocarbons for Energy Storage and Conversion Devices: A Full Elucidation of the Microstructure by Small Angle X-Ray and Neutron** — C 13.6
E. Härk, A.Petzold, G.Goerigk, S.Risse, M. Ballauff
Soft Matter and Functional Materials, Helmholtz-Zentrum für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany

10:15 **Coffee Break**

11:00 **Plenary Session 2**

12:30 **Lunch**

Aqueous Electrolytes and Batteries : Alexandru Vlad

13:45 **Effect of cobalt substitution on managese carbonophosphates as cathode material for water-in-salt sodium-ion batteries** — C 14.1
Maximilian Schuster, Claire Villevieille, Cyril Marino
Paul Scherrer Institut

14:00 **Controlling the cation-water interactions to extend the electrochemical stability window of water: toward aqueous Li-ion batteri** — C 14.2
Nicolas Dubouis, Alexis Grimaud
1Chimie du Solide et de l?Energie, UMR 8260, Collège de France, 75231, Paris Cedex 05, France 2Réseau sur le Stockage Electrochimique de l?Energie (RS2E), CNRS FR 3459,33 rue Saint Leu, 80039, Amiens Cedex, France

14:15 INV **Advances and issues in developing salt-concentrated battery electrolytes** — C 14.3
Atsuo YAMADA
University of Tokyo

14:45 **The role of the interface for the SEI formation in aprotic electrolyte** — C 14.4
Ivano E. Castelli, Dusan Strmcnik, Byron K. Antonopoulos, Filippo Maglia, Nenad Markovic, Jan Rossmeisl
Department of energy conversion and storage, Technical University of Denmark, Denmark, Materials Science Division, Argonne National Laboratory, Argonne, IL, USA, Battery Cell Technology, BMW Group, München, Germany, Battery Cell Technology, BMW Group, München, Germany, Materials Science Division, Argonne National Laboratory, Argonne, IL, USA, Nano-Science Center, Department of Chemistry, University of Copenhagen, Denmark

15:00 **A novel low-cost synthesis of olivine NaFePO4 as positive electrode for sodium-ion batteries** — C 14.5
C. Berlanga, I. Monterrubio, J.L. Gómez-Cámer, M. Armand, T. Rojo, M. Casas-Cabanas, M. Galceran
CIC energiGUNE, Albert Einstein 48, 01510 Vitoria-Gasteiz (Basque Country), CIC energiGUNE, Albert Einstein 48, 01510 Vitoria-Gasteiz (Basque Country), CIC energiGUNE, Albert Einstein 48, 01510 Vitoria-Gasteiz (Basque Country), CIC energiGUNE, Albert Einstein 48, 01510 Vitoria-Gasteiz (Basque Country), CIC energiGUNE, Albert Einstein 48, 01510 Vitoria-Gasteiz (Basque Country), Departamento de Química Inorgánica, Facultad de Ciencia y Tecnología, Universidad del País Vasco (UPV/EHU) Barrio Sarriena s/n, 48940 Leioa (Basque Country), CIC energiGUNE, Albert Einstein 48, 01510 Vitoria-Gasteiz (Basque Country), CIC energiGUNE, Albert Einstein 48, 01510 Vitoria-Gasteiz (Basque Country)

15:15 **Coffee Break**

Solid-State Batteries II : Claire Villevieille

15:45 **Two-Dimensional Materials for Safe Design of Li Batteries** — C 15.1
Reza Shahbazian-Yassar*
Associate Professor, Department of Mechanical Engineering, University of Illinois at Chicago, Chicago, IL 60607, USA. *Email: rsyassar@uic.edu

16:00 **Highly conductive solid polymer electrolytes for all solid-state lithium metal batteries** — C 15.2
Itziar Aldalur1*, María Martínez-Ibañez1, Eduardo Sánchez-Díez1, Uxue Oteo1, Michal Piszcz2, Heng Zhang1, Michel Armand1
1CIC Energigune. Parque Tecnológico de Alava, Albert Einstein 48, 01510 Miñano, Álava, Spain 2Warsaw University of Technology, Faculty of Chemistry, Polymer Ionics Research group, Noakowskiego 3, PL-00664 Warszawa, Poland

16:15 **Opportunities and challenges for closo-borate-based electrolytes for all-solid-state batteries** — C 15.3
Arndt Remhof (1), Léo Duchêne (1,2), Ruben-Simon Kühnel (1), Daniel Rentsch (1), Ryo Asakura (1,2), Seyedhosein Payandeh (1), Hans Hagemann (2), Corsin Battaglia (1)
(1) Empa, Swiss Federal Laboratories for Materials Science and Technology, 8600 Dübendorf, Switzerland, (2) Département de Chimie-Physique, Université de Genève, 1211 Geneva 4,Switzerland

16:30 INV **Solid-state electrolytes: a glance at the diversity of materials classes and related solid-state battery concepts** — C 15.4
Fanny Bardé
imec

17:00 **Fast ion conductors enabling high energy density batteries** — C 15.5
Phuah Kia Chai, Zhang Xin, Yang Guang, Stefan Adams
Department of Materials Science and Engineering, National University of Singapore

17:15 **High lithium ion diffusion in Al doped lithium phosphidosilicate Li2SiP2: a solid Li electrolyte material** — C 15.6
Stephen R. Yeandel 1, David O. Scanlon 2, Pooja Goddard*1
1 Loughborough University, Department of Chemistry, Epinal Way, Loughborough, Leicestershire, LE11 3TU, UK 2 University College London, Department of Chemistry, 20 Gordon Street, London, WC1H 0AJ, UK

POSTER SESSION 2 : A. VLAD, A. PONROUCH, B. DUNN, M. MORCRETTE

17:30 **A 3 V stable closo-borate electrolyte for all-solid-state sodium–ion batteries** — C 15.7
Léo Duchêne (1,2), Arndt Remhof (1), Ruben-Simon Kühnel (1), Daniel Rentsch (1), Ryo Asakura (1,2), Seyedhosein Payandeh (1), Hans Hagemann (2), Corsin Battaglia (1)
(1) Empa, Swiss Federal Laboratories for Materials Science and Technology, 8600 Dübendorf, Switzerland, (2) Département de Chimie-Physique, Université de Genève, 1211 Geneva 4, Switzerland,

17:30 **Layered Na2Mn3O7 as a Versatile Insertion Material** **C 15.8**
B. Senthilkumar1,2*, K. Sada1, and P. Barpanda1
1Faraday Materials Laboratory, Materials Research Center, Indian Institute of Science, Bangalore-12, India. 2Laboratoire de Reactivite de Chimie des Solides (LRCS), CNRS UMR 7314, Universitede Picardie Jules Verne, 80039 Amiens Cedex, France

17:30 **Synthesis and electrochemical analysis of mesoporous MOx-ZnO (M = Mn, Co, Ni, and Cu) as anode materials for LIBs** **C 15.9**
Hee Yeon Park, Ye Lim Kwon, Zhengyang Li, Zhiyong Zheng, and Ji Man Kim
Department of Chemistry, Sungkyunkwan university, Suwon, Korea

17:30 **Preparation of nanofibrous electroactive polyvinylidene fluoride based polymer electrolyte for sodium ion batteries** **C 15.10**
S. Janakiraman 1*, Abhijith Surendran 2, Rasmita Biswal1, Sudipto Ghosh 1, S. Anandhan 2, A. Venimadhav 3
1 Metallurgical & Materials Engineering, I.I.T Kharagpur, Kharagpur-721302, West Bengal, India. 2 Metallurgical & Materials Engineering, N.I.T.K Surathkal, Srinivasanagar P.O.575025, Karnataka, India. 3 Cryogenic Engineering Center, I.I.T Kharagpur, Kharagpur-721302, West Bengal, India.

17:30 **Aluminum substituted β–type NaMn1-xAlxO2: a stable and enhanced electrochemical kinetic sodium-ion battery cathode** **C 15.11**
Debasis Nayak1, Pawan Kumar Jha1, Sudipto Ghosh1, Venimadhav Adyam2
1Department of Metallurgical and Materials Engineering, Indian Institute of Technology, Kharagpur-721302, India 2Cryogenic Engineering Centre, Indian Institute of Technology, Kharagpur-721302, India

17:30 **Highly Elastic binders employing polyrotaxanes for silicon microparticle anodes in lithium ion batteries** **C 15.12**
Sunghun Choi, Tae-woo Kwon, Ali Coskun, Jang Wook Choi
Gwangju Bio/Energy R&D Center, Korea Institute of Energy Research (KIER) 270-25 Samso-ro, Buk-gu,Gwangju 61003, Korea, Department of Chemistry, Northwestern University, 2145 Sheridan Road, Evanston, Illinois 60208, United States, Department of Chemistry, University of Fribourg, Chemin du Musee 9, 1700 Fribourg, Switzerland, School of Chemical and Biological Engineering, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 08826, Republic of Korea

17:30 **Enhancement of Ionic Conduction in Bi2O3 based Solid Electrolyte through Multiple Doping based on Thermodyamics Consideration** **C 15.13**
Inechia Ghevanda, Kuan-Zong Fung
Department of Material Science and Engineering, National Cheng Kung University, Taiwan

17:30 **Introducing transition metal dopants into metal oxide Li-ion anodes ? Effect of the dopant nature and the base metal oxide** **C 15.14**
Yanjiao Ma, Stefano Passerini, and Dominic Bresser
Helmholtz Institute Ulm (HIU), Helmholtzstrasse 11, 89081 Ulm, Germany
Karlsruhe Institute of Technology (KIT), P.O. Box 3640, 76021 Karlsruhe, Germany

17:30 **Synthesis of Polyaniline/Co(OH)2/Ni(OH)2 nanocomposite electrode material for supercapacitor applications** **C 15.15**
Vijaykumar V. Jadhav, Janardhan H. Shendkar, Rajaram S. Mane
School of Chemistry, University College of Cork, Ireland

17:30 **An ultrafast battery performing as a supercapacitor: electrode tuning for high power performance and long cycling life** **C 15.16**
Jon Ajuria, Frederic Aguesse
CIC EnergiGUNE

17:30 **METAL ORGANIC FRAMEWORK DERIVED HOLLOW ARRAYS FOR FLEXIBLE ENERGY STORAGE AND CONVERSION** **C 15.17**
Cao Guan, Chenyu Zhu?Wei Huang
Institute of Flexible Electronics, Northwestern Polytechnical University, Xi?an, 710072 China

17:30 **Metal sulfide composite cathodes for next generation all-solid-state lithium sulfur batteries** **C 15.18**
Milad Hosseini, Alberto Varzi, Yuichi Aihara, Stefano Passerini
M.Hosseini, Helmholtz Institute Ulm (HIU), Helmholtzstrasse 11, 89081 Ulm, Germany Karlsruhe Institute of Technology (KIT), P.O. Box 3640, 76021 Karlsruhe, Germany, A. Varzi, Helmholtz Institute Ulm (HIU), Helmholtzstrasse 11, 89081 Ulm, Germany Karlsruhe Institute of Technology (KIT), P.O. Box 3640, 76021 Karlsruhe, Germany, Y. Aihara, Samsung R&D Institute, Japan, S.Passerini, Helmholtz Institute Ulm (HIU), Helmholtzstrasse 11, 89081 Ulm, Germany Karlsruhe Institute of Technology (KIT), P.O. Box 3640, 76021 Karlsruhe, Germany,

17:30 **New colloidal methods for nanotechnology of supercapacitor devices with high active mass** **C 15.19**
J.Milne, R.Poon, I.Zhitomirsky
Department of Materials Science and Engineering, McMaster University, Hamilton, On, Canada

17:30 **XRD, TEM and DSC/TG studies of Li7La3Zr2O12 compound processed by milling and annealing of powders** **C 15.20**
D. Oleszak, T. Pikula, M. Pawlyta, I. Szczygiel, M. Senna, H. Suzuki
Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland, Faculty of Electronics and Information Technology, Lublin University of Technology, Lublin, Poland, Institute of Engineering Materials and Biomaterials, Silesian University of Technology, Gliwice, Poland, Dept. Inorganic Chemistry, Faculty of Engineering and Economics, Wroclaw University of Economics, Wroclaw, Poland, Faculty of Science and Technology, Keio University, Yokohama, Japan, Research Institute of Electronics, Shizuoka University, Hamamatsu, Japan

17:30 **Vanadium pentoxide thin films by atomic layer deposition for energy strorage applications** **C 15.21**
Seungmin Yeo, Jin Joo Ryu, Kanghyeok Jeon, Soo-Hyun Kim, Hyungjun Kim, Gun Hwan Kim, Taek-Mo Chung
Division of Advanced Materials, Korea Research Institute of Chemical Technology (KRICT), Republic of Korea, School of Electrical and Electronic Engineering, Yonsei University, Seodaemun-gu, Seoul 03722, Republic of Korea, School of Materials Science and Engineering, Yeungnam University, Gyeongsan, Gyeongbuk 38541, Republic of Korea

17:30 **Silk Fibroin Li-batteries separators with controllable pore size** **C 15.22**
Ander Reizabal1,2, R. Gonçalves3, C. M. Costa3,4, Leyre Pérez1,2, Jose-Luis Vilas1,2, S. Lanceros-Mendez1,5
1BCMaterials, Basque Center for Materials, Applications and Nanostructures, UPV/EHU Science Park, 48940 Leioa, Spain. 2Macromolecular Chemistry Research Group (LABQUIMAC). Dept. of Physical Chemistry. Faculty of Science and Technology. University of the Basque Country (UPV/EHU), Spain. 3Center of Physics, University of Minho, 4710-058 Braga, Portugal 4Center of Chemistry, University of Minho, 4710-058 Braga, Portugal 5Ikerbasque, Basque Foundation for Science, 48013 Bilbao, Spain

17:30 **High Performance Inkjet-Printed and Flexible NiO Supercapacitors** **C 15.23**
Pavlos Giannakou, Maxim Shkunov
Advanced Technology Institute, University of Surrey

17:30 **Silicon pillared Ti3C2 MXene for Na-ion hybrid capacitors.** **C 15.24**
Phil Maughan, Valerie Seymour, Ramon Bernardo Gavito, Daniel Kelly, Supakorn Tantisriyanurak, Nuria Tapia-Ruiz, Rob Dawson, Sarah Haigh, Robert Young, Nuno Bimbo
Department of Engineering, Lancaster University, Phil Maughan, Nuno Bimbo, Department of Chemistry, Lancaster University, Valerie Seymour, Nuria Tapia-Ruiz, Department of Physics, Lancaster University, Ramon Bernardo Gavito, Robert Young, School of Materials, University of Manchester, Daniel Kelly, Sarah Haigh, Department of Chemistry, University of Sheffield, Supakorn Tantisriyanurak, Rob Dawson,

17:30 **NaMnPO4 nanostructures ?High performing electrode material for Na-ion supercapacitors under ambient and nonambient environments** **C 15.25**
Ananya Chowdhury, Amreesh Chandra
Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur 721302, West Bengal, India, Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur 721302, West Bengal, India

17:30 **Characterisation of lithium rich Rock-Salts oxides** **C 15.26**
Damien Guégan (a), Jean-François Colin (a), Adrien Boulieau (a), Pierre-Etienne Cabelguen (b), Sébastien Martinet (a)
(a)Univ Grenoble Alpes, CEA-LITEN, 17 Avenue des Martyrs, 38000 Grenoble, France, (b) Umicore, Rechargeable Battery Materials, 31 rue du Marais, Brussels BE-1000, Belgium,

17:30 **Investigation on binary CuO/Pt-TiO2 nanocomposite material for high performance supercapacitor** **C 15.27**
Loubaba. Attou1*, dimitri. Schopf2, Boujemaâ. Jaber1,3, and Hamid. Ez-Zahraouy1
1 LaMCScI laboratory, Faculty of Sciences, Mohammed V University, Rabat, Morocco 2 Institute for Materials & Surface Technology (IMST), Kiel, Germany. 3Material Science Platform, UATRS division, CNRST, Rabat, Morocco.

17:30 **Effect of Aliovalent Doping on Stabilization of Co-Free Layered LiNi0.5Mn0.5O2 Cathode for Li-ion Battery Applications** **C 15.28**
Mia Kristina, Kuan-Zong Fung
Department of Materials Science and Engineering, National Cheng Kung University, Taiwan

17:30 **Doped Carbon Xerogels for Lithium/Sodium-ion Battery Anodes** **C 15.29**
Joseph Carabetta, Nathalie Job
Liege University, Dept. of Chemical Engineering ? nanomaterials, Catalysis, Electrochemistry (NCE), Building B6a, Allée du 6 Août 11, 4000 Liège

17:30 **Fluorine doping of LLZO: stabilisation of the cubic phase and enhancement of Li diffusion at low temperatures** **C 15.30**
Stephen R. Yeandel, Benjamin J. Chapman, Peter R. Slater, Pooja Goddard
Loughborough University, Loughborough University, University of Birmingham, Loughborough University

17:30 **Novel 3D-printed Li-air battery design for in operando synchrotron nano-FTIR and X-ray analysis** **C 15.31**
Andre N. Miranda, Leticia F. Cremasco, Lorrane C. C. B. Oliveira, Cristiane B. Rodella, Isaias B. Aragao, Gustavo Doubek
University of Campinas, School of Chemical Engineering, Center for Innovation on New Energies - CINE

17:30 **NiP2/C nanocomposites as a high-performance anode material for sodium ion batteries** **C 15.32**
Jongwon Lee, Seong-Hyeon Hong
Department of Materials Science and Engineering and Research Institute of Advanced Materials, Seoul National University, Seoul, Korea

17:30 **Effect of Aliovalent Doping on Stabilization of Co-Free Layered LiNi0.5Mn0.5O2 Cathode for Li-ion Battery Applications** **C 15.33**
Mia Kristina, Kuan-Zong Fung
Department of Material Science and Engineering, National Cheng Kung University, Taiwan

17:30 **Understanding ionic liquids in the applications to the electrolyte of Li-air batteries** **C 15.34**
Liquan Pi, Clotilde Cucinotta, Patricia Hunt
Imperial College London

17:30 **sp-sp2 hyrbrid conjugated microporous polymers derived Pd encapsulated porous carbon materials for lithium-sulfur batteries** **C 15.35**
Xu Li, Shuzhang Niu, Yanbing He, Changxin Chen, Baohua Li, Feiyu Kang
Xu Li Department of Micro/Nano Electronics, Shanghai Jiao Tong University, Shanghai 200240, China, Graduate School at Shenzhen, Tsinghua University, Shenzhen, 518055, China, School of Materials Science and Engineering, Tsinghua University, Beijing, 100084, China Shuzhang Niu, Yanbing He, Baohua Li, Feiyu Kang Graduate School at Shenzhen, Tsinghua University, Shenzhen, 518055, China, School of Materials Science and Engineering, Tsinghua University, Beijing, 100084, China Changxin Chen Department of Micro/Nano Electronics, Shanghai Jiao Tong University, Shanghai 200240, China

17:30 **Ni(OH)2@Ni core-shell nanochains: a low-cost high-rate performance electrode for energy storage applications** **C 15.36**
Mario Urso 1, Giacomo Torrisi 1, Simona Boninelli 2, Corrado Bongiorno 2, Francesco Priolo 1, Salvo Mirabella 1
1 MATIS IMM-CNR and Dipartimento di Fisica e Astronomia ?Ettore Majorana?, Università di Catania, via S. Sofia 64, 95123 Catania, Italy, 2 IMM-CNR, Z.I. VIII Strada 5, 95121 Catania, Italy.

17:30 **Using transmission electron microscopy to probe the sodiation mechanisms of TiS2 cathodes** **C 15.37**
Katerina E. Aifantis, Pu Hu
University of Florida

17:30 **High capacity and long life-cycle Cr2(NCN)3 anode material for Li-ion batteries ? an X-ray absorption spectroscopy investigatio** **C 15.38**
Jeethu Jiju Arayamparambil 1 2, Markus Mann 3, Richard Dronskowski 3, Antonella Iadecola 4, Lorenzo Stievano1 2, Moulay Tahar Sougrati 1 2
1 Institut Charles Gerhardt-CNRS Université de Montpellier, Montpellier, France, 2ALISTORE-ERI, Amiens, France, 3Institute of Inorganic Chemistry, RWTH Aachen University, Aachen, Germany, 4Réseau sur le Stockage Electrochimique de l?Energie, CNRS FR3459, Amiens, France

17:30 **Building better high-voltage aqueous pseudocapacitive energy storage devices** **C 15.39**
Hemesh Avireddy *1, Bryan Byles 3,4, David Pinto 3,4, Jose Miguel Delgado Galindo 1, Jordi Jacas Biendicho 1, Xuehang Wang 3,4, Cristina Flox 1, Oliver Crosnier 5,6, Thierry Brousse 5,6, Ekaterina Pomerantseva 3,4, Joan Ramon Morante 1,2, Yury Gogotsi 3,4
1 IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930. Sant Adrià de Besòs, Spain. 2 Faculty of Physics, University of Barcelona, Barcelona, Spain. 3 Department of Materials Science & Engineering, Drexel University, Philadelphia, PA 19104, USA. 4 A.J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA 19104, USA. 5 Institut des Matériaux Jean Rouxel (IMN), CNRS UMR 6502-Université de Nantes, 2 rue de la Houssinière BP32229, 44322, Nantes Cedex 3, France. 6 Réseau sur le Stockage Electrochimique de l?Energie, FR CNRS 3459, 80039 Amiens Cedex, France.
*Corresponding: ahemesh@irec.cat

17:30 **Rapidly solidified Fe-Sb alloy anode for sodium-ion batteries** **C 15.40**
Eldho Edison, Sivaramapanicker Sreejith, Srinivasan Madhavi
Eldho Edison, Srinivasan Madhavi School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798, Singapore Sivaramapanicker Sreejith Center for Advanced 2D Materials and Graphene Research Centre, National University of Singapore, 6 Science Drive 2, 117546, Singapore

17:30 **Porous carbon-graphene composites as electrodes for high energy supercapacitors** **C 15.41**
Gelines Moreno-Fernández, Juan L. Gómez-Urbano, Marina Enterría, Teófilo Rojo, Daniel Carriazo
CIC EnergiGUNE, Parque Tecnológico de Álava, 01510 Miñano, Álava, Spain, CIC EnergiGUNE, Parque Tecnológico de Álava, 01510 Miñano, Álava, Spain, CIC EnergiGUNE, Parque Tecnológico de Álava, 01510 Miñano, Álava, Spain, CIC EnergiGUNE, Parque Tecnológico de Álava, 01510 Miñano, Álava, Spain and UPV/EHU, Bilbao, Spain, EnergiGUNE, Parque Tecnológico de Álava, 01510 Miñano, Álava, Spain and IKERBASQUE, Basque Foundation for Science, 48013 Bilbao, Spain

17:30 **Growth and characterization of Nb2O5 microstructures using Tailings from the Penouta Sn?Ta?Nb Deposit as precursor** **C 15.42**
B. Sotillo, F. A. López, I.García-Díaz, P. Fernández
B. Sotillo, P. Fernández Department of Materials Physics, Faculty of Physics, Complutense University of Madrid, Madrid, Spain. F. A. López, I.García-Díaz Centro Nacional de Investigaciones Metalúrgicas (CENIM-CSIC), Avda. Gregorio del Amo, 8, 28040 Madrid, Spain

17:30 **Sn rich Sn-SnSb-NrGO sandwich nanocomposite impregnated into Ni foam for use as a high-rate anode for sodium-ion battery** **C 15.43**
Sambedan Jena, Arijit Mitra, Sparsh Agrawal, Karabi Das, Subhasish B. Majumder, Siddhartha Das
School of Nano Science and Technology, Indian Institute of Technology Kharagpur, West Bengal, India, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, West Bengal, India, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, West Bengal, India, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, West Bengal, India, Materials Science Centre, Indian Institute of Technology Kharagpur, West Bengal, India, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, West Bengal, India,

17:30 **Functional and structural transformation of LiMn2O4 Battery Cathodes During Lithiation and Degradation studied by Scanning Pro** **C 15.44**
D.O. Alikin, B.N. Slautin, K.N. Romanyuk, D. Rosato, A.L. Kholkin
School of Natural Science and Mathematics, Ural Federal University, 620002, Ekaterinburg, Russia, Physics Department & CICECO ? Aveiro Institute of Materials, University of Aveiro, 3810-193, Aveiro, Portugal, School of Natural Science and Mathematics, Ural Federal University, 620002, Ekaterinburg, Russia, Physics Department & CICECO ? Aveiro Institute of Materials, University of Aveiro, 3810-193, Aveiro, Portugal, Robert Bosch GmbH, 70839 Gerlingen-Schillerhoehe, Germany, School of Natural Science and Mathematics, Ural Federal University, 620002, Ekaterinburg, Russia, Physics Department & CICECO ? Aveiro Institute of Materials, University of Aveiro, 3810-193, Aveiro, Portugal,

17:30 **Origin of the magnetic field dependent effects in supercapacitors ? Contribution from electrode materials to electrolytes** **C 15.45**
Vikas Sharma[1], Sudipta Biswas [2], Ananya Chowdhury [2], and Amreesh Chandra[1],[2]
[1] School of Nanoscience and Technology, [2] Department of Physics Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, INDIA

17:30 **Interfacial Lithium Storage of LiF-NiFe2O4 Composite Thin Films Cathode for Li-ion Batteries** **C 15.46**
Yu Zhao, Kaiyuan Wei,Yanhua Cui, Yixiu Cui, Jian Li, Lin Xu
Institute of Electronic Engineering, China Academy of Engineering Physics

17:30 **Preparation of Supercapacitors with High Nitrogen Biomass Materials and Analysis of Nitrogen Forms** **C 15.47**
Jie Lian 1, Lingshan Xiong 1, Ru Cheng 1, Dongqiang Pang 1, Xiuquan Tian 1, Jia Lei 1, Rong He 1, Xiangrui Su 2, Tao Duan 1 *, and Wenkun Zhu 1,2 *
1. State Key Laboratory of Environment-friendly Energy Materials, School of National Defense Science and Technology, Southwest University of Science and Technology, Mianyang, Sichuan 621010, P. R. China. 2. China Jiliang University, Hangzhou, Zhejiang,310018, P. R. China 3. Sichuan Co-Innovation Center for New Energetic Materials, Southwest University of Science and Technology, Mianyang, Sichuan 621010, P. R. China.

17:30 **Effect of Mix Conducting Ba0.5Sr0.5Co0.8Fe0.2O as Cathode Electrocatalyst into Capacity and Cycling Stability of Lithium Oxygen** **C 15.48**
Octavina Novita Sari, Kuan Zong Fung
Department of Materials Science and Engineering, National Cheng Kung University , Hierarchical Green-Energy Materials Research Center, National Cheng Kung University, Tainan, Taiwan

17:30 **Nano-structured TiO2 integrated Functional Electrodes for Advanced Lithium Secondary Batteries** **C 15.49**
Ce Zhang 1, Shengtang Liu 1&2, Yaohua Li 1&2, Fangming Cui 1, Wenbo Yue 2, Xiaojing Yang 2, Wei Yao 1
1. Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology (CAST) No.104 Youyi Street, Haidian District, Beijing 100094, China, 2. Beijing Key Laboratory of Energy Conversion and Storage Materials, College of Chemistry, Beijing Normal University, No. 19, Xinjiekouwai Street, Haidian District, Beijing 100875, China

17:30 **Accelerated ageing method to estimate a reliable cell voltage of electrochemical supercapacitor** **C 15.50**
R. Hachicha 1,3,4* , S. Le Vot 1,2 , R. Zarrougui 3 , O. Fontaine 1,2 , O. Ghodbane 3 and F. Favier 1,2
1 Institut Charles Gerhardt, Université de Montpellier, Campus Triolet, 34095 Montpellier Cedex 5, France. 2 Réseau sur le stockage électrochimique de l?énergie (RS2E), FR CNRS 3 Laboratoire des Matériaux Utiles (LR10INRAP01), Institut national de recherche et d?analyse physico-chimique, Biotechpole Sidi Thabet,2020, Ariana, Tunisia. 4 Université de Tunis El Manar - Campus Universitaire Farhat Hached Tunis B.P. n° 94 - ROMMANA 1068, Tunisia.

17:30 **Insights on iron doping in alkaline-rich compounds of the Li-Na-Ni--Mn-O system** **C 15.51**
C. Tachouaft1,2, S. De Almeida-Didry2, B. Montigny1, M. Sougrati3, C. Damas2, R. Naèjus2, P.E. Lippens3, J. C. Jumas3, C. Autret3, J. Santos-Peña4
1 Laboratoire de Physico-Chimie des Matériaux et des Electrolytes pour l?Energie (PCM2E), 37200 Tours (France) 2 Research Group Materials, Microelectronics, Acoustics, Nanotechnologies (GREMAN), 37200 Tours (France) 3 ICGM-AIME Case Courrier 15-02, Place Eugène Bataillon, Université de Montpellier, 34095 Montpellier Cedex 5 (France) 4 ERIEE, Institut de Chimie Moléculaire et des Matériaux d'Orsay, Université Paris-Sud, UMR 8182, Rue du doyen Georges Poitou, 91405 Orsay cedex (France)

17:30 **Polymer-Triggered Synthesis is Remedying Metal Anode for All Li-Ion Types Energy Storage in a Fast, Scalable and Inexpensive Way** **C 15.52**
Jong Ho Won, Jeung Ku Kang
Applied Science Institute, Korea Advanced Institute of Science and Technology, Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology

17:30 **Electrophoretically deposited bismuth iron oxide as a remarkable Li-ion battery anode :a binder free green fabrication technique** **C 15.53**
Moumita Dewan and Subhasish Basu Majumder
Materials Science Centre, Indian Institute of Technology Kharagpur, Kharagpur-721302, India.

17:30 **CVD-graphene Layer between MXenes and Ni-foil for High Capacitance Supercapacitors** **C 15.54**
Sunil Kumar and Yongho Seo
Graphene Research Institute, Sejong University, Seoul, 05006, South Korea
Department of Nanotechnology and Advanced Materials Engineering, Sejong University, Seoul, 05006, South Korea

17:30 **Carbonized Silk Fibroin-PEDOT Inverse Opals as a Flexible Electrode for Solid-State Supercapacitor** **C 15.55**
Tsung-Yu Li, Ta-Chung Liu, ,Pei-Sung Hung and San-Yuan Chen*
Material Science and Engineering, National Chiao Tung University, Taiwan (R.O.C)

17:30 **UV-cured gel polymer electrolyte for flexible lithium-ion batteries** **C 15.56**
Almagul Mentbayeva1,2, Sandugash Kalybekkyzy1,3, Al-Farabi Kopzhasar1, Memet Vezir Kahraman3, Zhumabay Bakenov1,2
1National Laboratory Astana, Nazarbayev University, Astana, 010000, Kazakhstan, 2School of Engineering, Nazarbayev University, Astana, 010000, Kazakhstan, 3Department of Chemistry, Marmara University, Istanbul, 34722, Turkey.

17:30 **A new fluorophosphate cathode material for sodium-ion batteries** **C 15.57**
Xuelian Liu, Jiande Wang and Alexandru Vlad
Institute of Condensed Matter and Nanosciences (IMCN), Université catholique de Louvain, Place Louis Pasteur 1, B-1348 Louvain-la-Neuve, Belgium

17:30 **Study of Magnetic Field Effect on Solid-State Energy Storage Device using Ni/NiO and Fe2O3 as electrode materials** **C 15.58**
Himadri Tanaya Das, Dr. Perumal Elumalai*
Electrochemical Energy and Sensors Lab, Department of Green Energy Technology, Madanjeet School of Green Energy Technologies, Pondicherry University, Puducherry-605014, India

17:30 **Chemical and Morphological SEI Evolution in FEC-containing Electrolytes** **C 15.59**
Yuri Surace(a), Daniela Leanza(a), Marta Mirolo(a), Carlos Vaz(b), Mario El Kazzi(a), Petr Novák(a), Sigita Trabesinger(a)
a) Electrochemical Energy Storage Section, Electrochemistry Laboratory, Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland b) Swiss Light Source, Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland

17:30 **Binder-free bimetallic nickel iron telluride as advanced anode for sodium ion battery** **C 15.60**
Ching-Chen Chang1, Yu-Ze Chen1, Shu-Chi Wu1, Yu-Lun Chueh1*
1Department of Material Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan

17:30 **Redesigning High-Performance Rechargeable Zn/MnO2 Based Batteries** **C 15.61**
Frank Meng Shize
Nanyang Technological University School Of Materials Science and Engineering

17:30 **Structural aspects of the LATP degradation in air and argon** **C 15.62**
Mariam Pogosova, Irina Krasnikova, Artem Sergeev, Andriy Zhugayevych, Keith Stevenson
Skolkovo Institute of Science and Technology

17:30 **Charge Storage Performances of N-Doped Carbon Nanotubes** **C 15.63**
Qi Zhu1, Andrés Botello2, EMILIO MUÑOZ-SANDOVAL2, FLORENTINO LÓPEZ-URIAS2, Jean-Christophe Charlier1 and Alexandru Vlad1
1 IMCN, Place Louis Pasteur 1, B-1348 Louvain-la-Neuve, Belgium, 2 Advanced Materials Department, IPICYT, Mexico

17:30 **Designing of an Advanced High-Performance Asymmetric Supercapacitor based on Microcubical PB@MnO2 Hybrid and PANI/GNP Composite** **C 15.64**
Amit Kumar Das, Bhanu Bhusan Khatua
Materials Science Centre, Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, India

17:30 **3D network Polypyrrole nanotube/N-doped graphene and core-shell MoO3/PPy/MoS2 for high performances of asymmetric supercapacitor** **C 15.65**
Fitri Nur Indah Sari, Jyh-Ming Ting
Hierarchical Green-Energy Materials (Hi-GEM) Research Center and Department of Materials Science and Engineering, National Cheng Kung University, Tainan (70101), Taiwan

17:30 **Electrochemical down-scaling of metal oxide nanoparticles for energy storage and conversion** **C 15.66**
Hyung Mo Jeong
Department of Materials Science & Engineering, Kangwon National University

17:30 **Combining redox addtive modified electrolytes with hollow nanostructures of metal oxides for next generation supercapacitors** **C 15.67**
Vikas Sharma1, Amreesh Chandra1,2
1 School of Nanoscience and Technology, Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, INDIA , 2 Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, INDIA

17:30 **Unexpected Contribution of Current Collector to the Al-ion Battery Cost** **C 15.68**
David Muñoz-Torrero, Jesús Palma, Rebeca Marcilla, Edgar Ventosa
Electrochemical Processes Unit, IMDEA Energy Institute Móstoles (Madrid), Spain.

17:30 **Structure and Dynamics of Li-rich Li1+xAlxTi2-x(PO4)3 (LATP), where 0.3< x< 0.5: A Combined Computational and Experimental Study** **C 15.69**
Ryan Sharpe1, David Case1, Adam McSloy1, Stephen Yeandel1, Enke Dashjav2, Frank Tietz2, Pooja Goddard*1
1Department of Chemistry, Loughborough University, Loughborough, 2Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research (IEK-1), 52425 Jülich, Germany

17:30 **Aging behavior of ceramic and composite electrolytes for Li-ion batteries** **C 15.70**
Irina V. Krasnikova, Mariam A. Pogosova, Keith Stevenson
Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, 121205, Moscow, Russian Federation

17:30 **Defect engineering of MnO2 nanosheets for micro-supercapacitors** **C 15.71**
Yang Wang1, Yi-Zhou Zhang2, Yu-Qiang Gao1, Johan E. ten Elshof1
1. University of Twente, MESA Institute for Nanotechnology, P.O. Box 217 7500AE, Enschede, The Netherlands 2. Materials Science and Engineering, Physical Science and Engineering Division, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia

17:30 **POLYANILINE-MWCNTS COMPOSITES FOR HIGH PERFORMANCE SUPERCAPACITOR APPLICATION** **C 15.72**
Muhammad Tayyab Ahsan, Muhammad Aftab Akram*, Ramsha Khan
School of Chemical and Materials Engineering National University of Sciences and Technology Pakistan

17:30 **Exploring Iron and Vanadium based Mixed Polyanionic Cathode Materials** **C 15.73**
Baskar Senthilkumar1,2*, Shoubham Lochab1 and Prabeer Barpanda1
1Faraday Materials Laboratory, Materials Research Centre, Indian Institute of Science, C.V. Raman Avenue, Bangalore, 560012, India. 2Laboratoire de Reactivite de Chimie des Solides (LRCS), CNRS UMR 7314, Universitede Picardie Jules Verne, 80039 Amiens Cedex, France

17:30 **High temperature stable lithium sulfur batteries enabled by Porous reduced graphene oxide (PRGO) synthesized via chemical method** **C 15.74**
Abdullah Aljaafari, Faheem Ahmed, Hatem Abuhimd
Physics Department, King Faisal University, Alahsa, Saudi Arabia, Physics Department, King Faisal University, Alahsa, Saudi Arabia, National Nanotechnology Center, King Abdulaziz City for Science and Technology. Riyadh, Saudi Arabia

17:30 **Native Oxide Layer in Silicon Anodes for Lithium/Sulfur Batteries** **C 15.75**
Luca Silvi, Arne Ronneburg, Sebastian Risse, Matthias Ballauff
Institute for Soft Matter and Functional Materials, Institute for Soft Matter and Functional Materials, Institute for Soft Matter and Functional Materials, Institute for Soft Matter and Functional Materials,

17:30 **Synthesis of Two-dimensional Tellurium Nanoflakes for High-Rate Sodium-ion Battery Cathodes** **C 15.76**
Pin-Jung Chen, Yu-Ze Chen, Shu-Chi Wu, Xiao Qiu, Yu-Lun Chueh
Department of Material Science and Engineering, Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu,Department of Material Science and Engineering, Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu, Department of Material Science and Engineering, Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu, School of Materials Science and Engineering, Hefei University of Technology, Anhui Hefei 230009, P. R. China, Department of Material Science and Engineering, Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu

17:30 **Prelithiated Molybdenum Diselenide (MoSe2) as Alternative Cathode Materials for Lithium-Ion Batteries** **C 15.77**
Joong-Hee Han(1), Anish-Raj Kathribail(1), Hyungil Jang(2), Do-Young Ahn(2), Sung-Hwan Han(2), Marcus Jahn(2)
1. Electric Drive Technologies, Center for Low-emission Transport, Austrian Institute of Technology, Giefinggasse 2, 1210, Vienna, Austria. 2. Department of Chemistry, Hanyang University, 222, Wangsimni-ro, Seongdong-gu, Seoul 04763, Republic of Korea.

17:30 **Control of swelling behavior of anode of Li ion batteries by microstructural engineering** **C 15.78**
Keemin Park1, Jeongheon Kim1, Seho Sun1, Dongsoo Lee1, Seoungcheol Myeong1, Kangchun Lee1, Seungwoo Lee1, Yeongil Jung2, Taeseup Song1, Ungyu Paik1*
1Department of Energy Engineering, Hanyang University, Seoul, Republic of Korea, 133-791, 2School of Nano & Advanced Materials Engineering, Changwon National University, Changwon, South Korea, *E-mail address: upaik@hanyang.ac.kr

17:30 **High-Performance Pseudocapacitive Polymer Chain Electrode Based on Graphene for Aqueous/Nonaqueous Hybrid Energy Storages** **C 15.79**
Il woo Ock, Jeung ku Kang*
Korea Advanced Institute of Science and Technology (KAIST)

17:30 **Towards high-energy alkaline flow batteries by enabling charge storage in solid materials** **C 15.81**
Teresa Páez, Jesús Palma and Edgar Ventosa*
Electrochemical Processes Unit, IMDEA Energy Institute E-28933, Móstoles (Madrid), Spain E-mail: edgar.ventosa@imdea.org

17:30 **All-Climate Aqueous Fiber-Shaped Supercapacitors with Energy Density and High Safety** **C 15.82**
Jianli Cheng, Bin Wang*
Institute of Chemical Materials, China Academy of Engineering Physics

17:30 **Chemically Reduced Graphene Oxide for Improved Ultracapacitor** **C 15.83**
Plawan Kumar Jha, Kriti Gupta, Vikash Kumar, Shammi Rana, Devashree Roy, Anil Krishna Debnath, and Nirmalya Ballav
Department of Chemistry, Indian Institute of Science Education and Research Pune, Dr Homi Bhabha Road, Pashan, Pune-411008, India.

17:30 **Synthesis of Pseudocapacitive Porous Metal Oxide Nanoclusters Anchored on Graphene for Aqueous Hybrid Capacitors** **C 15.84**
Jae Won Choi, Jeung Ku Kang
Graduate School of EEWS (Energy, Environment, Water and Sustainability), Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology

17:30 **Cu Ion Implantation improves the performance of Si film anode used in Lithium ion battery** **C 15.85**
Zheng-Guang Hu, Zhi-Yuan Tan, Zhong Lin, Jun Chen, Bao-Shun Wang, Li-Fei Tian, Rui-Ting Zheng, Yong-Chong Chen, Guo-An Cheng
Key Laboratory of Beam Technology and Material Modification of the Ministry of Education,College of Nuclear Science and Technology, Beijing Normal University, Beijing 100875,China

17:30 **Rationally Designed 3D Free-Standing Lithiophilic Beta-Silver Nanowire Aerogels for Lithium Metal/Alloy Batteries** **C 15.86**
Nutthaphon Phattharasupakun, Juthaporn Wutthiprom, Salatan Duangdangchote, Montree Sawangphruk*
Centre of Excellence for Energy Storage Technology (CEST), Department of Chemical and Biomolecular Engineering, School of Energy Science and Engineering, Vidyasirimedhi Institute of Science and Technology, Rayong 21210, Thailand

17:30 **Modification and performance improvement of CoS2-based cathode for thermal battery** **C 15.87**
Yong Cao, Chao Wang, Xiaowei Yang, Liangping Dong
Institute of Electronic Engineering, China Academy of Engineering Physics, Mianyang, Sichuan, 621000, P. R. China

17:30 **Size Tunable Synthesis and Surface Chemistry of Metastable TiO2-Bronze Nanocrystals, a new anode material for Li-ion batteries** **C 15.88**
Jonas Billet, Wouter Dujardin, Katrien De Keukeleere, Klaartje De Buysser, Jonathan De Roo, Isabel Van Driessche
Jonas Billet, Wouter Dujardin, Katrien De Keukeleere, Klaartje De Buysser, Jonathan De Roo, Isabel Van Driessche Department of Chemistry, Ghent University, Gent B-9000, Belgium Jonathan De Roo Department of Chemistry, Columbia University, New York, NY 10027, USA

17:30 **Hexagonal Phase NiS Octahedrons co-Modified by 0D-, 1D-, and 2D Carbon Materials for High-Performance Supercapacitor** **C 15.89**
Rui Zhang, Chengxing Lu, Zhaoliang Shi, Tong Liu, Wei Zhou*
School of Chemistry, Beihang University, Beijing, 100191, China

17:30 **Solvent evaporation induced graphene powder with high volumetric capacitance and outstanding rate capability for supercapacitors** **C 15.90**
Xiaozhe Zhang, Xufeng Zhoua, Zhaoping Liu, Alexandru Vlad
Université catholique de Louvain, Institute of Condensed Matter and Nanoscience (IMCN), B-1348 Louvain-la-Neuve,Belgium. Key Laboratory of Graphene Technologies and Applications of Zhejiang Province and Advanced Li-ion Battery Engineering Laboratory, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Zhejiang 315201, PR China.

17:30 **AIR STABLE LITHIUM CONTAINING CATHODE ELECTRODE MATERIALS FOR ORGANIC BATTERIES** **C 15.91**
Jiande Wang, Alaeddine Lakraychi, Cristian Morari, Geo Borodi, Alia Jouhara, Louis Sieuw, Philippe Poizot and Alexandru Vlad*
[a] Institute de la Matiere Condense et des Nanosciences (IMCN), Universite catholique de Louvain, Place L.Pasteur 1, 1348 Louvain-la-Neuve, Belgium. [b] Institut des Materiaux Jean Rouxel (IMN), UMR CNRS 6502, Universite de Nantes, 2 rue de la Houssiniere, B.P. 32229, 44322 Nantes Cedex 3, France. [c] Institutul National de Cercetare-Dezvoltare pentru Tehnologii Izotopice si Moleculare Cluj-Napoca, Str. Donat nr. 67-103 PO 5 Box 700 400293 Cluj-Napoca, Romania.

17:30 **STRUCTURAL AND ELECTROCHEMICAL HYDROGEN STORAGE PROPERTIES OF THE SPINEL FERRITE ALLOY** **C 15.92**
Wissem Zayani (a), Samir Azizi (a), Karam S. El-Nasser (b,c) , Yassine Ben Belgacem (a) , Ibraheem Othman Ali (b,d) , Nouredine Fenineche (e) , Hamadi Mathlouthi (a)
(a) Université de Tunis, ENSIT, LR99ES05, Montfleury, 1008 Tunis, Tunisia (b) Chemistry Department, College of Science and Arts, Aljouf wissemzayani20193@gmail.com (c) Department of Chemistry, Faculty of Science, Al-Azhar University, Nasr City 11884, Cairo, Egypt (d) Physics Department, College of Science and Arts, Aljouf University, Alqurayyat, KSA (e) IRTES-LERMPS/FR FCLAB, UTBM, Site de Sévenans, 90010, Belfort Cedex, France

17:30 **A versatile electrochemical setup for Ca and Mg cells** **C 15.93**
R. Dugas, A. Ponrouch
ICMAB-CSIC

17:30 **Study of SEI Components Enabling Calcium Plating and Stripping** **C 15.94**
Juan Forero-Saboya,1 Ibraheem Yousef,2 Carine Davoisne,3 Rémi Dedryvere,4 Pieremanuele Canepa,5 Alexandre Ponrouch1
1. ICMAB-CSIC, 2. ALBA Synchrotron, 3. LRCS, 4. IPREM, 5. National University of Singapore

17:30 **Hybrid NMC-LFP cathode materials for pulse power delivery applications** **C 15.95**
Mihaela Buga1, Adnana Spinu-Zaulet1, Alexandru Rizoiu1, Radu Ene1, Alin Chitu1, Alexandru Vlad2
1National R&D Institute for Cryogenics and Isotopic Technologies - ICSI Energy, Rm.Valcea, Romania 2Université catholique de Louvain, IMCN &#8211, MOST, Belgium

17:30 **Sodium Metal Anodes &#8211, The Influence of Neglected Parameters** **C 15.0**
Rico Rupp, Alexandru Vlad
Institute of Condensed Matter and Nanosciences (IMCN)

Friday 31 may 2019

Li-S and Li-O2 batteries : Olivier Fontaine

08:30 **Metal-Oxide Decorated, Nitrogen-Doped Carbon Nanotube Impregnated Gas Diffusion Layers as Air Electrodes for Zn-Air Batteries** **C 17.1**
Drew Aasen, Michael Clark, Douglas. G. Ivey
Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta, Canada, T6G 1H9

08:45 **Phase evolution in Li-O2 batteries as seen by operando small angle X-ray scattering** **C 17.2**
Christian Prehal, Aleksej Samojlov, Heinz Amenitsch, Stefan A. Freunberger
Institute for Chemistry and Technology of Materials, Graz University of Technology, Stremayrgasse 9/V, 8010 Graz, Austria, Institute for Chemistry and Technology of Materials, Graz University of Technology, Stremayrgasse 9/V, 8010 Graz, Austria, Institute for Inorganic Chemistry, Graz University of Technology, Stremayrgasse 9/IV, 8010 Graz, Austria, Institute for Chemistry and Technology of Materials, Graz University of Technology, Stremayrgasse 9/V, 8010 Graz, Austria,

09:00 INV **Oxygen redox and singlet oxygen in non-aqueous battery chemistries** **C 17.3**
N. Mahne, Y. Petit, E. Mourad, L. Schafzahl, S. Renfrew, D. Kramer, O. Fontaine, C. Slugovc, S. Brutti, B.D. McCloskey, S.M. Borisov, S. A. Freunberger
Graz University of Technology, Graz University of Technology, Graz University of Technology, Graz University of Technology, UC Berkely, University of Southampton, University of Montpellier, Graz University of Technology, Sapienza University Rome, UC Berkely, Graz University of Technology, Graz University of Technology

09:30 **Redox mediators for high performance Li?S batteries** **C 17.4**
R. Bouchal,1 S. D. Talian,2,3 S. Fantini,4 R. Dominko,2,3,5 and P. Johansson1,5
1. Department of Physics, Chalmers University of Technology, 412 96 Gothenburg, Sweden 2. Department of Materials Chemistry, National Institute of Chemistry, Hajdrihova 19, 1000 Ljubljana, Slovenia 3. Faculty of Chemistry and Chemical Technology University of Ljubljana, Vec?na pot 113, 1000 Ljubljana, Slovenia 4. Solvionic SA, Chemin de la Loge, FR-31078 Toulouse, France 5. ALISTORE-ERI, CNRS FR 3104, Hub de l?Energie, Rue Baudelocque, 80039 Amiens Cedex, France

09:45 **Multidimensional Operando Analysis of Li/S batteries with Neutrons and Photons** **C 17.5**
Sebastian Risse (a), Eneli Härk (a), Ben Kent (a), Ingo Manke (b), André Hilger (b), Nikolay Kardjilov (b) and Matthias Ballauff (a,c)
(a) Helmholtz-Zentrum Berlin, Institute of Soft Matter and Functional Materials, Hahn-Meitner-Platz 1, 14109 Berlin, Germany (b) Helmholtz-Zentrum Berlin, Institute of Applied Materials, Hahn-Meitner Platz 1, 14109 Berlin, Germany (c) Institute of Physics, Humboldt-University Berlin, Unter den Linden 6, 10099 Berlin, Germany

10:00 **Coffee Break**

Advanced Anode Materials : Mathieu Morcrette

10:30 **Pure Silicon Anodes for Li-ion batteries** **C 18.1**
Wim Soppe, Frans Ooms, Mario Marinaro, Klaus Brandt, Zhaolong Li, Arjen Didden
W. Soppe - ECN.TNO, Frans Ooms - Delft University, Mario Marinaro - ZSW, Klaus Brandt - Akku Brandt, Zhaolong Li and Arjen Didden - Leyden Jar Technologies,

10:45 **Solid Solution Phosphide (Mn1-xFexP) as a Tunable Conversion/Alloying Hybrid Anode for Lithium-Ion Batteries** **C 18.2**
Kyeong-Ho Kim, Seong-Hyeon Hong
Department of Materials Science and Engineering and Research Institute of Advanced Materials, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 151-744, Korea

11:00 **The amazing electrochemical potential of FeNb11O29 as anode for LIBs** **C 18.3**
D. Spada, I. Quinzeni, D. Capsoni, M. Bini
Dept. of Chemistry, University of Pavia, viale Taramelli 16, 27100 Pavia Italy

11:15 **Solid electrolyte interface formation on lithium silicide and lithium silicate thin films** **C 18.4**
Yun Xu, Jaclyn Coyle, Caleb Stetson, Kevin Wood, Eric Sivonxay, Chaiwat Engtrakul, Chunsheng Jiang, Glenn Teeter, Svitlana Pylypenko, Conrad Stold Sang-Don Han, Kristin A. Persson, Anthony Burrell, and Andriy Zakutayev
National Renewable Energy Laboratory, University of Colorado Boulder, Colorado School of Mines, Lawrence Berkeley National Laboratory

11:30 **Synthesis of macroporous carbon from soy industry waste: The path ahead in future energy systems.** **C 18.5**

Dr. Vidya Chamundeswari Narasimhan*, Dr Rohit Satish, Dr Joachim Say Chye Loo*
* School of Materials Science and Engineering, Nanyang Technological University, Singapore 639977

11:45 **Siloxene: A potential layered silicon intercalation anode for Na, Li and K ion batteries** **C 18.6**

Laura C. Loaiza, Laure Monconduit, Vincent Seznec
Laura C. Loaiza (Laboratoire de Réactivité et Chimie des Solides (CNRS UMR 7314), Université de Picardie Jules Verne, 33 Rue Saint Leu, 80039 Amiens Cedex, France.), Laure Monconduit (Institut Charles Gerhardt -AIME (CNRS UMR 5253), Université de Montpellier CC 15-02, Pl. E. Bataillon, 34095 Montpellier Cedex 5, France. Réseau sur le Stockage Electrochimique de l?Energie (RS2E), CNRS FR3459, 33 Rue Saint Leu, 80039 Amiens, Cedex, France. ALISTORE European Research Institute, Université de Picardie Jules Verne, 33 rue Saint Leu, 80039 Amiens Cedex, France), Vincent Seznec (Laboratoire de Réactivité et Chimie des Solides (CNRS UMR 7314), Université de Picardie Jules Verne, 33 Rue Saint Leu, 80039 Amiens Cedex, France.Réseau sur le Stockage Electrochimique de l?Energie (RS2E), CNRS FR3459, 33 Rue Saint Leu, 80039 Amiens, Cedex, France.ALISTORE European Research Institute, Université de Picardie Jules Verne, 33 rue Saint Leu, 80039 Amiens Cedex, France.)

12:00 **Phosphorus-based anodes for potassium-ion batteries: insights from computational structure prediction** **C 18.7**

Matthew L. Evans [1], Kent J. Griffith [2, 3], Andrew J. Morris [4]
[1] Cavendish Laboratory, University of Cambridge, JJ Thomson Avenue, Cambridge, CB3 0HE, [2] Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge, CB2 1EW and [3] Department of Materials Science and Engineering, Northwestern University, USA, [4] School of Metallurgy and Materials, University of Birmingham, Edgbaston, Birmingham, B15 2TT

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM D

Advances in silicon-nanoelectronics, -nanostructures and high-efficiency Si-photovoltaics

Symposium Organizers :

Daniel HILLER, ANU, Acton, Australia

Paul STRADINS, NREL, Golden, USA

Ray DUFFY, University College, Cork, Ireland

Steffen Strehle, Ilmenau University of Technology, Germany

To be published in Physica Status Solidi, Wiley

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RAITH NANOFABRICATION

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Monday 27 may 2019

08:50 **Welcome & Opening Remarks**

Si-Photovoltaics I : Session Chairs: J. Bullock, D. Hiller

09:00 INV **Passivating contacts for silicon and perovskite solar cells** **D 1.1**
Stefaan De Wolf
KAUST Solar Center (KSC), King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia.

09:30 **Selective deposition of thin silicon layers for back-contacted silicon heterojunction solar cells with interband tunnel junction** **D 1.2**
Bertrand Paviet-Salomon, Curdin Wüthrich, Laurie-Lou Senaud, Gabriel Christmann, Antoine Descoeudres, Sylvain Nicolay, Matthieu Despeisse, and Christophe Ballif
CSEM, PV-Center, Rue Jaquet-Droz 1, CH-2002 Neuchâtel, Switzerland

09:45 **Phosphorous Catalytic-doping of Intrinsic Silicon Materials for the Use in Silicon Heterojunction Solar Cells** **D 1.3**
Yong Liu, Manuel Pomaska, Depeng Qiu, Friedhelm Finger, Kaining Ding
IEK5-Photovoltaik, Forschungszentrum Jülich, 52425 Jülich, Germany

10:00 **Coffee Break**

Si-Photovoltaics II : Session Chairs: S. De Wolf, P. Stradins

10:30 INV **Low temperature passivated contacts for crystalline silicon solar cells** **D 2.1**
Dr. James Bullock
Department of Electrical and Electronic Engineering, University of Melbourne, Melbourne, Victoria, Australia.

11:00 **Improved surface passivation by wet texture, ozone-based cleaning and PECVD processes for high-efficiency SHJ solar cells** **D 2.2**
Anna Belen Morales Vilches, Er-Chien Wang, Tobias Henschel, Stefan Janke, Matthias Kubicki, Lars Korte, Bernd Stannowski, Rutger Schlatmann
Helmholtz-Zentrum Berlin, PVcomB, Schwarzschildstr. 3, 12489, Berlin, Germany, Helmholtz-Zentrum Berlin, Institut for Silicon Photovoltaics, Kekuléstr. 5, 12489, Berlin, Germany.

11:15 **Approach for highly productive fabrication of heterojunction solar cells using a VHF-PECVD process** **D 2.3**
Barbara Leszczynska, Dr. Carsten Strobel, Sebastian Leszczynski, Sylva Waurenschk, Sören Röhlecke, Dr. Frank Stahr, Dr. Ulf Stephan, Dr. Matthias Albert, Dr. Jürgen Kuske, Prof. Johann Wolfgang Bartha,
Barbara Leszczynska, Dresden University of Technology, Semiconductor and Microsystems Technology Laboratory, 01062 Dresden, Germany, barbara.leszczynska@tu-dresden.de, Dr. Carsten Strobel, Dresden University of Technology, Semiconductor and Microsystems Technology Laboratory, 01062 Dresden, Germany, carsten.strobel@tu-dresden.de, Sebastian Leszczynski, Dresden University of Technology, Semiconductor and Microsystems Technology Laboratory, 01062 Dresden, Germany, Sebastian_Sylwester.Leszczynski@tu-dresden.de, Sylva Waurenschk, Dresden University of Technology, Semiconductor and Microsystems Technology Laboratory, 01062 Dresden, Germany, sylva.waurenschk@tu-dresden.de, Sören Röhlecke, Forschungs- und Applikationslabor Plasmatechnik GmbH, Gostritzer Str. 67, 01217 Dresden, Germany, roehlecke@fap-gmbh.de, Dr. Frank Stahr, Forschungs- und Applikationslabor Plasmatechnik GmbH, Gostritzer Str. 67, 01217 Dresden, Germany, fap.stahr@online.de, Dr. Ulf Stephan, Forschungs- und Applikationslabor Plasmatechnik GmbH, Gostritzer Str. 67, 01217 Dresden, Germany, stephan@fap-gmbh.de, Dr. Matthias Albert, Dresden University of Technology, Semiconductor and Microsystems Technology Laboratory, 01062 Dresden, Germany, matthias.Albert@tu-dresden.de, Dr. Jürgen Kuske, Forschungs- und Applikationslabor Plasmatechnik GmbH, Gostritzer Str. 67, 01217 Dresden, Germany, fap.kuske@online.de, Prof. Johann Wolfgang Bartha, Dresden University of Technology, Semiconductor and Microsystems Technology Laboratory, 01062 Dresden, Germany, johann.bartha@tu-dresden.de,

11:30 **Influence of MoOx and (i)a-Si:H layer thicknesses on the properties and stability of c-Si heterojunction solar cells** **D 2.4**
Julie Dréon, Christophe Ballif and Mathieu Boccard
Ecole Polytechnique Fédérale de Lausanne (EPFL) Institute of Micro Engineering (IMT) Photovoltaics and Thin Film Electronic Laboratory (PV-Lab)

11:45 **Low-temperature GaN on Si as a transparent, carrier-selective contact for heterojunction solar cells** **D 2.5**
Angela N. Fioretti, Yashi Xiao, Mathieu Boccard, Christophe Ballif
Ecole Polytechnique Federale de Lausanne

12:00 **Photovoltaic structures based on ZnO/Si heterojunction – new concept** **D 2.6**
R. Pietruszka1, B.S. Witkowski1, M.Ozga1, P. Sybilski1, M. Godlewski1
1Institute of Physics, Polish Academy of Sciences, Aleja Lotnikow 32/46, PL-02668 Warsaw, Poland

12:15 **The effect of the pH values of the NH4F: H2O2 solutions on the structural and optical properties of silicon nanowires** **D 2.7**
K.A. Gonchar1, V.Yu. Kitaeva1, G.A. Zharik1, A.A. Eliseev2,3, L.A. Osminkina1,4
1 Physics Department, Lomonosov Moscow State University, Leninskie Gory 1, 119991 Moscow, Russia, 2 Chemistry Department, Lomonosov Moscow State University, Leninskie Gory 1, 119991 Moscow, Russia, 3 Faculty of Materials Science, Lomonosov Moscow State University, Leninskie Gory 1, 119991 Moscow, Russia, 4 Institute for Biological Instrumentation of Russian Academy of Sciences, 142290 Pushchino, Moscow Region, Russia

12:30 **Lunch**

Si-Photovoltaics III : Session Chairs: H. Savin, S. Strehle

14:00 INV **Nanoscale thin films for contact and surface passivation of silicon solar cells** **D 3.1**
Bram Hoex, Tian Zhang, Chang-Yeh Lee, Kean Khoo, Geedhika Poduval, Borong Sang, Anower Hossain, Mike Pollard
School of Photovoltaic and Renewable Energy Engineering, UNSW Sydney, Sydney, Australia

14:30 **Nanoscale Study of the Hole-selective Passivating Contacts for High-Efficiency Silicon Solar Cells Using C-AFM Tomography** **D 3.2**
Matěj Hývl (1), Gizem Nogay (2), Philipp Loper (2), Andrea Ingenito (2), Martin Ledinský (1), Christophe Ballif (2), Antonín Fejfar (1)
(1) Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnická 10, 162 00 Prague 6, Czech Republic (2) Ecole Polytechnique Fédérale de Lausanne (EPFL), Institute of Microengineering (IMT), Photovoltaics and Thin-Film Electronics Laboratory (PV-Lab), Rue de la Maladière 71b, 2000 Neuchâtel, Switzerland

14:45 **Modeled I-V signatures in highly efficient PERC mass production data** **D 3.3**
Matthias Müller, Tobias Urban, Johannes Heitmann
TU Bergakademie Freiberg, Institute of Applied Physics, Leipzigerstr. 23, 09599 Freiberg, Germany, TU Bergakademie Freiberg, Institute of Applied Physics, Leipzigerstr. 23, 09599 Freiberg, Germany, TU Bergakademie Freiberg, Institute of Applied Physics, Leipzigerstr. 23, 09599 Freiberg, Germany,

15:00 **Boron-doped Epitaxial Silicon Films by Low Temperature PECVD** **D 3.4**
Marta Chrostowski(1, 2, 3), Wanghua Chen(3), Rafaël Peyronnet(3), José Alvarez(3,4), Etienne Drahi(2, 3), Pere Roca i Cabarrocas(1, 3)
1LPICM, CNRS, Ecole Polytechnique, Université Paris-Saclay, 91128, Palaiseau, France 2 TOTAL New Energies, 24 cours Michelet, 92069 Paris La Défense Cedex, France 3 Institut Photovoltaïque d'Ile-de-France (IPVF) – 30 Route Départementale 128, 91120 Palaiseau, France 4GeePs, CNRS/Centrale Supélec, 11 rue Joliot-Curie, Plateau de Moulon, F-91192 Gif-sur-Yvette Cedex, France

15:15 **Sintering of Si ingots and wafers from Si powders by hot pressing or spark plasma techniques** **D 3.5**
A.Ulyashin*, A. Azar*, J. S. Graff*, N. Abrosimov**, T. Kaden***
*SINTEF Material and Chemistry, Oslo, Norway ** IKZ, Berlin, Germany *** THM, Freiberg, Germany

15:30 **Coffee Break**

Si-Photovoltaics IV : Session Chairs: B. Hoex, R. Duffy

16:00 INV **Industrial applicability of dry-etched black silicon on PERC solar cells and modules** **D 4.1**
Toni P. Pasanen, Ville Vähänissi, Ismo T. S. Heikkinen, Hele Savin
Aalto University, Department of Electronics and Nanoengineering, Tietotie 3, 02150 Espoo, Finland

16:30 **Towards solar cells made from solution-grown polysilicon** **D 4.2**
David Uebel, Christian Ehlers, Roman Bansen, Thomas Teubner, Torsten Boeck
Leibniz-Institut für Kristallzüchtung (IKZ)

16:45 **Transport Losses Mitigation for > 24% 2x2 screen-printed Silicon Heterojunction Solar Cells** **D 4.3**
Laurie-Lou Senaud, Antoine Descoeudres, Gabriel Christmann, Jonas Geissbühler, Nicolas Badel, Christophe Allebé, Sylvain Nicolay, Matthieu Despeisse, Christophe Ballif, Bertrand Paviet-Salomon
CSEM, PV-Center, Rue Jaquet-Droz 1, CH-2002 Neuchâtel, Switzerland

17:00 **Enhancement in field-effect passivation using nano-scaled pyramids for light management in diffused junction silicon solar cells** **D 4.4**
Arsalan Razzaq (1, 2), Valerie Depauw (2), Joachim John (2), Ivan Gordon (2), Jozef Szlufcik (2), Jef Poortmans (1, 2, 3, 4)
(1) Department ESAT, KU Leuven, Kasteelpark Arenberg 10, 3001 Leuven, Belgium (2) IMEC, Kapeldreef 75, 3001 Leuven, Belgium (3) U Hasselt, Wetenschapspark 2, 3590 Diepenbeek, Hasselt, Belgium (4) EnergyVille, Thor Park 8320, 3600 Genk, Belgium

17:15 **Study of GaP nucleation layer grown on Si by PE-ALD** **D 4.5**
A.S. Gudovskikh a)b), A.V. Uvarov a), I.A. Morozov a), A.I. Baranov a), K.S. Zelentsov a), D.A. Kudryashov a)
a) St.Petersburg Academic University RAS, St. Petersburg, Russia b) St. Petersburg Electrotechnical University “LETI”, St. Petersburg, Russia

17:30 **Studies on Si/CIGS Epitaxial Tandem Solar Cells** **D 4.6**
O. Durand7, A. Létoublon7, C. Cornet7, A. Zhou7, N. Barreau3, M. Balestrieri2, A. B. Slimane1,4, T. Bidaud4, S. Collin4, M. Feifel5, F. Dimroth5, S. Bechu6, M. Bouttemy6, A. Etcheberry6, M. A. Pinault-Thaury8, F. Jomard8, D. Lincot1,2
1 IPVF, Institut Photovoltaïque d’Ile de France, 30 RD128 91120 Palaiseau, France 2 CNRS, IPVF, 30 RD128 91120 Palaiseau, France 3 Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, BP32229, 44322 Nantes, France 4 Centre de Nanosciences et de Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, C2N - Orsay, 91405, Orsay, France 5 Fraunhofer Institute for Solar Energy Systems ISE, Heidenhofstr. 2, 79110 Freiburg, Germany 6 ILV, Institut Lavoisier de Versailles, Université Paris-Saclay, CNRS-UVSQ, 45 av. des Etats-Unis, Versailles, 78035, France 7 Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, F-35000 Rennes, France. 8 GEMaC, CNRS, UVSQ, UMR 8635, Université Paris–Saclay, 78035 Versailles, France

17:45 **Stretchable, Bifacial Si-Organic Hybrid Solar Cells by Vertical Array of Si Micro-Pillars Embedded into Elastomeric Substrates** **D 4.7**
Sung-Soo Yoon, Dahl-Young Khang*
Yonsei University

Tuesday 28 may 2019

Silicene / Germanium I : Session Chairs: H. Sugimoto, S. Strehle

08:30 INV **Silicene and two-dimensional Xenes for nanotechnologies** **D 5.1**
Alessandro Molle, Christian Martella, and Carlo Grazianetti
CNR-IMM, unit of Agrate Brianza, via C. Olivetti 2, 20864 Agrate Brianza (MB), Italy

09:00 **Strain engineering and heavy doping of epitaxially grown Ge-on-Si by pulsed laser melting** **D 5.2**
E. Napolitani(1), R. Milazzo(1), A. Ballabio(2), J. Frigerio(2), Y. Hou(3), M. Scuderi(4), K. Gallacher(5), R. Millar(5), V. Giliberti(6), L. Baldassarre(6), F. Mazzamuto(7), K. Huet(7), M. Ortolani(6), D.J. Paul(5), G. Nicotra(4), G. Capellini(3,8), and G. Isella(2)
(1) Dipartimento di Fisica e Astronomia, Università di Padova and CNR-IMM, Via Marzolo 8, I-35131 Padova, Italy, (2) L-NESS, Dipartimento di Fisica, Politecnico di Milano, Polo di Como, Via Anzani 42, I-22100 Como, Italy, (3) IHP, Im Technologiepark 25, D-15236 Frankfurt (Oder), Germany (4) IMM-CNR, Z. I. VIII Strada 5, I-95121 Catania, Italy (5) School of Engineering, University of Glasgow, Rankine Building, Oakfield Avenue, Glasgow G12 8LT, United Kingdom, (6) Dipartimento di Fisica, Sapienza Università di Roma, Piazzale Aldo Moro 5, I-00185 Rome, Italy (7) Laser systems and solutions of Europe (LASSE), SCREEN Semiconductor Solutions Co., Ltd., 14-38 rue Alexandre, Bldg D, 92230 Gennevilliers, France, (8) Dipartimento di Scienze, Università degli Studi Roma Tre, I-00154 Roma, Italy

09:15 **Vapour-phase passivation of Germanium using aliphatic thiols for integration into Silicon-based systems** **D 5.3**
Shane Garvey and Dr. Brenda Long
1 School of Chemistry, University College Cork, Cork, Ireland. 2 Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland.

09:30 **Coffee Break**

Doping of Si Nanostructures : Session Chairs: K. Nomoto, P. Stradins

10:00 INV **All-Inorganic Colloidal Silicon Quantum Dots Codoped with Boron and Phosphorus** **D 6.1**
Hiroshi Sugimoto
Department of Electrical and Electronic Engineering, Graduate School of Engineering, Kobe University, Kobe, Japan

10:30 **Modulation Doping of SiO2 for adjacent Si: Acceptor Candidates** **D 6.2**
Dirk König(a,b), Daniel Hiller(c), Sean Smith(d)
(a) Integrated Material Design Centre (IMDC), University of NSW, Sydney, Australia (b) Institute of Semiconductor Electronics (IHT), RWTH Aachen University, Germany (c) Research School of Computer Engineering, The Australian National University, Canberra, Australia (d) Research School of Physics and Engineering, The Australian National University, Canberra, Australia

10:45 **Breaking the doping limit in silicon by deep-level impurities** **D 6.3**
Mao Wang1,2,, A. Debernardi3,, Y. Berencén1, R. Heller1, Chi Xu1,2, Ye Yuan1,4, Yufang Xie1,2, R. Böttger1, L. Rebohle1, W. Skorupa1, M. Helm1,2, S. Prucnal1 and Shengqiang Zhou1,
1Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Bautzner Landstr. 400, 01328 Dresden, Germany 2Technische Universität Dresden, 01062 Dresden, Germany 3CNR-IMM, sede Agrate Brianza, via Olivetti 2, I-20864, Agrate Brianza, Italy 4Physical Science and Engineering Division (PSE), King Abdullah, University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia

11:00 **Plenary Session I**

12:30 **Lunch**

Nano-Si Metrology : Session Chairs: E. Napolitani, R. Duffy

14:00 INV **Metrology for nanoscale complex semiconductor systems.** **D 7.1**
W.Vandervorst
Imec, Kapeldreef 75, B-3001 Leuven, Belgium Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200D-bus 2418, 3001 Leuven,Belgium

14:30 **Understanding of the Phase Transformation in Silicon Thin Films for Scanning Spreading Resistance Microscopy Measurements** — D 7.2
K. Pandey1,2, K. Paredis1, G. Pourtois1, and W. Vandervorst1,2
1 IMEC, Kapeldreef 75, B-3000 Leuven, Belgium 2 Instituut voor Kern- en Stralingsfysica, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium

14:45 **Experimental analyses and numerical simulations for quantification of scanning spreading resistance microscopy** — D 7.3
Jan K. Prüßing [1], Tim Böckendorf [1], Gerry Hamdana [2], Erwin Peiner [2], Hartmut Bracht [1]
[1] Institute of Materials Physics, University of Münster, Germany, [2] Institute of Semiconductor Technology (IHT) and Laboratory of Emerging Nanometrology (LENA), Technische Universität Braunschweig, Germany

15:00 **THz and infrared near-field imaging and spectroscopy with nanoscale resolution** — D 7.4
Philip Schäfer, Aina Reich, Andreas Huber
neaspec GmbH, Eglfinger Weg 2, 85540 Haar, Germany

15:15 **Carrier profiling in molecular layer doped Si nanowires: effects of the density and width of the nanowires.** — D 7.5
Margarita Georgieva, Noel Kennedy, Luke Eaton, Fintan Meaney, John MacHale, Christopher Hatem, Brenda Long, Ray Duffy, Nikolay Petkov.
Physical Sciences Department, Cork Institute of Technology, Bishopstown, Cork, Ireland, School of Chemistry, University College Cork, Cork, Ireland, Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland, Applied Materials, Gloucester, Massachusetts, USA.

15:30 **Influence of local magnification effects in the atom probe for silicon nanocrystals doped by indium** — D 7.6
Keita Nomoto1, Daniel Hiller2, Lars Rebohle3, Simon Ringer1
1 The University of Sydney. Australian Centre for Microscopy & Microanalysis and School of Aerospace Mechanical and Mechatronic Engineering, Sydney, NSW, Australia 2 Research School of Engineering, Australian National University, Canberra, ACT, Australia 3 Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Dresden, Germany

15:45 **Chemical nanoanalysis at Si grain boundaries by atom probe tomography combined with FIB operated at low temperatures** — D 7.7
Y. Ohno, Y. Shimizu, N. Ebisawa, K. Inoue, Y. Nagai, H. Yoshida, N. Kamiuchi, R. Aso, S. Takeda, J. Liang, N. Shigekawa
IMR, Tohoku University, ISIR, Osaka University, GSE, Osaka City University

16:00 **Coffee Break**

Poster Session : Session Chair: D. Hiller

16:30 **Nanowires on the Surface of Silicon for Solar Cells** — D P1.1
O.V. Pylypova, A.A. Evtukh, I.I. Ivanov, P.V. Parfenyuk, I.M. Korobchuk, O.O. Havryliuk, O.Yu. Semchuk
Taras Shevchenko National University of Kyiv, V. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Taras Shevchenko National University of Kyiv, V. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine,Taras Shevchenko National University of Kyiv, Chuiko Institute of Surface Chemistry NAS of Ukraine, Chuiko Institute of Surface Chemistry NAS of Ukraine

16:30 **The Effects of In-situ Soft Treatment After Direct Contact Etching on DRAM devices** — D P1.2
Jun-Hwa Song, Jin-Hyuk Yoo, Young-Seung Cho, Ji-Hun Kim, Jeong-Hoon Oh, Il-Gweon Kim, Hyoung-Sub Kim, Byoung-Deog Choi
Jun-Hwa Song, Jin-Hyuk Yoo, Young-Seung Cho, Byoung-Deog Choi College of Information and Communication Engineering, Sungkyunkwan University, Suwon City 440-746, Republic of Korea, Jun-Hwa Song, Ji-Hun Kim, Jeong-Hoon Oh, Il-Gweon Kim, Hyoung-Sub Kim Memory Division, Samsung Electronics Co. Ltd., Hwasung City 445-330, Republic of Korea, Jin-Hyuk Yoo, Young-Seung Cho Semiconductor R&D Center, Samsung Electronics Co. Ltd., Hwasung City 445-330, Republic of Korea,

16:30 **Lifetime recovery in silicon after cryogenic dry etching for vertically aligned heterostructure solar cells** — D P1.3
D. Kudryashov1), A. Gudovskikh1)2), I. Morozov1), A. Baranov1), A. Uvarov1), A. Monastyrenko1)
1) St. Petersburg Academic University RAS, Russia 2) St. Petersburg Electrotechnical University “LETI”, Russia

16:30 **Photoluminescence intensity enhancement and ultranarrow emission linewidth of Single Si QD on a metal membrane** — D P1.4
JJ. Zhou, F. Pevere, HK. Gatty, J. Linnros, I. Sychugov
Applied Physics Department, KTH Royal Institute of Technology, Sweden, Applied Physics Department, KTH Royal Institute of Technology, Sweden, Department of Engineering Sciences, Uppsala University, Sweden, Applied Physics Department, KTH Royal Institute of Technology, Sweden, Applied Physics Department, KTH Royal Institute of Technology, Sweden

16:30 **Numerical Study of a New Tunneling Field-Effect Transistor for Infra-red sensing applications** — D P1.5
H. Ferhati1 and F. Djeffal1,2,*
1 LEA, Department of Electronics, University of Batna 2, Batna 05000, Algeria. 2 LEPCM, University of Batna 1, Batna 05000, Algeria. * Corresponding author: E-mail: faycaldzdz@hotmail.com.

16:30 **Study of latex sphere lithography for high aspect ratio dry silicon etching** — D P1.6
I.A. Morozov 1, A.S. Gudovskikh 1, 2, A.V. Uvarov 1, A.I. Baranov 1, K.S. Zelentsov 1, D.A. Kudryashov 1
1 St.Petersburg National Research Academic University RAS St. Petersburg, Russia, 2 St. Petersburg Electrotechnical University “LETI”, St. Petersburg, Russia

16:30 **CIGS growth on a GaP/Si(001) platform : towards CIGS/Si tandem solar cells.** — D P1.7
O. Durand1, A. Létoublon1, C. Cornet1, A. Zhou,1 N. Barreau2, M. Balestrieri4, D. Coutancier3,4 and D. Lincot3,4.
1 Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, F-35000 Rennes, France 2 Univ Nantes, CNRS, Institut des Matériaux Jean Rouxel IMN, UMR 6502, F-44322 Nantes 3, France 3 IPVF, Institut Photovoltaïque d’Ile de France, 30 RD128 91120 Palaiseau, France 4 CNRS, IPVF, 30 RD128 91120 Palaiseau, France

16:30 **Energy transfer in Si-nanocrystals sensitized by Diphenylantracene** — D P1.8
T.Popelář (1), K.Kůsová (1), L.Ondič (1), I. Pelant (1), P. Ceroni (2)
1-Institute of Physics of the ASCR, v.v.i., Cukrovarnická 10, 162 00 Prague 6, Czech Republic, 2-Department of Chemistry “G. Ciamician”, University of Bologna, Via Selmi 2, 40126 Bologna, Italy

16:30 **An unique system for the registration of one-photon signal in VUV range from isomeric Th-229 nucleus based on thin SiO2/Si films** — D P1.9
P.V. Borisyuk 1, E.V. Chubunova 1, N.N. Kolachevsky 2 1, Yu.Yu. Lebedinskii 1, O.S. Vasiliev 1, E. V. Tkalya 3 1 4
1National Research Nuclear University MEPhI, Moscow, Russia 2P.N. Lebedev Physical Institute of the Russian Academy of Sciences,Moscow, Russia 3Skobeltsyn Institute of Nuclear Physics Lomonosov Moscow State University, Moscow, Russia 4Nuclear Safety Institute of RAS, Moscow, Russia

16:30 **Growth of silicon nanowires by plasma enhanced chemical vapor deposition using Tin and Indium as catalyst** — D P1.10
S. Djoumi1, P. Roca i Cabarrocas2, F. Kail1, and L. Chahed1
LPCMME, Université Oran1, BP1524, ElM’naouar 31100 Oran, Algérie.

16:30 **Colloidal all-inorganic nanocrystals in MIS structures and devices** — D P1.11
Andrzej Mazurak, Robert Mroczyński
Institute of Microelectronics and Optoelectronics, Warsaw University of Technology

16:30 **Fabrication of efficient semi-transparent silicon thin-film solar cells for energy havesting** — D P1.12
Jun-Sik Cho, Min Jeong Shin, Ara Cho, Seungkyu Ahn, Jinsu Yoo, Joo Hyung Park, Kihwan Kim, Jihye Gwak
Korea Institute of Energy Research

16:30 **Highly Sensitive Silicon Nanowire-based Piezoelectric Pressure Sensors for Multipurpose Ultra-low Pressure Detection** — D P1.13
Ramesh Ghosh, S. M. Sattari-Esfahlan, Minho S. Song, Gyu-Chul Yi
Department of Physics and Astronomy, Seoul National University, Seoul 08826, Korea

16:30 **Crystallisation behaviour of amorphous Si nanoinclusions embedded in Si oxide matrix** — D P1.14
Andrey Sarikov
V. Lashkarev Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 45 Nauki avenue, 03028 Kiev, Ukraine Present address: Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via R. Cozzi 55, 20125 Milano, Italy

16:30 **Ytterbium Doped Scheelite-Like Crystals as Promising Quantum Cutting Materials for Silicon Solar Cells** **D P1.15**
V.V.Sanina, K.A.Subbotin, A.I.Titov, E.Sani, D.A.Lis, V.A.Smirnov, E.V.Zharikov, I.A.Shcherbakov
Prokhorov General Physics Institute of Russian Academy of Sciences, Mendeleev University of Chemical Technology of Russia, 1CNR-INO National Institute of Applied Optics, Largo E. Fermi, Italy

16:30 **In-situ monitoring of hydrogen plasma-induced electronic defects in silicon** **D P1.16**
Shota NUNOMURA, Isao SAKATA, Koji Matsubara
National Institute of Advanced Industrial Science and Technology (AIST)

16:30 **Preparation of poly-Si films from SiOx by inverted aluminum-induced layer exchange process** **D P1.17**
A.O. Zamchiy, E.A. Baranov
Kutateladze Institute of Thermophysics, Ac. Lavrentiev ave. 1, 630090, Novosibirsk, Russia

16:30 **INVESTIGATION OF THE INITIAL STAGE OF THE EPITAXIAL GROWTH** **D P1.18**
INVESTIGATION OF THE INITIAL STAGE OF THE EPITAXIAL GROWTH
Tashkent State Technical University

16:30 **Controlling Energy Transfer between Silicon Quantum Dots** **D P1.19**
Jiahao Cao, Hanjie Zhang, Deren Yang, Dongsheng Li
State Key Laboratory of Silicon Materials and School of Materials Science and Engineering, Zhejiang University

16:30 **The enhancement of schottky junction Silicon solar cell with CdSe quantum dots decorated metal nanostructures** **D P1.20**
Ha Trang Nguyen1, Vishwa Bhatt1, Song Jin-Won2, Manjeet Kumar1, Ju-Hyung Yun*1
1 Department of Electrical Engineering, Incheon National University, Incheon 406772, South Korea, 2 Powerlogics Co. Ltd. 163, Gwahaksaneop 4-ro, Oksan-myeon, Heungdeck-gu, Cheongju city, Chungcheongbuk-do, Korea

16:30 **Sub-band-gap optical response in Au-implanted silicon** **D P1.21**
Mao Wang,1,2 Fang Liu,1,2 Ye Yuan,1,2 S. Prucnal,1 Y. Berencén, 1 L. Rebohle,1 W. Skorupa,1 M. Helm1,2 and Shengqiang Zhou1
1Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Bautzner Landstr. 400, 01328 Dresden, Germany 2Technische Universität Dresden, 01062 Dresden, Germany

16:30 **The influence of heat treatment on the opto-electronic properties of Bi-porous silicon nanocomposites** **D P1.22**
Khawla AZAIEZ, Wissem DIMASSI
Photovoltaic Laboratory, Center for Research and Technology Energy, Tourist Route Soliman, BP 95, 2050 Hammam-Lif, Tunisia / National Higher Engineering School of Tunis (ENSIT), University of Tunis , Photovoltaic Laboratory,Center for Research and Technology Energy, Tourist Route Soliman, BP 95, 2050 Hammam-Lif, Tunisia

16:30 **Nanostructured por Si-CdS/ZnS Thin Films** **D P1.23**
M.A. Jafarov, E.F. Nasirov, S.A.Jahangirova, R.Jafarli
Baku State University, Baku, Azerbaijan, maarif.jafarov@mail.ru

16:30 **Transparent window layers based on silicon- and tungsten-oxide for heterojunction solar cells** **D P1.24**
F. Menchini 1, L. Serenelli 1, L. Martini 2, A. Albano 1, F. Alessio 1, G. Stracci 1, P. Mangiapane 1, E. Salza 1, G. De Cesare 2, D. Caputo 2, and M. Tucci 1
1 ENEA, Casaccia Research Center, Via Anguillarese 301, 00123 Roma, Italy, 2 DIET University of Rome “Sapienza”, Via Eudossiana 18, 00184 Roma, Italy

16:30 **Novel synthesis of different silicon nanowires compounds for use in 3th generation of solar cells** **D P1.25**
J. Salazar-Hernández, E. Ramos-Peña, G. Santana, A. Dutt
National Autonomous University of Mexico, Materials Research Institute

16:30 **Ultralow resistivity in Ge by Sb deposition and pulsed laser melting** **D P1.26**
C. Carraro(1,2), R. Milazzo(1,2), F. Sgarbossa(1,2), G. Maggioni(1,2), W. Raniero(2), S. Carturan(1,2), D. Scarpa(2), L. Baldassarre(3), M. Ortolani(3), A. Ballabio(4), G. Isella(4), S. Modak(5), L. Chernyak(5), A. Andrighetto(2), D.R. Napoli(2), D. De Salvador(1,2) and E. Napolitani(1,2)
(1) Dipartimento di Fisica e Astronomia, Università di Padova, Via Marzolo 8, I-35131 Padova, Italy, (2) Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali di Legnaro, Viale dell’Università 2, 35020 Legnaro (PD), Italy, (3) Dipartimento di Fisica, Sapienza Università di Roma, Piazzale Aldo Moro 5, I-00185 Rome, Italy, (4) Dipartimento di Fisica, L-NESS, Politecnico di Milano, Polo di Como, Via Anzani 42, I-22100 Como, Italy (5) Department of Physics, University of Central Florida, Orlando, FL 32816 USA

16:30 **Development of Silicon-Oxides (SiOx:H) as Window Layers on Silicon Heterojunction Solar Cells, Impacts and Properties** **D P1.27**
Brahim Aïssa1, Amir A. Abdallah1, Maulid M. Kivambe1, Yahya Zakaria1 and Nouar Tabet1, Jean Cattin2, Jan Haschke2 Mathieu Boccard2 and Christophe Ballif2
1 Qatar Environment and Energy Research Institute, Hamad bin Khalifa University, Qatar Foundation, P.O. Box 34110, Doha, Qatar. 2 Photovoltaics and Thin-Film Electronics Laboratory (PV-lab), Institute of Microengineering, Ecole Polytechnique Fédérale de Lausanne, Rue de la Maladière 71B, CH-2002 Neuchâtel, Switzerland.

16:30 **Investigation of the Oxygen Content Effect on the Optoelectronic Properties of ITO for Silicon Heterojunction Solar Cells** **D P1.28**
Brahim Aïssa1, Amir A. Abdallah1, Maulid M. Kivambe1, Yahya Zakaria1 and Nouar Tabet1, Jean Cattin2, Jan Haschke2, Mathieu Boccard2 and Christophe Ballif2
1 Qatar Environment and Energy Research Institute, Hamad bin Khalifa University, Qatar Foundation, P.O. Box 34110, Doha, Qatar 2 Photovoltaics and Thin-Film Electronics Laboratory (PV-lab), Institute of Microengineering, Ecole Polytechnique Fédérale de Lausanne, Rue de la Maladière 71B, CH-2002 Neuchâtel, Switzerland

16:30 **Interdigitated back-contact c-Si solar cells with non-conventional selective contacts** **D P1.29**
B. Pusay, R. Almache, G. Masmitjà, E. Ros, J. Puigdollers, I. Martín, C. Voz, P. Ortega
Departament d’Enginyeria Electrònica, Universitat Politècnica de Catalunya

16:30 **Preparation and atomic structure of As-modified Si(100) surfaces for high-efficiency III-V-on-Si solar cells in CVD ambience** **D P1.30**
Agnieszka Paszuk 1, Andreas Nägelein 1, Oleksandr Romanyuk 2, Oliver Supplie 1, Manali Nandy 1, Peter Kleinschmidt 1, and Thomas Hannappel 1
1 Institute for Physics, Fundamentals of energy materials, University of Technology, Ilmenau, Germany 2 Institute of Physics, Academy of Sciences of the Czech Republic, Prague, Czech Republic

16:30 **Capacitance mapping at nanoscale by scanning microwave microscopy (SMM): Metrological aspects** **D P1.31**
J. A. Morán-Meza, A. Delvallée, D. Allal, F. Piquemal
Laboratoire National de métrologie et d’Essais (LNE)

16:30 **Ion beam doping for the formation of n- and p-type regions in individual Si/SiO2 core/shell nanowires** **D P1.32**
Y. Berencén1,a), S. Prucnal1, W. Möller1, R. Hübner1, L. Rebohle1, T. Schönherr1, M. Bilal Khan1, M. Wang1,3, M. Glaser2, Y. M. Georgiev1, A. Erbe1, A. Lugstein2, M. Helm1,3 and S. Zhou1
1Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, P.O. Box 510119, 01314 Dresden, Germany 2Institute for Solid State Electronics, Vienna University of Technology, Floragasse 7, A-1040 Vienna, Austria 3Center for Advancing Electronics Dresden (cfaed), Technische Universität Dresden, D-01062 Dresden, Germany

16:30 **Optical properties of silicon surface functionalized with rare earth** **D P1.35**
Kathleen Toussaint, Cyril Cadiou, Bijal K. Bahuleyan, Françoise Chuburu, Thomas Easwarakhanthan, Alexandre Bouché, Michaël Molinari, Hervé Rinnert
Institut Jean Lamour, CNRS UMR 7198, Université de Lorraine, 54506 Vandœuvre-lès-Nancy Cedex, France, Institut de Chimie Moléculaire de Reims, CNRS UMR 7312, Université de Reims Champagne-Ardenne URCA, 51687 Reims Cedex 2, France, Department of General Studies, Royal Commission: Yanbu Industrial College (RCYCI),P.O. Box 30436, Saudi Arabia, Institut de Chimie Moléculaire de Reims, CNRS UMR 7312, Université de Reims Champagne-Ardenne URCA, 51687 Reims Cedex 2, France, Institut Jean Lamour, CNRS UMR 7198, Université de Lorraine, 54506 Vandœuvre-lès-Nancy Cedex, France, Institut Jean Lamour, CNRS UMR 7198, Université de Lorraine, 54506 Vandœuvre-lès-Nancy Cedex, France, Laboratoire de Recherche en Nanosciences, EA 4682, Université de Reims Champagne-Ardenne URCA, 51685 Reims Cedex 2, France, Institut Jean Lamour, CNRS UMR 7198, Université de Lorraine, 54506 Vandœuvre-lès-Nancy Cedex, France.

16:30 **Improvement of Boron doping on p-type pm-Si:H thin films for solar cells** **D P1.36**
L. Hamui, C. Ramos, G. Santana
Universidad Anahuac, Facultad de Ingenieria, Mexico, Mexico, Instituto de Investigaciones en Materiales, UNAM, Mexico, Mexico.

16:30 **Low-Temperature Saw Damage Gettering for Improved Multicrystalline Silicon** **D P1.37**
Dr Mohammad Al-Amin, Dr Nicholas Grant, Professor John D. Murphy
WMG, University of Warwick, UK, School of Engineering, University of Warwick, UK, School of Engineering, University of Warwick, UK

16:30 **Formation of continuous Si nano-particles based mono-layers by Al induced crystallization and layer exchange processes** **D P1.38**
Ø. Dahl*, A. Ulyashin**
*SINTEF Material and Chemistry, Trondheim, Norway **SINTEF, Material and Chemistry, Oslo, Norway

16:30 **Investigation of the intentional doping with silane of GaAs crystals grown on silicon for tandem solar cells applications** **D P1.39**
A. Jaffré 1, J. Alvarez 1, M. Coste 2, G. Hallais 2, G. Chau 1, 2, J.C. Connolly 1, C. Renard 2, D. Mencaraglia 1
1-GeePs, Group of Electrical Engineering Paris, CNRS, CentraleSupelec, Univ. Paris-Sud, Université Paris-Saclay, Sorbonne Université, 3&11 rue Joliot-Curie, Plateau de Moulon, 91192 Gif-sur-Yvette CEDEX, France 2- C2N, Centre de Nanosciences et de Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Avenue de la Vauve, 91120 Palaiseau, France

16:30 **Improving TLM measurement and analysis of metal-silicon contacts for photovoltaic application considering finite junction isolat** **D P1.41**
Tobias Urban, Matthias Müller, Johannes Heitmann
TU Bergakademie Freiberg

16:30 **Quantum Cutting Mechanisms in Ytterbium Doped Scheelite-Like Crystals** **D P1.42**
K.A.Subbotin, A.I.Titov, V.V.Sanina, D.A.Lis, V.A.Smirnov, O.K.Alimov, E.V.Zharikov, I.A.Shcherbakov
Prokhorov General Physics Institute of Russian Academy of Sciences, Mendeleev University of Chemical Technology of Russia

16:30 **Wafer Warpage : Obstacle for developing 3D NAND Devices.** **D P1.43**
Hyojoon Ryu, Sunil Shim, Jihoon Han, Jinhong Park, and Yugyun Shin
Semiconductor R&D Center, Samsung Electronics Co. Ltd., Hwasung, Korea, Department of Electrical and Computer Engineering, Sungkyunkwan University, Suwon, Korea, Semiconductor R&D Center, Samsung Electronics Co. Ltd., Hwasung, Korea, Semiconductor R&D Center, Samsung Electronics Co. Ltd., Hwasung, Korea, Department of Electrical and Computer Engineering, Sungkyunkwan University, Suwon, Korea, Semiconductor R&D Center, Samsung Electronics Co. Ltd., Hwasung, Korea,

16:30 **Effect of RF sputtering deposition parameters on silicon nitride coatings** **D P1.44**
S. Meziani1, N. Mesbah1,3, A. Moussi1, A. Brighet2, S. Chaouchi1, A. Djelloul1, L. Benharat1
1Centre de Recherche en Technologie des Semi-Conducteurs pour l'Energétique (CRTSE), Divion Dispositifs de Conversion à Semi-conducteurs, 02 Bd Frantz Fanon, BP 140, 7 Merveilles, Alger. Algérie. 2Laboratoire des couches minces et semi-conducteurs, Université des Sciences et de la Technologie Houari Boumediene. BP 32 El Alia, Bab Ezzouar. Alger. Algérie. 3Faculté génie des procédés industrielles, Université des Sciences et de la Technologie Houari Boumediene. BP 32 El Alia, Bab Ezzouar. Alger. Algérie.

16:30 **Optical diagnostics of free charge carriers in silicon nanostructures** **D P1.45**
S.P. Rodichkina (a,b), A.V. Pavlikov (a), T. Nychyporuk (b), V. Lysenko (b,c), V.Yu. Timoshenko (a,c,d)
(a) Lomonosov Moscow State University, Leninskie Gory 1, 119991 Moscow, Russia, (b) University of Lyon, INSA de Lyon, INL, UMR CNRS 5270, Lyon, France, (c) National Research Nuclear University MEPhI, Kashirskoye Sh. 31, 115409 Moscow, Russia, (d) Lebedev Physical Institute of RAS, Leninskiy Prospekt 53 Leninskiy Prospekt,119991 Moscow, Russia

16:30 **Effects of front and back gate bias on memory operations of positive feedback FET** **D P1.46**
Yong Tae Kim1, Sehyun Kwon1, Young Min Jhon2, Francisco Gamiz3, and Sorin Cristoloveanu4
1Semiconductor Materials and Device Lab, Korea Institute of Science and Technology, Seoul 02792, Korea 2Sensor Research Center, Korea Institute of Science and Technology, Seoul 02792, Korea 3Nanoelectronics Research Group, University of Granada, 18071 Granada, Spain 4IMEP-LAHC, Grenoble INP MINATEC, 38016 Grenoble, France

16:30 **Material Design for Fast switching Phase Change Memory** **D P1.47**
Yong Tae Kim1, Young Min Jhon2, Minho Choi1 and Francisco Gamiz3
1Semiconductor Materials and Device Lab, Korea Institute of Science and Technology, Seoul 02792, Korea 2Sensor System Research Center, Korea Institute of Science and Technology, Seoul 02792, Korea 3Nanoelectronics Research Group, University of Granada, 18071 Granada, Spain

Si Nanoelectronics I : Session Chairs: D. König, R. Duffy

08:30 INV **The MOSFET at the end of Moore's law** **D 8.1**
JP Colinge
CEA-LETI, 17 rue des Martyrs, Grenoble, France

09:00 INV **Reconfigurable nanowire field effect transistors with volatile and nonvolatile configuration modes** **D 8.2**
T. Mikolajick1,2, A. Heinzig2, V. Sessi1, M. Simon1, T. Mauersberger1, J. Trommer1, S. Rai3, M. Raiza3, A. Kumar3 and W. M. Weber1
1 NaMLab gGmbH, Noethnitzerstrasse 64, 01187 Dresden 2 Institute of Semiconductors and Microsystems, TU Dresden, 01062 Dresden 3 Chair for Processor Design, TU Dresden, 01062 Dresden

09:30 **Quantifying Electrical Conduction in Ultrathin Si Films down to 3 nm, Doped by Non-Conventional Approaches** **D 8.3**
John MacHale1, Fintan Meaney1, Noel Kennedy2, Brenda Long2, Margarita Georgieva3, Nikolay Petkov3, Christopher Hatem4, Ray Duffy1.
1 Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland. 2 School of Chemistry, University College Cork, Cork, Ireland. 3Physical Sciences Department, Cork Institute of Technology, Bishopstown, Cork, Ireland. 4 Applied Materials, Gloucester, Massachusetts, USA.

09:45 **Strain Characterization of SiGe Channel and Layout Optimization in 22nm UTBB FDSOI PMOSFET RF Devices** **D 8.4**
F. Ravaux, W. A. Gill, A. Al Ghaferi, I. Saadat, Z. Zhao, D. Utess, D. Harame
Khalifa University Of Science and Technology, Abu Dhabi, U.A.E.
GLOBALFOUNDRIES, Dresden, Germany,

10:00 **Coffee Break**

Si Nanoelectronics II : Session Chairs: J.-P. Colinge, S. Strehle

10:30 INV **Silicon transistors for quantum computing: From bits to qubits** **D 9.1**
Fernando Gonzalez-Zalba
Hitachi Cambridge Laboratory, J J Thomson Avenue, Cambridge, UK

11:00 INV **Si3N4/SiO2 Coating of Deep Nanoscale Silicon leading to p/n-Behaviour** **D 9.2**
Dirk König(a,b), Daniel Hiller(c), Noël Wilck(b), Birger Berghoff(b), Merlin Müller(d), Giovanni Di Santo(e), Luca Petaccia(e), Joachim Mayer(d), Sean Smith(f,g) and Joachim Knoch(b)
(a) Integrated Material Design Centre (IMDC), University of NSW, Sydney, Australia (b) Institute of Semiconductor Electronics (IHT), RWTH Aachen University, Germany (c) Research School of Computer Engineering, The Australian National University, Canberra, Australia (d) Ernst-Ruska Centre for Microscopy and Spectroscopy with Electrons, RWTH Aachen University, Germany (e) Elettra Sincrotrone Trieste, Strada Statale 14 km 163.5, 34149 Trieste, Italy (f) Research School of Physics and Engineering, The Australian National University, Canberra, Australia

11:30 **Identification of Structural Phases in Ferroelectric and Non-Ferroelectric HfO2-based Films by DFT-Assisted EXAFS Analysis** **D 9.3**
M. Alper Sahiner1, Rory Vander Valk1 ,Eric Kurywczak1, William Cockerell1, Joshua Steier1, Stephen Kelty1, Bruce Ravel2, Joseph C. Woicik2, Jean L. Jordan-Sweet3, Christian Lavoie3, Martin M. Frank3
1. Seton Hall University, South Orange, New Jersey 07079, USA, 2. National Institute of Standards and Technology, Gaithersburg, Maryland 20899, USA, 3. IBM T. J. Watson Research Center, Yorktown Heights, NY 10598, USA,

11:45 **FinFET versus GAAFET Performances and Perspectives** **D 9.4**
A. Benfdila, M. Kessi and A. Lakhlef
Micro and Nanoelectronics Research Group, Faculty of Electrical Engineering and Computer Sciences University Mouloud Mammeri, Tizi-Ouzou, Algeria

12:00 **Electrical performance of FinFETs fabricated by novel technologies neutral beam etching and microwave annealing** **D 9.5**
Tai-Chen Kuo, Yin-Hsien Su, Wen-His Lee, Michael Current, Seiji Samukawa
Department of Electrical Engineering, National Cheng Kung University, Taiwan
Current Scientific, San Jose, CA 95124, USA Institute of Fluid Science, Tohoku University, Japan

12:15 **Electroluminescence-readable memristor based on silicon nanocrystals** **D 9.6**
J. L. Frieiro,1,2 J. López-Vidrier,3 O. Blázquez,1,2 D. Yazıcıoğlu,3 S. Gutsch,3 J. Valenta,4 M. Zacharias,3 S. Hernández,1,2 B. Garrido1,2
1 MIND, Department of Engineering: Electronics, Universitat de Barcelona, Martí i Franquès 1, E-08028 Barcelona, Spain 2 Institute of Nanoscience and Nanotechnology (IN2UB), Universitat de Barcelona, Av. Joan XXIII S/N, E-08028 Barcelona, Spain 3 Laboratory for Nanotechnology, Department of Microsystems Engineering (IMTEK), University of Freiburg, Albert-Ludwigs-University Freiburg, Georges-Köhler-Allee 103, D–79110 Freiburg (Germany) 4 Faculty of Mathematics and Physics, Charles University, Ke Karlovu 3, 121 16 Prague 2 (Czech Republic)

12:30 **Lunch**

Si Nanowires I : Session Chairs: T. Cohen-Karni, D. Hiller

14:00 INV **Bottom-up synthesis of rectifying silicon nanostructures: From asymmetric electron ratchets to decuple-junction photovoltaics** **D 10.1**
James F. Cahoon
Department of Chemistry, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599, USA

14:30 **Fractal arrays of silicon nanowires for photonics** **D 10.2**
M.J. Lo Faro1,2,3, A.A. Leonardi1,2,3,4, D. Morganti1,2, P. Musumeci1, B. Fazio2, F. Priolo1,3,5, A. Irrera2.
1 Dipartimento di Fisica e Astronomia “Ettore Majorana”, Università di Catania, Via Santa Sofia 64, 95123 Catania, Italy, 2 CNR-IPCF, Istituto per i Processi Chimico-Fisici, V.le F. Stagno D’Alcontres 37, 98158 Messina, Italy, 3 MATIS CNR-IMM, Istituto per la Microelettronica e Microsistemi, Via Santa Sofia 64, 95123 Catania, Italy, 4 INFN sezione di Catania, Via Santa Sofia 64, 95123 Catania, Italy, 5 Scuola Superiore di Catania, Via Valdisavoia 9, 95123 Catania, Italy,

14:45 **Flexible SiNWs-based thermoelectric generators for healthcare monitoring** **D 10.3**
Darwin Caina (1), Georgiana Sandu (1), and Sorin Melinte (1)(*)
(1) Institute of Information and Communication Technologies, Electronics and Applied Mathematics, Université catholique de Louvain, 1348, Louvain-la-Neuve, Belgium.

15:00 **Silicon nanowire based surface enhanced Raman spectroscopy probes for ultra-localized optical biosensing** **D 10.4**
A. Moeinian, F. N. Gür, T. L. Schmidt, O. H. Wittekindt, S. Strehle
Institute of Electron Devices and Circuits, Ulm University, Ulm, Germany, Center for Advancing Electronics Dresden, TU Dresden, Dresden, Germany, Center for Advancing Electronics Dresden (cfaed) and B CUBE – Center for Molecular Bioengineering, TU Dresden, Dresden, Germany, (now: Kent State University, Physics Department, Kent, OH, United States), Institute of General Physiology, Ulm University, Ulm, Germany, Institute of Electron Devices and Circuits, Ulm University, Ulm, Germany,

15:15 **Fabrication of reproducible, ultra-sensitive kinked silicon nanowire biosensors for non-invasive, high-resolution pH-measurement** **D 10.5**
Michael M. Roos, Anouk Puchinger, Ahmed Chnani, Oliver Wittekindt, Steffen Strehle
Institute of Electron Devices and Circuits, Institute of Electron Devices and Circuits, Institute of Electron Devices and Circuits, Institute of General Physiology, Institute of Electron Devices and Circuits University of Ulm

15:30 **Coffee Break**

Si Nanowires II / Germanium II : Session Chairs: J. F. Cahoon, P. Stradins

16:00 INV **Multiscale synthesis of highly-controlled hybrid-nanomaterials** **D 11.1**
San Roman, Daniel,1 Garg, Raghav,1 Krishnamurthy, Dilip,2 de la Barrera, Sergio,3 Gopalan, Devashish,3 Rastogi, Sahil K.,4 Lamparski, Michael,5 Nuhfer, Noel T.,1 Meunier, Vincent,5 Hunt, Benjamin M.,3 Viswanathan, Venkat,2 Cohen-Karni, Tzahi,1,4
1 Department of Material Science and Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, 15213, USA. 2 Department of Mechanical Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, 15213, USA. 3 Department of Physics, Carnegie Mellon University, Pittsburgh, Pennsylvania, 15213, USA. 4 Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, 15213, 5 Department of Physics, Applied Physics, and Astronomy, Rensselaer Polytechnic Institute, Troy, New York, 12180, USA.

16:30 INV **Advances in the simulation of silicon nanowire transistors** **D 11.2**
A. Asenov, T. Al-Ameri, V. Gerorgiev
The University of Glasgow, Glasgow, UK

17:00 **Self-modulated Ge/Si hetero island-chain nanowires by uniform a-Si/a-Ge bilayer feeding** **D 11.3**
Yaolong Zhao 1, Haiguang Ma 1, Taige Dong 1, Junzhuan Wang 1, Linwei Yu 1,2, Jun Xu 1, and Pere Roca i Cabarrocas 2
1 National Laboratory of Solid State Microstructures/School of Electronics Science and Engineering, Nanjing University, 210093 Nanjing, China 2 LPICM, CNRS, Ecole Polytechnique, Universite Paris-Saclay, 91128 Palaiseau, France

17:15 **Formation of Heterojunctions in SiGe Nanowires by Thermal Oxidation** **D 11.4**
Yu-Tao Sun, Shao-Sian Li, Cheng-Yen Wen
Department of Materials Science and Engineering, National Taiwan University, Taiwan, Graduate Institute of Biomedical Optomechatronics, Taipei Medical University, Taiwan

17:30 **Self-limiting Sb monolayer as a diffusion source for Ge doping** **D 11.5**
Francesco Sgarbossa(1,2), Gianluigi Maggioni(1,2), Gian Andrea Rizzi(3), Sara Maria Carturan(1,2), Enrico Napolitani(1,2), Walter Raniero(2), Chiara Carraro(1,2), Daniel R. Napoli(2), Gaetano Granozzi(3), Davide De Salvador(1,2)
1) Department of Physics and Astronomy, Università degli Studi di Padova, Via Marzolo n. 8, 35131 Padova, Italy, 2) Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali di Legnaro, Viale dell’Università n. 2, 35020 Legnaro (PD), Italy, 3) Department of Chemical Sciences and INSTM unit, Università degli Studi di Padova, Via Marzolo n. 1, 35131 Padova, Italy,

17:45 **Strategies and issues for Ge hyperdoping by pulsed laser melting** **D 11.6**
R. Milazzo,(1,5) C. Carraro,(1,5) G. Impellizzeri,(2) J. Frigerio,(3) A. Ballabio,(3) A. Pecora,(4) A. Sanson,(1) D. De Salvador,(1,5) D. Scarpa,(5) A. Andrighetto,(5) A. Portavoce,(6) D. Mangelinck,(6) M. Ortolani,(7) G. Isella,(3) G. Fortunato,(4) A. Carnera,(1) and E. Napolitani(1,2,5)
(1) Dipartimento di Fisica e Astronomia, Università di Padova, Via Marzolo 8, I-35131 Padova, Italy, (2) CNR-IMM, via S Sofia 64, I-95123, (3) L-NESS, Dipartimento di Fisica, Politecnico di Milano, Polo di Como, Via Anzani 42, I-22100 Como, Italy, (4) CNR-IMM, Via del Fosso del Cavaliere 100, 00133 Roma, Italy, (5) Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali di Legnaro, Viale dell’Università 2, 35020 Legnaro (PD), Italy, (6) IM2NP, CNRS-Universités d’Aix-Marseille et de Toulon, Faculté de saint Jérôme, 13397 Marseille, France, (7) Dipartimento di Fisica, Sapienza Università di Roma, Piazzale Aldo Moro 5, I-00185 Rome, Italy,

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Si Nanocrystals : Session Chairs: J. Veinot, S. Strehle

08:30 INV **Ambipolar quantum dots in planar silicon** **D 12.1**
P. C. Spruijtenburg, M. Brauns, S. V. Amitonov, M. W. S. Vervoort, A. J. Sousa de Almeida, A. Márquez Seco, W. G. van der Wiel, F.A. Zwanenburg
MESA+ Institute for Nanotechnology, University of Twente, Drienerlolaan 5, 7522 NB Enschede, The Netherlands

09:00 **Non-thermal Plasma Treatment: Efficient Way to Enhance Photoluminescence of Silicon Nanocrystals Dispersed in Water** **D 12.2**
Pavel Galář(1), Josef Khun(2), Anna Fučíková(3), Irena Matulková(4), Kateřina Herynková(1), Ivan Němec(4) and Kateřina Kůsová(1)
(1) Czech Academy of Sciences, Cukrovarnická 112/10, Prague, 162 00, Czech Republic, (2) University of Chemistry and Technology, Technická 3, Prague, 166 28, Czech Republic, (3) Charles University in Prague, Ke Karlovu 2027/3, Prague, 128 00, Czech Republic, (4) Charles University in Prague, Hlavova 2030/8, Prague, 128 43, Czech Republic

09:15 **Improved properties of Si nanocrystals in Si/SiC multilayers by oxidation and rapid thermal annealing** **D 12.3**
Charlotte Weiss, Markus Ohnemus, Stefan Janz
Frunhofer Institute for Solar Energy Systems ISE, Heidenhofstrasse 2, 79110 Freiburg, Germany

09:30 **Coffee Break**

Si NCs - Characterization : Session Chairs: F. Zwanenburg, R. Duffy

10:00 INV **Local-probe studies of doped Cu2S and Si nanocrystals** **D 13.1**
Oded Millo, Jonathan G. C. Veinot
Racah Institute of Physics and the Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem, Department of Chemistry, University of Alberta, Edmonton, Alberta T6G 2G2, Canada

10:30 **DFT simulations of silicon nanocrystals with enhanced properties via ligands** **D 13.2**
(1) Katerina Dohnalova Newell, (1) Prokop Hapala, (2) Ivan Infante
(1) University of Amsterdam, Science Park 904, 1098XH Amsterdam, The Netherlands, (2) VU University Amsterdam, 1081 HV Amsterdam, The Netherlands

10:45 **Promising approach for high efficiency silicon nanostructured hybrid solar cells via energy transfer** **D 13.3**
Thiyagu Subramani, Junyi Chen, Wipakorn Jevasuwan, Naoki Fukata
National Institute for Materials Science (NIMS), Japan

11:00 **Plenary Session II**

12:30 **Lunch**

Si NCs - Photoluminescence : Session Chairs: J. Linnros, P. Stradins

14:00 INV **Luminescence decay kinetics as a clue to understand Si nanoparticles and their ensembles** **D 14.1**
Mikel Greben, Jan Valenta
Faculty of Mathematics and Physics, Charles University, Prague, Czechia

14:30 **Silicon Nanocrystals: Is their internal structure as crystalline as we once thought?** **D 14.2**
Jonathan G. C. Veinot, Alyxandra N. Thiessen, Michelle Ha, Riley W. Hooper, Vladimir K. Michaelis
Department of Chemistry, University of Alberta, Edmonton, Alberta T6G 2G2, Canada

14:45 **Beyond the stretched-exponential photoluminescence decay in Si nanocrystals** **D 14.3**
K. Kusova1, T. Popelar1, P. Ceroni2
1 Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic
2 Department of Chemistry, University of Bologna, Bologna, Italy

15:00 **Probing luminescence dynamics and photo-selection of the organic-capped silicon nanocrystals** **D 14.4**
Chia-Ching Huang (1), Bart van Dam (1), Jonathan Wilbrink (2), Arnon Lesage (1), Femius Koenderink (1,3), Jos M. J. Paulusse (2), Katerina (Dohnalova) Newell (1)
(1) Institute of Physics, University of Amsterdam, Postbus 94485, 1090GL Amsterdam, the Netherlands, (2) MIRA Institute, University of Twente, Postbus 217, 7500AE Enschede, the Netherlands, (3) Center for Nanophotonics, AMOLF Institute, Science Park 104, 1098XG Amsterdam, the Netherlands.

15:15 **Impact excitation of Er3+ ions in SiO2 sensitized by Si Nanocrystals** **D 14.5**
Arnon Lesage, Dolf Timmerman, Tom Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, The Netherlands, Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, Japan, Van der Waals-Zeeman Institute, University of Amsterdam, The Netherlands,

15:30 **Enhancement of emission efficiency of oxidized silicon nanocrystals by interaction with H+ ions** **D 14.6**
M. Cannas, P. Camarda, L. Vaccaro, F. Amato, F. Messina, T. Fiore, S. Agnello, F.M. Gelardi
University of Palermo, Department of Physics and Chemistry, Palermo, Italy

15:45 **Coffee Break**

Si Nanopores & porous-Si : Session Chairs: J. Valenta, D. Hiller

16:15 INV **Silicon Nanotechnology for Biomolecule Sensing** **D 15.1**
Jan Linnros (1), Sara Cavallaro (1), Hithesh Kumar Gatty (1), Josef Horak (2), Amelie Eriksson Karlström (2), Kristina Viktorsson (3), Petra Hååg (3), Rolf Lewensohn (3), Apurba Dev (1)
1Department of Applied Physics, KTH - Royal Institute of Technology, Stockholm, Sweden 2Department of Protein Science, KTH - Royal Institute of Technology, Stockholm, Sweden 3Department of Oncology-Pathology, Karolinska Institutet, Stockholm, Sweden

16:45 **Silicon nanopore arrays for biomolecule translocation detection** **D 15.2**
Ilya Sychugov, Miao Zhang, Jan Linnros
KTH-Royal Institute of Technology, Stockholm, Sweden

17:00 **Potential Innovative Applications of Ordered Nano and Macro Porous Silicon Structures** **D 15.3**
Dr. Petra Goering, Monika Lelonek
SmartMembranes GmbH, Halle, Germany

17:15 **In-depth study of the Silicon porous structuration effect on negative LiB electrode permormances** **D 15.4**
Aude Roland (1), Arthur Dupuy (2), Frédérique Cunin (1), Nicolas Louvain (1), Abderraouf Boucherif (2), Laure Monconduit (1)
(1) Institut Charles Gerhardt Montpellier – UMR 5253 CNRS-UM-ENSCM, Université de Montpellier, 2 Place Eugène Bataillon, 34095 Montpellier cedex 5, France (2) Interdisciplinary Institute for Technological Innovation (3IT) - Innovation Park, Pavillion 2 Université de Sherbrooke - 3000 Université Blvd. , Sherbrooke (Québec) J1K 0A5, Canada

17:30 **Robust silicon anode of plate structures and its mechanical analysis during lithiation** **D 15.5**
Yeongae Kim, Soojin Sim, Jeonghun Yun, Seok Woo Lee
School of Electrical and Electronic Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798, Singapore

17:45 **Closing Remarks**

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM E

Earth-abundant next generation materials for solar energy - III

Symposium Organizers :

Alex REDINGER, University of Luxembourg, Luxembourg

Geoffroy HAUTIER, Université Catholique de Louvain, Belgium

Robert PALGARVE, University College London, U.K.

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Monday 27 may 2019

Session I:
Oxide and Oxy Nitride Solar Absorbers : TBA

14:00 INV **Nitrogen containing perovskite materials for solar energy** **E 1.1**
Andriy Zakutayev
National Renewable Energy Laboratory

14:30 **Correlation of oxygen content and disorder in zinc germanium oxide nitride** **E 1.2**
Zhenyu Wang, Joachim Breternitz, Susan Schorr
Zhenyu Wang, 1 Helmholtz-Zentrum Berlin für Materialien und Energie, Structure and Dynamics of Energy Materials, Hahn-Meitner-Platz 1, 14109 Berlin, Germany 2 Freie Universität Berlin, Department Geosciences, Malteserstraße 74-100, 12249 Berlin, Germany, Joachim Breternitz, 1 Helmholtz-Zentrum Berlin für Materialien und Energie, Structure and Dynamics of Energy Materials, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, Susan Schorr, 1 Helmholtz-Zentrum Berlin für Materialien und Energie, Structure and Dynamics of Energy Materials, Hahn-Meitner-Platz 1, 14109 Berlin, Germany 2 Freie Universität Berlin, Department Geosciences, Malteserstraße 74-100, 12249 Berlin, Germany

14:45 **Evaluating optical and electrical properties of earth-abundant Cu2O layers for PV applications** **E 1.3**
VS. Nguyen, J. Resende, C. Jiménez, N. D. Nguyen, J-L. Deschanvres, W. Favre.
Univ. Grenoble Alpes, CEA, LITEN, DTS, INES, 73375 Le Bourget du Lac, France, Univ. Grenoble Alpes, CNRS, Grenoble INP (Institute of Engineering Univ. Grenoble Alpes), LMGP, 38000 Grenoble, France, Département de physique, CESAM / Q-MAT, SPIN, Université de Liège, B-4000 Liège, Belgique,

15:15 **Ultra-fast growth of CuO layers for photovoltaic applications** **E 1.4**
Monika Ożga, Bartłomiej S. Witkowski, Rafał Pietruszka, Jarosław Kaszewski, Marek Godlewski
Institute of Physics of the Polish Academy of Sciences

15:15 **New generation of transparent electrodes for photovoltaics: a brief review** **E 1.5**
Daniel Bellet1, Dorina Papanastasiou1, Joao Resende1,2, Viet Huong Nguyen1, Carmen Jiménez1, David Muñoz-Rojas1
1 Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, 38000 Grenoble, France 2 Univ. Grenoble Alpes, Université Savoie Mont Blanc, CNRS, Grenoble INP, LEPMI, 38000 Grenoble, France

15:30 **Oxide route for Cu2ZnSnS4 solar cells by Pulsed Laser Deposition** **E 1.6**
M. Gansukh1, S. López-Marino2, M. Rodriguez1, S. Engberg1, F. Martinho1, N.C. Schjødt3, E. Stamate4, O. Hansen2, N. Pryds4, J. Schou1 and S. Canulescu1*
1 DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde, Denmark, 2 DTU Nanolab, National Center for Nano Fabrication and Characterization, Technical University of Denmark, DK-2800 Kgs. Lyngby, Denmark, 3 Haldor Topsoe A/S, Haldor Topsøes Allé 1, DK-2800 Kgs. Lyngby, Denmark, 4 DTU Energy, Technical University of Denmark, DK-4000 Roskilde, Denmark,

15:45 **Unlocking the Potential of Earth-Abundant Metal Oxides for Thermochemical Solar Fuel Production** **E 1.7**
Professor Antonio Tricoli, Dr Michael Gao
Nanotechnology Research Laboratory, College of Engineering and Computer Science, Australian National University

16:00 **Coffee Break**

Session II :
Advances in Zinc tin phosphide and new sulfide solar cell absorbers : TBA

16:30 INV **Development of ZnSnP2-based Photovoltaic Devices** **E 2.1**
Yoshitaro NOSE, Shigeru NAKATSUKA, Taro KUWANO, Ryoji KATSUBE
Department of Materials Science and Engineering, Kyoto University

17:00 **Growth and functional properties of Zn3P2 nanowires for energy harvesting** **E 2.2**
Simon Escobar Steinvall, Elias Stutz, Nicolas Tappy, Masoomeh Ghasemi, Jean-Baptiste Leran, Rarjupra Paul, Mahdi Zamani, Anna Fontcuberta i Morral
Laboratory of Semiconductor Materials, Institute of Materials, École Polytechnique Fédérale de Lausanne, Switzerland, Laboratory of Semiconductor Materials, Institute of Materials, École Polytechnique Fédérale de Lausanne, Switzerland, Laboratory of Semiconductor Materials, Institute of Materials, École Polytechnique Fédérale de Lausanne, Switzerland, Thermo-Calc AB, Stockholm, Sweden and Persian Gulf University, Iran, Laboratory of Semiconductor Materials, Institute of Materials, École Polytechnique Fédérale de Lausanne, Switzerland, Laboratory of Semiconductor Materials, Institute of Materials, École Polytechnique Fédérale de Lausanne, Switzerland, Laboratory of Semiconductor Materials, Institute of Materials, École Polytechnique Fédérale de Lausanne, Switzerland, Laboratory of Semiconductor Materials, Institute of Materials, École Polytechnique Fédérale de Lausanne, Switzerland

17:15 **Surface passivation of zinc phosphide thin films and nanowires** **E 2.3**
E. Stutz(1), S. Escobar Steinvall(1), R. Paul(1), J.-B. Leran(1), M. Zamani(1), N. Montanarella(1), N. Humblot(1,2), A. Fontcuberta i Morral(1)
1. Laboratory of Semiconductor Materials, Institute of Materials, Ecole Polytechnique Fédérale de Lausanne, Switzerland, 2. Xiong Qihua Group, Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore

17:45 **Effect of strong sunlight illumination on Hall mobility in solar cell materials for concentrated multi-junction solar cells** **E 2.4**
Tomoki Harada1, Kenjiro Takauchi1, Naoya Miyashita2, Tetsuo Ikari1, and Atsuhiko Fukuyama1
1Faculty of Engineering, University of Miyazaki, 1-1 Gakuen Kibanadai-Nishi, Miyazaki 889-2192, Japan, 2Research Center for Advanced Science and Technology, The University of Tokyo, Bunkyo-ku, Tokyo 113-0032, Japan

17:45 **The Solar Application of Few-Layer Molybdenum Disulfide (MoS2) Films Produced at the Liquid-Liquid Interface** **E 2.5**
Eliott P. C. Higgins (1,2), Simon G. McAdams (3), David G. Hopkinson (1,3), David J. Lewis (3), Robert A. W. Dryfe (1,2)
(1) National Graphene Institute, University of Manchester, Oxford Road, Manchester, M13 9PL, United Kingdom (2) School of Chemistry, University of Manchester, Oxford Road, Manchester, M13 9PL, United Kingdom (3) School of Materials, University of Manchester, Oxford Road, Manchester, M13 9PL, United Kingdom

18:00 **Silicon allotropes: silicon clathrate thin films for photovoltaic applications** **E 2.6**
A. Ameur1, S. Roques1, J.L. Rehspringer2, D. Muller1, A. Slaoui1, T. Fix1
1 CNRS and Université de Strasbourg, ICube Laboratory, 67037 Strasbourg, France, 2 CNRS and Université de Strasbourg, Institut de Physique et Chimie des Matériaux de Strasbourg, F-67034 Strasbourg, France

18:15 **Intrinsic defect induced changes in the optoelectronic properties and their correlation with the morphology in SnS particles** **E 2.7**
Chetan C. Singh, Emila Panda
Department of Materials Science and Engineering, Indian Institute of Technology Gandhinagar, Palaj, Gandhinagar 382355, Gujarat, India

Session III :
New insights into electronic structure of hybrid perovskites other novel absorber materials : TBA

08:45 INV **Light Soaking Effects and Passivation in Metal Halide Perovskites** — E 3.1
Bernard Wenger
University of Oxford

09:15 **Ab initio exploration of the Cs3Bi2X9 (X=Br, I) family for optoelectronic applications** — E 3.2
Christopher N. Savory, Taylor Hodgkins, Kelsey K. Bass, John Buckeridge, Brent C. Melot, David O. Scanlon
Department of Chemistry, University College London, Christopher Ingold Building, London WC1H 0AJ, United Kingdom, Department of Chemistry, University of Southern California, Los Angeles, California 90089, United States, Department of Chemistry, University of Southern California, Los Angeles, California 90089, United States, Department of Chemistry, University College London, Christopher Ingold Building, London WC1H 0AJ, United Kingdom, Department of Chemistry, University of Southern California, Los Angeles, California 90089, United States, a) Department of Chemistry, University College London, Christopher Ingold Building, London WC1H 0AJ, United Kingdom b) Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Didcot OX11 0DE, United Kingdom

09:30 **Halide Exchange in Single Crystal Halide Perovskites** — E 3.3
Aya Osherov, Yishay Feldman, Ifat Kaplan-Ashiri, Gary Hodes, David Cahen
Weizmann Institute of Science

09:45 **Coffee Break**

10:15 **Point defect influenced bulk and surface electrical properties of Sn-rich SnS films deposited by radio frequency magnetron sputt** — E 3.4
Chetan C. Singh and Emila Panda
Department of Materials Science and Engineering, Indian Institute of Technology, Gandhinagar, Palaj-382355, Gujarat, India

10:45 **An insight into the effect of band alignment at grain boundaries on photovoltaic performance in CIGS and CZTS solar cells** — E 3.5
Wenjie Li,Ye Feng, Guo Chen, Chunlei Yang
Center for Information Photonics and Energy Materials, Shenzhen Institutes of Advanced Techonology, Chinese Academy of Sciences

10:45 **V-doped Sn3Ge3Ni8 spinel, an efficient in-gap band material with improved absorption features** — E 3.6
P. Sanchez-Palencia(a), P. Palacios(b), G. García Moreno(a), J. C. Conesa (c), P. Wahnon(b)
(a) Instituto de Energía Solar and Dept. TFB, E.T.S.I. Telecomunicación, Universidad Politécnica de Madrid, Spain, (b) Instituto de Energía Solar and Dept. FAIAN, E.T.S.I. Aeronáutica y del Espacio, Universidad Politécnica de Madrid, (d) Instituto de Catálisis y Petroleoquímica, CSIC, Marie Curie 2, Madrid, Spain.

11:15 **Plenary Session 1**

12:30 **Lunch**

Session IV :
Advances in Hybrid Halide Perovskites and Related Materials : TBA

13:45 INV **Searching beyond methylammonium lead iodide for next generation solar absorbers** — E 4.1
David O. Scanlon
1. Department of Chemistry, University College London, London, United Kingdom.
2. Diamond Light Source, Didcot, Oxfordshire, United Kingdom.

14:15 INV **Shining Light on the Complex Compositional Landscape in Halide Perovskite Absorbers** — E 4.2
David P Fenning
University of California, San Diego, USA

14:45 **A Theoretical Study of Structure-Property Relations in Photovoltaic Perovskites** — E 4.3
Jordan A.R Cowell, Dr. Nicholas C. Bristowe
Functional Materials Group, School of Physical Sciences, University of Kent, United Kingdom

15:00 **Antisolvent temperature control enabled nucleation and growth manipulation for highly oriented large area perovskite solar cells** — E 4.4
Gyumin Jang, Hyeok-Chan Kwon, Sunihl Ma, Seongcheol Yoon, Hyunha Yang and Jooho Moon*
Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, Republic of Korea

15:15 **Nano-engineering of a hybrid organic-inorganic composite hole-transporting material for stable perovskite solar cells** — E 4.5
Francesco Lamberti, Min Kim, Marcello Righetto, Enrico Cescon, Antonio Rizzo, Roberto Sorrentino, Matteo Massetti, Luca Bolzonello, Niccolò Michieli, Moreno Meneghetti, Enzo Menna, Lorenzo Franco, Annamaria Petrozza, Teresa Gatti*
Dr. F. Lamberti, Dr. M. Righetto, E. Cescon, Dr. L. Bolzonello, Prof. M. Meneghetti, Prof. E. Menna, Prof. L. Franco, Dr. T. Gatti Department of Chemical Sciences, University of Padova and INSTM UdR Padova, Via Marzolo 1, 35131 Padova, Italy Dr. F. Lamberti, Dr. M. Kim, R. Sorrentino, M. Massetti, Dr. A. Petrozza Center for Nanoscience and Technology, Istituto Italiano di Tecnologia, Via Pascoli 70/3, 20133 Milano, Italy Dr. A. Rizzo Department of Information Engineering, University of Padova, Via Gradenigo 6/B, 35131 Padova, Italy Dr. N. Michieli Department of Physics and Astronomy, University of Padova, via Marzolo 8, 35131 Padova, Italy Dr. F. Lamberti, Dr. A. Rizzo, Prof. M. Meneghetti, Prof. E. Menna, Prof. L. Franco Interdepartmental Centre “Giorgio Levi Cases” for Energy Economics and Technology, University of Padova, via Marzolo 9, 35131 Padova, Italy

15:30 **Anodized aluminium oxide scaffold based nanopillar perovskite for large area semitransparent solar module** — E 4.6
Hyeok-Chan Kwon, Sunihl Ma, Yun Seong-Cheol, Gyumin Jang, Hyunha Yang, Jooho Moon*
Department of Materials Science and Engineering, Yonsei University

15:45 **Highly stable copper nanowire based bottom electrode protected by atomic layer deposition for flexible perovskite solar cell** — E 4.7
Hyunha Yang, Kyungmi Kim, Sunihl Ma, Hyeok-Chan Kwon, Seong-Cheol Yun, Gyumin Jang and Jooho Moon*
Department of Materials Science and Engineering, Yonsei University

16:00 **Coffee Break**

Poster Session 1 : TBA

16:30 **Fabrication and Characterization of n-Si-Nanowires/p-CZTS structured Solar Cells on Transparent Conducting Oxides Substrates** — E 20.1
Eray HUMALI, Elif PEKSU, Hakan KARAAGAC
Istanbul Technical University, Department of Physics

16:30 **Towards a synthesis of BaZrS3 chalogenide perovskite using PVD methods.** — E 20.2
Alexandra Davydova, Tove Ericson, Jonathan Scragg
Thin Film Solar Cell Group, Ångström Laboratory, Uppsala University, Sweden

16:30 **Sodium (Na) diffusion from the substrate during the pyrite (FeS2) thin films growth** — E 20.3
C. Morales, E. Flores, A. Gomes, S. Yoda, J. R. Ares, C. Sánchez, I. J. Ferrer
C. Morales: Dpto. de Física Aplicada, UAM, Cantoblanco, E-28049, Madrid (Spain). E. Flores: 3FINDER-group, Instituto de Micro y Nanotecnología, IMN-CNM, CSIC, E-28760, Tres Cantos, Madrid (Spain). A. Gomes: Centro de Química e Bioquímica, Faculdade de Ciências, Universidade de Lisboa, 1749-016 Lisboa (Portugal) S. Yoda, J. R. Ares, C. Sánchez, I. J. Ferrer MIRE-group, Dpto. de Física de Materiales, UAM, Cantoblanco, E-28049, Madrid (Spain).

16:30 **Thin film of type II Ge clathrate on sapphire substrate and its optical property** — E 20.4
Tetsuji Kume, Himanshu S. Jha, Takuma Maeda, Fumitaka Ohashi
Gifu University

16:30 **Influence of air-annealing on CdS/Cu(In,Ga)Se2 heterostructure surface chemical composition and solar cell properties** — E 20.5
M. Kauk-Kuusik, M. Danilson, M. Pilvet, E. Uslu, K. Timmo, M. Grossberg
Department of Materials and Environmental Technology, Tallinn University of Technology, Estonia

16:30 **Achieving the non-degenerate Zn3N2 thin films by non-equilibrium deposition** **E 20.6**
Yong Wang 1，Takeo Ohsawa 2，Naoki Ohashi 2
1 International Center for Young Scientists, National Institute for Materials Science, Tsukuba, Japan, 2 Research Center for Functional Materials, National Institute for Materials Science, Tsukuba, Japan

16:30 **Growth and properties of CuSbS2 and CuSbSe2 absorbers for solar cells** **E 20.7**
A. Penežko, M. Kauk-Kuusik, O. Volobujeva, M. Grossberg
Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

16:30 **Vacuum thermal evaporated Cu2ZnxFe1-xSnS4 thin films on Si (001) substrates** **E 20.8**
M. Sebai, I. Trabelsi, J. L.Lazzari and M. Kanzari
M. Sebai: Université de Tunis El Manar Ecole Nationale d'Ingénieurs de Tunis, Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs, 1002, Tunis, Tunisie. I. Trabelsi: Université de Tunis, ENIT-IPEITunis Montfleury, Laboratoire de Photovoltaïques et Matériaux Semi-conducteurs. J. L.Lazzari: Centre Interdisciplinaire de Nanoscience de Marseille (CINaM), UMR 7325 CNRS -- Aix-Marseille Université. Campus de Luminy, Case 913, 163, Avenue de Luminy, 13288 Marseille Cedex 09, France. M. Kanzari: Université de Tunis, ENIT-IPEITunis Montfleury, Laboratoire de Photovoltaïques et Matériaux Semi-conducteurs.

16:30 **Electrical modeling of Earth-abundant CZTS solar cells including time-related degradation effects** **E 20.9**
A. Maoucha1, F. Djeffal1,2,*, T. Bentrcia2 and A. Benhaya1
1 LEA, Department of Electronics, University Mostefa Benboulaid-Batna 2, Batna 05000, Algeria. 2 LEPCM, University of Batna 1, Batna 05000, Algeria. *E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

16:30 **Effect of absorber surface modification on the photovoltaic properties of Cu2CdGeSe4 solar cells** **E 20.10**
X. Li, M. Kauk-Kuusik, M. Pilvet, K. Timmo, M. Grossberg, M. Danilson, V. Mikli
Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

16:30 **Correlative EBIC-EBSD-APT Demonstrate Diverse Role of Grain Boundaries in Cu(In,Ga)Se2 Solar Cells** **E 20.11**
Mohit Raghuwanshi, Jens Keutgen and Oana Cojocaru-Mirédin
RWTH Aachen, I. Physikalisches Institut IA, Sommerfeldstrasse 14, 52074 Aachen, Germany

16:30 **Applications of Cu2ZnSnS4 (CZTS) in Quantum Dot Photovoltaics** **E 20.12**
Toby Wong, Xinxing Liang, Saif A. Haque
N/A

16:30 **Effect of annealing temperature on sodium doped Sb2S3 thin films** **E 20.13**
D. Abdelkader, F. Antoni, M. Kanzari
Université de Tunis ElManar, Ecole Nationale d'Ingénieurs de Tunis, Laboratoire de Photovoltaïque et Matériaux Semiconducteurs, BP37, 1002 Le Belvédère, Tunis, Tunisia ICube-Laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie, Université de Strasbourg-CNRS, 23, rue du Loess, 67037 Strasbourg Cedex, France

16:30 **DFT Study of Physical Properties of Highly Mismatched Zn1-xCuxS Nano-Sheet Alloys** **E 20.14**
Adil ES-SMAIRI 1, Nejma FAZOUAN 1,2*, El Houssine ATMANI 1
(1) Laboratory of Physics of Condensed Matters and Renewables Energies, Hassan II University, Faculty of Sciences and Technologies, B.P 146, 20650 Mohammedia, Morocco. (2) Laboratory of Materials Physics, Sulttan Moulay Slimane University, Faculty of Sciences and Technologies, B.P 523, 23000 BeniMellal, Morocco. (*) Corresponding author fazouan@yahoo.fr

16:30 **Effect of post annealing atmosphere on the properties of earth abundant CZTS absorber layer** **E 20.15**
N. Khemiria, S. Chammakh, M. Kanzari
Université Tunis El Manar, Institut Prépatoire aux Etudes d'Ingénieurs El Manar (IPEIEM), Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs 1002, Tunis, Tunisie. Université de Tunis, IPEITunis Montfleury, Laboratoire de Photovoltaïques et Matériaux Semi-conducteurs-ENIT

16:30 **The Band alignment study of Zn(S,O,OH)/CIGS interface** **E 20.16**
Ara Cho1,2*, Marlena Ostrysz1, Soomin Song1, Sangmin Lee1, SeJin Ahn1, Jae Ho Yun1, Jihye Gwak1, Seung Kyu Ahn1, Young-Joo Eo1, Jun Sik Cho1, Ju Hyung Park1, Jin Su Yoo1, Kihwan Kim1
1 New and Renewable Energy Research Division, Photovoltaic Laboratory, Korea Institute of Energy Research (KIER), Daejeon, Republic of Korea , 2 Renewable Energy Engineering, University of Science and Technology (UST), Daejeon, Republic of Korea

16:30 **The chelating effect on Cu2SnS3 thin film solar cells using hybrid ink** **E 20.17**
Ara Cho1,2*, Shahara Banu1,2, Yunae Cho1, SeJin Ahn1, Jae Ho Yun1, Jihye Gwak1, Seung Kyu Ahn1, Young-Joo Eo1, Jun Sik Cho1, Ju Hyung Park1, Jin Su Yoo1, Kihwan Kim1
1 New and Renewable Energy Research Division, Photovoltaic Laboratory, Korea Institute of Energy Research (KIER), Daejeon, Republic of Korea , 2 Renewable Energy Engineering, University of Science and Technology (UST), Daejeon, Republic of Korea

16:30 **Effects of irradiation of ZnO/CdS/Cu2ZnSnSe4/Mo/glass solar cells by 10 MeV electrons on photoluminescence spectra** **E 20.18**
M.A. Sulimov 1,2, M.N. Sarychev 2, M.V. Yakushev 1,2,3,4, J. Márquez-Prieto 5, I. Forbes 5, V.Yu. Ivanov 2, P.R. Edwards 3, A.V. Mudryi 6, J. Krustok 7 and R.W. Martin 3
1 M.N. Mikheev Institute of Metal Physics UB RAS, 620108, S. Kovalevskaya Street 18, Ekaterinburg, Russia, 2 Ural Federal University, Mira 19, 620002 Ekaterinburg, Russia, 3 Department of Physics, SUPA, University of Strathclyde, Rottenrow 107, G4 0NG Glasgow, UK, 4 Institute of Solid State Chemistry of Ural Branch of the RAS, Pervomaiskaya 91, 620990 Ekaterinburg, Russia, 5 Northumbria Photovoltaic Application Group, Faculty of Engineering and Environment, Northumbria University,Ellison Place, Newcastle upon Tyne NE1 8ST, UK, 6 Scientific-Practical Material Research Centre of the National Academy of Science of Belarus, P.Brovki 19, 220072 Minsk, Belarus, 7 Tallinn University of Technology, Departments of Physics and Materials Science, Ehitajate tee 5, 19086 Tallinn, Estonia

16:30 **All-oxide nanowire solar cells** **E 20.19**
Pedram Ghamgosar, Federica Rigoni, Arnaud Bemou, Alessandro Faccin, Raffaello Mazzaro, Shujie You, Nils Almqvist, Alberto Vomiero
Luleå University of Technology, Sweden

16:30 **Optical and Electrical Properties of Ga-doped SnS Thin Films** **E 20.20**
M. Ben Mbarek (1), M. Reghima (1), N. Yacoubi (1), M. Kunst (2), R. Schwarz (2)
(1) Unité de Recherche Photothermie, Institut Préparatoire aux Etudes d´Ingénieurs (IPEIN), 8000 Mrezka, Nabeul, Tunisia (2) Physics Department and CeFEMA, Instituto Superior Técnico, IST, P-1049-001 Lisbon, Portugal

16:30 **High-performance Sb2Se3 photocathode for photoelectrochemical water splitting with Cu-doped NiO hole selective layer** **E 20.21**
Hyungsoo Lee, Wooseok Yang, Jeiwan Tan, Yunjung Oh, Jaemin Park and Jooho Moon
Department of Materials Science and Engineering, Yonsei University

16:30 **Influence of defects of SnS layers around n-type buffer/p-type SnS interface** **E 20.22**
T Tosuke. T Funatsu. T Takato. M sugiyama.
Faculty of Science and Technology. Tokyo University of Science,

16:30 **Structural evolution and electrical properties of ZnO and AZO thin films grown by magnetron sputtering at room temperature** **E 20.23**
J. R. R. Bortoleto, R. Ramos, M. Chaves, E. Martins, S. F. Durrant, N. C. Cruz, T. F. da Silva
São Paulo State University (UNESP), Av. 3 de Março 511, Sorocaba, SP, Brazil São Paulo University (USP), Rua do Matão Trav. R187, São Paulo, SP, Brazil

16:30 **High-efficiency planar CH3NH3PbI3 perovskite solar cell using solution-processed NiO thin film as hole-transporting layer** **E 20.24**
Sang-Hun Nam1,*, Jung-Hoon Yu2, Dong In Kim2, Juwon Yang2, Hyeon Jin Seo2, Ji Won Lee1,2, Rak Hyun Jeong1,2, Yeong Eun Gil2, and Jin-Hyo Boo1,2
1Institute of Basic Science, Sungkyunkwan University, Suwon 440-746, Republic of Korea,2Department of Chemistry, Sungkyunkwan University, Suwon 440-746, Republic of Korea

16:30 **Solvent-less synthesis of Cu2FeSnS4 solid solutions using single source precursors** **E 20.25**
Abdulaziz Mohammed Alanazi,1,3 Firoz Alam,1,2 David. J. Lewis,2 and Paul O'Brien1,2
1 School of Chemistry and Materials, the University of Manchester, Oxford Road UK, M13 9PL. 2 Schools of Materials, the University of Manchester, Oxford Road UK, M13 9PL. 3 School of Chemistry, Islamic university, Prince Naif Ibn Abdulaziz Rd, Madinah, 42351, KSA.

16:30 **Effect of the thickness on the electrical and optical properties of Zn(O,Se) layers prepared by PLD** **E 20.26**
Akram Abdalla*, Sergei Bereznev, Olga Volobujeva and Svetlana Polivtseva
School of Engineering, Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, Tallinn 19086, Estonia

16:30 **Formation mechanisms of 12.5% CZTSSe using Sn/Cu/Zn/Mo stacked elemental precursors** **E 20.27**
Se-Yun Kim, Dae-Ho Son, Young-Ill Kim, Seung-Hyun Kim, Sammi Kim, Kwangseok Ahn, Shi-Joon Sung, Dae-Kue Hwang, Kee-Jeong Yang, Jin-Kyu Kang, Dae-Hwan Kim
Convergence Research Center for Solar Energy, Daegu-Gyeongbuk Institute of Science and Technology (DGIST), Daegu 42988, South Korea

16:45 **Comparison of rf and pulsed magnetron sputtering for the deposition of AZO thin films on PET substrates** **E 20.28**
J. R. R. Bortoleto, L. P. G Oliveira, R. Ramos, W. H. Rabelo, C. E. P. Ireno, E. C. Rangel, S. F. Durrant
São Paulo State University (UNESP), Av. 3 de Março 511, Sorocaba, SP, Brazil

16:45 **Investigation of BiCuSeO thin film applied as a photo-catalyst material** **E 20.29**
Yanbo Yang1, Si Wang1, Lixuan Wei1, Yue Wang1, Xiang Luo1, Zequn Chen2, La Zhuo1, Yuan He1, Dongyun Chen1,3, Yongkai Li1, Zhuo Chen2, Junfeng Han1,3*
1, Key laboratory of advanced optoelectronic quantum architecture and measurement, ministry of education, School of Physics, Beijing Institute of Technology, Beijing, 100081, China 2, School of Materials Science & Engineering, Beijing Institute of Technology, Beijing, 100081, China 3, Micronano Center, Beijing Institute of Technology, Beijing, 100081, China

Wednesday 29 may 2019

Session V :
Spectroscopic Characterisation of Solar Absorbers : TBA

08:45 INV **Accelerating the development of new solar absorbers by spectroscopic characterization.** **E 5.1**
Glenn Teeter1, Allison Mis1,2, Adele C. Tamboli1, Tahmida Najmatul Huq3, Robert L. Z. Hoye3,4, Judith Driscoll3, Elisabetta Arca1
1 Materials Science Center National Renewable Energy Laboratory, Golden, Colorado 80401, United States 2 Department of Metallurgical and Materials Engineering, Colorado School of Mines, Golden, Colorado 80401, United States 3 Department of Materials Science and Metallurgy, University of Cambridge, Cambridge CB3 0FS, UK 4 Cavendish Laboratory, University of Cambridge, Cambridge CB3 0HE, UK

09:15 **Band alignment at the CdS/ACZTS interface studied by soft X-ray spectroscopy** **E 5.3**
Stela Canulescu1*, Mungunshagai Gansukh1, Zheshen Li2, Moises Espindola Rodriguez1, Simon López-Marino3, Sara Engberg1, Eugen Stamate4, Ole Hansen3 and Jørgen Schou1
1) Department of Photonics Engineering, Technical University of Denmark, DK-4000 Roskilde, Denmark 2)Department of Physics and Astronomy, Aarhus University, DK-8000 Aarhus C, Denmark 3) DTU Nanolab, National Center for Nano Fabrication and Characterization, Technical University of Denmark, DK-2800 Kgs. Lyngby, Denmark 4) Department of Energy Conversion and Storage, Technical University of Denmark, DK-4000 Roskilde, Denmark

09:30 **X ray spectroscopic composition analysis of the electrical properties of amorphous ZnSnOy grown by magnetron sputtering** **E 5.4**
Ainur Zhussupbekova, Aitkazy Kaisha, Igor V. Shvets, Karsten Fleischer, David Caffrey
School of Physics and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College, The University of Dublin, Dublin 2, Ireland

09:45 **Development of thin-film 3-junction solar cells incorporating 1 eV GaAsBi absorber** **E 5.5**
1) Tadas Paulauskas, Vaidas Pacebutas, Renata Butkute, Andrejus Geizutis, Viktorija Strazdiene, Arunas Krotkus 2) Rafal Jakiela
1) Center for Physical Sciences and Technology, Dept. of Optoelectronics, Vilnius, Lithuania 2) Institute of Physics PAS, Laboratory of X-ray and Electron Microscopy, Warsaw, Poland

10:00 **Coffee Break**

Session VI :
Stoichiometry and Disorder in Zinc tin nitride and Kesterite solar absorbers : TBA

10:30 INV **The effects of off-stoichiometry and disorder on the electronic properties in ZnSnN2** **E 6.1**
Stephan Lany, Jie Pan, Jacob Cordell, Angela Fioretti, Elisabetta Arca, Dylan Hamilton, Garritt Tucker, Adele Tamboli, Andriy Zakutayev
National Renewable Energy Laboratory, Colorado School of Mines

11:00 **Exploiting cation disorder to tune the band gap of ZnSnN2 for photovoltaic devices** **E 6.2**
R.A. Makin1, K.R. York1, S.M. Durbin1, J.P. Mathis2, N. Senabulya2, L. Williams2, Z. Deng2, C. Jones2, E. Kioupakis2, R. Clarke2, R.J. Reeves3, P. Miska4 and S. Diliberto4
1.Western Michigan University, 2.University of Michigan, 3.University of Canterbury, 4.Universite de Lorraine

11:15 **Impact of Structure on Optical Properties of ZnGeN2 Thin Films Grown by Combinatorial Sputtering** **E 6.3**
Celeste L. Melamed (1,2), John S. Mangum (2), Brooks Tellekamp (1), Rachel Woods-Robinson (3), John Perkins (1), Patricia Dippo (1), Eric S. Toberer (2,1), Adele C. Tamboli (1)
(1) National Renewable Energy Laboratory, Golden CO USA, (2) Colorado School of Mines, Golden CO USA, (3) University of California Berkeley, Berkeley CA USA

11:30 **Defects, band tails, and disorder in Cu2ZnSnS4 solar cells** **E 6.4**
J.K. Larsen, N. Ross, C. Platzer-Björkman
Ångström Solar Center, Division of Solid State Electronics, Ångström Laboratory, Uppsala University, Uppsala 75236, Sweden

11:45 **Investigation of Cd1-xZnxS as buffer layer for earth-abundant thin film solar cells** **E 6.5**
Y. Sánchez, S. Giraldo, P. Vidal-Fuentes, I. Becerril-Romero, M. Guc, M. Placidi, V. Izquierdo-Roca, E. Saucedo
Catalonia Institute for Energy Research (IREC), Jardins de les Dones de Negre 1, 08930 Sant Adrià del Besòs-Barcelona, Spain.

12:00 **Improving the micro-homogeneity of sputtered kesterite solar cells for an enhanced conversion efficiency: effects of bronze-base** **E 6.6**
R. Fonoll-Rubio1, J. R. González-Castillo2, I. Becerril-Romero1, O. Vigil-Galán3, Eugenio Rodríguez-González2, Tariq jawhari2, Xavier Alcobe3, Lorenzo Calvo 3,4, E. Saucedo1, M. Placidi1, V. Izquierdo-Roca1
1 Catalonia Institute for Energy Research (IREC), Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs-Barcelona, Spain, 2 Centro de Investigación en Ciencia Aplicada y Tecnología Avanzada, Unidad Altamira - Instituto Politécnico Nacional, (CICATA, UA - IPN), 89600, Altamira, Tamaulipas, México, 3 Escuela Superior de Física y Matemáticas - Instituto Politécnico Nacional (ESFM - IPN), 07738, CDMX, México. 3 Centres Científics i Tecnològics (CCiTUB) de la Universitat de Barcelona, C/ Lluis Solé i Sabaris 1-3, 08028 Barcelona, Spain, 4 Departament d'Enginyeria Electrònica i Biomèdica, IN2UB, Universitat de Barcelona, C/ Martí i Franqués 1, 08028 Barcelona, Spain

12:15 **Towards wide band-gap kesterite thin films for photovoltaic applications** **E 6.7**
A. Ruiz-Perona1, L. de la Cueva1, Y. Sánchez2, J.M. Merino1, M. León1, R. Caballero1
1Universidad Autónoma de Madrid, Departamento de Física Aplicada, C/ Francisco Tomás y Valiente 7, 28049 Madrid, Spain. 2Catalonia Institute for Energy Research, C/ Jardins de les Dones de Negre 1, Sant Adriá del Besòs, 08930 Barcelona, Spain

Session VII :
Kesterite and Antimony based solar absorber materials : TBA

13:45 INV **Earth abundant absorber layers for photovoltaic tandem applications** **E 7.1**
Thomas Paul Weiss, Panagiota Arnou, Erika V.C. Robert, Joe Seil, Susanne Siebentritt, Phillip J. Dale
Physics and Materials Science Research Unit, University of Luxembourg, 41 Rue du Brill, L-4422, Luxembourg

14:15 **Phonon modes in anisotropic PV absorber Sb2Se3: polarised Raman spectroscopy and modelling** **E 7.2**
Nicole Fleck (1), Theo Hobson (1), John Buckeridge (2), Christopher Savory (2), Tim Veal (1), David Scanlon (2), Ken Durose (1), Frank Jaeckel (1)
(1) Stephenson Institute of Renewable Energy and Department of Physics, University of Liverpool, Liverpool, L69 7ZF, United Kingdom, (2) Department of Chemistry, University College London, 20 Gordon Street, London WC1H 0AJ, United Kingdom

14:30 **Band Alignment Measurements of Antimony Selenide Solar Cells Using Hard X-ray Photoemission Spectroscopy** **E 7.3**
H. Shiel [1], O. S. Hutter [1], J. E. N. Swallow [1], L. A. H. Jones [1], T. J. Featherstone [1], M. J. Smiles [1], P. K. Thakur [2], L. J. Phillips [1], Ken Durose [1], J. D. Major [1], V. R. Dhanak [1], T-L. Lee [2], T. D. Veal [1]
[1] Stephenson Institute for Renewable Energy, Physics Department, University of Liverpool, Liverpool, United Kingdom, [2] Diamond Light Source Ltd., Harwell Science and Innovation Campus, Didcot, United Kingdom

14:45 **Impact of post-deposition selenization on sprayed Sb2S3 thin films for photovoltaic applications** **E 7.4**
Jako Siim Eensalu, Atanas Katerski, Erki Kärber, Ilona Oja Acik, Arvo Mere, Malle Krunks
Jako Siim Eensalu [1], Atanas Katerski [1], Erki Kärber [1], Ilona Oja Acik [1], Arvo Mere [1], Malle Krunks [1] [1] Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

15:00 **QFLS on CZTS films made by colloidal-based ink spraying** **E 7.5**
Jérôme Michallon1 , Laure Giuliano1, Jose Marquez2, Daniel Pere1, Gerardo Larramona1, Thomas Unold2, Stephane Bourdais1
1 IMRA Europe S.A.S - 220 rue Albert Caquot 06904 Sophia Antipolis – FRANCE, 2 Department of Structure and Dynamics of Energy Materials - Helmholtz-Zentrum für Materialien und Energie - Hahn-Meitner-Platz 1, 14109 Berlin, German

15:15 **Hierarchically structured Sb2Se3 light absorber based photocathode for highly efficient solar to hydrogen conversion** **E 7.6**
Jaemin Park, Wooseok Yang, Yunjung Oh, Jeiwan Tan, Hyungsoo Lee and Jooho Moon*
Department of Materials Science and Engineering, Yonsei University 50 Yonsei-ro Seodaemun-gu, Seoul 120-749, Korea

15:30 **Carrier transport enhancement in flexible kesterite thin-film deposited with different precursor stack orders** **E 7.7**
Juran Kim, Jayeong Kim, Seokhyun Yoon, William Jo, Kee-Jeong Yang, Dae-Hwan Kim, Jin-Kyu Kang
Deprtment of Physics, and New & Renewable Energy Research Center (NREC), Ewha Womans University, Seoul, Korea 03730, Convergence Research Center for Solar Energy, Daegu Gyeongbuk Institute of Science & Technology (DGIST), Daegu, Korea 42988

16:00 **Coffee Break**

Session VIII :
Advances in Kesterite based solar cells : TBA

16:30 INV **Novel optimization strategies for fabrication of kesterite solar cells beyond 11%** **E 8.1**
Levent Gütay
Carl von Ossietzky University of Oldenburg

17:00 **Structural complexity of the wide gap semiconductors Cu2ZnGeS4, Cu2ZnGeSe4 and Cu2ZnSiSe4** **E 8.2**
Sara Niedenzu1,2, Galina Gurieva1, Alexandra Franz1, Susan Schorr1,2
1 Helmholtz-Zentrum Berlin for Materials and Energy, Department Structure and Dynamics of Energy Materials, Berlin, Germany, 2 Freie Universitaet Berlin, Institute of Geological Sciences, Berlin, Germany

17:15 **Real-time observation of earth-abundant trigonal Cu2BaSn(S,Se)4 solar cell absorber formation** **E 8.3**
Roland Mainz, Jose Marquez Prieto, Jon-Paul Sun, Helena Stange, Stefan Schäfer, Charles Hages, Sergej Levcenco, Tobias Scherb, Manuela Klaus, Hasan Ali, Klaus Leifer, Christoph Genzel, Thomas Unold, David Mitzi
Roland Mainz: Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, Jose Marquez Prieto: Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, Stefan Schäfer: Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, Sergej Levcenco,Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, Tobias Scherb: Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, Manuela Klaus: Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, Christoph Genzel: Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, Thomas Unold: Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany Jon-Paul Sun: Duke University, Department of Mechanical Engineering and Materials Science, Durham, North Carolina 27708, USA, David Mitzi: Duke University, Department of Mechanical Engineering and Materials Science, Durham, North Carolina 27708, USA, Helena Stange: Technische Universität Berlin, Institut für Werkstoffwissenschaften, 10587 Berlin, Germany, Charles Hages: University of Florida, Department of Chemical Engineering, Gainesville, FL 32611 USA, Hasan Ali: Applied Materials Science, Department of Engineering Science, Uppsala University, Uppsala 751 21, Sweden, Klaus Leifer: Applied Materials Science, Department of Engineering Science, Uppsala University, Uppsala 751 21, Sweden,

17:30 **The electronic properties of defects that are affecting the performance of kesterite solar cells** **E 8.4**
Sheng Yang(1) , Samira Khelifi(1) , Guy Brammertz(2,3,4), Bart Vermang(2,3,4) and Johan Lauwaert(1)
(1) Department of Electronics and Information Systems, Ghent University, Technologiepark 126, 9052 Zwijnaarde, Belgium (2) imec division IMOMEC – partner in Solliance, Wetenschapspark 1, 3590 Diepenbeek, Belgium (3) Hasselt University – partner in Solliance, Martelarenlaan 42, 3500 Hasselt, Belgium (4) EnergyVille, Thorpark 8320, 3600 Genk, Belgium

17:45 **Cu/Zn disorder in Cu2ZnSn(S1-xSex)4: the off-stoichiometry influence** **E 8.5**
G. Gurieva1*, A. Franz1, S. Schorr1,2
1 Helmholtz Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany 2 Free University Berlin, Institute of Geological Sciences, Malteserstr. 74-100, Berlin, Germany

18:00 **Effect of chemical etching treatment on layer morphology and performance of Cu2ZnGeSe4 thin-film solar cells** **E 8.6**
Samira Khelifi(1)(*), Sheng Yang(2), Léo Choubrac(3), Nicolas Barreau(3), Guy Brammertz(4)(5)(6), Marc Meuris(4)(5)(6), Bart Vermang(4)(5)(6), Maria Batuk(7), Joke Hadermann(7), Henk Vrielinck(1), Johan Lauwaert(2)
(1)Department of Solid State Sciences, Ghent University, Krijgslaan 281/S12, B-9000 Gent, Belgium, (2)Department of Electronics and Information Systems (ELIS), Ghent University, iGent Tower,Technology Park 15, B-9052 Zwijnaarde, Gent, Belgium, (3)Institut des matériaux Jean Rouxel, Université de Nantes, CNRS, France, (4)imec division IMOMEC– partner in Solliance, Wetenschapspark 1, 3590 Diepenbeek, Belgium, (5)Energy Ville, Thorpark 8320, 3600 Genk, Belgium, (6) Institute for Material Research (IMO) Hasselt University – partner in Solliance, Wetenschapspark 1, 3590 Diepenbeek, Belgium, (7)Electron Microscopy for Materials Science (EMAT), University of Antwerp, Groenenborgerlaan 171, 2020 Antwerp, Belgium

18:15 **Efficient Cu2ZnSnS4 solar cells developed onto transparent substrates** **E 8.7**
E. Ojeda-Durán (a), K. Monfil-Leyva (a), J.A. Andrade-Arvizu (b), I. Becerril-Romero (b), Y. Sánchez (b), R. Fonoll-Rubio (b), J.A. Luna-López (a), M. Guc (b), V. Izquierdo-Roca (b), M. Placidi (b), E. Saucedo (b)
(a) Research center of Semiconductor Devices, Meritorious University Autonomous of Puebla, 14th south, Col. San Manuel, C.P. 72750, Puebla, Mexico. (b) Institut de Recerca en Energía de Catalunya (IREC), Jardins de les Dones de Negre, 1, 2ª pl., 08930 Sant Adrià de Besòs, Barcelona, España.

18:30 **Theoretical Maximum Efficiency of Kesterite Solar Cells** **E 8.8**
Sunghyun Kim, Ji-Sang Park, Samantha N. Hood and Aron Walsh
Department of Materials, Imperial College London, UK, Department of Materials, Imperial College London, UK, Department of Materials, Imperial College London, UK, Department of Materials, Imperial College London, UK

19:00 **Graduate Student Award ceremony followed by the social event**

Session IX :
Experiment and theory in Zinc Tin Nitride and chalcogenide materials : TBA

08:45 INV **ZnSnN2: material investigations for photovoltaic applications** **E 9.1**
J-P. Vilcot, T. Bui, B. Ayachi P. Miska, J-F. Pierson C. Longeaud, S. Le Gall, W. Favre, V-S. Nguyen
Institut d'Electronique, Microélectronique et Nanotechnologie, UMR 8520, Université de Lille, Institut Jean Lamour, UMR 7198, Université de Lorraine

09:15 **Tuning the electrical properties of zinc tin nitride thin films for a photovoltaic absorber** **E 9.2**
Yong Wang 1,Takeo Ohsawa 2,Naoki Ohashi 2
1 International Center for Young Scientists, National Institute for Materials Science, Tsukuba, Japan, 2 Research Center for Functional Materials, National Institute for Materials Science, Tsukuba, Japan

09:30 **Leveraging high-throughput computation and combinatorial synthesis to predict p-type transparent chalcogenides for photovoltaics** **E 9.3**
Rachel Woods-Robinson †§*, Shyam S. Dwaraknath §, Danny Broberg †, Andriy Zakutayev *, Kristin A. Persson †§
† UC Berkeley, § Lawrence Berkeley National Laboratory, * National Renewable Energy Laboratory

09:45 **Coffee Break**

10:15 **Optimization of optoelectrical properties of DC magnetron-sputtered Cu2ZnSnS4 absorber layer** **E 9.4**
Maria Zhukova, Ratan Kotipalli, Olivier Poncelet, Louise Samain, Lionel Fourdrinier, Denis Flandre
ICTEAM, UC Louvain, Place du Levant 3, 1348, Louvain-la-Neuve, Belgium, CRM Group, Allée de l'Innovation 1, B57- Quartier Polytech 3, 4000 Liège, Belgium, IMAP, UC Louvain, Place Sainte Barbe 2, 1348, Louvain-la-Neuve, Belgium, CRM Group, Allée de l'Innovation 1, B57- Quartier Polytech 3, 4000 Liège, Belgium, CRM Group, Allée de l'Innovation 1, B57- Quartier Polytech 3, 4000 Liège, Belgium, ICTEAM, UC Louvain, Place du Levant 3, 1348, Louvain-la-Neuve, Belgium

10:30 **Modelling Bubble Formation in sputter deposited CdTe Solar Cells** **E 9.5**
Peter Hatton, Roger Smith, Pooja Goddard, Michael Walls
Loughborough University, School of Science, Centre for Renewable Energy Systems and Technology (CREST), Loughborough University

10:45 **Photoluminescence of Sb2Se3 absorbers for thin film solar cells** **E 9.6**
M. Grossberg, O. Volobujeva, A. Penežko, J.O. Adegite, R. Kaupmees, J. Krustok
Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

11:15 **Plenary Session 2**

12:30 **Lunch**

Session X :
Deposition and characterisation methods for solar cell absorbers : TBA

13:45 INV **Deep level defects and device performance in antimony selenide solar cells** **E 10.1**
Jon Major
University of Liverpool

14:15 **Influence of oxygen incorporation in Sb2S3 grown by atomic layer deposition and the photovoltaic performance of thin film solar** **E 10.2**
Ignacio Mínguez-Bacho,1 Pascal Büttner,1 Craig Pointer,2 Florian Scheler,1 Elif Kocar,1 Maïssa Barr,1 Elizabeth Young 2 and Julien Bachmann.1
1. Department of Chemistry and Pharmacy, Friedrich-Alexander University of Erlangen-Nürnberg, Egerlandstr. 1, 91058 Erlangen, Germany. 2. Department of Chemistry, Lehigh University, 6 E. Packer Ave., PA 18015 Bethlehem, USA.

14:30 **Investigation of the reaction mechanism during sulfurization growth of SnS thin films using Sn-S precursors** **E 10.3**
M. Sugiyama, T. Tosuke, T. Takaesu, T. Funatsu
Faculty of Science and Technology, Tokyo University of Science

14:45 **Influence of heat treatments and Se/S substitution on SnS solar absorbers** **E 10.4**
S. N. Nwankwo, K.T.R. Reddy, N. S. Beattie, V. Barrioz, G. Zoppi.
S. N. Nwankwo, N. S. Beattie, V. Barrioz, G. Zoppi, - Department of Mathematics, Physics and Electrical Engineering, Northumbria University, Ellison Building, Newcastle upon Tyne, NE1 8ST, UK K.T.R. Reddy - Department of Physics, Sri Venkateswara University, Tirupati-517502, India

15:00 **Copper vacancy induced varying optoelectronic properties of Cu2-xS films** **E 10.5**
Tvarit Patel, Emila Panda
Indian Institute of Technology Gandhinagar, Department of Materials Science and Engineering Ahmedabad 382424, Gujarat, India

15:15 **Spray pyrolysis of cuprous oxide from aqueous solutions and application in entirely-sprayed oxide solar cells** **E 10.6**
Nina Winkler [1,2], Adhi Rachmat Wibowo [1], Wolfgang Kautek [2], Theodoros Dimopoulos [1]
[1] AIT Austrian Institute of Technology, Center for Energy, Photovoltaic Systems, Vienna, Austria [2] University of Vienna, Department of Physical Chemistry, Vienna, Austria

15:30 **Tuning the Texture and Electrical Properties of Cu2O Thin Films Deposited via Aerosol-Assisted CVD** **E 10.7**
Hongjun Liu, Viet Huong Nguyen, Hervé Roussel, Isabelle Gélard, Laetitia Rapenne, Jean-Luc Deschanvres, Carmen Jiménez, and David Muñoz-Rojas
Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, F-38000 Grenoble, France

15:45 **Materials and synthesis of an Earth abundant Material solar with low cost methods. A study case of a Kesterite/Zinc Sulphide/het** **E 10.8**
Estrada Ayub Jesus Angel, Aguilar Elzegabal Alfredo, Roman Aguirre Manuel, Murillo Jose
Centro de Investigación de Materiales Avanzados (Advanced Materials Research Center

16:00 **Coffee Break**

Poster Session 2 : TBA

16:30 **Optical properties and electronic structures of Cu2(Ge,Sn)(S,Se)3 solid solution** **E 21.1**
Tsuyoshi Maeda, Kazuki Omori, Takahiro Wada
Department of Materials Chemistry, Ryukoku University

16:30 **Pseudo-phase transition behavior of CuSbS2 thin films using S flux effect** **E 21.2**
Ara Cho1,2*, Shahara Banu1,2, Yunae Cho1, SeJin Ahn1, Jae Ho Yun1, Jihye Gwak1, Seung Kyu Ahn1, Young-Joo Eo1, Jun Sik Cho1, Ju Hyung Park1, Jin Su Yoo1, Kihwan Kim1
1 New and Renewable Energy Research Division, Photovoltaic Laboratory, Korea Institute of Energy Research (KIER), Daejeon, Republic of Korea , 2 Renewable Energy Engineering, University of Science and Technology (UST), Daejeon, Republic of Korea

16:30 **The effect of Ag alloying of Cu2(Zn,Cd)SnS4 monograin powders on the solar cell properties** **E 21.3**
K. Timmo, M. Kauk-Kuusik, M. Pilvet, J. Raudoja, M. Altosaar, V. Mikli, M. Grossberg
Department of Materials and Environmental Technology, Tallinn University of Technology Ehitajate tee 5, 19086 Tallinn, Estonia

16:30 **Balancing Cavity Space and Core Size in a Yolk-Shell Nano-photocatalyst for Hydrogen Evolution from Water** **E 21.4**
Wei Liu, Guangchao Zheng, Enna Ha, Lok-yan So, Lawrence Yoon Suk Lee, Kwok-Yin Wong
Dept. of Applied Biology and Chemical Technology, The State Key Laboratory of Chemical Biology and Drug Discovery, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong SAR, China.

16:30 **Exploring electronic properties of SnS cubic phase** **E 21.5**
Olga Korchev-Khina, Ran E. Abutbul, Tatyana Bendikov, Yuval Golan, Iris Visoly-Fisher
Ben-Gurion University of the Negev, Ben-Gurion University of the Negev, Weizmann Institute of Science, Ben-Gurion University of the Negev, Ben-Gurion University of the Negev

16:30 **Synthesis and characterization of tetrahedrite Cu10Cd2Sb4S13 monograin material for photovoltaic application** **E 21.6**
F. Ghisani*, K. Timmo, M. Altosaar, J. Raudoja, V. Mikli, T. Varema, M. Kauk-Kuusik
Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

16:30 **Is back contact recombination a limiting factor for CZTSSe performance?** **E 21.7**
Antonio Cabas-Vidani1, Christian Andres1, José A. Márquez2, Thomas Unold2, Ayodhya N. Tiwari1, Yaroslav E. Romanyuk1
1Laboratory for Thin Films and Photovoltaics Empa-Swiss Federal Laboratories for Materials Science and Technology Ueberlandstrasse 129, 8600 Duebendorf, Switzerland, 2Dept. Structure and Dynamics of Energy Materials Helmholtz-Zentrum für Materialien und Energie GmbH Hahn-Meitner-Platz 1, D-14109 Berlin, Germany

16:30 **Cuprous Oxide Thin Films Deposited by Chemical Bath Deposition (CBD)** **E 21.8**
Odín Reyes *(1), J. Escorcia-García(2), R. M. Albores(4), and P.J. Sebastian(1)
1,.Instituto de Energías Renovables-UNAM, Temixco, Morelos, 62580, México
2.-CONACYT-CINVESTAV del IPN Unidad Saltillo, Parque Industrial Saltillo-Ramos Arizpe, Coahulia, 25900, México. 3.-Universidad de Ciencias y Artes de Chiapas, Tuxtla Gutiérrez, Chiapas, 29000, México.

16:30 **The formation mechanism and thickness relationship of CdS buffer layer on CIGS solar cell** **E 21.9**
Ara Cho1,2*, Marlena Ostrysz1, Soomin Song1, Sangmin Lee1, SeJin Ahn1, Jae Ho Yun1, Jihye Gwak1, Seung Kyu Ahn1, Young-Joo Eo1, Jun Sik Cho1, Ju Hyung Park1, Jin Su Yoo1, Kihwan Kim1
1 New and Renewable Energy Research Division, Photovoltaic Laboratory, Korea Institute of Energy Research (KIER), Daejeon, Republic of Korea , 2 Renewable Energy Engineering, University of Science and Technology (UST), Daejeon, Republic of Korea

16:30 **Effect of post deposition annealing treatment on properties of RF sputter deposited Sb2Se3 thin films** **E 21.10**
O. Volobujeva, J.O. Adegite, J. Raudoja, M. Grossberg, S. Bereznev
Department of Materials and Environmental Technology, Tallinn University of Technology (TUT), Ehitajate tee 5, 19086, Tallinn, Estonia

16:30 **Atomic layer deposition of high purity Cu2SnS3 films as absorber for photovoltaic cells** **E 21.11**
Raphael Edem Agbenyeke, Young Kuk Lee
Korea Research Institute of Chemical Technology

16:30 **The Mechanism of Surface-Functionalized ZnO Nanowire-Array Photoanodes for Enhanced Photoelectrochemical Water Splitting** **E 21.12**
Yu-Chang Lin 1,2, San-Yuan Chen 1, Yan-Gu Lin 2*
1 Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu 300, Taiwan 2 Material Science Group, Scientific Research Division, National Synchrotron Radiation Research Center, Hsinchu 300, Taiwan

16:30 **Electrical and photoconductive properties of Sn-doped indium sulfofluoride films** **E 21.13**
Y. Vygranenko (1), M. Fernandes (1&2), M. Vieira (1&2), G. Lavareda (1&3), C. Nunes de Carvalho (3&4), P. Brogueira (4&5), A. Amaral (4&5)
1) CTS-UNINOVA, Campus da Caparica, 2829-516 Caparica, Portugal 2) Departamento de Engenharia Electrónica e Telecomunicações e de Computadores, ISEL, Lisbon, 1950-062, Portugal 3) Departamento de Ciência dos Materiais, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica 4) CeFEMA, Instituto Superior Técnico, Av. RoviscoPais 1, 1049-001 Lisboa, Portugal 5) Departamento de Física, Instituto Superior Técnico, Universidade de Lisboa, 1049-001 Lisboa, Portugal

16:30 **Enhancing the Photoelectrochemical water splitting performance of CZTS absorber by using graphene oxide protecting layer** **E 21.14**
Manoj Vishwakarma, Shivani Singh Surah, B. R. Mehta
Thin Film Lab, Department of Physics, Indian Institute of Technology Delhi

16:30 **Metal oxides for heterojunction (CuO/ZnO) thin film solar cell** **E 21.15**
Zbigniew Starowicz (1), Katarzyna Gawlińska – Nęcek (1), Marcin Bartmański (2), Mateusz Wlazło (2),…G. Putynkowski (2), Robert Socha (3), Łukasz Major (1), Piotr Panek (1),
(1) Institute of Metallurgy and Materials Science PAS, Reymonta 25, Krakow, Poland, (2) CBRTP – Research and Development Center of Technology for Industry, Złota 59, Warsaw, Poland, (3) Jerzy Haber Institute of Catalysis and Surface Chemistry PAS, Niezapominajek 8, Krakow, Poland.

16:30 **Analysis of InGaAs/InP interfacial layer by HR-XRD and selective etching** **E 21.16**
Minhyuk Choi(a,b), In-young Jung(a,b), Seungwoo Song(a), Chang Soo Kim(a*), Eun Kyu Kim(b)
(a) Korea Research Institute of Standards and Science (KRISS), Daejeon 34113, Korea (b) Department of Physics, Hanyang University, Seoul 04763, Korea

16:30 **Post-deposition processing for tuning the properties of Sb2Se3 thin film absorber layer grown by close-spaced sublimation** **E 21.17**
Nicolae Spalatu, Jaan Hiie, Atanas Katerski, Ilona Oja Acik and Malle Krunks
Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

16:30 **Characterization and Comparision of Cu2ZnSnS4 Thin Films Prepared by Sol-Gel and Thermal Evaporation Method** **E 21.18**
Elif PEKSU, Hakan KARAAGAC
Istanbul Technical University, Department of Physics

16:30 **Thermal diffusion profiles of Silver dopant in Mg2Si pn junction** **E 21.19**
H. Udono (1), N. Hori (1), Y. Onizawa (1) and F. Esaka (2)
(1) Ibaraki University (2) Japan Atomic Energy Agency

16:30 **GeSe properties for thin film photovoltaics** **E 21.20**
M.J. Smiles, P. A. E. Murgatroyd, J. E. N. Swallow, H. Shiel, L. A. H. Jones, T. J. Featherstone, J. Araria, C. N. Savory, D. O. Scanlon, V. R. Dhanak, J. D. Major, T. D. Veal
Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Department of Chemistry, University College London, Department of Chemistry, University College London, Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool,

16:30 **Synthesis and Characterization of Novel Dopants in CZTSSe for Tailoring the Material Band Structure** **E 21.21**
Saatviki Gupta, Holly Edwards, Vinod Dhanak
Saatviki Gupta - Jawaharlal Nehru University, New Delhi - India, Holly Edwards, Vinod Dhanak - University of Liverpool, Liverpool - UK

16:30 **Efficient and flexible electrodes for micro-power sources: challenges and prospects** **E 21.22**
Daniel Bellet1, Dorina Papanastasiou1, Joao Resende1,2, Viet Huong Nguyen1, Carmen Jiménez1, David Muñoz-Rojas1
1 Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, 38000 Grenoble, France 2 Univ. Grenoble Alpes, Université Savoie Mont Blanc, CNRS, Grenoble INP, LEPMI, 38000 Grenoble, France

16:30 **Spray-coated organic ligand-free Cu2ZnSnS4 nanoparticle thin film solar cells** **E 21.23**
Sara Engberg, Stela Canulescu, Moises Espindola Rodriguez, Jørgen Schou
DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde, Denmark

16:30 **Surface engineering of highly porous NiO nano networked thin films controlled by aluminum addition for photovoltaic application** **E 21.24**
Jung-Hoon Yu, Yeong Eun Gil, Rak Hyun Jeong, Ji Won Lee, Dong In Kim, Hyeon Jin Seo, Sang-Hun Nam, Jin-Hyo Boo*
Department of Chemistry, Sungkyunkwan University

16:30 **Effective interface thermal resistance between two dielectric materials** **E 21.25**
Kamal ALAILI Jose ORDONEZ-MIRANDA Younes EZZAHRI
Institut Pprime, CNRS, Université de Poitiers, ISAE-ENSMA, F-86962 Futuroscope Chasseneuil, France

16:30 **SnS thin films with mechanochemical process for photovoltaic devices** **E 21.26**
Bo-In PARK, Yoon Hee JANG, Doh-Kwon LEE, Seung Yong LEE
Materials Architecturing Research Center, Korea Institute of Science and Technology, Seoul, Korea. Graduate School of Energy, Environment, Water, and Sustainability, Korea. Advanced Institute of Science and Technology, Deajeon, Korea., Photo-electronic Hybrids Research Center, Korea Institute of Science and Technology, Seoul, Korea., Photo-electronic Hybrids Research Center, Korea Institute of Science and Technology, Seoul, Korea., Materials Architecturing Research Center, Korea Institute of Science and Technology, Seoul, Korea.

16:30 **Enthalpy of formation and temperature depandance of volume in CZTSSe** **E 21.27**
Mohamed Issam ZIANE1,Djamel OUADJAOUT1, Meftah TABLAOUI1, Hamza BENNACER2 and Amar KHELFANE1
1 Research Center in Semiconductor technologies for Energetic (CRTSE), 02 Bd Frantz Fanon, BP. 140, Algiers, Algeria. 2 Elaboration and Characterization Physical Mechanics and Metallurgical of Material, Laboratory, Electrical Engineering Department, University of Mostaganem 27000, Algeria

16:30 **Zn3P2 growth on graphene via van der Waals epitaxy for photovoltaic applications** **E 21.28**
R. Paul, S. Escobar-Steinvall, E. Stutz, J.B. Leran, N.Tappy, M. Zamani, A. Fontcuberta i Morral
1) Laboratory of Semiconductor Materials, Institute of Materials, Ecole Polytechnique Fédérale de Lausanne (EPFL), 1015 Lausanne, Switzerland 2) Institute of Physics, Ecole Polytechnique Fédérale de Lausanne (EPFL), 1015 Lausanne, Switzerland

16:30 **Spherical and cylindrical conductive thermal diodes based on VO2** **E 21.29**
Suraju Olawale Kasali, Jose Ordonez-Miranda and Karl Joulain
Institut Pprime, CNRS, Université de Poitiers, ISAE-ENSMA, F-86962 Futuroscope Chasseneuil, France

Session XII : New directions is Kesterite solar cell materials : TBA

08:45 **Highly Efficient Earth-abundant Kesterite Solar Cell by Introducing Back Surface Fields** — **E 12.1**
Cheng-Ying Chen1,2,3, Chih-Yang Huang1,2,3,4, Yu-Chen Chen1,2, Jih-Shang Hwang3, Kuei-Hsien Chen1,2 and Li-Chyong Chen1,3
1Center for Condensed Matter Science, National Taiwan University, Taipei 106, Taiwan 2Institute of Atomic and Molecular Science, Academia Sinica, Taipei 106, Taiwan 3Center of Atomic Initiative for New Materials, National Taiwan University, Taipei 10617, Taiwan 4Institute of Optoelectronic Sciences, National Taiwan Ocean University, Keelung, Taiwan

09:00 **Improving Kesterite photovoltaics through defect engineering** — **E 12.2**
Yun Seog Lee, Ho-Young Kim
Department of Mechanical and Aerospace Engineering, Seoul National University

09:15 **Growth of CZTSe films by stack electrodeposition and in-vacuum selenization** — **E 12.3**
J. Parravicini 1, G. Panzeri 2, M. Acciarri 1, R. Dell'Oro 2, V. Trifiletti 1, L. Maganin 2, S. Binetti 1
1. Dipartimento di Scienza dei Materiali & MibSolar, Università di Milano-Bicocca, Milano, Italy 2. Dipartimento di Chimica, Materiali e Ingegneria Chimica "G. Natta", Politecnico di Milano, Milano, Italy

09:30 **Development of MoS2/TCOs multilayer structures as intermediate connection in monolithic CZTS/Si tandem cells.** — **E 12.4**
Claudia Malerba, Matteo Valentini, Massimo Izzi, Luca Serenelli, Enrico Salza, Mario Tucci, Alberto Mittiga
ENEA - R.C. Casaccia. via Anguillarese 301, 00123 Rome - Italy

09:45 **Coupling density functional and Bader's theories for unravelling CuIn1-xAlxSe2 structure-properties relationships** — **E 12.5**
Pingping Jiang, Pascal Boulet, Marie-Christine Record
Pingping Jiang, Aix-Marseille University and CNRS, MADIREL and IM2NP, Av. Normandie-Niemen, 13013 Marseille France, Pascal Boulet, Aix-Marseille University and CNRS, MADIREL, Av. Normandie-Niemen, 13013 Marseille France, Marie-Christine Record, Aix-Marseille University and CNRS, IM2NP, Av. Normandie-Niemen, 13013 Marseille France

E-MRS Spring Meeting 2019

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F

SYMPOSIUM F

Advanced materials, components & processes for integrated autonomous micro-power sources

Symposium Organizers :

Raphël SALOT, CEA-LETI, France

Gonzalo MURILLO, IMB-CNM, CSIC, Barcelona, Spain

Peter ZALAR, TNO, Eindhoven, The Netherlands

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Wednesday 29 may 2019

Piezoelectrics : Peter Zalar

09:00 INV **Overview of Challenges and Outlook for MEMS Piezoelectric Energy Harvesters** — F 1.1
Nathan Jackson
University of New Mexico

09:30 **Microstructured P(VDF:TrFE) Featuring Embedded Electrodes for Flexible Direction-Sensitive Strain Sensors and Nanogenerators** — F 1.2
P. Schäffner, J. Groten, M. Belegratis, A. Tschepp, M. Zirkl, B. Stadlober
Joanneum Research Forschungsgesellschaft mbH

09:45 **Nature Driven Bio-Piezoelectric Microgenerator for Next-Generation Green Energy Harvesting Applications** — F 1.3
Sumanta Kumar Karan and Bhanu Bhusan Khatua
Materials Science Centre, Indian Institute of Technology Kharagpur, Kharagpur-721302, India

10:00 **Coffee Break**

10:30 INV **Influence of RF Power of ZnO Seed Layer on the Morphological Properties of ZnO Nanowires for Piezoelectric Energy Harvesting** — F 1.4
Camille Justeau 1, Taoufik Slimani Tlemcani 1, Guylaine Poulin-Vittrant 2, Kevin Nadaud 1, Daniel Alquier 1
1 GREMAN UMR 7347, CNRS, Université de Tours, INSA Centre Val de Loire, 16 rue Pierre et Marie Curie, BP 7155, 37071 TOURS Cedex 2, France, 2 GREMAN UMR 7347, CNRS, Université de Tours, INSA Centre Val de Loire, 3 rue de la Chocolaterie, CS 23410, 41034 BLOIS Cedex, France

11:00 **High-temperature electromechanical loss in piezoelectric langasite and catangasite crystals** — F 1.5
Yuriy Suhak1, Ward L. Johnson2, Holger Fritze1
1 - Clausthal University of Technology, Am Stollen 19B, Goslar, 38640, Germany, 2 - National Institute of Standards and Technology, 325 Broadway St., Boulder, CO 80305, U.S.A.,

11:15 **AlN thin films for piezoelectric devices** — F 1.6
H. Stroescu 1, M. Anastasescu1, L. Duta 2, I.N. Mihailescu 2, G.E. Stan 3, A. Szekeres 4, C. Moldovan 5, M. Zaharescu 1, M. Gartner 1.
1-Institute of Physical Chemistry “Ilie Murgulescu”, Romanian Academy, Bucharest, Romania, 2-National Institute for Lasers, Plasma, and Radiation Physics, Magurele, Romania, 3-National Institute of Materials Physics, Magurele, Romania, 4-Institute of Solid State Physics, Bulgarian Academy of Sciences, Sofia, Bulgaria, 5-National Institute for Research and Development in Microtechnologies, Bucharest, Voluntari, Romania

11:30 **Formation Mechanisms of ZnO Nanowires on Polycrystalline Au Seed Layers for Piezoelectric Devices** — F 1.7
Clément LAUSECKER (1,2,3), Bassem SALEM (2), Xavier BAILLIN (3), Hervé ROUSSEL (1), Eirini SARIGIANNIDOU (1), Franck BASSANI (2), Estelle APPERT (1), Sébastien LABAU (2), and Vincent CONSONNI (1)
(1) Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, 38000 Grenoble, France (2) Univ. Grenoble Alpes, CNRS, LTM, 38000 Grenoble, France (3) Univ. Grenoble Alpes, CEA, LETI, 38000 Grenoble, France

Supercapacitors Raphaël Salot : Supercapacitors Raphaël Salot

12:00 INV **Powering miniaturized IoT devices with on chip micro-batteries and micro-supercapacitors: from planar and 3D micro-power sources** — F 2.1
Christophe Lethien
Institut d’électronique, de microélectronique et de nanotechnologie UMR CNRS 8520 - Laboratoire central Cité scientifique Avenue Henri Poincaré CS 60069 59652 Villeneuve d’Ascq cedex Réseau sur le Stockage Electrochimique de l’Energie RS2E - FR CNRS 3459

12:15 **Flexible all-solid-state micro supercapacitor integrated in triboelectric energy harvesting system** — F 2.2
Xia Liu, Xiaohong Wang, Juergen Brugger
Microsystems Laboratory, École Polytechnique Fédérale de Lausanne (EPFL), 1015 Lausanne, Switzerland, Tsinghua National Laboratory for Information Science and Technology, Institute of Microelectronics, Tsinghua University, Beijing 100084, China

12:15 **High volumetric electrochemical energy storage for autonomous IOT devices** — F 2.3
Hemesh Avireddy *1, Bryan Byles 3,4, Babak Anasori 3,4, David Pinto 3,4, Javier Vazquez Galvan 1, Jose Miguel Delgado Galindo 1, Jordi Jacas Biendicho 1, Xuehang Wang 3,4, Cristina Flox 1, Oliver Crosnier 5,6, Thierry Brousse 5,6, Ekaterina Pomerantseva 3,4, Yury Gogotsi 3,4, Joan Ramon Morante 1,2
1 IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930. Sant Adrià de Besòs, Spain. 2 Faculty of Physics, University of Barcelona, Barcelona, Spain. 3 Department of Materials Science & Engineering, Drexel University, Philadelphia, PA 19104, USA. 4 A.J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA 19104, USA. 5 Institut des Matériaux Jean Rouxel (IMN), CNRS UMR 6502-Université de Nantes, 2 rue de la Houssinière BP32229, 44322, Nantes Cedex 3, France. 6 Réseau sur le Stockage Electrochimique de l’Energie, FR CNRS 3459, 80039 Amiens Cedex, France.
*Corresponding: ahemesh@irec.cat

13:00 **Lunch**

14:30 **One-step electrodeposited MnxCo1-xOH nanosheets array and Fe3O4 nanoparticles for asymmetric on-chip micro-supercapacitors** — F 2.4
Hui Liu 1, Wen Luo 2, Liqiang Mai 1
1 State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, P. R. China, 2 Department of Physics, School of Science, Wuhan University of Technology, Wuhan 430070, P. R. China

14:45 **solid state ionic capacitors for on chip energy storage** — F 2.5
V. Sallaz a.b.c, S. Oukassi. b, F. Voiron.a, R. Salot. b, D. Berardan. c
a-Murata Integrated Passive Solution, 14000 Caen, France b-Univ. GrenobleAlpes, CEA LETI Minatec Capus, 38054 Grenoble, France c-ICMMO, Université Paris-Saclay, 91405 Orsay, France

Triboelectric Nanogenerators : Gonzalo Murillo

15:00 INV **Triboelectric nanogenerator for self-powered systems and blue energy** — F 3.1
Zhong Lin Wang
School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, Georgia USA Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, Beijing, China.

15:30 **Triboelectric-piezoelectric-electromagnetic hybrid nanogenerator built inside a footwear for harvesting walking energy** — F 3.2
C. Rodrigues1, A. Gomes1, A. Ghosh1,2, A. Pereira1, J. Ventura1
1 IFIMUP and Department of Physics and Astronomy, Faculty of Sciences, University of Porto, Rua do Campo Alegre 687, 4169-007 Porto, Portugal 2 Central University of Jharkhand, Central University of Jharkhand, Ratu-Lohardaga Road, Brambe, Ranchi, Jharkhand-835205, India

15:45 **Coffee Break**

16:15 **Engineering the Output Trends of Triboelectric Nanogenerators through Structural Design** — F 3.3
R.D.I.G. Dharmasena, S.R.P. Silva
Advanced Technology Institute, University of Surrey, United Kingdom.

16:30 **Thermal Drawing of Intrinsically Stretchable Triboelectric Fibers** — F 3.4
Chaoqun Dong, Andreas Leber, Tung Nguyen-Dang, Fabien Sorin*
Institute of Materials, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, CH 1015, Switzerland

16:45 **Power generation and output optimization Criteria for High Efficiency Triboelectric Nanogenerators** — F 3.5
R. D. I. G. Dharmasena, S. R. P. Silva
Advanced Technology Institute, Department of Electrical and Electronic Engineering, University of Surrey, United Kingdom.

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Novel Materials and Devices for Low-Power Applications : Neus Sabaté

09:00 INV **Micro Solid Oxide Fuel Cells: a New Generation of Micro-Power Sources for Portable Applications** — F 4.1
N. Alayo1, M. Bianchini1, F. Chiabrera1, A. Morata1, L. Fonseca2, M. Salleras2, I. Garbayo1, A. Tarancón1,3
1: IREC, 2: CSIC, 3: ICREA

09:45 **Crtl+P: Fully printed high efficiency organic solar cells using nonfullerene acceptors** — F 4.2
Daniel Corzo, Eloise Bihar, Khulud Almasabi, Neha Chaturvedi, Nicola Gasparini, Joel Troughton, Sahika Inal, Derya Baran
King Abdullah University of Science and Technology (KAUST)

10:00 **Coffee Break**

10:15 **Low-Cost and Facile Fabrication for High-Performance Metal Mesh-Based Flexible Transparent Electrodes** — F 4.3
Xi LU, Zijian ZHENG
Laboratory for Advanced Interfacial Materials and Devices, Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hong Kong SAR, China.

10:30 **Anomalous Power Enhancement of Biophotovoltaic Cell through Self-Constructed Extracellular Electron Transfer Conduit** — F 4.4
Min Jung Kim1, Seoung Jai Bai2, Jae Ryoun Youn1 and Young Seok Song3
Min Jung Kim1, Seoung Jai Bai2, Jae Ryoun Youn1,†, and Young Seok Song3,†
1 Research Institute of Advanced Materials (RIAM), Department of Materials Science and Engineering, Seoul National University, Seoul 08826, Korea 2 Department of Mechanical Engineering, Dankook University, Gyeonggi-do 16890, Korea 3 Department of Fiber System Engineering, Dankook University, Gyeonggi-do 16890, Korea

10:45 **Self-powered patch for sweat conductivity measurement** — F 4.5
Laura Ortega, Anna Llorella, Juan Pablo Esquivel, Neus Sabaté
Laura Ortega, Anna Llorella, Juan Pablo Esquivel, Neus Sabaté, Instituto de Microelectrónica de Barcelona, IMB-CNM (CSIC) C/ del Til·lers. Campus Universitat Autònoma de Barcelona (UAB) 08193 Bellaterra, Barcelona, SPAIN
Neus Sabaté, Catalan Institution for Research and Advanced Studies (ICREA) Passeig Lluís Companys 23, 08010 Barcelona, Spain

11:00 **Novel NTCR spinel oxide as printable temperature sensor** — F 4.6
D. Katerinopoulou1, 2, 4, P. Zalar4, E. C. P. Smits4, G. H. Gelinck3, 4 and G. Kiriakidis1, 2
1 Physics Department, University of Crete, P.O. Box 2208, 71003 Heraklion, Crete, Greece, 2 Institute of Electronic Structure & Laser (IESL), Foundation for Research and Technology (FORTH) Hellas, P.O. Box 1385, Heraklion 70013, Crete, Greece, 3 Department of Applied Physics, Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands, 4 Holst Centre / TNO, High Tech Campus 31, 5656AE, Eindhoven, The Netherlands

11:15 **PLENARY SESSION 2**

12:30 **Lunch**

Batteries : Christophe Lethien

14:30 INV **Benign and Biodegradable Single-Use Batteries for Portable Electronic Devices** — F 5.1
Neus Sabaté 1 2, Perla Alday 1, Omar Ibrahim 3, Erik Kjeang 3, Juan Pablo Esquivel 1
1 Instituto de Microelectrónica de Barcelona, IMB-CNM (CSIC), Campus UAB, Spain, 2 Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain, 3 Fuel cell Research Lab (FCReL), School of Mechatronic Systems Engineering, Simon Fraser University, Canada

15:00 **Improvement of 20 µm thick LiCoO2 electrodes performances for highly integrated thin-film microbatteries** — F 5.2
Christophe Secouard, Séverine Poncet, Françoise Geffraye, Isabelle Chevalier, Arnaud Bazin, Sami Oukassi
Univ. Grenoble Alpes, CEA, LETI, 38000 Grenoble, France

15:15 **Li7 La3Zr2O12/LiCoO2 - cathode for all-solid-state batteries** — F 5.3
Chellda Exantus, Carlos A. Páez, Nathalie Job
University of Liège, Department of Chemical Engineering – Nanomaterials, Catalysis, Electrochemistry (NCE), Building B6a, Sart-Tilman, B-4000 Liège, Belgium Corresponding author: cexantus@uliege.be

15:30 **Memory and nanobattery dual operation in Ag-GeS2-W based CBRAM** — F 5.4
P. Trotti, G. Molas, S. Oukassi, P. Blaise, M. Bernard, G. Pillonet, E. Nowak
Univ. Grenoble Alpes, CEA-LETI/Minatec, 38000 Grenoble, France

15:45 **New silica-based ionogel electrolyte for all-solid-state Lithium-ion microbatteries** — F 5.5
Korina Hartmann *, Cédric Calberg *, Dimitri Liquet °, Benoît Heinrichs *
* University of Liège, Department of Chemical Engineering – NCE, Liège, 4000, Belgium, ° Prayon S.A., Engis, 4480, Belgium

16:00 **Development of a New UV-Crosslinking Polymer Electrolyte for Extra-Thin Li Metal Batteries** — F 5.6
G. Piana (a,b), V. Armel (a), S. Oukassi (a), S. Martin (a), J. Amiran (a), S. Franger (b), H. Porthault (a)
(a) Univ. Grenoble Alpes, CEA, LETI Minatec Campus, 38054 Grenoble, France (b) ICMMO-ERIEE (UMR 8182 CNRS), Université Paris-Saclay, F-91405 Orsay, France

16:15 **Coffee Break**

Poster Session : No Session Chair

17:00 **Development of microphotodiodes as harvester device for single cell stimulation** — F P6.1
Carolina Vargas-Estevez1 , Andreu Blanquer1,2, Gonzalo Murillo1, Marcos Duque1, Leonardo Barrios2, Carme Nogués2, Elena Ibañez2, Jaume Esteve1.
1. Instituto de Microelectrónica de Barcelona, IMB-CNM (CSIC), Campus UAB, Bellaterra (Barcelona), 08193, Spain. 2. Departament Biologia Cel·lular, Fisiologia i Immunologia, Facultat Biociències. Universitat Autònoma de Barcelona, Bellaterra (Barcelona), 08193, Spain.

17:00 **Study and characterization of TeO2 region as part of back contact on CdTe solar cells** — F P6.2
C. Hernandez-Vasquez1, M. L. Albor-Aguilera1, M.A. Gonzalez-Trujillo2, J. M. Flores Marquez3, J. A. Ortega-Cardenas1, R. Mendoza-Pérez4
1Instituto Politécnico Nacional-ESFM, Depto. de Física, U.P.A.L.M., Zacatenco, CDMX, 07738, México, 2Instituto Politécnico Nacional-ESCOM, Formación Básica, U.P.A.L.M., Zacatenco, CDMX, 07738, México, 3Instituto Politécnico Nacional-ESIQIE, Departamento de Ingeniería en Metalurgia y Materiales, U.P.A.L.M., Zacatenco, CDMX, 07738, México, 4Universidad Autónoma de la Ciudad de México, Av. Prolongación San Isidro 151, Col. San Lorenzo Tezonco, Ciudad de México, 09790, México,

17:00 **Design of triboelectric nanogenerator for portable electronics by using elastic body** — F P6.3
Banseok Kim, Jihoon Chung, Haksung Moon, Hyungseok Yong, Deokjae Heo, Gunsub Shin, Seh-Hoon Chung, Dongseob Kim, Sangmin Lee
Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Hongik University, Aircraft System Technology Group Korea Industrial Technology (KITECH), Chung-Ang University

17:00 **Annealing and Thickness Effects of ZnO Seed Layer on Improving Alignment of ZnO NWs for Piezoelectric Nanogenerator Application** — F P6.4
Taoufik Slimani Tlemcani1, Camille Justeau1, Kevin Nadaud1, Guylaine Poulin-Vittrant2, Daniel Alquier1
1 GREMAN UMR-CNRS 7347, Université de Tours, INSA Centre Val de Loire, 16 rue Pierre et Marie Curie, BP 7155, 37071 TOURS Cedex 2, France, 2 GREMAN UMR-CNRS Université de Tours, INSA Centre Val de Loire, 3 rue de la Chocolaterie, CS 23410, 41034 BLOIS Cedex, France

17:00 **Hydrogen-related defects in ZnO nanorods grown by chemical bath deposition and its effects on their physical properties** — F P6.5
Jose Villafuerte 1 2, Thomas Cossuet 1, Fabrice Donatini 2, Eirini Sarigiannidou 1, Alex M. Lord 3, Estelle Appert, Julien Pernot 2 4, and Vincent Consonni 1
1 Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, F-38000 Grenoble, France, 2 Univ. Grenoble Alpes, CNRS, Institut NEEL, F-38042 Grenoble, France, 3 Centre for Nanohealth, College of Engineering, University of Swansea, Singleton Park, SA2 8PP, UK, 4 Institut Universitaire de France, 103 Boulevard Saint-Michel, F-75005 Paris, France

17:00 **Sustainable triboelectric nanogenerator as omnidirectional self-powered impact sensor** **F P6.6**
Deokjae Heo, Hyungseok Yong, Jihoon Chung, Banseok Kim, Gunsub Shin, Seh-Hoon Chung, Dongseob Kim, Sangmin Lee
Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Hongik University, Aircraft System Technology Group Korea Industrial Technology (KITECH), Chung-Ang University

17:00 **Flexible Thermoelectric Films Produced by Intercalation-Assisted Liquid Phase Exfoliation** **F P6.7**
Gergo Pinter(1), Boyang Mao(1), Maryana Asaad(1), Mohsen Moazzami Gudarzi(1), Kostya Novoselov(1), Andrey Kretinin(2)
(1) National Graphene Institute, University of Manchester, Manchester, M13 9PL, UK (2) School of Materials, University of Manchester, Manchester, M13 9PL, UK

17:00 **EMISSION PROPERTIES OF THE Pd – Ba ALLOY ACTIVATED BY LASER IRRADIATION** **F P6.8**
Umirzakov B.E., Donaev S.B.
Tashkent state technical university

17:00 **Lead-free Micro/Nano Energy Harvesting Solutions for Self-powered IoT** **F P6.9**
Marcos Duque, Jaume Esteve, Gonzalo Murillo.
Microelectronics Institute of Barcelona, IMB-CNM, Campus UAB, Bellaterra, Spain.

17:00 **Condensed droplets triboelectric nanogenerator via condensation of water** **F P6.10**
Gunsub Shin, Hyungseok Yong, Deokjae Heo, Jihoon Chung, Banseok Kim, Seh-Hoon Chung, Dongseob Kim, Sangmin Lee
Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Hongik University, Aircraft System Technology Group Korea Industrial Technology (KITECH), Chung-Ang University

17:00 **Methods of energy capture in structures of special materials according to their specific conversion systems** **F P6.11**
Irinela Chilibon
National Institute of Research and Development for Optoelectronics, INOE-2000, 409 Atomistilor Str., 77125, P.O. Box MG-5, Bucharest-Magurele, ROMANIA

17:00 **Eco-Friendly Poly(lactic acid) Microbeads by Melt Electrospraying** **F P6.12**
Hyeong Chan Nam, Donghwan Cho, Oh Hyeong Kwon, Won Ho Park
1. Department of Advanced Organic Materials and Textile System Engineering, Chungnam national University, Korea 2. Department of Polymer Science and Engineering, Kumoh National Institute of Technology, Korea

17:00 **Microwave-Assisted Hydrothermal Synthesis of Zn-Terephthalic Acid MOF for Redox Battery** **F P6.13**
Shotaro Ueda, Yuji Hirai, Sun He, Yuta Matsushima, Akito Masuhara,Hidenobu Shiroishi, Tsukasa Yoshida
Yamagata University

17:00 **Co-rich Spin Gapless Semiconductor CoFeCrGa: Insight and advancements** **F P6.14**
Deepika Rani, Enamullah, Lakhan Bainsla, K. G. Suresh and Aftab Alam/
1. Department of Physics, Indian Institute of Technology Bombay, Powai, Mumbai 400076, Maharashtra, India 2. WPI Advanced Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan

17:00 **Titanates-polymer nanocomposites for piezoelectric micro-generators** **F P6.15**
L. Branzi 1*, P. Cortelletti 2, A. Benedetti 1, A. Speghini 2.
1 Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Via Torino 155, Venezia Mestre, Italy, 2 Nanomaterials Research Group, Department of Biotechnology and INSTM, RU Verona, University of Verona, Strada le Grazie 15, Verona, Italy.

17:00 **Flexible Energy Harvesting Nanogenerators by Self-Assembled Graphene Multilayers** **F P6.16**
Dongseob Kim1, Jinkee Hong2,Yong Tae Park3*
1 Aircraft System Technology Group, KITECH, Korea 2 Department of Chemical and Biomolecular Engineering, Yonsei University, Seoul, Korea 3 Department of Mechanical Engineering, Myongji University, Yongin, Korea

17:00 **Synthesis of Luminescent and Swellable Conjugated Microporous Polymer for Detecting Nitroaromatic Explosives** **F P6.17**
Long Pan, Charl FJ Faul
University of Bristol

17:00 **Research of fiber morphology properties from amorphous super engineering plastic resin** **F P6.18**
Sang Young Yeo
Korea Institute of Industrial Technology

17:00 **Aspects of performance evaluation of PV-Battery microsystems based on Perovskite and Lithium-ion storage cells with MPP tracking** **F P6.19**
Li-chung Kin*1,2, Oleksandr Astakhov1, Shicheng Yu2, Hermann Tempel2, Hans Kungl2, Solomon N. Agbo1, Uwe Rau1, Ruediger-A. Eichel2, Tsvetelina Merdzhanova1
1 IEK 5-Photovoltaics, Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany
2 IEK 9-Fundamental Electrochemistry, Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany

17:00 **Transfer-Printed Arrays of Hierarchically Dewetted Microdroplets for Triboelectric Nanogenerators** **F P6.20**
Chanho Park, Seunggun Yu, Han Sol Kang, Seung Won Lee, Tae Hyun Park, Cheolmin Park
Yonsei University,Yonsei University,Yonsei University,Yonsei University,Yonsei University,Yonsei University

17:00 **Energy-loss return gate in daily life** **F P6.21**
Hyungseok Yong, Taehun Kim, Banseok Kim, Jihoon Chung, Deokjae Heo, Gunsub Shin, Seh Hoon Chung, Dongseob Kim and Sangmin Lee
Chung-Ang University

17:00 **The role of hierarchical surface structures on sustainable output generation of liquid-solid triboelectric nanogenerators** **F P6.22**
Jihoon Chung, Handong Cho, Gunsub Shin, Woonbong Hwang, Sangmin Lee
Chung-Ang University, Pohang University of Science and Technology (POSTECH), Chung-Ang University, Pohang University of Science and Technology (POSTECH), Chung-Ang University

17:00 **Screw pump triboelectric nanogenerator for water circulation system** **F P6.23**
Seh-Hoon Chung, Banseok Kim, Jihoon Chung, Haksung Moon, Hyungseok Yong, Deokjae Heo, Gunsub Shin, Dongseob Kim, Sangmin Lee
Hongik University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University, Aircraft System Technology Group Korea Industrial Technology (KITECH), Chung-Ang University

17:00 **Study of the overestimation of the Seebeck coefficient in a thermoelectric micro/nanogerator** **F P6.24**
Marc Dolcet, Marc Salleras, Andrej Stranz, Luis Fonseca
IMB-CNM (CSIC), Bellaterra, Spain

17:00 **Super ionic conductivity electrolyte 20SDC/8YSZ bilayer thin films prepared by Pulsed Laser Deposition** **F P6.25**
R.Pascu, N. Dumitrescu, B.Sava, A. Vlad, A. Matei, A. Trefilov
National Institute for Laser, Plasma and Radiation, P.O. Box MG 07, 077125 Măgurele, Romania

17:00 **Polyphenylene sulfide/liquid crystal polymer blend system for laser direct structuring** **F P6.26**
Hyunwoo Oh, Dabin Park, Jooheon Kim
School of Chemical Engineering & Materials Science, Chung-Ang University

17:00 **High performance microsupercapacitors based on a nano-micro hierarchical carbon electrode by direct laser writing** **F P6.27**
Soongeun Kwon, Geehong Kim, Hyungjun Lim, Seungmin Hyun, Jaegu Kim, Kee-Bong Choi, and JaeJong Lee
Korea Institute of Machinery and Materials, 156, Gajeongbuk-Ro, Yuseong-Gu, Daejeon 34103, Republic of Korea

17:00 **Electrodeposition of Zn-Terephthalate Metal-Organic Framework Thin Films for Redox Batteries** **F P6.28**
Tenshou Nakamura, Shotaro Ueda, Kyota Uda, Yuki Tsuda, Yuji Hirai, Tsukasa Yoshida
Yamagata university

Friday 31 may 2019

Thermoelectrics : Luis Fonseca

09:00 INV **Innovative Planar All-Solid-State Ionic Thermoelectric Supercapacitor** **F 7.1**
Ana L. Pires1, Rui S. Costa2,1, Clara Pereira2, André M. Pereira1
1 IFIMUP and IN ? Institute of Nanoscience and Nanotechnology, Departamento de Física e Astronomia, Faculdade de Ciências, Universidade do Porto, 4169-007 Porto, Portugal. 2 REQUIMTE/LAQV, Departamento de Química e Bioquímica, Faculdade de Ciências, Universidade do Porto, 4169-007 Porto, Portugal

09:30 **Numerical study of micro-thermoelectric generator based on bismuth telluride for waste heat recovery** **F 7.2**
Soufiane EL OUALID, Bertrand LENOIR, Francis KOSIOR, Anne DAUSCHER, Gerhard SPAN, Ervin MEHMEDOVIC, Janina PARIS
1 Institut Jean Lamour (IJL), UMR 7198 CNRS-Université de Lorraine, France 2 O-Flexx - Mahle Thermoelektronik GmbH, Duisburg, Germany

09:45 **Coffee Break**

10:15 **Improved all-silicon microthermoelectric generator with silicon microbeams** **F 7.3**
Marc Salleras, Marc Dolcet, Andrej Stranz, Luis Fonseca
IMB-CNM (CSIC), Campus UAB, E-08193 Bellaterra, Spain

10:30 **Thermoelectric nanogenerator networks: a viable source of power for the autonomy of wireless sensors?** **F 7.4**
D. Tainoff, A. Proudhom, C. Tur, T. Crozes, S. Dufresnes, S Dumont, T. Garret, D. Bourgault, O. Bourgeois.
Institut NEEL CNRS/UGA UPR2940, 25 rue des Martyrs BP 166, 38042 Grenoble cedex 9

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM G

Halide perovskites: low dimensions for devices

Symposium Organizers :

Claudine KATAN, ISCR, Rennes, France

Constantinos C. STOUMPOS, University of Crete, Greece

Samuel STRANKS, University of Cambridge, U.K.

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13:45 **WELCOME to Symposium G: Claudine KATAN, Costas STOUMPOS and Sam STRANKS**

Reduced dimension for emission : Constantinos STOUMPOS

14:00 INV **Dimensional reduction of halide perovskites** G 1.1
Bridget A. Connor, Matthew D. Smith, Linn Leppert, Jeffrey B. Neaton, Hemamala I. Karunadasa
1. Department of Chemistry, Stanford University, United States 2. Institute of Physics, University of Bayreuth, Germany 3. Department of Physics, University of California Berkeley, and Lawrence Berkeley National Lab., Berkeley, United States

14:30 **Influence of lattice symmetry on the optoelectronic properties of low dimension perovskites and nanostructures** G 1.2
Jacky Even
Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, F-35000 Rennes, France

14:45 **Microstructural Heterojunctions within 2D/3D Lead-Tin Perovskite Absorbers** G 1.3
Edoardo Ruggeri, Miguel Martín Anaya, Geraud Delport, Tiarnan Doherty, Krzysztof Gałkowski, Samuel D. Stranks
University of Cambridge (United Kingdom)

15:00 **Two-dimensional Halide Perovskites Incorporating Diammonium Cations** G 1.4
Xiaotong Li,1 Peijun Guo,2 Weijun Ke,1 Justin Hoffman,1 Mikaël Kepenekian,3 Claudine Katan,3 Jacky Even,4 Richard D. Schaller,2 Constantinos C. Stoumpos5 and Mercouri G. Kanatzidis1
1. Department of Chemistry, Northwestern University, 2145 Sheridan Road, Evanston, Illinois 60208, United States, 2. Center for Nanoscale Materials, Argonne National Laboratory, 9700 South Cass Avenue, Lemont, Illinois 60439, United States, 3. Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes), UMR 6226, Rennes F-35000, France, 4. Univ Rennes, INSA Rennes, CNRS, Institut FOTON, UMR 6082, Rennes F-35000, France, 5. Department of Materials Science and Technology, University of Crete, Vassilika Voutes GR-700 13 Heraklion, Greece

15:15 **1-D Hybrid Material, Imidazolium Lead Iodide, with Enhanced Stability** G 1.5
Charu Seth and Deepa Khushalani*
Department of Chemical Sciences Tata Institute of Fundamental Research Colaba, Mumbai 400005, India

15:30 **COFFEE break**

Photo-excited carriers : Hemamala KARUNADASA

16:00 INV **Ultrafast probing of energy exchanges and anharmonicity in halide perovskites** G 2.1
Peijun Guo(1), Benjamin T. Diroll(1), Angela C. Chang(2), Jue Gong(3), Tao Xu(3), John B. Ketterson(4), Constantinos C. Stoumpos(2,5), Lingling Mao(2), Mercouri G. Kanatzidis(2,5), Maria K.Y. Chan(1), Pierre Darancet(1), Richard Schaller(1,2)
(1) Center for Nanoscale Materials, Argonne National Laboratory, Lemont, Illinois, United States (2) Department of Chemistry, Northwestern University, Evanston, Illinois, United States (3) Department of Chemistry and Biochemistry, Northern Illinois University, DeKalb, Illinois, United States (4) Department of Physics, Northwestern University, Evanston, Illinois, United States (5) Materials Science Division, Argonne National Laboratory, Lemont, Illinois, United States

16:30 **Why are Hot Holes Easier to Extract than Hot Electrons from Methylammonium Lead Iodide Perovskite?** G 2.2
Ibrahim Dursun,1,2, † Partha Maity,2, † Jun Yin2, Bekir Turedi,1,2 Ayan A. Zhumekenov,1,2 Kwang Jae Lee,1,2 Omar F. Mohammed,2,* and Osman M. Bakr1,2,*
1KAUST Catalysis Center (KCC), 2Division of Physical Science and Engineering (PSE), King Abdullah University of Science and Technology (KAUST), Thuwal 23955, Kingdom of Saudi Arabia

16:45 **Ultrafast Hot Carrier Cooling Dynamics in Lead Halide Perovskite Solar Cell Materials: Theoretical RT-TDDFT Study** G 2.3
Roghayeh Imani1*, Shaozheng Ji2, Jonas Weissenrieder2, Alberto Vomiero1, Meysam Pazoki3
1Division of Materials Science, Department of Engineering Sciences and Mathematics, Luleå University of Technology, SE-97187 Luleå, Sweden 2Materials and Nano Physics, School of Engineering Sciences, KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden 3Department of Engineering Sciences, Solid State Physics, Ångström Laboratory, Uppsala University, Box 534, SE 751 21 Uppsala, Sweden

17:00 **Spectrally Resolved Ultrafast Exciton Transfer in Mixed Perovskite Quantum Wells** G 2.4
Andrew H. Proppe, Madeline H. Elkins, Oleksandr Voznyy, Ryan D. Pensack, Felipe Zapata, Lucas V. Besteiro, Li Na Quan, Rafael Quintero-Bermudez, Petar Todorovic, Shana O. Kelley, Alexander O. Govorov, Stephen K. Gray, Ivan Infante, Edward H. Sargent, Gregory D. Scholes
Department of Chemistry, University of Toronto, Toronto, Ontario, Canada M5S 3G4 The Edward S. Rogers Department of Electrical and Computer Engineering, University of Toronto, Toronto, Ontario, Canada M5S 3G4 Department of Chemistry, Princeton University, Princeton, New Jersey 08544, United States Netherlands eScience Center, Science Park 140, 1098 XG Amsterdam, The Netherlands Institute of Fundamental and Frontier Sciences, University of Electronic Science and Technology of China, Chengdu 610054, China Centre Énergie Matériaux et Télécommunications, Institut National de la Recherche Scientifique, 1650 Boul. Lionel Boulet, Varennes, Quebec J3X 1S2, Canada Department of Pharmaceutical Sciences, Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada M5S 3M2 Department of Physics and Astronomy, Ohio University, Athens, Ohio 45701, United States Center for Nanoscale Materials, Argonne National Laboratory, Argonne, Illinois 60439, United States Department of Theoretical Chemistry, Faculty of Sciences, Vrije Universiteit Amsterdam, De Boelelaan 1083, 1081 HV Amsterdam, The Netherlands

17:15 **Localized Photo-Doping in Alloyed Perovskites for Efficient Luminescence** G 2.5
Sascha Feldmann, Stuart Macpherson, Jasmine P.H. Rivett, Mojtaba Abdi-Jalebi, Guangjun Nan, Satyaprasad P. Senanayak, Gregory D. Tainter, Richard H. Friend, Henning Sirringhaus, Michael Saliba, David Beljonne, Samuel D. Stranks, Felix Deschler
Cavendish Laboratory, University of Cambridge, Cambridge, UK, Department of Physics, Zhejiang Normal University, Jinhua 321004, China, Adolphe Merkle Institute, University of Fribourg, CH-1700 Fribourg, Switzerland, Chimie des Matériaux Nouveaux, Université de Mons, B-7000 Mons, Belgium

17:30 **Hot-Carrier Dynamics in Lead-Halide Perovskite Nanocrystals: Role of Carrier Density, Nanoconfinement and Surface Ligands** G 2.6
Thomas R. Hopper, Andrei Gorodetsky, Jarvist M. Frost, Franziska Krieg, Maryna Bodnarchuk, Geogian Nedelcu, Christian Müller, Xiaokung Huang, Robert Lovrincic, Maksym V. Kovalenko and Artem A. Bakulin
Ultrafast Optoelectronics Group, Molecular Sciences Research Hub, Department of Chemistry, Imperial College London, London W12 0BZ, United Kingdom, Ultrafast Optoelectronics Group, Molecular Sciences Research Hub, Department of Chemistry, Imperial College London, London W12 0BZ, United Kingdom, Department of Physics, King's College London, London WC2R 2LS, United Kingdom, Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zürich, Vladimir Prelog Weg 1, Zürich CH-8093, Switzerland, Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zürich, Vladimir Prelog Weg 1, Zürich CH-8093, Switzerland, Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zürich, Vladimir Prelog Weg 1, Zürich CH-8093, Switzerland, Institute for High-Frequency Technology, Technische Universität Braunschweig, Schleinitzstr. 22, 38106 Braunschweig, Germany, Institute for High-Frequency Technology, Technische Universität Braunschweig, Schleinitzstr. 22, 38106 Braunschweig, Germany, Institute for High-Frequency Technology, Technische Universität Braunschweig, Schleinitzstr. 22, 38106 Braunschweig, Germany, Institute of Inorganic Chemistry, Department of Chemistry and Applied Bioscience, ETH Zürich, Vladimir Prelog Weg 1, Zürich CH-8093, Switzerland, Ultrafast Optoelectronics Group, Molecular Sciences Research Hub, Department of Chemistry, Imperial College London, London W12 0BZ, United Kingdom

Optoelectronic Applications : Richard SCHALLER

08:45 **Photoluminescence Modulation from Flake-Like Layered Halide Perovskites upon Cyclic Mechanical Loading** — G 3.1
Andrea Castelli, Giulia Biffi, Luca Ceseracciu, Davide Spirito, Mirko Prato, Davide Altamura, Cinzia Giannini, Sergey Artyukhin, Roman Krahne, Liberato Manna, Milena P. Arciniegas.
Dr. A. Castelli, G. Biffi, Dr. L. Ceseracciu, Dr. D. Spirito, Dr. Mirko Prato, Dr. S. Artyukhin, Dr. R. Krahne, Prof. L. Manna and Dr. M.P. Arciniegas. Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy. Dr. D. Altamura and Dr. C. Giannini. Istituto di Cristallografia, Consiglio Nazionale delle Ricerche, via Amendola 122/O, 70126 Bari, Italy. G. Biffi. Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, Via Dodecaneso, 31, 16146, Genova, Italy.

09:00 **Highly sensitivity direct X-ray detectors based on solution-processed cesium-containing mixed triple cation perovskite thin film** — G 3.2
Andrea Ciavatti1, Satyaprasad P Senanayak2, Laura Basiricò1, Mojtaba Abdi-Jalebi2, Beatrice Fraboni1, Henning Sirringhaus2
1University of Bologna, Department of Physics and Astronomy, Italy 2 Optoelectronics Group, Cavendish Laboratory, University of Cambridge, UK

09:15 **Simple devices based on hybrid organic inorganic low dimensional semiconductors** — G 3.3
I. Koutselas, I. Vareli, A. Vassilakopoulou, Pavlos Nikolaou, Emmanuel Topoglidis
University of Patras

09:30 **Using Bulk-like Nanocrystals To Probe Intrinsic Optical Gain Characteristics of Inorganic Lead Halide Perovskites** — G 3.4
Pieter Geiregat, Jorick Maes, Kai Chen, Emile Drijvers, Jonathan De Roo, Justin M. Hodgkiss, Zeger Hens
Pieter Geiregat, Jorick Maes, Emile Drijvers, Jonathan De Roo, Zeger Hens Ghent University, Department of Chemistry, Physics and Chemistry of Nanostructures, Belgium Kai Chen, Justin M. Hodgkiss Victoria University of Wellington, School of Chemical & Physical Sciences, New Zealand

09:45 **Impedance Spectroscopy of Perovskite Solar Cells** — G 3.5
Iván Mora-Seró
Institute of Advanced Materials, University Jaume I, Castelló de la Plana (Spain)

10:00 **COFFEE break**

Optoelectronic Applications : Richard SCHALLER

10:30 INV **Heterostructures of 2D Layered Halide Perovskites and Their Optoelectronic Applications** — G 3.6
Song Jin
Department of Chemistry University of Wisconsin-Madison

11:15 **PLENARY SESSION I**

12:30 **LUNCH**

Synthesis, solvent optimization for unconventional networks : Endre HORVATH

14:00 INV **Contributions from Solid State Chemistry – On Bandgap tuning by mixed cations and non-innocent solvents** — G 4.1
Harald Hillebrecht
Albert-Ludwigs-Universität Institut für Anorganische und Analytische Chemie
Albertstr. 21 79104 Freiburg Germany

14:30 **Enhanced stability and bangap tuning of formamidinium lead triiodide Perovskite by Large Cation Integration.** — G 4.2
Antonin Leblanc, Nicolas Mercier, Magali Allain, Jens Dittmer, Thierry Pauporté, Vincent Fernandez, Florent Boucher, Mikael Kepenekian, Claudine Katan
MOLTECH-ANJOU, UMR-CNRS 6200, Université d'Angers, 2 Bd Lavoisier, 49045 Angers, France, MOLTECH-ANJOU, UMR-CNRS 6200, Université d'Angers, 2 Bd Lavoisier, 49045 Angers, France, MOLTECH-ANJOU, UMR-CNRS 6200, Université d'Angers, 2 Bd Lavoisier, 49045 Angers, France, Institut des Molécules et Matériaux du Mans, CNRS UMR 6283, Le Mans Université, Avenue Olivier Messiaen, 72085 Le Mans cedex 9, France, Chimie ParisTech, PSL Research University, CNRS, Institut de Recherche de Chimie Paris (IRCP), 11 rue P. et M. Curie, F-75005 Paris, France, Institut des Matériaux Jean Rouxel, UMR-CNRS 6502, Université de Nantes, 2 rue de la Houssinière, BP 32229, 44322 Nantes Cedex 3, France, Institut des Matériaux Jean Rouxel, UMR-CNRS 6502, Université de Nantes, 2 rue de la Houssinière, BP 32229, 44322 Nantes Cedex 3, France, Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) - UMR 6226, F-35000 Rennes, France, Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) - UMR 6226, F-35000 Rennes, France

14:45 **2D SCN-Based Perovskites with Color-Tunability and Enhanced Stability Facilitated by Cs Cation and Halide Substitution** — G 4.3
Chia-Hsin Li, Chang-Che Tsai, Ming-Yun Liao, Yu-An Su, Shiang-Tai Lin, Chu-Chen Chueh
National Taiwan University, National Taiwan University,National Taiwan University,National Taiwan University,National Taiwan University,National Taiwan University

15:00 **Improved Thermal Stability of MAPbI3 Perovskite via Mixed-Dimensional Approach** — G 4.4
Bhumika Chaudhary,1,2 Teck Ming Koh,2 Benny Febriansyah,1,2 Annalisa Bruno,2 Nripan Methew,3 Subodh G. Mhaisalkar,2,3,* Cesare Soci4,*
1Interdisciplinary Graduate School, Energy Research Institute @ NTU (ERI@N), Research Techno Plaza, X-Frontier Block, Level 5, 50 Nanyang Drive, Singapore 637553 2Energy Research Institute @ NTU (ERI@N), Research Techno Plaza, X-Frontier Block, Level 5, 50 Nanyang Drive, Singapore 637553 3School of Materials Science and Engineering, Nanyang Technological University, Nanyang Avenue, Singapore 639798 4Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, 21 Nanyang Link, Singapore 637371

15:15 **Polyiodide Hybrid Perovskites: Conversion of Low-Dimensional Systems into 3D Photovoltaic Materials** — G 4.5
Allan Starkholm, Lars Kloo, Per H. Svensson
Allan Starkholm†‡ , Lars Kloo‡ , Per H. Svensson†‡ †RISE Surface, Process and Formulation, Forskargatan 20J, 15136 Södertälje, Sweden ‡Applied Physical Chemistry, Department of Chemistry, KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden

15:30 **COFFEE break**

Colloidal HP and other NCS : Christophe TENAILLEAU

16:00 INV **Nanoscale and Bulk Perovskite Single-Crystals: Surface Engineering for Efficient LEDs, Photodetectors, and Solar Cells** — G 5.1
Osman M. Bakr
Division of Physical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal 23955-6900, Kingdom of Saudi Arabia

16:30 **All-inorganic perovskite-based nanosystems: from material design to potential applications** — G 5.2
Athanasia Kostopoulou, Konstantinos Brintakis, Efthymis Serpetzoglou, Emmanuel Stratakis
Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas, 71110 Heraklion, Crete, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas, 71110 Heraklion, Crete, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas, 71110 Heraklion, Crete, Greece, Physics Department, University of Crete, 71003 Heraklion, Crete, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas, 71110 Heraklion, Crete, Greece, Physics Department, University of Crete, 71003 Heraklion, Crete, Greece

16:45 **Colloidal Halide Perovskite Nanocrystals: shape-control to self-assembly** — G 5.3
Lakshminarayana Polavarapu
1. Chair for Photonics and Optoelectronics, Nano-Institute Munich, Department of Physics, Ludwig-Maximilians-Universität (LMU), Königinstr. 10, 80539 Munich, Germany 2. Nanosystems Initiative Munich (NIM) and Center for NanoScience (CeNS), Schellingstr. 4, 80799 Munich, Germany *email: l.polavarapu@lmu.de

17:00 **Strain Engineering: A New Strategy for Stabilizing a-CsPbI3 for Ultra-Stable Perovskite** **G 5.4**
Sunihl Ma,1 Seong Hun Kim,2 Hyeok-Chan Kwon,1 Gyumin Jang, 1 Hyunha Yang,1 and Donghwa Lee,2,* Jooho Moon1,*
1Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, Republic of Korea 2Department of Materials Science and Engineering and Division of Advanced Materials Science, Pohang University of Science and Technology (POSTECH)

POSTER Session :
Claudine KATAN, Sam STRANKS and Constantinos STOUMPOS

17:15 **Pure cesium-containing PeLEDs using ZnO nanocrystals, PEIE and fluorene-based polyelectrolyte as the ETL** **G P 15.1**
Chun-Jung Chang, Sheng-Hsiung Yang
Institute of Lighting and Energy Photonics, National Chiao Tung University

17:15 **Charge carrier recombination dynamics and carrier-phonon interactions in bismuth halide semiconductor devices** **G P 15.2**
Lissa Eyre, Robert Hoye, Tahmida Huq, Tudor Thomas, Hannah Joyce, and Felix Deschler
Cavendish Laboratory, University of Cambridge, JJ Thomson Ave, Cambridge, CB3 0HE, United Kingdom, Department of Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Rd, Cambridge, CB3 0FS, United Kingdom, Department of Engineering, University of Cambridge, 9 JJ Thomson Ave, Cambridge, CB3 0FA, United Kingdom

17:15 **Layered halide perovskites for photovoltaics: first principles results** **G P 15.3**
Assam Linda, Boubacar Traore, Pedesseau Laurent, Kepenekian Mikael, Drahi Etienne, Even Jacky, Katan Claudine
Assam Linda : Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, F-35000 Rennes, France TOTAL SA, Tour Coupole, 2 place Jean Miller – La Défense 6 - Courbevoie, France Boubacar Traore : Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, F-35000 Rennes, France Pedesseau Laurent : Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, F-35000 Rennes, France Kepenekian Mikael : Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR - UMR 6226, F-35000 Rennes, France Drahi Etienne : TOTAL SA, Tour Coupole, 2 place Jean Miller – La Défense 6 - Courbevoie, France Even Jacky : Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, F-35000 Rennes, France Katan Claudine : Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR - UMR 6226, F-35000 Rennes, France

17:15 **Investigation of small organic molecules as hole transport materials for perovskite solar cells** **G P 15.4**
Katarzyna Gawlińska-Nęcek, Zbigniew Starowicz, Daiva Tavgeniene, Gintare Krucaite, Saulius Grigalevicius, Ewa Schab-Balcerzak, Marek Lipiński
1 Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Reymonta 25 St., 30-059 Krakow, Poland, e-mail: m.lipinski@imim.pl 2 Department of Polymer Chemistry and Technology, Kaunas University of Technology, Radvilenu Plentas 19, LT50254, Kaunas, Lithuania 3Institute of Chemistry, University of Silesia, 9 Szkolna Str., 40-006 Katowice, Poland

17:15 **Physical properties of the «HTSC-semiconductor» hybrid contact structures** **G P 15.5**
V. Bunda, S. Bunda
Transcarpathian Academy of Arts, Voloshin St., 37, Uzhgorod, 88000, Ukraine

17:15 **Magnetoexcitons in colloidal MAPbI3 nanoplatelets** **G P 15.6**
A. Surrente, K. Galkowski, M. Baranowski, S. Zelewski, V. Hintermayr, A. Richter, D. K. Maude, S. Stranks, A. Urban, and P. Plochocka
Laboratoire National des Champs Magnétiques Intenses, UPR 3228, CNRS-UGA-UPS-INSA, Grenoble and Toulouse, France, Photonics and Optoelectronics Group, Department of Physics and Center for NanoScience (CeNS), Ludwig-Maximilians-Universität München, Munich, Germany, Cavendish Laboratory, University of Cambridge, JJ Thomson Avenue, Cambridge CB3 0HE, UK

17:15 **Hybrid Perovskite Photobatteries** **G P 15.7**
Angus GM Mathieson, Dr Felix Deschler, Dr Michael DeVolder
University of Cambridge, Department of Physics, University of Cambridge, Institute for Manufacturing, Department of Engineering

17:15 **High-performance and Flexible Quasi-2D Perovskite Photodetectors with Mixed Cations Incorporation** **G P 15.8**
Ruoting Dong, Changyong Lan, Fangzhou Li, Johnny C. Ho
City University of Hong Kong

17:15 **Photo-stable Quantum Confined Perovskite Nanoplatelets: Towards Blue Lighting** **G P 15.9**
Javad Shamsi, Sam Stranks
Cavendish Laboratory, Department of Physics, University of Cambridge

17:15 **Stability Improvement of Perovskite Solar Cells Using 3D/1D Heterostructures of MAFACsPbI3-xBrx/(CH3)3SPbI3** **G P 15.10**
Mohamed M. Elsenety 1,2, Maria Antoniadou 1 , Nikolaos Balis 1, Andreas Kaltzoglou 1, Athanassios G. Kontos 1, Polycarpos Falaras 1
1 Institute of Nanoscience and Nanotechnology, National Centre for Scientific Research "Demokritos", 15341, Agia Paraskevi Attikis, Athens, Greece, 2 Department of Chemistry, National and Kapodistrian University of Athens, Zografou 157 84, Greece

17:15 **Simple solution synthesis of inorganic halide perovskites for photovoltaics** **G P 15.11**
E. Breniaud, P. Dufour, S. Guillemet-Fritsch, C. Costa, C. Tenailleau
CIRIMAT, CNRS-INP-UPS, Université de Toulouse, France

17:15 **Organic-inorganic halide perovskites–based microcavities for polaritonic applications** **G P 15.12**
Paul Bouteyre (1), Ferdinand Lédée (1), Hiba Diab (1), Géraud Delport (1), Gaëlle Trippé-Allard (1), Damien Garrot (2), Hai Son Nguyen (3), Christian Seassal (3), Jean-Sébastien Lauret (1), Fabien Bretenaker (1), Emmanuelle Deleporte (1)
(1) Laboratoire Aimé Cotton, CNRS, Univ. Paris-Sud, ENS Paris-Saclay, Université Paris- Saclay, 91405 Orsay Cedex, France , (2) Groupe d'Etude de la Matière Condensée, Université de Versailles Saint Quentin En Yvelines, Université Paris-Saclay, 45 Avenue des Etats-Unis, 78035, Versailles, France , (3) Université de Lyon, Institut des Nanotechnologies de Lyon - INL, UMR CNRS 5270, CNRS, Ecole Centrale de Lyon, Ecully, F-69134, France

17:15 **Fabrication and characterization of hybrid solar cells based on lead-free organic-metal halide perovskite materials** **G P 15.13**
Yiru Zhu, Xinxing Liang and Saif A. Haque
Department of Chemistry, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom

17:15 **Extending the functionality of low-dimensional hybrid perovskites through the incorporation of charge-transfer complexes** **G P 15.14**
Wouter T.M. Van Gompel[1], Roald Herckens[1], Kristof Van Hecke[2], Laurence Lutsen[1,3], Dirk Vanderzande[1,3]
[1] Hasselt University, Institute for Materials Research (IMO-IMOMEC), Hybrid Materials Design (HyMaD), Martelarenlaan 42, B-3500 Hasselt, Belgium., [2] Ghent University, Department of Inorganic and Physical Chemistry, XStruct, Krijgslaan 281-S3, B-9000 Ghent, Belgium., [3] imec, Associated Laboratory IMOMEC, Wetenschapspark 1, B-3590 Diepenbeek, Belgium.

17:15 **Multinary metal halides with variable dimensionality enabled by mechanochemical synthesis** **G P 15.15**
Francisco Palazon, Yousra El Ajjouri, Michele Sessolo, Henk J. Bolink
Instituto de Ciencia Molecular, Universidad de Valencia, C/ J. Beltrán 2, 46980, Paterna, Spain

17:15 **Light Management in Perovskite Solar Cells Using Quasi-Interdigitated Back Electrodes** **G P 15.16**
Haralds Abolins, Bart Roose, Gregory Tainter, Aoife Gregg, Gabriel Sauter, Silvia Vignolini, Felix Deschler
University of Cambridge

17:15 **Polyurethane based perovskite films with enhanced stability for optoelectronic application** **G P 15.17**
Jung Hyeon Yoo, Hyun Bin Kim, Seung Hee Choi, Seok Bin Kwon, Seong Guk Jeong, Young Hyun Song, Dae Ho Yoon
School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea,School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea,School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea,School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea,School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea,Lighting Design & Compnent Research Center, Korea Photonics Technology Institute (KOPTI), gwangju, 61007, Republic of Korea,School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea

17:15 **Dielectric Response of the Methylammonium Lead Halide Solar Cell Absorbers** **G P 15.18**
Sergejus Balčiūnas1, Mantas Šimėnas1, Šarūnas Svirskas1, Jaroslavas Belovickis1, Vytautas Samulionis1, Maksim Ivanov1, Jūras Banys1, Irina Anusca 2, Mehmet Sanlialp 2, Gerhard Lackner 2, Christian Fettkenhauer 2, Vladimir V. Shvartsman 2, Doru C. Lupascu 2, Pascale Gemeiner 3, Brahim Dkhil 3
1 Faculty of Physics, Vilnius University, Sauletekio 9/3 817k., LT10222 Vilnius, Lithuania 2 Institute for Materials Science and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Essen, Germany 3 Laboratoire Structures, Propriétés et Modélisation des Solides, CentraleSupélec, CNRS-UMR8580 Université Paris-Saclay, Châtenay-Malabry, France.

17:15 **Studies of Pseudohalide-perovskite Solar Cells by Synchrotron Spectroscopy and Microscopy** **G P 15.19**
Hung-Wei Shiu1, Ming-Wei Lin1, Kuo-Chin Wang2, Ming-Hsien Li2, Yu-Ling Lai1, Takuji Ohigashi3, Nobuhiro Kosugi3, Tzung-Fang Guo2, Peter Chen2, and Yao-Jane Hsu1, 2*
1 National Synchrotron Radiation Research Center, Hsinchu, Taiwan, R.O.C. 2 Department of Photonics, National Cheng Kung University, Tainan, Taiwan, R.O.C. 3 UVSOR Synchrotron, Institute for Molecular Science, Okazaki, Japan.

17:15 **Fine structure splitting of the bright exciton in a bulk MAPbBr3 single crystal** **G P 15.20**
M. Baranowski1, 2, K. Galkowski1, 3, A. Surrente 1, J. Urban 1 L. K lopotowski 4, S. Mackowski 3, D. K. Maude 1, R. Ben Aich 5, K. Boujdaria 5, M. Chamarro 6, C. Testelin 6, P. K. Nayak 7, M. Dollmann 7, H. J. Snaith 7, R. J. Nicholas 7, and P. Plochocka 1
1) Laboratoire National des Champs Magnetiques Intenses, UPR 3228, CNRS-UGA-UPS-INSA, Grenoble and Toulouse, France 2) Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology, Wroclaw, Poland 3) Institute of Physics, Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University, 5th Grudziadzka St., 87-100 Torun, Poland 4) Institute of Physics, Polish Academy of Sciences, al. Lotnikow 32/46, 02-668 Warsaw, Poland 5) Laboratoire de Physique des Matriaux : Structure et Proprits, Facult des Sciences de Bizerte, Universit de Carthage, 7021 Zarzouna, Bizerte, Tunisia 6) Sorbonne Universit, CNRS-UMR 7588, Institut des NanoSciences de Paris, INSP, 4 place Jussieu, F-75005, Paris, France 7) University of Oxford, Clarendon Laboratory, Parks Road, Oxford, OX1 3PU, United Kingdom

17:15 **PbI2 and PbS deposition from solution-ALD for PV application** **G P 15.21**
Maïssa Barr1, Ceyla Asker1, Soheila Nadiri1, V. Koch1 Karen Forberich2, Felix Hoga3, Tobias Stubhan3, Hans Egelhaaf3, Christoph Brabec2, Julien Bachmann1
1 CTFM, Friedrich-Alexander University of Erlangen-Nürnberg, Egerlandstr. 1, D-91058 Erlangen, Germany, 2 i-MEET, Friedrich-Alexander University of Erlangen-Nürnberg Martensstr. 7, D-91058 Erlangen, Germany, 3 ZAE Bayern - Erneuerbare Energien, Immerwahrstr. 2 91058 Erlangen, Germany

17:15 **Study of vibrational spectra and degradation of methylammonium lead iodide under UV** **G P 15.22**
Hajar Moatassim, Hind Benzidi, Omar Mounkachi, Mohammed Loulidi,
Faculty of Sciences, Mohammed V-Agdal University, Rabat, Morocco

17:15 **Monocrystalline thin films of layered organic-inorganic halide perovskites by rapid vapor-assisted process** **G P 15.23**
Ferdinand Lédée [1,2], Gaëlle Trippé-Allard [1], Gabriel Chehade [1], Pierre Audebert [2], Damien Garrot [3], Jean-Sébastien Lauret [1], Emmanuelle Deleporte [1].
1 Laboratoire Aimé Cotton, CNRS, Université Paris-Sud, ENS Paris-Saclay, Université Paris-Saclay, France, 2 PPSM, ENS Paris-Saclay, CNRS, Université Paris-Saclay, France, 3 GEMaC, CNRS, Université Versailles-Saint-Quentin, Université Paris-Saclay, France.

17:15 **Multi-layered hybrid perovskites templated with carbazole derivatives: enhanced moisture stability and solar cells** **G P 15.24**
Roald Herckens [1], Wouter T.M. Van Gompel [1], Wenya Song [2], Laurence Lutsen [1,3], Dirk Vanderzande [1,3]
[1] Hasselt University, Institute for Materials Research (IMO-IMOMEC), Hybrid Materials Design (HyMaD), Martelarenlaan 42, B-3500 Hasselt, Belgium, [2] imec, Thin-Film Photovoltaics, Energyville, Thor Park 8320, B-3600 Genk, Belgium, [3] imec, Associated Laboratory IMOMEC, Wetenschapspark 1, B-3590 Diepenbeek, Belgium.

17:15 **Study of phase transition and vibration modes in methylammonium lead halide perovskite single crystals by Raman scattering** **G P 15.25**
Trang Thi Thu Nguyen, Ye jin Kim, Seok hyun Yoon, Hye Ri Jung, William Jo, Won Seok Woo, Chang Won Ahn, Shin uk Cho, Ill Won Kim
Department of Physics, Ewha Womans University, Seoul 03760, Korea,
Department of Physics and Energy Harvest-Storage Research Center, University of Ulsan, Ulsan 44919, Korea

17:15 **Efficient carrier multiplication in CsPbI3 perovskite nanocrystals** **G P 15.26**
Leyre Gomez, Chris de Weerd, and Tom Gregorkiewicz
Institute of Physics, University of Amsterdam, The Netherlands

17:15 **Organic-inorganic perovskites: towards new thermoelectric materials** **G P 15.27**
Candida Pipitone*, Alessandro Chiara*, Federica Ursi*, Maria Costa*, Francesco Giannici*, Antonino Martorana*.
*Dipartimento di Fisica e Chimica, Università degli studi di Palermo, Palermo, Italy.

17:15 **Stability enhancement of perovskite solar cells by Al2O3 encapsulation** **G P 15.28**
Roja Singh1, Sudeshna Ghosh2, Anand Selvins1, Neha Mahuli2, Bireswar Madal1, Ansuman Halder1 and Shaibal K. Sarkar1
1 Department of Energy Science and Engineering, Indian Institute of Technology-Bombay, Powai, India 2 Center of Nanoscience and Technology, Institute of Technology- Bombay, Powai, India Email: roja.singh4@iitb.ac.in

17:15 **Light-Emitting Electrochemical Cells of 2D/3D Single Crystal Halide Perovskite with Vertically Aligned Carbon Nanotubes Contacts** **G P 15.29**
Pavao Andričević1, Xavier Mettan1, Márton Kollár1, Bálint Náfrádi1, Andrzej Sienkiewicz1, Tonko Garma2, László Forró1, Endre Horváth1
1 Laboratory of Physics of Complex Matter (LPMC) Ecole Polytechnique Fédérale de Lausanne Centre Est, Station 3, CH-1015 Lausanne, Switzerland 2 Power Engineering Department, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Split, Croatia

17:15 **Solution-phase epitaxial growth of perovskite films on 2D material flakes for high-performance solar cells** **G P 15.30**
Guanqi TANG, Feng YAN
Department of Applied Physics, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

17:15 **Static and Dynamic Disorder in Triple-Cation Hybrid Perovskites** **G P 15.31**
M. Baranowski 1,2, J. M. Urban1, N. Zhang 1, A. Surrente 1, D. K. Maude 1, Zahra Andaji-Garmaroudi 3, S. D. Stranks 3, and P. Plochocka 1
1) Laboratoire National des Champs Magnétiques Intenses, UPR 3228, CNRS-UGA-UPS-INSA, Grenoble/Toulouse 38042/31400, France 2) Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology, Wroclaw 50-370, Poland 3) Cavendish Laboratory, J.J. Thomson Avenue, Cambridge CB3 0HE, U.K.

17:15 **Impact of Fabrication Process on Thermal Stable Stability of Mixed Dimensional Perovskite Solar Cells** **G P 15.32**
Bhumika Chaudhary1,2, Annalisa Bruno2, Teck Ming Koh2, Subodh G. Mhaisalkar2,3*,Cesare Soci4*
1Interdisciplinary Graduate School- Energy Research Institute @ NTU (ERI@N), Research Techno Plaza, X-Frontier Block, Level 5, 50 Nanyang Drive, Singapore 637553 2Energy Research Institute @ NTU (ERI@N), Research Techno Plaza, X-Frontier Block, Level 5, 50 Nanyang Drive, Singapore 637553 3School of Materials Science and Engineering, Nanyang Technological University, Nanyang Avenue, Singapore 639798 4Division of Physics and Applied Physics, Nanyang Technological University, 21 Nanyang Link, Singapore 637371

17:15 **Carrier transport mechanism in lanthanide-doped perovskites** **G P 15.33**
Mengxia Liu, Akshay Rao
Department of Physics, University of Cambridge, JJ Thomson Ave, Cambridge, UK

17:15 **Incredible Perovskite Luminescence Materials for Next Generation Display** **G P 15.34**
YoungHyun Song, Yu Seoung Lee, Yu Kyung Kim, Bo Young Kim, Sie-Wook Jeon, In Seok Jang, Wan Ho Kim, Jae Pil Kim
Lighting Materials & Component Research Center, Korea Photonics Technology Institute, Gwangju 61007, Republic of Korea

17:15 **Improving the stability of lead-based perovskite solar cells with a Molybdenum disulfide hole transport layer** **G P 15.35**
Bich Phuong Nguyen, Hye-Jin Jin, Hye Ri Jung, Trang Thi Thu Nguyen, Seokhyun Yoon, and William Jo*
Department of Physics and New and Renewable Energy Research Center (NREC), Ewha Womans University, Seoul 03760, Republic of Korea.

17:15 **Synaptic behaviors in memristive organic-inorganic halide perovskite** **G P 15.36**
Yeon Soo Kim, Bich Phuong Nguyen, Hye Ri Jung, William Jo
Department of Physics, Ewha Womans University

17:15 **ZnO Nanoparticles Decorated All-inorganic Perovskite Based Photodetectors with Improved** **G P 15.37**

Kai Shen,a Xiao Li,a Hao Xu,*a Mingqing Wang,b Xiao Dai,c Jian Guo,d Ting Zhang,e Shibin Li,e Guifu Zou,c Kwang-Leong Choy,b Ivan P. Parkin,d Zhengxiao Guo,dfg Huiyun Liu a, Jiang Wu*a
a.Department of Electronic and Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, United Kingdom. b. Institute for Materials Discovery, University College London, Torrington Place, London WC1E 7JE, United Kingdom. c. School of Energy, Soochow Institute for Energy and Materials Innovations, and Key Laboratory of Advanced Carbon Materials and Wearable Energy Technologies of Jiangsu Province, Soochow University, Suzhou 215006, China. d. Department of Chemistry, University College London, 20 Gordon Street, Bloomsbury, London WC1H 0AJ, United Kingdom. e. State Key Laboratory of Electronic Thin Films and Integrated Devices and School of Optoelectronic Information, University of Electronic Science and Technology of China (UESTC), Chengdu, Sichuan, 610054, China. f. Departments of Chemistry and Mechanical Engineering, The University of Hong Kong, Hong Kong SAR, China. g.Zhejiang Institute of Research and Innovation, The University of Hong Kong, Qingshan Lake SciTech City, Hangzhou, China. Corresponding author Email: hao.xu.15@ucl.ac.uk, jiang.wu@ucl.ac.uk, k.choy@ucl.ac.uk,

17:15 **Facile Synthesis of Stable and Highly Luminescent Methylammonium Lead Halide Nanocrystals for Efficient Light Emitting Devices** **G P 15.38**

Bo Ram Lee1*, Sungyong Seo2, Yasser Hassan3, Richard H. Friend4, Henry J. Snaith3
1Department of Physics, Pukyong National University, 45 Yongso-ro, Nam-Gu, Busan 48513, Republic of Korea 2Department of Chemistry, Pukyong National University, 45 Yongso-ro, Nam-Gu, Busan 48513, Republic of Korea 3Clarendon Laboratory, Department of Physics, University of Oxford, Parks Road, Oxford OX1 3PU, United Kingdom 4Cavendish Laboratory, University of Cambridge, J J Thomson Avenue, Cambridge CB3 0HE, United Kingdom

Wednesday 29 may 2019

Lead free halide perovskites : Osman BAKR

09:00 INV **Computational design of novel double perovskites** **G 6.1**
George Volonakis, Feliciano Giustino
Department of Materials, University of Oxford, Oxford, UK

09:30 **Novel low-dimensional tin and antimony halide compounds: structures, properties and perspective applications** **G 6.2**
Maksym V. Kovalenko, Olga Nazarenko, Viktoriia Morad, Sergii Yakunin
1. ETH Zürich, Department of Chemistry and Applied Biosciences, CH-8093, Zurich, Switzerland 2. Empa-Swiss Federal Laboratories for Materials Science and Technology, CH-8600, Dübendorf, Switzerland

09:45 **Lead-free materials for solar cell applications** **G 6.3**
Marko Mladenovic Ursula Roethlisberger
École polytechnique fédérale de Lausanne Laboratory of Computational Chemistry and Biochemistry

10:00 **COFFEE break**

Joint session with symposium B: Strategies for More Stable Perovskite Solar Cells : Maksym KOVALENKO

10:30 INV **Tailoring phase purity, crystallinity and orientation in 2D perovskites for high-efficiency optoelectronic devices** **G 7.1**
Aditya D. Mohite,
Department of Chemical and Biomolecular Engineering Rice University, Houston, TX 77005

11:00 INV **Defect Physics and (In)Stability in Metal-halide Perovskite Semiconductors** **G 7.2**
Annamaria Petrozza
Center for Nano Science and Technology @Polimi, Istituto Italiano di Tecnologia, via Giovanni Pascoli 70/3, 20133, Milan, Italy.

11:30 **From Multifunctional Molecular Modulation to Layered Two-Dimensional Architectures for Stable Hybrid Perovskite Solar Cells** **G 7.4**
Jovana V. Milic (1), Dominik J. Kubicki (1,2), Yang Li (1), Xiong Li (1), Dongqin Bi (1), Lyndon Emsley (2), M. Graetzel (1)
(1) Laboratory of Photonics and Interfaces, EPFL, Lausanne, Switzerland. (2) Laboratory of Magnetic Resonance, EPFL, Lausanne, Switzerland.

11:45 **Ultra-high open circuit voltage beyond the 90% Shockley-Queisser limit in high efficiency wide bandgap perovskite solar cells** **G 7.5**
Saba Gharibzadeh,a,b Bahram Abdollahi Nejand,a,b Marius Jakoby,a,b Tobias Abzieher,b Somayeh Moghadazadehe,a,b Jonas A. Schwenzer,b Philipp Brenner,b Raphael Schmager,a,b Uli Lemmer,a,b Bryce S. Richards,a,b Ian A. Howard,a,b Ulrich W. Paetzold a
Institute of Microstructure Technology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Karlsruhe, Germany
Light Technology Institute, Karlsruhe Institute of Technology, Engesserstrasse 13, 76131, Karlsruhe, Germany

12:30 **LUNCH**

Extended and localized states: excitons, polarons,... : Harald HILLEBRECHT

14:00 INV **Polaron signatures in 2D layered hybrid perovskites from spectroscopy modeling** **G 8.1**
Claudio Quarti
University of Mons

14:30 **Optical properties and exciton recombination in Metal Halide Perovskites** **G 8.2**
Juan P. Martínez Pastor
Instituto de Ciencia de los Materiales, Universidad de Valencia, c/Catedrático J. Beltrán, 2, Paterna 46980, Spain

14:45 **Observation of an important exciton dissociation in confined multi-layered Ruddlesden-Popper Perovskites** **G 8.3**
Géraud Delport(a, Gabriel Chehade(a, Ferdinand Lédée(a, Hiba Diab(a, Cosme Milesi-Brault(a, Gaëlle Trippé-Allard(a, Jacky Even(b, Jean Sébastien Lauret(a, Emmanuelle Deleporte(a, and Damien Garrot(c
a) Laboratoire Aimé Cotton, CNRS, Université Paris-Sud, ENS Paris-Saclay, Université Paris-Saclay, 91405 Orsay Cedex, France b) Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, Rennes F-35000, France c) Groupe d'Etude de la Matière Condensée, CNRS, Université de Versailles Saint-Quentin-en-Yvelines, Université Paris-Saclay, 45 Avenue des Etats-Unis, 78035, Versailles, France

15:00 **Optical spectroscopy od 2D perovskites in high magnetic fields** **G 8.4**
M. Baranowski 1,2, S. J. Zelewski 2, J. M. Urban 1, A. Surrente 1, D. K. Maude 1, A. Kuc 3, Edward P. Booker 4, S. D. Stranks 4, P. Plochocka 1
1) Laboratoire National des Champs Magnétiques Intenses, UPR 3228, CNRS-UGA-UPS-INSA, Grenoble/Toulouse 38042/31400, France 2)Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology, Wroclaw 50-370, Poland 3)Helmholtz-Zentrum Dresden-Rossendorf, Abteilung Ressourcenokologie, Forschungsstelle Leipzig, Permoserstr. 15, 04318, Leipzig, Germany 4)Cavendish Laboratory, J.J. Thomson Avenue, Cambridge CB3 0HE, U.K.

15:15 **Light emission form stoichiometrically tuned quasi two-dimensional perovskites** **G 8.5**
Azhar Fakharuddin,*1 Weiming Qiu,1 Guillaume Croes,1 Andrius Devižis,2 Robert Gehlhaar,1 Andrey Kadashchuk,3 Vidmantas Gulbinas,2 Paul Heremans1
1 Imec, Kapeldreef 75, 3001, Leuven, Belgium 2 Center for Physical Sciences and Technology, Savanoriu 231, LT-02300 Vilnius, Lithuania 3 Institute of Physics, National Academy of Sciences of Ukraine, Prospect Nauky 46, 03028 Kyiv, Ukraine

15:30 **COFFEE break**

Growth and Upscaling : Aditya D. MOHITE

16:00 INV **Photovoltaic lead halide perovskite nanowires: quest for epitaxial growth condition?** **G 9.1**
Endre HORVÁTH1, Massimo SPINA1, Bálint NÁFRÁDI1, Eric BONVIN1, Márton KOLLÁR1, Andrzej SIENKIEVICZ1, Anastasiia GLUSHKOVA1, Alla ARAKCHEEVA1, Zsolt SZEKRÉNYES2, Hajnalka TÓHÁTI2, Katalin KAMARÁS2, Richard GAAL3, László FORRÓ1
1 EPFL SB IPHYS LPMC , station 3, 1015, Lausanne 2 Wigner Research Centre for Physics, 1525, Budapest 3 EPFL SB IPHYS EPSL

16:30 **Perovskite module characterization using dark lock-in thermography and luminescence imaging** **G 9.2**
Lucija Rakocevic, Laura Mundt, Robert Gehlhaar, Tamara Merckx, Tom Aernouts, Martin C Schubert, Stefan Glunz, Jef Poortmans
Lucija Rakocevic imec – partner in Solliance, 3001 Leuven, Belgium. ESAT, KU Leuven, 3000 Leuven, Belgium, Laura Mundt Fraunhofer Institute for Solar Energy Systems, 79110 Freiburg, Germany., Robert Gehlhaar imec – partner in Solliance, 3001 Leuven, Belgium., Tamara Merckx imec – partner in Solliance, 3001 Leuven, Belgium., Tom Aernouts imec – partner in Solliance, 3001 Leuven, Belgium., Martin C Schubert Fraunhofer Institute for Solar Energy Systems, 79110 Freiburg, Germany., Stefan Glunz Fraunhofer Institute for Solar Energy Systems, 79110 Freiburg, Germany. University of Freiburg, Laboratory for Photovoltaic Energy Conversion, 79110 Freiburg, Germany, Jef Poortmans imec – partner in Solliance, 3001 Leuven, Belgium. ESAT, KU Leuven, 3000 Leuven, Belgium. University of Hasselt, 3590 Diepenbeek, Belgium.,

16:45 **Continuous mass production of green-emitting Cs4PbBr6 perovskite luminescence materials for display application** **G 9.3**
Hyun Bin Kim 1, Seung Hee Choi 1, Seok Bin Kwon 1, Jung Hyeon Yoo 1, Seong Guk Jeong 1, Young Hyun Song 2, Dae Ho Yoon 1,*
1 School of Advanced Materials Science and Engineering, Sungkyunkwan University (SKKU), Suwon, 440-746, Republic of Korea, 2 Lighting Design & Component Research Center, Korea Photonics Technology Institute (KOPTI), Gwangju, 61007, Republic of Korea

17:00 **Ultra-lightweight, Flexible and Semitransparent Colloidal Quantum Dot Solar Cells** **G 9.4**
Erik Johansson
Physical Chemistry Dept. of Chemistry Uppsala University Sweden

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Defects/Surface states : Claudio QUARTI

09:00 INV **Defects, surfaces and surface defects in metal-halide perovskites** **G 10.1**
Filippo De Angelis, Edoardo Mosconi, Daniele Meggiolaro
Department of Chemistry, Biology and Biotechnology, University of Perugia, Via Elce di Sotto 8, 06123, Perugia, Italy, CNR-ISTM, Via Elce di Sotto 8, 06123, Perugia, Italy, CompuNet, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy

09:30 **Trap-Mediated Two-Step Sensitization of Manganese Dopants in Perovskite Nanocrystals** **G 10.2**
Valerio Pinchetti, Abhinav Anand, Quinten A. Akkerman, Davide Sciacca, Monica Lorenzon, Francesco Meinardi, Marco Fanciulli, Liberato Manna, Sergio Brovelli Valerio Pinchetti, Abhinav Anand, Davide Sciacca, Monica Lorenzon, Francesco Meinardi, Marco Fanciulli, Sergio Brovelli Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via R. Cozzi 55, IT-20125 Milano, Italy. Quinten A. Akkerman, Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, via Dodecaneso 31, IT-16146 Genova, Italy. Liberato Manna, Istituto Italiano di Tecnologia, via Morego 30, IT-16163 Genova, Italy

09:45 **Ionic versus Electronic Conductivity in Single Crystal Perovskites** **G 10.3**
E.A. Duijnstee, J. Lim, J.M. Ball, L.J.A. Koster, H.J. Snaith
University of Oxford, University of Oxford, University of Oxford, University of Groningen, University of Oxford

10:00 **COFFEE break**

10:30 **Grain boundary migration in polycrystalline perovskite films** **G 10.4**
Dr Bart Roose
University of Cambridge, UK

10:45 **Role of Polybromide Defects in Green Luminescence of the 0D Perovskite Cs4PbBr6** **G 10.5**
Young-Kwang Jung, Aron Walsh
Yonsei University, Yonsei University and Imperial College London

11:15 **PLENARY SESSION II**

12:30 **LUNCH**

NCs for emission : George VOLONAKIS

14:15 INV **Surface Chemistry of Colloidal Cesium and Formamidinium Lead Halides Perovskite Nanocrystals** **G 11.1**
Maryna Bodnarchuk
Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland

14:45 **Deeper Insight into the Synthesis Condition Effects in Halide Perovskite Nanocrystals** **G 11.2**
Laura Martínez-Sarti, Seung Hyeon Jo, Young-Hoon Kim, Michele Sessolo, Tae-Woo Lee, Henk J. Bolink
Laura Martínez-Sarti (Universidad de Valencia), Seung Hyeon Jo (Seoul National University), Young-Hoon Kim (Seoul National University), Michele Sessolo (Universidad de Valencia), Tae-Woo Lee (Seoul National University), Henk J. Bolink (Universidad de Valencia)

15:00 **Encapsulation of all-inorganic perovskite nanocrystals for increased emission efficiency and stability** **G 11.3**
Yingying Tang, Leyre Gomez, Marco van der Laan, Arnon Lesage, Peter Schall, and Tom Gregorkiewicz
University of Amsterdam

15:15 **Mixed Lead–Tin Halide Perovskites for Efficient and Wavelength-Tunable Near-Infrared Light-Emitting Diodes** **G 11.4**
Weiming Qiu, Zhengguo Xiao, Kwangdong Roh, Nakita K. Noel, Andrew Shapiro, Paul Heremans, Barry P. Rand
Imec, Kapeldreef 75, 3001 Leuven, Belgium, Department of Electrical Engineering, Princeton University, Princeton, NJ 08544, USA, ESAT, KU Leuven, 3001 Leuven, Belgium

15:30 **Boosting Tunable Blue Luminescence of Halide Perovskite Nanoplatelets through Postsynthetic Surface Trap Repair** **G 11.5**
Bernhard J. Bohn, Yu Tong, Moritz Gramlich, May Ling Lai, Markus Döblinger, Kun Wang, Robert L. Z. Hoye, Peter Müller-Buschbaum, Samuel D. Stranks, Alexander S. Urban, Lakshminarayana Polavarapu, Jochen Feldmann
BJB, YT, MG, ASU, LP, JF: Chair for Photonics and Optoelectronics, Department of Physics and Center for NanoScience (CeNS), Ludwig-Maximilians-Universität München, Amalienstr. 54, 80799 Munich, Germany MLL, RLZH, SDS: Cavendish Laboratory, JJ Thomson Avenue, Cambridge CB3 0HE, United Kingdom MD: Department of Chemistry, Ludwig-Maximilians-Universität München, Butenandtstr. 5-13 (E), 81377 Munich, Germany KW, PMB: Lehrstuhl für Funktionelle Materialien, Physik Department, Technische Universität München, James-Franck-Str. 1, 85748 Garching, Germany

15:45 **Photoluminescence Properties in Inorganic Lead Halide Perovskite NCs** **G 11.6**
Arnon Lesage, Leyre Gomez, Tom Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, The Netherlands

16:00 **COFFEE break**

Structures and heterostructures : David MITZI

16:30 INV **The polymorphous nature of cubic halide perovskites and its effect on optical and structural properties** **G 12.1**
Alex Zunger,Gustavo Dalpian, Xingang Zhao and Zhi Wang
University of Colorado, Boulder

17:00 **Phase transformation study of inorganic lead halide perovskites and enhancing stability of CsPbI3 by reducing its dimensionality** **G 12.2**
C. Tenailleau, A. Shpatz Dayan, B.-E. Cohen, S. Aharon, M. Wierzbowska, E. Breniaud, P. Dufour, L. Etgar
C. Tenailleau, E. Breniaud, P. Dufour: CIRIMAT, CNRS-INP-UPS, Université de Toulouse, France A. Shpatz Dayan, B.-E. Cohen, S. Aharon, M. Wierzbowska, L. Etgar: The Hebrew University of Jerusalem, Institute of Chemistry, Casali Center for Applied Chemistry, Jerusalem, Israel

17:15 **Organic Cation Engineering of the Low-Bandgap Perovskite Solar Cells in the Perovskite-Perovskite Tandem Solar Cells** **G 12.3**
B. Abdollahi Nejand,a,b, I. M. Hossain,a,b, S. Gharibzadeh,a,b S. Moghadamzadeh,a,b, J. A. Schwenzer, a T. Abzieher, a B. S. Richards,a,b U. Lemmer,a,b U. W. Paetzold.a,b
a.Light Technology Institute, Karlsruhe Institute of Technology, Engesserstr. 13, 76131 Karlsruhe, Germany b.Institute of Microstructure Technology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany

17:30 **Transfer of Transition-metal Dichalcogenide onto Organolead Perovskite for Efficient Heterojunction** **G 12.4**
Hye Ri Jung, William Jo
Department of Physics, Ewha Womans University

17:45 **short break**

18:00 **ABX3 perovskite nanocrystals in porous matrices** **G 12.5**
Mauricio Calvo, Andrea Rubino, Laura Calió, Hernán Míguez
Instituto de Ciencia de Materiales de Sevilla, Consejo Superior de Investigaciones Científicas

18:15 **Perovskite optoelectronics on n-type metal oxides: the catalysis of ZnO on perovskite crystallization and device performance** **G 12.6**
Zhongcheng Yuan, Sai Bai, Feng Gao*
IFM, Linköping University, Linköping, 58183, Sweden.

18:30 **Preparation of tungsten trioxide nanoparticles layer and perovskite nanowires for fabricating photovoltaic devices** **G 12.7**
Yu-An Chen, Sheng-Hsiung Yang
Institute of Lighting and Energy Photonics, National Chiao Tung University

18:45 **Understanding and Modulation of interaction between electronic and ionic charge transport at Perovskite-Electrolyte Interface** **G 12.8**
Priya Srivastava, Monojit Bag
Indian Institute of Technology Roorkee, Roorkee-247667, Uttarakhand, India

Friday 31 may 2019

Toward logic design with perovskites : Filippo DE ANGELIS

09:00 **Bismuth-doped 2D Cesium Lead Iodide Perovskite with Enhanced Air-Stability for Resistive Switching Memory and Artificial Synapse** **G 13.1**
Sun Gil Kim, Quyet Van Le, and Ho Won Jang
Department of Materials Science and Engineering, Research Institute of Advanced Materials, Seoul National University, Seoul 08826, Republic of Korea

09:15 **High-Performance Cross-Point Resistive Memory Devices Based on Solution-Processed Organo-Metal Halide Perovskite** **G 13.2**
Keehoon Kang1, Heebeom Ahn1, Younggul Song1, Woocheol Lee1, Junwoo Kim1, Youngrok Kim1, Daekyoung Yoo1 and Takhee Lee1
1Department of Physics and Astronomy, Seoul National University, Seoul 08826, Korea

09:30 **2D Hybrid Organic-Perovskite Blends for Resistive Switching Memory Devices** **G 13.3**
Murali Gedda, Emre Yengel, Hendrik Faber, Thomas Anthopoulos
King Abdullah University of Science and Technology (KAUST), KAUST Solar Center, Physical Sciences and Engineering Division, Thuwal, 23955-6900, Saudi Arabia.

09:45 **Photolithographically patterned solution processed perovskite transistor towards circuit application** **G 13.4**
Mithun Chennamkulam Ajith,Logesh Karunakaran,Venkatakrishnan Parthasarathy,Soumya Dutta
Mithun Chennamkulam Ajith-Department of Electrical Engineering, IIT Madras, Chennai 600036, India, Logesh Karunakaran-Department of Electrical Engineering, IIT Madras, Chennai 600036, India, Soumya Dutta-Department of Electrical Engineering, IIT Madras, Chennai 600036, India, Venkatakrishnan Parthasarathy-Department of Chemistry, IIT Madras, Chennai 600036, India

10:00 **COFFEE break**

Versatility of 2D Halide Perovskites : Jacky EVEN

10:30 INV **2D Halide Perovskites: Unrivaled Versatility for Semiconductor Design and Fabrication** **G 14.1**
David B. Mitzi
Duke University, Department of Mechanical Engineering and Materials Science and Department of Chemistry, Durham, North Carolina 27708, USA

11:00 **Control of Quantum Well Orientation and Distribution in Quasi-2D Perovskite Films** **G 14.2**
Rafael Quintero-Bermudez(1), Aryeh Gold-Parker(2), Andrew H. Proppe(1), Rahim Munir(3), Zhenyu Yang(1), Aram Amassian(3), Michael F. Toney(2), Edward H. Sargent(1)
1 Department of Electrical and Computer Engineering, University of Toronto, 10 King's College Road, Toronto, Ontario M5S 3G4, Canada 2 SLAC National Accelerator Laboratory, 2575 Sand Hill Road, Menlo Park, CA 94025 3 King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), and Physical Sciences and Engineering Division, Thuwal 23955-6900, Saudi Arabia

11:15 **Crystallization of Reduced Dimensional Perovskites: An in situ Viewpoint** **G 14.3**
Rahim Munir1, Rafael Quintero-Bermudez2, Yalan Zhang3, Ming-Chun Tang1, Dounya Barrit1, Kui Zhao2, Edward H. Sargent2, Aram Amassian1,4,*
1King Abdullah University of Science and Technology (KAUST), KAUST Solar Center and Division of Physical Sciences and Engineering, Thuwal, 23955-6900, Saudi Arabia. 2Shaanxi Key Laboratory for Advanced Energy Devices, Shaanxi Engineering Lab for Advanced Energy Technology, School of Materials Science and Engineering, Shaanxi Normal University, Xi&#8217,an 710119, China 3Department of Electrical and Computer Engineering, University of Toronto, Toronto, Ontario, Canada 4Department of Materials Science and Engineering, North Carolina State University, Raleigh, NC, 27695, USA, *aamassi@ncsu.edu

11:30 **Low-dimensional Hybrid Perovskites Containing an Organic Cation with an Extended Conjugated System** **G 14.4**

Wouter T.M. Van Gompel, Roald Herckens, Kristof Van Hecke, Bart Ruttens, Jan D'Haen, Laurence Lutsen, Dirk Vanderzande
Hasselt University, Martelarenlaan 42, B-3500 Hasselt, Belgium, Hasselt University, Martelarenlaan 42, B-3500 Hasselt, Belgium, Ghent University, Krijgslaan 281-S3, B-9000 Ghent (Belgium), Associated Laboratory IMOMEC, Imec, Wetenschapspark 1, B-3590 Diepenbeek, Belgium, Associated Laboratory IMOMEC, Imec, Wetenschapspark 1, B-3590 Diepenbeek, Belgium, Associated Laboratory IMOMEC, Imec, Wetenschapspark 1, B-3590 Diepenbeek, Belgium, University Hasselt and Associated Laboratory IMOMEC, Imec, Wetenschapspark 1, B-3590 Diepenbeek, Belgium,

11:45 **The role of spacer molecules in designing 2D Ruddlesden-Popper perovskites** **G 14.5**

F.Jahanbakhshi, M.Mladenovic, N.Ashari Astani and U.Roethlisberger
Laboratory of Computational Chemistry and Biochemistry, Ecole polytechnique fédérale de Lausanne (EPFL) Laboratory of Computational Chemistry and Biochemistry, Ecole polytechnique fédérale de Lausanne (EPFL) Physics Department, Sharif University of Technology Laboratory of Computational Chemistry and Biochemistry, Ecole polytechnique fédérale de Lausanne (EPFL)

12:00 **CLOSING REMARKS**

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM H

Materials for applications in photocatalysis and photoconversion

Symposium Organizers :

Anne MORRISSEY, Dublin University, Ireland

Giuliana IMPELLIZZERI, CNR-IMM, Catania,Italy

J. Anthony BYRNE, Ulster University, U.K..

Valérie KELLER, CNRS – University of Strasbourg, France

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EUROPEAN UNION

Monday 27 may 2019

09:00 **Welcome**

H2 Production (1) : -

09:15 INV **Photocatalytic Hydrogen Production, TiO2 and C3N4 compared** **H 1.1**
M. Bowker1,2, W. Jones,1,2, A Caravaca1,3, D. Martin1,4
1. Research Complex at Harwell, Rutherford Appleton Laboratory, Harwell Oxford, Didcot, OX11 0FA, UK, 2. Cardiff Catalysis Institute, School of Chemistry, Cardiff University, Main Building, Park Place, CF10 AT, Cardiff, UK, 3. now at CNRS, IRCELYON, France, 4. now at Johnson Matthey plc, Perstorp, Sweden.

09:45 **HiPIMS deposition of Ta-O-N films for water splitting application** **H 1.2**
J. Capek1, ?. Batková1, J. Houska1, S. Haviar1, T. Duchos2, M. Krbal3
1 Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Plze?, Czech Republic 2 Department of Surface and Plasma Science, Charles University, Praha, Czech Republic 3 CEMNAT - Center of Materials and Nanotechnologies, University of Pardubice, Pardubice, Czech Republic

10:00 **Colloidal Bimetallic Nanoparticles for Highly Active Solar Water Splitting and Alcohol Oxidation** **H 1.3**
Félix Urbain1*, Ruifeng Du1, Pengyi Tang1,2, Teresa Andreu1,3, A. Cabot1,4, Jordi Arbiol2,4, and Joan Ramón Morante1,5
1 IREC, Catalonia Institute for Energy Research, Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs, Barcelona, Catalonia, Spain 2 Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain 3 Universitat Politècnica de Catalunya, Jordi Girona 1–3, 08034 Barcelona, Catalonia, Spain 4 ICREA, Pg. Lluís Companys 23, 08010 Barcelona, Catalonia, Spain 5 Universitat de Barcelona, Martí i Franquès, 1, 08028 Barcelona, Catalonia, Spain

10:15 **Coffee break**

H2 Production (2) : -

10:45 INV **Modifying TiO2 for CO2 conversion and H2 production** **H 2.1**
Michael Nolan
Tyndall National Institute, UCC, T12 R5CP, Cork, Ireland

11:15 **Design and investigation of pure anatase, rutile and brookite phases TiO2 photoanodes for water splitting application** **H 2.2**
Antoine Deswaziere, Olivier Durupthy, Christel Laberty - Robert
Sorbonne Université, Laboratoire de Chimie de la Matière Condensée de Paris, LCMCP, F-75005 Paris, France

11:30 **LaFeO3/g-C3N4 heterostructured thin film photocatalysts for hydrogen production via water splitting** **H 2.3**
Raphaël Schninder 1, Thomas Gries 2
1: Laboratoire Réactions et Génie des Procédés, Université de Lorraine, CNRS UMR 7274, Nancy, France , 2: Institut Jean Lamour, Université de Lorraine, CNRS UMR 7198, Nancy, France

11:45 **Advanced photothermal activity of noble-metal-free Ti@TiO2 nanoparticles for hydrogen production from aqueous solutions** **H 2.4**
Sergey Nikitenko, Tony Chave, Sara El Hakim
ICSM, UMR 5257, CEA, CNRS, ENSCM, Univ Montpellier, Marcoule, France

12:00 **Visible light photocatalysis with main group octahedral sulphides** **H 2.5**
R. Lucena[1], F. Fresno[1], P. Palacios[2] , P. Wahnón[2], J.C. Conesa[1]
[1]Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain, [2] Instituto de Energía Solar, Universidad Politécnica de Madrid, Spain

12:15 INV **Molecular approaches toward hydrogen production in photoelectrochemical cells** **H 2.6**
M. Chavarot-Kerlidou
Laboratory of Chemistry and Biology of Metals, Univ. Grenoble Alpes, CNRS & CEA, Grenoble, France

12:45 **LUNCH**

Solar Fuels : -

14:00 INV **Defective Graphenes From Biomass Wastes As Photocatalysts For Solar Fuels Production** **H 3.1**
Hermenegildo Garcia
Instituto de Tecnología Química CSIC-UPV, Universitat Politécnica de Valencia, Av. de los Naranjos s/n, 46022 Valencia, Spain

14:30 **BiVO4/MeOx Heterogeneous Photoanodes for Efficient Photoelectrochemical Water Splitting via Electrochemical Synthesis** **H 3.2**
Jin Wook Yang, Mi Gyoung Lee, Min-Ju Choi, Ho Won Jang
Department of Materials Science and Engineering, Seoul National University, Seoul 08826, Republic of Korea

14:45 **Insights into the role of CuO in the CO2 photoreduction process** **H 3.3**
André E. Nogueira, Jéssica A. Oliveira, Gelson T. S. T. da Silva, Caue Ribeiro
Department of Chemistry, Institute of Exact and Biological Sciences (ICEB), Federal University of Ouro Preto, Ouro Preto-MG, Brazil. Chemical Engineering Department, Federal University of São Carlos, São Carlos-SP, Brazil. Department of Chemistry, Federal University of São Carlos, São Carlos-SP, Brazil. Embrapa Intrumentation, São Carlos-SP, Brazil. Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research (IEK-3): Electrochemical Process Engineering, Jülich, Germany.

15:00 **Metal-heteropolyacid-titania nanocomposites for enhanced photocatalytic reduction of CO2 to CO in the presence of water** **H 3.4**
Xiang Yu, Vitaly V. Ordomsky, Andrei Y. Khodakov
Univ. Lille, CNRS, Centrale Lille, ENSCL, Univ. Artois, UMR 8181 - UCCS - Unité de Catalyse et Chimie du Solide, F-59000 Lille, France

15:15 **Towards Stable and High Efficiency Solution Processed Hybrid Photocathodes for Water Splitting** **H 3.5**
Antonio Alfano, Alessandro Mezzetti, Fabio Di Fonzo
Politecnico Di Milano Physics Department, Center For Nano Science and Technology Istituto Italiano di Tecnologia, Center For Nano Science and Technology Istituto Italiano di Tecnologia, Center For Nano Science and Technology Istituto Italiano di Tecnologia

15:30 **GRAPHITIC C3N4 FOR CO2 REDUCTION: A PHOTOACTIVITY AND STABILITY STUDY** **H 3.6**
Pomilla, F.R.a,b,c, Cortes, M.A.L.R.M.d, Hamilton, J.W.J.d, Molinari, R.a, Barbieri, G.c, Marcì, G.b, Palmisano, L.b, Sharma, P.K.d, Brown, A.d, Byrne, J.A.d
a Department of Environmental and Chemical Engineering, University of Calabria, Via Pietro Bucci, Rende CS, 87036, Italy b Schiavello-Grillone Photocatalysis Group. Dipartimento di Energia, Ingegneria dell'Informazione e Modelli Matematici (DEIM), Università di Palermo Viale Delle Scienze, Palermo, 90128, Italy c Institute on Membrane Technology (ITM-CNR), National Research Council C/o, University of Calabria, Cubo 17C, Via Pietro Bucci, Rende CS, 87036, Italy

15:45 **Z-Schematic CO2 reduction using H2O electron donor by a mixture of Ru-complex/(CuGa)1-xZn2xS2 and BiVO4 particle photocatalysts** **H 3.7**
Tomiko M. Suzuki 1, Shunya Yoshino 2, Tomoaki Takayama 2, Akihide Iwase 2, Akihiko Kudo 2, Takeshi Morikawa 1
1 Toyota Central R&D Labs., Inc., Nagakute, Aichi, 480-1192, Japan, 2 Department of Applied Chemistry, Faculty of Science, Tokyo University of Science, 1-3 Kagurazaka, Shinjuku-ku, Tokyo 162-8601, Japan

16:00 **Coffee Break**

Poster Session 1 : -

16:30 **Various Metal Plasmonic Nanostructure Effects on the Photocatalytic Ability of Hematite Electrodes.** **H P1.1**
J. Horne, M. Forster, A. Cowan, F. Jaeckel
University of Liverpool

16:30 **Study photo-electrochemical properties of Orthorhombic Hybrid Perovskite MAPbI3: The Potential Application as a Photocatalyst** **H P1.2**
A. Al-Shami(1,4), A. Benyoussef(1,2), A. El Kenz(2), H. Ez-zahraouy(1), M. Hamedoun(2), A. Ennaoui(3), and O. Mounkachi(1), *
(1)- Laboratory of Condensed Matter and Interdisciplinary Sciences (LaMCScI), B.P. 1014, Faculty of Science-Mohammed V University, Rabat, Morocco. (2)- Materials and Nanomaterials Center, MAScIR Foundation, Rabat Design Center, Rue Mohamed Al Jazouli, Madinat Al Irfane, Rabat 10 100 – Morocco. (3)- Institut de Recherche en Energie Solaire et Energies Nouvelles (IRESEN), Morocco. (4)- Department of Physics, Faculty of Science, Sana'a University, Sana'a, Yemen.

16:30 **Study of thermal treatment effect on electrodeposited Sb2O3/Sb2S3 bilayer structures.** **H P1.3**
Jelena Maricheva*, Reelika Kaupmees, Valdek Mikli
Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

16:30 **LUMINESCENCE PROPERTIES OF Por.Si –CdS/ZnS :Cu(Mn) NANOPARTICLES** **H P1.4**
M.A. Jafarov, E.F. Nasirov, S.A.Jahangirova, R.Mammadov
M.A. Jafarov, E.F. Nasirov, S.A.Jahangirova, R.Jafarli

16:30 **Single Transition Metal Doped CdS Nanotube for OER and HER: A DFT Study** **H P1.5**
Priyanka Garg, Biswarup Pathak*
Discipline of Chemistry, Indian Institute of Technology (IIT) Indore, Indore. M.P. 453552, India Email: phd1401231006@iiti.ac.in, biswarup@iiti.ac.in

16:30 **The role of metal dopant / thermal annealing for electrochemically prepared photocathodes and effective water separation** **H P1.6**
DongSu Kim, YoungDae Yun, JooSung Kim, YoungBeen Kim, Prof. Dr. HyungKoun Cho
School of Advanced Materials Science and Engineering, Sungkyunkwan University

16:30 **TiO2 based coatings onto textile substrates for air purification applications** **H P1.7**
M. Suchea 1,2*, V. Dediu1, C. Pachiu1, M. A. Dinescu1, F. Comanescu1, O. Ionescu1, C. Obreja1, I. V. Tudose2, E. Koudoumas2
1 National Institute for Research and Development in Microtechnologies (IMT-Bucharest), 126 A, Erou Iancu Nicolae Street, P.O. Box 38-160, 023573 Bucharest, Romania 2 Center of Materials Technology and Photonics, School of Engineering, Technological Educational Institute of Crete, Heraklion, Greece * mira.suchea@imt.ro, mirasuchea@staff.teicrete.gr ,

16:30 **Synthesis of mesoporous TiO2 / SnO2 electrodes for dye-sensitized solar cells** **H P1.8**
Zhengyang Li, Zhiyong Zheng, Hee Yeon Park, Ye Lim Kwon
Department of Chemistry, SKKU, Suwon 440746, Korea.

16:30 **From Environmental Applications to Renewable Energy Production: an Overview about Nb2O5 and related materials** **H P1.9**
Caue Ribeiro (a,b), Gelson T. S. T. da Silva (c), Andre E. Nogueira (d), Juliana A. Torres (a), Jessica A. de Oliveira (c), Osmando F. Lopes (e), Marcelo Carmo (b)
(a) Embrapa Instrumentation (Sao Carlos, Brazil), (b) Forschungszentrum Julich - IEK-3, (Julich, Germany), (c) Nanotechnology Brazilian National Laboratory (Campinas, Brazil), (d) São Carlos Federal University (Sao Carlos, Brazil), (e) Uberlandia Federal University (Uberlandia, Brazil)

16:30 **Photocatalytic activities and photoconductivity properties in La2Ti2O7 nanostructures** **H P1.10**
Sébastien Leroy 1, Jean-François Blach 1, Redouane Douali 2, Christian Legrand 2, Nicolas Kania 1, Jean-François Henninot 1, Sébastien Saitzek 1
1 Univ. Artois, CNRS, Centrale Lille, ENSCL, Univ. Lille, UMR 8181 - UCCS - Unité de Catalyse et Chimie du Solide, F-62300 Lens, France , 2 Université du Littoral Côte d'Opale (ULCO) - UDSMM - Unité de Dynamique et Structure des Matériaux Moléculaires, F-62228 Calais, France

16:30 **Influence of microstructuring of mesoporous titania films loaded with silver salts on the photocatalytic degradation of methyl b** **H P1.11**
Nicolas Crespo-Monteiro*, Francis Vocanson*, Anthony Cazier, Yaya Lefkir, Stéphanie Reynaud, Jean-Yves Michalon, Thomas Kämpfe, Nathalie Destouches, Yves Jourlin
Univ Lyon, UJM-Saint-Etienne, CNRS, Institut d'Optique Graduate School, Laboratoire Hubert Curien UMR 5516, F-42023, SAINT-ETIENNE, France

16:30 **Ferrite nanoparticles on stick-like Freudenbergite as photocatalysts under visible light irradiation** **H P1.12**
Radu-George Ciocarlan*, Elena M. Seftel**, Maria Batuk***, Myrjam Mertens**, Joke Hadermann***, Pegie Cool*
*LADCA, University of Antwerp (CDE), Universiteitsplein 1, 2610 Wilrijk, Antwerp, Belgium, **VITO Flemish Institute for Technological Research, Boeretang 200, B-2400, Belgium, ***EMAT, University of Antwerp, Groenenborgerlaan 171, Antwerp 2020, Belgium.

16:30 **A review of the effectiveness of Ti02 based Photo-catalytic materials and treatments to improve air quality.** **H P1.13**
Dr David Williams
Cristal

16:30 **Anizotropy of photoconductivity in BiOX (X=Cl, Br, I) nanocrystals** **H P1.14**
V. Bunda(1), S. Bunda(1), V. Komanicky(2), A. Feher(2)
(1) Transcarpathian Academy of Arts, Faculty of Design, Uzhgorod 88000, Ukraine (2) Centre of Low Temperature Physics, Faculty of Science P. J. Šafárik University & Institute of Experimental Physics, Slovak Academy of Sciences, Kosice 04154, Slovakia

16:30 **Synergy of copper and graphene for visible-light promoted photochromism and photocatalysis in TiO2 nanoparticles** **H P1.15**
David Maria Tobaldi, Luc Lajaunie, Bruno Figueiredo, Vitor Abrantes, Maria Paula Seabra, José Calvino, João labrincha
University of Aveiro, Universidad de Cádiz, Graphenest

16:30 **Ferroelectric and photocatalytic properties of Ba0.925Bi0.05(Ti0.95-x Zrx) Sn0.05O3 ceramics** **H P1.16**
N. Haddadou-Taibi (1), K.Taïbi (1), A. Lahmar (2), G. Rekhila (3) and M. Trari (3)
(1) Laboratoire de Cristallographie-Thermodynamique, Faculté de Chimie, U.S.T.H.B., Alger, Algeria, (2) Laboratoire de Physique de la Matière Condensée (LPMC), Université de Picardie, Amiens Cedex 1, France, (3) Laboratoire de Stockage et de Valorisation des Energies Renouvelables, Faculté de Chimie, U.S.T.H.B., Alger, Algeria.

16:30 **Ultrafast dynamics in co-sensitized photocatalysts under visible and NIR light irradiation** **H P1.17**
Jayita Patwari, Samir Kumar Pal
Department of Chemical, Biological and Macromolecular Sciences, S. N. Bose National Centre for Basic Sciences, Block JD, Sector III, Salt Lake, Kolkata 700 106, India

16:30 **Amorphous silicon based photocathodes with plasmonic Au and Ag nanoparticles for hydrogen generation** **H P1.18**
Miroslav Mikolášek 1, Martin Kemény 1, Filip Chymo 1, Peter Ondrejka 1, Martin Weis 1, Jozef Huran 2, Ivan Hotový 1
1 Institute of Electronics and Photonics, Slovak University of Technology, Ilkovičova 3, 812 19 Bratislava, Slovakia, 2 Institute of Electrical Engineering SAS, Dúbravská cesta 9, 841 04, Bratislava, Slovakia

16:30 **STRATEGIES TOWARDS HIGHLY EFFICIENT HETEROJUNCTION PHOTOCATALYTIC FILMS** **H P1.19**
R. Quesada-Cabrera(a), C. Sotelo-Vazquez(a), A. Iqbal(b), A. Kafizas(c), M. Ling(a), D.O. Scanlon(a,c), P.K. Thakur(d), T.-L. Lee(d), A. Taylor(e), K. Bevan(b), G.W. Watson(f), R.G. Palgrave(a), C.S. Blackman(a), J.R. Durrant(c), I.P. Parkin(a)
(a) Department of Chemistry, UCL (University College London), 20 Gordon St., London WC1H 0AJ, United Kingdom. r.quesada@ucl.ac.uk, i.p.parkin@ucl.ac.uk (b) Department of Physics, McGill University, Wong Bldg, 3610 University St. Montreal, QC 3A 2B2, Canada (c) Department of Chemistry, Imperial College London, Exhibition Road, London SW7 2AZ, United Kingdom. (d) Diamond Light Source Ltd., Harwell Science and Innovation Campus, Didcot OX11 0DE United Kingdom. (e) Department of Electronic & Electrical Engineering, UCL (University College London), Torrington Place, London WC1E 7JE, United Kingdom. (f) School of Chemistry and CRANN Institute, Trinity College Dublin, Dublin 2, Ireland.

16:30 **Designing of PPy Based Hybrid Electrocatalyst for Hydrogen Evolution in Neutral Media** **H P1.20**
Timucin BALKAN, Sarp KAYA
1 Material Science and Engineering Department, Koç University, Istanbul, Turkey 2 Koç University TUPRAS Energy Center, Istanbul, Turkey 3 Chemistry Department, Koç University, Istanbul, Turkey

16:30 **ZnWO4 nanoparticles as efficient photocatalyst for degradation of para-aminobenzoic acid: Impact of calcination temperature on p** **H P1.21**
V. Faka 1,3, C. Patriarchea1,3, M. Moschogiannaki1,5, L. Zouridi1,5, G. Kiriakidis1,3 , V. Binas1,4
1 Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 70013 Heraklion, Crete, Greece 2 University of Crete, Department of Chemistry, 710 03 Heraklion, Crete, Greece 3 University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece 4 Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece 5 University of Crete, Department of Material Science and Technology, 710 03 Heraklion, Crete, Greece

16:30 **Dye-Sensitized Photoanodes for Water Oxidation based on Non-Covalent Molecular Assemblies** **H P1.22**
Giulia Alice Volpato, Francesco Rigodanza, Serena Berardi, Stefano Caramori, Marcella Bonchio, Maurizio Prato, Andrea Sartorel
Dipartimento di Scienze Chimiche, University of Padova, CNR-ITM, Department of Chemistry and Pharmaceutical Sciences and CNR-ISOF, University of Ferrara, Department of Chemistry and Pharmaceutical Sciences and CNR-ISOF, University of Ferrara, CNR-ITM and Dipartimento di Scienze Chimiche, University of Padova, Center of Excellence for Nanostructured Materials (CENMAT) and INSTM, Department of Chemical and Pharmaceutical Sciences, University of Trieste, CNR-ITM and Dipartimento di Scienze Chimiche, University of Padova

16:30 **A RATIONAL DESIGN OF HOLLOW Pt NANOPARTICLES FOR HYDROGEN EVOLUTION REACTION** **H P1.23**
Dilan Aksoy, Timuçin Balkan, Önder Metin, Sarp Kaya
Material Science and Engineering, Koç University, Istanbul 34450, Turkey, Koç University TUPRAS Energy Center (KÜTEM), Koç University, Istanbul 34450, Turkey, Chemistry Department, Koç University, Istanbul 34450, Turkey

16:30 **Ag/Pd decorated titania nanoparticles embedded in alginate magnetic hydrogel beads or Janus carpets and their photocatalytic pro** **H P1.24**
Fleaca C., Dumitrache F., Scarisoreanu M., Ilie A., Banici A.-M., Dumitru M.
NILPRP, Atomistilor street no. 409, Magurele-Bucharest , Romania

16:30 **Tuning the functional properties of shape engineered TiO2 anatase nanoparticles by post-synthesis treatments** **H P1.25**
Lorenzo Mino, Francesco Pellegrino, Steffi Rades, Jörg Radnik, Vasile Dan Hodoroaba, Giuseppe Spoto, Valter Maurino, Gianmario Martra
Lorenzo Mino, Francesco Pellegrino, Giuseppe Spoto, Valter Maurino, Gianmario Martra: Department of Chemistry and NIS Centre, University of Torino, via Giuria 7, 10125 Torino, Italy Steffi Rades, Jörg Radnik, Vasile Dan Hodoroaba: BAM Federal Institute for Materials Research and Testing, 12205 Berlin, Germany

16:30 **Hunting for the elusive path of photo-degradation using Gd-doped TiO2 mesoporous nanoparticles for water cleaning** **H P1.26**
Daniel L. A. Fernandes, Tomas Edvinsson
Angstrom laboratory, Department of Engineering Sciences, Solid State Physics, Uppsala University, Sweden

16:30 **Impact of post-deposition annealing of Ti-doped iron-oxide films on its photocatalytic performance** **H P1.27**
Pranab Biswas, Ardak Ainabayev, David Caffrey, Brian Walls, Daragh Mullarkey, Karsten Fleischer, Igor V. Shvets
School of Physics and Centre for Research on Adaptive Nanostructures and Nanodevices, Trinity College Dublin, Dublin 2, Ireland

16:30 **Microwave assisted fabrication of hierarchical nanostructures of TiO2 for photocatalytic application** **H P1.28**
Ramsha Khan, Sofia Javed, Mohammad Mujahid
Nanosynthesis Laboratory, School of Chemical & Materials Engineering (SCME), National University of Sciences and Technology (NUST), H-12, Islamabad, Pakistan.

16:30 **Aerosol Assisted Chemical Vapour Deposition and Photocatalytic Properties of Highly Textured and Defected ZnO Thin Films** **H P1.29**
Premrudee Promdet (a), Raul Quesada-Cabrera (a), Sanjayan Sathasivam (a), Arreerat Jiamprasertboon (a),(b), Jianwei Li (a), Jian Guo (a), Alaric Taylor (c), Claire J. Carmalt (a) and Ivan P. Parkin (a)
(a) Materials Chemistry Centre, Department of Chemistry, University College London, 20 Gordon Street, London WC1H 0AJ, UK Fax: (+44) 20-7679-7463 E-mail: i.p.parkin@ucl.ac.uk (b) School of Chemistry, Institute of Science, Suranaree University of Technology, 111 University Avenue, Muang, Nakhon Ratchasima, 30000, Thailand (c) Department of Electronic & Electrical Engineering, University College London, Torrington Place, London WC1E 7JE, UK

16:30 **GROWTH OF CdS THIN FILMS IN LARGE AREAS BY CBD REDUCING THE AMOUNT OF CHEMICAL WASTE** **H P1.30**
Maria de Lourdes Albor-Aguilera1, Roberto Carlos Ruiz-Ortega1, Miguel Ángel González-Trujillo2, Juana Angélica Ortega-Cárdenas1, Hernani Yee-Madeira1, Gabriela Rueda-Morales1, Lucero A. Esquivel-Méndez1
1 Instituto Politécnico Nacional-ESFM, Depto. de Física, U.P.A.L.M., Zacatenco, CDMX, 07738, México, 2 Instituto Politécnico Nacional-ESCOM, Depto. de Formación Básica, U.P.A.L.M., Zacatenco, CDMX, 07738, México,

16:30 **Bandgap-tunable CuxZnyS films Prepared by Intermittent UV-assisted Photochemical Deposition** **H P1.31**
Jun Zhang, Jun Liao, Lexi Shao, Shuwen Xue , Zhiguo Wang
1 School of Physical Science and Technology, Lingnan Normal University, Zhanjiang 524048, People's Republic of China 2 Department of Applied Physics, University of Electronic Science and Technology of China, Chengdu 610054, People's Republic of China

16:30 **Electrophilic Fluorination of α-Fe2O3 Nanostructures For Enhanced Photoelectrochemical Properties** **H P1.32**
Gaurav Bahuguna, Vikas Janu, Rakesh K Sharma and Ritu Gupta
Indian Institute of Technology Jodhpur

16:30 **Nanoscale interface mapping of photo-generation of charge in single nanorod heterojunctions** **H P1.33**
Saatviki Gupta, Yogita Batra, Deepak Varandani, V.R. Satsangi, B.R Mehta
Saatviki Gupta - Jawaharlal Nehru University, V.R. Satsangi - Dayalbagh Educational Institute, Yogita Batra, Deepak Varandani, B.R. Mehta - Indian Institute of Technology Delhi

16:30 **Structural evolution and applications of MOFs and ZIFs synthesized via a reaction diffusion process at room temperature** **H P1.34**
Mohamad Hmadeh
Department of Chemistry, American University of Beirut, Beirut, Lebano

16:30 **Catalysts for CO2 reduction and capture-homogeneous and heterogeneous study** **H P1.35**
Biswanath Das (a), Graham E Ball (a), Anders Thapper (b), Sascha Ott (b), Chuan Zhao (a), Stephen B Colbran (a)
(a) School of Chemistry, the University of New South Wales, Sydney, NSW 2052, Australia (b) Department of Chemistry – Ångström Laboratory, Uppsala University, P.O. Box 523, SE-75120, Uppsala, Sweden

16:30 **Novel Organic CT Salts of 1,3-Bis(dicyanomethylidene)indan Anion and Viologen Cations with Different Linear Alkyl Chain Lengths** **H P1.36**
E. Saito1, T. Yasuhara1, Y Tanaka2, R. Yamakado2, S. Okada2, T. Nohara1, A. Masuhara1 and T. Yoshida1
1 Graduate School of Science and Engineering, Yamagata University 2 Graduate School of Organic Materials Science, Yamagata University

16:30 **The Effect of Titanium Dioxide Synthesis Technique and its Photocatalytic Degradation of Organic Dye Pollutants** **H P1.37**
David Dodoo-Arhin1,2*, Frederick Paakwah Buabeng1,2, Julius M. Mwabora2,3, Prince Nana Amaniampong4, Henry Agbe5, Emmanuel Nyankson1, David Obada6, and Nana Yaw Asiedu7
1Department of Materials Science and Engineering, University of Ghana, Ghana 2African Materials Science and Engineering Network (A Carnegie-IAS RISE Network) 3Department of Physics, University of Nairobi, Kenya 4 INCREASE (FR CNRS 3707), ENSIP, 1 rue Marcel Doré, TSA41105, 86073 Poitiers Cedex 9 (France) 5Centre Universitaire de Recherche sur l'Aluminium, Université du Québec à Chicoutimi, Québec G7H 2B1, Canada. 6Department of Mechanical Engineering, Ahmadu Bello University, Zaria, Nigeria. 7Department of Chemical Engineering, Kwame Nkrumah University of Science and Technology, Ghana.

16:30 **Photogeneration of H2 with TiS3 as photoelectrode: a transition from photoelectroassisted to photoassisted reaction.** **H P1.38**
I.J. Ferrer, E. Flores, F. Leardini, J.R. Ares, C. Sánchez
I.J. Ferrer, F. Leardini, J.R. Ares, C. Sánchez: MIRE-group, Dpto. de Física de Materiales, UAM, Cantoblanco, E-28049, Madrid (Spain). E. Flores: FINDER-group, Instituto de Micro y Nanotecnología, IMN-CNM, E-28760, Tres Cantos, Madrid (Spain).

16:30 **Different strategies of surface modification to improve the photocatalysis properties** **H P1.39**
Thibault Roques-Carmes, Halima Alem, Tayssir Hamieh, Joumana Toufaily, Céline Frochot, and Frédéric Villiéras
T. Roques-Carmes (*) • C. Frochot Laboratoire Réactions et Génie des Procédés (LRGP), UMR CNRS 7274, Université de Lorraine, 1 rue Grandville, 54001 Nancy, France e-mail: thibault.roques-carmes@univ-lorraine.fr H. Alem Institut Jean Lamour (IJL), UMR CNRS 7198, Université de Lorraine, Department N2EV, 2 allée André Guinier - Campus Artem 54000 Nancy, France T. Hamieh, • J. Toufaily Laboratory of Materials, Catalysis, Environment and Analytical Methods, Faculty of Sciences I, Lebanese University, Campus Rafic Hariri, Beirut, Lebanon F. Villiéras Université de Lorraine, Laboratoire Interdisciplinaire des Environnements Continentaux, UMR 7360 CNRS, 54500 Vandœuvre-lès-Nancy, France

16:30 **The effect of precursors and reaction parameters on the physicochemical properties and photocatalytic activity of g-C3N4** **H P1.40**
Amit K. Singhal*, Preetam K. Sharma, Anukriti Singh, Helen Lubarsky, Jeremy W. J. Hamilton, Pilar Fernandez-Ibanez, Patrick Dunlop and John A. Byrne
NIBEC, Ulster University, Shore road, Newtownabbey, BT37 0QB, U.K. *E-mail: singhal-a@ulster.ac.uk

16:30 **Correlation of photocatalytic activity with analytical and photoelectrochemical properties for commercial titanium dioxide powde** **H P1.41**
Preetam K. Sharma, Jeremy W. J. Hamilton, Patrick Dunlop, J. Anthony Byrne
NIBEC, Ulster University, Shore Road, Newtownabbey, BT37 0QB, United Kingdom

16:30 **7.8% efficiency electrocatalytic CO2 reduction using series-connected silicon solar cells** **H P1.42**
Tae-Won Kim, Jeon-Ryang Lee, Ho-Sung Kim, Chae-hwan Joeng, Jin-Sup Lim, Jae-Cheol Park
Energy and applied optics research group, Korea Institute of Industrial Technology, Gwangju, Republic of Korea

16:30 **Improved Photoelectrochemical Response in Band Edge Engineered Metal Oxide Heterostructure Photoanode for Solar Fuel Production** **H P1.43**
Nisha Kodan, Bodh Raj Mehta
Thin Film Laboratory, Department of Physics, Indian Institute of Technology, New Delhi, India

16:30 **Structure-performance relation for self-assembled amorphous transition metal chalcogenides nanostructures for Hydrogen Evolution** **H P1.44**
Giorgio Giuffredi (1,2), Greta Tirelli (1,3), Alessandro Mezzetti (1), Andrea Perego (1), Francesco Fumagalli (1), Fabio Di Fonzo (1)
(1) Center for Nano Science and Technology - Istituto Italiano di Tecnologia (IIT@ Polimi) (2) Department of Energy – Politecnico di Milano (3) Dipartimento di Chimica, Materiali e Ingegneria Chimica 'Giulio Natta' – Politecnico di Milano

16:30 **TiO2-SiO2 core shell structure with excellent surface passivation using Perhydropolysilazane** **H P1.45**
Jae Hyun Han, Joon Soo Han, Byeong-Kwon Ju, So-Hye Cho
Materials Architecturing Research Center, Korea Institute of Science and Technology, Hwarangno 14-gil 5, Seongbuk-gu, Seoul, 02792 Republic of Korea,Display and Nanosystem Laboratory, College of Engineering, Korea University, Seoul, 02841 Republic of Korea,Materials Architecturing Research Center, Korea Institute of Science and Technology, Hwarangno 14-gil 5, Seongbuk-gu, Seoul, 02792 Republic of Korea,Display and Nanosystem Laboratory, College of Engineering, Korea University, Seoul, 02841 Republic of Korea,Materials Architecturing Research Center, Korea Institute of Science and Technology, Hwarangno 14-gil 5, Seongbuk-gu, Seoul, 02792 Republic of Korea,Department of Nanomaterial Science and Engineering, Korea University of Science and Technology, 217 Gajeong-ro Yuseonggu, Daejeon, 34113 Republic of Korea

16:30 **Development of high efficiency hydrogen production system using high frequency induction heating** **H P1.46**
Sung Gue Heo1,2, Hong Jun Chae3, Min-ho Seo4, DAVID Lee4, Soong Ju Oh2, Seok-Jun Seo 1,*
1.Korea Institute of Industrial Technology(KITECH) : 2.Department of Materials Science and Engineering, Korea University : 3.Institude for Advanced Engineering(IAE) : 4.Dong-yang Induction Furnace

16:30 **Pulse electrodeposition of Ni-Fe oxide film for oxygen evolution catalysts** **H P1.47**
Jae Yong Park, Wan Jae Dong, and Jong-Lam Lee
Department of Materials Science and Engineering, Pohang University of Science and Technology, Pohang, Korea Division of Advanced Materials Science, Pohang University of Science and Technology, Pohang, Korea

16:30 **Enhancement of PrOX reaction yield with integration of diatomaceous substrate on Pt based catalyst structure** **H P1.48**
Abir BEN BOUZAYENE, Anaïs GARNIER, Loïc MICHEL, Pierre PETIT, Sana LABIDI, Valérie CAPS, Corinne PETIT
Institut de Chimie et Procédés pour l'Energie, l'Environnement et la Santé, Université de Strasbourg, UMR7515 CNRS, 25 rue Becquerel, 67087 Strasbourg, France Institut Charles Sadron, UPR22 CNRS, 25 rue Becquerel, 67087 Strasbourg, France

16:30 **Customizable 3D-printed architecture with ZnO-based hierarchical structures for photocatalytic performance** **H P1.49**
Soomin Son, Pil-Hoon Jung, Jaemin Park, Dongwoo Chae, Daihong Huh, Jinhee Jung, Yuting Liu, Heon Lee
Korea University

16:30 **Current density transient response to variations in synthesis parameters during anodic deposition of TiO2 nanotubes** **H P1.50**
Nyasha J. Suliali [1], Crispin M. Mbulanga [1], William E. Goosen [2] and Johannes R. Botha [1]
[1] Department of Physics, Nelson Mandela University, P.O. Box 77000, Port Elizabeth, 6031, South Africa [2] Centre for HRTEM, Nelson Mandela University, P.O. Box 77000, Port Elizabeth, 6031, South Africa

16:30 **Performance of nitrogen-doped TiO2 films grown by MOCVD for water treatment under visible light** **H P1.51**
E. C. Oliveira, R. T. Bento, O. V. Correa, M. F. Pillis
Energetic and Nuclear Research Institute

16:30 **Investigating the electron transfer process in WO3-gC3N4 heterostructures for photocatalysis** **H P1.52**
Anukriti Singh, Jeremy W.J Hamilton, Preetam K. Sharma, Pilar Fernandez-Ibanez, Patrick S.M Dunlop, John A. Byrne
NIBEC, Ulster University, Newtownabbey, BT37 0QB, UK

16:30 **Theoretical study of charge and substituent effect on the thermal cis-trans isomerization of azobenzene and tetra-fluoroazobenze** **H P1.53**
S.Ben hassine, A.Zaidi, S.Ridene
Laboratory of Spectroscopy, Atomic, Molecular and Applications, Advanced Materials and Quantum Phenomena Laboratory

16:30 **Microwave-assisted synthesis of ZnSe and ZnSe:Mn nanosheets and microflowers for photocatalytic application** **H P1.54**
Svitlana Sovinska, Katarzyna Matras-Postołek, Dariusz Bogdał
Faculty of Chemical Engineering and Technology, Cracow University of Technology, Warszawska St. 24, Krakow, 31-155 Poland

16:30 **Facile electrochemical anodization synthesis of CuO nanowires decorated with TiO2 nanoparticles for enhanced MB dye degradation** **H P1.55**
Muhammad Zubair, Magnus Rønning, Jia Yang
Department of Chemical Engineering, Norwegian University of Science and Technology (NTNU), Trondheim, NO-7491, Norway

16:30 **Synthesis of new composites POM/Polymer with photocatalytic activity for organic dyes removal applications** **H P1.56**
Mariem Ghali, Chaima Brahmi, Mahmoud Benltifa, Fabrice Morlet Savary, Céline Dietlin, Salah Jellali, Latifa Bousselmi, Jacques Lalevée
Mariem Ghali a, b,c, Chaima Brahmi a,b,c, Mahmoud Benltifa b, Fabrice Morlet Savary a, Céline Dietlin a, Salah Jellali b, Latifa Bousselmi b, Jacques Lalevée a a University of Haute-Alsace, IS2M-CNRS UMR 7361, F-68100 Mulhouse, France b Wastewaters and Environment Laboratory, Center for Water Research and Technologies CERTE, BP 273, Soliman 8020, Tunisia c University of Carthage, National Institute of Applied Sciences and Technology, North urban center,Tunis 1080, Tunisia

16:30 **Electrochemical tuning of heterojunctions in TiO2 nanotubes for efficient solar water splitting** **H P1.57**
Preethi L K, Tom Mathews
Preethi L K, Scientist, Centre for Nanoscience and Nanotechnology, Sathyabama Institute of Science and Technology, Chennai, India. Tom Mathews, Scientific Officer G, Head of Thin Films and Coatings Section, Materials Science Group, Indira Gandhi Centre for Atomic Research, Kalpakkam, India

16:30 **Self-cleaning thin films based on ZnO-carbon derivatives heterostructures** **H P1.58**
Dana PERNIU, Cristina BOGATU, Silvia GHEORGHITA, Maria COVEI, Anca DUTA
Research Centre: Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania

16:30 **Stability of photocatalytic thin films based on ZnO - graphene derivatives** **H P1.59**
Cristina Bogatu, Dana Perniu, Maria Covei, Silvia Gheorghita, Anca Duta
The Centre: Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania

16:30 **Photo dégradation Of Rhoamine b dye under visible irradiation in thé présence ou BiOX synthesized by solvothermal method** **H P1.60**
M. MANSOUR, Ï. BENYAMINA, B. BENALIOUA, A. BENTOUAMI, B. BRUNO
University of Mostaganem University of Montpellier II

16:30 **Plasmonic multi-band absorber by mode hybridization for hydrogen generation** **H P1.61**
Yat Lam WONG, Huaping JIA, Xuming ZHANG
Department of Applied Physics, The Hong Kong Polytechnic University

16:30 **Titânia microspheres obtained by internal gelation method and its photocatalytic activity** **H P1.62**
Gabriel Lima de Oliveira[1], Marco Andreoli[1], André Almeida Silva[1], Luis Antonio Gênova[1]
[1]Instituto de Pesquisas Energéticas e Nucleares - IPEN/CNEN

16:30 **Anodic TiO2 Nanotube Layers: Efficient Photocatalyst** **H P1.63**
Martin Motola (1), Hanna Sopha (1,2), Milos Krbal (1), Siowwoon Ng (2), Filip Dvorak (1), Raul Zazpe (1,2), Jan Prikryl (1), Jan M. Macak (1,2)
(1) Center of Materials and Nanotechnologies, Faculty of Chemical Technology, University of Pardubice, Nam. Cs. Legii 565, 530 02 Pardubice, Czech Republic (2) Central European Institute of Technology, Brno University of Technology, Purkynova 123, 61200 Brno, Czech Republic

16:30 **Ag2S/MoS2/RGO ternary catalyst for stable and efficient electrocatalytic hydrogen production** **H P1.64**
Getachew Solomon,*a Raffaello Mazzaro,a,b Shujie You,a Marta Maria Natile,c Vittorio Morandi,b Isabella Concina,a Alberto Vomieroa
a. Division of Materials Science, Department of Engineering Science and Mathematics, Luleå University of Technology, Sweden. b. CNR-Institute for Microlectronics and Microsystems (IMM) Section of Bologna, Italy. c. CNR-Institute of Condensed Matter Chemistry and Technologies for Energy (ICMATE), Department of Chemical Sciences, University of Padova, Italy.

16:30 **Syntheses of dialkoxy benzimidazole-based conjugated for photovoltaics** **H P1.65**
Juae Kim, Sangmin Chae, Ahra Yi, Seungyeon Hong, Hyo Jung Kim, Hongsuk Suh.
aDepartment of Chemistry and Chemistry Institute for Functional Materials, Pusan National University, Busan 609-735, Korea, bDepartment of Organic Material Science and Engineering, Pusan National University, Busan 609-735, Korea,

16:30 **INFLUENCE OF Cd FREE ALTERNATIVE THERMAL TREATMENTS ON CdTe PHOTOVOLTAIC DEVICES** **H P1.66**
Maria de Lourdes Albor-Aguilera1, Miguel Ángel González-Trujillo2, Cesar Hernandez-Vasquez1, Roberto Carlos Ruiz-Ortega1, Rogelio Mendoza-Pérez3, María de los Angeles Hernandez-Pérez4
1 Instituto Politécnico Nacional-ESFM, Depto. de Física, U.P.A.L.M., Zacatenco, CDMX, 07738, México, 2 Instituto Politécnico Nacional-ESCOM, Depto. de Formación Básica, U.P.A.L.M., Zacatenco, CDMX, 07738, México, 3 UACM, Colegio de Ciencia y Tecnología, Av. Prolong. San Isidro 151, San Lorenzo Tezonco, 09790, CDMX, México, 4 Instituto Politécnico Nacional-ESIQIE, Depto. de Ing. en Metalurgía y Materiales, U.P.A.L.M., Zacatenco, CDMX, 07738, México,

16:30 **Gold nanoclusters with bright near-infrared luminescence due to metal-to-ligand charge transfer** **H P1.67**
J. Valenta(1), G. Pramanik(2), O. Pavelka(1), A. Fucikova(1), P. Cigler(2)
(1) Charles University, Faculty of Mathematics and Physics, Prague 2, (2) Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences, Prague 6, Czechia

16:30 **A study of the Cu2O {100} concave surface: Photoelectrochemical performance and First-principles calculations** **H P1.68**
Xinxin Lu, Dr Cui Ying Toe, Dr Yin Yao, Dr Judy hart, Dr Yun Hau Ng, and Dr Jason Scott
Chemical Engineering, UNSW, School of Energy and Environment, City University of Hong Kong

16:30 **Hot air flow annealing: Toward high quality MAPbI3 perovskite films** **H P1.69**
M.Ouafi1*, L. Atourki2, 3, E. Vega3, M. Mollar3, B. Mari3 L. Laânab1 and B. Jaber4
1 LCS, Faculty of Science, Mohammed V University, Rabat, Morocco. 2LMER, Faculty of Science, Ibn Zohr University, Agadir, Morocco 3 Instituto de Diseño y Fabricación (IDF) ? Universitat Politécnica de València, València, Spain 4Materials Science Platform, UATRS division, CNRST, Rabat, Morocco.

Tuesday 28 may 2019

Health/bactericidal applications : -

09:00 **Photoelectrocatalytic Disinfection of Stream Water** **H 4.1**
Stuart McMichael, Jeremy W.J. Hamilton, Pilar Fernandez-Ibanez, J. Anthony Byrne
NIBEC, Ulster University, Newtownabbey, BT37 0QB, UK

09:15 **Innovative films displaying quasi-instantaneous bacterial inactivation in the dark and under low intensity indoor hospital light** **H 4.2**
Sami Rtimi,1 Victor Nadtochenko,2 César Pulgarin1 John Kiwi1
1. Swiss Federal Institute of Technology (EPFL), EPFL-SB-ISIC-GPAO, Station 6, 1015 Lausanne, Switzerland. 2. N.N. Semenov Institute of Chemical Physics RAS, Kosigin str.4, Moscow, 119991, Russia.

09:30 **Photocatalytic bactericidal activity on immobilized novel P/F-modified TiO2 coatings** **H 4.3**
Yige Yan, Charline Soraru, Jules Valentin, Valérie Keller, Nicolas Keller, Lydie Ploux
ICPEES UMR7515, Strasbourg university, CNRS, 67000 Strasbourg, France
BIOMAT U1121, Strasbourg university, INSERM, 67000 Strasbourg, FranceIS2M UMR7361, Haute Alsace university, CNRS, 68057 Mulhouse, France

09:45 **PHOTOCATALYTIC OXIDATION FOR INDOOR AIR QUALITY IN HOSPITAL OPERATING ROOMS: ISOFLURANE DEGRADATION** **H 4.4**
Henrietta Essie Whyte, Cécile Raillard, Albert Subrenat, Valérie Héquet
GEPEA UMR CNRS 6144, IMT-Atlantique, DSEE, 4 Rue Alfred Kastler CS 20722, 44307 Nantes Cedex 3, France

10:00 **Field study of NOx degradation by a mineral-based air purifying paint** **H 4.5**
Qingliang Yu, Y. Hendrix, S. Lorencik, H.J.H. Brouwers
Eindhoven University of Technology

10:15 **Coffee Break**

11:15 **PLENARY SESSION 1**

12:45 **LUNCH**

H

Advanced Characterizations/Modelization : -

14:00 INV **Transient photoinduced phenomena in graphitic carbon nitride as measured at nanoseconds resolution by step-scan FTIR** **H 5.1**
Alon Ben-Refael, Itamar Benisti, Yaron Paz*
Department of Chemical Engineering, Technion, Haifa 3200003, Israel

14:30 **Modeling copper-based hole-transporting materials for solid-state dye-sensitized solar cells.** **H 5.2**
Simona Fantacci
Computational Laboratory for Hybrid/Organic Photovoltaics (CLHYO), CNR-ISTM, Via Elce di Sotto 8, 06123, Perugia, Italy.

14:45 **Emission Mechanisms of Different Families of Fluorescent Carbon Nanodots** **H 5.3**
A. Sciortino [1,2], M. Gazzetto [2], L. Sciortino [1], G. Buscarino [1], S. Agnello [1], F. M. Gelardi [1], M. Cannas [1], A. Cannizzo [2], F. Messina [1]
[1] Dipartimento di Fisica e Chimica, Università degli Studi di Palermo, Palermo (Italy) [2] Institute of Applied Physics, University of Bern, Bern (Switzerland)

15:00 **Understanding Charge Generation and Recombination in Non-Fullerene-Based Organic Solar Cells** **H 5.4**
Yizhen Zheng, Hyojung Cha, Yifan Dong, James Durrant
Yizhen Zheng, Hyojung Cha, Yifan Dong, James Durrant Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London SW7 2AZ, United King-dom.

15:15 **In Situ Probing of Crystal Phase-Dependent Photocatalysis on Au Nanostructures by Surface-Enhanced Raman Scattering** **H 5.5**
Jingtao Huang, Hua Zhang
Nanyang Technological University, Singapore

15:30 INV **Kinetic analyses of water-oxygen reactions in heterogeneous photocatalysis: Approach with light intensity dependence analysis** — **H 5.6**
Mai Takashima, Shugo Takeuchi, Pradudnet Ketwong, Haruna Hori, Chiharu Yamada, Bunsho Ohtani
Institute for Catalysis, Hokkaido University, Graduate School of Environmental Science, Hokkaido University

16:00 **Coffee Break**

Advanced Characterizaion : -

16:30 **Effect of ferroelectricity of lead free potassium sodium niobate on photocatalytic dye degradation and its photophysical study** — **H 6.1**
Smruti Purohit, K.L. Yadav, Soumitra Satapathi,
Department of Physics, Indian Institute of Technology Roorkee, Roorkee, Haridwar, Uttarakhand, 247667, India

16:45 **Manganese Oxide OER Catalysts investigated with X-Ray Photoelectron and in-operando Raman Spectroscopy** — **H 6.2**
Hannes Radinger, Paula Connor, Sven Tengeler, Wolfram Jaegermann, Bernhard Kaiser
Technical University Darmstadt, Institute for Materials Science, Otto-Berndt-Strasse 3, 64287 Darmstadt

17:00 **Photocatalytic Properties of Metal Oxide based Heteronanostructures: The Key Role of Inhomogeneous Space Charge Effects** — **H 6.3**
Shun Kashiwaya,1,2 Yannick Hermans,1,2 Wolfram Jaegermann,2 Thierry Toupance,1*
1 ISM UMR 5255 CNRS, University of Bordeaux, 351 Cours de la Libération, F-33405 Talence Cédex, France (*email: thierry.toupance@u-bordeaux.fr) 2 Surface Science, Technische Universität Darmstadt, Petersenstraße 23, D-64287 Darmstadt, Germany

17:15 **Broadband-sensitive upconversion emission of Er3+,Ni2+-codoped Ca3Ga2Ge3O12** — **H 6.4**
Yasuhiko Takeda, Shintaro Mizuno, Hom Nath Luitel, Toshihiko Tani
Toyota Central Research and Development Laboratories, Inc.

Photocatalytic Materials (1) : -

08:30 INV **Giant photo-effect in proton transport through graphene membranes** — **H 7.1**
M. Lozada-Hidalgo, S. Zhang, S. Hu, V. Kravets, F. J. Rodriguez, A. Berdyugin, A. Grigorenko, A. K. Geim
School of Physics & Astronomy, University of Manchester Manchester M13 9PL, UK National Graphene Institute, University of Manchester Manchester M13 9PL, UK

09:00 **Defect engineering of doped photocatalytic semiconductors** — **H 7.2**
Heechae Choi
Institute of Inorganic Chemistry, University of Cologne

09:15 **Polypyrrole nanostructures for application in photocatalysis** — **H 7.3**
Xiaojiao Yuan1, Fabrice Goubard2, Samy Remita1, Ally Aukauloo3, Hynd Remita1
1. Laboratoire de Chimie Physique, UMR 8000 CNRS, Université Paris-Sud, Université Paris-Saclay, 91400, Orsay, France 2. Laboratoire de Physicochimie des Polymères et des interfaces, Univerisité de Cergy-Pontoise, 5 mail Gay Lussac, F-95031 Neuville-sur Oise Cedex, France 3. ICMMO, CNRS-Université Paris-Sud, Université Paris-Saclay, Orsay, France

09:30 **Nanomaterials for photocatalytic coatings for indoor air quality: TiO2 versus ZnO** — **H 7.4**
Hot Julie (1)*, Topalov Jivko (1), Fau Pierre (2), Kahn L. Myrtil (2), Ringot Erick (1,3), Fajerwerg Katia (2)
(1) LMDC, Université de Toulouse, INSA/UPS Génie Civil, 135 avenue de Rangueil, 31077 Toulouse, France (2) LCC-CNRS, 205 route de Narbonne, Université de Toulouse, CNRS, UPS, 31079 Toulouse, France (3) LRVision SARL, 13 rue du Développement, 31320 Castanet-Tolosan, France *Corresponding author

09:45 **Photoactive Metal Organic Frameworks** — **H 7.5**
Christian Serre,1 Sujing Wang,1 Takashi Kitao,2 Takashi Uemera,2, Mohammad Wahiduzzaman, 3 Guillaume Maurin,3, Jorge Gascon,4
(1) Institute of Porous Materials, UMR CNRS 8004, Ecole Normale Supérieure, Ecole Supérieure de Physique et de Chimie Industrielles, PSL University, Paris, France (2) Department of Applied Chemistry, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan (3) Institut Charles Gerhardt, Montpellier UMR 5253 CNRS ENSCM UM, Université Montpellier, CEDEX 05, Montpellier 34095, France (4) KAUST Catalysis Center, Division of Physical Science and Engineering, Saudi Arabia

10:00 **The effect of residual palladium on the hydrogen evolution activity of conjugated polymer photocatalysts** — **H 7.6**
Michael Sachs, Jan Kosco, Hyojung Cha, Laia Francàs, Robert Godin, Alex Williams, Mindaugas Kirkus, Matthew Bidwell, Muhammad Qureshi, Dalaver Anjum, James R. Durrant, and Iain McCulloch
M. Sachs, H. Cha, L. Francas, R. Godin, A. Williams, M. Bidwell, J. R. Durrant, I. McCulloch: Department of Chemistry and Centre for Plastic Electronics, Imperial College London, U.K. J. Kosco, M. Kirkus, I. McCulloch: Department of Physical Sciences and Engineering, KAUST Solar Centre (KSC), 4700 KAUST, 23955 Thuwal, Saudi Arabia M. Qureshi, D. Anjum: Department of Physical Sciences and Engineering, KAUST Solar Centre (KSC), 4700 KAUST, 23955 Thuwal, Saudi Arabia R. Godin: Department of Chemistry, The University of British Columbia, Okanagan Campus, 3247 University Way, Kelowna, BC V1V V1Y, Canada

10:15 **Coffee Break**

Water treatment : -

10:45 INV **Solar fuel from carbon dioxide photoreduction with water in gas phase : a material approach** — **H 8.1**
Céline Pagis
IFPEN, France

11:15 **Molecular imprinting of TiO2 photocatalysts for the selective degradation of pesticides from water** — **H 8.2**
Roberto Fiorenza, Alessandro Di Mauro, Maria Cantarella, Maria Violetta Brundo, VIttorio Privitera, Giuliana Impellizzeri
Roberto Fiorenza, Alessandro Di Mauro, Maria Cantarella, Vittorio Privitera, Giuliana Impellizzeri, CNR-IMM Via S. Sofia 64, 95123 Catania (Italy). Maria Violetta Brundo, Department of Biological, Geological and Environmental Science, University of Catania, Via Androne 81, 95124 Catania (Italy).

11:30 **Facile synthesis of polyaniline coated bacterial cellulose mat for removal of Cr(VI) from drinking water** — **H 8.3**
Kousar Jahan, Nitesh Kumar, Vivek Verma
Department of Materials Science and Engineering, Indian Institute of Technology Kanpur, Kanpur – 208016, India

11:45 **Photocatalytic and hydrothermal transformation of glucose with commercial TiO2 catalysts for a hybrid process.** — **H 8.4**
Insaf ABDOULI, Frederic DAPPOZE, Marion ETHERNOT, Chantal GUILLARD, Nadine ESSAYEM
IRCELYON

12:00 **Visible-Light Photoactivated C3N4-based Tubular Micromotors for Environmental Remediation** — **H 8.5**
Katherine Villa, Martin Pumera
Center for Advanced Functional Nanorobots, Department of Inorganic Chemistry, University of Chemistry and Technology Prague, Technická 5, 166 28 Prague, Czech Republic

12:15 INV **Carbon geometries as functional base for developing efficient photocatalysts** — **H 8.6**
Joaquim Luís Faria
Laboratory of Separation and Reaction Engineering-Laboratory of Catalysis and Materials (LSRE&#8211,LCM), Faculdade de Engenharia, Universidade do Porto, Rua Dr. Roberto Frias s/n, 4200-465 Porto, Portugal

12:45 **LUNCH**

PEC for H2 production : -

14:00 INV **ALD for materials combination at the nanoscale: a promising process to build efficient photoelectrochemical devices ?** — **H 9.1**
L. Santinacci, M. K. S. Barr, M. W. Diouf, M. E. Dufond, G. Loget, C. Cozzi, G. Barillaro, S. Haschke and J. Bachmann
Aix-Marseille Univ., CNRS, CINaM, Marseille, France University of Rennes 1, CNRS, Rennes France University of Pisa, Pisa, Italy Friedrich-Alexander University Erlangen-Nürnberg, Germany Saint-Petersburg State University, St. Petersburg, Russia

14:30 **Origin of the low value onset potential in nanostructured hematite photoanodes** — **H 9.2**
Stefan Stanescu, Adam Hitchcock, Dana Stanescu
Synchrotron SOLEIL, Orme des Merisiers, BP48 Saint-Aubin, 91192 Gif-sur-Yvette, France, Department of Chemistry & Chemical Biology, McMaster University, Hamilton, Ontario, Canada, CEA/IRAMIS/SPEC/LNO, Orme des Merisiers, 91191, Gif-sur-Yvette, France

14:45 **High-performance MIL(125)-NH2/TiO2 nanorods with an effective charge transportation for photoelectrochemical water splitting** — **H 9.3**
Ji WonYoon 1, Do HongKim 1, Jae-Hyeok Kim 1, Ho WonJang 2, Jong-HeunLee 1
1 Department of Materials Science Engineering, Korea University, Seoul, 02841, Republic of Korea 2 Department of Materials Science and Engineering, Research Institute of Advanced Materials, Seoul National University, Seoul, 08826, Republic of Korea

15:00 **Photo-electrochemical conversion of urea on electrodeposited Fe2O3/Ni photoanodes for H2 production** — **H 9.4**
Stéphane Bastide, Diane Muller-Bouvet, Hatim Zakir Houssen, Sam Azimi, Vincent Rocher, Michel Latroche, Christine Cachet-Vivier
Institut de chimie et des Matériaux, Université Paris Est, CNRS, UPEC, F- 94320 Thiais, France SIAAP - Paris Sanitation Authority, Innovation and Environment Department, F-92700 Colombes, France

15:15 **Sunlight-driven HER-active polyoxothiometalate-PEDOT catalytic films deposited on structured Si photocathodes** — **H 9.5**
Jeoffrey Tourneur, Bruno Fabre, Gabriel Loget, Cristelle Mériadec, Soraya Ababou-Girard, Emmanuel Cadot, Nathalie Leclerc-Laronze, and Clément Falaise
Univ Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes)-UMR 6226, F-35000 Rennes, France, Univ Rennes, CNRS, IPR (Institut de Physique de Rennes)-UMR6251, F-35000 Rennes, France, Institut Lavoisier de Versailles (UMR-CNRS 8180), UVSQ, Université Paris-Saclay, 45 Avenue des Etats-Unis, 78000 Versailles, France

15:30 **Performance of the RuO2/SiO2/n-Si water splitting photoanode** — **H 9.6**
Karol Fröhlich 1,2, Miroslav Mikolášek 3, Kristína Hušeková 1,2, Ivan Kundrata 1,2, Filip Chymo 3, Vlastimil Řeháček 3, Ladislav Harmatha 3
1 CEMEA SAS, Dúbravská cesta 5807/9, 841 04, Bratislava, Slovakia 2 Institute of Electrical Engineering SAS, Dúbravská cesta 9, 841 04, Bratislava, Slovakia 3 Institute of Electronics and Photonics, Slovak University of Technology, Ilkovičova 3, 812 19 Bratislava, Slovakia

15:45 **Well- aligned ZnO nanorods as photoelectrodes synthesized by reducing annealing method applying for dye sensitized solar cells** — **H 9.7**
Chaoyang Li
Kochi Unversity of Technology, JAPAN

16:00 **Coffee Break**

Photoelectrochemistry/Devices : -

16:30 **Innovative ?light-to-hydrogen? all-solid multilayer device** — **H 10.1**
Stéphanie Roualdes(1), Adeline Miquelot(2), Laurène Youssef(1-3), Arnaud Joël Kinfack Leoga(4), Olivier Debieu(2), Constantin Vahlas(2), Vincent Rouessac(4), Joelle Bassil(3), Mirvat Zakhour(3), Michel Nakhl, Christina Villeneuve-Faure(5), Jeremy Cure(6), Nathalie Prudhomme(7), Amr Nada(1)
(1)IEM, Université de Montpellier/ENSCM/CNRS, Montpellier, France, (2)CIRIMAT, Université de Toulouse, Toulouse, France, (3)LCPM, Université Libanaise, Beyrouth, Liban, (4)IEM, Université de Montpellier/ENSCM/CNRS, Montpellier, France, (5) LAPLACE, Université de Toulouse, Toulouse, France, (6)LAAS, CNRS/Université de Toulouse, Toulouse, France, (7)ICMMO, Université Paris Sud/CNRS/Université Paris-Saclay, Orsay, France

16:45 **Photoelectrochemical reactions as a probe for light energy conversion in mesoporous materials filled with silver nanoparticles.** — **H 10.2**
Mathieu MAILLARD, Nelly COUZON, Laurence BOIS, Lucian ROIBAN, Fernand CHASSAGNIEUX, Arnaud BRIOUDE
a. Université de Lyon, Université Claude Bernard LYON1, Laboratoire des Multimatériaux et Interfaces, UMR CNRS 5615, F-69622 Villeurbanne, France b. Matériaux Ingénierie et Science, UMR CNRS 5510, INSA de Lyon, Université de Lyon, F- 69621 Villeurbanne, France

17:00 **Photoelectrochemical reduction of CO2 with TiNT** — **H 10.3**
M.A.L.R.M. Cortes, S. McMichael, J.W.J. Hamilton, P.K. Sharma, A. Brown, J.A. Byrne
NIBEC, Ulster University, Newtownabbey, BT37 0QB, UK

17:15 **Development and Optimisation of a Novel Titanium Propeller for use in a Photoelectrochemical reactor** — **H 10.4**
Con Boyle, Nathan Skillen, Lorenzo Stella, Peter Robertson
School of Chemistry and Chemical Engineering, Queens' University Belfast

19:00 **Graduate Student Award ceremony followed by the social event**

Photocatalytic Materials (2) : -

08:30 INV **ZnO-based nanomaterials in polymeric composites for applications in photocatalysis** — H 11.1
ALESSANDRO DI MAURO
National Research Council (CNR) – Institute for Microelectronics and Microsystems (IMM), Via Santa Sofia 64, 95123 Catania (Italy)

09:00 **Surface engineering of nanostructured ZnO: when small details can make the difference** — H 11.2
Alberto Gasparotto,*[a] Chiara Maccato,[a] Cinzia Sada,[b] José Balbuena,[c] Manuel Cruz-Yusta,[c] Luis Sánchez,[c] Nives Vodišek,[d] Urska Lavrenčič Štangar[d,e] and Davide Barreca.[f]
[a] Department of Chemical Sciences, Padova University and INSTM, 35131 Padova, Italy, [b] Department of Physics and Astronomy, Padova University and INSTM, 35131 Padova, Italy, [c] Department of Inorganic Chemistry and Engineering Chemistry, Córdoba University, 14071 Córdoba, Spain, [d] Laboratory for Environmental and Life Sciences, Nova Gorica University, 5001 Nova Gorica, Slovenia, [e] Faculty of Chemistry and Chemical Technology, Ljubljana University, 1000 Ljubljana, Slovenia, [f] CNR-ICMATE and INSTM, Department of Chemical Sciences, Padova University, 35131 Padova, Italy.

09:15 **Titanium dioxide with passivated co-doping for the enhanced photocatalytic activity** — H 11.3
Jaejun Yu, Sutassana Na Phattalung
Department of Physics and Astronomy, Seoul National University, Seoul 08826, Korea, School of Science, Walailak University, Nakhonsithammarat 80161, Thailand

09:30 **Selective photocatalytic benzene hydroxylation to phenol using surface-modified Cu2O supported on graphene** — H 11.4
Jinbao He, Min Zhang, Zhaohui Li, Ana Primo, Hermenegildo Garcia
Instituto de Tecnología Química, Consejo Superior de Investigaciones Científicas-Universitat Politécnica de Valencia, Av. De los Naranjos s/n, 46022 Valencia, Spain Research Institute of Photocatalysis, State Key Laboratory of Photocatalysis on Energy and Environment, College of Chemistry, Fuzhou University, Fuzhou, 350116, P. R. China

09:45 **Enhanced photocatalytic activity of black brookite and anatase for hydrogen evolution and dye degradation** — H 11.5
S.M. Hossein HEJAZI, Alberto NALDONI, Štěpán KMENT, Patrik SCHMUKI, Radek ZBOŘIL
Regional Centre of Advanced Technologies and Materials, Faculty of Science, Palacky University, Šlechtitelu 27, 783 71 Olomouc, Czech Republic

10:00 **Growth, characterization and photocatalytic response of ZnO micro- and nanostructures doped with Ce and Ru** — H 11.6
M. Rodríguez-Peña1, G. Flores-Carrasco2,3, A. Urbieta1, M.E. Rabanal3, and P. Fernández1
1Depto. de Física de Materiales, Facultad de Físicas, Univ. Complutense, 28040 Madrid, Spain, 2CIDS-ICUAP Benemérita Universidad Autónoma de Puebla, Av. San Claudio y 14 sur, Edif. 103C C.U., Col. San Manuel, Puebla 72570, México, 3University Carlos III of Madrid and IAAB, Dept. of Materials Science and Engineering and Chemical Engineering, Avda. Universidad 30, 28911-Leganés, Madrid, Spain

10:15 **Coffee Break**

11:15 **PLENARY SESSION 2**

12:45 **LUNCH**

H2 Production (3)/Photocatalysis Materials : -

14:00 INV **Enhancing photocatalytic hydrogen production by using different cellulose polymorphs** — H 12.1
Colby Chang(b), Kathryn Ralphs(a), Nathan Skillen(a), Sanjay Nagarajan(a)*, Linda Lawton(c), Peter Robertson(a)
(a)School of Chemistry and Chemical Engineering, Queen&#8217,s University Belfast, David Keir Building, Stranmillis Road, Belfast BT9 5AG, U.K. (b)School of Engineering and Applied Science, Princeton University, New Jersey 08544, USA (c)School of Pharmacy and Life Science, Sir Ian Wood Building, Robert Gordon University, Aberdeen, AB10 7GJ, U.K.

14:30 **Mr** — H 12.2
Jamie Kelly, Nathan Skilled, Panagiotis ManesiotIs, Peter Robertson
Queen's University Belfast

14:45 **Turning metal oxide nanocrystals into efficient methylene blue adsorbents by inorganic surface functionalization** — H 12.3
Alessandro Di Mauro 1, Anton Landström 2, Isabella Concina 2, Giuliana Impellizzeri 1, Vittorio Privitera 1, Mauro Epifani 3
1 Istituto per la Microelettronica e i Microsistemi, IMM-CNR, Via S. Sofia 64, 95123 Catania, Italy, 2 Luleå University of Technology, 971 87 Luleå, Sweden 3 Istituto per la Microelettronica e i Microsistemi, IMM-CNR, Via Monteroni, 73100 Lecce, Italy,

15:00 **Highly Efficient and Stable Solar Water Splitting from Hierarchical Ferrite Phosphate/Bismuth Vanadate Nanocactus** — H 12.4
Truong-Giang Vo, Yian Tai, Chia-Ying Chiang
Department of Chemical Engineering, National Taiwan University of Science and Technology

15:15 **Photocatalytic Zinc Oxide Coating for Water Treatment Fabricated by Atomic Layer Deposition** — H 12.5
Eun Heui Kang, Gwon Deok Han, Kanghee Park, Junmo Koo, Hee-Deung Park, Joon Hyung Shim
School of Mechanical Engineering, Korea University, School of Civil, Environmental and Architectural Engineering, Korea University

15:45 **Selective photodegradation of paracetamol by molecularly imprinted ZnO nanonuts** — H 0.0
Maria Cantarella (1), Alessandro Di Mauro (1), Antonino Gulino (2), Luca Spitaleri (2), Giuseppe Nicotra (3), Vittorio Privitera (1), Giuliana Impellizzeri (1)
(1) CNR-IMM, Via S. Sofia 64, 95123 Catania, Italy, (2) Department of Chemistry, University of Catania, and I.N.S.T.M. UdR of Catania, Viale Andrea Doria 6, 95125 Catania, Italy, (3) CNR- IMM, Z.I. VIII Strada 5, 95121 Catania, Italy

16:00 **Coffee Break**

Poster Session 2 : -

16:30 **Hybrid ZnS/WS2 nanotubes for photocatalytical water splitting: Prediction from the first principles** — H P2.1
Aleksejs Gopejenko, Sergei Piskunov
Institute of Solid State Physics, University of Latvia, 8 Kengaraga str., Riga LV-1063, Latvia

16:30 **Visible Light-Driven Dye-Sensitized Photocatalytic Hydrogen Production by Porphyrin and its Cyclic Dimer and Trimer loaded TiO2** — H P2.2
Motonori Watanabe, Songmei Sun, Tatsumi Ishihara, Takuya Kamimura, Masato Nishimura, Fumito Tani
International Institute for Carbon Neutral Energy Research, Kyushu University, 744 Motooka, Nishi-ku, Fukuoka 819-0395, Japan

16:30 **Solar-driven CO2 electro-conversion by using nanostructured Cu film** **H P2.3**

Ju Ye Kim, Woo-Bin Jung, Kyeong Min Cho, Hee-Tae Jung
Ju Ye Kim 1. Department of Chemical and Biomolecular Engineering (BK-21 Plus), Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Republic of Korea, 2. KAIST Institute for Nanocentury, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Korea, Woo-Bin Jung 1. Department of Chemical and Biomolecular Engineering (BK-21 Plus), Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Republic of Korea, 2. KAIST Institute for Nanocentury, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Korea, Kyeong Min Cho 1. Department of Chemical and Biomolecular Engineering (BK-21 Plus), Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Republic of Korea, 2. KAIST Institute for Nanocentury, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Korea, Hee-Tae Jung 1. Department of Chemical and Biomolecular Engineering (BK-21 Plus), Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Republic of Korea, 2. KAIST Institute for Nanocentury, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Korea,

16:30 **Size-dependent effects of ZnO NPs on the photocatalytic degradation of phenol in a water solution** **H P2.4**

A.W. Morawski1, E. Kusiak-Nejman1, J. Wojnarowicz2, U. Narkiewicz1, K. Sobczak3, W. Lojkowski2
1 – Faculty of Chemical Technology and Engineering, West Pomeranian University of Technology, 70-322 Szczecin, Pulaskiego 10, Poland, 2 – Institute of High Pressure Physics, Sokołowska 29, 01-142 Warsaw, Poland, 3 - Faculty of Chemistry, Biological and Chemical Research Centre, University of Warsaw, Żwirki i Wigury 101, 02-089 Warsaw, Poland

16:30 **Hybrid adsorption-photocatalytic air filter for removing pollutants from aircraft cabin zone** **H P2.5**

Martinez Thomas, Sanchis Sonia, Roux Paul, Dinca Marilena, Dreibine Lamia, Garcia-Montaño Julia
Martinez Thomas, Sanchis Sonia, Garcia-Montaño Julia, LEITAT Technological Center, Terrassa, Spain. Roux Paul, Dinca Marilena, Pall Europe Limited, Portsmouth, United Kingdom Dreibine Lamia, Liebherr-Aerospace, Toulouse, France

16:30 **Ordered Mesoporous Polyoxometalate–Organosilica Frameworks as Efficient Photocatalysts for Hydrogen Generation** **H P2.6**

Eirini D. Koutsouroubi, Ioannis T. Papadas, Gerasimos S. Armatas*
Department of Materials Science and Technology, University of Crete, Heraklion 71003, Greece

16:30 **Enhancement of visible-light photocatalytic activity of TiO2 and BiOCl thanks heterostructures with BiOF** **H P2.7**

Pierre BONNET 1 , Jiushan Cheng 2, Maryline Nasr 1, Wenshi Huang 2, Dandan Cui 2, Ying Sun 2, Lei Wang 2, Nathalie Gaillard Caperaa 1 and Cong Wan 2
1 Université Clermont Auvergne, Institut de Chimie de Clermont-Ferrand (ICCF), 24 Avenue Blaise Pascal, 63178 Aubière Cedex, France 2 Center for Condensed Matter and Material Physics, Department of Physics, Beihang University, Beijing 100191, P.R.China,

16:30 **Supporting the Photocatalysts: An Effective Way to Enhance the Photocatalytic Activity of SrSnO3** **H P2.8**

Luzia Maria Castro Honorio (1-2), André Luiz Menezes de Oliveira (1), Edson Cavalcanti da Silva Filho (2), Josy Anteveli Osajima (2), Ary da Silva Maia (1), Amer Hakki (3), Donald E. Macphee (3), Iêda Maria Garcia dos Santos (1-3)
(1) Núcleo de Pesquisa e Extensão-NPE, Laboratório de Combustíveis e Materiais - LACOM, Departamento de Química, Universidade Federal da Paraíba, Campus 1, CEP 58059-900, João Pessoa, PB, Brazil, (2) LIMAV - Laboratório Interdisciplinar de Materiais Avançados, Departamento de Engenharia de materiais, Universidade Federal do Piauí , Campus 1, CEP 64049-550, Teresina, PI, Brazil, (3) Department of Chemistry, University of Aberdeen, Meston Building, Meston Walk, AB24 3UE, Aberdeen, Scotland, United Kingdom

16:30 **Vapor phase fabrication of Fe2O3-based nanoheterostructures for the photocatalytic degradation water and air pollutants** **H P2.9**

Davide Barreca,[a] Alberto Gasparotto,[b]* Chiara Maccato,[b] Cinzia Sada,[c] Elza Bontempi,[d] Urška Lavrenčič Štangar,[e] Luis Sánchez.[f]
[a] CNR-ICMATE, Department of Chemical Sciences, Padova University and INSTM, 35131 Padova, Italy, [b] Department of Chemical Sciences, Padova University and INSTM, 35131 Padova, Italy, [c] Department of Physics and Astonomy, Padova University and INSTM, 35131 Padova, Italy, [d] Chemistry for Technologies Laboratory, Brescia University, 25123 Brescia, Italy, [e] Faculty of Chemistry and Chemical Technology, University of Ljubljana, 1000 Ljubljana, Slovenia, [f] Department of Inorganic Chemistry and Engineering Chemistry, Córdoba University, 14071 Córdoba, Spain.

16:30 **Photocatalytic sensitivity of Aluminium doped MgO grown by SRAY pyrolysis** **H P2.10**

Maher Tlili ,Neila Jebbari and Najoua Kamoun
Université Tunis El Manar, Faculté des Sciences de Tunis, Département de Physique, LR99ES13 Laboratoire de Physique de la Matière Condensée (LPMC), 2092 Tunis, Tunisia

16:30 **Efficient Photoelectrochemical and Electrochemical Fuel Production using Low-dimensional Catalysts** **H P2.11**

Uk Sim
Chonnam National University

16:30 **Nickel-Doped Titania Nanotube Formed by Galvanostatic Process in Organic Media for Photoelectrocatalytic Applications** **H P2.12**

Tirano Joaquin, Zea Hugo, Bredol Michael
Department of Chemical and Environmental Engineering, Universidad Nacional de Colombia, Bogota, Colombia, Department of Chemical and Environmental Engineering, Universidad Nacional de Colombia, Bogota, Colombia, Department of Chemical Engineering, Münster University of Applied Sciences, Münster, Germany

16:30 **Plasmonic gold nanostructures and hybrid materials for photocatalysis and oxygen singlet generation** **H P2.13**

S.Parola, D. Chateau, D. Gregori, I. Levchuk, A. Desert, F. Lerouge, F. Chaput, L. Khrouz, C. Monnereau, C. Andraud, C. Guillard, C. Mendoza, B. Heinrichs
S. Parola , D. Chateau , D. Gregori , I. Levchuk , A. Desert , F. Lerouge , F. Chaput , L. Khrouz , C. Monnereau , C. Andraud Laboratoire de Chimie, Ecole Normale Supérieure de Lyon, Université Lyon 1, CNRS UMR 5182, 46 allée d'Italie, 69364 Lyon, France C. Guillard IRCELYON, Lyon, France C. Mendoza , B. Heinrichs Nanomaterials, Catalysis & Electrochemistry (NCE). Department of Chemical Engineering. University of Liège, B-4000 Liège, Belgium

16:30 **Facile Flame-processed Metal Oxide Electron Selective Layers for Organic-Inorganic Hybrid Solar Cells** **H P2.14**

Jung Kyu Kim
School of Chemical Engineering, Sungkyunkwan University (SKKU), Suwon 16419, Korea

16:30 **Photocatalytic properties and polarized Raman of different ZnO crystal planes.** **H P2.15**

J. Thyr, L. Österlund, T. Edvinsson.
Department of Engineering Sciences, The Ångström Laboratory, Uppsala University,P.O. Box 534, SE-751 21 Uppsala, Sweden

16:30 **Ultrafast relaxation dynamics of localized surface plasmon resonances in aluminum nanoparticles prepared with colloidal methods** **H P2.16**

Domantas Peckus1, Joel Henzie2, Tomas Tamulevičius1, Mindaugas Andrulevičius1, Algirdas Lazauskas1, Šarūnas Meškinis1, Sigitas Tamulevičius1
1 Institute of Materials Science of Kaunas University of Technology, K. Baršausko St. 59, Kaunas LT-51423, Lithuania 2 International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan

16:30 **Synthesis of Lanthanide-doped ScF3 nanoparticles and used as luminescence thermometry** **H P2.17**

Biyun Ren, Wei Kong, Xueqing Yang, Feng Wang
Department of Materials Science and Engineering, City University of Hong Kong, Hong Kong

16:30 **Al doping effect on the crystal growth and optical properties of sprayed α-Fe2O3 thin films for gas sensor application** **H P2.18**
Rihab Ben Ayeda, MejdaAjilia, Jorge M. Garciab, Ahmed Labidic and NajouaKamounTurkia
a Université Tunis El Manar, Faculté des Sciences de Tunis, Département de Physique,LR99ES13 Laboratoire de Physique de la Matière Condensée (LPMC), 2092, Tunis Tunisie, Tunisia. b Institutode Micro Y Nanotecnologia de Madrid, CNM (CSIC), C/ Isaac Newton 8, PTM, 28760 TresCantos (Madrid), Spain. c Université de Carthage, IPEST, Laboratoire Matériaux, Molécules et Applications, BP51 La Marsa 2070, Tunis, Tunisia.

16:30 **Enhanced photoelectrochemical activity of NaTaO3 doped with carbon and BaBiO3 towards the CO2 conversion and H2 production** **H P2.19**
1.- J.M. Mora-Hernandez and 2.- Leticia M. Torres-Martínez
1.-CONACyT - Universidad Autónoma de Nuevo León, FIC - Departamento de Ecomateriales y Energía, Cd. Universitaria, 66455 San Nicolás de los Garza, N.L., Mexico. 2.-Universidad Autónoma de Nuevo León, Facultad de Ingeniería Civil, Departamento de Ecomateriales y Energía, Cd. Universitaria, 66455 San Nicolás de los Garza, N.L., Mexico.

16:30 **Self-Organization of Anodic Titanium Dioxide Nanotubes for Solar Energy Conversion** **H P2.20**
Tirano Joaquin, Zea Hugo, Luhrs Claudia
Department of Chemical and Environmental Engineering, Universidad Nacional de Colombia, Bogota, Colombia, Department of Chemical and Environmental Engineering, Universidad Nacional de Colombia, Bogota, Colombia, Mechanical and Aerospace Engineering Department, Naval Postgraduate School, Monterey, CA

16:30 **Photocatalytic self-cleaning TiO2-rGO composite thin films for PV glazing** **H P2.21**
Maria Covei, Cristina Bogatu, Dana Perniu, Anca Duta, Ion Visa
Transilvania University of Brasov, Romania, Renewable Energy Systems and Recycling Center (for all authors)

16:30 **Anatase nanotubes covered with laser-modified Cu/CuxO thin film for CO2 reduction** **H P2.22**
Zuzanna Molenda, Katarzyna Grochowska, Jakub Karczewski, Adam Cenian, Gerard Śliwiński, Katarzyna Siuzdak
The Szewalski Institute IMP PAN, 80-231 Gdańsk, Fiszera 14 st., Poland, Gdańsk University of Technology, 80-233 Gdańsk, Narutowicza 11/12 st., Poland

16:30 **Laser-induced morphological transformation of metal-decorated TiO2 nanotube arrays** **H P2.23**
Jakub Wawrzyniak (1), Łukasz Haryński (1), Piotr Kupracz (1), Katarzyna Grochowska (1), Jakub Karczewski (2), Katarzyna Siuzdak (1)
(1) The Szewalski Institute IMP PAN, 80-231 Gdańsk, Fiszera 14 st., Poland, (2) Gdańsk University of Technology, 80-233 Gdańsk, Narutowicza 11/12 st., Poland

16:30 **Porous titanate (CoxNi1-xTiO3) nanorods for solar photocatalytic degradation of ethyl paraben** **H P2.24**
Moschogiannaki, M., Frontistis, Z., Kiriakidis, G., Mantzavinos, D., Binas, V.
1Institute of Electronic Structure and Laser (IESL), FORTH, P.O. Box 1527, Vasilika Vouton, GR-71110 Heraklion, Greece 2 Crete Center for Quantum Complexity & Nanotechnology (CCQCN), Department of Physics, University of Crete, GR-71003, Heraklion, Greece 3 Department of Chemical Engineering, University of Patras, Caratheodory 1, University Campus, GR -26504 Patras, Greece

16:30 **Photobleaching of Dyes by CuOx-based heterojunction bi-catalysts** **H P2.25**
J. Montero*, J. Thyr, T. Edvinsson and L. Österlund
Department of Engineering Sciences, The Ångström Laboratory, Uppsala University,P.O. Box 534, SE-751 21 Uppsala, Sweden.

16:30 **Photophysical characterization of BODIPY containing A-D-A molecules comparing the effect of meso substituent** **H P2.26**
Gourav Tarafdar, Justin Johnson, Praveen C. Ramamurthy
Indian Institute of Science, Bangalore 560012, India, National Renewable Energy Laboratory, Golden CO 80401, United States, Indian Institute of Science, Bangalore 560012, India,

16:30 **Design of donor-acceptor conjugated polymers for catalytic hydrogen evolution reaction: optical and thermodynamic aspects** **H P2.27**
Giane B. Damas, Cleber F. Marchiori, C. Moyses Araujo
Materials Theory Division, Department of Physics and Astronomy, Uppsala University, Box 516, 75120 Uppsala, Sweden.

16:30 **Effect of nitrogen impurities on the physical properties of anataseTiO2 nanowires: ab initio study** **H P2.28**
1) Slimane Haffad 2) Kiptiemoi Korir Kiprono
1) Department of Technology, Faculty of Technology, University A.Mira of Bejaia, Algeria 2) Mathematics and Physics Department, Moi University, Kenya.

16:30 **Graphene oxide modified nanostructured SnS thin films for improved photoelectrochemical response** **H P2.29**
Dipika Sharma*, Jyoti Yadav, Bodh Raj Mehta
Thin Film Laboratory, Department of Physics, Indian Institute of Technology, New Delhi-110016, INDIA

16:30 **Water splitting activity elevation for BiVO4 photoanodes by surface doping** **H P2.30**
Mahsa Barzgar Vishlaghi1,2, Abdullah Kahraman1,2, Sinem Apaydin1,2, Shamsa Munir1,2, Sarp Kaya1,2,3
1Material Science and Engineering Department, Koç University, Istanbul, Turkey 2 Koç University TUPRAS Energy Center, Istanbul, Turkey 3 Chemistry Department, Koç University, Istanbul, Turkey

16:30 **Determining the dielectric constant of rutile TiO2 from implanted H-profiles** **H P2.31**
Julie Bonkerud, Christian Zimmermann, Lasse Vines, Edouard Monakhov
University of Oslo, Physics Department/Centre for Materials Science and Nanotechnology, P.O. Box 1048 Blindern, Oslo N-0316, Norway

16:30 **Synthesis and characterization of reduced graphene oxide-modified anatase TiO2 photocatalysts grown by MOCVD** **H P2.32**
Rodrigo Teixeira Bento, Jorge Costa Silva Filho, Olandir Vercino Correa, Hidetoshi Takiishi, Marina Fuser Pillis
Materials Science and Technology Center, Nuclear and Energy Research Institute – IPEN-CNEN/SP, University of São Paulo

16:30 **Doping TiO2 rutile with RuO2 nanocrystals to enhance visible light activated photocatalytic activity** **H P2.33**
Mihai Sonia1, Cursaru Diana-Luciana1, Manta Ana-Maria1, Branoiu Gheorghe1, Somoghi Raluca2
1.Petroleum-Gas University of Ploiesti, 39 Bucharest Blvd., Ploiesti, 100680, Romania 2.National Research and Development Institute for Chemistry and Petrochemistry – ICECHIM, 202 Splaiul Independenţei, 060021, Bucharest, Romania

16:30 **Shape-Controlled Gold Nanoarchitectures on Highly Active TiO2 Thin Film: Synthesis and Functional Applications** **H P2.34**
Salih Veziroglu, Muhammad Zubair Ghori, Marie Ullrich, Thomas Strunskus, Franz Faupel, Oral Cenk Aktas
Chair for Multicomponent Materials, Institute for Materials Science, Christian Albrechts University of Kiel, 24143 Kiel, Germany

16:30 **Au/WO3 photocatalyst under solar light irradiation: role of oxide morphology** **H P2.35**
Margaux Desseigne, Virginie Chevallier and Madjid Arab
Université de Toulon, AMU, CNRS, IM2NP, CS 60584, Toulon Cedex 9, F-83041, France

16:30 **Influence of Graphene and Copper on the Photocatalytic Response of TiO2 Nanotubes** **H P2.36**
E. Zghab1-2, M. Hamandi1, F. Dappozze1, H. Kochkar2-3, M. Saïd Zina2, C. Guillard1, G. Berhault1
1 Institut de Recherches sur la Catalyse et l'Environnement de Lyon, CNRS Université Lyon I, 69100 Villeurbanne, France, 2 Université de Tunis El Manar, Faculté des Sciences de Tunis, Laboratoire de Chimie des Matériaux et Catalyse, 2092 Tunis, Tunisia, 3 Imam Abdulrahman Bin Faisal University, 34212 Dammam, Saudi Arabia

16:30 **High-performance ITO transparent electrode films using Plasmon resonance of metal nanoparticles for photovoltaic applications** **H P2.37**
H. Ferhati1, F. Djeffal1,2,* and K. Kacha1
1 LEA, Department of Electronics, University Mostefa Benboulaid-Batna 2, Batna 05000, Algeria. 2 LEPCM, University of Batna 1, Batna 05000, Algeria. *E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

16:30 **Spin Channel Dependent Band-Edge Alignment at N doped Carbon Dot – TiO2 Interface** **H P2.38**
Dipayan Sen, Piotr Blonski, Michal Otyepka
Regional Centre of Advanced Technologies and Materials, Palacky University, Olomouc, Czech Republic

16:30 **Core-shell nanostructures of graphene-wrapped CdS nanoparticles and TiO2 (CdS@G@TiO2) for enhanced photocatalytic H2 generation** **H P2.39**
Muhammad Zubair, Magnus Rønning, Jia Yang
Department of Chemical Engineering, Norwegian University of Science and Technology (NTNU), Trondheim, NO-7491, Norway

16:30 **A New Two-Step Method Towards MAPbI3 Perovskite Films** **H P2.40**
Maayan Perez, Saar Peled, and Yuval Golan
Department of Materials Engineering, and the Ilse Katz Institute for Nanoscale Science and Technology, Ben-Gurion University of the Negev, Beer Sheva 8410500, Israel.

16:30 **New hybrid materials for water treatment** **H P2.41**
Alessandro Di Mauro (1), Maria Cantarella (1), Stephen Abela (2), Paul Refalo (3), Maurice Grech (2), Clayton Farrugia (2), Maria Antonietta Buccheri (4), Giancarlo Rappazzo (4), Vittorio Privitera (1), Giuliana Impellizeri (1)
1 - National Research Council (CNR) – Institute for Microelectronics and Microsystems (IMM) Catania Italy,National Research Council (CNR) 2 - University of Malta, Dept. Met. & Mat. Engn, Fac. Engn., Msida, Malta, 3 - University of Malta, Dept. Ind. & Manuf. Engn., Fac. Engn., Msida, Malta, 4 -Department of Biological Geological Environmental Sciences, University of Catania Italy,

16:30 **TiO2 photocatalysis for cancer treatment: from non-targeted to targeted cancer therapy** **H P2.42**
Roghayeh Imani* (1, 2, 3), Ralf Dillert (2, 4), Detlef. W. Bahnemann (2, 4, 5), Meysam Pazoki (6, 7), Tomaž Apih (8), Veno Kononenko (9), Neža Repar (9), Samo Hudoklin (10), Mateja Erdani Kreft (10), Peter Veranič (10), Veronika Kralj-Iglič (11), Gerrit Boschloo (12), Damjana Drobne (9), Aleš Iglič (1)
(1) Laboratory of Physics, Faculty of Electrical Engineering, University of Ljubljana, SI-1000 Ljubljana, Slovenia (2) Institut fuer Technische Chemie, Gottfried Wilhelm Leibniz, Universitaet Hannover, Callinstrasse 3, D-30167 Hannover, Germany (3) Experimental Physics, Department of Engineering Science and Mathematics, Luleå University of Technology SE-971 87 Luleå, Sweden (4) Laboratory of Nano and Quantum Engineering, University of Hannover, Schneiderberg 39, 30167 Hannover, Germany (5) Laboratory “Photoactive Nanocomposite Materials”, Saint-Petersburg State University, 198504 Saint-Petersburg, Russia (6) Department of Chemistry–Structural Chemistry, Ångström Laboratory, Uppsala University, Box 538, Lägerhyddsvägen 1, 75120 Uppsala, Sweden (7) Department of Engineering Sciences–Solid State Physics Division, Ångström Laboratory, Uppsala University, Box 534, 75121 Uppsala, Sweden (8) Institute J. Stefan, Jamova 39, SI-1000 Ljubljana, Slovenia (9) Department of Biology, Biotechnical Faculty, University of Ljubljana, Večna pot 111, SI-1000 Ljubljana, Slovenia (10) Institute of Cell Biology, Faculty of Medicine, University of Ljubljana, Vrazov trg 2, Ljubljana, Slovenia (11) Laboratory of Clinical Biophysics, Faculty of Health Sciences, University of Ljubljana, Zdravstvena 5, SI-1000 Ljubljana, Slovenia (12) Department of Chemistry–Physical Chemistry, Ångström Laboratory Uppsala University Box 523, Lägerhyddsvägen 1, 75120 Uppsala, Sweden

16:30 **Nanoscale mapping of TiO2 polymorphs in photocatalytic hollow-shell nanoclusters using Electron Energy-Loss Spectroscopy** **H P2.43**
Thomas Thersleff*, Zhehao Huang*, Xiaodong Zou*, Haoquan Zheng**
* Department of Materials and Environmental Chemistry, Stockholm University, Stockholm, SE-10691, Sweden, ** Key Laboratory of Applied Surface and Colloid Chemistry of Ministry of Education, School of Chemistry and Chemical Engineering, Shaanxi University, Xi’an, 710062, China

16:30 **Electrocatalytic CO2 Reduction toward Enhanced Ethylene Selectivity on Nanostructured Cu Catalyst** **H P2.44**
Youngkook Kwon
Carbon Resources Institute, Korea Research Institute of Chemical Technology, Daejeon 34114, Korea

16:30 **Enhancement of visible-light-driven CO2 reduction over Zn-based metal sulfides by surface-modification with Ru-complex catalysts** **H P2.45**
Tomiko M. Suzuki 1, Tomoaki Takayama 2, Shunsuke Sato 1, Akihide Iwase 2, Akihiko Kudo 2, Takeshi Morikawa 1
1 Toyota Central R&D Labs., Inc., Nagakute, Aichi, 480-1192, Japan, 2 Department of Applied Chemistry, Faculty of Science, Tokyo University of Science, 1-3 Kagurazaka, Shinjuku-ku, Tokyo 162-8601, Japan

16:30 **Optimising Singlet Fission Dynamics and Triplet Energy Transfer in TIPS-Tc Thin Films and Blends for Down Conversion of Light** **H P2.46**
Nipun Sawhney, Arya Thampi, Richard Chen, Jesse Allardice, Akshay Rao
Optoelectronics Group, Department of Physics, University of Cambridge

16:30 **Effect of defect on reduced graphene oxide with graphitic carbon nitrides as photocatalyst: A first principle calculation** **H P2.47**
Minyeong Je, Heechae Choi*
University of cologne, University of cologne

16:30 **Improving the photocatalytic hydrogen production using a ternary TiO2/ reduced graphene oxide/Ag composite** **H P2.48**
Karifa Sanfo, David Wray, Bruce Alexander
Faculty of Engineering & Science Department of Pharmaceutical, Chemical & Environmental Science

16:30 **SYNTHESIS AND CHARACTERIZATION OF (Zn,Sn)O THIN FILMS AS Cd-FREE BUFFER LAYER IN PHOTOVOLTAIC DEVICES** **H P2.49**
N. Khemiri, E. Gnenna , M. Kanzari
Université Tunis El Manar, Institut Prepatoire aux Etudes d’Ingénieurs El Manar (IPEIEM), Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs 1002, Tunis, Tunisie. Université de Tunis, IPEITunis Montfleury, Laboratoire de Photovoltaïques et Matériaux Semi-conducteurs-ENIT

16:30 **The influence of surface modification of ZnSe nanocrystals of the properties of nanocrystals** **H P2.50**
Svitlana Sovinska, Katarzyna Matras-Postołek
Cracow University of Technology, Faculty of Chemical Engineering and Technology, Department of Biotechnology and Physical Chemistry Warszawska 24 St. 31-155, Krakow, Poland

16:30 **Photoelectrochemical conversion of biomass wastes into renewable energy** **H P2.51**
Maria Antoniadou, Nikolaos Balis, Andreas Kaltzoglou, Athanassios G. Kontos, Polycarpos Falaras
Institute of Nanoscience and Nanotechnology, National Centre for Scientific Research “Demokritos”, 15341, Agia Paraskevi, Athens, Greece

16:30 **Improved Cr(VI) reduction by TiO2 based heterojunction solar photocatalysts** **H P2.52**
T. Chakraborty, Noor Aman, T. Mishra*
Functional Material Group, AMP Division, CSIR-National Metallurgical Laboratory, Jamshedpur-831007

16:30 **Optical in situ spectroscopy during MOCVD-preparation of metamorphic GaAsP buffers for III-V-on-Si solar cells** **H P2.53**
Ammar Tummalieh, Andreas Nägelein, Oliver Supplie, Agnieszka Paszuk, Alexander Heinisch, Peter Kleinschmidt, and Thomas Hannappel
Institute for Physics, Fundamentals of energy materials, University of Technology, Ilmenau, Germany

16:30 **Photocatalytic Au-TiO2 nanocomposite synthesis and applications** **H P2.54**
Siying Tang1, Zhe Wang2, and Paul K. Chu1,*
1. Department of Physics and Department of Materials Science and Engineering, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China, 2. Food Science and Processing Research Center, Shenzhen University, Shenzhen 518060, China

16:30 **Plasma mediated fabrication of N doped NiAl nanosheets with rich Oxygen vacancies for photoelectrochemical water oxidation** **H P2.55**
Keon-Han Kim, Jeung Ku Kang
Department of Materials Science and Engineering, KAIST

16:30 **Organic semiconductors as catalysts – general observation of efficient photocatalytic hydrogen peroxide production** **H P2.56**
Maciej Gryszel, Eric D. Głowacki
Linköping University

16:30 **Effects of the annealing temperatures on the structure and photoluminescence properties for La0.995Pr0.005VO4 phosphor** **H P2.57**
Lay-Gaik Teoh, Sean Wu, Hung-Rung Shih, Yee-Shin Chang
Department of Mechanical Engineering, National Pingtung University of Science and Technology, Neipu, Pingtung, 912 Taiwan, Department of Electronics and Information Engineering, Tung-Fung Institute of Technology, Kaohsiung 821, Taiwan, Department of Mechanical and Computer-Aided Engineering, National Formosa University, Huwei, Yunlin 632 Taiwan, Department of Electronic Engineering, National Formosa University, Huwei, Yunlin, 632 Taiwan

16:30 **Photochemistry and the role of light during the submerged photosynthesis of zinc oxide nanorods** **H P2.58**
Lihua Zhang, Melbert Jeem, Seiichi Watanabe
Faculty of Engineering, Hokkaido University, N13, W8, Kita-ku, Sapporo, Hokkaido 0608628, Japan

16:30 **Enhanced Photocatalytic Hydrogen Production with Au Nanoparticles / ZnxCd1-xS Nanowires** **H P2.59**
Yu-Cheng Chen, Yu-Sheng Huang, Lih-Juann Chen
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan, Republic of China

16:30 **A Combinatorial Approach to Investigate Light Down-Conversion in Tb3+/ Yb3+ Codoped Amorphous AlOxNy Thin Films** **H P2.60**
K. Y. Tucto, J. A. Dulanto, C. Torres, J. A. Töfflinger, J. A. Guerra and R. Grieseler
Departamento de Ciencias, Sección Física, Pontificia Universidad Católica del Perú, Av. Universitaria 1801, Lima 32, Perú

16:30 **Mesoporous Networks of β-Ni(OH)$_2$ Modified CdS Nanoparticles as Efficient Photocatalysts for Visible-Light Hydrogen Evolution** **H P2.61**
Ioannis Vamvasakis, Gerasimos S. Armatas*
Department of Materials Science and Technology, University of Crete, Heraklion 71003, Greece

16:30 **Investigations of EPR and optical properties of carbon nitride oxide (g-C3N4)O as perspective photocatalytic material** **H P2.62**
M. Bondarenko, M. Zahornyi, A. Ragulya, P. Silenko, Yu. Solonin, N. Gubareni, O. Khyzhun, N. Ostapovskaya
Frantsevich Institute for Problems of Materials Science of NASU, Krzhyzhanovsky St. 3, 03142 Kiev, Ukraine

16:30 **The Next Opportunity of MoS2 for Electrolytic Hydrogen Evolution Reaction---Hybridizing MoS2 with Other Electrocatalysts** **H P2.63**
Shu Hearn Yu, Wenzhou Chen, Hongyu Wang, Dai Haiwen, Hui Pan, Daniel H.C. Chua
Material Science and Engineering, National University of Singapore, Institute of Applied Physics and Materials Engineering, University of Macau, Macau, SAR, China.

16:30 **Sonohydrothermal synthesis of noble-metal-free Ti@TiO2 core-shell photocatalysts** **H P2.64**
Sara El Hakim, Tony Chave, Sergey I. Nikitenko
ICSM, UMR 5257, CEA, CNRS, ENSCM, Univ Montpellier, Marcoule, France

16:30 **Photovoltaic performance of n-type SnS active layer in FTO/PEDOT:PSS/SnS/Ag structure** **H P2.65**
F. Aousgi 1, N. Khemiri 2, B. Khalfallah 2, R. Chtourou 1
1Laboratory of Nanomaterials and Renewable Energy Systems LANSER, Research and Technology Center of Energy, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia, 2Université Tunis El Manar, Ecole National d'Ingénieurs de Tunis, Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs 1002, Tunis, Tunisia.

16:30 **Molar Optimization And Comparison Of SnxSy Thin Films Deposited By Spray Pyrolysis Technique** **H P2.66**
A. El hat*, A. Hadri, C. Nassiri , F.Z. Chafi, B. Fares, N. Hassanain and A. Mzer
Équipe des semi-conducteurs et technologie des capteurs d'environnement STCE-Centre de Recherche en Énergie- Mohammed V University, Faculty of Sciences, B.P. 1014, Rabat, Morocco.

16:30 **Syntesis and study of electrochemic and spectroscopic properties of a new dye for solar cells based on zno** **H P2.67**
Amina Adala , Mounia Guergouri , Leila Bencharif.
University of Brothers Mentouri , Constantine 1. Laboratory: Chemistry of Materials, BP, 325, Ain El Bey Town, Constantine, Algeria, 25017.

16:30 **Application of ZTO nanoparticles and porous silicon layer as an antireflection coating for silicon solar cells efficiency increa** **H P2.68**
Malek Atyaoui , Tayssir Ben Amara , and Hatem Ezzaouia
Laboratoire des nanostructures, des semi-conducteurs et des technologies avancées, Centre des recherches et des technologies de l'énergie, technopole de Borj-Cédria, PB :95,Hammam Lif 2050, Tunisia

16:30 **Abrupt photocurrent generation via electrochemical surface charge-inversion from semi-insulating Sb2Se3 photoanodes in water splitting** **H P2.69**
Young Been Kim, Joo Sung Kim, Sung Hyeon Jung, Dong Su Kim, Hyung Koun Cho*
School of Advanced Materials Science and Engineering, Sungkyunkwan University, 2066, Seobu-ro, Jangan-gu, Suwon Gyeonggi-do 16419, Republic of Korea

16:30 **Formation of metal oxide nanoparticles via submerged photosynthesis** **H P2.70**
Lihua Zhang, Melbert Jeem, Seiichi Watanabe
Faculty of Engineering, Hokkaido University, N13, W8, Kita-ku, Sapporo, Hokkaido 0608628, Japan

16:30 **Effect of dopants on the photoelectrochemical activity of electrodeposited cuprous oxide films** **H P2.71**
Sung Hyeon Jung, Young Been Kim, Joo Sung Kim, Dong Su Kim, Hyung Koun Cho
School of Advanced Materials Science and Engineering, Sungkyunkwan University

2d-carbon based Materials : -

08:30 INV **Polymeric- and Electronic-Structures of Graphitic Carbon Nitride (g-C3N4) Providing Photocatalytic Redox Activities** **H 13.1**
Taizo Sano,* Hiroaki Sato, Tomoko Hori, Tsutomu Hirakawa, Yoshiyuki Teramoto, Kazuhide Koike
National Institute of Advanced Industrial Science and Technology (AIST)

09:00 **Heteropolyacids supported on C3N4 and BN: Comparison between catalytic and photocatalytic alcohol dehydration** **H 13.2**
Francesca Rita Pomilla1,2, Farnaz Fazlali2,3, Elisa I. García-López2, Giuseppe Marcì2, Bartolo Megna2, Aida Serrano4, Ali Reza Mahjoub3, Leonardo Palmisano2
1 Department of Environmental and Chemical Engineering, University of Calabria, Via Pietro Bucci, Rende CS, 87036, Italy 2 Dipartimento di Ingegneria, Università di Palermo, Viale delle Scienze, 90128 Palermo, Italy 3 Tarbiat Modares University, Department of Chemistry, 14155-4383 Tehran, Iran 4 Departamento de Electrocerámica, Instituto de Cerámica y Vidrio (ICV), CSIC, 28049 Madrid, Spain

09:15 **Pyrene-Functionalized Polymeric Carbon Nitride with Promoted Aqueous-Organic Biphasic Photocatalytic CO2 Reduction** **H 13.3**
Can Xue, Xuezhong Gong
School of Materials Science and Engineering, Nanyang Technological University, Singapore

09:30 **TiO2/ FLG nanocomposites for hydrothermal transformation of cellulosic substrates assisted by photocatalysis** **H 13.4**
Hamza EL MAROUAZI, Izabela JANOWSKA, Valérie KELLER
Institut de Chimie et Procédés pour l&#8217,Energie, l&#8217,Environnement et la Santé (UMR CNRS 7515), Photocatalysis team, Université de Strasbourg, ECPM, 25 rue Becquerel, 67087 Strasbourg, France

09:45 **Enhanced light-to-heat conversion process for water purification using graphene-based nanofluids** **H 13.5**
Francesca Marchetti (1) (2), Nadhira Bensaada Laidani (2), Nicola Ferrari (2), Marina Scarpa (1), Enrico Moser (1)
(1) Physics Department University of Trento, Via Sommarive 14, 38123 Povo, Trento, Italy (2) Fondazione Bruno Kessler - Center for Materials and Microsystems, Via Sommarive 18, 38123 Povo, Trento, Italy

10:15 **Coffee Break**

Photocatalytic Materials (3) : -

10:45 **A Case Study Showing the Effect of Leaching and Oxidative Etching Using Ag Catalysts** **H 14.1**
S. Neretina, R. A. Hughes, R. D. Neal, S. D. Golze, T. B. Demille
University of Notre Dame, College of Engineering, Department of Chemistry and Biochemistry, Notre Dame, IN, USA

11:00 **An Analysis of the Factors Determining the Efficiency of Photocurrent Generation in Polymer:Nonfullerene Acceptor Solar Cells** **H 14.2**
Hyojung Cha, James R. Durrant
Chemistry, Imperial College London

11:15 **Towards novel light harvesting systems based on metal-organic frameworks: investigations from first principle calculations** **H 14.3**
Mariana Kozlowska, Xiaojing Liu, Michael Adams, Ian Howard, Lars Heinke, Wolfgang Wenzel, Christof Wöll
Institute of Nanotechnology, Institute of Functional Interfaces, Institute of Microstructure Technology, Karlsruhe Institute of Technology (KIT), 76344 Eggenstein-Leopoldshafen, Germany

11:30 **UCNP@SiO2@ZnO as NIR-based photocatalysts for turbid wastewater treatment** **H 14.4**
David Hu, Ting Cheng, Zhenpeng Cui, Fiorenzo Vetrone, Christophe Colbeau-Justin, Guylène Costentin, Souhir Boujday, Juliette Blanchard
D. Hu, Laboratoire de Réactivité de Surface (LRS), Sorbonne Université, Paris, T. Cheng, Institut National de la Recherche Scientifique (INRS), Université du Québec, Varennes, Z. P. Cui, Laboratoire de Chimie Physique (LCP), Université Paris-Sud, Orsay, F. Vetrone, Institut National de la Recherche Scientifique (INRS), Université du Québec, Varennes, C. Colbeau-Justin, Laboratoire de Chimie Physique (LCP), Université Paris-Sud, Orsay, G. Costentin, Laboratoire de Réactivité de Surface (LRS), Sorbonne Université, Paris, S. Boujday, Laboratoire de Réactivité de Surface (LRS), Sorbonne Université, Paris, J. Blanchard, Laboratoire de Réactivité de Surface (LRS), Sorbonne Université, Paris

11:45 **Controlled Thermal Oxidation Synthesis and Surface Band Structure Reconstruction of Hematite Nanowires and Nanoflakes** **H 14.5**

A. Chnani, A. Moeinian, A. Pasquarelli, and S. Strehle
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

12:00 **Time-saving preparation of Nickel-free 3D graphene for Visible-Light photocatalysis** **H 14.6**

Martina Ussia (1) (2), Mario Urso (1)(2), Maria Miritello (1), Elena Bruno (1) (2), Daniele Vitalini (3), Guido Condorelli (4), Vittorio Privitera (2) and Sabrina C. Carroccio (2) (3)
(1) University of Catania, Department of Physics and Astronomy “Ettore Majorana”, Via Santa Sofia 64, 95123, Catania, Italy, (2) CNR-IMM Catania Unit, Via Santa Sofia 64, 95123, Catania, Italy, (3) CNR-IPCB, Via Paolo Gaifami 18, 95126, Catania, Italy, (4) University of Catania, Department of Chemistry, Viale Andrea Doria xx, 9512x, Catania, Italy.

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM I

Recent developments in thermoelectric materials and applications

Symposium Organizers :

Antoine MAIGNAN, ENSICAEN – CRISMAT, France

Qiang LI, Brookhaven National Laboratory, USA

Takao MORI, NIMS, Tsukuba, Japan

Wenjie XIE, University of Stuttgart, Germany

To be published in Science and Technology Advanced Materials, IOP

New and Classical Thermoelectric Materials : Qiang Li and George Nolas

13:45 INV **Semiconducting metallic structural arrangements for thermoelectrics** — I o-1.1
Yuri Grin
Max-Planck-Institut für Chemische Physik fester Stoffe, Dresden, Germany

14:15 INV **Layered thermoelectric materials** — I o-1.2
Bo Brummerstedt Iversen
Center for Materials Crystallography, Department of Chemistry & iNANO, Aarhus University, Aarhus, DK-8000, Denmark

14:45 **Rare-Earth Metals Doped Complex Zintl Phase Thermoelectric Materials: Ca11-xRExSb10-y System** — I o-1.3
JunSu Lee, Tae-Soo You*
Department of Chemistry, Chungbuk National University, Cheongju, Chungbuk 28644, Republic of Korea

15:00 **Thermoelectric properties of As-based 122 Zintl compounds** — I o-1.4
H. Kunioka (1), K. Kihou (1), H. Nishiate (1), A. Yamamoto (1), H. Usui (2), K. Kuroki (2), and C. H. Lee* (1)
(1) National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki 305-8568, Japan, (2) Department of Physics, Osaka University, Toyonaka, Osaka 560-0043, Japan

15:15 **Exploring the Unexplored: Computational Discovery of New n-type Zintl Thermoelectric Materials** — I o-1.5
Prashun Gorai, Alex Ganose, Alireza Faghaninia, Brenden Ortiz, Eric Toberer, Anubhav Jain, Vladan Stevanovic
Colorado School of Mines, National Renewable Energy Laboratory, Golden, USA, Lawrence Berkeley National Laboratory, Berkeley, USA, Lawrence Berkeley National Laboratory, Berkeley, USA, Colorado School of Mines, Golden, USA, Colorado School of Mines, National Renewable Energy Laboratory, Golden, USA, Lawrence Berkeley National Laboratory, Berkeley, USA, Colorado School of Mines, National Renewable Energy Laboratory, Golden, USA

15:30 **Anionic Doping and Cationic Site-Preference in CaYb4Al2Sb6-xGex (x = 0.2, 0.5, 0.7): Origin of the Enhanced Seebeck Coefficient** — I o-1.6
Sung-Ji Lim, Gnu Nam, Seungeun Shin, Kyunghan Ahn, Yunho Lee, and Tae-Soo You
Department of Chemistry, Chungbuk National University, Cheongju, Chungbuk 28644, Republic of Korea Department of Applied Physics, Kyung Hee University, Yong-in 17104, Republic of Korea Department of Chemistry, Korea Advanced Institute of Science and Technology, Daejeon 34141, Republic of Korea

15:45 **Phonons and electrons in cage-compounds with large freedom of space** — I o-1.7
Katsumi Tanigaki^1,2) and Jiazhen Wu^3)
AIMR, Tohoku University^1), Department of Physics, Graduate School of Science, Tohoku University^2), Tokyo Institute of Technology^3)

16:00 **Coffee break**

16:30 INV **New materials for low temperature thermoelectric applications** — I o-1.8
George S. Nolas
Department of Physics, University of South Florida, Tampa, FL, USA

17:00 INV **In search of new thermoelectric materials — the potential of metal-cluster phosphides** — I o-1.9
Jürgen Nuss (1), Ulrich Wedig (1), Kai Philippi (1), Wenjie Xie (2), Jan Bruin (1), Petar Yordanov (1), Anke Weidenkaff (2), Hidenori Takagi (1)
(1) Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, (2) Fraunhofer Project Group Materials Recycling and Resource Strategies IWKS, Rodenbacher Chaussee 4, 63457 Hanau, Germany

17:30 **Simultaneous control in electron and phonon transport in 2D based Bi2Te3 nanocomposites for thermoelectric applications** — I o-1.10
Khushboo Agarwal, Deepak Varandani, B. R. Mehta
Indian Institute of Technology-Delhi, Department of Physics, Hauz Khas, New Delhi, India

17:45 **Enhanced Thermoelectric Performance of Bi-Sb-Te/Sb2O3 Nanocomposites** — I o-1.11
Amir Pakdel,* Quansheng Guo, Valeria Nicolosi, Takao Mori*
(1) National Institute for Materials Science (NIMS), International Center for Materials Nanoarchitechtonics (MANA), Tsukuba, Japan. (2) Trinity College Dublin, School of Chemistry, Dublin, Ireland. (3) Trinity College Dublin, Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Advanced Materials Bio-Engineering Research Centre (AMBER), Dublin, Ireland.

18:00 **Tunable ternary Bi2(Se1-xTex)3 thermoelectric thin film via low pressure chemical vapour deposition** — I o-1.12
Ruomeng Huang1, Stephen Richards2, Daniel Newbrook1, Andrew Hector2, William Levason2, Gill Reid2, C.H. (Kees) De Groot1
1 School of Electronics and Computer Science, University of Southampton, United Kingdom 2 School of Chemistry, University of Southampton, United Kingdom

18:15 **Bi2Te3 nanowires by pulsed electrodeposition: Ultra-high aspect ratio, uniform growth front, stoichiometric, single crystal alon** — I o-1.13
Cristina V. Manzano1, 2,*, Mikhail N. Polyakov2, Jon Maiz1, Myriam H. Aguirre3,4, Xavier Mae-der2, Marisol Martín-González1
1 Instituto de Micro y Nanotecnología de Madrid, IMN-CNM (CSIC), Isaac Newton 8 (PTM), Tres Cantos, Madrid, Spain 2 Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Mechanics of Materials and Nanostructures, Feuerwerkerstrasse 39, CH-3602 Thun, Switzerland 3 Laboratory of Advanced Microscopy and Department of Physics Condensed Matter, University of Zaragoza, 4 Institute of Nanoscience of Aragón-ICMA-CSIC,University of Zaragoza , 50018, Zaragoza, Spain

Tuesday 28 may 2019

chalcogenides and oxides : Takao Mori and Georg Madsen

08:30 INV **Towards outstanding power factors in synthetic colusites** — I o−2.1
Emmanuel Guilmeau
Laboratoire CRISMAT, CNRS, Normandie Univ, ENSICAEN, UNICAEN, 14000 Caen, France

09:00 **Phonon transport analysis and microstructure control of Chalcopyrite CuFeS2** — I o−2.2
Naoki Sato, Pei Se Gan, S. N. Vijayaraghavan, Yohei Kakefuda, Naoyuki Kawamoto, Naohito Tsujii, Takao Mori
National Institute for Materials Science, University of Tsukuba

09:15 **Non-Toxic Earth-Abundant Copper-Based Thermoelectric Materials: Structural Design and Ultralow Thermal Conductivity** — I o−2.4
Xian Zhang,* Fuqiang Huang
Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology, Beijing 100094, P. R. China, State Key Laboratory of Rare Earth Materials Chemistry and Applications, College of Chemistry and Molecular Engineering, Peking University, Beijing 100871, P.R. China,

09:30 INV **Anomalous Reduction of Lattice Thermal Conductivity in ZnO-based Thermoelectric Oxides with Extended Solid Solubility Limit on Binary Doping** — I o−2.5
Michitaka Ohtaki
Department of Applied Science for Electronics and Materials, Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan, Transdisciplinary Research and Education Center for Green Technologies, Kyushu University, Japan

10:00 **From nanomanipulation of ZnO nanoparticles towards low-cost thermoelectric devices** — I o−2.6
M. M. Maia, A. L. Pires, A. M. L. Lopes, A. M. Pereira
IFIMUP - Institute of Advanced Materials Physics, Nanotechnology and Photonics, Departamento de Física e Astronomia da Faculdade de Ciências da Universidade do Porto, Rua Campo Alegre, 687, 4769-007 Porto, Portugal

10:15 **Thermoelectric perovskite-oxide epitaxial films grown by MBE** — I o−2.7
Dong Han1, Mohamed Bouras1, Rahma Moalla1, Claude Botella1, Aziz Benamrouche1, Geneviève Grenet1, Bruno Canut2, Régis Debord3, Valentina Giordano3, Stéphane Pailhès3, Guillaume Saint-Girons1, Romain Bachelet1*
1 Institut des Nanotechnologies de Lyon, INL UMR5270 CNRS, Ecole Centrale de Lyon, 69134 Ecully, France, 2 Institut des Nanotechnologies de Lyon, INL UMR5270 CNRS, INSA de Lyon, 69621 Villeurbanne, France, 3 Institut Lumière Matière, ILM UMR5306 CNRS, Université Claude Bernard Lyon 1, 69622 Villeurbanne, France

10:30 **Coffee break**

11:15 **PLENARY SESSION**

12:30 **Lunch break**

Phonons and chalcogenides : Emmanuel Guilmeau and Michitaka Ohtaki

13:45 INV **Phonon Superscatterers** — I o−3.1
Georg K. H. Madsen
Institute of Materials Chemistry, TU Wien, A-1060 Vienna, Austria. georg.madsen@tuwien.ac.at

14:15 INV **Effect of Phonon Drag on Seebeck Coefficient Based on Linear Response Theory: Application to FeSb_2** — I o−3.2
Masao Ogata, Hiroyasu Matsuura, Hideaki Maebashi, Hidetoshi Fukuyama
Department of Physics, University of Tokyo: Tokyo University of Science

14:45 **Quantum transport simulations in hierarchically disordered nanostructures for high thermoelectric power factors** — I o−3.3
Vassilios Vargiamidis, Laura de Sousa Oliveira, Samuel Foster, and Neophytos Neophytou
University of Warwick

15:00 **Enhanced ZT through near percolation threshold anomalies in amorphous thermoelectric thin films** — I o−3.4
Andres Rösch (1), Fabian Giunta (1), Jörg Schmalian (2), Uli Lemmer (1)
1Light Technology Institute, Karlsruhe Institute of Technology (KIT) Engesserstrasse 13, 76131 Karlsruhe, Germany 2Institute for Theoretical Condensed Matter physics, Karlsruhe Institute of Technology (KIT) Wolfgang-Gaede-Str. 1, 76131 Karlsruhe, Germany

15:15 **Thermoelectric properties of two-dimensional transition metal carbides and nitrides** — I o−3.5
Jacek A. Majewski
Faculty of Physics, University of Warsaw, ul. L. Pasteura 5, 02-093 Warszawa, Poland

15:30 **Improved thermoelectric properties of Ag-doped polycrystalline SnSe with facile electroless plating** — I o−3.6
Hong-Xing Mi , Shen Cao, Zhong-Yue Huang, Li Han, Ju Xu
1.Micro-nano Fabrication Technology Department, Institute of Electrical Engineering, Chinese Academy of Sciences, Beijing 100190, PR China, 2.Liquid/Solid Metal Processing Institute, School of Materials Science & Engineering, Hefei University of Technology, Hefei 230009, PR China,

15:45 **Temperature dependence of electronic structure and electron-phonon coupling in the weak topological insulator SnTe** — I o−3.7
J. D. Querales-Flores(1), D. Dangic(1,2), J. Cao(1,3), P. Aguado-Puente(4), M. Gruening(4), S. Fahy(1,2), I. Savic(1)
1) Tyndall National Institute, Lee Maltings, Dyke Parade, Cork, Ireland 2) Department of Physics, University College Cork, Cork, Ireland 3) Nanjing University of Science and Technology, People's Republic of China 4) School of Mathematics and Physics, Queen's University Belfast, Belfast BT7 1NN, Northern Ireland, United Kingdom

16:00 **Coffee break**

Poster session : Xiaoyuan Zhou and V. Giordano

16:30 **Thermoelectric Cu-Se chalcogenides deposited by Pulsed Hybrid Reactive Magnetron Sputtering (PHRMS)** — I p−1.1
E. Flores, O. Caballero-Calero, F. Briones, M. Martin-Gonzalez.
FINDER-group, Instituto de Micro y Nanotecnología, IMN-CNM, CSIC (CEI UAM CSIC) Isaac Newton, 8, E-28760, Tres Cantos, Madrid (Spain)

16:30 **Towards flexible oxide thermoelectric micro-generators** — I p−1.2
J. Wolfman,* N. Jaber, * J. Sakai, * F. Giovannelli, * A. Ruyter, * B. Negulescu, * C. Autret, * S. Desplobain, ± L. Ventura,± P. Lecoeur,° E. Thiébaut,° C. Goupil,‡ P. Andreazza,†
* GREMAN, UMR7347 CNRS, Université de Tours, Parc de Grandmont, F-37200 Tours, France ± SiLiMiXT-SAS, c/o STMicroelectronics, 10 rue Thalès de Milet, F-37071 Tours, France ° C2N, UMR 9001 CNRS, Université Paris-Saclay, 10 Boulevard Thomas Gobert, F-91120 Palaiseau, France ‡ LIED , UMR 8236 CNRS, Université Paris-Jussieu, Bat Lamarck, 50 rue Alice-Domon et Léonie-Duque, F-75013 Paris, France † ICMN, UMR 7374 CNRS, Université d'Orléans, 1b rue de la Férollerie, F-45071 Orléans, France

16:30 **From n-type to p-type behaviour of CrN thin films: the importance of stoichiometry** — I p−1.3
Arnaud le Febvrier 1, Davide Gambino 2, Gregory Abadias 3, Fabien Giovannelli 4, Bjorn Alling 2, Per Eklund 1
1 Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-581 83 Linköping, Sweden 2 Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-58183 Linköping, Sweden 3 Institut Pprime, Département de Physique et Mécanique des Matériaux, UPR 3346, CNRS?Université de Poitiers?ENSMA, 86962 Chasseneuil-Futuroscope, France 4 Greman, UMR CNRS 7347, Universite de Tours, IUT de Blois, 15 rue de la chocolaterie, CS2903, 41000 Blois, France

16:30 **Effect of process parameters on the microstructure of thermoelectric thin films in a Cu and Bi2Te3 co-sputtered system** — I p−1.4
Sang Hyun Bae, Soon-Mok Choi
School of Energy, Materials and Chemical Engineering, Korea University of Technology and Education, Cheonan 330-708, Korea

16:30 **Microstructure and Thermoelectric Properties of Ge1-x-ySbxCuyTe** — I p−1.5
Hyunho Kim, Hyerin Jeong, Hyunji Kim, Ho Seong Lee
Kyungpook National University

16:30 **Thermoelectric Properties and Microstructure of NbFeSb-based Material** **I p-1.6**
Hyerin Jeong, Hyunho Kim, Hyunji Kim, Ho Seong Lee
Kyungpook National University, Republic of Korea

16:30 **Microstructural characteristics of CuInSe2 and CuIn3Se5** **I p-1.7**
Hyunji Kim1, Hyunho Kim1, Hyerin Jeong1, Ho Seong Lee1, Hyung Koun Cho2
1School of Materials Science and Metallurgical Engineering, Kyungpook National University, Republic of Korea, 2School of Advanced Materials Science and Engineering, Sungkyunkwan University, Republic of Korea

16:30 **Thermoelectric properties of a silicon-based structure modified with Ni/Ge-multilayers** **I p-1.8**
Kyongmin Kim(1), Kyunho Jung(1), Seunggon Song(1), Seungeun Mun(2), Moongyu Jang(3), Kyoungwan Park(4)
(1)Department of Nano Science and Technology, University of Seoul, (2)Electronics and Telecommunications Research Institute, (3)Hallym University, (4)Department of Physics, University of Seoul, Korea

16:30 **Gold-Induced Crystallization of Si1-xGex for Thermoelectrics** **I p-1.9**
Alexander Steigert 1) 2), Johannes Frisch 1) 2), Danny Kojda 3), Rene Gunder 4), Florian Kronast 5), Nina Novakovic 5), Kathrine Ann Mazzio 1) 2), Klaus Habicht 3), Simone Raoux 1) 2) 6)
1) Institute for Nanospectroscopy, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Albert Einstein Str. 15, 12489 Berlin, Germany, 2) Energy Materials In-Situ Laboratory, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Albert Einstein Str. 15, 12489 Berlin, Germany, 3) Department Methods for Characterization of Transport Phenomena in Energy Materials, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, 4) Department Structure and Dynamics of Energy Materials, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, 5) Department Materials for Green Spintronics, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Albert Einstein Str. 15, 12489 Berlin, Germany, 6) Institute of Physics, Humboldt University Berlin, Newtonstr. 15, 12489 Berlin, Germany

16:30 **Dual function additive of 2,4-Hexadiyne-1,6-diol as Dispersion Agent and structure binder for Organic Thermoelectric Generator** **I p-1.10**
Jae Un Ha, Seongwon Yoon, Jangwhan Cho, Syed Zahid Hassan and Dae Sung Chung*
Department of Energy Science and Engineering, Daegu Gyeongbuk Institute of Science and Technology, Daegu, 42988, Republic of Korea

16:30 **Pulsed electrodeposition and transfer of bismuth telluride thin films** **I p-1.11**
Katarina Cicvari?, Lingcong Meng, Ruomeng Huang, Wenjian Zhang, Gabriela P. Kissling, CH Kees de Groot and Philip N. Bartlett
School of Electronics and Computer Science, University of Southampton, School of Chemistry, University of Southampton, School of Electronics and Computer Science, University of Southampton, School of Chemistry, University of Southampton, School of Chemistry, University of Southampton, School of Electronics and Computer Science, University of Southampton, School of Chemistry, University of Southampton

16:30 **Precise Investigation of Thermal Transport in Semicrystalline Polymer Semiconductors** **I p-1.12**
Ekaterina Selezneva1, Riccardo Di Pietro2, Xuechen Jiao3, Christopher R. McNeill3, and Henning Sirringhaus1
1Cavendish Laboratory, University of Cambridge, J J Thomson Avenue, CB3 0HE Cambridge, UK, 2Hitachi Cambridge Laboratory, J J Thomson Avenue, CB3 0HE Cambridge, UK, 3Department of Materials Engineering, Monash University, Wellington Road, Clayton, Victoria 3800, Australia

16:30 **Synthesis and Characterization of Bismuth Selenide Nanoplates** **I p-1.13**
Srikanth Chakaravarthy, Mauricio Ortega-Lopez, Manuel Alejandro Perez Guzman, Jaime Santoyo-Salazar
Programa de Doctorado en Nanociencias y Nanotecnología, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México, Sección de Electronica y Estado Solido, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México, Programa de Doctorado en Nanociencias y Nanotecnología, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México, Departmento de Fisica, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-IPN), No. 2508 Av. IPN, Col. San Pedro Zacatenco, C.P. 07360 Distrito Federal, México

16:30 **Fast synthesis and improved stability in n-type Ag2Te thermoelectric materials** **I p-1.14**
Huiping Hu, Xinbing Zhao, Tiejun Zhu
State Key Laboratory of Silicon Materials, School of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, China

16:30 **A study on doped MnSi1.7 powder synthesized by the pack cementation process** **I p-1.15**
Aikaterini Teknetzi, Dimitrios Stathokostopoulos, Evangelia Tarani, Eleni Pavlidou, Konstantinos Chrissafis, E. K. Polychroniadis, George Vourlias
Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

16:30 **Enhancing thermoelectric properties of p-type half-Heusler (Ti/Zr/Hf) CoSb0.85Sn0.15 compound via phase separation** **I p-1.16**
Ruijuan Yan1, Benjamin Balke2, Wenjie Xie1, Anke Weidenkaff1,2
1) Department of Materials and Earth Sciences, Technische Universität Darmstadt, 64287 Darmstadt 2) Fraunhofer Project Group Materials Recycling and Resource Strategies IWKS, 63457 Hanau

16:30 **Highly effective thermoelectric BiSbTe thin films** **I p-1.17**
Philipp Lorenz, Gabriel Zieger, Andreas Ihring, Jan Dellith, Frank Haenschke, Heidemarie Schmidt
Leibniz Institute of Photonic Technologies (Leibniz-IPHT), Jena, Germany

16:30 **Measurement and characterization of transport property for Bi wire** **I p-1.18**
Mioko Otsuka, Yasuhiro Hasegawa
Saitama University, Japan Society for the Promotion of Science

16:30 **Integrated system of thermoelectric cooler and power generator for automobile** **I p-1.19**
Seungwoo Han1*, Da-hye Kim1, Sijin Kim2
1 Korea Institute of machinery & materials, 2 TETech

Topological Materials, Electron and Phonon Properties : Antoine Maignan and Masao Ogata

08:30 INV **Thermoelectric properties and topology of Phosphides** I o-4.1
Claudia Felser
Max Planck Institute Chemical Physics of Solids, Dresden, Germany

09:00 INV **Thermoelectric properties of topological semimetals** I o-4.2
Shuang Jia
International Center for Quantum Materials, School of Physics, Peking University, China

09:30 **Chiral fermions and thermoelectric properties** I o-4.3
Qiang Li
Brookhaven National Laboratory

09:45 **First-principles study of thermoelectric effect in chiral magnet** I o-4.4
Fumiyuki Ishii, Hikaru Sawahata, Yo Pierre Mizuta
Kanazawa University

10:00 **Utilization of magnetic interactions to enhance thermoelectric properties** I o-4.5
Takao Mori, Naohito Tsujii, Fahim Ahmed, Atta Ullah Khan, Quansheng Guo
National Institute for Materials Science (NIMS), Tsukuba 305-0044, Japan, University of Tsukuba, Tsukuba 305-8671, Japan

10:15 **Coffee break**

10:30 INV **Band structures from experimental electronic transport data: beyond the standard model of thermoelectricity** I o-4.6
Terry E. Stearns, Andrew R. Supka, Nicholas A. Mecholsky, Marco Buongiorno Nardelli, Stefano Curtarolo, Marco Fornari
Department of Physics, Central Michigan University, Department of Physics and Science of Advanced Materials Program, Central Michigan University, Department of Physics, Catholic University of America, Department of Physics, University of North Texas, Materials Science, Duke University, Department of Physics and Science of Advanced Materials Program, Central Michigan University

11:00 INV **A microscopic understanding of thermal engineering in nanocomposites for thermoelectric applications** I o-4.7
V. M. Giordano
Institut Lumiere Matiere - CNRS - Universite' Lyon 1

11:30 **Templated growth of high-density Sb2Te3 nanopillars by MOCVD** I o-4.8
R. Cecchini (1), R. S. R. Gajjela (1,2), C. Martella (1,3), C. Wiemer (1), A. Lamperti (1), L. Nasi (4), L. Lazzarini (4), L.G. Nobili (2), M. Longo (1).
(1) CNR-IMM, via C. Olivetti 2, Agrate Brianza, Italy, (2) Dipartimento di Chimica, Materiali e Ingegneria Chimica "Giulio Natta, Politecnico di Milano, Via Mancinelli, 7, 20131 Milano, Italy, (3) CNR-ISC, U.O.S. Sapienza, I-00185 Roma, Italy, (4) CNR-IMEM, Parco Area delle Scienze, 37, Parma, Italy.

11:45 **Effect of Compositional Tuning on Thermal Transport and Thermopower of Hybrid Halide Perovskites** I o-4.9
Md Azimul Haque, Mohamad Insan Nugraha, Sri Harish Kumar Paleti, Derya Baran
KAUST Solar Center (KSC), Physical Science and Engineering Division, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia

12:00 **Metal/insulator thermally conductive layers for thermoelectric energy harvesting applications** I o-4.10
Tianzhuo Zhan, Ryo Yamato, Mao Xu, Hiroki Takezawa, Kohei Mesaki, Motohiro Tomita, Yen-ju Wu, Yibin Xu, and Takanobu Watanabe
1. Tianzhuo Zhan, Ryo Yamato, Mao Xu, Hiroki Takezawa, Kohei Mesaki, Motohiro Tomita, and Takanobu Watanabe, Waseda University, Japan 2. Yen-ju Wu and Yibin Xu, National Institute for Materials Science, Japan

12:15 **Electrical and Thermoelectric Properties of thickness dependent Bi2Te3 based thin films** I o-4.11
Mujeeb Ahmad and B. R. Mehta
Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi New Delhi, 110016, India

12:30 **Thermoelectric properties of bismuth telluride tridimensional nanostructures** I o-4.12
Alejandra Ruiz-Clavijo, Olga Caballero-Calero, Marisol Martín-González
Instituto de Microelectrónica de Madrid (IMM-CSIC), Calle de Isaac Newton 8, Tres Cantos, 28760 Madrid, Spain

12:45 **Lunch break**

Oxides, Chalcogenides, Pnictides, and Half-Heuslers : Wenjie Xie and Jan Konig

13:45 INV **Enhancing the lifetime of thermoelectric materials** I o-5.1
Anke Weidenkaff 1,2, W. Xie 2, X. X. Xiao 2, and B. Balke 1
1) Fraunhofer Project Group Materials Recycling and Resource Strategies IWKS 2) Department of Materials and Earth Sciences , Technische Universität Darmstadt

14:15 INV **Optimization of the thermoelectric properties in the pyrite family : the example of CoS2** I o-5.2
Ulises Acevedo Salas, Denis Pelloquin, Oleg Lebedev, Antoine Maignan, Jean Juraszek* and Sylvie Hebert
Laboratoire CRISMAT, Normandie Univ, ENSICAEN, UNICAEN, CNRS, 14000 Caen, France *Laboratoire GPM, Normandie Univ, INSA Rouen, UNIROUEN, CNRS, 76800 Saint-Etienne du Rouvray, France

14:45 **Relationship between magnetism and thermopower in transition metal oxides and sulfides** I o-5.3
Antoine Maignan, David Berthebaud, Oleg Lebedev, Sylvie Hébert, Christine Martin
Laboratoire CRISMAT, UMR 6508 CNRS/ENSICAEN/UNICAEN/NORMANDIE UNIVERSITE, 6 bd du Maréchal Juin, 14050 CAEN Cedex 4, France

15:00 **Enhancing the Thermoelectric Power Factor of Sr0.9Nd0.1TiO3 through Control of the Nanostructure and Microstructure** I o-5.4
D. Ekren, F. Azough, A. Gholinia, S. J. Day, D. Hernandez-Maldonado, D. M. Kepaptsoglou, Q. M. Ramasse, R. Freer
D. Ekren, School of Materials, University of Manchester, F. Azough, School of Materials, University of Manchester, A. Gholinia, School of Materials, University of Manchester, S. J. Day, Diamond Light Source, Harwell Science and Innovation Campus, D. Hernandez-Maldonado, SuperSTEM Laboratory, STFC Daresbury Campus,D. M. Kepaptsoglou, SuperSTEM Laboratory, STFC Daresbury Campus, Q. M. Ramasse SuperSTEM Laboratory, STFC Daresbury Campus, R. Freer, School of Materials, University of Manchester

15:15 **Self-Nano-Structuring in SrTiO3: A Novel Strategy for Enhancement of Thermoelectric Response in Oxides** I o-5.5
Feridoon Azough1, Ali Golinia1, Diana T. Alvarez -Ruiz1, Demie M. Kepaptsoglou2,3, Quentin M. Ramasse2,4 and Robert Freer1.
1, School of Materials, University of Manchester, Manchester, M13 9PL, U.K. 2,SuperSTEM Laboratory, STFC Daresbury Campus, Daresbury WA4 4AD, U.K. 3,Jeol Nanocentre and Department of Physics, University of York, Heslington, York YO10 5DD, U.K. 4,School of Chemical and Process Engineering and School of Physics, University of Leeds, Leeds LS2 9JT, U.K.

15:30 **Resonant states: from minimal model to Vanadium doping in Strontium Titanate** I o-5.6
S. Thébaud, Ch. Adessi, G. Bouzerar
Univ Lyon, Université Claude Bernard Lyon 1, CNRS, Institut Lumière Matière, F-69622, LYON, France

15:45 **Interplay between chemical pressure effects and thermoelectric performance in perovskite-type titanates: the case of EuTiO3.** I o-5.7
Xingxing Xiao, Marc Widenmeyer, Songhak Yoon, Wenjie Xie, and Anke Weidenkaff
University of Stuttgart, Institute for Materials Science, Heisenbergstr. 3, 70569 Stuttgart, Germany

16:00 **Exploring new materials for optical thermometric sensing** I o-5.8
Suchinder K. Sharma*,1,2, Jan Beyer1, Margret Fuchs2, Richard Gloaguen2, Johannes Heitmann1
1Institute of Applied Physics, TU Bergakademie Freiberg, Leipziger Str. 23, 09599 Freiberg, Germany 2Helmholtz--Zentrum Dresden--Rossendorf, Helmholtz Institute Freiberg for Resource Technology, Chemnitzer Str. 40, 09599 Freiberg, Germany

16:15 **Coffee break**

16:30 INV **Recent developments on half-Heusler based thermoelectric modules for waste heat recovery** I o-5.9
J. D. Konig
1 Fraunhofer Institute for Physical Measurement Techniques IPM, Thermal Energy Converters, Heidenhofstr. 8, D-79110 Freiburg, Germany 2 IMTEK - Department of Microsystems Engineering, Laboratory for Gas Sensors, University of Freiburg, Georges-Koehler-Allee 102, 79110 Freiburg, Germany

17:00 INV **Defective Half-Heusler Thermoelectric Compounds: Structure and Properties** I o-5.10
Tiejun Zhu
State Key Laboratory of Silicon Materials and School of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, China

17:30 **Grain boundary scattering of charge transport in n-type (Hf,Zr)CoSb half-Heusler thermoelectric materials** I o-5.11
Qinyi Qiu, Yintu Liu, Kaiyang Xia, Teng Fang, Junjie Yu, Xinbing Zhao, Tiejun Zhu
State Key Laboratory of Silicon Materials and School of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, China

17:45 **Solubility of p-type doping Sc and Al in Half-Heusler TiNiSn for thermoelectric applications** I o-5.12
1,2D. Rabin, 1M. Kaller, 1Y. Gelbstein, 1D. Fuks
1Materials Engineering Department, Ben Gurion University of the Negev, Beer Sheva, Israel 2NRCN, P.O. Box 9001 Beer-Sheva 84190, Israel

18:00 **A first principles method to obtain the figure of merit of materials: application to NiTiSn, ZnSb and Mg2Si** I o-5.13
Alexandre Berche, Philippe Jund
Institut Charles Gerhardt - Université de Montpellier, Place E. Bataillon CC15001 34095 Montpellier France

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Thermoelectric Applications : Yuri Grin and Tiejun Zhu

08:30 INV **Translational research using high durable thermoelectric modules** I o-6.1
Ryoji Funahashi, Tomoyuki Urata, Yoko Matsumura, Miho Suzuki, Hiroyo Murakami, Hitomi Ikenishi, Shinya Sasaki, and Shigeaki Sugiyama
National Institute of Advanced Industrial Sci. & Tech., Akita Industrial Technology Center

09:00 INV **Thermoelectric device and module: from laboratory to industry** I o-6.2
Lidong Chen, Shengqiang Bai, Ruiheng Liu
State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Science, Shanghai 200050, China

09:30 **Flexible planar-type device for thermoelectric generation by solar absorber** I o-6.3
Shen Hai-shan(1,2), Hoo-jeong Lee(1*), Seung-woo Han(2*)
1Sungkyunkwan University,2066, Seobu-ro, Jangan-gu, Suwon-si, Gyeonggi-do, Korea 2Korea Institute of machinery & materials, 156, Gajeongbuk-ro, Yuseong-gu, Daejeon-si

09:45 **Development of High Efficiency Segmented Thermoelectric Couples for Space Applications** I o-6.4
Fivos Drymiotis 1, Jean-Pierre Fleurial 1, Sabah Bux 1, Samad Firdosy 1, Kurt Star 1, Ike Chi 1, Vilupanur Ravi 1,2, Billy Chun-Yip Li 1, Sevan Chanakian 3, Dean Cheikh 1, Kathy Lee1, Kevin Yu 1, Obed Villalpando 1, Kevin Smith 1, David Uhl 1, Chen-Kuo Huang 1, Michell Aranda 1, David Neff 1, Sutinee Sujittosakul 1, Emmanuelle Despagnet-Ayoub 1, Jong-Ah Paik 1, Knut Oxnevut 1, Zi-Kui Liu 4, Jorge Paz Soldan Palma 4, Yi Wang 4, XiaoYu Chong 4, Frances Hurwitz 5, Dongming Zhu 5, Haiquan Guo 5, Gustavo Costa 5.
1Jet Propulsion Laboratory-California Institute of Technology, Pasadena CA 91109 2California State Polytechnic University Pomona, Pomona CA 91768 3Michigan State University, East Lansing MI 48824, 4Penn State University, State College, PA 16801 5NASA Glenn Research Center, Cleveland, OH 44135

10:00 **New solid state thermoelectrochemical cells, based on mixed valence oxides and prepared by magnetron sputtering** I o-6.5
D.Godovsky1, V.Mesheryakov2, L.Ebralidze2, A.Redkin2
1 - LG TCM, LG Electronics, Paveletskaya sq.,115054, Moscow, Russia 2 - Comberry Co., Ulyanovsk Nanocenter, Ulyanovsk, Russia

10:15 **Thermal and Electrical Analysis of Interface Properties of Detachable Solders for High Temperature Thermoelectric Materials** I o-6.6
Stefan Tappertzhofen, Christian Stiewe, Antoine Micallef, Thorsten Schmitz-Kempen, Eckhard Müller, Stephan Tiedke
aixACCT Systems GmbH, Aachen, Germany, German Aerospace Center (DLR), Cologne, Germany

10:30 **An overview of key skutterudite materials and technology development over the last 30 years** I o-6.7
T. Caillat
Jet Propulsion Laboratory/California Institute of Technology 4800 Oak Grove Dr. Pasadena, CA 91109 USA

10:45 **New Thermoelectric Energy Harvesting Opportunities: Ocean Robotic Exploration Enabled by Ocean Hydrothermal Vents** I o-6.8
Terry J. Hendricks, Jean-Pierre Fleurial, Erik J. Brandon, Laura M. Barge
All authors - NASA - Jet Propulsion Laboratory/California Institute of Technology, 4800 Oak Grove Drive, Pasadena, CA 91109

11:00 **Coffee break**

11:15 **PLENARY SESSION**

12:30 **Lunch break**

Silicides : Y. Funahashi and Sylvie Hebert

13:45 INV **Domain Separation in Manganese Silicide Thermoelectric Materials** I o-7.1
Y. Miyazaki, H. Nagai, Y. Kawasaki, K. Hayashi, K. Yubuta
Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan, Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan,

14:15 **Bi-doped Mg2Si0.6Sn0.4 thermoelectric materials prepared by Mechanical Alloying** — I o-7.2
E. Symeou(1), M. Karyou(1), A. Delimitis(2), M.Constantinou (3), G.Constantinides (3) and Th. Kyratsi(1)
(1)Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Av., PO Box 20537, 1678 Nicosia, Cyprus, (2) Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger, PO Box 8600 Forus, N-4036 Stavanger, Norway, (3) Department of Mechanical and Materials Science Engineering, Cyprus University of Technology,3036, Limassol, Cyprus.

14:30 **Silicides for industrial heat waste recovery** — I o-7.3
Quansheng Guo (1,2), David Berthebaud(1), Takao Mori(2)
1 CNRS-Saint Gobain-NIMS, UMI 3629, Laboratory for Innovative Key Materials and Structures (LINK), NIMS, Tsukuba, Japan 2 National Institute for Materials Science, Tsukuba 305-0044, Japan

14:45 **Enhancing the thermoelectric characteristics of n-type Mg2Si** — I o-7.4
T. Iida, T. Kawamura, F. Ikeda, J. Nakano, Y. Minamida, T. Kodama, K. Tani, R. Hatanaka, D. Shiojiri R. Inoue, and Y. Kogo
Tokyo University of Science, Department of Materials Science and Technology

15:00 **Thermoelectric and electron transport properties of silicon nanowires obtained by metal-assisted chemical etching** — I o-7.5
K.A. Gonchar1, A.S. Fedotov2, D.A.Rusak2, L.A. Osminkina1,3
1 Physics Department, Lomonosov Moscow State University, Leninskie Gory 1, 119991 Moscow, Russia, 2 Belarusian State University, 4 Nezalezhnasci av., 220030, Minsk, Belarus, 3 Institute for Biological Instrumentation of Russian Academy of Sciences, 142290 Pushchino, Moscow Region, Russia

15:15 **Significant Reduction of Thermal Conductivity of Si Nanopillar/SiGe Composite Film Fabricated by Neutral Beam Etching** — I o-7.6
Daisuke Ohori1, Takuya Goda2, Tsubasa Nakamura2, Tetsuo Ikari2, Seiji Samukawa1, and Atsuhiko Fukuyama2
1 Institute of Fluid Science, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai, 980-8577, Japan 2 University of Miyazaki, 1-1 Gakuen-Kibanadainishi nishi, Miyazaki, 889-2192, Japan

15:30 **Colossal thermoelectric power factor in hydrogen-depleted boron-doped nanocrystalline silicon thin films** — I o-7.7
Dario Narducci (1), Stefano Magagna (1), Federico Giulio (1), Andrea Campos (2), Marion Descoins (2), Dominique Mangelinck (2), Ahmed Charaï (2)
(1) Univ. of Milano Bicocca, Dept. Materials Science, v. R. Cozzi 55, I-20125 Milano, Italy, (2) Laboratoire IM2NP, Aix Marseille Université, UMR 7334, CNRS, Faculté des Sciences, Campus de St Jérôme, Case 261, Marseille Cedex 20, France

15:45 **Transport properties analysis of crystalline silicon micro beams for thermoelectric applications by simulations and measurements** — I o-7.8
Andrej Stranz, Marc Salleras, Marc Dolcet, Luis Fonseca
IMB-CNM (CSIC), 08193 Bellaterra, Spain

16:00 **Coffee break**

Poster session : Marco Fornari and Shuang Jia

16:30 **Experimental and theoretical investigations of thermoelectric properties of thiospinel CuCr2-xTixS4** — I p-2.1
P. Kamińska (a), H.-W. Son (b), P. Śpiewak (a), D. Berthebaud (c), A. Maignan (d), W. Święszkowski (a), T. Mori (b)
(a) Faculty of Materials Science and Engineering, Warsaw University of Technology, Wołoska 141, 02-507 Warsaw, Poland, (b) International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Namiki 1-1, Tsukuba 305-0044, Japan, (c) CNRS-Saint Gobain-NIMS, UMI 3629, Laboratory for Innovative Key Materials and Structures (LINK), NIMS, Namiki 1-1, Tsukuba 305-0044, Japan, (d) Laboratoire de Cristallographie et Sciences des Materiaux (CRISMAT), Normandie Universite, UMR6508 CNRS, ENSICAEN, UNICAEN, 14000 Caen, France,

16:30 **Ba substitution effect on thermoelectric properties of SrSi2** — I p-2.2
Motoharu Imai, Shiva K. Singh
National Institute for Materials Science

16:30 **Thermoelectric Cu-Se chalcogenides deposited by Pulsed Hybrid Reactive Magnetron Sputtering (PHRMS)** — I p-2.3
E. Flores, O. Caballero-Calero, F. Briones, M. Martin-Gonzalez.
FINDER-group, Instituto de Micro y Nanotecnología, IMN-CNM, CSIC (CEI UAM CSIC) Isaac Newton, 8, E-28760, Tres Cantos, Madrid (Spain)

16:30 **The Effect of Hydrogen Exposure on Thermoelectric Power of MoS2** — I p-2.4
Hyun-Seok Jang, Jun Woo Jeon, Won Taek Jung, Byung Hoon Kim*
1. Department of Physics, Incheon National University, 22012, Incheon, Republic of Korea 2. Institute of Basic Science, Incheon National University, 22012, Incheon, Republic of Korea

16:30 **Thermoelectric Materials: Tetrahedrite Synthesized via Scalable One-step Mechanochemical Process** — I p-2.5
Peter Baláž1, Emanuel Guilmeau2, Oleksandr Dobrozhan1,3, Matej Baláž1, Michal Hegedus4, Tristan Barbier2, Nina Daneu5, Marcela Achimovičová1,6, Jaroslav Briančin1, Mária Kaňuchová7, Zdenka Bujňáková1
1 Institute of Geotechnics, Slovak Academy of Sciences, Watsonova 45, 04001 Košice, Slovakia 2 Laboratoire CRISMAT, UMR 6508 CNRS/ENSICAEN, 6 Boulevard du Marechal Juin, 14050 Cedex 4, Caen, France 3 Sumy State University, Rymskogo-Korsakova 2, 40007 Sumy, Ukraine 4 GEOtest, a.s., Šmahova 1244/112, 62700 Brno, Czech Republic 5 Jozef Stefan Institute, Jamova cesta 39, S1-1000 Ljublana, Slovenia 6 Institute of Mineral and Waste Processing, Waste Disposal and Geomechanics, University of Technology, 38678 Clausthal, Germany 7 Institute of Mineral of Earth Resources, Faculty of Mining, Ecology, Process Control and Geotechnologies, Technical University in Košice,Letná 9, 04001 Košice, Slovakia

16:30 **Systematic study in the Organic Thermoelectric devices via inkjet printing process** — I p-2.6
Namhun Kimb) and Sung Hyun Kim a)
a) Department of Carbon Fusion Engineering, Wonkwang University, Iksan, Jeonbuk 54538, Republic of Korea. b)Division of Microelectronics and Display Technology, Wonkwang University, Iksan, Jeonbuk 54538, Republic of Korea.

16:30 **Morphology/doping level relation in PEDOT-Tos thin films using a super-undopant on the thermoelectric properties** — I p-2.7
Morgan Lépinoy, Patrice Limelette, Bruno Schmaltz, François Tran Van
Morgan Lépinoy : Université de Tours, CNRS, GREMAN UMR 7347, Parc de Grandmont, 37200 Tours, France and Université de Tours, PCM2E EA 6299, Parc de Grandmont, 37200 Tours, France , Patrice Limelette : Université de Tours, CNRS, GREMAN UMR 7347, Parc de Grandmont, 37200 Tours, France , Bruno Schmaltz : Université de Tours, PCM2E EA 6299, Parc de Grandmont, 37200 Tours, France , François Tran Van : Université de Tours, PCM2E EA 6299, Parc de Grandmont, 37200 Tours, France

16:30 **An Atlas of Anisotropic Lattice Thermal Conductivity: Application to Layered Materials** — I p-2.8
Prashun Gorai, Robert McKinney, Eric Toberer, Vladan Stevanovic
Colorado School of Mines, National Renewable Energy Laboratory, Golden, CO 80401, USA.

16:30 **The effect of grain size on the thermoelectric properties of hot-pressed Bi0.3Sb1.7Te3 alloys** — I p-2.9
I.Ioannou*, E.Symeou*,P.Ioannou,* T.Kyratsi* , J.Giapintzakis*
*Department of Mechanical and Manufacturing Engineering, University of Cyprus, Kallipoleos Avenue 75, P.O. Box 20537 ,Nicosia 1678, Cyprus

16:30 **Fabrication of silver pastes from leaching solutions of catalyst wastes and their application to thermoelectric devices** — I p-2.10
Suhyeon Lee1, Stanley Abbey2, Kim Jong Bae1, Hanhwi Jang3, Dongkyu Lee4, Min-Wook Oh2*
1. Flexible Thermoelectric Device Technology Center, Republic of Korea 2. Department of Materials Science and Engineering, Hanbat National University, Republic of Korea 3. Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Republic of Korea 4. School of Materials Science and Engineering, Gwangju Institute of Science and Technology, Republic of Korea

16:30 **Uncertainty analysis for thermoelectric measurement using a microdevice technique** — I p-2.11
Hosun Shin, Seong Gi Jeon, Jae Yong Song
KRISS (Korea Research Institute of Standards & Science)

16:30 **Copper-halide polymer nanowires for thermoelectrics** — I p-2.12
Min-Seok Kim, Kahyun Hur
Korea Institute of Science and Technology Computational Science Research Center

16:30 **Synthesis and characterization of Cu12-x-yZnxFeySb4S13-z tetrahedrites** **I p-2.13**
F. Neves, J. B. Correia, E.B. Lopes, A.P. Gonçalves
LNEG, Laboratório Nacional de Energia e Geologia, Estrada do Paço do Lumiar, 22, 1649-038 Lisboa, Portugal, LNEG, Laboratório Nacional de Energia e Geologia, Estrada do Paço do Lumiar, 22, 1649-038 Lisboa, Portugal, C2TN, Instituto Superior Técnico, Universidade de Lisboa, Estrada Nacional 10, 2695-066 Bobadela LRS, Portugal, C2TN, Instituto Superior Técnico, Universidade de Lisboa, Estrada Nacional 10, 2695-066 Bobadela LRS, Portugal

16:30 **Solvothermal synthesis of Sb2Te3 nanoplates under various synthetic conditions and thermoelectric properties of sintered pellet** **I p-2.14**
Ji Eun Lee, Hye Jin Im, Bokun Koo, Min-Soo Kim
Korea Electrotechnology Research Institute

16:30 **Development of mixed anion thermoelectrics** **I p-2.15**
Maud Einhorn, David O. Scanlon
Department of Chemistry, University College London, 20 Gordon Street, London, WC1H 0AJ, UK, Department of Chemistry, University College London, 20 Gordon Street, London, WC1H 0AJ, UK, Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Didcot, Oxfordshire, OX11 0DE, UK

16:30 **Spongy Bi2Te3** **I p-2.16**
Olga Caballero-Calero, Rut Martinez-Moro, Marisol Martín-González
Instituto de Micro y Nanotecnología, IMN-CNM,CSIC (CEI UAM+CSIC) Isaac Newton, 8, E-28760, Tres Cantos, Madrid, Spain

16:30 **Enhancement of thermoelectric performance in Nb-doped SrTiO3 ceramics by processing conditions** **I p-2.17**
Alexander Tkach, João Resende, Pablo Diaz Chao, Emmanuel Guilmeau, M. Elisabete Costa, Paula M. Vilarinho
Alexander Tkach CICECO – Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, University of Aveiro, Aveiro, Portugal, João Resende CICECO – Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, University of Aveiro, Aveiro, Portugal, Pablo Diaz Chao Laboratoire CRISMAT, UMR 6508, CNRS, ENSICAEN, Caen, France, Emmanuel Guilmeau Laboratoire CRISMAT, UMR 6508, CNRS, ENSICAEN, Caen, France, M. Elisabete Costa CICECO – Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, University of Aveiro, Aveiro, Portugal, Paula M. Vilarinho CICECO – Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, University of Aveiro, Aveiro, Portugal

16:30 **Theoretical investigation EuTiO3 in three structures optical, electric and magnetic properties** **I p-2.18**
C. Azahaf,H, Zaari, noureddine lakouari, A. Benyoussef, H. EZ-Zahraouy, A. El Kenz
Laboratoire de Matière Condensée et Sciences Interdisciplinaires

16:30 **Fabrication of porous SnS nanosheets and their combination with conductive polymer for hybrid thermoelectric application** **I p-2.19**
Jooheon Kim
School of Chemical Engineering & Materials Science, Chung-Ang University

16:30 **Lattice Thermal Conductance of aperiodic DNA-like systems** **I p-2.20**
J. E. González1, A. L. Marcos-Viquez1, L. A. Perez2, and M. Cruz-Irrison1
1ESIME-Culhuacán, Instituto Politécnico Nacional, Av. Santa Ana 1000, 04430, CDMX, México 2Instituto de Física, Universidad Nacional Autónoma de México, CDMX, México

phase-change materials, polymers and thin film : Y. Miyazaki and T. Cailat

08:30 INV **Atomic-Scale Visualization and Quantification of Configuration Entropy towards Materials with Ultralow Thermal Conductivity** **I o-8.1**
Xiaoyuan Zhou
Chongqing University, China

09:00 INV **Colossal Seebeck effect observed for metallic Cu2Se** **I o-8.2**
T. Takeuchi1 *, R. Sobota1*, D. Byeon1, K. D.-Codrin1, S. Choi1, K. Hirata1, M. Adachi2, M. Kiyama2, T. Matsuura2, Y. Yamamoto2, and M. Matsunami1
1Toyota Technological Institute, Hisakata 2-12-1, Tempaku, Nagoya 468-8511, Japan 2Sumitomo Electric Industries, Ltd., Konyo Kita 1-1-1, Itami, Hyogo 664-0016, Japan.

09:30 **Quasi-two-dimensional GeSbTe compounds as promising thermoelectric materials** **I o-8.3**
Tian-Ran Wei, Ping Hu, Pengfei Qiu, Xun Shi, Lidong Chen
Shanghai Institute of Ceramics Chinese Academy of Sciences, Shanghai Jiao Tong University

09:45 **Organometallic coordination polymers for thermoelectric applications** **I o-8.4**
Zilu Liu, Tianjun Liu, Oliver Fenwick, Bob C. Schroeder
1. Zilu Liu and Bob C. Schroeder, Department of Chemistry, University College London, London WC1H 0AJ, UK., 2. Tianjun Liu, Oliver Fenwick, School of Engineering and Materials Science, Queen Mary University of London, London E1 4NS, UK.

10:00 **Hybrid TiS2/Amines for high-performance printed thermoelectrics** **I o-8.5**
Stéphane Jacob (a), Bruno Delatouche (a), Daniel Péré (a), Zia Ullah Khan (a,b), Xavier Crispin (b), Radoslaw Chmielowski (a)
(a) IMRA EUROPE SAS, 220 rue Albert Caquot, 06904 Sophia Antipolis, France, (b) Laboratory of Organic Electronics, Linköping University, 60174, Norrköping, Sweden

10:15 **Towards flexible organic thermoelectric generators** **I o-8.6**
M. Cassinelli, M. Caironi.
M. Cassinelli, M. Caironi: Italian Institute of Technology, via Pascoli 70/3, 20133 Milano

10:30 **Polymer gels with tunable ionic Seebeck coefficient for ultra-sensitive printed thermopiles** **I o-8.7**
Dan Zhao1, Anna Martinelli2, Andreas Willfahrt1, Diana Bernin2, Magnus P. Jonsson1, Simone Fabiano1, Xavier Crispin1
1. Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, SE-60174, Norrköping, Sweden, 2. Department of Chemistry and Chemical Engineering, Chalmers University of Technology, SE-41296, Gothenburg, Sweden

10:45 **Thermoelectric Properties of Conducing Polymers Doped by Solid-State Diffusion for Probing Energy-Dependent Charge Transport** **I o-8.8**
Keehoon Kang1, Sam Schott2, Deepak Venkateshvaran2, Katharina Broch3, Guillaume Schweicher2, Youngrok Kim1, Cameron Jellet4, Christian Nielsen5, Iain McCulloch4, Takhee Lee1, Henning Sirringhaus2
1Department of Physics and Astronomy, Seoul National University, Seoul 08826, Korea, 2Cavendish Laboratory, University of Cambridge, J. J. Thomson Avenue, Cambridge CB3 0HE, UK, 3Institut fur Angewandte Physik, University of Tuebingen, Germany, 4Department of Chemistryand Centre for Plastic Electronics, Imperial College, London, UK, 5Materials Research Institute and School of Biological and Chemical Sciences, Queen Mary University, London, UK

11:00 **In-plane thermal conductivity of critically strained thermoelectric thin films** **I o-8.9**
Elisabetta Dimaggio, Dario Narducci, Giovanni Pennelli
Elisabetta Dimaggio: Dipartimento di Ingegneria dell'Informazione, Universita' di Pisa, Via G. Caruso 16, 56122 Pisa, Italy, Dario Narducci: Dipartimento di Scienza dei Materiali, Universita' di Milano, Bicocca Via R. Cozzi 55, 20125 Milan, Italy, Giovanni Pennelli: Dipartimento di Ingegneria dell'Informazione, Universita' di Pisa, Via G. Caruso 16, 56122 Pisa, Italy,

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM J

Nuclear Materials

Symposium Organizers :

Claude DEGUELDRE, Lancaster University, U.K.

Rodney C. EWING, University of Stanford, USA

Chaitanyamoy GANGULY, University Gandhinagar, Gujarat, India

Gregory R. LUMPKIN, ANSTO, Australia

To be published in Nuclear Instruments Methods B, Elsevier

Monday 27 may 2019

09:00 **Welcome address by G. Kiriakidis (E-MRS President)**

09:05 **Introduction to the Nuclear Materials Symposium by C. Degueldre et al. (Symposium organizers)**

Fuel from mining to production : NN

09:15 INV **Manufacturing Challenges for High Density Fuel Materials** J 1.1
D. T. Goddard
National Nuclear Laboratory, Preston Laboratory, Springfields, Preston, Lancs. PR4 0XJ

09:45 **ZnO Nanorods and Amidoxime Co-Functionalized Ramie Fiber Adsorbent for Uranium Extraction** J 1.2
Zhenyuan Bai 1, Jun Wang 1,2
1 College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, P.R. China, 2 Key Laboratory of Superlight Material and Surface Technology, Ministry of Education, Harbin Engineering University, 150001, PR China.

10:00 **Preparation of Mg2CO3(OH)2/PAN and Its Adsorption Properties for Uranium** J 1.3
Ju Peihai1，Wang Jun1,2
1 Key Laboratory of Superlight Material and Surface Technology, Ministry of Education, Harbin Engineering University, Harbin 150001，Heilongjiang，China, 2College of Material Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, Heilongjiang

10:15 **Polyethylenimine Modified Polyacrylonitrile Cloth for Uranium Adsorption from Seawater** J 1.4
Huiquan Gu1, Qi Liu1, Jun Wang1,2
(1) College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, P.R. China. (2) Key Laboratory of Superlight Material and Surface Technology, Ministry of Education, Harbin Engineering University, 150001, PR China.

10:30 **Coffee break**

10:45 **Highly efficient immobilization of uranium(VI) from seawater by phosphonate-functionalized Luffa fiber** J 1.5
Jiawu Gao1, Jingyuan Liu1, 2, Jun Wang1, 2
1 College of Material Science and Chemical Engineering, Harbin Engineering University, 150001, PR China, 2 Key Laboratory of Superlight Material and Surface Technology, Ministry of Education, Harbin Engineering University, 150001, PR China.

11:00 **Preliminary study of annular fuel fabrication by using hot extrusion method in a viewpoint of microstructure** J 1.6
Sang Gyu Park, Jeong Yong Park
Korea Atomic Energy Research Institute

11:15 **Experimental and numerical assessments of grain boundaries energy in polycrystalline uranium dioxide** J 1.7
A. KSIBI1, X. ILTIS1, E. BOURASSEAU1, A. PENA2, B. MENAERT2, D. DROUAN1, A. MIARD1, G. LAPERTOT3, J.-P. BRISON3, R. C. BELIN1
1- CEA, Centre de Cadarache-DEN/DEC, 13108 St Paul Les Durance, France
2- Institut Néel CNRS/UJF, 25 rue des Martyrs, BP 166, F38042 Grenoble Cedex 9, France 3- CEA, Centre de Grenoble-DRF/INAC/PHELIQS/MAPEC, 38054 Grenoble Cedex 9, France

11:30 **Study of UO2 sintering first stage by in situ HT-ESEM** J 1.8
Victor TRILLAUD, Renaud PODOR, Nicolas DACHEUX, Nicolas CLAVIER
Institut de Chimie Séparative de Marcoule, UMR 5257 CEA-CNRS-ENSCM-Univ. Montpellier, Site de Marcoule – 30207 Bagnols/Cèze cedex, France

11:45 **Multiparametric study of the hydrothermal conversion of uranium (IV) oxalate** J 1.9
Jérémie Manaud, Jérôme Maynadié, Daniel Meyer, Adel Mesbah, Nicolas Dacheux, Nicolas Clavier
ICSM - UMR 5257 - CEA, CNRS, ENSCM, Univ Montpellier, Site de Marcoule, BP 17171, 30207 Bagnols/Ceze cedex, France

12:00 **The effect of temperature on the efficiency of UO2 pellet compaction: observations and mechanisms** J 1.10
V.A. Borodin(1,2), A.V. Tenishev(1), D.P. Shornikov(1)
(1) National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia, (2) NRC «Kurchatov Institute», Moscow, Russia

12:15 **Lunch**

13:30 INV **The impact of protactinium on the proliferation resistance of thorium power** J 1.11
Eva C. Uribe
Systems Research and Analysis Group, Sandia National Laboratories, California

14:00 **Is thorium really more abundant than uranium?** J 1.12
Claude Degueldre*, Malcolm Joyce
Nuclear Engineering Group, Engineering Department, Lancaster University LA1 4YW, UK *E-mail: c.degueldre@lancaster.ac.uk

14:15 **Rapid Photochemical Reduction of U(VI) for the Development of New Mixed Metal Oxide Fuel Production Processes** J 1.13
Michael A Bromley (a),* Colin Boxall (a), Robin Taylor (b), Mark Sarsfield (b)
(a) Lancaster University, Engineering, Gillow Avenue, Lancaster, LA1 4YW, UK (b) National Nuclear Laboratory, Central Laboratory, Sellafield, Cumbria, CA20 1PG, UK

14:30 **Improved Water Corrosion Resistance of Advanced U3Si2** J 1.14
Lu Cai(1), Kathryn Metzger(1), Edward J. Lahoda(1), Frank Boylan(1), Peng Xu(1), Andrew Atwood(1), Robert L. Oelrich(1), Bowen Gong(2), Jie Lian(2)
(1) Westinghouse Electric Company LLC, U.S.A., (2) Rensselaer Polytechnic Institute

14:45 **High performance Nano-Ceramic Oxide Coatings for Accident Tolerant Fuel concept** J 1.15
Mattia Cabrioli, Erkka Frankberg, Matteo Vanazzi, Fabio Di Fonzo
Politecnico di Milano Energy Department, Center for Nano Science and Technology Istituto Italiano di Tecnologia, Center for Nano Science and Technology Istituto Italiano di Tecnologia, Center for Nano Science and Technology Istituto Italiano di Tecnologia, Center for Nano Science and Technology Istituto Italiano di Tecnologia

15:00 **Oxidation behavior of TRISO fuel graphitic matrix materials in water vapor** J 1.16
Haiming Wen, Jiaqi Duan, Hans Pommerenke, Adam Bratten
Missouri University of Science and Technology, USA

15:15 **U1-xPuxO2±δ fuel precursor synthesis through advanced thermal denitration in presence of organic additive** J 1.17
Martin LEBLANC, Gilles LETURCQ, Eléonore WELCOMME, Xavier DESCHANELS, Thibaud DELAHAYE
CEA, DEN, MAR/DMRC/SFMA/LPCA, F-30207 Bagnols-sur-Cèze Cedex, France and Institut de Chimie Séparative de Marcoule, ICSM UMR5257, Centre de Marcoule, F-30207, CEA, DEN, MAR/DMRC/SFMA/LPCA, F-30207 Bagnols-sur-Cèze Cedex, France, CEA, DEN, MAR/DMRC/SFMA/LPCA, F-30207 Bagnols-sur-Cèze Cedex, France, Bagnols/Cèze, France, Institut de Chimie Séparative de Marcoule, ICSM UMR5257, Centre de Marcoule, CEA, DEN, MAR/DIR, F-30207 Bagnols-sur-Cèze Cedex, France

15:30 **Modelling of Plutonium Self-diffusion in Uranium, Plutonium Mixed Oxide (MOx) using DICTRA code** J 1.18
Prantik Chakraborty, A. Chartier, C. Guéneau
Den-Service de la Corrosion et du Comportement des Matériaux dans leur Environnement (SCCME), CEA, Université Paris-Saclay, F-91191, Gif-sur-Yvette, France

15:45 **Green fuel production: application of the hot compressed water decomposition of oxalates for PuO2 and MOX** J 1.19
Karin Popa, Olaf Walter
European Commission, Joint Research Centre, P.O. Box 2340, D-76125 Karlsruhe, Germany

16:00 **Coffee break**

Poster J: Nuclear Materials : NN

16:15 **Multifunctional nanoceramic barrier for future generation nuclear systems** **J P1.1**
Daniele Iadicicco, Boris Paladino, Matteo Vanazzi, Patricia Munoz, Serena Bassini, Marco Utili, Fabio Di Fonzo
Center for NanoScience and Technology (CNST) Istituto Italiano di Tecnologia (IIT), Center for NanoScience and Technology (CNST) Istituto Italiano di Tecnologia (IIT), Department of Energy at Politecnico Milano, Center for NanoScience and Technology (CNST) Istituto Italiano di Tecnologia (IIT), Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT), Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile (ENEA), Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile (ENEA), Center for NanoScience and Technology (CNST) Istituto Italiano di Tecnologia (IIT)

16:15 **THORIUM SALT NETWORK: APPLYING BLOCKCHAIN TECHNOLOGY TO MOLTEN SALT REACTOR SYSTEMS** **J P1.2**
Jeremiah Emanuel Josey
Thorium Salt Network, MECi Group, Baar, CH-6340, Switzerland

16:15 **Waste forms for highly saline nuclear wastes** **J P1.3**
S.N. Kalmykov, V.G. Petrov, A.A. Zherebtsov, A.P. Varlakov, A.V. Dmitrieva, V.V. Kapustin
Lomonosov Moscow State University, department of chemistry

16:15 **Radionuclide sequestration in wastewater and seawater by post treatment of hierarchical ZIF-based electrospun mat** **J P1.4**
Xiaoyan Jing, Wenting Li
(1) College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, P.R. China. (2) Key Laboratory of Superlight Material and Surface Technology, Ministry of Education, Harbin Engineering University, 150001, PR China.

16:15 **Understanding of the Kinetics of Defect Annealing in Heavily Irradiated Binary and Complex Oxides – Disordering Effects** **J P1.5**
A. I. Popov, E.A. Kotomin, V.N. Kuzovkov
Institute of Solid State Physics, University of Latvia, 8 Kengaraga Str., Riga LV1063, Latvia

16:15 **Simulating uranium sorption onto inorganic, organic and bioorganic model substrates: effect of redox potential** **J P1.6**
S McGowan, C. Degueldre
Department of Engineering, University of Lancaster LA1 4YW

16:15 **Surface nanoscale defects induced by single swift heavy ions in crystalline oxides** **J P1.7**
J. O'Connell1, G. Aralbayeva2, V. Skuratov3,4,5, M. Saifullin3, A. van Vuuren1, A. Akilbekov2, M. Zdorovets6,7, A. Seitbayev2, A. Dauletbekova2
1CHRTEM, NMU, University Way, Summerstrand, Port Elizabeth, South Africa 2L.N. Gumilyov Eurasian National University, Astana, Kazakhstan, 010008 3FLNR, JINR, Joliot-Curie 6, 141980 Dubna, Russia 4National Research Nuclear University MEPhI, Moscow, Russia 5Dubna State University, Dubna, Russia 6Institute of Nuclear Physics, Astana, Kazakhstan 7Ural Federal University, Yekaterinburg, Russia.

16:15 **A molecular dynamics study of irradiation creep deformation mechanisms in α-zirconium** **J P1.8**
N. Khiara [1], L. Dupuy [1], F. Onimus [1], J.P. Crocombette [1], T. Pardoen [2], J-P. Raskin [2], Y. Bréchet [3]
[1] CEA Saclay, Gif-sur-Yvette, France , [2] Université Catholique de Louvain, Louvain-la-Neuve, Belgique , [3] INPG, Université Grenoble Alpes, 38402 Saint Martin d'Hères - France

16:15 **Modeling of F-type Centers Thermal Annealing in Neutron Irradiated and Thermochemically Reduced ZnO and BeO single crystals** **J P1.9**
A. I. Popov, E.A. Kotomin, V.N. Kuzovkov
Institute of Solid State Physics, University of Latvia, 8 Kengaraga Str., Riga LV1063, Latvia

16:15 **High efficiency extraction of U(VI) from seawater by polyaniline cross-linked graphene oxide (GO)** **J P1.10**
JunWang, Peipei Yang
(1) College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, P.R. China. (2) Key Laboratory of Superlight Material and Surface Technology, Ministry of Education, Harbin Engineering University, 150001, PR China.

16:15 **Improved Model for Atomic Displacement Calculation** **J P1.11**
Shengli Chen, David Bernard, Jean Tommasi, Cyrille De Saint Jean
CEA, Cadarache

16:15 **Fuel additives to control lanthanides in metallic nuclear fuels** **J P1.12**
Michael T. Benson, Yi Xie, Jason M. Harp, Lingfeng He, James A. King, Jinsuo Zhang, Indrajit Charit, Samrat Choudhury
Michael T. Benson, Yi Xie, Jason M. Harp, Lingfeng He, James A. King - Idaho National Laboratory Jinsuo Zhang - Virginia Polytechnic Institute and State University Indrajit Charit, Samrat Choudhury - University of Idaho

16:15 **Carbon Dots-capped Magnetic Metal-organic Frameworks as a bi-functional Adsorbent for Uranium Enrichment** **J P1.13**
Qi Liu, Xuejie Guo
1. College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, P.R. China. 2. Key Laboratory of Superlight Material and Surface Technology, Ministry of Education, Harbin Engineering University, 150001, PR China.

16:15 **Synthesis of actinides-based hybrids nanomaterials using bottom up approach** **J P1.14**
Elisa Re, Jérôme Maynadie, Daniel Meyer, Xavier Le Goff
Institut de Chimie Séparative de Marcoule, UMR 5257 CEA/CNRS/UM/ENSCM, Site de Marcoule – Bât. 426, BP 1717130207, Bagnols / Cèze cedex, France

16:15 **Experience of fuel cycle management with different types of fuels used in of Indian Light Water Reactor Plants** **J P1.15**
Yatendra Kumar Pandey, David Nesaraj, Gautam Biswas*
Nuclear Power Corporation of India Limited, Nabhikiya Urja Bhavan, Anushaktinagar, Mumbai &#8211, 400094, India

16:15 **Raman studies of crystalline state in InP irradiated with heavy ions** **J P1.16**
Peipei Hu (a,b), Jie Llu (a), Jian Zeng(a), Pengfei Zhai (a), Shengxia Zhang (a),Lijun Xu (a,b), Zongzhen Li (a,b), Liu Li (a,b)
a.Institute of Modern Physics, Chinese Academy of Sciences (CAS), Lanzhou 730000, PR China, b.University of Chinese Academy of Sciences (UCAS), Beijing 100049, PR China,

16:15 **Influence of the induced F0-center to the electronic structure of Mn-doped YAlO3: Prediction from the first principles** **J P1.17**
S. Piskunov, I. Isakovica, A. I. Popov
Institute of Solid State Physics, University of Latvia, 8 Kengaraga Str., Riga LV1063, Latvia

16:15 **Electron beam welding system for HANARO fuel rods** **J P1.18**
Kyuhong Lee, Wonjae So, Jonghwan Kim, Ki Nam Kim, Jung Min Do, Sunghwan Kim, Yong Jin Jeong, Jong Man Park
Korea Atomic Energy Research Institute, 111, Daedeok-daero 989Beon-gil, Yuseong-gu, Daejeon, Republic of Korea

16:15 **Evaluation of Fission Gas Released Isotopes in the Fuel Rods of Boiling Water Reactors and Pressurized Water Reactors** **J P1.19**
Claude Degueldre, Daniel Ulloa Garza, Hans-Holger Wiese
Engineering Department, Lancaster University, LA1 4YW, UK Laboratory of Nuclear Materials, Paul Scherrer Institute, CH-5232Villigen Hot Laboratory, Paul Scherrer Institute, CH-5232Villigen

16:15 **Kinetic study on the evolution of nanoceramic coatings under heavy ions irradiation** **J P1.20**
Matteo Vanazzi, Boris Paladino, Luca Ceseracciu, Gaelle Gutierrez, Celine Cabet, Jing Hu, Meimei Li, Fabio Di Fonzo
Center for Nano Science and Technology (CNST@PoliMi) - Istituto Italiano di Tecnologia (IIT), Dipartimento di Energia - Politecnico di Milano, Smart Materials, Nanophysics - Istituto Italiano di Tecnologia (IIT), DEN, Service de Recherches de Métallurgie Physique - CEA, DEN, Service de Recherches de Métallurgie Physique - CEA, Nuclear Engineering Division - Argonne National Laboratory (ANL), Nuclear Engineering Division - Argonne National Laboratory (ANL), Center for Nano Science and Technology (CNST@PoliMi) - Istituto Italiano di Tecnologia (IIT)

16:15 **A Transportable Thorium-fuelled Molten Salt Reactor Materials Requirements** **J P1.21**
John David Simnett, Phil Holden, Claude Degueldre.
John David Simnett, Phil Holden', Sustainable Energy Microsystems Community Interest Company («Sustenerg») Claude Degueldre, Lancaster University

16:15 **Effect of 1 MeV Au irradiation on nanocrystalline ZrN thin films optical properties** J P1.22
C. Martin1, K.H. Miller2, D. Craciun3, R. Martin1, G. Dorcioman3, M. D. Dracea4, D. Pantelica4, B. S. Vasile5, and V. Craciun3, 6
1Ramapo College, New Jersey, USA, 2NASA Goddard Space Flight Center, Greenbelt, MD, USA, 3National Institute for Lasers, Plasma and Radiation Physics, Măgurele, Romania, 4Horia Hulubei National Institute for Physics and Nuclear Engineering, Măgurele, Romania, 5Faculty of Applied Chemistry and Material Science, Polytechnic University of Bucharest, Bucharest, Romania, 6Extreme Light Infrastructure-Nuclear Physics, Magurele, Romania

16:15 **Study of the Cs-Na-Mo-O system for the safety assessment of the SFR: From experimental measurements to Calphad modelling** J P1.23
G. Kauric, A.L. Smith, S.Bordier, S.Gossé, C. Guéneau
DEN-Service de la Corrosion et du Comportement des Matériaux dans leur Environnement (SCCME), CEA, Université Paris-Saclay, F-91191 Gif-sur-Yvette cedex, France , Delft University of Technology, Faculty of Applied Sciences, Radiation Science & Technology Department, Reactor Physics and Nuclear Materials (RPNM), Mekelweg 15, 2629 JB Delft, The Netherlands , DEN-Service de la Corrosion et du Comportement des Matériaux dans leur Environnement (SCCME), CEA, Université Paris-Saclay, F-91191 Gif-sur-Yvette cedex, France , DEN-Service de la Corrosion et du Comportement des Matériaux dans leur Environnement (SCCME), CEA, Université Paris-Saclay, F-91191 Gif-sur-Yvette cedex, France , DEN-Service de la Corrosion et du Comportement des Matériaux dans leur Environnement (SCCME), CEA, Université Paris-Saclay, F-91191 Gif-sur-Yvette cedex, France

16:15 **Modeling of H2O-HNO3-UO2(NO3)2-TBP-dodecane System** J P1.24
A. V. Ochkin, S. V. Stefanovsky
D. Mendeleev University of Chemical Technology, Frumkin Institute of Physical Chemistry and Electrochemistry of the Russian Academy of Sciences

16:15 **Some Problems in Reprocessing of Spent Fuel with Modern Power Reactors** J P1.25
A.V. Ochkin, S.V. Stefanovsky
D. Mendeleev University of Chemical Technology, Frumkin Institute of Physical Chemistry and Electrochemistry of the Russian Academy of Sciences

16:15 **A high-efficiency seawater uranium adsorbent based on natural minerals** J P1.26
Hengbin Xu, Milin Zhang
Key Laboratory of Superlight Material and Surface Technology, Ministry of Education, Harbin Engineering University, 150001, PR China

16:15 **X-ray absorption spectroscopy studies of wasteforms for higher activity wastes in the United Kingdom** J P1.27
Neil Hyatt, Amber Mason, Lucy Mottram, Shi Kuan Sun, Martin Stennett and Claire Corkhill.
Department of Materials Science & Engineering, The University of Sheffield, Mappin Street, Sheffield, S1 3JD, UK.

16:15 **Development of High-density LEU Dispersion Targets for Mo-99 Using Atomized Uranium Alloy Powder** J P1.28
Ki Nam Kim, Jong Hwan Kim, Sunghwan Kim, Kyuhong Lee, Yong Jin Jeong, Jong Man Park
Korea Atomic Energy Research Institute

16:15 **Ligand-separation enhanced U(VI) adsorption of NiCo-LDHs/ZIF-67 at seawater pH** J P1.29
Shouzheng Su 1, Hong xia 1 and Jun Wang 1,2,3
1 College of Nuclear Science and Technology, Harbin Engineering University, Harbin 150001, China, 2 Key Laboratory of Superlight Material and Surface Technology, Ministry of Education, Harbin Engineering University, Harbin 150001, China, 3 College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, China,

16:15 **Comparison of the F-type center thermal annealing in irradiated Al2O3 and Y3Al5O12 single crystals** J P1.30
V.N. Kuzovkov (a), A.I. Popov (a), E.A. Kotomin (a), M. Izerrouken (b), R. Villa (c)
(a) Institute of Solid State Physics, University of Latvia, Riga, Latvia, (b) Nuclear Research Center of Draria, Algiers, (c) CIEMAT, Madrid, Spain

16:15 **Gamma phase stability in U-Mo Alloys: A new perspective** J P1.31
R. Rakesh(1), V. P. Sinha(1), and R. Tewari(2)
(1) Metallic Fuels Division, (2) Materials Science Division, Bhabha Atomic Research Centre, Mumbai 400085

Tuesday 28 may 2019

Structural materials : NN

08:30 INV **Overview of Nuclear Energy in China and material needs** J 2.1
Tong Liu
China Nuclear Power Technology Research Institute

09:00 **He behaviour in Zr/Nb multilayer nanocomposites** J 2.2
Huseyin Sener Sen, Tomas Polcar
ADVAMAT Group, Department of Control Engineering, Czech Technical University in Prague, Technicka 2, 16627 Prague 6, Czech Republic

09:15 **Improvement of corrosion resistance in zirconium alloy processed by pulsed laser** J 2.3
Junkai LIU, Wenbo LIU, Di YUN, Guanghai BAI, Meiyi Yao, Zhixin XIA
Xi'an Jiaotong University, Xi'an Jiaotong University, Xi'an Jiaotong University, Suzhou Nuclear Power Research Institute, Shanghai University, Suzhou University,

09:30 **Use of Small-Angle Neutron Scattering to understand LWR fuel cladding performance** J 2.4
Kenneth C. Littrell
Oak Ridge National Laboratory

09:45 **MAX phases as accident-tolerant fuel clads: Cathodic arc deposition of the V2AlC MAX phase on steel and Zr-4 substrates** J 2.5
Clio Azina, Andrejs Petruhins, Igor Zhirkov, Binbin Xin, Johanna Rosen, Per Eklund
Thin Film Physics Division, Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-58183 Linköping, Sweden

10:00 **Coffee Break**

10:15 **High-temperature corrosion behavior of advanced FeCrAl + Ni alloys using high-pressure steam thermo-gravimetric analyzer** J 2.6
Chaewon Kim(a), Hyunmyung Kim(a), Lee Sung Yong(b), Changheui Jang(a)*
(a) Korea Advanced Institute of Science and Technology (KAIST), Daejeon 34141, Republic of Korea, (b) KEPCO Nuclear Fuel, Daejeon 34057, Republic of Korea

10:30 **425 °C thermal aging behavior of FeCrAl+Ni alloys: Microstructure and mechanical properties** J 2.7
Hyunmyung Kim(a), Chaewon Kim(a), Hun Jang(b), and Changheui Jang(a)*
(a) Korea Advanced Institute of Science and Technology (KAIST), Daejeon 34141, Republic of Korea, (b) KEPCO Nuclear Fuel, Daejeon 34057, Republic of Korea

10:45 **Influence of heavy ion irradiation on microstructure of oxide layer on 12%Cr ferritic-martensitic steel EP823** J 2.8
P. Dzhumaev (1), V. Borodin (1,2), O. Emelianova (1,3), M. Ganchenkova (1), A. Gentils (3), M. Leontieva-Smirnova (1,4), I. Naumenko (4), V. Yakushin (1)
(1) National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow, Russia, (2) NRC "Kurchatov Institute", Moscow, Russia, (3) CSNSM, Université Paris-Sud, CNRS/IN2P3, Université Paris-Saclay, Orsay, France, (4) A.A. Bochvar High-Technology Scientific Research Institute for Inorganic Materials (VNIINM), Moscow, Russia,

11:00 **Plenary**

12:30 **Lunch**

13:45 **Recent Progress on the Study of Radiation Tolerant Materials with Ion Beams** J 2.9
Lumin Wang
Department of Nuclear Engineering and Radiological Sciences, Department of Materials Science and Engineering, University of Michigan-Ann Arbor, Michigan 48109, USA

14:00 **Effect of Si addition on the mechanical property and oxidation behavior of spark plasma sintered ODS ferritic steel** J 2.10
Wahida R Ilaham and Tapas Laha
Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, India

14:15 **Nanoscale analysis of neutron irradiated ODS 14YWT ferritic alloy** **J 2.11**
Maria A. Auger, David T. Hoelzer, Kevin G. Field, Michael P. Moody
Physics Department, Universidad Carlos III de Madrid. Avenida Universidad 30, 28911 Leganes, Madrid, Spain, Oak Ridge National Laboratory, Oak Ridge, TN 37831, Tennessee, USA, Oak Ridge National Laboratory, Oak Ridge, TN 37831, Tennessee, USA, Department of Materials, University of Oxford. Parks Road OX1 3PH, Oxford, UK

14:30 **Microstructural response of ODS-EUROFER steel to helium ion implantation up to high doses** **J 2.12**
O. Emelyanova (1,2), A. Gentils (1), M.G. Ganchenkova (2), V.A. Borodin (2,3), P.V. Vladimirov (4), P. Dzhumaev (2) , I. Golovchanskiy (5), A. Moeslang (4)
(1) CSNSM, Université Paris-Sud, CNRS/IN2P3, Université Paris-Saclay, Orsay, France, (2) National Research Nuclear University MEPhI, Moscow, Russia, (3) NRC "Kurchatov Institute", Moscow, Russia, (4) Institute of Applied Materials, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany, (5) National University of Science and Technology MISIS, Moscow, Russia

14:45 **Nanostructured steels for enhanced mechanical properties and irradiation tolerance** **J 2.13**
Haiming Wen1, Andrew K. Hoffman1, Rinat K. Islamgaliev2
1 Missouri University of Science and Technology, USA, 2 Ufa State Aviation Technical University, Russia

15:00 **Effects of minor alloying elements on defect accumulation in high-Cr steels under neutron irradiation** **J 2.14**
N. Castin, A. Dubinko, D. Terentyev, M. Konstantinovic
Institute of Nuclear Material Science, SCK•CEN, Boeretang 200, Mol, Belgium,

15:15 **Corrosion Behavior of Ferritic-Martensitic Steels in Supercritical Water** **J 2.15**
Ziqiang Dong, Jingli Luo, Zihan Wang, Ming Zhang
Ziqiang Dong, Materials Genome Institute, Shanghai University, Jingli Luo, Chemical and Materials Engineering Department, University of Alberta Zihan Wang, Materials Genome Institute, Shanghai University, Ming Zhang, Materials Genome Institute, Shanghai University

15:30 **Coffee Break**

15:45 **Potential Impact of the SiC Defect Annealing Process on Design Basis Accidents in mHTGRs** **J 2.16**
Cihang Lu 1, Takaaki Koyanagi 2, Yutai Katoh 2, Kurt A. Terrani 2, Nicholas R. Brown 3
1 Pennsylvania State University, University Park, PA USA, 2 Oak Ridge National Laboratory, Oak Ridge, TN USA, 3 University of Tennessee-Knoxville, Knoxville, TN USA

16:00 **Tungsten-iron-borocarbide materials for radiation shielding in compact nuclear reactors** **J 2.17**
J. M. Marshall, D. Walker and P. A. Thomas
University of Warwick

16:15 **Enhancing irradiation tolerance in single-phase concentrated solid solution alloys by tuning chemical complexity** **J 2.18**
Chenyang Lu1,2, Fei Gao2, Yanwen Zhang3, Lumin Wang2
1. Department of Nuclear Science and Technology, Xi'an Jiaotong University, Xi'an 710049, China 2. Department of Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI 48109, United States 3. Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA

16:30 **Comparative Simulations of Defect Interactions in Fe and W using SEAKMC** **J 2.19**
Haixuan Xu
The University of Tennessee, Knoxville

16:45 **Radiation Damage in REBCO Materials for Compact Fusion Reactors** **J 2.20**
Rebecca Gray, Michael Rushton, Samuel Murphy
Lancaster University, Bangor University, Lancaster University

17:00 **Degradation and service life of reactor containment buildings in the Middle East and North Africa region** **J 2.21**
Boohyun An, Yongsun Yi, Pyungyeon Cho, Taeyeon Kim*, Paul Rostron, Akram AlFantazi
Khalifa University, Abu Dhabi, UAE. *presenting author

Fuel analysis and post irradiation management I : NN

17:15 **The US Nuclear Science User Facilities** **J 3.1**
J. Rory Kennedy
Idaho National Laboratory

17:30 **Fundamentals of Actinide Chemistry by Cutting Edge X-ray Methods and Models** **J 3.2**
K. O. Kvashnina
1 Rossendorf Beamline at ESRF – The European Synchrotron, CS40220, 38043 Grenoble Cedex 9, France. 2 Helmholtz Zentrum Dresden-Rossendorf (HZDR), Institute of Resource Ecology, PO Box 510119, 01314 Dresden, Germany

17:45 **Investigation of plutonium dioxide nanoparticles with spectroscopic and scattering synchrotron methods** **J 3.3**
Evgeny Gerber, Anna Romanchuk, Ivan Pidchenko, Christoph Hennig, Alexander Trigub, Stephan Weiss, Andreas Scheinost, Andre Rossberg, Gavin Vaughan, Lucia Amidani, Stepan Kalmykov, Kristina Kvashnina
Rossendorf Beamline at ESRF – The European Synchrotron, CS40220, 38043 Grenoble Cedex 9, France Helmholtz Zentrum Dresden-Rossendorf (HZDR), Institute of Resource Ecology, PO Box 510119, 01314 Dresden Lomonosov Moscow State University, Department of Chemistry, 119991 Moscow, Russia, Lomonosov Moscow State University, Department of Chemistry, 119991 Moscow, Russia, Rossendorf Beamline at ESRF – The European Synchrotron, CS40220, 38043 Grenoble Cedex 9, France Helmholtz Zentrum Dresden-Rossendorf (HZDR), Institute of Resource Ecology, PO Box 510119, 01314 Dresden, Rossendorf Beamline at ESRF – The European Synchrotron, CS40220, 38043 Grenoble Cedex 9, France Helmholtz Zentrum Dresden-Rossendorf (HZDR), Institute of Resource Ecology, PO Box 510119, 01314 Dresden, National Research Centre "Kurchatov Institute", 123182 Moscow, Russia, Helmholtz Zentrum Dresden-Rossendorf (HZDR), Institute of Resource Ecology, PO Box 510119, 01314 Dresden, Rossendorf Beamline at ESRF – The European Synchrotron, CS40220, 38043 Grenoble Cedex 9, France Helmholtz Zentrum Dresden-Rossendorf (HZDR), Institute of Resource Ecology, PO Box 510119, 01314 Dresden, Rossendorf Beamline at ESRF – The European Synchrotron, CS40220, 38043 Grenoble Cedex 9, France Helmholtz Zentrum Dresden-Rossendorf (HZDR), Institute of Resource Ecology, PO Box 510119, 01314 Dresden, European Synchrotron Radiation Facility (ESRF), Grenoble, 38000, France, Rossendorf Beamline at ESRF – The European Synchrotron, CS40220, 38043 Grenoble Cedex 9, France Helmholtz Zentrum Dresden-Rossendorf (HZDR), Institute of Resource Ecology, PO Box 510119, 01314 Dresden, Lomonosov Moscow State University, Department of Chemistry, 119991 Moscow, Russia, Rossendorf Beamline at ESRF – The European Synchrotron, CS40220, 38043 Grenoble Cedex 9, France Helmholtz Zentrum Dresden-Rossendorf (HZDR), Institute of Resource Ecology, PO Box 510119, 01314 Dresden,

18:00 **Modelling high resolution XANES for nuclear materials** **J 3.4**
Lucia Amidani, Ivan Pidchenko, Kristina Kvashnina
Helmholtz-Zentrum Dresden-Rossendorf, ROBL, Bautzner Landstraße 400, 01328 Dresden

18:15 **Developing Laboratory Based X-ray Absorption Spectroscopy for Nuclear Materials Science** **J 3.5**
Neil Hyatt, Martin Stennett, Sarah O'Sullivan, Lewis Blackburn, Chris Dixon Edwards, Amber Mason, Lucy Mottram and Claire Corkhill.
Department of Materials Science & Engineering, The University of Sheffield, Mappin Street, Sheffield, S1 3JD, UK.

Fuel analysis and post irradiation management II : NN

08:15 INV **Materials challenge of the MSR** J 3.6
Kirk Sorensen
CEO of Flibe Energy, Inc., Huntsville, Alabama, USA

08:45 **A kinetic rate theory interpretation of an in-situ Xe ion implantation experiment in single crystal Mo** J 3.7
Di YUN, Wenhua ZHANG, Xin XIE, Wenbo LIU
Xi'an Jiaotong University, Xi'an Jiaotong University, Xi'an Jiaotong University, Xi'an Jiaotong University,

09:00 **Investigation of radiation damage in yttria stabilized zirconia (YSZ):studies in the perspective of materials for nuclear energy** J 3.8
Parswajit Kalita, Santanu Ghosh, Gaël Sattonnay, Gaëlle Gutierrez, Udai B. Singh, Pawan K. Kulriya, Vinita Grover, Rakesh Shukla, A.K. Tyagi, Devesh K. Avasthi
Dept. of Physics, Indian Institute of Technology Delhi, New Delhi – 110016, India, Dept. of Physics, Indian Institute of Technology Delhi, New Delhi – 110016, India, LAL, Université Paris-Sud, Bât 200 F-91405, Orsay, France, CEA Saclay, DEN, SRMP, Labo JANNUS, 91191 Gif-sur-Yvette, France, Dept. of Physics, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur – 273009, India, Materials Science Group, Inter University Accelerator Centre, New Delhi – 40085, India, Chemistry Division, Bhabha Atomic Research Centre, Mumbai – 400085, India, Chemistry Division, Bhabha Atomic Research Centre, Mumbai – 400085, India, Chemistry Division, Bhabha Atomic Research Centre, Mumbai – 400085, India, Amity Institute of Nanotechnology, Amity University, Noida – 201313, India

09:15 **Chemical interactions between fuel, claddings and neutronic absorber during severe accident conditions in a Sodium Fast Reactor** J 3.9
M.Garrigue, A. Quaini, C.Guéneau, C.Bonnet, T. Alpettaz
DEN-Service de la Corrosion et du Comportement des Matériaux dans leur Environnement (SCCME), CEA, Université Paris-Saclay, F-91191, Gif-sur-Yvette, France

09:30 **How PGM elements can affect the dissolution of uranium dioxide ?** J 3.10
N. Dacheux 1, T. Cordara 1, S. Szenknect 1, L. Claparede 1, A. Mesbah 1, C. Lavalette 2, R. Podor 1,
1- ICSM, CNRS, CEA, ENSCM, Univ Montpellier 2- AREVA NC/BG aval/DO recyclage/RDP, Direction AREVA

09:45 **Equation of state of lithium fluoride at high temperatures and pressures** J 3.11
K. V. Khishchenko
Joint Institute for High Temperatures RAS, Moscow, Russia

10:00 **Coffee Break**

10:15 **Microchemical Analysis of High Burnup Mixed Oxide Fuels** J 3.12
Riley J. Parrish1, Karen E. Wright2, Alexander J. Winston2, Jason M. Harp2, Assel Aitkaliyeva1
1. University of Florida, Department of Materials Science and Engineering, Gainesville, FL, USA 2. Idaho National Laboratory, Idaho Falls, ID, USA

10:30 **Electron microscopy characterization of fuel-cladding chemical interaction layer of fast reactor MOX** J 3.13
F. Cappia B. Miller D. Murray L. He J. Harp
Idaho National Laboratory

10:45 **Contribution of the coupling milling / dissolution on the dissolution of oxides** J 3.14
Julia Hidalgo, P. Roussel, T. Delahaye, G. Leturcq, J.L. Rouviere,
CEA, Nuclear Energy Division, DMRC, SFMA, F-30207, Bagnols sur Cèze, France , UCCS, USTL-ENSCL-EC Lille, 59655 VIlleneuve d'Ascq, France, CEA, Nuclear Energy Division, DMRC, SFMA, F-30207, Bagnols sur Cèze, France , CEA, Nuclear Energy Division, DMRC, SFMA, F-30207, Bagnols sur Cèze, France , CEA-Grenoble, Department de Recherche Fondamentale sur la Matière Condencée/SP2M, 17 rue des Martyres, 38054 Grenoble Cedex 9, France,

11:00 **The Extraction of An(IV, VI) and Ln(III) with HDEHDGA from HNO3 Solutions** J 3.15
Zhang Yan, Yang Suliang, Liu Qian, YangZhihong, Zhao Yonggang, Tian Guoxin*
China Institute of Atomic Energy

11:15 **A Spectrometric Study on the Extraction of Uranyl ion by an Unsymmetrical TRDGA Ligand** J 3.16
Yang Suliang, Yang Zhihong, Zhang Yan, Zhou Jin, Liu Qian, Tian Guoxin*
China Institute of Atomic Energy

11:30 **Helium precipitation study in UO2 by Transmission Electron Microscopy** J 4.17
A. Michel, G. Carlot, C. Sabathier, C. Onofri, M. Dumont, M. Cabie
CEA / DEN / DEC, Saint Paul Lez Durance, France , CEA / DEN / DEC, Saint Paul Lez Durance, France , CEA / DEN / DEC, Saint Paul Lez Durance, France , CEA / DEN / DEC, Saint Paul Lez Durance, France , IM2NP – UMR CNRS 7334 – Aix-Marseille Université, Marseille, France , CP2M – Aix-Marseille Université Marseille, France

11:45 **Evaluation of gamma-ray mass attenuation of Fast Reactor fuels with nuclear burnup and its comparison with LWR fuels** J 3.18
Peter Andersson, Haluk Atak, Anastasios Anastasiadis
Department of Physics and Astronomy, Uppsala University, Department of Nuclear Engineering, Hacettepe University, Department of Physics and Astronomy, Uppsala University

12:00 **Simulation of segmented HPGe detector for gamma emission tomography of nuclear fuel and comparison with existing detectors** J 3.19
P. Andersson 1, V. Rathore 1, E. Andersson Sundén 1, H. Atak 2, S. Holcombe 3, A. Håkansson 1, P. Jansson 1, J. Nyberg 1
1. Dep. Of Physics and Astronomy, Uppsala University, 2. Dep. of Nuclear Engineering, Hacettepe University 3. Dep. Of Nuclear Fuels and Materials Experiments, Institute for Energy Technology

12:15 **Nanocomposite uranium carbide targets operated in extreme conditions for radioactive ion beam production at CERN** J 3.20
J.P. Ramos, N.-T. Vuong, A. Gottberg, R. Catherall, T. Stora
CERN (Switzerland) and KU Leuven (Belgium), CERN and EPFL (Switzerland), TRIUMF (Canada), CERN (Switzerland), CERN (Switzerland)

12:30 **New Mathematical Formulation for the Deposition Potential and Atomic Radius: Theoretical Background and Applications to Sn-Ln In** J 3.21
Zhang-Mi Lin
Key Laboratory of Superlight Materials and Surface Technology, Ministry of Education, College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, China

12:45 **Lunch**

Waste forms : NN

14:00 INV **Materials for Molten Salt Reactor: the Chemical Control** J 4.1
S. Delpech, G. Duran-Klie and D. Rodrigues
Institut de Physique Nucléaire - CNRS/IN2P3 Univ. Paris Sud, Université Paris Saclay, 91406 Orsay, France

14:30 **Improved casting process to develop reusable crucible for reducing radioactive wastes** J 4.2
Seoung Woo Kuk, SangGyu Park, Kyung Chai Jeong, Seok Jin Oh, Ki Hwan Kim, Jeong-Yong Park
KAERI (KOREA ATOMIC ENERGY RESEARCH INSTITUTE)

14:45 **Modelling Nuclear Waste Glass Dissolution** J 4.3
Mr Joseph Lillington, Professor Ian Farnan
Department of Earth Sciences, University of Cambridge (Both Authors)

15:00 **Host Phases for Americium-241 Bearing Waste** J 4.4
S.V. Stefanovsky, O.I. Stefanovsky, S.V. Yudintsev, A.V. Ochkin
Frumkin Institute of Physical Chemistry and Electrochemistry

15:15 **Porous materials: From radionuclides uptake to conditioning matrices** J 4.5
Jeremy Causse, Cyrielle Rey, Sandrine Dourdain, Xavier Deschanels
ICSM, UMR 5257, CEA, CNRS, ENSCM, Univ. Montpellier, Marcoule, 30207 Bagnols sur Cèze, France

15:30 **Coffee Break**

15:45 **Synthesis, characterisation and stability of AnPO4 and AnAlO3 (An= Pu and Am)** J 4.6
Karin Popa, Jean-François Vigier, Laura Martel, Dario Manara, Daniel Freis, Rudy J.M. Konings
European Commission, Joint Research Centre, P.O. Box 2340, D-76125 Karlsruhe, Germany

16:00 **From Th-rhabdophane to monazite-cheralite solid solutions: synthesis and sintering of Nd1-2xThxCaxPO4·nH2O (x = 0 - 0.1)** **J 4.7**
Danwen Qin, Adel Mesbah, Nicolas Clavier, Stéphanie Szenknect, Nicolas Dacheux
ICSM, CNRS, CEA, ENSCM, Univ Montpellier, Site de Marcoule, BP 17171, 30207 Bagnols/Cèze, France

16:15 **Formation of PuSiO4: synthesis and comparison with analogues** **J 4.8**
Nicolas Dacheux 1 , Paul Estevenon 1,2 , Eleonore Welcomme 2 , Stéphanie Szenknect 1 , Adel Mesbah 1 , Philippe Moisy 2 , Christophe Poinssot 2
1-ICSM, CNRS, CEA, ENSCM, Univ Montpellier, Site de Marcoule, Bat 426, BP 17171, 30207 Bagnols sur Ceze, France 2-CEA, Nuclear Energy Division, DMRC, BP 17171, 30207 Bagnols sur Ceze, France

16:30 **Murataite as a perspective host phase for actinides, fission, and corrosion products** **J 4.9**
S.V. Stefanovsky, S.V. Yudintsev, B.S. Nikonov, O.I. Stefanovsky, M.V. Skvortsov
Frumkin Institute of Physical Chemistry and Electrochemistry of the Russian Academy of Sciences, Institute of Geology of Ore Deposits, Mineralogy, Petrography, and Geochemistry of the Russian Academy of Sciences

16:45 **Electronic structure of actinide compounds by high-resolution x-ray absorption spectroscopy** **J 4.10**
Sergei M. Butorin
Department of Physics and Astronomy, Uppsala University, Sweden

17:00 **Chloride-induced stress corrosion cracking of low-carbon austenitic stainless steels for dry storage casks** **J 4.11**
Peilong Dong, Giuseppe Scatigno, Mark Wenman
Imperial College London, EDF, Imperial College London

17:15 **Oxidation kinetics studies for the treatment of next generation uranium carbide targets waste at ISOLDE** **J 4.12**
N.-T. Vuong 1 2, A. Gottberg 3, Sanjib Chowdhury 4, A. P. Gonçalves 4, K. Sivula 2, T. Stora 1
1 – CERN, 1211 Genève 23, Switzerland, 2 – École Polytechnique Fédérale de Lausanne, EPFL, 1015 Lausanne, Switzerland, 3 –Present address : TRIUMF, 4004 Wesbrook Mall, Vancouver, B.C. V6T 2A3, Canada, 4 – C2TN Instituto Superior Técnico, Universidade Lisboa, Estrada Nacional 10, Km 139.7, 2695-066 Bobadela LRS, Portugal

17:30 **The management of nuclear waste with molten salt reactors** **J 4.13**
Shotaro Akahori (physician in Japan) Motoyasu Kinoshita
Standard Power Ltd

17:45 **Overview of Nuclear Energy and Related Fuel Cycle Activities in India** **J 4.14**
Chaitanyamoy Ganguly
Pandit Deendayal Petroleum University (PDPU) Gandhinagar , Gujarat , India

18:00 **Poster Awards - Final discussion**

19:00 **Graduate Student Award ceremony followed by the social event**

SYMPOSIUM K

Organic bioelectronics

Symposium Organizers :

Luisa TORSI, University of Bari, Italy

Sabine SZUNERITS, University Lille – IEMN, France

Wolfgang KNOLL, AIT, Vienna, Austria

Stretchable Electonics : Wolfgang Knoll

09:00 INV **Printed EEG and EMG electronic-tattoos for neurological applications** **K 1.1**
Yael Hanein
School of Electrical Engineering, Tel Aviv University

09:30 **Auxetic Metamaterials Enhancing Strain Sensor Sensitivity for Health Monitoring** **K 1.3**
Ying Jiang, Zhuangjian Liu, Xiaodong Chen
Innovative Centre for Flexible Devices (iFLEX), School of Materials Science and Engineering, Nanyang Technological University, Singapore,

09:45 **Soft electronic and robotic systems from resilient yet biocompatible and degradable materials** **K 1.2**
Martin Kaltenbrunner
Soft Electronics Laboratory, LIT, Johannes Kepler University Linz, Altenbergerstr. 69, A-4040 Linz, Austria Soft Matter Physics, Johannes Kepler University Linz, Altenbergerstr. 69, A-4040 Linz, Austria

10:00 **Coffee Break**

Stretchable Electonics : Sabine Szunerits

10:30 **Plasticizing Silk Protein for On-skin Stretchable Electrodes** **K 2.1**
Geng Chen, Yuan Cheng* and Xiaodong Chen*
Innovative Centre for Flexible Devices (iFLEX), School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798

10:45 **Programmable proton and thermal conductivity in stretchable protein materials** **K 2.2**
Abdon Pena-Francesch1.2.3, Huihun Jung2.3, John A. Tomko4, Madhusudan Tyagi5.6, Benjamin D. Allen3.7.8, Metin Sitti1, Patrick E. Hopkins4.9.10, Melik C. Demirel2.3.7
1Physical Intelligence Department, Max Planck Institute for Intelligent Systems, 70569 Stuttgart, Germany, 2 Department of Engineering Science and Mechanics, Pennsylvania State University, University Park, PA, 16802, USA, 3 Center for Research on Advanced Fiber Technologies (CRAFT), Materials Research Institute, Pennsylvania State University, University Park, PA, 16802, USA, 4 Department of Materials Science and Engineering, University of Virginia, Charlottesville, VA, USA, 5 NIST Center for Neutron Research, Gaithersburg, MD, USA, 6 Department of Materials Science and Engineering, University of Maryland, College Park, MD, USA, 7 Huck Institutes of Life Sciences, Pennsylvania State University, University Park, PA, 16802, USA, 8 Department of Biochemistry and Molecular Biology, Pennsylvania State University, University Park, PA, 16802, USA, 9Department of Mechanical and Aerospace Engineering, University of Virginia, Charlottesville, VA, USA, 10Department of Physics, University of Virginia, Charlottesville, VA, USA

11:00 **A Stretchable Hydrogel-based Electrode for Vertical Electric Field Stimulation and Cell Biomechanics Visualization** **K 2.3**
Luo Yifei, Loh Xian Jun, Chen Xiaodong
Ms, Dr, Prof

11:15 **3D smart electronic structures on textiles for versatile health monitoring** **K 2.4**
Hubert Miraglia, Esma Ismailova
Department of Bioelectronics, Ecole Nationale Supérieure des Mines de Saint Etienne, CMP-EMSE, MOC, 13541 Gardanne, France.

11:30 **Bendable, naturally derived, all-keratin made microelectrode array as humidity sensor** **K 2.5**
Stefano Toffanin, Marco Natali, Alessandra Campana, Tamara Posati, Annalisa Aluigi, Emilia Benvenuti, Federico Prescimone, Claudia Vineis, Alessio Varesano
Stefano Toffanin, Consiglio Nazionale delle Ricerche (CNR) — Istituto per lo Studio dei Materiali Nanostrutturati (ISMN), Via P. Gobetti 101, 40129 Bologna, Italy, Marco Natali, Consiglio Nazionale delle Ricerche (CNR) — Istituto per lo Studio dei Materiali Nanostrutturati (ISMN), Via P. Gobetti 101, 40129 Bologna, Italy, Alessandra Campana, Consiglio Nazionale delle Ricerche (CNR) — Istituto per lo Studio dei Materiali Nanostrutturati (ISMN), Via P. Gobetti 101, 40129 Bologna, Italy, Tamara Posati, Consiglio Nazionale delle Ricerche (CNR) — Istituto per la Sintesi Organica e la Fotoreattività (ISOF), Via P. Gobetti 101, 40129 Bologna, Italy, Annalisa Aluigi, Consiglio Nazionale delle Ricerche (CNR) — Istituto per la Sintesi Organica e la Fotoreattività (ISOF), Via P. Gobetti 101, 40129 Bologna, Italy, Emilia Benvenuti, Consiglio Nazionale delle Ricerche (CNR) — Istituto per lo Studio dei Materiali Nanostrutturati (ISMN), Via P. Gobetti 101, 40129 Bologna, Italy, Federico Prescimone, Consiglio Nazionale delle Ricerche (CNR) — Istituto per lo Studio dei Materiali Nanostrutturati (ISMN), Via P. Gobetti 101, 40129 Bologna, Italy, Claudia Vineis, (c) Consiglio Nazionale delle Ricerche (CNR) — Istituto per lo Studio delle Macromolecole (ISMAC), C.so G. Pella 16, 13900 Biella, Italy, Alessio Varesano, (c) Consiglio Nazionale delle Ricerche (CNR) — Istituto per lo Studio delle Macromolecole (ISMAC), C.so G. Pella 16, 13900 Biella, Italy,

11:45 **Prototyping Organic Electronic Devices with Paper Microfluidics** **K 2.6**
Liangqi Ouyang, Shirin Khaliliazar, Zhen Wang, Mahiar Max Hamedi
Fiber and Polymer Technology, KTH

12:00 **Sample preparation for molecular diagnostics using textiles** **K 2.7**
Martin Hanze, Shirin Khaliliazar, Liangqi Ouyang, Georgios Chondrogiannis, Max Hamedi
School of Engineering Sciences in Chemistry, Biotechnology and Health, Department of Fibre and Polymer Technology, KTH Royal Institute of Technology

12:15 **DNA biosensors integrated in textiles** **K 2.8**
Shirin Khaliliazar, Liangqi Ouyang, Mahiar Max Hamedia
School of Engineering Sciences in Chemistry, Biotechnology and Health, Department of Fibre and Polymer Technology, KTH Royal Institute of Technology, Stockholm Sweden

12:30 **Lunch**

Organic Biosensors : Fabio Biscarini

14:00 INV **Receptor Layer Design and Electronic Coupling in Organic Electronic Biosensors** **K 3.1**
Howard E. Katz, Jian Song, Hyun-June Jang, and Jennifer Dailey
Department of Materials Science and Engineering, Johns Hopkins University, 2076 Maryland Hall, 3400 North Charles Street, Baltimore, Maryland, 21218, USA

14:30 **Organic Field-Effect Transistors for Biosensors** **K 3.2**
Raphael Pfattner,1,2,*, Amir M. Foudeh,1, Celine Liong,1, Lance Bettinson,1, Allison C. Hinckley,1, Chao Wang,1, and Zhenan Bao1
1) Department of Chemical Engineering, Shriram Center, Stanford University, 443 Via Ortega, Stanford, CA 94305-4125. 2) Institute of Materials Science of Barcelona (ICMAB-CSIC) Campus UAB, 08193 Bellaterra (Spain) and Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN) ICMAB-CSIC, 08193 Bellaterra (Spain) (*email address: rpfattner@icmab.es)

14:45 **Crystalline PEDOT:PSS Microfiber-Based Single-Strand Organic Electrochemical Transistors** **K 3.3**
Youngseok Kim, Jiwoong Kim, and Myung-Han Yoon*
Gwangju Institute of Science and Technology

15:00 **Dimensionality explored at the nanoscale in bioelectronics** **K 3.4**
Fabrizio Pennacchio, Leonardo Garma, Laura Matino, Francesca Santoro
Italian Institute of Technology, 80125, Italy

15:15 **Bio-functionalized Organic Electrochemical Transistors (Bio-OECTs) for Organ-Chip applications** **K 3.5**
Erica Zeglio, Thomas E. Winkler, Liangqi Ouyang, Damia Mawad, Mahiar Max Hamedi, Anna Herland
Erica Zeglio a,b, Thomas E. Winkler b, Liangqi Ouyang c, Damia Mawad a, Mahiar Max Hamedi c, Anna Herland a,d a School of Materials Science and Engineering, UNSW Sydney, NSW, Australia b Department of Micro and Nanosystems, KTH Royal Institute of Technology, Stockholm, Sweden c Department of Fibre and Polymertechnology, KTH Royal Institute of Technology, Stockholm, Sweden d Swedish Medical Nanoscience center, Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden

15:30 **Inkjet-printed flexible conjugated polymer devices towards full colour artificial retina** **K 3.6**
M. Ciocca, P. Giannakou, K. Snashall, T.M. Brown, M. Shkunov
M. Ciocca, P. Giannakou, K. Snashall, M. Shkunov Electrical and Electronic Engineering, Advanced Technology Institute, University of Surrey, Guildford GU2 7XH, UK M. Ciocca, T.M. Brown, Department Electronic Engineering, Centre of Hybrid and Organic Solar Energy, University of Rome Tor Vergata, Via del Politecnico 1, 00133 Roma, Italy

15:45 **Active materials for bio-functionalized organic electrochemical transistors (bio-OECTs)** **K 3.7**
Erica Zeglio, Damia Mawad, Anna Herland
Erica Zeglio, Damia Mawad, School of Materials Science and Engineering, UNSW Sydney, NSW, Australia. Erica Zeglio, Anna Herland, Department of Micro and Nanosystems, KTH Royal Institute of Technology, Stockholm, Sweden. Anna Herland, Department of Physiology and Pharmacology, Karolinska Institutet, Stockholm, Sweden.

16:00 **Coffee Break**

Organic Transistors : Luisa Torsi

16:45 INV **Monitoring Mixed Conduction for High Performance Electrolyte Gated Transistors** **K 4.1**
Sahika Inal
Biological and Environmental Science and Engineering, King Abdullah University of Science and Technology (KAUST), Thuwal, 23955-6900, Saudi Arabia

17:15 **Selective Single-Molecule Detection of clinically relevant biomarkers with an Organic Transistor** **K 4.2**
Eleonora Macchia,1,2* Rosaria A. Picca,1 Kyriaki Manoli,1 Nicola Cioffi,1 Cinzia Di Franco,3 Gaetano Scamarcio,4 Gerardo Palazzo,1,4 Fabrizio Torricelli,5 Ronald Österbacka,2 & Luisa Torsi,1,2,4 eleonora.macchia@uniba.it
1 Dipartimento di Chimica, Università degli Studi di Bari “Aldo Moro”, 70125 Bari (Italy). 2 The Faculty of Science and Engineering, Åbo Akademi University, 20500 Turku (Finland). 3 CNR, Istituto di Fotonica e Nanotecnologie, Sede di Bari, 70125 Bari (Italy). 4 Dipartimento InterAteneo di Fisica “M. Merlin”, Università degli Studi di Bari “Aldo Moro”, 70125 Bari (Italy). 4 CSGI (Centre for Colloid and Surface Science), 70125 Bari (Italy). 5 Department of Information Engineering, University of Brescia, Brescia 25123, Italy

17:30 **Protein - based electronics** **K 4.3**
Giovanni Perotto, Pietro Cataldi, Ilker Bayer, Athanassia Athanassiou
Smart Materials, Istituto Italiano di Tecnologia

17:45 **Solvent Engineering for High Performance Organic Electrochemical Transistors and Glucose Biosensors** **K 4.4**
Achilleas Savva,1 David Ohayon,1 Jokubas Surgailis,1 Alexandra F. Paterson,1 Tania Cecillia Hidalgo Castillo,1 Xingxing Chen,2 Iuliana P. Maria,3 Iain McCulloch2,3 and Sahika Inal1
1Biological and Environmental Science and Engineering Division, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia 2 Physical Science and Engineering Division, KAUST Solar Center (KSC), King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia 3Department of Chemistry, Imperial College London, London SW7 2AZ, UK

18:00 **Understanding interfaces of electrolyte-gated field-effect transistors: pressure response and cells activity recording** **K 4.5**
Francesca Leonardi1, Qiaoming Zhang1, Raphael Pfattner1, Stefano Casalini2, Adrica Kyndiah3, Gabriel Gomila Lluch3, Marta Mas-Torrent1
1Institut de Ciència de Materials de Barcelona (ICMAB-CSIC) and CIBER-BBN, Campus de la UAB, 08193 Bellaterra, Spain, 2University of Strasbourg, CNRS, ISIS UMR 7006, 8 allée Gaspard Monge, F-67000 Strasbourg, France, 3Institut de Bioenginyeria de Catalunya, Barcelona Institute of Science and Technology, C/ Baldiri i Reixac 15-21, 08028 Barcelona, Spain

18:15 **Electrolyte Gated Organic Transistors as biosensing across different lengthscales** **K 4.6**
Carlo A. Bortolotti,a Marcello Berto,a Matteo Sensi,a Chiara Diacci,a,b Michele Di Lauro,c Magnus Berggren,b Daniel Simon,b Valerio Beni,d Fabio Biscarinia,c
a) Life Sciences Department, University of Modena and Reggio Emilia, Via Campi 103, 41125 Modena, Italy. b) Department of Science and Technology, ITN, Linko&#776,ping University, Sweden. c) Center for Translational Neurophysiology, Italian Institute of Technology, Via Fossato di Mortara, 44121, Ferrara, Italy. d) Department of Printed Electronics, RISE Acreo, Research Institute of Sweden, Norrköping, Sweden

19:00 **Graduate Student Award ceremony followed by the social event**

Graphene based technologies : Sabine Szunerits

08:45 INV **Graphene bandages as a wound-healing platform for smart bandages** K 5.1
Vincent BOUCHIAT
Neel Institute CNRS Grenoble and Grapheal SAS.

09:15 **Electronic and optical bio-sensing on Graphene and it's challenges** K 5.2
Patrik Aspermair (1,2,3), Johannes Bintinger (3), Rabah Boukherroub (1), Wolfgang Knoll (2,3), Sabine Szunerits (1)
(1) Univ. Lille, CNRS, Centrale Lille, ISEN, Univ. Valenciennes, UMR 8520 - IEMN, F-59000 Lille, France (2) CEST Center for Electrochemical Surface Technology, A-2700 Wiener Neustadt, Austria (3) Austrian Institute of Technology, Biosensor Technologies, A-3430 Tulln, Austria

09:30 **Electrophoretic deposition of graphene based materials for sensing** K 5.3
Vladyslav Mishyn, Rabah Boukherroub, Wolfgang Knoll, Henri Happy, Sabine Szunerits
Vladyslav Mishyn, Rabah Boukherroub, Henri Happy, Sabine Szunerits Univ. Lille, CNRS, Centrale Lille, ISEN,Univ. Valenciennes, UMR 8520 - IEMN, F-59000 Lille, France, Wolfgang Knoll University of Natural Resources and Life Sciences, Austria

09:45 INV **Graphene-based neural interfaces** K 5.4
Jose A. Garrido
Advanced Electronic Materials and Devices group
Catalan Institute of Nanoscience and Nanotechnology - ICN2 Campus UAB &#8211, Edifici ICN2 08193 Bellaterra (Barcelona) SPAIN

10:15 **Coffee Break**

11:15 **PLENARY SESSION 2**

12:30 **lunch**

Organic Transistors : Vicent Bouchiat

14:00 INV **Neuromorphic organic electronics biosensors** K 6.1
Fabio Biscarini1,2, Martina Giordani3, Michele Di Lauro1, Marcello Berto2, Michele Bianchi1, Stefano Carli1, Gioacchino Calandra Sebastianella3, M. Murgia1,4, Carlo A. Bortolotti2, Michele Zoli3, Luciano Fadiga1
1Istituto Italiano di Tecnologia - Center for Translational Neurophysiology, Via Fossato di Mortara 17-19, Ferrara. 2Dept. of Life Sciences, Università di Modena e Reggio Emilia, Via Campi 103, Modena. 3Dept of Biomedical, Metabolic and Neural Sciences, Università di Modena e Reggio Emilia, Via Campi 287, Modena 4Istituto per lo Studio dei Materiali Nanostrutturati-Consiglio Nazionale delle Ricerche, Via Gobetti 101, Bologna.

14:30 **Branched DNA based field effect transistor for microRNA-1 detection** K 6.2
Ajoy Mandal1, S. Mandal1, S. Roy1, U.Subudhi3, D. K. Goswami1, 2
1 Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur – 721302, India 2 School of Nano Science and Technology, Indian Institute of Technology Kharagpur, Kharagpur – 721302, India 3CSIR-Institute of Minerals & Materials Technology, Bhubaneswar- 751013, India

14:45 **Extracellular Recording of Cardiomyocyte cells using an Electrolyte-Gated Organic Field Effect Transistor** K 6.3
Adrica Kyndiah (1), Francesca Leonardi (2), Carolina Tarantino (3), Rubèn Millàn-Solsona (1,4), Tobias Cramer (5), Marta Mas-Torrent (2), Núria Montserrat (3), Gabriel Gomila (1,4)
(1) Nanobioelectrical characterization group, Institut de Bioenginyeria de Catalunya, The Barcelona Institute of Science and Technology, Barcelona, Spain (2) Institut de Ciència de Materials de Barcelona (ICMAB-CSIC) and CIBER-BBN, Bellaterra, Spain (3) Pluripotency for organ regeneration group, Institut de Bioenginyeria de Catalunya, The Barcelona Institute of Science and Technology, Barcelona, Spain (4) Department d'Enginyeria Electrònica i Biomedica, Universita de Barcelona (5) Department of Physics and Astronomy, University of Bologna, Italy

15:00 **Accurate multiplex discrimination of antimicrobial resistance genes using novel multidimensional standard curves** K 6.7
Bibi Khadija, Ahmed Moniri
Dr Jesus Rodriguez Manzano, Dr Pantelis Georgiou

15:15 **Physical-based modeling of single-molecule label-free electrolyte-gated organic transistors** K 6.8
Fabrizio Torricelli, Eleonora Macchia, Kyriaki Manoli, Cinzia Di Franco, Zsolt M. Kovacs-Vajna, Gerardo Palazzo, Gaetano Scamarcio, Luisa Torsi
Fabrizio Torricelli, Department of Information Engineering, University of Brescia, 25123 Brescia, Italy Eleonora Macchia, Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", 70125 Bari, Italy, The Faculty of Science and Engineering, Åbo Akademi University, 20500 Turku, Finland Kyriaki Manoli, Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", 70125 Bari, Italy Cinzia Di Franco, CNR, Istituto di Fotonica e Nanotecnologie, Sede di Bari, 70125 Bari, Italy Zsolt M. Kovacs-Vajna, Department of Information Engineering, University of Brescia, 25123 Brescia, Italy Gerardo Palazzo, Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", 70125 Bari, Italy, Dipartimento InterAteneo di Fisica "M. Merlin", Università degli Studi di Bari "Aldo Moro", 70125 Bari, Italy, CSGI (Centre for Colloid and Surface Science), 70125 Bari, Italy Gaetano Scamarcio, CNR, Istituto di Fotonica e Nanotecnologie, Sede di Bari, 70125 Bari, Italy, Dipartimento InterAteneo di Fisica "M. Merlin", Università degli Studi di Bari "Aldo Moro", 70125 Bari, Italy Luisa Torsi, Dipartimento di Chimica, Università degli Studi di Bari "Aldo Moro", 70125 Bari, Italy, The Faculty of Science and Engineering, Åbo Akademi University, 20500 Turku, Finland, CSGI (Centre for Colloid and Surface Science), 70125 Bari, Italy

15:30 **Structural features - Electrical properties relationship in Eumelanin/ PEDOT(PSS) blend for ITO-free electrodes in bioelectronics** K 6.4
Ludovico Migliaccio, Salvatore Aprano, Luca Iannuzzi, Davide Altamura, Cinzia Giannini,Maria Grazia Maglione, Paolo Tassini,Carla Minarini, Paola Manini, Alessandro Pezzella
1 ENEA Agenzia Nazionale per Le Nuove Tecnologie per l' Energia e lo Sviluppo Economico Sostenibile, SSPT-PROMAS-NANO, C.R.Portici, Portici, NA, Italy 2 Università degli Studi di Napoli Federico II - Department of Chemical Sciences, Via Cintia n.4, Napoli, Italy 3 Istituto di Cristallografia (IC), CNR, Via Amendola 122/O, 70126 Bari, Italy

15:45 **Flexible Pressure-Sensitive Contact Transistor** K 6.5
Sanghoon Baek, Geun Yeol Bae, Jimin Kwon, Kilwon Cho, and Sungjune Jung
Sanghoon Baek, Department of Creative IT Engineering, Pohang University of Science and Technology (POSTECH), Geun Yeol Bae, Department of Chemical Engineering, Pohang University of Science and Technology (POSTECH), Jimin Kwon, Department of Creative IT Engineering, Pohang University of Science and Technology (POSTECH), Kilwon Cho, Department of Chemical Engineering, Pohang University of Science and Technology (POSTECH), Sungjune Jung, Department of Creative IT Engineering, Pohang University of Science and Technology (POSTECH),

16:00 **Coffee Break**

POSTER SESSION : Wolfgang Knoll

17:00 **Novel gold core-shell nanostars for enhanced fluorescence in the first and second near-infrared windows** K 7.9
Jessica Miller, Dr. Fang Xie
Imperial College London

17:00 **Highly conductive, stretchable and biopolymer-based microelectrode for optogenetic neural signal recording** K 7.10
Yajing Cui, Xiaodong Chen*
Innovative Centre for Flexible Devices (iFLEX), School of Materials Science and Engineering, Nanyang Technological University, Institute of High Performance Computing Agency for Science, Technology and Research (A*STAR)

17:00 **Selective Single-Molecule Nanopore Sensing of Protein-Protein Interactions Using DNA Carriers** K 7.11
Xiaoyi Wang, Aleksandar P. Ivanov, Joshua B. Edel
Department of Chemistry, Imperial College London, South Kensington Campus, London, SW7 2AZ United Kingdom

17:00 **A new approach for the poling of piezoelectric PVDF thin films using surface chemical modification** K 7.4
Daisuke Tadaki 1), Shin Yamamiya 1), Teng Ma 2), Yuji Imai 3), Ayumi Hirano-Iwata 1,2), Michio Niwano 4)
1) Research Institute of Electrical Communication, Tohoku University, 2) World Premier Institute - Advanced Institute for Materials Research, Tohoku University, 3) National Institute of Technology, Sendai College, 4) Kansei Fukushi Research Institute, Tohoku Fukushi University

17:00 **Light-induced switching in OFET-based memory devices with photosensitive self-assembled monolayers of porphyrin dyads** **K 7.5**

D.D. Dashitsyrenova, L.A. Frolova, G. Charalampidis, S. Margiola, V. Nikolaou, A.G. Coutsolelos, P.A. Troshin

This work was supported by RFBR (project № 18-33-00904)

17:00 **Selective gas sensors based on organic field effect transistors** **K 7.6**

Alexey A. Parfenov[1], Diana K. Susarova[1], Pavel A. Troshin[2,1]
[1]Institute for Problems of Chemical Physics of RAS, Chernogolovka, Russia, [2] Skolkovo Institute of Science and Technology, Moscow, Russia.

17:00 **Development of an opto-electronic sensing setup** **K 7.7**

Ulrich Ramach (1,4) , Johannes Bintinger (2), Patrik Aspermair (1,2,3), Paola Ayala (4), Wolfgang Knoll (1,2)
(1) CEST Center for Electrochemical Surface Technology, 2700 Wiener Neustadt, Austria (2) AIT Wien, Austrian Institute of Technology, 3430 Tulln, Austria (3) Univ. Lille Centrale Lille, ISEN, Univ. Valanciennes, UMR 8520 - IEMN, F-59000, Lille France (4) Institute of Physics, University of Vienna, 1090, Vienna

17:00 **Stretchable Low Impedance Electrodes for Small Peripheral Nerve Recordings** **K 7.8**

Francesco Decataldo, Tobias.Cramer, Davide Martelli, Isacco Gualandi, Willian S. Korim, Song T. Yao, Marta Tessarolo, Mauro Murgia, Erica Scavetta, Roberto D'Amici, Beatrice Fraboni
Francesco Decataldo, Tobias.Cramer, Marta Tessarolo, Beatrice Fraboni - Department of Physics and Astronomy, University of Bologna, Italy Davide Martelli, Roberto D'Amici - Department of Biomedical and Neuromotor Sciences, Physiology, University of Bologna, Italy Davide Martelli, Willian S. Korim, Song T. Yao - Florey Institute of Neuroscience and Mental Health, University of Melbourne, Parkville, Australia Erica Scavetta, Isacco Gualandi - Department of Industrial Chemistry, Alma Mater Studiorum, University of Bologna, Italy Mauro Murgia - Consiglio Nazionale delle Ricerche, Istituto per lo Studio dei Materiali Nanostrutturati (CNR-ISMN), Bologna, Italy

17:00 **Kirigami-based mechanical metamaterials for stretchable electronics** **K 7.9**

Bongkyun Jang, Jae-Hyun Kim, Kwang-Seop Kim, Seung-Mo Lee, Byung-Ik Choi, Hak-Joo Lee
Korea Institute of Machinery and Materials

17:00 **Water adsorption and transport in self-assembled diphenylalanine peptide microtubes** **K 7.10**

P. Zelenovskii(1,2), S. Kopyl(1), E. Domingues(3), F.M.L. Figueiredo(3), A. Kholkin(1,2)
1) CICECO – Aveiro Institute of Materials, Department of Physics, University of Aveiro, 3810-193 Aveiro, Portugal 2) School of Natural Sciences and Mathematics, Ural Federal University, 620000 Ekaterinburg, Russia 3) CICECO – Aveiro Institute of Materials, Department of Materials & Ceramic Engineering, University of Aveiro, 3810-193 Aveiro, Portugal

17:00 **Crystallized PEDOT:PSS-Pt Nanocomposites for Electorchemical Catalyst** **K 7.11**

Da-Young Lee1, Hye-Min Shin1, and Myung-Han Yoon1*
1 School of Materials Science and Engineering, Gwangju Institute of Science and Technology

17:00 **An enzyme-based wearable lactate sensor with subthreshold operation of a dual-gate organic transistor for high sensitivity** **K 7.12**

Sanghoon Baek, Jimin Kown, and Sungjune Jung*
Department of Creative IT Engineering, Pohang University of Science and Technology (POSTECH), 77 Cheongam-Ro, Nam-Gu, Pohang, 37673, Republic of Korea

17:00 **Fullerene C60/ds-DNA self-assembled layer on silicon oxide: nanostructure - conductivity models and experiment** **K 7.13**

N. Tsierkezos, U. Ritter, P. Scharff (2), O.Ivanyuta, E. Buzaneva (1)
1National Taras Shevshenko University of Kyiv, 64/13, Vladimirska Str., 01033, Kiev, Ukraine e-mail: iva@univ.net.ua 2 Technische Universitat Ilmenau, Institut fur Chemistry & Biotechnoly, Postfach 100565, 986884 Ilmenau, Germany

17:00 **Attenuated Total Reflectance Infrared Spectroscopic Characterization of functionalized Gold Gates employed in EGOFET biosensors** **K 7.14**

A. Tricase (1), R.A. Picca (1,2), E. Macchia (1,3), K. Manoli (1), C. Di Franco (4), G. Scamarcio (4,5), N. Cioffi (1,2), L. Torsi (1,2,3)
1 Dipartimento di Chimica - Università degli Studi di Bari "Aldo Moro" - Bari (I), 2 CSGI (Centre for Colloid and Surface Science) – Bari (I), 3 Center for Functional materials, The Faculty of Science and Engineering – Åbo Akademi University – Turku (FI), 4 CNR - Istituto di Fotonica e Nanotecnologie, Sede di Bari (I), 5 Dipartimento Interateneo di Fisica "M. Merlin" - Università degli Studi di Bari – "Aldo Moro" - Bari (I)

17:00 **Lab-on-disc for in situ monitoring of surface water quality by algae biosensors and physicochemical sensors** **K 7.15**

C. DURRIEU, L. RENAUD, J.-F. CHATEAUX, O. MARGEAT, J. ACKERMANN, C. VIDELOT-ACKERMANN, M. VALAY, P. TEMPLE-BOYER, V. BARDINAL, E. BEDEL PEREIRA, I. SEGUY, J. LAUNAY.
Laboratoire d?Ecologie des Hydrosystèmes Naturels Anthropises (LEHNA, UMR5023), 3 rue Maurice Audin, 69518 Vaulx-en-Velin, France , Institut des Nanotechnologies de Lyon (INL, UMR5270), 43 boulevard du 11 novembre 1918, bâtiment 203 Brillouin, 69622 Villeurbanne Cedex, France , Centre Interdisciplinaire de Nanoscience de Marseille (CINaM, UMR7325), 163 avenue de Luminy, Campus Luminy, Case 913, 13288 Marseille Cedex 9, France , OrigaLys ElectroChem SAS, Les Verchères 2, 62A Avenue de l'Europe, 69140 Rillieux-la-Pape, France , Laboratoire d?Analyse et d?Architecture des Systèmes (LAAS, UPR8001), 7 avenue du Colonel Roche, BP 54200, 31031 Toulouse Cedex 4, France.

17:00 **Millimeter-sized Electrolyte-gated Transistor for Single Molecule Detection of HIV-p24 Antigen** **K 7.16**

Eleonora Macchiaa,b&, Sunil Kumar Sailapuc&, Lucia Sarcinaa, Luisa Torsia,b,e* and Neus Sabatéc,d*
aDepartment of Chemistry, Università degli Studi di Bari A. Moro 4, Via Orabona, 70126 Bari, Italy b The Faculty of Science and Engineering, Åbo Akademi University, 20500 Turku, Finland. cInstituto de Microelectrónica de Barcelona IMB-CNM (CSIC) C/ del Til·lers. (UAB) 08193 Bellaterra, Barcelona, Spain. dCatalan Institution for Research and Advanced Studies (ICREA) P.L.Companys 23, 08010 Barcelona, Spain. eCSGI (Centre for Colloid and Surface Science), 70125 Bari, Italy. & E. Macchia and S. K. Sailapu equally contributed to this work *luisa.torsi@uniba.it , *nsabatevizcarra@gmail.com

17:00 **Isothermal amplification chemistries in DNA methylation quantification for monitoring cancer** **K 7.0**

B. Fenech-Salerno, E. Chysostomou, S. de Mateo, M. Kalofonou, C. Toumazou
Centre for Bio-inspired Technology, Department of Electrical and Electronic Engineering, Faculty of Engineering, Imperial College London

17:00 **Fabric organic electrochemical transistors for wearable biosensors** **K 7.17**

Anneng Yang, Feng Yan
Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong, China

Organic Transistors and more : Jose Garrido

09:00 INV **Novel approaches for the development of high-performance organic sensors for artificial skin** — K 8.1
Stefano Lai, Andrea Spanu, Piero Cosseddu and Annalisa Bonfiglio
Department of Electrical and Electronic Engineering, University of Cagliari, Piazza d&#8217,Armi, 09123 Cagliari, Italy)

09:30 **Bioelectronic Textiles: organic smart materials meet textile industry** — K 8.2
Esma Ismailova
Department of Bioelectronics, Ecole Nationale Supérieure des Mines de Saint Etienne, CMP-EMSE, MOC, 13541 Gardanne, France. ismailova@emse.fr

09:45 **Ink-jet printed PEDOT:PSS based electrodes on cellulose substrates to probe sweat** — K 8.3
A. Cavaco (1,2), P. M.C. Inácio (3,4), T. Carvalho (5=, C. Freire (5) and H. L. Gomes (3,4)
(1)CIEPQPF, Departamento de Engenharia Química, Universidade de Coimbra, Rua Sílvio Lima, 3030-790 Coimbra, Portugal (2) ESSUAlg, Escola Superior de Saúde, Universidad do Algarve, Avª. Dr. Adelino da Palma Carlos, 8000-510 Faro, Portugal (3)Instituto de Telecomunicações, Avenida Rovisco, Pais 1, 1049-001 Lisboa, Portugal. (4)Universidade do Algarve, Faculdade de Ciências e Tecnologia, Campus de Gambelas, 8005-139 Faro (5)CICECO, Instituto de Materiais, Universidade de Aveiro, Aveiro, Portugal

10:00 **Impedance sensing of polystyrene microspheres in a microfluidic channel: An integrated electro-optic method** — K 8.4
Darwin Caina (1), Jonathan Avila Osses (1), Wenhao Du (1), and Sorin Melinte (1) (*)
(1) Institute of Information and Communication Technologies, Electronics and Applied Mathematics, Université catholique de Louvain, 1348, Louvain-la-Neuve, Belgium.

10:15 **Coffee Break**

Organic Transistors and more : Sahika Inal

10:45 **A Functionalization Strategy for Stem Cells Differentiation Monitoring** — K 8.1
F. Decataldo, V. Druet, A.M. Pappa, C. Pitsalidis, R. M. Owens, B. Fraboni, D. Iandolo
F. Decataldo, B. Fraboni - Department of Physics and Astronomy, University of Bologna, Bologna, Italy F. Decataldo, V. Druet, A.M. Pappa, C. Pitsalidis, R. M. Owens, D. Iandolo - Department of Chemical Engineering and Biotechnology, University of Cambridge, United Kingdom V. Druet - École Nationale Supérieure de Chimie, de Biologie et de Physique, Pessac, France

11:00 **Multimodal Characterization of Neural Networks Using Highly Transparent Electrode Arrays** — K 8.2
Mary J. Donahue, Attila Kaszas, Gergely F. Turi, Andrea Slézia, Christophe Bernard, George G. Malliaras and Adam Williamson
Department of Bioelectronics, Ecole Nationale Supérieure des Mines, Centre of Microelectronics in Provence, Gardanne 13541, France, Department of Physical Chemistry and Materials Science, Interdisciplinary Excellence Centre, University of Szeged, Rerrich Square 1, Szeged, H-6720, Hungary, Aix Marseille Univ, CNRS, INT, Inst Neurosci Timone, Marseille, France, Department of Psychiatry, Division of Systems Neuroscience, Columbia University and Research Foundation for Mental Hygiene, New York State Psychiatric Institute, New York, NY 10032, Aix Marseille Univ, INSERM, INS, Inst Neurosci Syst, Marseille, France, Neuroengineering Research Group, Interdisciplinary Excellence Center, Department of Medical Microbiology and Immunobiology, University of Szeged, Szeged 6720, Hungary, Aix Marseille Univ, INSERM, INS, Inst Neurosci Syst, Marseille, France, Electrical Engineering Division, Department of Engineering, University of Cambridge, Cambridge CB3 0FA, United Kingdom, Aix Marseille Univ, INSERM, INS, Inst Neurosci Syst, Marseille, France, Neuroengineering Research Group, Interdisciplinary Excellence Center, Department of Medical Microbiology and Immunobiology, University of Szeged, Szeged 6720, Hungary

11:15 **Monitoring Fluorescent Calcium Signals in Neuronal Cells with Organic Photodetectors** — K 8.3
Shahab Rezaei-Mazinani (1), Anton I. Ivanov (2), Markus Biele (3), Alexandra L. Rutz (4), Vasilis G. Gregoriou (5), Apostolos Avgeropoulos (6), Sandro Francesco Tedde (3), Christos L. Chochos (5), Christophe Bernard (2), Rodney P. O'Connor (7), George G. Malliaras (4), and Esma Ismailova (7)
(1) Collège de France, Center for Interdisciplinary Research in Biology (CIRB), Paris, France, (2) Aix Marseille Univ, INSERM, INS, Inst Neurosci Syst, Marseille, France, (3) Siemens Healthcare GmbH, Technology Center, TI TC BMT, Günther-Scharowsky-Straße 1, 91058 Erlangen, (4) Electrical Engineering Division, Department of Engineering, University of Cambridge, Cambridge, United Kingdom, (5) Advent Technologies SA, Patras Science Park, Stadiou Street, Platani-Rio, 26504, Patra, Greece, (6) National Hellenic Research Foundation (NHRF), Athens, Greece, (7) Department of Bioelectronics, Ecole Nationale Supérieure des Mines, CMP-EMSE, Gardanne, France

11:30 **A fully inkjet-printed noninvasive glucose sensor on paper** — K 8.4
Dr Eloïse Bihar, Dr Shofarul Wustoni, Dr Anna Maria Pappa, Prof. Derya Baran, Prof. Sahika Inal, Prof. Khaled N. Salama,
Dr Eloise Bihar, Dr Shofarul Wustoni, Prof. Sahika Inal, Division of Biological and Environmental Science and Engineering, King Abdullah University of Science and Technology (KAUST), Thuwal 23955, Saudi Arabia, Dr Eloise Bihar, Prof. Derya Baran, Division of Physical Science and Engineering, KAUST Solar Center, KAUST, Thuwal 23955, Saudi Arabia, Dr Anna Maria Pappa, Department of Chemical Engineering and Biotechnology, University of Cambridge, Philippa Fawcett Drive, Cambridge CB3 0AS, UK, Dr Eloise Bihar, Prof. Khaled N. Salama Division of Computer, Electrical and Mathematical Sciences and Engineering, Advanced Membranes and Porous Materials Center, KAUST, Thuwal 23955, Saudi Arabia

11:45 **A Chloride two terminal sensor based on Ag/AgCl nanoparticles-modified bioelectronic device** — K 8.5
Federica Mariani (a), Isacco Gualandi (a), Marta Tessarolo (b), Tobias Cramer (b), Domenica Tonelli (a), Beatrice Fraboni (b), Erika Scavetta (a)
(a) Dipartimento di Chimica Industriale 'Toso Montanari', Università di Bologna, Viale Risorgimento 4, 40136 Bologna, Italy. (b) Dipartimento di Fisica e Astronomia, Università di Bologna, Viale Berti Pichat 6/2, 40127 Bologna, Italy federica.mariani8@unibo.it

12:00 **A novel Bioelectronic pH sensor with enhanced sensitivity based on an Organic Electrochemical Transistor** — K 8.6
Federica Mariani (a), Isacco Gualandi (a), Marta Tessarolo (b), Beatrice Fraboni (b), Erika Scavetta (a)
(a) Dipartimento di Chimica Industriale 'Toso Montanari', Università di Bologna, Viale Risorgimento 4, 40136 Bologna, Italy. (b) Dipartimento di Fisica e Astronomia, Università di Bologna, Viale Berti Pichat 6/2, 40127 Bologna, Italy federica.mariani8@unibo.it

12:15 **Microchip Compatible Isothermal Amplification Chemistries for Detection of Breast Cancer Mutations** — K 8.7
Bingling Chen, Dr. Jesus Rodriguez Manzano and Dr. Melpomeni Kalofonou
Centre for Bio-Inspired Technology, Department of Electrical and Electronic Engineering, Imperial College London, London, SW7 2AZ, UK

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM L

New strategies for smart biointerfaces

Symposium Organizers :

Frédéric BARRIERE, University of Rennes, France

Giovanni MARLETTA, University of Catania, Italy

Mathieu ETIENNE, University of Lorraine, Nancy, France

Paula COLAVITA, Trinity College Dublin, Ireland

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Monday 27 may 2019

Functional Biointerfaces I : Paula Colavita

09:00 INV **Towards multifunctional and smart biointerfaces** — L 1.1
Klaus Jandt
Institute of Materials Science and Technology (IMT), Friedrich Schiller University Jena, Germany

09:30 **Subsurface ferroelectric water provokes a controlled protein adsorption** — L 1.2
Ezgi Bülbül, Dirk Hegemann, Manfred Heuberger
Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory of Advanced Fibers, St. Gallen, Switzerland ETHZ Zurich, Department of Materials, Laboratory of Surface Science and Technology, Zurich, Switzerland

09:45 **pH-driven reversible structure of stimuli-sensitive peptide: a molecular sponge** — L 1.3
Grazia M.L. Messina1, Benedetta Di Napoli3, Marta De Zotti2, Claudia Mazzuca3, Fernando Formaggio2
1 Laboratory for Molecular Surfaces and Nanotechnology (LAMSUN), Department of Chemical Sciences, University of Catania and CSGI, Viale Andrea Doria 6, 95125, Catania, Italy, 2 Department of Chemical Sciences and Technologies, University of Roma Tor Vergata, Via della Ricerca Scientifica, 00133 Roma, Italy, 3 CB Padova Unit, CNR, Department of Chemistry, University of Padova, 35131 Padova, Italy

10:00 **Phosphonic acid-based PEGylated polymers as a platform for coating metal oxide surfaces** — L 1.4
V. Baldim1, N. Giamblanco2, A. Graillot3, N. Bia3, C. Loubat3, G. Marletta2, and J.-F. Berret*1
1Matière et Systèmes Complexes, UMR 7057 CNRS Université Denis Diderot Paris-VII, Bâtiment Condorcet, 10 rue Alice Domon et Léonie Duquet, 75205 Paris, France. 2Laboratory for Molecular Surface and Nanotechnology (LAMSUN), Department of Chemical Sciences, University of Catania and CSGI, Viale A. Doria 6, 95125, Catania, Italy 3Specific Polymers, ZAC Via Domitia, 150 Avenue des Cocardie?res, 34160 Castries, France.

10:15 **Coffee Break**

Bioinspired Materials and Interfaces : Giovanni Marletta

10:30 INV **Structural colors, photonic crystals and vision in aquatic organisms. Nano-interfaces in nano-scale crystal mirrors** — L 2.1
Benjamin A. Palmer, Dvir Gur, Anna Hirsch, Gan Zhang, Dan Oron, Leeor Kronik, Leslie Leiserowitz, Steve Weiner, Lia Addadi
BA Palmer, D Gur, G Zhang, S Weiner, L Addadi, Dept. of Structural Biology, Weizmann Institute of Science, A Hirsch, L Kronik, L Leiserowitz, Dept. of Materials and Interfaces, Weizmann Institute of Science, D Oron, Physics of Complex Systems, Weizmann Institute of Science,

11:00 **Bioinspired fast self-healing protein materials** — L 2.2
Abdon Pena-Francesch1, Melik C. Demirel2.3.4, Metin Sitti1
1Physical Intelligence Department, Max Planck Institute for Intelligent Systems, 70569 Stuttgart, Germany, 2 Department of Engineering Science and Mechanics, Pennsylvania State University, University Park, PA, 16802, USA, 3 Center for Research on Advanced Fiber Technologies (CRAFT), Materials Research Institute, Pennsylvania State University, University Park, PA, 16802, USA, 4 Huck Institutes of Life Sciences, Pennsylvania State University, University Park, PA, 16802, USA

11:15 **Guided self-organization of engineered small molecules on plasmonic nanostructures for efficient cell antigen targeting** — L 2.3
Francesca Biscaglia, Gianfranco Bocchinfuso, Antonio Palleschi, Marina Gobbo, Moreno Meneghetti
Francesca Biscaglia, Marina Gobbo, Moreno Meneghetti Department of Chemical Sciences?, University of Padova, ?Via Marzolo 1, 35131 Padova, Italy Gianfranco Bocchinfuso, Antonio Palleschi Department of Chemical Sciences & Technologies, University of Roma Tor Vergata and CSGI?, Via della Ricerca Scientifica, 00133 Rome, Italy

11:30 **Protein Mediated Shape Control of Noble Metal Nanoparticles** — L 2.4
Dr. Indranath Chakraborty, Prof. Dr. Wolfgang J. Parak
Fachbereich Physik and Center for Hybrid Nanostructure (CHyN), Universität Hamburg, 22761 Hamburg, Germany.

11:45 **Nanostructured Surfaces Inspired by Nature for Controlling Cellular Behaviour** — L 2.5
Lucia Podhorska [1], James C. McCormack [1], Shauna P. Flynn [1], Niamh Hunt [2], Christine Loscher [2] and Susan M. Kelleher [1]
[1] School of Chemistry, University College Dublin, Belfield, Dublin 4, Ireland, [2] School of Biotechnology, Dublin City University, Glasnevin, Dublin 9, Ireland

12:00 **Lunch**

Functional Biointerfaces II : Francois Berret

14:00 **Adjusting Release Kinetics with Stimuli-Responsive Polymers** — L 3.1
Daniel Crespy
Vidyasirimedhi Institute of Science and Technology (VISTEC)

14:30 **Chelating Surfaces for Site-specific Immobilization of HSA molecules** — L 3.2
Giovanni Li Destri, Grazia M.L. Messina, Nunzio Tuccitto, Giovanni Marletta
Laboratory for Molecular Surfaces and Nanotechnology (LAMSUN), Department of Chemical Sciences, University of Catania and CSGI, Viale Andrea Doria 6, 95125, Catania, Italy

14:45 **Micro-structured Biodegradable Fibers via Thermal Drawing** — L 3.3
Shahrzad Shadman Yazdi, Tung Nguyen-Dang, Tapajyoti Das Gupta, Ines Richard, Prof. Fabien Sorin
Laboratory of Photonic Materials and Fiber Devices (FIMAP) Institute of Materials Ecole Polytechnique Federale de Lausanne (EPFL) Lausanne 1015, Switzerland

15:00 **Responsive 3D Microstructures Fabricated by Direct Laser Writing** — L 3.4
Larisa Florea
AMBER, School of Chemistry, Trinity College Dublin

15:15 **Solid-state nanopore analysis on conformation change of p53-MDM2 fusion protein induced by protein-protein interaction** — L 3.5
1. HONGSIK CHAE 2. DONG-KYU KWAK 3. MI-KYUNG LEE 4. SEUNG-WOOK CHI* 5. KI-BUM KIM*
1. HONGSIK CHAE (Department of Materials Science and Engineering, Seoul National University, Seoul 08826, Korea) 2. DONG-KYU KWAK (Disease Target Structure Research Center, KRIBB, Daejeon 34141, Korea) 3. MI-KYUNG LEE (Disease Target Structure Research Center, KRIBB, Daejeon 34141, Korea) 4. SEUNG-WOOK CHI* (Disease Target Structure Research Center, KRIBB, Daejeon 34141, Korea) 5. KI-BUM KIM* (Department of Materials Science and Engineering, Seoul National University, Seoul 08826, Korea)

15:30 **New horizons for PEDOT based drug delivery systems** — L 3.6
Carli Stefano, Fadiga Luciano, Biscarini Fabio
Center for Translational Neurophysiology of Speech and Communication Istituto Italiano di Tecnologia 44121 Ferrara (Italy)

Poster Session I : TBD

16:30 **Antimicrobial implants based on Chitosan/biomimetic apatite/tetracycline composite powders synthesized by Matrix Assisted Pulsed** — L P1.1
Anita Visan1, Carmen Ristoscu1, Gianina Popescu-Pelin1, Mihai Soprony1, R. Cristescu1, Carmen Mariana Chifiriuc3, David Grossin4, Fabien Brouillet4, Ion N. Mihailescu1
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Ilfov, Romania , 2 National Institute of Materials Physics, Magurele, Ilfov, Romania,3Department of Microbiology, Faculty of Biology, University of Bucharest, 060101, Research Institute of the University of Bucharest –ICUB, Spl. Independentei 91-95, Bucharest, Romania,4 CIRIMAT – Carnot Institute, University of Toulouse, ENSIACET, 4 Allée Emile Monso, 31030 Toulouse Cedex 4, France

16:30 **Influence of surface modification of Ti6Al7Nb alloy on adhesion of poly (lactic-co-glycolic acid) coating (PLGA)** — L P1.2
J. Szewczenko, W. Kajzer, A. Kajzer, M. Basiega, M. Kaczmarek, M. Antonowicz, R. Major, J. Jaworska, K. Jelonek, P. Karpeta-Jarząbek, J. Kasperczyk,
J. Szewczenko, W. Kajzer, A. Kajzer, M. Basiega, M. Kaczmarek, M. Antonowicz - Department of Biomaterials and Medical Devices Engineering, Faculty of Biomedical Engineering, Silesian University of Technology, Zabrze, Poland. R. Major - Institute of Metallurgy and Materials Science of Polish Academy of Sciences, Kraków, Poland J. Jaworska, K. Jelonek, P. Karpeta-Jarząbek, J. Kasperczyk - Centre of Polymer and Carbon Materials of the Polish Academy of Sciences Zabrze, Poland.

16:30 **pH-Responsive lignin nanogels for controlled release** **L P1.3**
Doungporn Yiamsawas1, Hugo Delval 2, Wiyong Kangwansupamonkon1,3, Suda Kiatkamjornwong4,5
1 National Nanotechnology Center, National Science and Technology Development Agency, 111 Thailand Science Park, Phahonyothin Rd., Khlong Luang, Phathum Thani 12120, Thailand, 2 Graduate School of Chemistry, Biology and Physics of Bordeaux, Avenue Pey Berland, 33607, Pessac, France, 3 AFRS (T), the Royal Society of Thailand, Sanam Sueapa, Dusit, Bangkok 10300, Thailand, 4 Faculty of Science, Chulalongkorn University, 254 Phyathai Road, Wangmai, Patumwan, Bangkok 10330, Thailand, 5FRS (T), the Royal Society of Thailand, Sanam Sueapa, Dusit, Bangkok 10300, Thailand

16:30 **Three Dimensional Cell Printing with Sulfated Alginate for Improve Bone Morphogenetic Protein-2 Delivery and Osteogenesis in Bon** **L P1.4**
Ji-sun Park, Tea-gon Jung, Yong-hoon Jeong, Jae-young Jeong, Jae-Woong Yang, Kwang-Min Park, Kwan-Su Kang, Jae-young Lee, Su-a Park
Department of R&D, Osong Medical Innovation Foundation Medical Device Development Center, Gwangju Institute of Science and Technology, Korea Institute of Machinery & Materials

16:30 **Cisplatin delivered by glucose-conjugated carbon dots loses tumoricidal activity and its efficacy is attenuated by TAMs** **L P1.5**
Shen-Jun Yuan 1, Yu Wen 1, Li Zhao 2, *, Xiao Chen 1, *
1 Department of Pharmacology, School of Basic Medical Sciences, Wuhan University, Donghu Avenue No.185, Wuhan, 430071, China 2 School of Radiation Medicine and Protection & School for Radiological and Interdisciplinary Sciences (RAD-X), Soochow University, Suzhou, 215123, China

16:30 **Antimicrobial film for food packaging applications** **L P1.6**
Maria Chiara Sportelli (1,2), Margherita Izzi (1), Annalisa Volpe (2), Valentina Lacivita (3), Maurizio Clemente (1), Rosaria Anna Picca (1), Cinzia Di Franco (2), Amalia Conte (3), Matteo Alessandro Del Nobile (3), Antonio Ancona (2), Nicola Cioffi (1)
(1) Department of Chemistry, University of Bari “Aldo Moro”, Via Orabona, 4, 70126 Bari, Italy, (2) CNR, Istituto di Fotonica e Nanotecnologie UOS Bari, Physics Department, Via Amendola, 173, 70126 Bari, Italy, (3) Department of Agricultural Sciences, Food and Environment, University of Foggia, Via Napoli, 25, 71121 Foggia, Italy,

16:30 **Biocompatible and biodegradable polymeric microtubes based scaffold for neural tissue engineering** **L P1.7**
Raj Kumar, Orit Shefi, Amit Sitt
Bar Ilan Institute of Nanotechnology and Advanced Materials (BINA) and Faculty of Engineering, Bar Ilan University, Ramat Gan-5290002 Israe School of Chemistry, Sackler Faculty of Exact Sciences, Tel Aviv University, Tel Aviv, 6997801 Israel

16:30 **Preparation and characterization of Zinc oxide tetrapods and neuroengineering application** **L P1.8**
Raj Kumar, Orit Shefi, Yogendra Kumar Mishra
Bar-Ilan Institute for Nanotechnology and Advanced Materials (BINA) and Faculty of Engineering, Bar-Ilan University, Ramat Gan 5290002, Israel Functional Nanomaterials Center, Institute of Materials Science, Kiel University, Kaiserstr, 2, D-24143 Kiel, Germany

16:30 **Protein corona investigation of functionalized silica nanoparticles after exposure to Pseudomonas biofilm matrix** **L P1.9**
Caio H. N. Barros, Henry Devlin, Stephanie F. Fulaz Silva, Dishon W. Hiebner, Laura Quinn, Stefania Vitale, Eoin Casey
School of Chemical and Bioprocess Engineering - University College Dublin - Ireland

16:30 **Antibacterial activity of functional Fe3O4-PEG SiO2 nanoparticles on pathogenic and microbiota species** **L P1.10**
Alina Maria Holban1,2*, Lia-Mara Ditu2, Alexandru Mihai Grumezescu1, Carmen Curutiu2, Coralia Bleotu3, Valentina Grumezescu4, Veronica Lazar2, Bogdan Vasile1, Ecaterina Andronescu1
1 Faculty of Applied Chemistry and Materials Science, Politehnica University of Bucharest, Romania, 2 Faculty f Biology, University of Bucharest, Romania, 3 Ştefan S. Nicolau Institute of Virology, Bucharest, Romania, 4 Laser-Surface-Plasma Interactions” Laboratory, Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania

16:30 **Production of antibacterial polymeric materials** **L P1.11**
Graham M. Reid (1), Lucia Podhorska (1), (1) Shauna P. Flynn, Laura Quinn (2), Eoin Casey (2), Susan Mulansky (3), Susan M. Kelleher (1)
(1) School of Chemistry, University College Dublin, (2) School of Chemical and Bioprocess Engineering, University College Dublin, (3) Institute of Food and Biochemical Engineering, Technische Universität Dresden

16:30 **Multifunctional devices for the regulation of cytotoxic activity of natural killer cells** **L P1.12**
Esti Toledo, Guillaume Le Saux, Angel Porgador, Mark Schvartzman
Avishai Edri, Uzi Hadad,

16:30 **Toxicity behavior of calcium carbonate nanoparticles** **L P1.13**
Marta d?Amora1, Freddy Liendo2, Fabio A. Deorsola2, Samir Bensaid2, Silvia Giordani3
1 CSF@PoliTo Torino, Istituto Italiano di Tecnologia, Via Livorno 60, 10144, Turin, Italy 2 Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy 3 School of Chemical Sciences, Dublin City University, Dublin, Ireland

16:30 **Enhanced adhesion and differentiation of osteoblasts on organic/inorganic composites by polymer-layer coating** **L P1.14**
Sheng-Ying Cheng, Yu-Lun Chiang, Yu-Jui Chang, Shiao-Wen Tsai
Graduate Institute of Biomedical Engineering, Chang Gung University, Taiwan.

16:30 **Biopolymer gel with embedded voids: tuning of mechanical and diffusive properties for controlled release applications.** **L P1.15**
Arindam Banerjee, Somenath Ganguly
Indian Institute of Technology Kharagpur, INDIA

16:30 **Artificial 3D tissue constructs based on gelatin** **L P1.16**
Martin Järvekülg1, Rasmus Liira1, Kaidi Möll2, Paula Reemann3, Mart Loog2 and Viljar Jaks4
1. University of Tartu, Institute of Physics, W. Ostwaldi Str 1, 50411, Tartu, Estonia, 2. Institute of Technology, University of Tartu, Nooruse 1, 50411, Tartu, Estonia, 3. Institute of Biomedicine and Translational Medicine, University of Tartu, Ravila 19, 50411 Tartu, Estonia, 4. Institute of Molecular and Cell Biology, University of Tartu, Riia 23, 23b-134, 51010, Tartu, Estonia.

16:30 **Next-Generation Artificial Cells: Soft-Hard Matter Hybridizations for Exoskeletal Mimics** **L P1.17**
Adithya Vivek, 1st Supervisor: Dr. Yuval Elani, 2nd Supervisor: Dr. Nick Brooks
Membrane Biophysics Group, Dept. Chemistry -Imperial College London

16:30 **Multimodal nanoparticles for medical applications** **L P1.18**
Michal M. Godlewski, Paula Kielbik, Anna Slonska-Zielonka, Waldemar Lipinski, Jaroslaw Olszewski, Mikolaj A. Gralak, Zdzislaw Gajewski, Jaroslaw Kaszewski, Rafal Pietruszka, Bartlomiej S. Witkowski, Marek Godlewski
Michal M. Godlewski, Paula Kielbik, Anna Slonska-Zielonka, Waldemar Lipinski, Jaroslaw Olszewski, Mikolaj A. Gralak, Zdzislaw Gajewski: Faculty of Veterinary Medicine, Warsaw University of Life Sciences ? SGGW, Nowoursynowska St, 02-776 Warsaw, Poland, Jaroslaw Kaszewski, Rafal Pietruszka, Bartlomiej S. Witkowski, Marek Godlewski: Institute of Physics, Polish Academy of Sciences, Al. Lotnikow 32/46, 02-668 Warsaw, Poland

16:30 **Effect of Heat Treatment Condition for Material Properties of Bio-ceramic Scaffold** **L P1.19**
Jae-Young Jeong, Yong-Hoon Jeong, Jae-Woong Yang, Kwang-Min Park, Kwan-Su Kang, Ji-Sun Park, Tae-Gon Jung
Department of R&D, OSONG Medical Innovation Foundation

16:30 **DIMER IS NOT DOUBLE: INSIGHT INTO THE SQUEEZING BEHAVIOUR OF A MONOMER AND A DIMER TRICHOGIN GA IV ANALOGS MONOLAYERS** **L P1.20**
B.Di Napoli, M.G.L.Messina, C.Mazzuca, E.Gatto, M.De Zotti, F.Formaggio, A.Palleschi, G.Marletta
B.Di Napoli, C.Mazzuca, E.Gatto, A.Palleschi: Department of Chemical Science and Technology, University of Rome Tor Vergata, Via della Ricerca Scientifica, 00133 Roma, Italy, M.G.L.Messina, G.Marletta: Laboratory for Molecular Surfaces and Nanotechnology, Department of Chemical Sciences, University of Catania and CSGI, Viale Andrea Doria 6, 95125, Catania, Italy, M.De Zotti, F.Formaggio: CB Padova Unit, CNR, Department of Chemistry, University of Padova, 35131 Padova, Italy

16:30 **Corrosion resistance of Ti6Al7Nb alloy with biodegradable polymer coatings** **L P1.21**
W. Kajzer, J. Szewczenko, A. Kajzer, M. Basiaga, M. Kaczmarek, M. Antonowicz, J. Jaworska, K. Jelonek, J. Kasperczyk
W. Kajzer, J. Szewczenko, A. Kajzer, M. Basiaga, M. Kaczmarek, M. Antonowicz - Silesian University of Technology, Faculty of Biomedical Engineering, Department of Biomaterials and Medical Devices Engineering, Roosevelta 40, 41-800 Zabrze, Poland. J. Jaworska, K. Jelonek, J. Kasperczyk - Centre of Polymer and Carbon Materials, Polish Academy of Science, M. Curie-Sklodowska 34, 41-819 Zabrze, Poland.

16:30 **Fluorescent Carbon dots preparation, characterization and neural tissue engineering** **L P1.22**
Raj Kumar and Orit Shefi
Bar Ilan Institute of Nanotechnology and Advanced Materials and Faculty of Engineering, Bar Ilan University, Ramat Gan-5290002, Israel

16:30 **Nanoscale deformation of PCL nanofibers with embedded drugs and ZnO nanoparticles** **L P1.23**
P. Gkertsiou, Z. Dardani, S. Kassavetis, A. K. Tsiapla, V. Mpakola, C. Kamaraki, C. Gravalidis, V. Karagkiozaki, S. Logothetidis
Nanotechnology Lab LTFN, Aristotle University of Thessaloniki, 54124, Thessaloniki, Greece

16:30 **Stabilized suspensions prepared from iron oxide nanoaggregates coupled with porphyrins** **L P1.24**
Lungu I.1,2, Badoi A.1, Gavrila Florescu L.1, Dumitrache F.1, Fleaca C.1, Staicu A.1, Ilie A.1, Banici AM.1, Greculeasa S.3, Vasile E.4
1. National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Str., PO Box MG-36, Magurele, Ilfov, Romania 2. Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest 3. Natl Inst Mat Phys, POB MG-7, Magurele 77125, Romania 4. Politehnica" University of Bucharest, Faculty of Applied Chemistry and Materials Sciences, 1-7 Gh. Polizu Str., Bucharest, Romania

16:30 **Magnetic Chitosan Biomaterials Towards Treatment/Diagnostic Solutions** **L P1.25**
Inês Cruz 1, Paula Parreira 2, Francisca Gomes 1, Clara Pereira 3, Cristina Martins 2, André M. Pereira 1
1 IFIMUP, Department of Physics and Astronomy, Faculty of Sciences, University of Porto, Porto, Portugal, 2 i3S?Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Portugal, 3 REQUIMTE/LAQV, Department of Chemistry and Biochemistry, Faculty of Sciences, University of Porto, Porto, Portugal,

16:30 **Investigation of morphological, structural changes and biological performance of Zn or Mg substituted hydroxyapatite** **L P1.26**
Bogdan, I.M.(1), Tite, T.(1), Balescu, L.M.(1), Iconaru, S. (1), Ciobanu, C.S. (1), Predoi, D. (1), Popa, A.C.(1,2), L. Albulescu (3), C. Tanase (3), S. Nita (4), Stan, G.E.(1)
(1)National Institute of Materials Physics, RO-077125 Magurele, Romania (2)Army Centre for Medical Research, RO-010195 Bucharest, Romania (3)"Victor Babes" National Institute of Pathology, Bucharest 050096, Romania (4) National Institute for Chemical Pharmaceutical Research and Development, Bucharest, Romania

16:30 **Investigation of morphological, structural and biological performance in Sr or Ce substituted hydroxyapatite** **L P1.27**
Bogdan, I.M.(1), Tite, T.(1), Balescu, L.M.(1), Popa, A.C.(1,2), L. Albulescu (3), C. Tanase (3), S. Nita (4), Stan, G.E.(1)
(1)National Institute of Materials Physics, RO-077125 Magurele, Romania (2)Army Centre for Medical Research, RO-010195 Bucharest, Romania (3)"Victor Babes" National Institute of Pathology, Bucharest 050096, Romania (4) National Institute for Chemical Pharmaceutical Research and Development, Bucharest, Romania

16:30 **BIO-INSPIRED HIERARCHICAL AND FUNCTIONALIZED SURFACE STRUCTURES FOR EFFICIENT CAPTURE AND RELEASE OF CIRCULATING TUMOR CELLS** **L P1.28**
Xiaoqiu Dou[a,b], Chuanliang Feng[a], and Holger Schönherr[b]*
[a] Xiaoqiu Dou, Chuanliang Feng: State Key Lab of Metal Matrix Composites, School of Materials Science and Engineering, Shanghai Jiaotong University, Dongchuan Road 800, 200240, Shanghai, China [b] Xiaoqiu Dou, Holger Schönherr: Physical Chemistry I and Research Center of Micro and Nanochemistry and Engineering (Cμ), Department of Chemistry and Biology, University of Siegen, Adolf-Reichwein-Str. 2, 57076, Siegen, Germany.

16:30 **Cationic ligands on laser – generated gold nanoparticles open doors for diagnostics, molecular transport, therapy** **L P1.29**
Andreas Schielke, Lisa Gamrad, Carmen Streich, Christoph Rehbock, Stephan Barcikowski
Technical Chemistry 1 and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Technical Chemistry 1 and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Technical Chemistry 1 and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Technical Chemistry 1 and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Technical Chemistry 1 and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen

16:30 **Fabrication of Mesoporous Nanoparticles for Biomedical Applications** **L P1.30**
Sung Bum Park1, SeungHyun Park2, Md Shahjahan Kabir Chowdury1, Won Hyung Ryu2, Yong-il Park1
1 Department of Advanced Material Science and Engineering, Kumoh National Institute of Technology, 61 Daehak-ro, Gumi, Gyeongbuk, 39177, Korea, 2 School of Mechanical Engineering, Yonsei University, 262 Seongsanno, Seodaemun-gu, Seoul 120-749, Korea

16:30 **Tailoring soft-interactions at the interface for loading and release of salicylic acid from functional PDMS materials** **L P1.31**
Ioritz Sorzabal Bellido, Yuri A. Diaz Fernandez, Arturo Susarrey-Arce, Adam Skelton, Fiona McBride, Alison J. Beckett, Ian A. Prior, and Rasmita Raval
Dr. I. Sorzabal Bellido, Dr. Y.A. Diaz-Fernandez, Dr. A. Susarrey-Arce, Dr. F. McBride, Prof. R. Raval Open Innovation Hub for Antimicrobial Surfaces, University of Liverpool, L69 3BX, UK Dr. A. J. Beckett, Prof. I, A. Prior, Biomedical EM Unit, University of Liverpool, L69 3BX, UK Dr. Adam Skelton Department of Chemistry, University of Liverpool, L69 3BX, UK

16:30 **Bismuth-doped nanohydroxyapatite coatings on titanium implants with improved radiopacity and antimicrobial activity** **L P1.32**
Gabriela Ciobanu, Maria Harja
"Gheorghe Asachi" Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection, Iasi, Romania

16:30 **Nanocomposite of polypeptide hydrogel: synthesis, fabrication and characterization** **L P1.33**
Tzu-Yi Yu, Ta-Ching Chen, Wei-Fang Su
Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan

16:30 **ANTIMICROBIAL PEPTIDES RELEASING NANOCOATINGS FOR PREVENTING MICROBIAL ADHESION AND BIOFILMS FORMATION ON MEDICAL IMPLANTS** **L P1.34**
I. Negut1, R. Cristescu1, C. Popescu1, A. Visan1, G. Dorcioman1, A. Popescu1, D. Istrati2, D.E. Mihaiescu2, M. Popa3, M.C. Chifiriuc3, R.J. Narayan4, D.B. Chrisey5
1 National Institute for Lasers, Plasma & Radiation Physics, Bucharest-Magurele, Romania 2 Faculty of Applied Chemistry and Materials Science, Politehnica University of Bucharest, Bucharest, Romania 3 Microbiology Immunology Department, Faculty of Biology, Research Institute of the University of Bucharest - ICUB, Bucharest, Romania 4 Department of Biomedical Engineering, University of North Carolina, Chapel Hill, NC, USA 5 Department of Physics and Engineering Physics, Tulane University, New Orleans, LA, USA

16:30 **Synergetic antibacterial effect in alkali-free bio-glasses incorporated with ZnO and/or SrO as therapeutic agents** **L P1.35**
Popa, A.C.(1,2), Tite, T. (1), Bogdan, I.M. (1), Fernandes, H.R. (3), Necsulescu, M.(2), C. Luculescu, C.(4), Cioangher, M.(1), Dumitru, V.(1), Stuart, B.W.(5), Grant, D.M. (5), Ferreira, J.M.F.(3), Stan, G.E. (1)
(1)National Institute of Materials Physics, 077125 Magurele-Ilfov, Romania (2) Army Centre for Medical Research, 020012 Bucharest, Romania (3)Department of Materials and Ceramics Engineering, CICECO, University of Aveiro, 3810-193 Aveiro, Portugal (4)National Institute for Lasers, Plasma and Radiation Physics, 077125 Magurele-Ilfov, Romania (5)Advanced Materials Research Group, Faculty of Engineering, University of Nottingham, NG7 2RD, UK

16:30 **Hybrid Nanocellulose Matrices for Remote Cell Actuation** **L P1.36**
O. Deschaume (1), J. Wellens (1), W. Yu (1), S. Jooken (1), P. Lettinga (1,2), W. Thielemans (3), C. Bartic (1)
(1) Soft Matter Physics and Biophysics unit, Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200D - box 2416, 3001 Leuven, Belgium, olivier.deschaume@kuleuven.be, (2) Forschungszentrum Jülich, Institute of Complex Systems (ICS-3), 52425 Jülich, Germany, (3) Renewable Materials and Nanotechnology Research Group, Department of Chemical Engineering, KU Leuven, Campus Kulak Kortrijk, Etienne Sabbelaan 53, 8500 Kortrijk, Belgium.

16:30 **CD-44 targeted gold nanoparticles for theranostic applications in cancer** **L P1.37**
Viviana C.L. Caruso,1,2 Vanessa Sanfilippo,1,2 Lorena M. Cucci, 1,2 Valentina Greco,2 Giusy Villaggio,1,2 Cristina Satriano1,2
1 Hybrid Nanobionterfaces Lab (NHIL), Department of Chemical Sciences, University of Catania, Italy, 2 Consorzio Interuniversitario di Ricerca in Chimica dei Metalli nei Sistemi Biologici (C.I.R.C.M.S.B.), Italy

16:30 **Effect of grain-boundary of hydroxyapatite on the adsorption of serum proteins** **L P1.38**
Seung-Hoon Um, Sang-Hoon Rhee
Department of Dental Biomaterials Science, School of Dentistry, Seoul National University

16:30 **Polyamphoteric hydrogels exhibit tenacious adhesion at mucosal tissue interface** **L P1.39**
Fumiko Nishio (1,2), Isao Hirata (1), Kazuhiro Tsuga (2), Koichi Kato (1)
(1) Department of Biomaterials, (2) Department of Advanced Prosthodontics, Graduate School of of Biomedical & Health Sciences, Hiroshima University, 1-2-3 Kasumi, Minami-ku, Hiroshima 734-8553, Japan

16:30 **Smart Biointerface for the Efficient Expansion of Neural Progenitor Cells Derived from Induced Pluripotent Stem Cells** **L P1.40**
Yuka Yamauchi (1,2), Kotaro Tanimoto (2), Koichi Kato (1)
(1) Department of Biomaterials, (2) Department of Orthodontics and Craniofacial Developmental Biology, Graduate School of Biomedical & Health Sciences, Hiroshima University, Hiroshima, Japan

16:30 **Magnetic-Responsive Bioceramic Nanocrystal for Potential Cancer Therapy** **L P1.41**
Hsi-Chin Wu1, 2*, Jing-Yun Lin2, Tzu-Wei Wang3, Jui-Sheng Sun4
1 Department of Bioengineering, Tatung University, Taiwan, 2 Department of Materials Engineering, Tatung University, Taiwan, 3 Department of Materials Science and Engineering, National Tsing Hua University, Taiwan, 4 Department of Orthopedic Surgery, National Taiwan University Hospital, Taiwan

16:30 **Translating conformational change of biomolecules into macroscopic swelling/shrinking in dynamic hydrogels** **L P1.42**
Se Won Bae, Seunghan Shin
Green Chemistry and Materials Group, Korea Institute of Industrial Technology, Cheonnan, Republic of Korea

16:30 **Preparation of a dual-function injectable hydrogel with high mechanical properties for cartilage tissue engineering applications** **L P1.43**
Dorsa Dehghan-Baniani (a,b), Reza Bagheri (b), Atefeh Solouk (c), Hongkai Wu (a,d,*) * Corresponding Author
(a) Department of Chemical and Biological Engineering, Division of Biomedical Engineering, The Hong Kong University of Science and Technology, Hong Kong, China (b) Polymeric Materials Research Group, Department of Materials Science and Engineering, Sharif University of Technology, Tehran, P.O. Box 11155-9466, Iran (c) Department of Biomedical Engineering, Amirkabir University of Technology, Tehran, Iran. (d) Department of Chemistry, The Hong Kong University of Science and Technology, Hong Kong, China. chhkwu@ust.hk and HKUST Shenzhen Research Institute, Shenzhen, China

16:30 **Guided Regeneration of a Rabbit Calvarial Defect Using the Silk Fibroin Nanofiber/Poly(glycolic acid) Hybrid Scaffold** **L P1.44**
Oh Hyeong Kwon, Donghwan Cho, Won Ho Park, and Sang-Hoon Rhee
Kumoh National Institute of Technology, Chungnam National University, Seoul National University

16:30 **Doxorubicin Loaded Thermo-responsive Superparamagnetic Nanocarriers for Controlled Drug Delivery and Hyperthermia Applications** **L P1.45**
Zied Ferjaoui 1 , Raphaël Schneider 2 , Eric Gaffet 1 and Halima Alem 1
1 Institut Jean Lamour (IJL), UMR CNRS 7198, Université de Lorraine, Department N2EV, Parc de Saurupt CS50840 54011 Nancy, France. 2 Laboratoire Réactions et Génie des Procédés (LRGP), UMR CNRS 7274, Université de Lorraine, 1 rue Grandville 54001 Nancy, France

16:35 **Polymer Thin Film?Induced Tumor Spheroids Acquire Cancer Stem Cell?like Properties** **L P1.46**
Minsuk Choi, Seung J. Yu, Yoonjung Choi, Hak R. Lee, Eunbeol Lee, Eunjung Lee, Yumi Lee, Junhyuk Song, Jin G. Son, Tae G. Lee, Jin Y. Kim, Sukmo Kang, Jieung Baek, Daeyoup Lee, Sung G. Im, and Sangyong Jon
Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology

16:35 **Surface functionalization with anticorrosive and antimicrobial biodegradable polymeric implants** **L P1.47**
A. Visan1, G.Popescu-Pelin1, I. Zgura2,M. Chiritoiu3, L. E. Sima3, Mihai Cosmin Cotru?5, R. Cristescu1, G. Socol1
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Ilfov, Romania 2 National Institute of Materials Physics, Magurele, Ilfov, Romania 3 Department of Molecular Cell Biology, Institute of Biochemistry, Romanian Academy, Bucharest, Romania 4Institute of Cellular Biology and Pathology ?N. Simionescu,? 8, BP Hasdeu Street, Bucharest, Romania 5University Politehnica of Bucharest, Faculty of Material Science and Engineering, Department of Metallic Materials Science, Physical Metallurgy, 313, Splaiul Independen?ei street, Building J, 060042 -Bucharest, Romania

Tuesday 28 may 2019

Biointerfaces at electrodes I : Mathieu Etienne

09:00 INV **Design of enzyme electrodes for biofuel cell applications** **L 4.1**
Seiya Tsujimura
Division of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba

09:30 **Redox Glyconanoparticles: Self-Assembly, Mediated Bioelectrocatalysis and the Solubilised Enzymatic Fuel Cell (SEFC)** **L 4.2**
Andrew J. Gross?, Jules L. Hammond?, Xiaohong Chen?, Fabien Giroud?, Christophe Travelet?, Redouane Borsali?, Serge Cosnier?
? Université Grenoble Alpes, CNRS, DCM, 38000 Grenoble, France ? Université Grenoble Alpes, CERMAV, 38000 Grenoble, France

09:30 **An antibacterial platform based on capacitive carbon-doped TiO2 nanotubes after charging with direct/alternating currents** **L 4.3**
Guomin Wang, Huaiyu Wang, Paul K. Chu
Guomin Wang, Paul K. Chu, Department of Physics and Department of Materials Science and Engineering, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, P. R. China Huaiyu Wang, Research Center for Biomedical Materials and Interfaces, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, 518055, P.R. China.

10:00 **Three-Dimensional PEDOT Based Device Platform for the Isolation and Detection of Circulating Tumor Cells** **L 4.4**
Chiung Wen Kuo, and Peilin Chen
Research Center for Applied Sciences, Academia Sinica, Taiwan.

10:15 **Coffee break**

11:15 **Plenary Session 1**

12:30 **Lunch**

Biointerfaces at electrodes II : Frederic Barriere

14:00 INV **Biomolecule-carbon interfaces: an opportunity for the design of functional materials** **L 5.1**
Nicolas Brun
Institut Charles Gerhardt Montpellier, UMR 5253, CNRS, Université de Montpellier, ENSCM

14:30 **Nanostructured electrodes as bioactive interfaces for spinal cord injury** **L 5.2**
Ana Domínguez-Bajo1, Ankor González-Mayorga2, Beatriz L. Rodilla3, Ana Arché3, Lucas Pérez3, María Teresa González3, Elisa López2,4, and María Concepción Serrano1,*, *Correspondence author: mc.terradas@csic.es
(1) Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas (ICMM-CSIC), Calle Sor Juana Inés de la Cruz 3, 28049 Madrid, Spain, (2) Hospital Nacional de Parapléjicos, Servicio de Salud de Castilla-La Mancha, Finca La Peraleda s/n, 45071 Toledo, Spain, (3) IMDEA Nanociencia, Calle Faraday 9, Campus Cantoblanco, 28049 Madrid, Spain, (4) Research Unit of ?Design and Development of Biomaterials for Neural Regeneration?, Hospital Nacional de Parapléjicos, Joint Research Unit with CSIC, 45071 Toledo, Spain.

14:45 **A new strategy to promote direct electron transfer in an electroactive artificial biofilm** **L 5.3**
Stéphane PINCK, Frédéric P.A. JORAND, Mengjie XU, Mathieu ETIENNE
Université de Lorraine, CNRS, LCPME, F-54000 Nancy, France.

15:00 **Bio-platform based on 3D nanowire electrodes for electrical monitoring of single neuron activity** **L 5.4**
L. Bettamin[1] [2], A. Casanova[1], M-C. Blatche[1], F. Mathieu[1], K. Bourgade[2], H. Martin[2], E. Suberbielle[2], D. Gonzalez-Dunia[2], G. Larrieu[1]
[1]LAAS-CNRS, Université de Toulouse, CNRS, Toulouse, France [2]CPTP, INSERM UMR 1043, CNRS UMR 5282, Université de Toulouse, Toulouse, France

15:15 **Flexible nanostructured electrodes as neural tissue interfaces** **L 5.5**

Beatriz L. Rodilla (1,2), Claudia Fernández-González (1,2), Ana Arché (1), Ana Domínguez-Bajo (3), Ankor González-Mayorga (4), Elisa López-Dolado (4), Sandra Ruiz-Gomez (2), Julio Camarero (1,5), Rodolfo Miranda (1,5), María Concepción Serrano (3), Lucas Pérez (1,2), María Teresa González (1)
(1) IMDEA Nanociencia, Campus Cantoblanco, 28049 Madrid, Spain, (2) Depto. Física de Materiales. Universidad Complutense de Madrid, 28040, Madrid, Spain, (3) Instituto de Ciencia de Materiales de Madrid (ICMM-CSIC), 28049 Madrid, Spain, (4) Hospital Nacional de Parapléjicos, Servicio de Salud de Castilla-La Mancha, 45071 Toledo, Spain, (5) Depto. Física de la Materia Condensada-IFIMAC. Universidad Autónoma de Madrid, 28049, Madrid, Spain

15:30 **Single-molecule label-free large-area bioelectronic sensing of clinical biomarkers** **L 5.6**

Luisa Torsi,1,2,3* Eleonora Macchia,1 Rosaria Anna Picca,1,2 Kyriaki Manoli,1 Cinzia Di Franco,4 Nicola Cioffi,1,2 Ronald Österbacka,3 Gerardo Palazzo1,2 and Gaetano Scamarcio,4,5
1Dipartimento di Chimica - Università degli Studi di Bari “Aldo Moro” - Bari (I) 2CSGI (Centre for Colloid and Surface Science) – Bari (I) 3Center for Functional materials, The Faculty of Science and Engineering - Åbo Akademi University – Turku (FI) 4CNR - Istituto di Fotonica e Nanotecnologie, Sede di Bari (I) 5Dipartimento Interateneo di Fisica “M. Merlin” - Università degli Studi di Bari – “Aldo Moro” - Bari (I) *luisa.torsi@uniba.it

15:45 **Coffee Break**

Biointerfaces for implantable medical devices : Klaus Jandt

16:00 **In-Situ TEM Studies of Biomineralization** **L 6.1**

Reza Shahbazian-Yassar(1)*, Tolou Shokuhfar(2)
(1) Associate Professor, Department of Mechanical Engineering, University of Illinois at Chicago, Chicago, IL 60607, USA. *Email: rsyassar@uic.edu (2) Associate Professor, Department of BioEngineering, University of Illinois at Chicago, Chicago, IL 60607, USA.

16:30 **A molecular view of nanohydroxyapatite surfaces: the added value of combining IR spectroscopy and quantum mechanical modeling** **L 6.2**

P. Ivanchenko (a), M. Iafisco (b), A. Tampieri (b), P. Ugliengo (a) and G. Martra (a)
a) Department of Chemistry and Interdepartmental Centre NIS, University of Torino, Via P. Giuria 7, 10125 Torino -Italy b) Institute of Science and Technology for Ceramics (ISTEC), National Research Council (CNR), Via Granarolo 64, 48018 Faenza - Italy

16:45 **Lactofferin based nanocomposite coatings for modulating the macrophages and osteoblast response in vitro** **L 6.3**

A. Bonciu1, V. Dinca1, M. Icriverzi2,3, S. Brajnicov1, L. Rusen1, A. Roseanu2, A. Campean3 and M. Dinescu1
1National Institute for Lasers, Plasma and radiation Physics, Bucharest, Romania 2Institute of Biochemistry of the Romanian Academy IBAR, Bucharest, Romania 3University of Bucharest, Faculty of Biology, Bucharest, Romania 4University of Bucharest, Faculty of Physics, Bucharest, Romania

17:00 **Ionized Jet Deposition of metallic and ceramic nanostructured thin films: antibacterial and biomimetic coatings for biomedical d** **L 6.4**

G. Graziani, M. Bianchi, C. Gualandi, M.L. Focarete, G. Pagnotta, M. Carlini, N. Baldini
G. Graziani, IRCSS Istituto Ortopedico Rizzoli, Laboratory of NanoBiotechnology, bOlogna, Italy, M. Bianchi, Fondazione Istituto Italiano di Tecnologia Centro di Neurofisiologia traslazionale, Ferrara (IT) & IRCSS Istituto Ortopedico Rizzoli, Laboratory of NanoBiotechnology, Bologna (IT), C. Gualandi, Department of Chemistry «Giacomo Ciamician», University of Bologna, Bologna (IT), M.L. Focarete, Department of Chemistry «Giacomo Ciamician», University of Bologna, Bologna (IT), G. Pagnotta, Department of Chemistry «Giacomo Ciamician», University of Bologna, Bologna (IT), M. Carlini, Department of Chemistry «Giacomo Ciamician», University of Bologna, Bologna (IT), N. Baldini, IRCSS Istituto Ortopedico Rizzoli, Orthopaedic Pathophysiology and Regenerative Medicine Unit, Bologna (IT) & Department of Biomedical and Neuromotor Sciences, University of Bologna, Bologna (IT)

17:15 **Electric field-sensitive polymers as controlled Gentamicin sulfate delivery platforms** **L 6.5**

Anita Visan 1, Gianina Popescu-Pelin 1, Oana Gherasim 1,2, Valentina Grumezescu 1,2, Marcela Socol 3, Irina Zgura 3, Camelia Florica 3, Roxana C. Popescu 4, Diana Savu 4, Alina Maria Holban 5, Rodica Cristescu 1, Consuela E. Matei 1, Gabriel Socol 1
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Ilfov, Romania, 2 Department of Science and Engineering of Oxide Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, Bucharest, Romania, 3 National Institute of Materials Physics, Magurele, Ilfov, Romania 4 Life and Environmental Physics Department, Horia Hulubei National Institute of Physics and Nuclear Engineering, Magurele, Ilfov, Romania, 5 Microbiology & Immunology Department, Faculty of Biology, University of Bucharest, Bucharest, Romania,

17:30 **Bioactive, antimicrobial 3D printed implants for large jawbone defects after tumour resection** **L 6.6**

Roman Major1, Marcin Surmiak2, Juergen M. Lackner3, Michal Charkiewicz5
1 Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Reymonta St. 25, Crakow, PL. 2 Department of Medicine, Jagiellonian University Medical College, 8 Skawinska Street, 31-066 Cracow, PL. 3 JOANNEUM RESEARCH Forschungsgesellschaft mbH MATERIALS - Institute of Surface Technologies and Photonics Functional Surfaces Leobner Straße 94 A-8712 Niklasdorf 4 ChM sp. z.o.o. Lewickie 3B 16-061 Juchnowiec Ko?cielny Poland

Nanomaterials for biosensing and biodelivery I : Andrew J. Gross

09:00 **SNAP and Click: improved strategies for bioconjugation to quantum dots** **L 7.1**
Victor R. Mann, Sarah Wichner, Alexander Powers, Bruce E. Cohen
The Molecular Foundry, Lawrence Berkeley National Laboratory

09:30 **Painless and responsive control of blood glucose based on micro/nano materials** **L 7.2**
Yujie Zhang1, Wubin Dai2, Yifeng Lei1*
1 Department of Materials Engineering, School of Mechanical Engineering, Wuhan University, Wuhan 430072, China, 2 Department of Materials Science and Engineering, Wuhan Institute of Technology, Wuhan 430205, China

09:45 **Magneto-responsive metafluids for in situ SERS sensing of molecules** **L 7.3**
Yutaro Hirai, Hiroshi Yabu
Tohoku University

10:00 **Flexible Polyethylene based Bragg-Refractors for Multipurpose Applications** **L 7.4**
Pedro M. Resende, Ruy Sanz, Olga Caballero-Calero, Marisol Martín-González
Instituto de Micro y Nanotecnología (IMN-CSIC), calle Isaac Newton 8, PTM, 28760 Madrid, Spain

10:15 **Coffee break**

Nanostructured surfaces for tissue and cell control : Matthew R. Lockett

10:30 INV **Dynamic cell instructive materials to control and guide tissue formation in vitro** **L 8.1**
Prof. Paolo Netti
Interdisciplinary Research Centre for Biomaterials (CRIB), University of Naples Federico II and Centre for Advanced Biomaterials for Health Care, Istituto Italiano di Tecnologia, Napoli, Italy

11:00 **Understanding biointerfaces in aged human bone toward improving biomechanical responses** **L 8.2**
G. Sarau1,2, P. Milovanovic3,4, A. vom Scheidt3, E. ?. Zimmermann3, K. Mletzko3, K. Püschel5, Marija Djuric4, B. Hoffmann2, T. Yorgan3, M. Schweizer6, M. Amling3, B. Busse3,7 and S. Christiansen1,2,
1. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, 2. Max Planck Institute for the Science of Light, Staudtstr. 2, 91058 Erlangen, Germany, 3. Department of Osteology and Biomechanics, University Medical Center Hamburg-Eppendorf, Lottestrasse 55a, 22529 Hamburg, Germany, 4. Laboratory for Anthropology and Skeletal Biology, Institute of Anatomy, Faculty of Medicine, University of Belgrade, Dr Subotica 4/2, 11000 Belgrade, Serbia, 5. Department of Forensic Medicine, University Medical Center Hamburg-Eppendorf, Martinistr. 52, 20246 Hamburg, Germany, 6. Center of Molecular Neurobiology, University Medical Center Hamburg-Eppendorf, Martinistrasse 52, 20246 Hamburg, Germany, 7. Materials Sciences Division, Lawrence Berkeley National Laboratory / University of California-Berkeley, CA 94720, USA, 8. Physics Department, Freie Universität Berlin, Arnimallee 14, 14195 Berlin, Germany

11:15 **Polymer-based scaffolds for neural stem cell culture** **L 8.3**
Jorge Morgado1,2, Laura Sordini1,3, Fábio F. F. Garrudo1,3, Carlos A. V. Rodrigues2,3, Frederico C. Ferreira2,3
1. Instituto de Telecomunicações, Av. Rovisco Pais, 1049-001 Lisboa, Portugal, 2. Department of Bioengineering, Instituto Superior Técnico, University of Lisbon, Portugal, 3. iBB-Institute for Bioengineering and Biosciences, Instituto Superior Técnico, University of Lisbon, Av. Rovisco Pais, 1049-001 Lisboa, Portugal

11:30 **Nanoscale Mechanosensing of Natural Killer Cells is Revealed by Antigen?Functionalized Nanowires** **L 8.4**
Guillaume Le Saux, ?? Netanel Bar?Hanin, ?? Avishay Edri, § Uzi Hadad, ? Angel Porgador, § Mark Schvartzman??
?Department of Materials Engineering, Ben-Gurion University of the Negev, Beer-Sheva, 84105, Israel, ?Ilse Katz Institute for Nanoscale Science & Technology, Ben-Gurion University of the Negev, Beer-Sheva, 84105, Israel, §The Shraga Segal Department of Microbiology, Immunology and Genetics, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, 84105, Israel

11:45 **Poly(3,4-ethylenedioxythiophene) Based Bioelectrodes with Chemical and Topographical Cues to Manipulate the Neuronal Cells** **L 8.5**
Nien-Chen Tsai1+, Jia-Wei She2+, Jhih-Guang Wu2, Peilin Chen3, Yu-Sheng Hsiao4*, and Jiashing Yu1*
1. Department of Chemical Engineering, National Taiwan University, Da-an, Taipei City 10617, Taiwan. 2. Department of Materials Science and Engineering, National Taiwan University, Da-an, Taipei City 10617, Taiwan. 3. Research Center for Applied Sciences, Academia Sinica, 128 Sec. 2, Academia Rd., Nankang, Taipei City, 11529, Taiwan. 4. Department of Materials Engineering, Ming Chi University of Technology, Taishan, New Taipei City 24301, Taiwan.

12:00 **Lunch**

Biofilms : Giovanni Marletta

14:00 INV **Bacterial interactions with nanostructured surfaces** **L 9.1**
Henk J. Busscher
University of Groningen and University Medical Center Groningen Antonius Deusinglaan 1, 9713AV Groningen, The Netherlands

14:30 **Fluorescent mesoporous silica nanoparticle pH sensors to map pH within bacterial biofilms** **L 9.2**
Stephanie Fulaz, Caio Barros, Henry Devlin, Dishon Hiebner, Laura Quinn, Stefania Vitale, Eoin Casey
UCD School of Chemical and Bioprocess Engineering, University College Dublin, Belfield, Dublin 4, Ireland

14:45 **Polyglycerol grafted nanoparticles improve stealth effect by resisting protein corona formation: A comparison study to PEG** **L 9.3**
Yajuan Zou, *Naoki Komatsu
Graduate School of Human and Environmental Studies, Kyoto University

15:00 **To be or not to be in water? The dilemma of a peptide at the air/water interface** **L 9.4**
B.Di Napoli, C.Mazzuca, M.De Zotti,F.Formaggio, M. Venanzi, A.Palleschi
B.Di Napoli, C.Mazzuca, M. Venanzi, A.Palleschi: Department of Chemical Science and Technology, University of Rome ?Tor Vergata?, Via della Ricerca Scientifica, 00133, Rome, Italy, M.De Zotti, F.Formaggio: CB Padova Unit, CNR, Department of Chemistry, University of Padova, 35131 Padova, Italy

15:15 **Bacterial biofilm interactions with surface engineered fluorescent silica nanoparticles: insights on the role of the EPS** **L 9.5**
Stefania Vitale, Caio H. N. Barros, Henry Devlin, Stephanie Fulaz Silva, Dishon W. Hiebner, Laura Quinn, Eoin Casey
University College Dublin, School of Chemical and Bioprocess Engineering, Belfield, Dublin 4 (Ireland)

15:30 **Anti bacterial hydrophilic nanopatterned silk-based material** **L 9.6**
Babak Mehrjou (1), Mo Shi (1), Guomin Wang (1), Abdul Mateen Qasim (1), Hao Song (2), Kaifu Huo (2), Paul k. Chu (1),*
(1) Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China (2) Wuhan National Laboratories for Optoelectronics, School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan 430074, China

Poster Session II : TBD

16:30 **Design of pH responsive electrodes for measuring pH at bio-interfaces** **L P2.1**
N. L. Costa, T. Flinois, M. Cronier, E. Lebègue, F. Barrière
Univ Rennes, CNRS, Institut des Sciences Chimiques de Rennes - F-35000 Rennes, France

16:30 **Simultaneous Submicron IR & Raman (IRaman) Spectral Imaging for Highly Spatially Resolved Analysis of Bioplastic Composites Collected Using Optical Photothermal Infrared Spectroscopy** **L P2.2**
Mustafa Kansiz1*, Eoghan Dillon1, and Isao Noda2,3
1 Photothermal Spectroscopy Corp, Santa Barbara, CA 93101, U.S.A. 2 Department of Materials Science and Engineering, University of Delaware, Newark, DE 19716, U.S.A. 3 Danimer Scientific, Bainbridge, GA 39817, U.S.A. Keywords: IRaman, Simultaneous IR & Raman, Instrumentation development, optical photothermal spectroscopy, 2D-COS, bioplastics

16:30 **A Wireless Controllable Optoelectronic Device for Optogenetics** **L P2.3**
Teng Zan□Xiaoyan Yi□Chen Lin□Junnan Zhou□Junxi Wang□Jinmin Li
Research and Development Center for Solid State Lighting, Institute of Semiconductors, Chinese Academy of Sciences

16:30 **Nano and Macro Structured Materials from Alumina and Silicon for Novel Biomedical Applications** **L P2.4**
Monika Lelonek, Dr. Petra Goering
SmartMembranes GmbH, Halle, Germany

16:30 **Metal Oxides as Biosensor Materials to Improve the Biointerface** **L P2.5**
Hsin-Ning Ku, Tri-Rung Yew*
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan 30013

16:30 **Towards entirely polymer-based transient neural devices** **L P2.6**
Laura Ferlauto, Paola Vagni, Elodie Geneviève Zollinger, Sara Pagnamenta, Diego Ghezzi
Medtronic Chair in Neuroengineering, Center for Neuroprosthetics and Institute of Bioengineering, School of Engineering, École Polytechnique Fédérale de Lausanne, Switzerland

16:30 **A biocompatible implantable neural probe with drug/electrostimulation hybrid electrode array** **L P2.7**
Po-Chun Chen (1), Fu-Erh Chan (1), Zheng-Ting Tang (2), You-Yin Chen (3), Wei-Chen Huang (2), Shao-Sian Li (2), Jiashing Yu(4).
1 Department of Materials Mineral Resources Engineering, National Taipei University of Technology 2 Graduate Institute of Biomedical Materials and Tissue Engineering, Taipei Medical University 3 Department of Biomedical Engineering, National Yang-Ming University 4 Department of Chemical Engineering, National Taiwan University

16:30 **High-throughput DNA extraction method using SiNx Nanofilter device** **L P2.8**
Jaehyun Kang1, Yong Tae Kim2, Junhyoung Ahn3, Seok Jae Lee2, Jaejong Lee3, and Ki-Bum Kim1
1 Department of Materials Science and Engineering, Seoul National University, 599 Gwanak-ro, Gwanak-gu, Seoul 08826, Korea 2 National Nanofab Center (NNFC) 335 Gwahakno, Yuseong-gu, Daejeon 305-806, Korea 3 Korea Institute of Machinery and Materials, 156 Gajeongbuk-ro, Yuseong-gu, Daejeon 305-343, Korea

16:30 **Physical methods of cancer theranostics by using biodegradable porous silicon nanoparticles** **L P2.9**
L.A. Osminkina 1,2, M.B. Gongalsky 1, U.A. Natashina 1, G.Z. Gvindzhilia 1, A.P. Sviridov 1, S.N. Agafilushkina 1, K. P. Tamarov 1, A. A. Kudryavtsev 3
1 Lomonosov Moscow State University, Department of Physics, Leninskie Gory 1, 119991 Moscow, Russian Federation, 2Institute for Biological Instrumentation of Russian Academy of Sciences, 142290 Pushchino, Moscow Region, Russian Federation 3Institute of Theoretical and Experimental Biophysics, Russian Academy of Science, Pushchino 142290, Russian Federation

16:30 **Polypyrrole Nanotube Transistor Based Dopamine Aptasensor** **L P2.10**
Jiyeon Lee, Oh Seok Kwon*
Infectious Disease Research Center, Korea Research Institute of Bioscience & Biotechnology (KRIBB)

16:30 **Bioinspired and electrically conductive suction cups for enhanced surface adhesion of conductive films** **L P2.11**
Pedro M. Resende, Cristina V. Manzano, Marisol Martín-González
Instituto de Micro y Nanotecnología (IMN-CSIC), calle Isaac Newton 8, PTM, 28760 Madrid, Spain

16:30 **Formate dehydrogenase (FDH)-immobilised cathode for CO2 Utilization** **L P2.12**
Sen Mei1, Mingyi Wang2, Juan Yang1, Paul Hoff Backe2, Brian Wabende1, Mathieu Grandcolas1, Magnar Bjørås2, Christian Simon1
1. SINTEF Industry, Department of Materials and Nanotechnology, P.O. Box 124 Blindern, NO-0314 Oslo, Norway, 2. Department of Microbiology, Oslo University Hospital, P.O. Box 4950 Nydalen, NO-0424 Oslo, Norway

16:30 **Cell Proliferation and Migration in Bicontinuous Bijels-derived Hybrid Hydrogel Membranes** **L P2.13**
Haoran Sun, Min Wang *
Department of Mechanical Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong * Email: memwang@hku.hk

16:30 **Preparation and characterization of Zinc oxide tetrapods and neuroengineering application** **L P2.14**
Raj Kumar, Orit Shefi, Yogendra Kumar Mishra
Bar-Ilan Institute for Nanotechnology and Advanced Materials (BINA) and Faculty of Engineering, Bar-Ilan University, Ramat Gan 5290002, Israel Functional Nanomaterials Center, Institute of Materials Science, Kiel University, Kaiserstr, 2, D-24143 Kiel, Germany

16:30 **Dual-converted chemical probes conjugated Triplet-Triplet Annihilation Upconversion nanocapsules for monitoring of heavy metals** **L P2.15**
Sung Eun Seo, Oh Seok Kwon
Korea Research Institute of Bioscience and Biotechnology (KRIBB)

16:30 **Simply said: laser induced photonic effects in PDMS elastomer ... But for novel approach to implantable neural interface applica** **L P2.16**
N.E. Stankova1, N.N. Nedyalkov1, A.S. Nikolov1, P.A. Atanasov1, E. Radeva2, E. Iordanova2, G. Yankov2, V. Mihajlov2, K.N. Kolev3
1Institute of Electronics, Bulgarian Academy of Sciences, 72 Tzarigradsko Chaussee blvd., 1784 Sofia, Bulgaria, 2Institute of Solid State Physics, Bulgarian Academy of Sciences, 72 Tsarigradsko shousse blvd., 1784 Sofia, Bulgaria, 3Institute of Physical Chemistry, Bulgarian Academy of Sciences, Acad. Georgi Bonchev str. bld.11, 1113 Sofia, Bulgaria

16:30 **Biosensing MWCNs surface at a suspension and coating layer: modelling of biointerface bonds and experiment.** **L P2.17**
N. Tsierkezos, U.Ritter, P.Scharff (1), O.Ivanyuta, E.Buzaneva (2)
1- TU Ilmenau, Institute for Chemistry and Biotechnology,Postfach 100565, 986 884, Ilmenau, Germany , 2- TSN University of Kyiv, 64/13 Vladymirska Str.,01033, Kyiv, Ukraine e-mail: iva@univ.net.ua

16:30 **Flexible and Wearable Electrode for Monitoring of Biological Signals** **L P2.18**
Seung Min Lee, Kwang-Ho Lee
Advanced Materials Science and Engineering, Kangwon National University

16:30 **In vivo biodistribution and interactions of carbon nano-onions in zebrafish** **L P2.36**
Marta d?Amora1 and Silvia Giordani1, 2
1 Nano Carbon Materials, Istituto Italiano di Tecnologia, Via Livorno 60, 10144, Turin, Italy 2 School of Chemical Sciences, Dublin City University, Dublin, Ireland

16:30 **A novel Electrochemical immunosensor platform for TNF-? cytokines detection in real human saliva** **L P2.19**
Lassaad Barhoumi (a, b), Abdoullatif Baraket (c), Mounir Ben Ali (a,b), Abdelhamid Errachid (c)
(a) Higher Institute of Applied Sciences and Technology of Sousse, University of Sousse, Sousse, Tunisia, (b) Nanomisene Lab, LR16CRMN01, Center for Research on Microelectronics and Nanotechnology of Sousse, Sousse, Tunisia, (c) Université de Lyon, Institut des Sciences Analytiques,UMR 5280, CNRS,Université Lyon 1, ENS Lyon-5, rue de la Doua, F-69100 Villeurbanne, France.

16:30 **New biointerface material to realize ohmic contacts in larger flexible device** **L P2.20**
Qingzhen Bian, Yuxin Xia, Chiara Musumeci, Olle Inganas
Qingzhen Bian, Olle Inganas Department of Physics, Chemistry and Biology (IFM), Linköping University, 58183 Linköping, Sweden.

16:30 **Bioelectrochemical TiN|FDH Catalyst for CO2 Reduction to HCOOH** **L P2.21**
Federica Arena, Giorgio Giuffredi, Andrea Perego, Stefano Donini, Emilio Parisini, Fabio Di Fonzo
Dipartimento di Energia-Politecnico di Milano, Dipartimento di Energia-Politecnico di Milano, CNST-IIT, CNST-IIT, CNST-IIT,CNST-IIT

16:30 **Surface Modified Quantum Dots for Real-Time Imaging of Circulating Tumor Cells** **L P2.22**
Chiung Wen Kuo and Peilin Chen
Research Center for Applied Sciences, Academia Sincia, Taiwan

16:30 **Engineegring of Implantable Microfluidic Device Based on Smart Hydrogel for Kidney Replacement** **L P2.23**
Marleine Tamer (a,b), Maria Bassil (b), Sebastien Balme (a), Philippe Miele (a), Mario El Tahchi (b), Mikhael Bechelany (a)
a. Institut Européen des Membranes, ENSCM, CNRS, Université de Montpellier, France. b. Laboratoire des Biomatériaux et Matériaux Intelligents, Département de Physique, Université Libanaise - Faculté des Sciences II, Jdeidet, Liban.

16:30 **AFM study of functionalized gold nanoparticles for drug delivery system applications** **L P2.24**
Patrick Lemoine*1, Chris Dooley1, Emma Harrison2, Dorian Dixon1
1,NIBEC, Ulster University, Shore Road, Newtownabbey, BT37 0QB, UK 2, Terumo BCT- Ltd, Old Belfast Road, Millbrook, Larne BT40 2SH, UK

16:30 **Binding of viruses with porous silicon nanostructures for sensors applications** **L P2.25**

L.A. Osminkina 1,2, S.N. Agafilushkina 1, M.B. Gongalsky 1, U.A. Natashina 1, N.Yu. Saushkin 1, E.A. Kropotkina 3, A. A. Kudryavtsev 4, J.V. Samsonova 5, A.S. Gambaryan 3
1Lomonosov Moscow State University, Physics Department, Leninskie Gory 1, 119991 Moscow, Russian Federation 2Institute for Biological Instrumentation of Russian Academy of Sciences, 142290 Pushchino, Moscow Region, Russian Federation 3Chumakov Federal Scientific Center for Research and Development of Immune-and-Biological Products, Russian Academy of Sciences, Moscow, 108819 Russian Federation 4Institute of Theoretical and Experimental Biophysics, Russian Academy of Science, Pushchino 142290, Russian Federation 5Lomonosov Moscow State University, Department of Chemistry, Leninskie Gory 1, 119991 Moscow, Russian Federation

16:30 **Influence of surface oxidation on cytotoxicity of titanium carbides monolayers** **L P2.26**

A. Szuplewska, A. Rozmyslowska-Wojciechowska, Sz. Pozniak, M. Chudy, M. Birowska, M. Popielski, B. Scheibe, V. Natu, M. W. Barsoum, J. A. Majewski, A. M. Jastrzebska
Warsaw University of Technology, Faculty of Chemistry, Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw University of Technology, Faculty of Chemistry, Faculty of Physics, University of Warsaw, Faculty of Physics, University of Warsaw, NanoBioMedical Centre, Adam Mickiewicz University, Department of Materials Science and Engineering and A. J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, Department of Materials Science and Engineering and A. J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, Warsaw University of Technology, Faculty of Materials Science and Engineering

16:30 **High Performance Hazards Monitoring System Based Field-Effect Transistor (FET) with G-protein-coupled receptor (GPCR) Integrated** **L P2.27**

Seon Joo Park, Oh Seok Kwon*
Infectious Disease Research Center, Korea Research Institute of Bioscience and Biotechnology (KRIBB)

16:30 **Enzymatic biofuel cells using mediator embedded biocatalysts** **L P2.48**

Yongchai Kwon
Graduate school of Energy and Environment, Seoul National University of Science and Technology

16:30 **Optical biosensor for single point mutation detection in amyloid β peptide fragments** **L P2.28**

Phuong Hoang, Niveen M. Khashab
Smart Hybrid Materials Lab (SHMs), Advanced Membranes and Porous Materials Center (AMPMC), King Abdullah University of Science and Technology (KAUST)

16:30 **Exploring the Potassium Ion-Sensitive Characteristics of Silicon Nanowire BioFETs using Different Gate Controls** **L P2.29**

Ming-Pei Lu
Taiwan Semiconductor Research Institute, National Applied Research Laboratories, Taiwan

16:30 **Enzyme modified Au-Ti heterostructures for glucose detection - spectroscopic and electrochemical characterization** **L P2.30**

Wiktoria Lipińska, Katarzyna Siuzdak, Jacek Ryl, Gerard Śliwiński, Katarzyna Grochowska
The Szewalski Institute IMP PAN, 80-231 Gdańsk, Fiszera 14 st., Poland, Gdańsk University of Technology, 80-233 Gdańsk, Narutowicza 11/12 st., Poland

16:30 **Synthesis of PSMA-targeted upconverting nanoparticles for optical/ scintigraphic imaging of prostate cancer** **L P2.31**

Axel Cordonnier (1,2), Damien Boyer (2), Sophie Besse (1), Arnaud Briat (1), Françoise Degoul (1), Rachid Mahiou (2), Leslie Mazuel (1), Mercedes Quintana (1), Magali Vivier (1), Elisabeth Miot-Noirault (1), Jean-Michel Chezal (1)
(1) Université Clermont Auvergne, INSERM, UMR 1240 IMoST, F-63000 Clermont-Ferrand, France, (2) Université Clermont Auvergne, CNRS, SIGMA Clermont, ICCF, F-63000 Clermont-Ferrand, France

16:30 **Electrode functionalization for NAD(P)H regeneration applicable in enzymatic electrosynthesis** **L P2.32**

T.H.X. Le,1,2,3,4, M. Xu,1,2,3,4, M. Etienne,1 Lin Zhang,1 N. Vilà,1 F. Lapicque,2 A. Hehn,3 A. Celzard,4 A. Walcarius1
1 LCPME, UMR 7564 CNRS - Université de Lorraine, 405 rue de Vandoeuvre, 54600 Villers-lès-Nancy, France. 2 LRGP, UMR 7274 CNRS - Université de Lorraine, 1 rue Grandville, 54000 Nancy, France 3 LAE, UMR 1121 INRA– Université de Lorraine, 2 avenue de la Forêt de Haye, 54500 Vandœuvre-lès-Nancy, France 4 Institut Jean Lamour, UMR 7198 CNRS – Université de Lorraine, 27 rue Philippe Séguin, 88000 Epinal, France

16:30 **PEDOT:PSS as smart biointerface for monitoring cell stress condition in leaky-barrier cell lines** **L P2.33**

F. Decataldo, M. Barbalinardo, M. Tessarolo, M. Calienni, D. Gentili, F. Valle, M. Cavallini,B. Fraboni
F. Decataldo, M. Tessarolo, M. Calienni, B. Fraboni - Department of Physics and Astronomy, University of Bologna, Italy M. Barbalinardo, D. Gentili, F. Valle, M. Cavallini - Instituto per lo Studio dei Materiali Nanostrutturati (ISMN), Centro Nazionale delle Ricerche (CNR), Bologna, Italy

16:30 **Optical monitoring of porous silicon nanoparticles biodegradation in living cells and simulated liquids** **L P2.34**

U.A. Natashina, M.B. Gongalsky, A. A. Kudryavtsev, L.A. Osminkina
Department of Physics, Lomonosov Moscow State University, Leninskie Gory 1, 119991 Moscow, Russian Federation, Institute of Theoretical and Experimental Biophysics, Russian Academy of Science, Pushchino 142290, Russian Federation, Institute for Biological Instrumentation of Russian Academy of Sciences, 142290 Pushchino, Moscow Region, Russia

16:30 **Interferometric sensing of bacteria located on a double etched porous silicon layer** **L P2.35**

M. B. Gongalsky, A. A. Koval, S.N. Agafilushkina, and L. A. Osminkina
Lomonosov Moscow State University, Physics Department, Leninskie Gory 1, 119991 Moscow, Russian Federation

16:30 **Amphiphilic luminescent porous silicon nanoparticles as cavitation amplifiers for cancer theranostics** **L P2.37**

M.B. Gongalsky1,2, A.P. Sviridov1, V.D. Egoshina1, G.Z. Gvindzhilia1, A.A. Kudryavtsev3, V.G. Andreev1, M.J. Sailor2, L.A. Osminkina1
1 Lomonosov Moscow State University, Faculty of Physics, Russia 2 University of California San Diego, Department of Chemistry and Biochemistry, USA 3 Institute of Theoretical and Experimental Biophysics, Russian Academy of Science, Russia

16:30 **Sensing of chemical stimulus by an oscillating swimmer** **L P2.38**

Ruma Maity, P. S. Burada
Dept. of Physics, Indian Institute of Technology Kharagpur , Dept. of Physics, Indian Institute of Technology Kharagpur.

16:30 **Bioactive electrografted Aryldiazonium salts on graphite based anodes for Microbial Fuel Cells applications** **L P2.39**

Alessandro Iannaci, Adam T. Myles, James A. Behan, Thomas Flinois, Frédéric Barriere, Eoin Scanlan, Paula E. Colavita
Alessandro Iannaci, Adam T. Myles, James A. Behan, Paula E. Colavita School of Chemistry, CRANN and AMBER research centres, Trinity College Dublin, College Green, Dublin 2, Thomas Flinois, Frédéric Barriere Univ Rennes, CNRS, Institut des Sciences Chimiques de Rennes, France

16:30 **Development of Carbene interfacing compound for ultra-stable biosensors** **L P2.40**

Jinyeong Kim , Oh Seok Kwon
Korea Research Institute of Bioscience and Biotechnology (KRIBB)

16:30 **Interfacial Polymerization of Polydopamine-gelatin composite film for 3D modeling** **L P2.41**

Hiroya Abe, Hiroshi Yabu
WPI-AIMR, Tohoku University, Japan

16:30 **How an onion can become a sniper: Doxorubicin ? Folic acid functionalized carbon nano-onions as targeted drug delivery systems** **L P2.42**

Stefania Lettieri, Debora Russo, Ilaria Penna, Adalberto Camisasca, Tiziano Bandiera, Silvia Giordani
Stefania Lettieri, Nano Carbon Materials, Istituto Italiano di Tecnologia (IIT), via Livorno 60, 10144, Turin, Italy, Debora Russo, D3 - PharmaChemistry Facility, Istituto Italiano di Tecnologia (IIT), via Morego 30, 16163, Genoa, Italy, Ilaria Penna, D3 - PharmaChemistry Facility, Istituto Italiano di Tecnologia (IIT), via Morego 30, 16163, Genoa, Italy, Adalberto Camisasca, Nano Carbon Materials, Istituto Italiano di Tecnologia (IIT), via Livorno 60, 10144, Turin, Italy, Tiziano Bandiera, D3 - PharmaChemistry Facility, Istituto Italiano di Tecnologia (IIT), via Morego 30, 16163, Genoa, Italy, Silvia Giordani, Nano Carbon Materials, Istituto Italiano di Tecnologia (IIT), via Livorno 60, 10144, Turin, Italy - School of Chemical Sciences, Dublin City University, Glasnevin, Dublin 9, Ireland

16:30 **Fabrication of Plasmonic Nanoslit for single molecule analysis** **L P2.43**

1) Seong Soo Choi, Sae-Joong Oh, 2) Myoung Jin Park 3) Byung Seong Bae
1) Research Center for NanoScience, SunMoon University, Ahsan, Chungnam, 31460 South Korea 2) Department of Physics, Korea Military Academy, Seoul, Korea 3) School of electronics and display engineering, Hoseo University, South Korea

16:30 **Surface modified silica-based biomaterials for heavy metal adsorption: A Density Functional Theory study.** **L P2.44**
J.J. Gutiérrez Moreno 1-2, K. Pan 1, W. Li 1.
1. Institute for Advanced Study, Shenzhen University, Shenzhen 518060, China. 2. Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province, College of Optoelectronic Engineering, Shenzhen University, Shenzhen 518060.

16:30 **In-situ Sensing Bone-Extracellular Matrix Proteins Using Graphene Oxide Electrodeposited on Anodized Titanium Electrode** **L P2.45**
Sirinrath Sirivisoot
Biological Engineering Program, Faculty of Engineering, King Mongkut's University of Technology Thonburi, Bangkok 10140, Thailand

16:30 **From prebiotic chemistry to materials science: deposition of aminomalonitrile based films.** **L P2.46**
Rou Jun Toh1, Richard Evans1, Helmut Thissen1 and Vincent Ball 2,3
1: CSIRO Manufacturing, Research Way, Clayton, 3168, Victoria, Australia. 2: Université de Strasbourg. Faculté de Chirurgie Dentaire. 8 rue Sainte Elizabeth. 67000 Strasbourg. France. 3: Institut National de la Santé et de la Recherche Médicale. Unité Mixte de Recherche 1121. 11 rue Humann. 67085 Strasbourg. Cédex. France.

16:30 **Evaluating Poly(ethylenimine)-Mediated Lysosomal pH Alteration with Capsule-Based Fluorescent Sensor** **L P2.47**
Sathi Roy, Neus Feliu, Wolfgang J. Parak*
Fachbereich Physik und Chemie, and Center for Hybrid Nanostructure (CHyN), Universität Hamburg, Hamburg, Germany.

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Nanomaterials for biosensing and biodelivery II : Nicolas Brun

09:00 **Carbon nano-onions interfacing with neurons** **L 10.1**
Silvia Giordani
School of Chemical Sciences, Dublin City University, Dublin, Ireland

09:30 **Nanoparticle ? Protein Interaction in the ultrasmall regime** **L 10.2**
David Beke, Gabriella Dravecz, Gyula Károlyházy, Tibor Z Jánosi, János Erostyák, Katalin Kamarás, Adam Gali
Wigner Research Centre for Physics, Wigner Research Centre for Physics, Wigner Research Centre for Physics, University of Pécs, Szentágothai Research Centre, University of Pécs, Szentágothai Research Centre, Wigner Research Centre for Physics, Wigner Research Centre for Physics,

09:45 **Multifunctional Carbon Dots as Therapeutic Nanoagents for Suppressing Alzheimer?s Amyloid-? Aggregation and Neurotoxicity** **L 10.3**
You Jung Chung, Byung Il Lee, Chan Beum Park
Korea Advanced Institute of Science and Technology (KAIST)

10:00 **Biomimetically inspired polydopamine@enzyme functional nanomaterials** **L 10.4**
Salima El Yakhlifi (1) Marie-Hélène Metz-Boutigue (1,2) Daniel Hauser (3) Barbara Rothen-Rutishauser (3) Ovidiu Ersen (4)
(1) Institut de la Santé et de la Recherche Médicale, Unité Mixte de Recherche 1121, 11 rue human, Cedex, 67085 Strasbourg, France. (2) Faculté de Chirurgie dentaire, Université de Strasbourg, 8 rue Sainte Elisabeth, 67000 Strasbourg, France. (3) Adolphe Merkle Institute, University of Fribourd, 4 chemin des verdiers, CH-1700 Fribourg, Switzerland (4) Institut de Physique et de Chimie des matériaux, UMR 7504 CNRS, Université de Strasbourg, 23 rue du Loess, BP43 Cedex 2, 67034 Strasbourg, France.

10:15 **Coffee break**

11:15 **Plenary Session 2**

12:30 **Lunch**

Nanostructured surfaces for tissue and cell control II : Paolo Netti

14:00 INV **From Tissue to Tumor Models: Cellulose-based Materials as Scaffolds for 3D Cell Cultures** **L 11.1**
Matthew Ryen Lockett
Department of Chemistry, University of North Carolina at Chapel Hill

14:30 **Smart antimicrobial bio-selective nanotubular surfaces for osseointegrated implant applications** **L 11.2**
Tolou Shokuhfar, Reza Shahbazian
University of Illinois at Chicago

14:45 **Hybrid Quantum dot/protein matrices allow in situ monitoring of cardiomyocyte activity** **L 11.3**
Jooken S. 1, Deschaume O. 1, Krylychkina O. 2, de Coene Y. 1, Callewaert G. 3, Bartic C. 1
1) Laboratory of Soft Matter and Biophysics, Department of Physics and Astronomy, KU Leuven, 3001 Leuven, Belgium. 2) Department of Life Science Technologies, IMEC, 3001 Leuven, Belgium 3) Department of Cellular and Molecular Medicine, KU Leuven Campus Kulak, 8500 Kortrijk, Belgium

15:00 **Charged Colloidal Hydrogel Fibers for Three-Dimensional Cellular Cultures** **L 11.4**
Sungrok Wang, Dong-Hee Kang, Myung-Han Yoon*
School of Materials Science & Engineering Gwangju Institute of Science & Technology, School of Materials Science & Engineering Gwangju Institute of Science & Technology, School of Materials Science & Engineering Gwangju Institute of Science & Technology

15:15 **Self-assembled nanoparticle arrays on nanostructured surfaces for tailored large-area biointerfaces** **L 11.5**
M. J. Lüther, K. Brassat, J. K. N. Lindner
Nanostructuring, Nanoanalysis and Photonic Materials group, Dept. of Physics, Paderborn University, Germany, Center for Optoelectronics and Photonics Paderborn CeOPP, Paderborn, Germany

15:30 **Coffee break**

Nanomaterials for biosensing and biodelivery III : Seiya Tsujimura

16:00 **Hybrid Organic-Inorganic Nanoparticulate Magnetic Resonance Imaging Contrast Agents towards Responsive Diagnostics** **L 12.1**
Gemma-Louise Davies
Department of Chemistry, University College London (UCL), United Kingdom

16:30 **Single Walled Carbon Nanohorns As Light Activated Therapeutics: From Photosensitization to Radiosensitization** **L 12.2**
Stephen J. Devereux, Mona Khan, Marina Massaro, Andrew Barker, David T. Hinds, Badriah Hifni, Jonathan A. Coulter, Jeremy C. Simpson and Susan J. Quinn.
School of Chemistry, University College Dublin, Belfield, Dublin 4, Ireland, School of Pharmacy, Queen?s University Belfast, Belfast, BT9 7BL, UK, School of Biology & Environment Science, University College Dublin, Belfield, Dublin 4, Ireland.

16:45 **Preparation and Characterization of Nitroxide-Based Magnetic Nanoemulsions Directed toward MRI-Visible Targeted Delivery System** **L 12.3**
Kota Nagura,1 Satoshi Shimono,1 Tsukuru Amano,2 Fumi Yoshino,2 Tatsuhisa Kato,1 Naoki Komatsu,1 Rui Tamura1
1Graduate School of Human and Environmental Studies, Kyoto University, Kyoto 606-8501, JAPAN. 2Shiga University of Medical Science, JAPAN

17:00 **Innovative Inkjet printed encapsulation of gold nanoparticles inside cell-adhesive chitosan hydrogels for oral administration** **L 12.4**
Alvaro Artiga, Francisco Ramos-Sanchez, Sonia Garcia-Embid, Ines Serrano-Sevilla, Laura De Matteis, Scott G. Mitchell,
Instituto de Ciencia de Materiales de Aragon (ICMA), Consejo Superior de Investigaciones Cient?ficas (CSIC)-Universidad de Zaragoza and CIBER-BBN, C/ Pedro Cerbuna 12, 50009 Zaragoza, Spain. Instituto de Nanociencia de Aragon (INA), Universidad de Zaragoza and CIBER- BBN, C/Mariano Esquillor s/n, 50018 Zaragoza, Spain

17:15 **Laser-assisted Multifunctional Silk Fibroin Hydrogel System for Combining Starving and Photothermal Therapy for Cancer Treatment** **L 12.5**
Yu-Hsuan Hsu, I-Hsin Jen, Ling-Chu Yang, Yun-ching Chen, Dehui Wan
Institute of Biomedical Engineering and Frontier Research Center on Fundamental, National Tsing Hua University, Hsinchu, 300, Taiwan

17:30 **Selective detection of Dopamine at an all-PEDOT:PSS Organic Electrochemical Transistor** **L 12.6**
Federica Mariani (a), Isacco Gualandi (a), Domenica Tonelli (a), Marta Tessarolo (b), Beatrice Fraboni (b), Erika Scavetta (a)
(a) Dipartimento di Chimica Industriale ?Toso Montanari?, Università di Bologna, Viale Risorgimento 4, 40136 Bologna, Italy. (b) Dipartimento di Fisica e Astronomia, Università di Bologna, Viale Berti Pichat 6/2, 40127 Bologna, Italy
federica.mariani8@unibo.it

Functional biointerfaces III : Estelle Lebegue

09:00 **Urea Binding onto Morphologically Different Nano Hydroxyapatite Coatings** **L 13.1**
M. Nimshi. L. Fernando 1, Dhanusha T. N. Rathnayake 1, Nilwala. Kottegoda 2, J. K. D. S. Jayanetti 1, Veranja Karunaratne 3, Dilushan. R. Jayasundara 1
1.Department of Physics, University of Colombo, Sri Lanka 2.Department of Chemistry, University of Sri Jayewardenepura, Sri Lanka 3.Department of Chemistry, University of Peradeniya, Sri Lanka

09:15 **Multifunctional assemblies of Au-GO-ANG for Wound Healing** **L 13.2**
Lorena Maria Cucci1,2, Giusy Villaggio1, Diego La Mendola2,3, Cristina Satriano1,2
1Department of Chemical Sciences, University of Catania, Italy, 2Consorzio Interuniversitario di Ricerca in Chimica dei Metalli nei Sistemi Biologici (C.I.R.C.M.S.B.), Italy, 3Department of Pharmacy, University of Pisa, Italy.

09:30 **Enhanced silica nanoparticle coating using supported lipid bilayers for nanomedical applications** **L 13.3**
E. K. Oikonomou 1*, L. Ferreira 2, M. Bacovic 1, F. Mousseau 1, M. Ould Ali 3, A.-A. Arteni 3, M. Caroso 2 and J.-F. Berret 1
1 Matière et Systèmes Complexes, UMR 7057 CNRS Université Denis Diderot Paris-VII, Bâtiment Condorcet, 10 rue Alice Domon et Léonie Duquet, 75205 Paris, France, 2 Laboratorio Nacional de Nanotecnologia (LNNano), Centro Nacional de Pesquisa em Energia e Materiais (CNPEM), CEP 13083-970, Campinas, Sao Paulo, Brasil, 3 Cryo Microscopy Platform, Institute for Integrative Biology of the Cell (I2BC), CEA, CNRS, University Paris South, University Paris-Saclay, Gif-sur-Yvette, France

09:45 **Assisted lipid layer deposition by electrochemical grafting, insertion of an antiport protein at this modified electrode** **L 13.4**
T. Flinois [1], E. Lebègue [1], A. Zebda [2], J. P. Alcaraz [2], D. Martin [2], F. Barrière [1]
[1] Univ Rennes, CNRS, Institut des Sciences Chimiques de Rennes, France [2] Univ Grenoble Alpes, CNRS, TIMC- IMAG, Grenoble, France

10:00 **Coffee break**

Functional biointerfaces IV : Alessandro Iannaci

10:30 **2-Photon Polymerisation for the generation of biocompatible nanostructures** **L 14.1**
Colm Delaney 1, Larisa Florea 2, Niamh Geoghegan 1, Susan M. Kelleher 1
1 School of Chemistry, University College Dublin, Dublin 4, Ireland 2 School of Chemistry, Trinity College Dublin, Dublin 2, Ireland

10:45 **Sonoactivated biodegradable containers based on porous silicon for delivery of chemotherapeutic drugs** **L 14.2**
Andrey Sviridov, Ulyana Natashina, Maxim Gongalsky, Andrey Kudryavtsev, Valery Andreev, Liubov Osminkina
M.V. Lomonosov Moscow State University, M.V. Lomonosov Moscow State University, M.V. Lomonosov Moscow State University, Institute of Theoretical and Experimental Biophysics, Russian Academy of Sciences, M.V. Lomonosov Moscow State University, M.V. Lomonosov Moscow State University

11:00 **Magnetic separation and high reusability of chloroperoxidase entrapped in multi polysaccharide micro-supports** **L 14.3**
Sonia García-Embid, Francesca Di Renzo, Laura De Matteis, Nicoletta Spreti, Jesús M. de la Fuente
Instituto de Ciencia de Materiales de Aragón (ICMA), CSIC - Universidad de Zaragoza, Zaragoza, Spain and CIBER-BBN, Instituto de Salud Carlos III, Madrid, Spain, Department of Physical and Chemical Sciences, University of L'Aquila, L'Aquila, Italy, Instituto de Nanociencia de Aragón (INA), Universidad de Zaragoza, Zaragoza, Spain and CIBER-BBN, Instituto de Salud Carlos III, Madrid, Spain, Department of Physical and Chemical Sciences, University of L'Aquila, L'Aquila, Italy, Instituto de Ciencia de Materiales de Aragón (ICMA), CSIC - Universidad de Zaragoza, Zaragoza, Spain and CIBER-BBN, Instituto de Salud Carlos III, Madrid, Spain,

11:15 **Electrochemical properties of pH-dependent flavocytochrome c3 from Shewanella putrefaciens adsorbed onto catechol-modified edge** **L 14.4**
Estelle Lebègue, Nazua L. Costa, Bruno M. Fonseca, Ricardo O. Louro, Frédéric Barrière
Estelle Lebègue, Nazua L. Costa, Frédéric Barrière: Univ Rennes, CNRS, Institut des Sciences Chimiques de Rennes - UMR 6226, F-35000 Rennes, France, Bruno M. Fonseca, Ricardo O. Louro: Universidade NOVA de Lisboa, Instituto de Tecnologia Química e Biológica, António Xavier, 2780-157 Oeiras, Portugal

11:30 **Ultrabright polymeric nanoprobe for the ratiometric detection of biomimetic oxygen gradients in cancer cells** **L 14.5**

Nagappanpillai ADARSH, Pichandi ASHOKKUMAR, Andrey S. KLYMCHENKO
Laboratory of Bioimaging and Pathologies, UMR 7021 CNRS, Faculty of Pharmacy, University of Strasbourg, 67401 Illkirch, France

11:45 **Receptor integrated multidimensional conducting polymer nanofiber field-effect transistor for dopamine detection** **L 14.6**

Seung Ah Byeon, Oh Seok Kwon*
Infectious Disease Research Center, Korea Research Institute of Bioscience and Biotechnology (KRIBB)

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | **Nice** | France

SYMPOSIUM M

Advanced carbon materials: electrochemical aspects

Symposium Organizers :

Dai-Wen PANG, Wuhan University, China

Nianjun YANG, University of Siegen, Germany

Xinliang FENG, Technische Universität Dresden, Germany

Yasuaki EINAGA, Keio University, Japan

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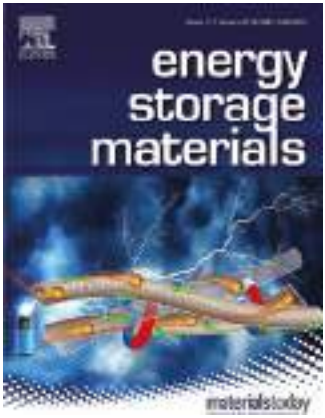

Tuesday 28 may 2019

08:20 **Opening remarks**

Materials and Technology I : Nianjun Yang

08:30 INV **Graphene Films and Membranes: Fabrication and Applications** **M 1.1**
Hui-Ming Cheng
Shenyang National Laboratory for Materials Science, Institute of Metal Research, the Chinese Academy of Sciences, Shenyang 110016, China, Tsinghua-Berkeley Shenzhen Institute, Tsinghua University, Shenzhen 518055, China

09:00 INV **Electrochemistry in nanoporous carbon: understanding ion adsorption/ transfer in supercapacitor electrodes** **M 1.2**
P. Simon
Université Paul Sabatier, CIRIMAT Laboratory, UMR CNRS 5085, 31062 Toulouse, France Réseau sur le Stockage Electrochimique de l'Energie (RS2E), FR CNRS 3459

09:30 INV **Synthesis of Novel Two-Dimensional Nanomaterials for Clean Energy Applications** **M 1.3**
Hua Zhang
Department of Chemistry, City University of Hong Kong, Hong Kong, China. Center for Programmable Materials, School of Materials Science and Engineering, Nanyang Technological University, Singapore 639798, Singapore.

10:00 INV **Applications of Plasma Technology in Electrochemical Energy Conversion and Storage Materials** **M 1.4**
Wenjun Zhang
Centre Of Super-Diamond and Advanced Films (COSDAF) & Department of Materials Science and Engineering, City University of Hong Kong, China

10:30 **Trends reflected in the Energy Storage Materials journal** **M 1.5**
Hui-Ming Cheng (Editor-in-Chief of EnSM)
Shenyang National Laboratory for Materials Science, Institute of Metal Research, the Chinese Academy of Sciences, Shenyang 110016, China, Tsinghua-Berkeley Shenzhen Institute, Tsinghua University, Shenzhen 518055, China Email: cheng@imr.ac.cn or hmcheng@sz.tsinghua.edu.cn

11:15 **PLENARY SESSION 1**

12:30 **Lunch**

Diamond I : Karin Larsson

14:00 INV **Platinum on nanodiamond: A promising prodrug conjugated with polyglycerol, targeting peptide and anticancer drug** **M 2.1**
Naoki Komatsu
Kyoto University, Japan

14:30 INV **Investigating mechanical property of soft materials by diamond quantum sensing** **M 2.2**
Quan LI
Department of Physics, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong, China, Centre for Quantum Coherence, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong, China

15:00 **Boron doped diamond-multilayered graphene core-shell nanowalls for supercapacitor electrodes** **M 2.3**
D. Banerjee, M. Ficek, K. J. Sankaran, S. Deshmukh, G. Bhattacharya, R. Bogdanowicz, I. N. Lin, K. Haenen, A. Kanjilal, S. S. Roy.
Department of Physics, School of Natural Sciences, Shiv Nadar University, NH-91, Gautam Buddha Nagar, Uttar Pradesh 201314, India, Department of Metrology and Optoelectronics, Faculty of Electronics, Telecommunications and Informatics, Gdansk University of Technology, 80-233 Gdansk, Poland, Institute for Materials Research (IMO), Hasselt University, 3590 Diepenbeek, Belgium, Department of Physics, School of Natural Sciences, Shiv Nadar University, NH-91, Gautam Buddha Nagar, Uttar Pradesh 201314, India, Department of Physics, School of Natural Sciences, Shiv Nadar University, NH-91, Gautam Buddha Nagar, Uttar Pradesh 201314, India, Department of Metrology and Optoelectronics, Faculty of Electronics, Telecommunications and Informatics, Gdansk University of Technology, 80-233 Gdansk, Poland, Department of Physics, Tamkang University, Tamsui, 251 Taiwan, Republic of China, Institute for Materials Research (IMO), Hasselt University, 3590 Diepenbeek, Belgium, Department of Physics, School of Natural Sciences, Shiv Nadar University, NH-91, Gautam Buddha Nagar, Uttar Pradesh 201314, India, Department of Physics, School of Natural Sciences, Shiv Nadar University, NH-91, Gautam Buddha Nagar, Uttar Pradesh 201314, India.

15:15 **Modification of heavy boron-doped diamond through surface oxidation: the influence of heterogeneity on electrode properties** **M 2.4**
Jacek Ryl, Artur Zielinski, Lukasz Burczyk, Mateusz Cieslik, Michal Sobaszek, Robert Bogdanowicz
JR, AZ, LB, MC - Faculty of Chemistry, Gdansk University of Technology, Narutowicza 11/12, 80-233 Gdansk, Poland, MS, RB - Faculty of Electronics, Telecommunication and Informatics, Gdansk University of Technology, Narutowicza 11/12, 80-233 Gdansk, Poland

15:30 **In-situ Electron Paramagnetic Resonance Observation of the Electrochemical Radical Mechanisms at Boron-doped Diamond Anode** **M 2.5**
Junzhuo Cai, Guohua Zhao*
Junzhuo Cai, School of Chemical Science and Engineering, Tongji University, Shanghai, 200092, P. R. China, Guohua Zhao*, School of Chemical Science and Engineering, Shanghai Key Lab of Chemical Assessment and Sustainability, Tongji University, Shanghai, 200092, P. R. China.

15:45 **3D printable electrically conducting boron-doped diamond polymer composite for humidity sensing** **M 2.6**
Umme Kalsoom
ARC Centre of Excellence for Electromaterials Science (ACES), School of Natural Sciences, College of Sciences and Engineering, University of Tasmania, Sandy Bay, Hobart 7001, Tasmania, Australia

16:00 **Electrochemical Detection of Heavy Metal Ions Using Nitrogen Doped Diamond Nanorod Electrodes** **M 2.7**
Sujit Deshmukh, Kamatchi Jothiramalingam Sankaran, Svetlana Korneychuk, Johan Verbeeck, James Mclaughlin, Ken Haenen, and Susanta Sinha Roy
Department of Physics, School of Natural Sciences, Shiv Nadar University, NH-91, Uttar Pradesh 201314, India, Institute for Materials Research (IMO), Hasselt University, 3590 Diepenbeek, Belgium, Electron Microscopy for Materials Science (EMAT), University of Antwerp, 2020 Antwerp, Belgium, Electron Microscopy for Materials Science (EMAT), University of Antwerp, 2020 Antwerp, Belgium, Institute for Materials Research (IMO), Hasselt University, 3590 Diepenbeek, Belgium, Nanotechnology and Integrated Bioengineering Centre, University of Ulster, Jordanstown Campus, Newtownabbey, BT37 0QB, Northern Ireland, UK, Department of Physics, School of Natural Sciences, Shiv Nadar University, NH-91, Uttar Pradesh 201314, India.

16:15 **Coffee break**

Energy Storage I : Quan-Hong Yang

16:30 INV **Fiber-enabled Wearable Energy Storage Devices** **M 3.1**
Zijian Zheng
Research Centre of Smart Wearable Technology, Institute of Textiles and Clothing, The Hong Kong Polytechnic University, Hong Kong SAR, China

17:00 INV **Semiconductive Carbon Based 2D Heterostructures as Electrodes for Supercapacitors** **M 3.2**
Chenbao Lu, Xiaodong Zhuang*
State Key Laboratory of Metal Matrix Composites, Shanghai Key Laboratory of Electrical Insulation and Thermal Ageing, School of Chemistry and Chemical Engineering, Shanghai Jiao Tong University, 200240 Shanghai, P. R. China.

17:30 **Packing activated carbons into dense graphene network towards compact supercapacitors and its scalable production technique** **M 3.3**
Pei Li1□Huan Li1□Daliang Han1□Ying Tao1*□Quan-Hong Yang 1*
1Nanoyang Group, State Key Laboratory of Chemical Engineering, School of Chemical Engineering and Technology, Tianjin University, Tianjin, China. Email: yingtao@tju.edu.cn, qhyangcn@tju.edu.cn, website: http://nanoyang.tju.edu.cn/

17:45 **Making of nitrogen-enriched carbon nanoparticulate film electrodes for supercapacitor by electrospray of polymeric precursor sol** **M 3.4**
Madhav P. Chavhan, Aditya Singh, Debarchan Basu, Somenath Ganguly
Indian Institute of Technology Kharagpur, India 721302

18:00 **Honeycomb-like layered Nanoporous Carbon from LDH@ZIF-67 as Supercapacitor Electrode** **M 3.5**
Szu-Chen Wu1, Po-Hsueh Chang2, Ta-ChungLiu1 and San-Yuan Chen1
1 National Chiao Tung University, 2 Ming Hsin University of Science and Technology

18:15 INV **Graphdiyne: A promising catalyst for energy applications** **M 3.6**
Dan Wang
State Key Laboratory of Biochemical Engineering, Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China

Wednesday 29 may 2019

Energy Conversion I : Xiaodong Zhuang

08:30 **3D Hierarchical Porous Carbon from Metal-Organic-Frameworks Growed on Silk Fibroin Aerogels for Energy Storage Application** **M 4.1**
Syun-Hong Chou, Szu-Chen Wu, Ta-Chung Liu, Tsung-Yu Li, San-Yun Chen
Material Science and Engineering/National Chiao Tung University

08:45 **Zeolitic Imidazolate Framework-67 transformation to Cobalt Nanoparticles Embedded N-doped Carbon for Energy Storage device** **M 4.2**
Mohit Kumar, Min Seob Kim, Dong In Jeong, Dae Ho Yoon*
School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea, School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea, School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea, School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea,

09:00 **Dissociative adsorption of methane on pristine and defected graphene from ab initio calculations** **M 4.3**
Mateusz Wlazlo, Jacek A. Majewski
Faculty of Physics, University of Warsaw, ul. L. Pasteura 5, 02-093 Warszawa, Poland

09:15 **Porous Carbon Based Materials for Hydrogen Evolution Reaction and Carbon Dioxide Reduction** **M 4.4**
Chenbao Lu, Xiaodong Zhuang
School of Chemistry and Chemical Engineering, School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai 200240, P. R. China

09:30 **Tolerant catalyst for electrochemical carbon dioxide reduction in real water matrix** **M 4.5**
Da Hye Won, Yun Jeong Hwang, Byoung Koun Min
Clean Energy Research Center, Korea Institute of Science and Technology, Hwarang-ro 14-gil 5, Seongbuk-gu, Seoul 02792, Republic of Korea

09:45 **Operando-Spectroscopy Insights on the Active Site Structures of M-N-C catalysts for Electrochemical Reduction of CO2** **M 4.6**
Jingkun Li and Frédéric Jaouen
Institut Charles Gerhardt Montpellier, UMR 5253, CNRS, Université Montpellier, ENSCM, Place Eugène Bataillon, 34095 Montpellier cedex 5, France

10:00 **Uncover the charge transfer between carbon dots photocatalysts with water by in-situ soft X-ray absorption spectroscopy** **M 4.7**
Jian Ren1,2, Demetra Achilleos3, Hayato Yuzawa4, Jie Xiao5, Masanari Nagasaka4, Ronny Golnak5, Erwin Reisner3, Tristan Petit1
1 Institute of Methods for Material Development, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (HZB), Albert-Einstein-Straße 15, 12489 Berlin, Germany, 2 Department of Physics, Freie Universität Berlin, Arnimallee 14, 14195 Berlin, Germany, 3 Christian Doppler Laboratory for Sustainable SynGas Chemistry, Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge CB2 1EW, UK, 4 Institute for Molecular Science, Myodaiji, Okazaki 444-8585, Japan, 5 Department of Highly Sensitive X-ray Spectroscopy, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH (HZB), Albert-Einstein-Straße 15, 12489 Berlin, Germany,

10:15 **Coffee break**

10:30 INV **Mitochondria-Targeted DNA Nanoprobe for Real-Time Imaging and Simultaneous Quantification of Ca2+ and pH in Neurons** **M 9.2**
Yang Tian
School of Chemistry and Molecular Engineering, East China Normal University, Shanghai, P. R. China.

11:00 **AgNPs/Porous Carbon Flexible 3D-electrodes for Electrochemical Sensing of Glucose** **M 5.2**
Mehran Mehrabanian
Institute of Microstructure Technology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76334 Eggenstein-Leopoldshafen, Germany

11:15 **Study on electrochemical properties of N-methyl-2-pyrrolidone exfoliation graphene tuned by salts -assisting** **M 5.3**
Jian Shen, Piaopiao Wei, Kangbing Wu*
Key Laboratory for Material Chemistry of Energy Conversion and Storage, Ministry of Education, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

11:30 **Carbon-based nanomaterials for applications in sensing** **M 5.4**
Shengfu Wang*
Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials & Ministry of Education Key Laboratory for the Synthesis and Application of Organic Functional Molecules College of Chemistry and Chemical Engineering Hubei University

11:45 **Tailoring the Electrochemical Properties of Diamond/Graphite Nanoplatelet Film for Sensitive Detection of Trace Heavy Metal Ions** **M 5.5**
Zhaofeng Zhai1,2, Nan Huang1,*, Bing Yang1, Lusheng Liu1, Xin Jiang1,3,*
1 Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Wenhua Road 72, 110016 Shenyang, China. 2 School of Materials Science and Engineering, University of Science and Technology of China, No.96 Jinzhai Road, Hefei 230026, China. 3 Institute of Materials Engineering, University of Siegen, Paul-Bonatz-Str.9-11, 57076 Siegen, Germany.

12:00 **Publishing with Wiley** **M 5.6**
Marco Squillaci
Wiley publisher

12:30 **Lunch**

Energy Storage II : Xiaobo Ji

14:00 INV **Nano-strcutured Carbon Using for Energy Storage** **M 6.1**
Feiyu Kang
Graduate School at Shenzhen, Tsinghua University

14:30 INV **One Dimensional Nanomaterials for Emerging Energy Storage** **M 6.2**
Liqiang Mai
Wuhan University of Technology

15:00 INV **Dense yet porous graphene assembly makes batteries smaller** **M 6.3**
Quan-Hong Yang
Nanoyang Group, State Key Laboratory of Chemical Engineering, School of Chemical Engineering and Technology, Tianjin University, Tianjin, China. Email: qhyangcn@tju.edu.cn, web site: http://nanoyang.tju.edu.cn/

15:30 **Capillary shrinkage of graphene network towards superior volumetric lithium storage** **M 6.4**
Junwei Han, Debin Kong, Wei Lv, Dai-Ming Tang, Quan-Hong Yang*
Nanoyang Group, State Key Laboratory of Chemical Engineering, School of Chemical Engineering and Technology, Tianjin University, Tianjin, China. Email: qhyangcn@tju.edu.cn, web site: http://nanoyang.tju.edu.cn/ CAS Center for Excellence in Nanoscience, National Center for Nanoscience and Technology, Beijing, China Engineering Laboratory for Functionalized Carbon Materials and Shenzhen Key Laboratory for Graphene-based Materials, Graduate School at Shenzhen, Tsinghua University, Shenzhen, China International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science (NIMS), Namiki 1-1, Tsukuba, Ibaraki, Japan.

15:45 **Scalable pore size tuning process for seeking better cathode and configuration of full cell Li-ion capacitor through it.** **M 6.5**
Jong Ho Won, Jeung Ku Kang
Applied Science Institute, Korea Advanced Institute of Science and Technology, Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology

16:00 **Ordered Mesoporous Carbon Nanorod Assemblies as a Binder-Free Monolithic Electrode for Na-ion Batteries** **M 6.6**
George Hasegawa, Kazuyoshi Kanamori, Kazuki Nakanishi, Katsuro Hayashi
Kyushu University (G. Hasegawa and K. Hayashi), Kyoto University (K. Kanamori), Nagoya University (K. Nakanishi)

16:15 INV **Electron-nuclear correlated multiphoton energy absorption in strong-field ionization of molecule** **M 11.3**
Jian Wu1, Qing He2, Guixu Zhang3,
1State Key Laboratory of Precision Spectroscopy, East China Normal University, 200062 Shanghai, China 2State Key Laboratory of Estuarine and Coastal Research, East China Normal University, 200062 Shanghai, China 3Shanghai Key Laboratory of Multidimensional Information Processing, Department of Computer Science and Technology, East China Normal University, Shanghai 200062, China 4Department of Human Resources, East China Normal University, Shanghai 200062, China 5School of Chemistry and Molecular Engineering, East China Normal University, Shanghai 200062, China

Poster session : Nianjun Yang, Dai-Wen Pang

17:00 **Development of screen printing based flexible fabric interface using conductive material** **M P7.1**
So Hee Lee
Gyeongsang National University

17:00 **Fabrication of Prussian blue nanoparticle-decorated carbon sponge and their application in remediation agents in decontamination** **M P7.2**
Dong Seok Kim b), Sung Hyun Kim a)*
b) Division of Microelectronics and Display Technology, Wonkwang University, Iksan, Jeonbuk 54538, Republic of Korea. a)*Department of Carbon Fusion Engineering, Wonkwang University, Iksan, Jeonbuk 54538, Republic of Korea.

17:00 **Electrochemical characterizations of SiN/DLC-coated stainless steel in deaerated Hanks' physiological solution** **M P7.3**
Lai Xuan Bach, Tran Dinh Manh, Nguyen Dang Nam
University of Science and Technology of Hanoi, 18 Hoang Quoc Viet Street, Hanoi, 100000, Vietnam, Institute of Research and Development, Duy Tan University, Da Nang 550000, Vietnam, Institute of Fundamental and Applied Sciences, Duy Tan University, 10C Tran Nhat Duat Street, District 1, Ho Chi Minh City 700000, Vietnam

17:00 **Effect of different kinds of carbon materials on the anode chamber of molten hydroxide direct carbon fuel cell by CFD simulation** **M P7.4**
Xuedong Bai,Yanfang Gao*.
Inner Mongolia University of Technology, China

17:00 **Surface activation of catalyst-free CNWs for detection of liquid organic solvent** **M P7.5**
Seok Hun Kwon, Hyeokjoo Choi, Tran Van Hiep, Wonseok Choi and Hyunil Kang*
Department of Electrical Engineering, Hanbat National University, Daejeon 34158, Republic of Korea

17:00 **Epitaxial cubic silicon carbide films as visible-light driven electrocatalysts for photoelectrochemical water splitting** **M P7.6**
Xiuxiu Han, Xili Tong, Nianjun Yang, Xin Jiang
State Key Laboratory of Coal Conversion, Institute of Coal Chemistry, Chinese Academy of Sciences Institute of Materials Engineering, University of Siegen, Germany

17:00 **Impedance characteristics of functionalized CNT films obtained by inprinting** **M P7.7**
A.Bashuk, I.Vlasenko, O.Ivanyuta
National Taras Shevshenko University of Kyiv, 64/13, Vladimirska Str., 01033, Kiev, Ukraine e-mail: iva@univ.net.ua

17:00 **Monolithic Carbon Xerogel with Hierarchical Porosity via One-Step, Template- and Catalyst-Free Hydrothermal Reaction** **M P7.8**
Hyoung-Ju Yoon, Jae-Suk Lee and Tae-Ho Yoon
Gwangju Institute of Science and Technoligy(GIST)

17:00 **Flexible free-standing composite films deploying 3D continuous structures of hollow graphene ellipsoids** **M P7.9**
Eun Goo Lee, Jonghwi Lee, Sang-Soo Lee
Eun Goo Lee, Jonghwi Lee, Dep. of Chemical Engineering, Chung-Ang University
Sang-Soo Lee, Photo-Electronic Hybrids Research Center, Korea Institute of Science and Technology

17:00 **Design and synthesis of copper phthalocyanine-functionalized carbon dots for molecular imprinting photoelectrochemical sensor** **M P7.10**
Lebao Mao, Xinyi Wang, Yun Guo, Linli Yao, Xiaojie Xue, Hang-Xing Wang*, Wei Wena, Xiuhua Zhang*, Shengfu Wang
Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials, Ministry-of-Education Key Laboratory for the Synthesis and Application of Organic Functional Molecules, College of Chemistry and Chemical Engineering, Hubei University, Wuhan 430062, China

17:00 **An innovative material as anodic carbon fuel for molten hydroxide direct carbon fuel cell** — **M P7.11**
Xiaofeng Li,Yanfang Gao,*
College of Chemical Engineering, Inner Mongolia University of Technology, Hohhot, 010051, P.R. China

17:00 **Improvement of adhesion of carbon nanowall using TCO-based interlayer** — **M P7.12**
Hyeokjoo Choi, Seok Hun Kwon, Chang Yeon Lee, Seokwon Lee, Chiwon Choi, Kyu Min Lee, Hyunil Kang and Wonseok Choi*
Department of Electrical Engineering, Hanbat National University, Daejeon 34158, Republic of Korea

17:00 **Synthesis of Low-cost and Environmental-friendly Porous Carbon Nanomaterials by Template Method** — **M P7.14**
Dongni Ma Yanfang Gao*
Inner Mongolia university of technology

17:00 **Commercial silk-based electronic textiles for gas sensing** — **M P7.15**
Won Taek Jung, Hyun-Seok Jang, Jun Woo Jeon, and Byung Hoon Kim*
Department of Physics, Incheon National University, Incheon 22012, Republic of Korea Research Institute of Basic Sciences, Incheon National University, Incheon 22012, Republic of Korea

17:00 **Fe Doped Carbon Nitride Nanocomposites with Mimicking Horseradish Peroxidase Activity for Colorimetric Detection of Hydrogen Per** — **M P7.16**
Xiaoxue Xi, Junlun Zhu, Xiuhua Zhang, Wei Wen*, Shengfu Wang
Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials & Ministry of Education Key Laboratory for the Synthesis and Application of Organic Functional Molecules College of Chemistry and Chemical Engineering Hubei University

17:00 **Graphene@ZIF-8 stabilized gold nanoclusters for enhancing electrochemical assay with layered-branched hybridization chain reacti** — **M P7.17**
Ting Bao, Wei Wen, Xiuhua Zhang, Shengfu Wang*
Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials, Ministry of Education Key Laboratory for the Synthesis and Application of Organic Functional Molecules & College of Chemistry and Chemical Engineering, Hubei University

17:00 **Formation of Carbon Quantum Dots via Acetic Acid Hydrothermal Treatment of Water Hyacinth (Eichhornia crassipes)** — **M P7.18**
Eduardo R. Magdaluyo, Jr.* Gerald Mari O. Quiachon** Christian James Emman* Persia Ada de Yro**
*Department of Mining, Metallurgical and Materials Engineering, University of the Philippines, 1101 Diliman, Quezon City, Philippines **Materials Science Division, Industrial Technology Development Institute, Department of Science and Technology, Bicutan, Taguig City, Philippines

17:00 **Biointerfaces at carbon electrodes for CO2 reduction** — **M P7.19**
Mohamed Baccour, Olivier Fontaine, Jullien Drone, Ahmad Mehdi, Anne Galarneau, Nicolas Brun
Institut Charles Gerhardt Montpellier, UMR 5253, CNRS, Université de Montpellier, ENSCM

17:00 **Stable and Effective Vapor Phase Molecular Doping of Graphene with Linear Aliphatic and Aromatic Diamines.** — **M P7.20**
Eun Jung Kim, Byung Hee Hong
Department of Chemistry, Seoul National University, 1 Gwanak-ro, Seoul 08826, Republic of Korea

17:00 **Platinum-cobalt alloy and cerium oxide work together to improve cathode oxygen reduction performance of fuel cell** — **M P7.21**
Zhiguang Hu?Yanfang Gao*
Inner Mongolia University of Technology

17:00 **CO2 RF sensing based on carbon nanotube networks** — **M P7.22**
Alina Cismaru, Cosmin Obreja, Martino Aldrigo, Sergiu Iordanescu, Mircea Dragoman
National Institute for Research and Development in Microtechnologies (IMT), Erou Iancu Nicolae Street 126A, 077190, Voluntari (Ilfov), Romania.

17:00 **Modification of Ordered Mesoporous Carbon with Physical Block and Catalytic Effects** — **M P7.23**
Ye Lim Kwon, Hee Yeon Park, Zhengtang Li, Zhiyong Zheng, and Ji Man Kim
Department of Chemistry, Sungkyunkwan University, Suwon 16419, Korea

17:00 **Selective Edge Filling of Collapsed Carbon Nanotubes for Nanoelectronics: An ab-initio study** — **M P7.24**
Anthony Impellizzeri, Chris P. Ewels, Abraao Torres-Dias, Marc Monthioux, Emmanuel Picheau, Alain Pénicaud
Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, 44322, Nantes Cedex 3, France, CEMES-CNRS, UPR-8011, Université Fédérale de Toulouse-Midi-Pyrénées, Toulouse France, Centre de Recherche Paul Pascal (CRPP-CNRS), Université de Bordeaux, UPR 8641, F-33600 Pessac, Bordeaux France.

17:00 **One-step and controllable synthesis of heteroatom-doped graphene nanosheets by mechanochemical ball-milling for graphene-enhance** — **M P7.25**
Jun-Xiang Chen, Wei-Hung Chiang *
National Taiwan University of Science and Technology, Department of Chemical Engineering

17:00 **Electrochemistry of Three-Dimensionally Honeycomb-like Porous Ni-N-C Networks** — **M P7.26**
Xuerong Chen, Juan Gao, Xuanfeng Jiang, Can Wu* E-mail: cwu@hubu.edu.cn
Faculty of Materials Science & Engineering, Hubei University, Wuhan 430062, China

17:00 **Development of cathode for efficient hydrogen production using two-dimensional MoS2 and graphene on stainless steel** — **M P7.27**
Hari Kang,, Jong-Sang Youn, Sangmin Jeong, Inhwan Oh, M. Kovendhan and Ki-Joon Jeon*
Department of Environmental Engineering, The Inha University, Incheon 22212, south Korea

17:00 **Effect of MoS2 and MoO2 hybrid catalysts on carbon cloth electrode for hydrogen evolution reaction** — **M P7.28**
Hari Kang,, Jong-Sang Youn, Sangmin Jeong, Inhwan Oh, and Ki-Joon Jeon*
Department of Environmental Engineering, The Inha University, Incheon 22212, south Korea

17:00 **One-pot preparation of gold nanoparticle doped graphene hydrogel and its application in determination of IAA and SA** — **M P7.29**
Xueting Zhu, Yongkang Ye, Xiaodong Cao
School of Food and Biological Engineering, Hefei University of Technology, Hefei 230009, China

17:00 **Disposable electrochemical sensor based on benzimidazole derivatives functionalized graphene oxide for the detection of progeste** — **M P7.30**
Yujia Yan, Juankun Zhang, Xiaoyu Zhao* Tianjin University of Science and Technology *Corrsponding to: Xiaoyu Zhao, email: xyz@tust.edu.cn
Tianjin University of Science and Technology

17:00 **An electrochemical biosensor for determination of InvA gene based on the interface of PPy-rGO modified GCE using a nanotag** — **M P7.31**
Wuwen Yan, Yaqian Liu, Xiaodong Cao, Yongkang Ye
School of Food Science and Biological Engineering, Hefei University of Technology, Hefei 230009, China

17:00 **Phosphorus doped nanocrystalline diamond for supercapacitor application** — **M P7.32**
Siyu Yu, Hiromitsu Kato, Shetian Liu, Nianjun Yang, and Xin Jiang*
Siyu Yu: School of Chemistry and Chemical Engineering, Southwest University, 400715 Chongqing, P. R. China, Institute of Materials Engineering, University of Siegen, 57076 Siegen, Germany, Hiromitsu Kato: Advanced Power Electronics Research Center, National Institute of Advanced Industrial Science and Technology Tsukuba 305-8568, Japan, Shetian Liu: School of Chemistry and Chemical Engineering, Southwest University, 400715 Chongqing, P. R. China, Nianjun Yang: Institute of Materials Engineering, University of Siegen, 57076 Siegen, Germany, Xin Jiang: Institute of Materials Engineering, University of Siegen, 57076 Siegen, Germany

17:00 **Synthesis of Au nanorods?embedded and graphene oxide?wrapped microporous ZIF?8 with high electrocatalytic activity for the sensi** — **M P7.33**
Jiebin Li , Tian Gan*
College of Chemistry and Chemical Engineering, Xinyang Normal University, Xinyang 464000, China

17:00 **Functionalized carbon nanotubes for chemical sensing: electrochemical detection of hydrogen isotopes** **M P7.34**
A.M. Iordache (1,3), S.M. Iordache (1,3), E.I.Ionete (2), I. Stamatin (3), E. Tanasa (4), C.Vasiliu (1), M.Elisa (1), I. Chilibon (1), C.E.A. Grigorescu (1)
(1) National Institute for Research and Development in Optoelectronics-INOE 2000,Optospintronics Department, 409 Atomistilor, 077125, Magurele Romania (2) National R&D Institute for Cryogenics and Isotopic Technologies ? ICSI Rm.Valcea, 4 Uzinei Str. RM Valcea, 240050, Valcea, Romania (3) University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, 405 Atomistilor, P.O. Box MG-38, 077125, Magurele, Romania (4) Politehnica University of Bucharest, 313 Splaiul Independen?ei, Bucharest, Romania

17:00 **Cu-TCPP/Graphene nanaosheets-based electrochemical sensing platform for rapid and simple determination of 5-Hydroxytryptamine** **M P7.35**
Peng Hu, Liudi Ji*
Hubei Collaboration Innovative Center for Nonpower Nuclear Technology, Hubei University of Science and Technology, Xianning 437100, China

17:00 **Hydrothermal Synthesis of a New Kind of N?Doped Graphene Gel-llike Hybrid As an Enhanced ORR Electrocatalyst** **M P7.36**
Xin Bao, Yanfang Gao.*
Inner Mongolia University of Technology

17:00 **g-C3N4 sheets as an efficient supercapacitor materials and oxygen evolution reaction catalyst** **M P7.37**
Wenjing Chu, Yanfang Gao.*
Inner Mongolia University of Technology

17:00 **The Fabrication and Electrochemical Properties of Polycrystalline Born-Doped Diamond on Anodic Aluminum Oxide Template with Nano** **M P7.38**
Zhigang Gai1, Fengxiang Guo1, Tao Zhang1, Mei Zhang1, Huimin Qiu1, Yibao Wang1, Xin Jiang1,2
1 Institute of Oceanographic Instrumentation, Qilu University of Technology (Shandong Academy of Sciences), Shandong Provincial Key Laboratory of Marine Monitoring Instrument Equipment Technology, National Engineering and Technological Research Center of Marine Monitoring Equipment, Qingdao 266001, China, 2 Institute of Materials Engineering, University of Siegen, Paul-Bonatz-Str. 9-11, 57076 Siegen, Germany

17:00 **Carbon-based electrocatalyst for the reduction of CO2 to form formic acid** **M P7.39**
Jin Li, Yanfang Gao.*
Inner Mongolia University of Technology

17:00 **In situ synthesis of Cu-BTC@ball-milled graphene composite and its electrochemical sensing properties** **M P7.40**
Caoling Li, Xiaoyu Li, Kangbing Wu*
Key Laboratory for Material Chemistry of Energy Conversion and Storage, Ministry of Education, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China

17:00 **A novel acetaminophen electrochemical sensor based on triblock temperature-sensitive copolymer and carbon nanocomposites** **M P7.41**
Pengcheng Zhao, Meijun Ni, Chao Chen, Zhidu Zhou, Xiping Li, Chunyan Li, Yixi Xie, Junjie Fei*
College of Chemistry, Xiangtan University, Xiangtan 411105, People?s Republic of China.

17:00 **Minimum conductivity and shot noise anomalies in shifted bilayer graphene** **M P7.42**
A. Daboussi 1,2, L. Mandhour 1,3 and S. Jaziri 1,4
1. Université de Tunis El Manar, Faculté des Sciences de Tunis, Laboratoire de Physique de la Matière Condensée, Campus Universitaire Tunis, El Manar, 2092 Tunis, Tunisie. 2. Ecole Supérieure Privée d'ingénierie et de communication, 85-87 Rue Palestine, 1002 Tunis, Tunisie. 3. Université de Tunis El Manar, Institut Supérieur des Technologies Médicales de Tunis, 9 Rue Zouhair Essafi ,1006 Tunis, Tunisie. 4. Université de Carthage, Faculté des Sciences de Bizerte, Laboratoire de Physique des Matériaux, Jarzouna, 7021 Bizerte, Tunisie.

17:00 **Enhancement of copper?s anti-corrosion using carbon coating for efficient HER in extreme electrolytes** **M P7.43**
Inhwan Oh, Hari Kang, Sangmin Jeong, Tri Khoa Nguyen, Jongsang Youn, Kijoon Jeon
Inha university, Incheon, Korea(Repulic of)

17:00 **Sulfur Spillover on Carbon Materials and Possible Impacts on Metal-Sulfur Batteries** **M P7.44**
Lukas Medenbach, Ines Escher, Nicolas Köwitsch, Marc Armbrüster, Linda Zedler, Benjamin Dietzek, Philipp Adelhelm
Friedrich-Schiller-University Jena, Technical University Chemnitz, Leibniz Institute of Photonic Technology Jena

17:00 **Synthesis of highly effective Pt nanoparticle immobilized nanocellulose-CNT foam as a catalyst for Hydrogen evolution reaction** **M P7.45**
Hye-Jin Hong, Namdong Kim, Hyeon Su Jeong
Mineral Resources Research Division, Korea Institute of Geoscience and Mineral Resources, Daejeon 34132, Republic of Korea, Institute of Advanced Composite Materials, Korea Institute of Science and Technology, 92 Chudong ro, Bondong-eup, Wanju-gun, Jeonbuk 565-905, Republic of Korea, Institute of Advanced Composite Materials, Korea Institute of Science and Technology, 92 Chudong ro, Bondong-eup, Wanju-gun, Jeonbuk 565-905, Republic of Korea

17:00 **CeO2/graphene nanoplatelet composites towards electrocatalytic oxidation of tetrabromobisphenol A: morphology effect of CeO2** **M P7.46**
Chi Lia, Yuanyuan Zhanga*, Ting Zenga, Xinyue Chena, Qijin Wana, Nianjun Yanga,b
a School of Chemistry and Environmental Engineering, Key Laboratory for Green Chemical Process of Ministry of Education, Hubei Key Lab of Novel Reactor & Green Chemical Technology, Wuhan Institute of Technology, Wuhan 430073, China
b Institute of Materials Engineering, University of Siegen, 57076 Siegen, Germany

17:00 **Magnetic carbon nanofibers deriving from electrospun cellulose/Fe3O4 fibrous nanocomposites** **M P7.47**
Georgia Papaparaskeva, Panayiotis S. Ioannou, Ioannis Giapintzakis,Theodora Krasia-Christoforou
University of Cyprus, Department of Mechanical and Manufacturing Engineering 75, Kallipoleos Avenue, P.O.Box 20537, 1678, Nicosia, CYPRUS

17:00 **Iron-based catalysts for O2 electro-reduction: novel insights on their pH-dependent stability and promising application in anion** **M P7.48**
Pietro Giovanni Santori, Florian Speck, Andrea Zitolo, Qingying Jia, Sanjeev Mukerjee, Serhiy Cherevko, Frédéric Jaouen
Pietro Giovanni Santori, Frédéric Jaouen Institut Charles Gerhardt Montpellier, UMR 5253, CNRS, Université Montpellier, ENSCM, Place Eugène Bataillon, 34095 Montpellier cedex 5, France Florian Speck, Serhiy Cherevko Helmholtz-Institute Erlangen-Nürnberg for Renewable Energy (IEK-11), Forschungszentrum Jülich, Egerlandstr. 3, 91058 Erlangen, Germany Andrea Zitolo Synchrotron SOLEIL, L?Orme des Merisiers, BP 48 Saint Aubin, 91192, Gif-sur-Yvette, France Qingying Jia, Sanjeev Mukerjee Department of Chemistry and Chemical Biology, Northeastern University, 364 Egan Research Center, 360 Huntington avenue, Boston, MA 02115, USA

17:00 **Synthesis of N/Fe doped macroporous carbon for the oxygen reduction reaction using hydrothermal method** **M P7.49**
Swapnil INGLE, Alessandro IANNACI, Carlota DOMINGUEZ, Md. Khairul HOQUE and Paula COLAVITA
School of Chemistry Trinity College Dublin Ireland

17:00 **Wearable Paper-like Electrochemical Oxygen Sensor Based on Massively Produced Carbon Nanotube Electrode Arrays** **M P7.50**
Lantu Dang, Jia Yang, Chengguo Hu*
Key Laboratory of Analytical Chemistry for Biology and Medicine (Ministry of Education), College of Chemistry and Molecular Sciences, Wuhan University, Wuhan 430072, China

17:00 **Electrochemical investigation of graphene/lipid interfaces: from liposomes to supported lipid membranes** **M P7.51**
M.Gabriella Santonicola (1), Martina Pittori (1,2), Luca Ortolani (2), Denis Gentili (3), Vittorio Morandi (2), Rita Rizzoli (2)
(1) Department of Chemical Materials and Environmental Engineering, Sapienza University of Rome, Italy, (2) Institute for Microelectronics and Microsystems (IMM) ? Bologna Section, National Research Council (CNR), Bologna, Italy, (3) Institute for Nanostructured Materials (ISMN) ? Bologna Section, National Research Council (CNR), Bologna, Italy

17:00 **Bimodal Nanoporous Carbon: Selective Pore Modification and Filling with Guest Species for Lithium Cell Electrodes** **M P7.52**
Christian Weinberger, Sai Ren, Xiaojuan Cao, Marc Hartmann, Thorsten Wagner, Michael Tiemann
Paderborn University, Department of Chemistry, Warburger Str. 100, D-33098 Paderborn, Germany

17:00 **Spectroscopic studies of fullerene clusters in N-methyl-2-pyrrolidone** **M P7.53**
L.Bulavin, O.Kyzyma, N.Bulavina, A. Naumenko, V. Gubanov, M. Biliy
Taras Shevchenko National University of Kyiv, 64/13, Volodymyrs'ka St., 01601, Kyiv, Ukraine

17:00 **Plasma-grown Carbon Nanowalls as Microporous Layer for PEM Fuel Cell Applications** — **M P7.54**
Alexandra M.I. Trefilov1*, Athanasios Tiliakos 1*, Adriana Balan 2, Bogdan Bita 1, Sorin Vizireanu 1, Gheorghe Dinescu 1
1 INFLPR - National Institute for Laser, Plasma and Radiation Physics, Bucharest, Romania 2 University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, Bucharest, Romania * e-mail: alexandra.trefilov@inflpr.ro, s_vizi@infim.ro

17:00 **Composite graphene oxide membranes for fuel cells** — **M P7.55**
Md Shahjahan Kabir Chowdury, Sung Bum Park ,Yong-il Park
Department of Advanced Material Science and Engineering, Kumoh National Institute of Technology, 61 Daehak-ro, Gumi, Gyeongbuk, 39177, Korea

17:00 **Preparation of BDD/MoS2/AuNPs Composite Electrode and Its Application in Heavy Metal Ion Detection** — **M P7.56**
Mei Zhang1, Zhigang Gai1,Tao Zhang1, Yibao Wang1, Fengxiang Guo1, Huimin Qiu1, Xin Jiang1,2
1 Institute of Oceanographic Instrumentation, Qilu University of Technology (Shandong Academy of Sciences), Shandong Provincial Key Laboratory of Marine Monitoring Instrument Equipment Technology, National Engineering and Technological Research Center of Marine Monitoring Equipment, Qingdao 266001, China? 2 Institute of Materials Engineering, University of Siegen, Paul-Bonatz-Str. 9-11, 57076 Siegen, Germany

17:00 **Exonuclease-assisted target recycling for ultrasensitive electrochemical detection of microRNA at vertically aligned SWCNTs** — **M P7.57**
Zhichao Chen, Aimin Yu, Guosong Lai*
Hubei Normal University, China

17:00 **Designing high-performance lithium sulfur batteries via optimizing surface/interfacial properties** — **M P7.58**
Long Jiao, Chen Zhang, Ying Tao, Wei Lv, Quan-hong Yang
Nanoyang Group, State Key Laboratory of Chemical Engineering, School of Chemical Engineering and Technology, Tianjin University, Tianjin, China, School of Marine Science and Technology, Tianjin University, Tianjin 300072, China, Engineering Laboratory for Functionalized Carbon Materials and Shenzhen Key Laboratory for Graphene-based Materials, Graduate School at Shenzhen, Tsinghua University, Shenzhen, China

17:00 **Electrocatalytic Performance of Pt Nanoparticles Supported on High Surface Area SiC for Methanol Oxidation** — **M P7.59**
Gailing Bai?,Xili Tong, Xiangyun Guo
State Key Laboratory of Coal Conversion, Institute of Coal Chemistry, Chinese Academy of Sciences, Taiyuan 030001, China.

17:00 **Carbon nanotube grafted-carbon nano?bers for lithium metal anodes** — **M P7.108**
Yeonsong Kim, Byoung-Sun Lee and Woong-Ryeol Yu
Department of Materials Science and Engineering and Research Institute of Advnaced Materials (RIAM), Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 151-744, Republic of KOREA

17:00 **Mesoporous and ultrathin arrays of cobalt nitride nanosheets for electrocatalytic oxygen evolution** — **M P7.60**
Chang Liu? XiliTong? Nianjun Yang
State Key Laboratory of Coal Conversion, Institute of Coal Chemistry, CAS, Taiyuan 030001, China

17:00 **Magnetic Beads-Based Renewable Electrochemical Immunosensor for Exclusive and Sensitive Monitoring of Carcinoembryonic Antigen** — **M P7.61**
Junxing Hao, Kangbing Wu*
Hubei Key Laboratory of Bioinorganic Chemistry and Materia Medica, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China ?Corresponding author. kbwu@hust.edu.cn (K. Wu)

17:00 **Template synthesis of few-layered WS2 Nanoplates confined in Metal-organic framework Nanocaqes for dye-sensitized solar cells** — **M P7.62**
Xiaohui Liu,Yanfang Gao,*
College of Chemical Engineering, Inner Mongolia University of Technology, Hohhot, 010051, P.R. China

17:00 **Direct Chitin Conversion to N-doped Amorphous Carbon Nanofibers for Rechargeable Batteries** — **M P7.63**
Yun Yang, Hua Wang
School of Chemistry, Beihang University, Beijing 100191, China

17:00 **Sulfur-nitrogen double-doped graphene as an efficient counter electrode of dye-sensitized solar cells** — **M P7.64**
Manli An, Yanfang Gao.*
Inner Mongolia University of Technology

17:00 **Carbon black nanoparticle arrangement and its influence on polymer composite VOC vapour detection** — **M P7.65**
Santa Stepina, Linards Lapcinskis, Kaspars Ozols, Maris Knite
Institute of Technical Physics, Faculty of Material Science and Applied Chemistry, Riga Technical University, Riga, Latvia

17:00 **Metal Impregnated Carbonized-Cotton for Tough and High-Rate Energy Storage** — **M P7.66**
Do Van Lam, Jae-Hyun Kim, Hak Joo Lee, Seung-Mo Lee
1 Department of Nanomechanics, Korea Institute of Machinery and Materials (KIMM), 156 Gajeongbuk-ro, Yuseong-gu, Daejeon 34103, Korea 2 Nano Mechatronics, Korea University of Science and Technology (UST), 217 Gajeong-ro, Yuseong-gu, Daejeon 34113, Korea

17:00 **Green processing of Li-ion battery electrodes using polysaccharide-derived materials (Starbons®)** — **M P7.67**
Sanghoon Kim, Nicolas Brun, Johan G. Alauzun, Nicolas Louvain, Bruno Boury, Lorenzo Stievano, Laure Monconduit, P. Hubert Mutin
Institut Charles Gerhardt Montpellier, UMR 5253, CNRS, Université de Montpellier, ENSCM

17:00 **Edge-selectively hydorxylated graphene nanosheets from oxidation of graphite during ball milling in the presence of persulfate** — **M P7.68**
Nan Wang, Cuiyu Huang, Yuqi Zhou, Heqing Tang, Tetsuro Majima, and Lihua Zhu
Key Laboratory of Material Chemistry for Energy Conversion and Storage, Ministry of Education, School of Chemistry and Chemical Engineering, Huazhong University of Science & Technology, Wuhan 430074, P. R. China.

17:00 **Effect of Different Nitrogen Configurations on Electrochemical Activity of N-doped Graphene** — **M P7.69**
Navid Solati1,2, Abdullah Kahraman1,2, Sarp Kaya1,2,3*
1 Materials Science and Engineering, Graduate School of Science and Engineering, Koç University, Istanbul, Turkey 2 Koç University TÜPRA? Energy Center, Istanbul, Turkey 3 Chemistry Department, Koç University, Istanbul, Turkey

17:00 **Monodisperse Carbon Sphere-Constructed Pomegranate-Like Structures for High-Volumetric-Capacitance Supercapacitors** — **M P7.70**
Shihao Feng, Wen Luo, Liang Zhou, Liqiang Mai
State Key Laboratory of Advanced Technology for Materials Synthesis and Processing (Wuhan University of Technology)

17:00 **Synthesis of Li3V2(PO4)3/C nanocomposites as positive electrode for Lithium-ion Supercapatteries** — **M P7.71**
Biying Zhuang, Yanfang Gao*
Inner Mongolia University of Technology

17:00 **Solution Plasma Synthesis of Nitrogen-doped carbon Catalysts for Oxygen Reduction Reaction toward Li-Air Battery** — **M P7.72**
Takahiro Ishizaki, Shuhei Kato, Kensuke Fujiwara, Hiroko Watanabe
Department of Materials Science and Engineering, Shibaura Institute of Technology

17:00 **Hierarchically Interconnected Pores Boosting the Rate Capability of Carbon Supercapacitor** — **M P7.73**
Wei Jiaqi, Lv Zhisheng, Zhang Wei, Zhang Hongwei, Zhu Zhiqiang, Tang yuxin, Li Shuzhou, Chen Xiaodong
School of Materials Science and Engineering, Nanyang Technological University

17:00 **Ultrathin-layered carbon intercalated MoS2 hollow nanospheres fabrication and photoelectrochemical immunosensing pro-gastrin rel** — **M P7.74**
Chen Wang, Yanying Wang, Chunya Li*
Key Laboratory of Analytical Chemistry of the State Ethnic Affairs Commission, College of Chemistry and Materials Science, South-Central University for Nationalities, Wuhan 430074, China

17:00 **Graphene quantum dots functionalized by binaphthol derivatives and high responsiveness to Hg2+** — **M P7.75**
Yong-Chang Liu, Wen-Wen Ren, Li-Hui Wu, Yan-Jun Hu*
Hubei Key Laboratory of Pollutant Analysis & Reuse Technology, Department of Chemistry, Hubei Normal University, Huangshi 435002, PR China

17:00 **Preparation and electrocatalytic activity of the Nb2O5-Fe3C@NCNTs composites for the methanol and ethanol oxidation** **M P7.76**
Xiaoguang Zheng, Qiaobo Li, Yue Zhao, Yanhong Zhao*, Xiaojing Wang
College of Chemistry and Chemical Engineering, Inner Mongolia University, Hohhot, 010021, China

17:00 **Asymmetric Supercapacitors as high-performance anode for asymmetric supercapacitor with impressive energy density** **M P7.77**
Zijun Shi, Yanfang Gao.*
College of Chemical Engineering, Inner Mongolia University of Technology, Hohhot, 010051, P.R. China

17:00 **3D macroscopic architectures of rGO/MXenes composite monolith towards energy storage** **M P7.78**
Tongxin Shang1, Zifeng Lin2, 3, Ying Tao1, Patrice Simon2, Quan-Hong Yang1, *
1Nanoyang Group, State Key Laboratory of Chemical Engineering, School of Chemical Engineering and Technology, Tianjin University, Tianjin, China. Email: qhyangcn@tju.edu.cn, web site: http://nanoyang.tju.edu.cn/ 2 CIRIMAT UMR CNRS 5085, Université Paul Sabatier, 118 route de Narbonne, 31062 Toulouse, France 3 College of Materials Science and Engineering, Sichuan University, Chengdu 610065, China

17:00 **The Controllable Electro-deposition Fabrication of Ni-particles on Born-Doped Diamond on Anodic Aluminum Oxide Template and Thei** **M P7.79**
Fengxiang Guo1, Zhigang Gai1, Tao Zhang1, Mei Zhang1, Huimin Qiu1, Yibao Wang1, Xin Jiang1,2
1 Institute of Oceanographic Instrumentation, Qilu University of Technology (Shandong Academy of Sciences), Shandong Provincial Key Laboratory of Marine Monitoring Instrument Equipment Technology, National Engineering and Technological Research Center of Marine Monitoring Equipment, Qingdao 266001, China? 2 Institute of Materials Engineering, University of Siegen, Paul-Bonatz-Str. 9-11, 57076 Siegen, Germany

17:00 **Carbon in inorganic+carbon spray-dried composites: transformation from precursors and/or in-situ addition** **M P7.80**
Benedicte Vertruyen*, Nicolas Eshraghi, Jerome Bodart, Caroline Piffet, Frederic Boschini, Abdelfattah Mahmoud
GREENMAT, CESAM Research Unit, Chemistry Institute B6, University of Liège, 4000 Liège, Belgium

17:00 **Graphene Oxide Modified Cu Foil with Enhanced Lithiophilicity and Stable Lithium Deposition for Lithium Metal Battery** **M P7.81**
Mengxue Chen, Hua Wang (corresponding author)
School of Chemistry, Beihang University, Beijing 100191, China

17:00 **High performing Na-ion supercapacitors - Synergistic combination of carbon nanostructures and hollow particles of NaFePO4** **M P7.82**
Sudipta Biswas, Debabrata Mandal, Amreesh Chandra
Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur, India, School of Nanoscience and Technology,Indian Institute of Technology Kharagpur, Kharagpur, India, Department of Physics and School of Nanoscience and Technology,Indian Institute of Technology Kharagpur, Kharagpur, India

17:00 **Mechanism investigation of the photoelectrochemical oxidation of atrazine under different external bias potential** **M P7.83**
Chunjing Tang, Huijie Shi*, and Guohua Zhao*
School of Chemical Science and Engineering, and Shanghai Key Lab of Chemical Assessment and Sustainability, Tongji University, 1239 Siping Road, Shanghai, 200092, China

17:00 **High-Performance Supercapacitors Using Three-dimensional 3C-SiC/ Graphene Hybrid Nanolaminate Films and Redox Electrolytes** **M P7.84**
Steffen Heuser, Nianjun Yang*, Felix Hof, and Xin Jiang*
Institute of Materials Engineering, University of Siegen, Siegen 57076, Germany

17:00 **MOF derived Carbon@MoS2/ZnS nanocomposites for photoelectrochemical immunosensing tumor marker** **M P7.85**
Qiuxi Wei, Chunya Li, Yanying Wang*
Experimental Teaching and Laboratory Management Center, South-Central University for Nationalities, Wuhan 430074, China

17:00 **Reduced graphene oxides integrated with Bi-rich Bi4O5Br2 enhanced photocatalytic performance towards antibiotics removal under s** **M P7.86**
Mengwen Xu, Yanying Wang, Chunya Li*
aKey Laboratory of Analytical Chemistry of the State Ethnic Affairs Commission, College of Chemistry and Materials Science, South-Central University for Nationalities, Wuhan 430074, China

17:00 **Polymer based energetic composites with improved thermal conductivity through bioinspired interfacial engineering strategy** **M P7.87**
Guansong He
Institute of Chemical Materials, CAEP

17:00 **The Impact of Defect Density, Grain Size, and Cu Orientation on Thermal Oxidation of Graphene-Coated Cu** **M P7.109**
Katherine T. Young, Shelly S. Phillips, Jasmine T. T. Coley, Christopher J. Perini, Dale A. Hitchcock, Steve M. Serkiz, Eric M. Vogel
School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332, United States, School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332, United States, School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332, United States, School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332, United States, Savannah River National Lab, Aiken, South Carolina, 29808, United States, Savannah River National Lab, Aiken, South Carolina, 29808, United States, and Department of Physics and Astronomy, Clemson University, Clemson South Carolina 29634, United States, School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332, United States

17:00 **Nickel Copper Alloy Nanoparticles Embedded 3D Carbon Matrix for Electrochemical Energy Storage** **M P7.88**
Usama Bin Humayoun, Mohit Kumar
Department of Textile Engineering, University of Engineering and technology Lahore, Faisalabad Campus. , School of Advanced Materials Science and Engineering, Sungkyunkwan University, South Korea.

17:00 **HYDROTHERMAL REDUCTION OF GRAPHENE OXIDE TO GRAPHENE AEROGELS WITH TUNABLE STRUCTURE FOR SUPERCAPACITORS** **M P7.89**
Vanesa Rodríguez-Mata, Javier Hernández-Ferrer, Ana M. Benito, Wolfgang Maser, Enrique García-Bordejé
Instituto de Carboquímica (ICB-CSIC) Miguel Luesma Castán 4, Zaragoza, Spain 34976733977, jegarcia@icb.csic.es

17:00 **Editable asymmetric all-solid-state supercapacitors based on high-strength, flexible, and programmable 2D-metal?organic framewor** **M P7.90**
Junye Cheng, Chen Shengmei, Dong Liubing, Kang Feiyu, Wenjun Zhang,*
Center of Super-Diamond and Advanced Films, Department of Materials Science and Engineering, City University of Hong Kong, Hong Kong 999077, China.
School of Materials Science and Engineering, Tsinghua University, Beijing 100084, China

17:00 **Ternary MnO/CoMn Alloy@N-doped Graphitic from bi-metal pigment for bifunctional electrocatalysis** **M P7.91**
Chen Deng, Kuang-Hsu Wu, Jason Scott, Shenmin Zhu, Rose Amal and Da-Wei Wang*
Chen Deng, Kuang-Hsu Wu, Jason Scott, Rose Amal and Da-Wei Wang* Particles and Catalysis Research Group, School of Chemical Engineering, The University of New South Wales, Sydney, NSW 2052, Australia, Shenmin Zhu State Key Laboratory of Metal Matrix Composites, School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai 200240, China.

17:00 **3D Flower-like BiOI-Bi@carbon Composite for Constructing a Cathodic ?Signal-on? Photoelectrochemical Aptasensor** **M P7.92**
Yuhan Zhu, Kai Yan, Zuwei Xu, Jinnan Wu, Jingdong Zhang *
School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Luoyu Road 1037, Wuhan 430074, P.R. China

17:00 **One-step Synthesis of CdS-rGO-g-C3N4 Composite for Highly Sensitive and Selective Aptasensing of PCB72 Detection** **M P7.93**
Mengjun Sun (a), Ruizhen Li (b), Jingdong Zhang (a),*
(a) School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Luoyu Road 1037, Wuhan 430074, P.R. China (b) School of Chemical and Environmental Engineering, Sichuan University of Science and Engineering, Zigong 64300, Sichuan, P.R. China

17:00 **Hollow and Porous Carbon Materials for the Well-Arranged Incorporation of PdCo Nanocatalysts for Superior Catalytic Activity** **M P7.94**
Sojin Oh, Sora Choi, Sujeong Lee, and Moonhyun Oh*
Department of Chemistry, Yonsei University, Seoul, 03722, Republic of Korea

17:00 **Production of Well-Defined Porous Carbon Materials from Core-Shell type Hybrid Metal-Organic Frameworks (MOFs)** **M P7.95**
Sujeong Lee, Sojin Oh, and Moonhyun Oh*
Department of Chemistry, Yonsei University, Seoul, 03722, Republic of Korea

17:00 **Photovoltammetric study and sensing application on CdS-graphene photoanode and BiOI-graphene photocathode** **M P7.96**
Yuhan Zhu, Jingdong Zhang *
School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Luoyu Road 1037, Wuhan 430074, P.R. China

17:00 **Carbon-based electronic textiles for various applications** **M P7.97**
Jun Woo Jeon, Hyung-Seok Jang, Won Taek Jung, Byung Hoon Kim
Department of Physics, Incheon National University, Incheon, Republic of Korea

17:00 **Asymmetric supercapacitors constructed using holey reduced graphene oxide** **M P7.98**
Chang Guo a, Gehua Zheng a, Ting Zeng a?, Yuanyuan Zhang a, Qijin Wan a*, NianjunYang a,b
a School of Chemistry and Environmental Engineering, Key Laboratory for Green Chemical Process of Ministry of Education, Hubei Key Lab of Novel Reactor &Green Chemical Technology,Wuhan Institute of Technology, Wuhan 430073, China b Institute of Materials Engineering, University of Siegen, 57076 Siegen, Germany

17:00 **Composites of expanded graphite and Fe2O3 with varied morphologies for electrochemical monitoring of organic pollutants** **M P7.99**
Xinyue Chen a, Yuanyuan Zhang a*, Ting Zeng a, Chi Li a, Qijin Wana, Nianjun Yang a,b
a School of Chemistry and Environmental Engineering, Key Laboratory for Green Chemical Process of Ministry of Education, Hubei Key Lab of Novel Reactor & Green Chemical Technology, Wuhan Institute of Technology, Wuhan 430073, China b Institute of Materials Engineering, University of Siegen, 57076 Siegen, Germany

17:00 **Expanded graphite supported palladium oxide@carbon nanoparticles for voltammetric phenol detection** **M P7.100**
Gehua Zheng a, Ting Zeng a?,Yuanyuan Zhang a, Tianming Nie b, Qijin Wan a* , NianjunYang a,c
a School of Chemistry and Environmental Engineering, Key Laboratory for Green Chemical Process of Ministry of Education, Hubei Key Lab of Novel Reactor &Green Chemical Technology,Wuhan Institute of Technology, Wuhan 430073, China b School of Chemical Engineering & Pharmacy,Wuhan Institute of Technology, Wuhan 430073, China c Institute of Materials Engineering, University of Siegen, 57076 Siegen, Germany

17:00 **Micropatterning of Reduced Graphene Oxide by Meniscus-Guided Printing** **M P7.102**
W. S. Chang, H Jeong, J. H. Kim, S. Lee, M. Wajahat, S. K. Seol
Nano Hybrid Technology Research Center, Korea Electrotechnology Research Institute(KERI), Changwon-si, Gyeongsangnam-do, Republic of Korea

17:00 **Pyroprotein-based electronic textiles with high thermal durability for particulate matter filter and energy harvesting materials** **M P7.103**
Jun Woo Jeon, Hyun-Seok Jang, Won Taek Jung, and Byung Hoon Kim*
Department of Physics, Incheon National University, Incheon 22012, Republic of Korea Research Institute of Basic Sciences, Incheon National University, Incheon, 22012, Republic of Korea

17:00 **Nitrogen-doped Carbon Aerogel for Two-Electron Oxygen Reduction to H2O2 with High selectivity** **M P7.104**
Hongying Zhao, Xuqian Shen, Ying Chen, Guohua Zhao
School of Chemical Science and Engineering, and Shanghai Key lab of Chemical Assessment and Sustainability, Tongji University, Siping Road 1239, Shanghai 200092, P.R.China

17:00 **Unraveling Surface State-Related Photoluminescence of Carbon Nanodots: The Coupling Effect between ?-Electron System and Carbony** **M P7.105**
Cui Liu, Zhi-Ling Zhang, Dai-Wen Pang
Laboratory of Analytical Chemistry for Biology and Medicine (Ministry of Education), College of Chemistry and Molecular Sciences, Wuhan University, Wuhan 430072, China

17:00 **Highly efficient flow-electrode capacitive deionization utilizing high-aspect ratio functionalized carbon nanotubes** **M P7.106**
Younghyun Cho, Chung-Yul Yoo, Seung Woo Lee, Hana Yoon, Ki Sook Lee, SeungCheol Yang, Dong Kook Kim
Department of Energy Systems, Soonchunhyang University, Republic of Korea ,Energy Efficiency and Materials Research Division, Korea Institute of Energy Research, Republic of Korea ,The George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, USA ,Jeju Global Research Center, Korea Institute of Energy Research, Republic of Korea

17:00 **New composite hydrogels for energy storage and production** **M P7.107**
Bettina Roellinger, Nicolas Bremond, Annie Colin, Philippe Poulain
Bettina Roellinger, Nicolas Bremond, Annie Colin : Chimie Biologie Innovation, ESPCI Paris, CNRS, PSL University, 75005 Paris, France Philippe Poulain: Centre de Recherche Paul Pascal, CNRS, University of Bordeaux, 33600 Pessac, France

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Diamond II : Naoki Komatsu

08:30 INV **Simulation of Diamond Surface Chemistry - Reactivity and Properties** — M 8.1
Karin Larsson
Department of Chemistry-Ångström Laboratory, Uppsala University, Sweden

09:00 INV **Hydrogenated nanodiamonds: from isotopic investigations to production of radicals & electrons under irradiation** — M 8.2
J. C. Arnault
CEA, LIST, Diamond Sensors Laboratory, F-91191 Gif-sur-Yvette, France.

09:30 INV **Recent progress in the nature, mechanisms and reactivity of electrosynthesis of reactive species at diamond electrode** — M 8.3
Soliu Oladejo Ganiyu, Paola Villegas-Guzman, Djalma Ribeiro da Silva, Elisama Vieira dos Santos, Carlos Alberto Martínez-Huitle
Institute of Chemistry, Federal University of Rio Grande do Norte, Lagoa Nova, CEP 59078-970, Natal, RN, Brazil

10:00 **Electronic Behavior Adjustment in 2D Nanomaterials** — M 8.4
Nailiang Yang1,2, Hongfei Cheng2, Hua Zhang2,*, Dan Wang1,*
1State Key Laboratory of Biochemical Engineering, Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China 2Center for Programmable Materials, School of Materials Science and Engineering, Nanyang Technological University hua.zhang@cityu.edu.hk, danwang@ipe.ac.cn

10:15 **Enhanced capacitive performance of diamond-graphite nanohybrid films via surface oxidation treatments** — M 8.5
Ying Xiong,1,* Dongling Hu,1 Bing Wang,1 Tao Duan2
1 State Key Laboratory for Environment-friendly Energy Materials, Southwest University of Science & Technology, Mianyang, 621010, P. R. China 2 School of National Defense and Technology, Southwest University of Science & Technology, Mianyang, 621010, P. R. China

10:30 **Quantitative evaluation of polymer density and net charge effects on nanodiamond surface toward protein affinity** — M 8.6
Yajuan Zou, *Naoki Komatsu
Graduate School of Human and Environmantal Studies, Kyoto University

11:15 **PLENARY SESSION 2**

12:30 **Lunch**

Sensing II : Jean-Charles Arnault

14:00 INV **Carbon-based electrochemical sensors for real time monitoring of cells** — M 9.1
Wei-Hua Huang
Key Laboratory of Analytical Chemistry for Biology and Medicine (Ministry of Education), College of Chemistry and Molecular Sciences, Wuhan University, Wuhan 430072, China

Sensing I : Wei-Hua Huang

14:30 INV **Electrochemiluminescence of carbon nanomaterials and sensing applications** — M 5.1
Ruina Wang, Ruifen Sun, Yuwu Chi*
College of Chemistry, Fuzhou University

15:00 **Boron/Nitrogen-Codoped Carbon Nano-Onions as Promising Electrocatalysts for Oxygen Reduction Reaction** — M 9.3
Adalberto Camisasca, Adriano Sacco, Rosaria Brescia, Silvia Giordani*
Adalberto Camisasca: School of Chemical Sciences, Dublin City University, Glasnevin, Dublin 9, Ireland, Adriano Sacco: Center for Sustainable Future Technologies, Istituto Italiano di Tecnologia (IIT), via Livorno 60, 10144 Torino, Italy, Rosaria Brescia: Electron Microscopy Facility, Istituto Italiano di Tecnologia (IIT), Via Morego 30, 16163 Genova, Italy, Silvia Giordani: School of Chemical Sciences, Dublin City University, Glasnevin, Dublin 9, Ireland

15:15 **SERS Analysis based on Nonmetallic Composite Nanomaterials** — M 9.4
Tingting Zheng
School of Chemistry and Molecular Engineering, East China Normal University, Shanghai, 200241, P. R. China

15:30 **Biomolecular Mechanism of Pathogen Detection by Means of Various Impedimetric Strategies on Boron-Doped Nanocarbon Electrodes** — M 9.5
Anna Dettlaff 1*, Dawid Nidzworski2,3, Paweł Niedziałkowski4, Elżbieta Wnuk4, Michał Sobaszek1, Mateusz Ficek1, Jacek Ryl5, Robert Bogdanowicz1
1Department of Metrology and Optoelectronics, Faculty of Electronics, Telecommunications and Informatics, Gdansk University of Technology, 11/12 G. Narutowicza St., 80-233, Gdansk, Poland. 2Institute of Biotechnology and Molecular Medicine, 3 Trzy Lipy St., 80-172, Gdańsk, Poland. 3SensDx Ltd, 14b Postepu St., 02-676, Warszawa, Poland. 4Department of Analytical Chemistry, Faculty of Chemistry, University of Gdansk, 63 Wita Stwosza St., 80-308, Gdansk, Poland. 5Department of Electrochemistry, Corrosion and Materials Engineering, Faculty of Chemistry, Gdansk University of Technology, 11/12 G. Narutowicza St., 80-233, Gdansk, Poland *anna.dettlaff@pg.edu.pl

15:45 **Scanning Electrochemical Cell Microscopic Analysis for Graphite/Graphene** — M 9.6
Akichika Kumatani, Yasufumi Takahashi, Chiho Miura, Miyu Shimura, Hitoshi Shiku, Tomokazu Matsue
Tohoku Univ. WPI-AIMR, Tohoku Univ., Kanazawa Univ. WPI-NanoLSI, JST-PRESTO

16:00 **3D-printed graphene/polylactic acid electrochemical sensors and biosensors** — M 9.7
C. Lorena Manzanares-Palenzuela, Martin Pumera
Center for the Advanced Functional Nanorobots, Department of Inorganic Chemistry, University of Chemistry and Technology Prague

16:15 **Coffee break**

Energy Conversion II : Carlos Alberto Martínez-Huitle

16:30 INV **Functional carbon materials for energy applications** — M 10.1
Thuan-Nguyen Pham-Truong, Christine Ranjan, Jalal Ghilane, Randriamahazaka Hyacinthe*
SIELE Group, ITODYS Lab. – UMR 7086 CNRS, Chemistry Department, Université Paris Diderot, Sorbonne Paris Cité, 15 rue Jean Antoine de Baïf, 75013, Paris, France

17:00 INV **The Bond Evolution Mechanism of Covalent Sulfur-Carbon Materials for Energy Storage** — M 10.2
Tianjing Wu, Guoqiang Zou, Hongshuai Hou, Xiaobo Ji*
Central South University

17:30 **3D-Printing of Carbon based Electrodes for Electrochemical Energy Applications** — M 10.3
Michelle Browne, Martin Pumera
Nanorobots Research Center, University of Chemistry and Technology Prague, Technická 5, 166 28 Praha 6, Czechia.

17:45 **Mass Production of MoS2-Based Carbides Electrocatalysts for Hydrogen Evolution at Large Current Density** — M 10.4
Chi Zhang, Bilu Liu
Shenzhen Geim Graphene Center (SGC), Tsinghua-Berkeley Shenzhen Institute (TBSI), Tsinghua University, Shenzhen 518055, P. R. China

18:00 **Physico Chemical study of Oxygen Reduction Reaction catalysed by N-doped carbon thin film electrodes as a function of pH** — M 10.5
James A. Behan, Alessandro Iannaci, Carlota Domínguez, Serban N. Stamatin, Md. Khairul Hoque, Tatiana S. Perova and Paula E. Colavita
James A. Behan, Alessandro Iannaci, Carlota Domínguez, Serban N. Stamatin, Md. Khairul Hoque, Paula E. Colavita School of Chemistry, CRANN and AMBER research centres, Trinity College Dublin, College Green, Dublin 2, Serban N. Stamatin Faculty of Physics, 3Nano-SAE Research Centre, University of Bucharest, 405 Atomistilor Str., Bucharest-Magurele077125, Romania, Tatiana S. Perova Department of Electronic and Electrical Engineering, Trinity College Dublin, Dublin 2, Ireland and ITMO University, 49 Kronverskiy pr., Saint Petersburg, 197101, Russia

18:15 **3D heterostructure of MoS2 /graphene on carbon cloth for efficient hydrogen evolution reaction** — M 10.6
Inhwan Oh, Hari Kang, Sangmin Jeong, Tri Khoa Nguyen, Jongsang Youn, Kijoon Jeon
Inha university, Incheon, Korea(the republic of)

Materials and Technology II : Nianjun Yang

08:30 INV **Role of Function Element at Outer Surface of Nanochannels** **M 11.1**
Pengcheng Gao , Qun Ma, Fan Xia*
Engineering Research Center of Nano-Geomaterials of Ministry of Education, Faculty of Materials Science and Chemistry, China University of Geosciences (CUG), 388 lumo Road, Wuhan 430074, R. P. China.

09:00 INV **Graphene Oxide Liquid Crystal & Other Chemically Modified Graphene Based Structures** **M 11.2**
Sang Ouk Kim
National Creative Research Initiative Center for Multi-Dimensional Directed Nanoscale Assembly, Department of Materials Science & Engineering, KAIST, Daejeon 34141, Republic of Korea

09:30 **Au-Luminol nanoparticles Decorated Porous Carbon Spheres for Ultrasensitive Electrochemiluminesence Aptasensing of MUC1** **M P7.13**
Jing-Wen Gao, Miao-Miao Chen*, Xiuhua Zhang, Shengfu Wang, and Wei-Hua Huang
Laboratory of Analytical Chemistry for Biology and Medicine (Ministry of Education), College of Chemistry and Molecular Sciences, Wuhan University, Wuhan 430072, China Hubei Collaborative Innovation Center for Advanced Organic Chemical Materials, Ministry of Education Key Laboratory for the Synthesis and Application of Organic Functional Molecules?College of Chemistry and Chemical Engineering, Hubei University, Wuhan 430062, China

09:45 **Construction of MoS2 Nanosheets/Hydrogenated Graphene Hybrid Catalysts for Highly Efficient Electrocatalytic Hydrogen Evolution** **M P7.101**
Xiuxiu Han 1, 2, 3, Xili Tong 1, Xingchen Liu 1, Xiaodong Wen 1, Nianjun Yang 3, and Xiang-Yun Guo 1
1 State Key Laboratory of Coal Conversion, Institute of Coal Chemistry, Chinese Academy of Sciences, Taiyuan 030001, China, 2 University of Chinese Academy of Sciences, Beijing 100049, China, 3 Institute of Materials Engineering, University of Siegen, Siegen 57076, Germany

10:00 **Construction of 3D CQDs-{001} TiO2/Ti Photoelectric Anodes for High Efficient Photoelectrocatalytic Oxidation of Bisphenol** **M 11.4**
Qiongyan Niu, Jiaqi Ma, Yanan Zhang*, and Guohua Zhao*
School of Chemistry Science and Engineering, Shanghai Key Lab of Chemical Assessment andSustainability, Tongji University, Shanghai, 200092, China

10:15 **Distinct functional elements for outer-surface anti-interference and inner-wall ion gating of nanochannels** **M 11.5**
Pengcheng Gao, Qun Ma, Fan Xia
Engineering Research Center of Nano-Geomaterials of Ministry of Education, Faculty of Materials Science and Chemistry, China University of Geosciences (CUG), 388 lumo Road, 430074 Wuhan, China.

10:30 **Closing remarks**

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM N

Nano-engineered coatings and thin films: from design to applications

Symposium Organizers :

Kostas SARAKINOS, Linköping University, Sweden

Gregory ABADIAS, University of Poitiers-CNRS-ENSMA, France

Panos PATSALAS, Aristotle University of Thessaloniki, Greece

To be published in Surface and Coatings Technology, Elsevier

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08:45 **Welcome**

Modeling of processes and computational thin-film design : Pantelis KELIRES

09:00 INV **Pathways for the preparation of technologically important metal oxides** **N 1.1**
Jiri Houska
Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Univerzitni 8, 30614 Plzen, Czech Republic

09:30 **Vacancies are essential for stabilising metastable nitrides with exceptional properties** **N 1.2**
Nikola Koutná, Rainer Hahn, Julian Buchinger, Jakub Zálešák, Martin Friák, Jozef Keckes, Mojmír Šob, Matthias Bartosik, Paul H. Mayrhofer, David Holec
Institute of Materials Science and Technology, TU Wien, Getreidemarkt 9, A-1060 Vienna, Austria and Institute of Physics of Materials, Academy of Sciences of the Czech Republic, v.v.i., Žižkova 22, CZ-616 62 Brno, Czech Republic, Institute of Materials Science and Technology, TU Wien, Getreidemarkt 9, A-1060 Vienna, Austria, Institute of Materials Science and Technology, TU Wien, Getreidemarkt 9, A-1060 Vienna, Austria, Department of Materials Science, Montanuniversität Leoben, Leoben A-8700, Austria, Institute of Physics of Materials, Academy of Sciences of the Czech Republic, v.v.i., Žižkova 22, CZ-616 62 Brno, Czech Republic and Central European Institute of Technology, CEITEC MU, Masaryk University, Kamenice 5, CZ-625 00 Brno, Czech Republic and Department of Condensed Matter Physics, Faculty of Science, Masaryk University, Kotlářská 2, CZ-611 37 Brno, Czech Republic, Department of Materials Science, Montanuniversität Leoben, Leoben A-8700, Austria, Central European Institute of Technology, CEITEC MU, Masaryk University, Kamenice 5, CZ-625 00 Brno, Czech Republic and Institute of Physics of Materials, Academy of Sciences of the Czech Republic, v.v.i., Žižkova 22, CZ-616 62 Brno, Czech Republic and Department of Chemistry, Faculty of Science, Masaryk University, Kotlářská 2, CZ-611 37 Brno, Czech Republic, Institute of Materials Science and Technology, TU Wien, Getreidemarkt 9, A-1060 Vienna, Austria, Institute of Materials Science and Technology, TU Wien, Getreidemarkt 9, A-1060 Vienna, Austria, Department of Materials Science, Montanuniversität Leoben, Leoben A-8700, Austria

09:45 **Elastic properties of TiN, ZrN and TiZrN epitaxial thin films on MgO substrate: thin film growth and first-principle calculation** **N 1.3**
G. Abadias, C.-H. Li, L. Belliard, Q. M. Hu, P. Djemia
Institut P', Département Physique et Mécanique des Matériaux, CNRS-Université de Poitiers-ENSMA, SP2MI, Téléport 2, BP 30179, Futuroscope-Chasseneuil, France, Laboratoire des Sciences des Procédés et des Matériaux (LSPM), UPR 3407 CNRS, Université Paris 13, Sorbonne Paris Cité, 99 Avenue J. B. Clément, Villetaneuse, France, Université Pierre et Marie Curie-INSP, 4 place Jussieu 75252 Paris cedex 05, France, Institute of Metal Research Chinese Academy of Sciences, Wenhua Road 72, Shenyang 110016, China, Laboratoire des Sciences des Procédés et des Matériaux (LSPM), UPR 3407 CNRS, Université Paris 13, Sorbonne Paris Cité, 99 Avenue J. B. Clément, Villetaneuse, France

10:00 **Coffee Break**

Modeling of processes and computional thin-film design (cont.) : Celia POLOP & Jiri HOUSKA

10:30 **Modeling of 3D Nanographene** **N 1.4**
C. Mathioudakis, T. Leontiou, P.C. Kelires
C. Mathioudakis, Cyprus University of Technology, T. Leontiou, Frederick University, P.C. Kelires, Cyprus University of Technology

10:45 **First Principles Analysis of Ruthenium-Tantalum Nitride Films as Copper Interconnect Barrier/Liner Materials** **N 1.5**
Cara-Lena Nies, Suresh Natarajan, Michael Nolan
Tyndall National Institute, UCC, T12 R5CP Cork, Ireland

11:00 **A significant directional dependence of mechanical properties of CrN-based superlattices predicted from first principles** **N 1.6**
Lukas Löfler, Matthias Bartosik, David Holec
Department of Materials Science, Montanuniversität Leoben, Austria, Institute of Materials Science and Technology, TU Wien, Austria, Department of Materials Science, Montanuniversität Leoben, Austria

11:15 INV **Magnetron sputtering: understanding plasma physics for more reliable deposition of thin films** **N 1.7**
Matjaz Panjan
Jožef Stefan Institute, Jamova 39, 1000 Ljubljana, Slovenia

11:45 **High Mobility Tantalum doped SnO2 Thin Films** **N 1.8**
Sanjayan Sathasivam, Benjamin A. D. Williamson, Thomas J. Featherstone, Jack E. N. Swallow, David O. Scanlon, Tim Veal, Claire J. Carmalt & Ivan P. Parkin
Sanjayan Sathasivam, Benjamin A. D. Williamson, David O. Scanlon, Claire J. Carmalt, Ivan P. Parkin, Department of Chemistry, University College London, 20 Gordon Street, London WC1H 0AJ, UK Thomas J. Featherstone, Jack E. N. Swallow, Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Liverpool L69 7ZF, UK David O. Scanlon, Thomas Young Centre, University College London, Gower Street, London WC1E 6BT, UK and Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Didcot, Oxfordshire OX11 0DE, UK

12:00 **On the dynamics of surface-diffusion-driven nanoscale coalescence** **N 1.9**
V. Gervilla, G. Almyras, B. Lü, K. Sarakinos
Department of Physics, Chemistry and Biology (IFM), Linköping University, Sweden

12:15 **Computational Investigation of Thermal Atomic Layer Etch Processes** **N 1.10**
Suresh Kondati Natarajan, Rita Mullins, Simon D. Elliott, Michael Nolan
SKN, RM, MN: University College Cork, Tyndall National Institute, Lee Maltings Dyke Parade, Cork T12R5CP, Ireland, SDE : Schrodinger Inc., 120 West 45th Street, 17th Floor, New York, NY 10036-4041, USA

12:30 **Lunch Break**

Oxidation- and wear-resistant coatings I : Mariana BRAIC & Spyros KASSAVETIS

14:00 INV **Understanding the high-temperature oxidation behavior of CrAlYN-based protective coatings** **N 2.1**
J.C. Sánchez-López, T.C. Rojas, S. Domínguez-Meister, M. Brizuela, S. Mato, G. Alcalá, F.J. Pérez
Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla), 41092-Sevilla, Spain, Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla), 41092-Sevilla, Spain,Instituto de Ciencia de Materiales de Sevilla (CSIC-Univ. Sevilla), 41092-Sevilla, Spain,TECNALIA, 20009 Donostia-San Sebastián, Spain, Universidad Complutense de Madrid, Facultad de Ciencias Químicas, E-28040 Madrid, Spain, Universidad Complutense de Madrid, Facultad de Ciencias Químicas, E-28040 Madrid, Spain, Universidad Complutense de Madrid, Facultad de Ciencias Químicas, E-28040 Madrid, Spain

14:30 **Superior high-temperature behavior of amorphous coatings from quinary Hf-B-Si-C-N system** **N 2.2**
P. Zeman (1), Š. Zuzjaková (1), R. Čerstvý (1), Y. Shen (2), E. I. Meletis (2), J. Vlček (1)
(1) Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Univerzitní 8, 306 14 Plzeň, Czech Republic, (2) Department of Materials Science and Engineering, The University of Texas at Arlington, Arlington, 76019 TX, USA

14:45 **Fundamental study of oxygen induced decomposition pathways in PVD deposited TiAlN/Mo-Si-B multilayer coatings** **N 2.3**
E. Aschauer1,2, P. Felfer3, H. Bolvardi4, M. Arndt4, P. Polcik5, P.H. Mayrhofer1,6, and H. Riedl2,6
1Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria 2CDL-AOS at the Institute of Materials Science and Technology, TU Wien, Austria 3Department of Materials Science, Friedrich-Alexander-Universität Erlangen-Nürnberg, Martensstrasse 5, D-91058 Erlangen, Germany 4Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein 5Plansee Composite Materials GmbH, Germany 6Institute of Materials Science and Technology, TU Wien, Austria

15:00 **Microstructure, Mechanical Properties and Cutting Performances of Chemically Vapor Deposited TiSiCN Nanocomposite Coatings Designed by Thermodynamic Calculations** **N 2.4**
Lianchang Qiu-a,c, Liying Wu-a, Yong Du-a, Shaoqing Wang-b, Jifei Zhu-c, Lei Yin-c, Zhuopeng Tan-c, Layyous Albir-d
a-State Key Laboratory of Powder Metallurgy, Central South University, Changsha, Hunan 410083, China b-School of Materials Science and Engineering, Shijiazhuang Tiedao University, Shijiazhuang, Hebei 050043, China c-Ganzhou Achteck Tool Technology Co,. Ltd., Ganzhou, Jiangxi 341000, China d-Layyous Consulting Ltd., Miilya 25140, Israel

15:15 **Optical transparent hard ZrBN and ZrBSiN films with high wear- and oxidation-resistance** **N 2.5**
Ph.V. Kiryukhantsev-Korneev, A.P. Kozlova, N.S. Kozlova, E.A.Levashov
National University of Science and Technology &#8220,MISIS&#8221,, Leninsky pr., 4, Moscow 119049, Russia

16:00 **Tutorial - Thin-film synthesis from the vapor phase: fundamentals of processes, growth evolution, and applications**

Tuesday 28 may 2019

Time-dependent and ionized thin-film deposition processes : Panos PATSALAS

08:30 INV **The effect of gas residence time and ion energy on plasma atomic layer deposition processes** **N 3.1**
Harm Knoops
Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands and Oxford Instruments Plasma Technology, North End, Bristol, BS49 4AP, United Kingdom

09:00 **Influence of the Geometric Parameters on the Deposition Mode in Spatial Atomic Layer Deposition: A Novel Approach to Area-Select** **N 3.2**
César Masse de la Huerta, Viet Huong Nguyen, Jean-Marc Dedulle, Daniel Bellet, Carmen Jiménez, David Muñoz-Rojas
Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, F-38000 Grenoble, France,

09:15 **Synthesis and characterization of nanostructured TiO2/Au composite inverse opals by Atomic Layer Deposition** **N 3.3**
P. BIRNAL (1), V. POTIN (1), I. POCHARD (2), B. DOMENICHINI (1), C. MARCO DE LUCAS (1), L. IMHOFF (1)
(1) Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB) - UMR 6303 CNRS - Université Bourgogne Franche-Comté - 9 av. Alain Savary -21078 Dijon Cedex – France, (2) Laboratoire UTINAM – UMR 6213 CNRS – Université Bourgogne Franche-Comté – 16 route de Gray – 25030 Besançon Cedex - France

09:30 **Microstructural study of nickel thin films by pulsed laser deposition** **N 3.4**
Gauthier Lefevre, Sébastien Saitzek, Florent Blanchart, Anthony Ferri, Pascal Roussel, Rachel Desfeux, Adlane Sayede
Univ. Artois, CNRS, Centrale Lille, ENSCL, Univ. Lille, UMR 8181 – UCCS – Unité de Catalyse et Chimie du Solide, F-59000 Lille, France

09:45 **Coffee Break**

Time-dependent and ionized thin-film deposition processes (cont.) : Harm KNOOPS

10:15 **Reactive deep oscillation magnetron sputtering of Mo-O(-N) films with tunable composition and properties** **N 3.5**
Michal Procházka, Faezeh A. F. Lahiji, Jaroslav Vlček, Jiří Houška, Stanislav Haviar, Radomír Čerstvý
Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Univerzitní 8, 306 14 Plzeň, Czech Republic

10:30 **Nano-structured titania thin films by pulsed pressure-MOCVD with excellent photocatalytic and antimicrobial activity** **N 3.6**
Catherine M. Bishop, Aleksandra J. Gardecka, Raphael Boichot, Jack Heinemann, Susan P. Krumdieck
Mechanical Engineering, University of Canterbury, Private Bag 4800, Christchurch, 8140, New Zealand, Mechanical Engineering, University of Canterbury, Private Bag 4800, Christchurch, 8140, New Zealand, University Grenoble Alpes, SIMAP, CNRS 38000 Grenoble, France, School of Biological Sciences, University of Canterbury, Private Bag 4800, Christchurch, 8140, New Zealand, Mechanical Engineering, University of Canterbury, Private Bag 4800, Christchurch, 8140, New Zealand,

10:45 **Inexpensive thin film deposition technique using a microwave generator** **N 3.7**
M. Mogildea1, G. Mogildea1, S. Irimiciuc2, B. Hodoroaba3, P. Garoi2, G. Dorcioman2, D. Craciun2, C. Achim (Popa)2, L. Nedelcu4, M.G Banciu4 and V. Craciun2, 5
1Institute of Space Science, Bucharest-Magurele, Romania, 2National Institute for Lasers, Plasma and Radiation Physics, Măgurele, Romania, 3Physics Faculty, University of Bucharest, Magurele, Romania, 4National Institute of Materials Physics, Magurele, Romania, 5Extreme Light Infrastructure-Nuclear Physics, Magurele, Romania

11:00 **Plenary Session and Lunch Break**

Size effect and mechanical properties : David HOLEC

14:00 INV **Resolving the stress puzzle in polycrystalline films by surface stress mapping at the nanoscale** — N 4.1
Celia Polop, Alma P. Perrino, Ricardo Garcia, Enrique G. Michel, Enrique Vasco
Departamento de Física de la Materia Condensada and Condensed Matter Physics Center (IFIMAC), Universidad Autónoma de Madrid, Spain, Instituto de Ciencia de Materiales de Madrid, Spanish National Research Council (CSIC), Spain

14:30 **Influence of residual stress induced during magnetron deposition to tune the morphology of nanoporous gold after dealloying** — N 4.2
Adrien Chauvin,1 Lukas Horak,1 Elen Duverger-Nédellec,1 Milan Dopita,1 Pierre-Yves Tessier,2 and Abdel-Aziz El Mel2
1. Charles University in Prague, Ke Karlovu 3, 121 16 Praha 2, Czech Republic, 2. Institut des Matériaux Jean Rouxel, Université de Nantes, CNRS, 2 rue de la Houssinière B.P. 32229, 44322 Nantes cedex 3, France

14:45 **Advances in Thin Film Growth Nanotechnology and Nanofabrication of Smart Nano-Multifunctional Metal Insulating Transition Oxide Heterostructures for Femtosecond Optoelectronic Sensors and Nanodevices** — N 4.3
Mohamed M Saad*1 , Ahmed I Osman2 J Kim3, P Kozlowski4 and D Sadana4
1 School of Science and Technology, Nottingham Trent University, Nottingham, NG11 8NS, UK. 2 School of Chemistry and Chemical Engineering, Queen&#8217,s University Belfast, Belfast, BT9 5AG, UK. 3 Massachusetts Institute of Technology, USA. 4 IMB Thomas J. Watson Research Center, USA. * Corresponding Author, Email: mohamed.saad@ntu.ac.uk

15:00 **Effect of thin silver films on vibrational properties of epitaxial graphene** — N 4.4
Ivan Shtepliuk 1, Ivan G. Ivanov 1, Tihomir Iakimov 1, Andreas Jamnig 1, Bela Pecz 2, Filippo Giannazzo 3, Rositsa Yakimova 1, Kostas Sarakinos 1
1 Department of Physics, Chemistry and Biology, Linköping University, SE-58183, Linköping, Sweden, 2 Institute for Technical Physics and Materials Science, Research Centre for Natural Sciences, Hungarian Academy of Sciences, P.O. Box 49, H-1525 Budapest, Hungary, 3 Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e Microsistemi, Strada VIII, n. 5, Zona Industriale, 95121, Catania, Italy

15:15 **Determination of Micro/Macroscopic Elasticity Constants of Anisotropic Architectured Thin Films** — N 4.5
E. Zgheib [a,b,c], A. Alhussein [a], M.F. Slim [b], K. Khalil [c], M. François [b]
[a] ICD-LASMIS, Université de Technologie de Troyes, UMR 6281, CNRS, 52800 Nogent, France [b] ICD-LASMIS, Université de Technologie de Troyes, UMR 6281, CNRS, 10004 Troyes, France [c] MMC, Unité MGC, CRSI, Université Libanaise, Faculté de génie, Tripoli, Liban

15:30 **Diamond like carbon and diamond like carbon nanocomposite based saturable absorbers** — N 4.6
Š. Meškinis1, A. Vasiliauskas1, A. Jurkevičiūtė1, M. Andrulevičius1, D. Peckus, S. Tamulevičius1, K. Viskontas2
1Kaunas University of Technology, Institute of Materials Science, Baršausko 59, Kaunas, Lithuania, 2Ekspla Ltd., Savanoriu 237, LT-02300 Vilnius, Lithuania

16:00 **Tutorial - Thin-film synthesis from the vapor phase: fundamentals of processes, growth evolution, and applications**

Poster Session I : Kostas SARAKINOS

17:00 **Deep Ultraviolet Light-assisted Low-temperature Crystallization of Amorphous TiO2 Films for Energy Conversion Application** — N PI.1
Won-June Lee [1], Yong Tae Kim [2], Hyung-ju Ahn [3], Sang Yun Jeong [1], Sanghan Lee [1], Jeayoung Heo [2], and Myung-Han Yoon [1]
[1] School of Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju, South Korea, [2] Department of Materials Science and Engineering, Chonnam National University, Gwangju, South Korea, [3] Department of Industrial Technology Convergence Center, Pohang Accelerator Laboratory (PAL), POSTECH, Pohang, South Korea

17:00 **Surface coating of polymer membranes with polyelectrolytes nanolayers: a new approach to mitigate biofouling** — N PI.2
Viktor Kochkodan
Qatar Environment and Energy Research Institute

17:00 **Engineering titania coating: tuning of film quality with precursor choice, deposition temperature and heat treatment** — N PI.3
Maïmouna W. Diouf, Maxime E. Dufond, Jacques Kools, Lionel Santinacci
Aix-Marseille Univ - CNRS, Aix-Marseille Univ - CNRS, Encapsulix SAS, Aix-Marseille Univ - CNRS

17:00 **Modification ofbiodegradable nanofibers by deposition of thin plasma coatings and immobilization of bioactive molecules.** — N PI.4
Anastasia Solovieva (1), Anton Manakhov (1), Lenka Zajickova (2)
1 - Institute of Cytology and Genetics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia 2 - CEITEC - Masaryk University, Brno, Czechia

17:00 **Atomic Layer Deposited Ytrria-Stabilized Zirconia Overcoating for Direct Methane-Fueled Solid Oxide Fuel Cell Anode** — N PI.5
Dohyun Go, Byung Chan Yang, Jeong Woo Shin, Hyungjune Kim, Sungje Lee, Seoung Hyueon Kye, Jihwan An
Department of Manufacturing Systems and Design Engineering (MSDE), Seoul National University of Science and Technology (SeoulTech)

17:00 **Mechanoresponsive crystal engineering of diacetylenes for novel patterning method** — N PI.6
Yuna Kim, Jijian Qi, Nobuyuki Tamaoki
Research Institute for Electronic Science, Hokkaido University, Japan

17:00 **Stability of Mn-based Heusler Mn2RuGa in Magnetoresistive Devices Using Novel Spacer Layers** — N PI.7
Gwenael Atcheson, Katarzyna Siewierska, Michael Coey, Karsten Rode, Plamen Stamenov
CRANN and School of Physics, Trinity College Dublin, Ireland

17:00 **Uniform fabrication of large-area nano/micro crystalline domains of NaCl on nano-patterned and bio-mimicked polymeric substrates** — N PI.8
Nandita Basu, Rabibrata Mukherjee
Indian Institute of Technology, Kharagpur, India, Indian Institute of Technology, Kharagpur, India

17:00 **Atomic Layer Deposition of Platinum Nanoparticles on Plasma-Pretreated Carbon Nanotubes for High Performance Fuel Cell Catalysts** — N PI.9
Junmo Koo, Donghwan Kim, Eun Heui Kang, Byung-ho Choi, Joon Hyung Shim
School of Mechanical Engineering, Korea University, Republic of Korea

17:00 **Multi-component Design to Synergetic and Added Effects in Hetero-tribological Thin Film Coatings Based at Magnetron Deposition** — N PI.10
Andrey Belikov
Bauman Moscow State Technical University (BMSTU), Moscow

17:00 **Molecular dynamics simulations of organic semiconductor thin film growth: stability of nuclei and their growth** — N PI.11
Susumu Ikeda
WPI-Advanced Institute for Materials Research (WPI-AIMR), Tohoku University, Japan

17:00 **Thermally Activated Resonant Grating Using Vanadium Dioxide Synthesized by Pulsed-Laser Deposition** — N PI.12
Erieta-Katerina Koussi, Florent Bourquard, Maria Usuga, Nicolas Crespo-Monteiro, Florence Garrelie, Yves Jourlin
Université de Lyon, Université Jean Monnet-Saint-Étienne, CNRS, Institut d'Optique Graduate School, Laboratoire Hubert Curien UMR 5516, F-42023, Saint-Étienne, France

17:00 **Improved Transparent Conductive Electrodes based on Silver Nanowire for inkjet Printed Flexible Organic solar cells and modules** — N PI.13
Donia Fredj, Sadok Ben Dkhil, Florent Pourcin , Ali Nourdine, Jérome Vernet, Brice Cruchon, Lionel Flandin, Pascal Pierron
Dracula Technologies, LEPMI / Université Savoie Mont Blanc, Dracula Technologies, Dracula Technologies, LEPMI / Université Savoie Mont Blanc, Dracula Technologies, Dracula Technologies, LEPMI / Université Savoie Mont Blanc, Dracula Technologies.

17:00 **Stochastic knitting cabon nanotube network mediated by bacteriophage template on flexible substrate as a cryptographic primitive** — N PI.14
Gyo Sub Lee, Jae-Seung Jeong, Ki-Young Lee, Hyunsu Ju
Korea Institute of Science and Technology, University of Science and Technology

17:00 **Rear nanopatterned metal/dielectric structure for enhancing optical reflection in ultrathin Cu(In,Ga)Se2 solar cells** **N PI.15**
T. S. Lopes1, J. M. V. Cunha1,2,*, S. Bose1,3,#, J. R. S. Barbosa1, J. Borme1, C. Rocha1, P. A. Fernandes1,4,5, P. M. P. Salomé1,2,*
1-INL – International Iberian Nanotechnology Laboratory, Avenida Mestre José Veiga, 4715-330 Braga, Portugal, 2-Departamento de Física, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal, 3-Ångström Laboratory, Solid State Electronics, Ångström Solar Center, Uppsala University, SE-751 21 Uppsala, Sweden, 4-I3N, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal, 5-CIETI, Departamento de Física, Instituto Superior de Engenharia do Porto, Instituto Politécnico do Porto, Porto 4200-072, Portugal

17:00 **"Erase-free" based multi-bit operation in a HfO2 resistive switching material** **N PI.16**
Jin Joo Ryu, Kanghyeok Jeon, Seungmin Yeo, Chunjoong Kim, Gun Hwan Kim
Division of Advanced Materials, Korea Research Institute of Chemical Technology (KRICT), Republic of Korea, Department of Materials Science and Engineering, Chungnam National University, Republic of Korea

17:00 **Atmospheric pressure plasma treatment of polymer powders used for 3D printing** **N PI.17**
Nicola Stehling, Antje Quade, Cornelia Rodenburg, Candice Majewski, Jan Schäfer
NS, CE: Department of Materials Science and Engineering, University of Sheffield, Sir Robert Hadfield Building, Mappin St, Sheffield S1 3JD, United Kingdom AQ, JS: Leibniz Institute for Plasma Science and Technology, Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany CM : Department of Mechanical Engineering, University of Sheffield, Garden Street, Sheffield, S1 3JD

17:00 **Printing of Highly Vivid Structural Colors on Bulk Stainless Steel and Aluminum** **N PI.18**
Minseok Seo, Jaeyong Kim, Harim Oh, Junho Lee, and Myeongkyu Lee
Department of Materials Science and Engineering, Yonsei Univerisity, Seoul 03722, Korea

17:00 **How subsurface gradient plasma polymers affect protein-surface interaction** **N PI.19**
Ezgi Bülbül, Dirk Hegemann, Manfred Heuberger
Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory of Advanced Fibers, St. Gallen, Switzerland ETHZ Zurich, Department of Materials, Laboratory of Surface Science and Technology, Zurich, Switzerland

17:00 **Design rule for metalens to get desired focal length and numerical aperture** **N PI.20**
Sangwon Baek1, Jae Yong Park1, Eunjong Kim1, AND Jong-Lam Lee1,2
1Department of Materials Science and Engineering, Pohang University of Science and Technology, Pohang, Korea 2Division of Advanced Materials Science, Pohang University of Science and Technology, Pohang, Korea

17:00 **Air bubbles embedded haze film for flexible electronic devices** **N PI.21**
Won Seok Cho, Jae Yong Park, Sangwon Baek, and Jong-Lam Lee
Division of Advanced Materials Science, Department of Materials Science and Engineering, Pohang University of Science and Technology, Pohang, Korea

17:00 **Optical modelling, deposition and characterization of an all-oxide multilayer as colored glazing for thermal solar collectors** **N PI.22**
Iulian Pana, Nicolae Catalin Zoita, Mihaela Dinu, Adrian Emil Kiss, Catalin Vitelaru, Mariana Braic
National Institute for Optoelectronics, 409 Atomistilor St., Magurele-Bucharest, 077125, Romania

17:00 **The impact of the ionic dipole on the electronic properties of amine modified Si/SiO2: Theoretical and experimental study.** **N PI.23**
Ruthy Sfez, Alina Gankin, Evgeniy Mervinetsky, Jörg Buchwald, Arezoo Dianat, Leonardo Medrano Sandonas, Rafael Gutierrez, Gianaurelio Cuniberti and Shlomo Yitzchaik
Institute of Chemistry, The Hebrew University of Jerusalem, Safra Campus, Givat Ram, Jerusalem 91904, Israel., Center for Nanoscience and Nanotechnology, The Hebrew University of Jerusalem, Jerusalem 91904, Israel, Azrieli, College of Engineering, Jerusalem, Israel., Institute for Materials Science and Max Bergmann Center of Biomaterials, TU Dresden, 01062 Dresden, Germany., Max Planck Institute for the Physics of Complex Systems, 01187 Dresden, Germany., Dresden Center for Computational Materials Science, TU Dresden, 01062 Dresden, Germany. , Center for Advancing Electronics Dresden, TU Dresden, 01062 Dresden, Germany.

17:00 **Surface Chemistry during Atomic Layer Deposition of Nickel Sulfide** **N PI.24**
Xinwei Wang
School of Advanced Materials, Shenzhen Graduate School, Peking University

17:00 **Water-mediated degradation of photochemically modified PBAT films** **N PI.25**
Gabriela Ramos Chagas, Guilherme Kretzmann Belmonte, Daniel Weibel, Lénaïk Bélec, Jean-François Chailan, Christine Bressy
Université de Toulon, MAPIEM, CS 60584 -83041 Toulon, France, Universidade Federal do Rio Grande do Sul, Instituto de Química, Porto Alegre, Brazil

17:00 **Coating of stretchable and chemically-stable metallic glass film for encapsulations** **N PI.26**
Sun-Young Park, Hangeul Kim, Ju-Young Kim
School of Materials Science and Engineering, UNIST(Ulsan National Institute of Science and Technology), Ulsan 44919, Republic of Korea

17:00 **Graphene-polymer nanocomposite coatings for corrosion protection of Mg-alloys** **N PI.27**
Chayanika Das, Julia Witt, Elaine Kastanias and Ozlem Ozcan
Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin (Germany)

17:00 **Synthesis and characterization of copper nano-particle ink for inkjet printing** **N PI.28**
Eon Ju Lee, Ho Young Jun, Si Ok Ryu*
School of Chemical Engineering, Yeungnam University, 280 Daehak-ro, Gyeongsan 38541, South Korea

17:00 **Geometrical phase elements based on clusters of nanoparticles deposited on a glass substrate** **N PI.29**
Justas Berškys, Klemensas Laurinavičius, Sergej Orlov
State research institute Center for Physical Sciences and Technology, Industrial Laboratory for Photonic Technologies, Sauletekio ave 3, LT-10222, Vilnius, Lithuania

17:00 **Boehmite-reinforced UV curable hybrid resin for coating applications** **N PI.30**
Ievgeniia Topolniak1, Vasile-Dan Hodoroaba2, Dietmar Pfeifer3, Ulrike Braun1, Heinz Sturm1,4
1 Federal Institute for Material Research and Testing (BAM), Unter den Eichen 87, 12205 Berlin, Germany 2 Federal Institute for Materials Research and Testing (BAM), Unter den Eichen 44-46, 12203 Berlin, Germany 3 Federal Institute for Materials Research and Testing (BAM), Richard-Willstaetter-Strasse 11, 12489 Berlin, Germany 4 Technical University Berlin, Institute Machine Tools and Factory Management, Pascalstrasse 8-9, 10587 Berlin, Germany

17:00 **Anodic TiO2 Nanotube Layers: Excellent Platform for Secondary Materials** **N PI.31**
Siowwoon Ng (1), Raul Zazpe (1,2), Milos Krbal (2), Jan Prikryl (2), Hanna Sopha (1,2), Filip Dvorak (2), Jan M. Macak (1,2)
(1) Central European Institute of Technology, Brno University of Technology, Purkynova 123, 61200 Brno, Czech Republic, (2) Center of Materials and Nanotechnologies, Faculty of Chemical Technology, University of Pardubice, Nam. Cs. Legii 565, 530 02 Pardubice, Czech Republic

17:00 **In-situ Raman spectroscopy study on electrochemical treated MoS2 basal plane for hydrogen evolution reaction** **N PI.32**
Sangmin Jeong, Tri Khoa Nguyen, Jong-sang Youn, Inhwan Oh, Hari Kang, and Ki-Joon Jeon*
Department of Environmental Engineering, Inha University, Incheon 402-751, Korea
*Corresponding author: kjjeon@inha.ac.kr

17:00 **Facile fabrication for composite inverse opaline films as efficient electrocatalysts** **N PI.33**
Pei-Sung Hung, Shih-Cheng Chou, Guang-Ren Wang, Wei-An Chung, Pu-Wei Wu
National Chiao Tung University

17:00 **Growth of β-Ga2O3 thin film on cost-effective silicon substrates and their ultra-sensitive performance in solar-blind region usi** **N PI.34**
Kanika Arora, Mukesh Kumar
Functional and Renewable Energy Materials Laboratory, Indian Institute of Technology Ropar, Punjab, 140001, India

17:00 **Study on tribological behabiors of multi-component ceramic coatings on 3-D printed substrates** **N PI.35**
Gun Hwan Lee, Wook Hee Nam
Korea Institute of Materials Science

17:00 **Thin film fabrication of ferroelectric PVDF, TrFE, and P(VDF-TrFE) copolymer using chemical vapor deposition method** **N PI.36**
Omid Mohammad Moradi (a,b), Gozde Ozaydin Ince (a,b)
a) Sabancı University, Materials Science&Nano Engineering Program, Orta Mahalle, Tuzla, Istanbul 34956, Turkey b) Sabanci University Nanotechnology and Applications Center (SUNUM), Orta Mahalle, Tuzla, Istanbul 34956, Turkey

17:00 **Antibacterial and anti-adhesion properties of Cu, Cu-SiC functionally graded coating** **N PI.37**
Swastika Banthia‡, Chinmay Hazra≠, Ramkrishna Sen≠, Siddhartha Das‡, †, Karabi Das‡, †, *
‡ School of Nanoscience and Technology, Indian Institute of Technology Kharagpur, Kharagpur, India ≠ Department of Biotechnology, Indian Institute of Technology Kharagpur, Kharagpur, India † Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, Kharagpur, India * Corresponding author

17:00 **Organic Polymer-Hydrogels as Porogenic Scaffolds for Nanoporous Materials** **N PI.38**
Zimei Chen, Christian Weinberger, Dirk Kuckling, Michael Tiemann
Paderborn University, Department of Chemistry, Warburger Str. 100, D-33098 Paderborn, Germany

17:00 **Role of plasma-induced surface modifications on electron field emission properties of nanocrystalline diamond films** **N PI.39**
Derese Desta,1,2 Kamatchi Jothiramalingam Sankaran,1,2 Martin Gierse,3 Berndt Koslowski,3 Ken Haenen,1,2 Milos Nesladek,1,2 and Hans-Gerd Boyen,1,2
1. Institute for Materials Research (IMO), Hasselt University, Wetenschapspark 1, 3590, Diepenbeek. 2. IMOMEC, IMEC vzw, 3590 Diepenbeek, Belgium 3. Ulm University, Institute of Solid State Physics, Albert-Einstein-Allee 11, 89081 Ulm, Germany

17:00 **Fully Printed Infrared Phototdetector from PbS Nanocrystals** **N PI.40**
AmirAbbas YousefiAmin†, Niall A Killilea†, Mykhailo Sytnyk†, Philipp Maisch‡, Ka Cheong Tam&, Hans-Joachim Egelhaaf&, Stefan Langner‡, Tobias Stubhan&, Christoph J. Brabec‡, Tobias Rejek©, Marcus Halik©, Katharina Poulsen¥, Jan Niehaus¥†, Anton Köck$, Wolfgang Heiss†
YousefiAmin, AmirAbbas, Friedrich-Alexander-Universitat Erlangen- Nurnberg Killilea, Niall, Friedrich-Alexander-Universitat Erlangen-Nurnberg Sytnyk, Mykhailo, Friedrich-Alexander-Universitat Erlangen-Nurnberg, Department of Materials Science and Engineering Maisch, Philipp, Bayerisches Zentrum fur Angewandte Energieforschung eV, Tam , Ka Cheong, Bavarian Center for Applied Energy Research Egelhaaf, Hans-Joachim, Konarka Technologies GmbH, Langner, Stefan, Friedrich-Alexander-Universitat Erlangen-Nurnberg Stubhan, Tobias, Friedrich-Alexander-Universitat Erlangen-Nurnberg, Materials for Electronics and Energy Technology Brabec, Christoph J., Friedrich Alexander Univ Erlangen Nurnberg Rejek, Tobias , Friedrich-Alexander University Erlangen-Nürnberg Halik, Marcus, Friedrich-Alexander-Universitat Erlangen-Nurnberg, Institute for Materials Sciences Poulsen, Katharina , Centrum für Angewandte Nanotechnologie (CAN) GmbH Niehaus, Jens, Frauenhofer Institut für Angewandte Polymerforschung IAP Koeck, Anton, Materials Center Leoben Forschung GmbH, Microelectronics Heiss, Wolfgang, Friedrich-Alexander-Universitat Erlangen-Nurnberg, Werkstoffwissenschaften

17:00 **Copper nanoparticles fabrication and deposition by laser ablation in open air** **N PI.41**
Mónica Fernández1, Jesús del Val1, Mohamed Boutinguiza1, Antonio Riveiro1, Rafael Comesaña2, Fernando Lusquiños1, D. Rodríguez3, F.J. Gil4, Juan Pou1
1. Applied Physics Department, University of Vigo, Spain 2. Materials Eng., Applied Mech., and Construction Dpt., University of Vigo, Spain. 3.Biomaterials, Biomechanics and Tissue Engineering Group, Dept. Materials Science and Metallurgical Engineering, UPC-BarcelonaTECH, Barcelona, Spain. 4. School of Dentistry, Universitat Internacional de Catalunya, Barcelona, Spain.

17:00 **Optical Properties of Co-Doped SnO2 Thin Films from Reflectance Spectra** **N PI.42**
Sibel Gürakar, Tülay Serin
Ankara University, Physics Engineering Department

17:00 **A transparent indium tin oxide nanowire array for electrochemical biodetection: tuning its properties for optimizing the sensing** **N PI.43**
Raquel Pruna, Francesc Teixidor, Manuel López
Departament d'Enginyeria Electrònica i Biomèdica, Universitat de Barcelona (Spain), Institut de Ciència de Materials de Barcelona (ICMAB-CSIC) (Spain), Departament d'Enginyeria Electrònica i Biomèdica, Universitat de Barcelona (Spain)

17:00 **Tunable wettability of polymer blend films on flat and microstructured silicon surfaces** **N PI.44**
M.Kanidi1,2, A.Papagiannopoulos1, A.Skandalis1, S.Pispas1, and M.Kandyla1
1Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, 48 Vasileos Constantinou Avenue, 11635 Athens, Greece,
2Department of Material Science, University of Patras, University Campus, 26504 Rio, Greece

17:00 **Tuning the structure and biological response of sputtered phosphate bioglass films by the deposition pressure** **N PI.45**
Tite, T. (1), Popa, A.C.(1,2), Galca, A.C.(1), Balescu, L.M.(1), Bogdan, I.M.(1), Stuart, B.W.(3), G. Pelin-Popescu(4) Stan, G.E.(1)
(1)National Institute of Materials Physics, RO-077125 Magurele, Romania (2) Army Centre for Medical Research, RO-010195 Bucharest, Romania (3)Advanced Materials Research Group, Faculty of Engineering, University of Nottingham, NG7 2RD, UK (4)National Institute for Lasers, Plasma and Radiation Physics, RO-077125 Magurele, Romania

17:00 **Low-temperature thermal ALD of SiO2 – from single wafer to batch** **N PI.46**
Jesse Kalliomäki, Miia Mäntymäki, Markku Kääriä, Shashank Shukla, Tero Lehto, Tiina Sarnet
Picosun Oy, Tietotie 3, 02150 Espoo, Finland (tiina.mckee@picosun.com)

17:00 **Improvement of Film Properties for Silicon Dioxide Film by Plasma-Enhanced Atomic Layer Deposition on Patterned Sidewall** **N PI.47**
Donghyuk Shin, Ji-eun Jeong, Heungseop Song, Heungsoo Park, Dae-Hong Ko*
Department of Materials Science and Engineering, Yonsei University, Department of Materials Science and Engineering, Yonsei University, Department of Materials Science and Engineering, Yonsei University, BIO-IT Micro Fab Center, Yonsei University, Department of Materials Science and Engineering, Yonsei University,

17:00 **Novel technique of layer deposition for building asymmetric supported membranes for hydrogen separation** **N PI.48**
V.A. Sadykov, A.V. Krasnov, Yu.E. Fedorova, Yu.N. Bespalko, A.I. Lukashevich, N.F. Eremeev, P.I. Skriabin, O.L. Smorygo
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia, Novosibirsk State University, Novosibirsk, Russia, Powder Metallurgy Institute, Minsk, Republic of Belarus

17:00 **Effect of Joule heating on electromigration in combinatorial Al-Cu thin film alloys** **N PI.49**
Saeedeh Ravandi1,2, Tobias Zenger3, Martin Eibelhuber3, Achim Walter Hassel1,2, and Andrei Ionut Mardare1,2
1 Institute for Chemical Technology of Inorganic Materials, Johannes Kepler University Linz, Altenberger Str. 69, 4040 Linz, Austria 2 CEST Competence Center for Electrochemical Surface Technology, Viktor Kaplan Str. 2, 2700 Wiener Neustadt, Austria 3 EV Group E.Thallner GmbH, DI Erich Thallner Str. 1, 4782 St. Florian am Inn, Austria

17:00 **Graded Gap Nanocrystal Structures for Efficient Neural Photostimulation** **N PI.50**
Houman Bahmani Jalali [1], Rustamzhon Melikov [2], Ugur Meric Dikbas [3], Guncem Ozgun Eren [1], Sadra Sadeghi [4], Çagla Ergun [5], Onuralp Karatum [2], Ibrahim Halil Kavakli [3,5], Sedat Nizamoglu [1,2,4]
[1] Department of Biomedical Science and Engineering, Koç University, Istanbul 34450, Turkey [2] Department of Electrical and Electronics Engineering, Koç University, Istanbul 34450, Turkey [3] Department of Molecular Biology and Genetics, Koç University, Istanbul 34450, Turkey [4] Department of Material Science and Engineering, Koç University, Istanbul 34450, Turkey [5] Department of Chemical and Biological Engineering, Koç University, Istanbul 34450, Turkey

17:00 **Threshold voltage control of organic field-effect transistors by doping with fluorinated alkylsilanes** **N PI.51**
Jakob Zessin, Zheng Xu, Nara Shin, Mike Hambsch, Stefan C.B. Mannsfeld
Center for Advancing Electronics Dresden (cfaed) and Faculty of Electrical and Computer Engineering, Technische Universität Dresden, 01062 Dresden, Germany

17:00 **Low temperature grafting of CNTs on glass fibers using plasma-enhanced CVD and bimetallic catalysts** **N PI.52**
Ga-Young Kim, Geunsung Lee, Woong-Ryeol Yu
Department of Materials Science and Engineering and Research Institute of Advanced Materials (RIAM), Seoul National University, Seoul, Korea

17:00 **2D Transition metal carbide (MXene) thin film for Electromagnetic Interference Shielding** **N PI.53**
Chong Min Koo, Aamir Iqbal, YongSu Cho, Hyerim Kim
Korea Institute of Science and Technology Korea University

17:00 **Fabrication of nanotwinned copper film on commonly used substrates for wafer level packaging** **N PI.54**
Zhi-Quan Liu, Fu-Long Sun
Institute of Metal Research, Chinese Academy of Sciences, Shenyang 110016, China, University of Chinese Academy of Sciences, Beijing, 100049, China

17:00 **Application of low energy ion implantation in order to improve adhesion of DLC (a-C:H) films on germanium and silicon** **N PI.55**
Alexander Zolkin, Anna Semerikova, Olesya Novikova
Novosibirsk State University, Pirogova str., 2, Novosibirsk, Russia, Scientific Educational Center of NSU, Pirogova str., 11/1, Novosibirsk, Russia

17:00 **DIRECT PHOTO-PATTERNING OF THICK TITANIA SOL-GEL FILMS AND THEIR APPLICATIONS IN RESONANT WAVEGUIDE GRATINGS** **N PI.56**
Usuga Maria, Crespo-Monteiro Nicolas, Vocanson Francis, Jourlin Yves, Jamon Damien and Koussi Erieta-Katerina
Univ Lyon, UJM-Saint-Etienne, CNRS, Institut d'Optique Graduate School, Laboratoire Hubert Curien UMR 5516, F-42023, SAINT-ETIENNE, France

17:00 **Highly sensitive printable NTC ceramic based Thermistors** **N PI.57**
D. Katerinopoulou1, 2, 4, E. C. P. Smits4, P. Zalar4 G. H. Gelinck3, 4, E. Iliopoulos1,2 and G. Kiriakidis1, 2
1. Department of Physics, University of Crete, P.O. Box 2208, 71003 Heraklion, Crete, Greece, 2. Institute of Electronic Structure & Laser (IESL), Foundation for Research and Technology (FORTH) Hellas, P.O. Box 1385, Heraklion 70013, Crete, Greece, 3. Department of Applied Physics, Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands, 4. Holst Centre / TNO, High Tech Campus 31, 5656AE, Eindhoven, The Netherlands

17:00 **Architectural Advances of Organic Photodiode to Realize Color Filter-Free Image Sensors** **N PI.58**
Dae Sung Chung
Daegu Gyeongbuk Institute of Science & Technology (DGIST)

17:00 **Cross-linked poly(N-vinylcaprolactam) Thin Films with Tunable Swelling Behavior by initiated Chemical Vapor Deposition** **N PI.59**
Fabian Muralter, Alberto Perrotta, Anna Maria Coclite
Institute of Solid State Physics, NAWI Graz, Graz University of Technology, Petersgasse 16, 8010 Graz, Austria

17:00 **Template synthesis of noble metal nanostructures with novel crystal phase** **N PI.60**
Jie Wang, Zhanxi Fan, Hua Zhang
Center for Progammable Materials, School of Materials Science and Engineering, Nanyang Technological University

17:00 **Chemical vapor deposition-grown monolayer MoS2 for applications in hydrogen evolution reaction** **N PI.61**
Tri Khoa Nguyen, Sangmin Jeong, Jong-Sang Youn, Inhwan Oh, Hari Kang, and Ki-Joon Jeon*
Department of Environmental Engineering, Inha University, Incheon 402-751, South Korea * Corresponding author. Tel: +82-032-860-7509, Fax: +82-32-865-1425, E-mail: kjjeon@inha.ac.kr

17:00 **Scanning X-ray Nanodiffraction for multilayer coating materials studies** **N PI.62**
Anton Davydok and Christina Krywka
Helmholtz Zentrum Geesthacht

17:00 **Thermoelectric Properties of Bi2Te3 Films Electrodeposited with Different Te Sources** **N PI.63**
Cristina V. Manzano1*, Begoña Abad1, Marisol Martín-González1
1 IMN – Instituto de Micro y Nanotecnología (IMN-CNM-CSIC), Isaac Newton 8, PTM, E-28760 Tres Cantos, Madrid, Spain

17:00 **The design of polyhydroxyalkanoate nanoparticle as controlled drug-release vector and application on drugs of autoimmune disorde** **N PI.65**
Hu Jin, Wang Min, Zhang Bo, Xie Qiu
Research Department, Peking Union Medical College Hospital, Beijing, 100730, China

17:00 **Deposition of nanostructured amorphous carbon films using various metals** **N PI.66**
Liutauras Marcinauskas, Vilius Dovydaitis, Marius Černauskas, Pavels Onufrijevs
Department of Physics, Kaunas University of Technology, Kaunas, Lithuania, Department of Physics, Kaunas University of Technology, Kaunas, Lithuania, Department of Physics, Kaunas University of Technology, Kaunas, Lithuania, Department of Semiconductor Physics, Vilnius University, Vilnius, Lithuania, Faculty of Materials Science and Applied Chemistry, Riga Technical University, Riga, Latvia

17:00 **Supported lipid monolayer with unprecedented mechanical and dielectric properties: Application to ISFET sensors** **N PI.67**
Volkan Kilinc(1), Tin Nguy(4), Sebastien Lamant(1), Frédéric Brunel(1), Catherine Henry-de-Villeneuve(2), Guillaume Monier(3), Matthieu Petit(1), Yutaka Wakayama(4), Jean-Manuel Raimundo(1), Anne Charrier*(1)
(1) CINaM, Aix Marseille Université, CNRS, Campus de Luminy, 13009 Marseille, France (2) PMC, Ecole Polytechnique,91128 Palaiseau, France. (3) Institut Pascal, 4 Avenue Blaise Pascal, 63178 Aubière, France (4) NIMS, Tsukuba, Japan

17:00 **Influence of Silver Nanoparticles on Selected Physico-Mechanical Properties of Emulsion Paint** **N PI.68**
Tesleem B Asafa
Ladoke Akintola University of Technology PMB 4000, Ogbomoso, Oyo State Nigeria

17:00 **Tetherless Near-Infrared Control of Neuronal Activity with Implantable Enhanced Upconversion Inverse Opals** **N PI.69**
Ta-Chung Liu, Chao-Yi Chu, You-Yin Chen and San-Yuan Chen
1. Material Science and Engineering/National Chiao Tung University, Taiwan (R.O.C) 2. Medical Engineering/National Yang Ming University, Taiwan (R.O.C)

Wednesday 29 may 2019

Nanostructured and amorphous films : Tomas KUBART

08:30 INV **Transition metal nitride layers: New phases, new properties, new applications** **N 5.1**
Daniel Gall
Rensselaer Polytechnic Institute

09:00 **Synthesis and Characterization of (Ti,Mg)N Thin Films** **N 5.2**
M. A. Gharavi, A. le Febvrier, B. Alling, R. Armiento, P. Eklund
Department of Physics, Chemistry, and Biology (IFM), Linköping University, SE-58183 Linköping, Sweden

09:15 **Strategy for increasing both hardness and toughness in transition-metal diboride thin films using ZrB2 as a model system** **N 5.3**
Babak Bakhit,(a) Ivan Petrov,(a,b) J.E. Greene,(a,b) Lars Hultman,(a) Johanna Rosén,(a) and Grzegorz Greczynski,(a)
(a) Thin Film Physics Division, Department of Physics (IFM), Linköping University, SE-58183 Linköping, Sweden (b) Frederick Seitz Materials Research Laboratory and Department Materials Science, University of Illinois, Urbana, Illinois 61801, USA

09:30 **Influence of Tantalum on the phase stability and mechanical properties of WB2 thin films** **N 5.4**
C. Fuger, V. Moraes, R. Hahn, M. Arndt, H. Bolvardi, P. Polcik, P.H. Mayrhofer, and H. Riedl
CDL AOS at the Institute of Materials Science and Technology, TU Wien, Austria, CDL AOS at the Institute of Materials Science and Technology, TU Wien, Austria, Institute of Materials Science and Technology, TU Wien, Austria, CDL AOS at the Institute of Materials Science and Technology, TU Wien, Austria, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein, Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein, Plansee Composite Materials GmbH, Germany, CDL AOS at the Institute of Materials Science and Technology, TU Wien, Austria, Institute of Materials Science and Technology, TU Wien, Austria, CDL AOS at the Institute of Materials Science and Technology, TU Wien, Austria, Institute of Materials Science and Technology, TU Wien, Austria,

09:45 **Composite (CrN/ZrN)/(Cr/Zr) coatings with nanoscale architecture: microstructure, elemental and phase composition** **N 5.5**
A.D. Pogrebnjak, O.V. Bondar, B. Postolnyi, R. Webster, Y. Takeda, R.E. Sakenova, P. Zukowski, M. Opielak
Sumy State University, 2, R.-Korsakova st., 40007 Sumy, Ukraine (A.D. Pogrebnjak, O.V. Bondar) Research Center for Advanced Measurement and Characterization, National Institute for Materials Science (NIMS), Tsukuba, Ibaraki 305-0003, Japan (O.V. Bondar, Y. Takeda) IFIMUP and IN-Institute of Nanoscience and Nanotechnology, Department of Physics and Astronomy, Faculty of Sciences, University of Porto, 687, Campo Alegre st., 4169-007 Porto, Portugal (B. Postolnyi) Mark Wainwright Analytical Centre, University of New South Wales, Sydney, NSW 2052, Australia (R. Webster) D. Serikbayev East Kazakhstan State Technical University, 69, Protozanov st., 070004 Ust-Kamenogorsk, Republic of Kazakhstan (R.E. Sakenova) Lublin University of Technology, Nadbystrzycka 38 D, 20-618 Lublin, Poland (P. Zukowski, M. Opielak)

10:00 **Coffee Break**

Nanostructured and amorphous films (cont.) : Daniel GALL & Matjaz PANJAN

10:30 **Synthesis of Diamond-Like Carbon Thin Films by Ionized Sputtering** **N 5.6**
Tomas Kubart1, Catalin Vitelaru2, Arcadie Sobetkii3, Ulf Helmersson4, Rafael Sanchez5, Fabio Ferreira6, Joao Oliveira6
1 Solid State Electronics, The Ångström Laboratory, Uppsala University, SE-75121 Uppsala, Sweden, 2 National Institute for Optoelectronics, 409 Atomistilor St., Magurele-Bucharest, PO Box MG 05, Romania, 3 SC MGM STAR CONSTRUCT SRL, 7 Pancota St, Bucharest 022773, Romania, 4 Plasma & Coatings Physics Division, IFM Materials Physics, Linköping University, SE-581 83 Linköping, Sweden, 5 Ionautics AB, Uvebergsvägen 45, SE-589 31 Linköping, Sweden, 6 SEG-CEMMPRE-Department of Mechanical Engineering, University of Coimbra, Rua Luis Reis Santos, 3030-788 Coimbra, Portugal,

10:45 **Nanostructural CoCrMoC/a-C:H coatings deposited by reactive magnetron sputtering** **N 5.7**
Tomasz Suszko (a), Ewa Dobruchowska (a), Grzegorz Greczynski (b), Jerzy Morgiel (c), Witold Gulbinski (a)
a) Koszalin University of Technology, Ul. Sniadeckich 2, 75-453 Koszalin, Poland, b) Thin Film Physics Division, Department of Physics (IFM), 581 83 Linkoping, Sweden, c) Institute of Metallurgy and Materials Sciences, Polish Academy of Science, Ul. Reymonta 25, 30-059 Krakow, Poland

11:00 **High-rate reactive high-power impulse magnetron sputtering of In-Ga-Zn-O and ZnO:Al thin films: process and material** **N 5.8**
Jiri Rezek, Jiri Houska, Tomas Kozak, Michal Prochazka, Petr Novak, Andrea Dagmar Pajdarova
University of West Bohemia, Univerzitni 8, 30614 Plzen, Czech Republic

11:15 **Intermixed amorphous and crystalline metastable magnetic Au-Co nanoalloy thin films and 2D nanostructured arrays** **N 5.9**
Chiara Maurizio (1), Niccolò T. Michieli (1), Boris Kalinic (1), Valentina Mattarello (1), Gianluca Ciatto (2), and Giovanni Mattei (1)
(1) Physics and Astronomy Department and CNISM, University of Padova, via Marzolo 8, I-35131 Padova, Italy. (2) Synchrotron SOLEIL, L'Orme des Merisiers, Saint Aubin, BP 48 F-91192 Gif sur Yvette CEDEX, France.

11:30 **Investigation of structure and properties of doped amorphous carbon films deposited by magnetron sputtering** **N 5.10**
Vilius Dovydaitis, Liutauras Marcinauskas, Paola Ayala, Aleksandras Iljinas, Juan Carlos Moreno, Johnny Chimborazo, Claudia Berkmann
Department of Physics, Kaunas University of Technology, Studentų 50, LT-51368 Kaunas, Lithuania, Department of Physics, Kaunas University of Technology, Studentų 50, LT-51368 Kaunas, Lithuania, Faculty of Physics, University of Vienna, Strudlhofgasse 4, 1090 Wien, Austria, Department of Physics, Kaunas University of Technology, Studentų 50, LT-51368 Kaunas, Lithuania, Faculty of Physics, University of Vienna, Strudlhofgasse 4, 1090 Wien, Austria,Faculty of Physics, University of Vienna, Strudlhofgasse 4, 1090 Wien, Austria,Faculty of Physics, University of Vienna, Strudlhofgasse 4, 1090 Wien, Austria,

11:45 **Nanostructured metal coatings on a surgical blade for in vivo label free diagnosis in oncologic surgery** **N 5.11**
A.Sobetkii¬1, C. Rizea2, M.I. Rusu3, C. R. Stefan (Iordanescu)3, A.M. Iordache3, S.M.Iordache3, A. Tonetto4, R. Notonier4, L. Tortet5, C.E.A. Grigorescu3
1. MGM STAR Construct SRL, Bucharest, Romania, 2. ROXY VETERINARY S.R.L. Magurele, Romania, 3. National Institute of Research and Development for Optoelectronics INOE 2000, Magurele, Romania, 4. Aix-Marseille Universite´, Centrale Marseille, CNRS, Federation Sciences Chimiques Marseille (FR 1739) - PRATIM, Marseille, France, 5. DEPARTEMENT CHIMIE Aix-Marseille Université, MADIREL, Marseille, France

12:00 **Nanoparticles as Oxygen Scavengers** **N 5.12**
H. Lamsaf 1, I. Carvalho 1, S. Calderon V. 2, P. J. Ferreira 2,3,4, A. Cavaleiro 5,6, S. Carvalho 1,4
1 CFUM-UP, University of Minho, Department of Physics, Campus of Azurém, 4800-058 Guimarães, PT 2 INL - International Iberian Nanotechnology Laboratory, Braga, Portugal 3 Mechanical Engineering Department and IDMEC, Instituto Superior Técnico, University of Lisbon, Av. Rovisco Pais, 1049-001 Lisboa, Portugal 4 Materials Science and Engineering Program, The University of Texas at Austin, Austin, Texas, USA. 5 SEG-CEMMPRE Mechanical Engineering Department, University of Coimbra, Coimbra, PT 6 IPN-LED&MAT Instituto Pedro Nunes, Laboratory for Wear, Testing & Materials, Coimbra, PT

12:15 **Lunch Break**

Poster Session II : Gregory ABADIAS

13:30 **Formation of hard and wear-resistant layered (Nb,W)C0.7, Nb coatings on hard alloy tools by niobium ion bombardment and cathod** **N PII.1**
A.K. Kuleshov, V.V. Uglov, V.M. Anischik, D.P. Rusalski
Belarusian State University, Nezavisimosti av., 4, Minsk, 220030, Belarus, kuleshak@bsu.by, (+375 17) 2265834

13:30 **Improvement of Performance and Stability of Low Temperature Solid Oxide Fuel Cell Electrode by Atomic Layer Deposited CeO2** **N PII.2**

Jeong Woo Shin, Seongkook Oh, Jin-Geun Yu, Joonsuk Park, Sungje Lee, Byung Chan Yang, and Jihwan An
Jeong Woo Shin, Seongkook Oh, Jin-Geun Yu, Sungje Lee, Byung Chan Yang, and Jihwan An , Department of Manufacturing Systems and Design Engineering (MSDE), Seoul National University of Science and Technology (SeoulTech), Seoul 01811, Republic of Korea Joonsuk Park , Department of Materials Science and Engineering, Stanford University, Stanford, California 94305, United States.

13:30 **CVD graphene: from synthesis to applications** **N PII.3**

Bianca Ţîncu 1), 2), Andrei Avram 1), Vasilica Ţucureanu 1), 3), Alina Matei 1), Cătălin Mărculescu 1), Tiberiu Burinaru 1), 4), Florin Comănescu 1), Marian Popescu 1), Marioara Avram 1)
1) National Institute for Research and Development in Microtehnologies (IMT-Bucharest), Bucharest, Romania, 2) University Politehnica of Bucharest, Faculty of Applied Chemistry and Materials Science, Bucharest, Romania, 3) Transilvania University of Brasov, Department of Materials Science, Brasov, Romania, 4) University Of Agronomic Sciences And Veterinary Medicine Of Bucharest, Faculty Of Veterinary Medicine, Anatomic Pathology Department, Bucharest, Romania

13:30 **Creation of Hardened Coatings on Steel AISI 420 by Methods of Complex High-Energy Processing** **N PII.4**

Ie.V. Ivashchenko, G.G. Lobachova, S.I. Sidorenko, V. Y. Boryshkevych
Metal Physics Department, Igor Sikorsky Kyiv Polytechnic Institute, Ukraine

13:30 **ROLE OF NONLOCAL THERMOELASTIC PEAKS IN THE STRESS AND TEXTURE EVOLUTION OF NITRIDE COATINGS FORMED BY PLASMA BASED ION IMPLANTA** **N PII.5**

A. Kalinichenko 1, E. Reshetnyak 1, V. Strel'nitskij 1, G. Abadias 2
1 - National Science Centre "Kharkov Institute of Physics and Technology", Kharkov, Ukraine, 2 - Institut Pprime, UPR 3346, CNRS-Universitede Poitiers-ENSMA, SP2MI, Teleport 2, F86962 Futuroscope-Chasseneuil, France

13:30 **In-situ SiO2 thin film thickness monitoring using spatially resolved optical emission spectroscopy in PECVD processes** **N PII.6**

Seok Jun Suh1,2, Dae-Woong Kim2, Jin Young Lee2, Min Hur2, Woo Seok Kang1,2
1 University of Science & Technology, Daejeon 305-343, Republic of Korea 2 Korea Institute of Machinery & Materials, Daejeon 305-343, Republic of Korea

13:30 **Electron-beam surface modification of Co-Cr alloys** **N PII.7**

Stefan Valkov1, Stoyan Parshorov2, Rumyana Lazarova2, Mihail Kolev2, Peter Petrov1
1Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee blvd., 1784 Sofia, Bulgaria 2Institute of Metal Science, Equipment and Technologies with Hydro and Aerodynamics center, Bulgarian Academy of Sciences, 67 Shipchenski Prohod blvd., 1574 Sofia, Bulgaria

13:30 **Crystalline phase evolution and light emission in Nd doped Si-rich HfO2 films prepared by magnetron sputtering** **N PII.8**

T. Torchynska1, L.G. Vega Macotela2, L. Khomenkova3,4, F. Gourbilleau5
1) Instituto Politécnico Nacional - ESFM, Av. IPN, México City, 07738, México, 2) Instituto Politécnico Nacional - ESIME, Av. IPN, México City, 07320, México, 3) V. Lashkaryov Institute of Semiconductor Physics at NASU, 45 Pr. Nauky, Kyiv 03028, Ukraine, 4) National University "Kyiv-Mohyla Academy", 2 Skovorody str., Kyiv 04170, Ukraine, 5) CIMAP, UMR CNRS/CEA/ENSICAEN/UNICAEN, 6 Boulevard Marechal Juin,14050 Caen Cedex 4, France,

13:30 **Fabrication of Transparent Electrodes using Transition Metal Ditellurides, 2D materials** **N PII.9**

Ho Jun Park, Junho Lee, Byeonguk Min and Suk Jun Kim*
Korea University of Technology and Education

13:30 **Synthesis of ZnSe nanocrystals in a-SiO2 /Si track templates** **N PII.10**

A. Dauletbekova1, Z. Baimukhanov1, A. Akilbekov1, A. Kozlovskii2, F. Komarov 3, L. Vlasukova3, Sh. Giniyatova1, A. Usseinov1, A. Akylbekova1, Zh. Karipbayev1
1L.N. Gumilyov Eurasian National University, Astana, Kazakhstan 2AB of Institute of Nuclear Physics, Astana, Kazakhstan 3Belarus State University, Minsk, Belarus

13:30 **Structural changes in CrFeCoNiCu high entropy alloy thin films during in-situ annealing in TEM.** **N PII.11**

Arfaoui Mohamed1,2, György Radnóczi1, Viktória Kovács-Kis,1
1 Centre for Energy Research of the Hungarian Academy of Sciences H1121 Budapest, Konkoly-Thege M. u. 29-33, Hungary 2 Eötvös Loránd University, Dept. of Physics, 1117 Budapest, Pázmány Péter sétány 1a, Hungary

13:30 **Growth of high entropy alloys thin films by pulsed laser deposition techniques** **N PII.12**

V. Craciun1, 5, M. Dumitru1, B. Hodoroaba2, S. Irimiciuc1, D. Craciun1, G. Dorcioman1, M. Dracea3, D. Pantelica3, and H. Makino4
1National Institute for Lasers, Plasma and Radiation Physics, 77125 Măgurele, Ilfov, Romania, 2Physics Faculty, University of Bucharest, Magurele, Romania, 3Horia Hulubei National Institute for Physics and Nuclear Engineering, Măgurele, Romania, 4Kochi Technical University, Kochi, Japan, 5Extreme Light Infrastructure-Nuclear Physics, Magurele, Romania

13:30 **Stable synthesis of tungsten nanoparticles by means of magnetron sputtering combined with gas aggregation** **N PII.13**

Tomy Acsente1 (tomy@infim.ro), Elena Matei2, Christian Grisolia3, Lavinia Gabriela Carpen1,4, Nicoleta Vasile1,4 and Gheorghe Dinescu1,4
1 National Institute for Lasers, Plasma and Radiation Physics, Atomistilor 409 str., Bucharest- Magurele, Romania 2 National Institute for Materials Physics, Atomistilor 405A str., Bucharest- Magurele, Romania 3 CEA, IRFM, Saint-Paul-lez-Durance, France 4 University of Bucharest, Faculty of Physics, Atomiştilor 405 str, Magurele, Bucharest, Romania

13:30 **Diamond-like carbon films application for II-VI-based radiation detector improvement** **N PII.14**

N. I. Klyui 1, A.N. Luk'yanov 1, R.K. Savkina 1, A.B. Smirnov 1, T. Kryshtab 2
1 V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 41 Nauky av, Kyiv 03028, Ukraine 2 Instituto Politécnico Nacional - ESFM, Department of Physics, Av. IPN, Ed. 9 U.P.A.L.M., 07738, Mexico D.F

13:30 **Structural and spectroscopic properties of Eu-doped Y2O2S thin films prepared by atomic layer deposition** **N PII.15**

J. Rosa1*, Pekka J. Soininen1, J. Deuermeier2, M. Bosund1, Z. Zhu1, E. Fortunato2, R. Martins2, M. Sugiyama3 and S. Merdes1
1 Beneq Oy, Olarinluoma 9, FI-02200 Espoo, Finland 2 CENIMAT/I3N, Centro de Investigação de Materiais, Faculdade de Ciências e Tecnologia &#8211, Universidade Nova de Lisboa, Campus da FCT - Quinta da Torre, 2829-516 Caparica, Portugal 3 Tokyo University of Science, Department of Electrical Engineering, 2641 Yamazaki, Noda, 278-8510 Chiba, Japan

13:30 **PI-MOCVD Synthesis, Structural Analysis and Sensor Application of La-Sr-Mn-Co-O Nanostructured Thin Films** **N PII.16**

Milita Vagner, Valentina Plausinaitiene, Rasuole Lukose
Institute of Chemistry, Faculty of Chemistry and Geosciences, Vilnius University, LT- 03225 Vilnius, Lithuania., Department of Material Science and Electrical Engineering, Center for Physical Sciences and Technology, LT-10257 Vilnius, Lithuania

13:30 **Coatings of TiCN nanocomposites on aluminum substrate obtained by electron-beam treatment** **N PII.17**

Peter Petrov 1, Rumyana Lazarova2, Mihail Kolev2, Stefan Valkov1
1Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee blvd., 1784 Sofia, Bulgaria 2Institute of Metal Science, Equipment and Technologies with Hydro and Aerodynamics center, Bulgarian Academy of Sciences, 67 Shipchenski Prohod blvd., 1574 Sofia, Bulgaria

13:30 **Fabrication of Fe/Au multi-layers with a low stress and low coarseness** **N PII.18**

Chungang Guo, Jiangping Zhu, Fengju Gao, Jing Yu, Xiaolin Wu, Guoan Cheng, Ruiting Zheng
Key laboratory of Beam Techology and material Modification of ministry of education, College of Nuclear Science and Technology, Beijing Normal University, Beijing 100875, China,

13:30 **Direct Nanoimprint of Chalcogenide Glasses for Optical Applications** **N PII.19**

D. Yehuda (1), N. Ostrovsky (1), S. Tzadka (1), E. Kassys (2), S. Joseph (2), M. Schvartzman (1).
1. Department of Materials Engineering, Isle Katz Institute of Nanoscale Science and Technology, Ben-Gurion University of the Negev, Beer-Sheva, 8410501, Israel.
2. Optical Component Center, RAFAEL, Haifa, 3102102 Israel.

13:30 **Interface Engineering and Role of Intermetallic Roughness on Single-Crystalline Thin Magnetic Heterostructures** **N PII.20**

D. Karfaridis1, Th. Kehagias1, E. Th. Papaioannou2, E. K. Polychroniadis1, G. Vourlias1
1Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, 2Department of Physics and National Research Center OPTIMAS, Technical University of Kaiserslautern, 67663 Kaiserslautern, Germany

13:30 **Influence of deposition parameters on the microstructure and properties of multicomponent Ti-Nb-Zr-Ta nitride coatings** **N PII.22**
Rui Shu, Smita G. Rao, Arnaud le Febvrier, Per Eklund
Thin Film Physics Division, Department of Physics, Chemistry, and Biology (IFM), Linköping University, SE-581 83 Linköping, Sweden

13:30 **Influence of Ge surfactant on the early growth stages of Ag and Cu thin films revealed by in situ and real time monitoring** **N PII.23**
Clarisse Furgeaud, David Babonneau, Lionel Simonot, Anny Michel, Cédric Mastail, Sophie Camelio, Grégory Abadias
Institut Pprime, SP2MI Téléport 2, 86962 Chasseneuil-Futuroscope, France

13:30 **ZnO and PZT films prepared by physical and chemical methods for piezoelectric applications** **N PII.24**
M.Gartner1, S. Mihaiu1, C.Vladut1, J. Calderon1, M.Anastasescu1, H.Stroescu1, S.Preda1, E.Tenea1, M.Zaharescu1, C.Moldovan2, M.Gheorghe3, M.Dinescu4, P.Terziyska5
1-Institute of Physical Chemistry ?Ilie Murgulescu?, Romanian Academy 202 Splaiul Independentei, 06002 Bucharest, Romania, 2-National Institute for Research and Development in Microtechnologies, 077190 Bucharest, Voluntari, Romania, 3-NANOM MEMS SRL, Râ?nov, Romania, 4-National Institute of Lasers, Plasma and Radiation, 409 Atomistilor Street, 077125 Bucharest-Magurele, Romania, 5- Institute of Solid State Physics, Bulgarian Academy,Tzarigradsko Chaussee 72, 1784 Sofia, Bulgaria

13:30 **Metallic and superhydrophilic nickel cobalt diselenides films on carbon cloth for bifunctional water splitting** **N PII.25**
Jing Yu
College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin, China

13:30 **Fast and Selective High Temperature Annealing of Metal Thin Film with Microwave Induction Heating** **N PII.26**
Daeho Kim
Nano Hybrid Research Center, Korea Electrotechnology Research Institute, Changwon-city, KOREA

13:30 **Preparation and characterisation of Ga2O3 nanostructures** **N PII.27**
Zsófia Baji, Zsófia Medveczky
MTA EK Institute of Technical Physics and Materials Science

13:30 **Simply printed Ag electrodes for wearable strain sensors.** **N PII.28**
Sunyoung Yoon1, Hae-Jun Seok1, Ji-Eun Lim1, Dock-Young Lee2, and Han-Ki Kim1*
1 School of Advanced Materials Science & Engineering, Sungkyunkwan University, 2066 Seobu-ro, Jangan-gu, Suwon, Gyeonggi-do 16419, Republic of Korea 2 Department of R&D Center, ELK, 89, Techno 2-ro, Gwanpyeong-dong Yuseong-Gu, Daejeon 34013, Republic of Korea

13:30 **Active optical control loop for reactive deposition of CuOx with tunable properties** **N PII.29**
Catalin Vitelaru [1], Iulian Pana [1], Anca Constantina Parau [1], Lidia Ruxandra Constantin [1], Adrian Emil Kiss [1], Ofelia Muresan [2], Ion Rusen [2], Mariana Braic [1]
[1] National Institute for Optoelectronics, 409 Atomistilor St., Magurele-Bucharest, PO Box MG 05, Romania, [2] Horia Hulubei National Institute for Physics and Nuclear Engineering, 30 Reactorului Str., Magurele, Romania

13:30 **Atomic Layer Deposited Zirconia-Doped Ceria as Cathodic Interlayer for Solid Oxide Fuel Cell** **N PII.30**
Byung Chan Yang, Dohyun Go, Seongkook Oh, Jeong Woo Shin, Hyong June Kim, and Jihwan An
Seoultech

13:30 **Controlled Ultrafine Nanoporous Gold film by Simple Modified Dealloying Method** **N PII.31**
Xufen Xiao, Wenhui Ou, Yangyang Li
Department of Materials Science and Engineering, City University of Hong Kong, Hong Kong

13:30 **Oxynitride thin films as adhesion interlayers between metal and ceramic for dental restorations** **N PII.32**
M. Dinu1, L. Constantin1, I. Pana1, V. Braic1, A. Vladescu1, C.M. Cosmin2, M. Braic1
1 National Institute of Optoelectronics, Magurele, Romania 2 University Politehnica of Bucharest, Bucharest, Romania

13:30 **Industrially relevant DLC coatings on metal substrates by using HIPIMS sputtering coupled with synchronized pulsed biasing** **N PII.33**
Arcadie Sobetkii [1], Arcadii Sobetkii [1], Catalin Vitelaru [2], Adrian Emil Kiss [2], Anca Constantina Parau [2], Tomas Kubart [3], Rafael Sanchez [4]
[1] SC MGM STAR CONSTRUCT SRL, 7 Pancota St, Bucharest 022773, Romania, [2] National Institute for Optoelectronics, 409 Atomistilor St., Magurele-Bucharest, PO Box MG 05, Romania, [3] Solid State Electronics, The Ångström Laboratory, Uppsala University, SE-75121 Uppsala, Sweden, [4] Ionautics AB, Linkoping, Sweden,

13:30 **Effects of temperature and nitrogen content on CrFeCoCuNx multicomponent alloy films deposited by magnetron sputtering.** **N PII.34**
Smita G. Rao, Rui Shu, Arnaud le Febvrier, Per Eklund
Thin Film Physics Division, Department of Physics, Chemistry, and Biology (IFM), Linköping University, SE-581 83 Linköping, Sweden

13:30 **Influence of Ti on the phase evolution of magnetron sputtered PVD deposited Mo-Si-B coatings** **N PII.35**
E. Aschauer1,2, P. Felfer3, C.A. Macauley3, M. Arndt4, H. Bolvardi4, P. Polcik5, P.H. Mayrhofer2,6, H. Riedl1,6
1Christian Doppler Laboratory for Surface Engineering of high-performance Components, TU Wien, Austria 2CDL-AOS at the Institute of Materials Science and Technology, TU Wien, Austria 3Department of Materials Science, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany 4Oerlikon Balzers, Oerlikon Surface Solutions AG, Liechtenstein 5Plansee Composite Materials GmbH, Germany 6Institute of Materials Science and Technology, TU Wien, Austria

13:30 **Properties of glancing angle deposition of titanium nitride thin films with DC magnetron discharge** **N PII.36**
B. Bouaouina(1,2), R. Mareus(1), G. Abadias(1), C. Mastail(1), A. Michel(1), N. Brunetière(1), S.E Abaidia(2)
(1)Institut Pprime, Département Physique et Mécanique des Matériaux, UPR 3346, CNRS-Université de Poitiers-ENSMA, SP2MI, Téléport 2, 86962, Futuroscope-Chasseneuil, France. (2)Département de physique, Université M'hamed Bougara de Boumerdès, UR-MPE, 35000 Algérie.

13:30 **SiO2 films deposited at atmospheric pressure by a novel glow plasma jet** **N PII.37**
Jan Schäfer (1), Antje Quade (1,2), Wolfgang Skorupa (2), T. Schumann (2)
(1) Leibniz Institute for Plasma Science and Technology, Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany (2) Institute of Ion Beam Physics and Materials Research, Helmholtz Zentrum Dresden Rossendorf, Bautzner Landstraße 400, 01328 Dresden, Germany

13:30 **Precursor Design for The Inkjet Printing of Conductive Metal Coatings** **N PII.38**
S. P. Douglas, E. A. Metcalf, M. A. Bhide, S. Mrig, C. E. Knapp
Department of Chemistry, University College London, 20 Gordon street, London, WC1H 0AJ, UK. E-mail: caroline.knapp@ucl.ac.uk

13:30 **Effect of Process Temperature and O2 Plasma Time on Film Properties of TiO2 by PE-ALD with Tetrakis(dimethylamido)titanium** **N PII.39**
Ji-eun Jeong,Donghyuk Shin,Heungseop Song,Heungsoo Park,Dae-Hong Ko*
Department of Materials Science and Engineering, Yonsei University, Department of Materials Science and Engineering, Yonsei University, Department of Materials Science and Engineering, Yonsei University, BIO-IT Micro Fab Center, Yonsei University, Department of Materials Science and Engineering, Yonsei University

13:30 **APPLICATION OF SILVER ANTIBACTERIAL NANOLAYERS FOR CONTACT LENSES COATING** **N PII.40**
Krasimir Koev1,2*, Nikolaj Donkov2, Rumen Nikov2, Hristo Naidenski3, Vesslin Kussovski3, Timerfayaz Nurgaliev2, Latchezar Avramov2 *Corresponding author: E-mail: k00007@abv.bg
1Department of ophthalmology, Medical University 8 Byalo More str., Sofia, Bulgaria, 2Institute of Electronics, Bulgarian Academy of Sciences 72 Tsarigradsko Chaussee blvd., 1784 Sofia, Bulgaria 3Institute of Microbiology, Bulgarian Academy of Sciences, 26 Georgi Bonchev str., 1113 Sofia, Bulgaria

13:30 **Synthesis and Characterization of Cu Precursors for Atomic Layer Deposition of Cu Oxide Thin Films** **N PII.41**
Sunyoung Shin, Bo Keun Park, Chang Gyoun Kim, Taek-Mo Chung
Thin Film Materials Research Center, Korea Research Institute of Chemical Technology

13:30 **Blistering in ZrSiN nanocomposite films irradiated by He ions** **N PII.42**
V.V. Uglov1,2, G. Abadias3, S.V. Zlotski1, I.A. Saladukhin1, A.A. Malashevich1
1Belarusian State University, Minsk, 220030, Nezavisimosty ave., 4, Belarus
2Tomsk Polytechnic University, Tomsk, 634028, Lenina ave., 2a, Russia. 3Institut Pprime, Université de Poitiers-CNRS-ENSMA, Dpt. Physique et Mécanique des Matériaux, SP2MI, Téléport 2, F86962 Chasseneuil-Futuroscope cedex, France

13:30 **Oxidation resistance of ZrN/SiNx, CrN/SiNx and AlN/SiNx multilayered films deposited by magnetron sputtering technique** **N PII.43**
G. Abadias1, I.A. Saladukhin2, V.V. Uglov2, S.V. Zlotski2, A.A. Malashevich2
1. Institut Pprime, Université de Poitiers-CNRS-ENSMA, Dpt. Physique et Mécanique des Matériaux, SP2MI, Téléport 2, F86962 Chasseneuil-Futuroscope cedex, France 2. Belarusian State University, Minsk, 220030, Nezavisimosti ave., 4, Belarus

13:30 **Giant Optical Activity in Chiral/Magnetic Layered Heterostructures and Metamaterials** **N PII.44**
Aristi Christofi and Nikolaos Stefanou
National and Kapodistrian University of Athens, Department of Physics, Section of Solid State Physics, Panepistimioupolis, GR-157 84 Athens, Greece

13:30 **Influence of material composition on structure, surface properties and biological activity of nanocrystalline coatings based on** **N PII.45**
Damian Wojcieszak1, Malgorzata Osekowska2, Danuta Kaczmarek1, Bogumila Szponar2, Michal Mazur1, Piotr Mazur3, Jacek Rogala1
1Wroclaw University of Science and Technology, Faculty of Microsystem Electronics and Photonics, Janiszewskiego 11/17, 50-372 Wroclaw, Poland 2Polish Academy of Sciences, Institute of Immunology and Experimental Therapy, Weigla 12, 53-114 Wroclaw, Poland 3University of Wroclaw, Institute of Experimental Physics, Max Born 9, 50-204 Wroclaw, Poland

13:30 **Directed self assemble of Polystyrene NP via spin coating on lithographic pattern** **N PII.46**
N. Ostrovsky (1), M. Schvartzman (1)
(1) Department of Materials Engineering, Isle Katz Institute of Nanoscale Science and Technology, Ben-Gurion University of the Negev, Beer-Sheva, 8410501, Israel

13:30 **Effect of TiN/TiO2 Multilayer Coatings on the properties of Stainless Steel for Biomedical applications** **N PII.47**
Todor Hikov, Natalia Krasteva, Maria Nikolova, Peter Petrov
Institute of Electronics, Bulgarian Academy of Sciences, 72 Tzarigradskochaussee Blvd., 1784 Sofia, Institute of Biophysics and Biomedical Engineering, BAS, Acad. G. Bonchev Str., bl. 21, 1113 Sofia, University of Ruse “A. Kanchev”, Department of Material Science, 8 Studentska Str., 7017 Ruse, Bulgaria, Institute of Electronics, Bulgarian Academy of Sciences, 72 Tzarigradskochaussee Blvd., 1784 Sofia

13:30 **Corrosion resistance and biocompatibility of electron beam deposited Nb2O5 coatings** **N PII.48**
M. Dinu1, L. Braic1, S.C. Padmanabhan2,3, M. A. Morris2,3, L. Constantin1, I.Titorencu4, V. Pruna4, L.F. Petrik5, I. Pana1, V. Braic1, A. Vladescu1,6
1 National Institute for Optoelectronics, Magurele, Romania 2 University College Cork, Department of Chemistry, College Road, Cork, Ireland 3 Advanced Materials and BioEngineering Research (AMBER), Trinity College Dublin, College Green, Dublin 2, Ireland 4 Institute of Cellular Biology and Pathology “Nicolae Simionescu” of the Romanian Academy, Bucharest, Romania 5 Department of Chemistry, Environmental and Nano Sciences, University of the Western Cape, Cape Town, South Africa 6 National Research Tomsk Polytechnic University, Tomsk, Russia

13:30 **Effect of stress and strain on structure and properties of nitrided layers forming in iron-based alloys under N and C diffusion** **N PII.49**
Lesya Demchenko1, Anatoliy Titenko2, Sergiy Sidorenko1, Tie-Zhen Ren3
1 National Technical University of Ukraine “Kyiv Polytechnic Institute”, Peremogy prospect, 37, Kyiv, 03056, Ukraine, 2 Institute of Magnetism, NAS of Ukraine, Acad. Vernadsky Avenue, 36-b, Kyiv, 03142, Ukraine, 3 Hebei University of Technology, Guangrong Road 8, Hongqiao district, Tianjin, 300130, China

13:30 **Deposition of DLC coatings on metal substrates by using DC and HIPIMS sputtering of C target** **N PII.50**
[1] Catalin Vitelaru, [1] Adrian Emil Kiss, [1] Anca Constantina Parau, [1] Mihaela Dinu, [1] Lidia Ruxandra Constantin, [2] Arcadie Sobetkii, [3] Tomas Kubart
[1] National Institute for Optoelectronics, 409 Atomistilor St., Magurele-Bucharest, PO Box MG 05, Romania, [2] SC MGM STAR CONSTRUCT SRL, 7 Pancota St, Bucharest 022773, Romania [3] Solid State Electronics, The Ångström Laboratory, Uppsala University, SE-75121 Uppsala, Sweden,

13:30 **Vapour deposition of ZIF-8 thin films with preferred orientation** **N PII.51**
M. Kraeuter+, A. Perrotta+, J. Pilz+, R. Ameloot*, T. Stassin*, A. Cruz*, R. Resel+, A.M. Coclite+
+Institute of Solid State Physics, Graz University of Technology, Graz, Austria
*Department of Microbial and Molecular Systems, KU Leuven, Leuven, Belgium

13:30 **Hydrogen Gas Sensor Based on WO3 and CuO thin films and Nanoclusters** **N PII.52**
Nirmal Kumar, Stanislav Haviar, ?árka Batková, Ji?í ?apek, Pavel Baroch
University of West Bohemia, Pilsen, Czech Republic

13:30 **Fabrication of metasurfaces thin films from silver inks and vacuum deposited silver** **N PII.53**
Fionnuala McGrath 1, Deirdre M. O’Carroll 1,2
1 Trinity College Dublin, School of Physics, College Green, Dublin 2, Ireland 2 Rutgers University, Department of Materials Science and Engineering, 607 Taylor Rd., Piscataway, New Jersey 08840, USA

13:30 **The Effect of Surface Functionalization on the Interfacial Integrity of Boron Doped Diamond and Atomic Layer Deposited Alumina** **N PII.54**
A. Jaggernauth (1), R.M. Silva (1), M.A. Neto (1), , F.J. Oliveira (1), I.K. Bdikin (2), J.C. Mendes (3), R.F. Silva (1)
(1) CICECO, Department of Materials and Ceramic Engineering, University of Aveiro, 3810-193 Aveiro, Portugal, (2) TEMA, Department of Mechanical Engineering, University of Aveiro, 3810-193 Aveiro, Portugal, (3) Instituto de Telecomunicações, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal

13:30 **Magnetron sputter epitaxy of GeSn films on Ge/Si wafers using RF or high power impulse feeding of Ge target** **N PII.55**
N.C. Zoita (1), I. Pana (1), A. Kiss (1), I. Dascalescu (2), A. Slav (2), O. Muresan (3), H. A. Schubert (3), C. Palade (2), D. Buca (4), T. Stoica (2), M.Braic (1)
(1) National Institute for Optoelectronics, Magurele-Bucharest, Romania (2) National Institute for Materials Physics, Magurele-Bucharest, Romania (3) ”Horia Hulubei”National Institute for Physics and Nuclear Engineering, Magurele-Bucharest, Romania (4) Peter Grünberg Institut 9 and JARA-FIT, Forschungszentrum Jülich, Jülich, Germany

13:30 **Influence of Cu Underlayer on Phase Formation, Structure and Magnetic Properties of Nanoscaled FePd/Cu Films** **N PII.56**
M.N. Shamis1, P.V. Makushko1, T.I. Verbytska1, S.I. Sidorenko1, G. Beddies2, N.Y. Safonova2, M. Albrecht2, Yu. N. Makogon1
1-Igor Sikorsky Kyiv Polytechnic Institute, Department of Physics of Metals, Peremogy av. 37, 03056, Kyiv, Ukraine, 2-University of Augsburg, Institute of Physics, Universitätsstraße 1, D-86159, Augsburg, Germany,

13:30 **Study of effects of Ar/N2 gas mixture ratio on properties of zirconium nitride thin films** **N PII.57**
Katerina Horakova, Jiri Bulir, Vladimir Chab, Jan Drahokoupil, Ladislav Fekete, Jan Lancok
Institute of Physics of the Czech Academy of Sciences, 182 21 Prague 8, Czech Republic

13:30 **Modular plasma activation and functionalization of nanoparticles from gas-phase synthesis** **N PII.58**
M. Dasgupta (1), T. Hülser (2), U. Riebel (3), C. Schulz (1,4), H. Wiggers (1,4)
(1) IVG, Institute for Combustion and Gas Dynamics – Reactive Fluids, Duisburg, (2) Institute for Energy and Environnmental Technology e. V. (IUTA), Duisburg, Germany (3) Brandenburgische University of Technology, Cottbus-Senftenberg, Germany (4) Center for Nanointegration Duisburg-Essen (CENIDE), Duisburg, Germany

13:30 **A comparative investigation of plane and Ag containing hydroxiapatite coatings for use in spine surgery** **N PII.59**
M. Braic1, A. Vladescu1, V. Braic1, R. N. Ion2, A. Cimpean2, N.C. Zoita1, I. Pana1, A.E. Kiss1
1National Institute for Optoelectronics, 409 Atomistilor St, Magurele, Romania
2University of Bucharest, Department of Biochemistry and Molecular Biology, Bucharest, Romania

13:30 **Bismuth-Based Thin Films Deposited by Reactive Magnetron Sputtering as Potential Photocatalytic Materials** **N PII.60**
Sara IBRAHIM, Angelique BOUSQUET, Pierre BONNET, Eric TOMASELLA, Mohamed SARAKHA, Thierry SAUVAGE
Université Clermont Auvergne, Institut de Chimie de Clermont-Ferrand (ICCF), 24 Avenue Blaise Pascal, 63178 Aubière Cedex, France, CNRS/CEMHTI Site Cyclotron, 3A rue de la Férollerie 45071 Orléans Cedex 2, France

13:30 **Copper-Carbon coatings deposited by HiPIMS as electrical conductive coatings for satellite antenna application** **N PII.61**
V. Braic1, I. Pana1, C. Vitelaru1, D. Mihai2, C.N. Zoita1, R. Mihalache2, O. Muresan3, H. A. Schubert3, M. Braic1, A.E. Kiss1
1 National Institute for Optoelectronics, 077125 Magurele, Romania 2 National Institute for Gas Turbines, 061126 Bucharest, Romania 3 ”Horia Hulubei” National Institute for Physics and Nuclear Engineering, Magurele, Romania

13:30 **Fabrication of Hierarchical Structure using Wet-etching of Nickel Thin Films in Lamellae Layer** — **N PII.62**
Jeong Hwan Kim, Seung-Hun Lee, Kwanoh Kim, Jae Sung Yoon, and Yeong-Eun Yoo
Korea Institute of Machinery and Materials(KIMM), University of Science and Technology(UST)

13:30 **HiPIMS deposition of YAlN thin films** — **N PII.63**
N.C. Zoita, C. Vitelaru, A. Kiss, M. Dinu, A. Parau, I. Pana, M.Braic
National Institute for Optoelectronics, Magurele-Bucharest, Romania

13:30 **Functionally graded multilayers for enhanced adhesion of dental ceramic on metallic substrates** — **N PII.64**
M. Dinu1, A. Vladescu1, V. Braic1, I. Pana1, L. Constantin1, C.M. Cosmin2, M. Braic1
1. National Institute for Optoelectronics, 077125, Magurele, Romania 2. University Politehnica of Bucharest, 060042 Bucharest, Romania

13:30 **Heterostructured SOFC Cathodes Prepared by Atomic Layer Deposition for Enhanced Oxygen Reduction Reaction Kinetics** — **N PII.65**
Hyung Jong Choi, Kiho Bae, Jun Woo Kim, Gwon Deok Han, Junmo Koo, Joon Hyung Shim
School of Mechanical Engineering, Korea University

13:30 **Designed Transparent Conductive Film for Efficient Optoelectronic Devices** — **N PII.66**
Bin Hu
Huazhong University of Science and Technology

13:30 **RRT (Round Robin Test) for thickness of nano-scale HfO2 thin films using XRR (X-Ray Reflectometry)** — **N PII.67**
Chang Soo Kim(a)*, Minhyuk Choi(a), In-young Jung(a), Seungwoo Song(a), Yasushi Azuma(b), Yunsan Chien(c), and Lingling Ren(d)
(a) Korea Research Institute of Standards and Science (KRISS), 267 Gajeong-ro, Daejeon, 34113, South Korea (b) National Institute of Advanced Industrial Science and Technology (AIST), National Metrology Institute of Japan (NMIJ), 1-1-1 Higashi, Tsukuba, 305-8565 Japan (c) Center for Measurement Standards (CMS), Industrial Technology Research Institute, Kuangfu Rd. 30011, Hsinch City, Taiwan (d) National Institute of Metrology (NIM), Bei San Huan Lu, Chaoyang District, Beijing 100013, China

13:30 **Plasma Assisted ALD-WCN diffusion barrier for Cu through silicon vias** — **N PII.68**
Young Min Jhon1, Yong Tae Kim2, Francisco Gamiz3
1Sensor System Research Center, Korea Institute of Science and Technology, Seoul 02792, Korea 2Semiconductor Materials and Device Lab, Korea Institute of Science and Technology, Seoul 02792, Korea 3Nanoelectronics Research Group, University of Granada, 18071 Granada, Spain

13:30 **Anisotropy of stress assisted diffusion of interstitials in austenitic stainless steel** — **N PII.69**
Teresa Moskalioviene, Arvaidas Galdikas
Physics Department, Kaunas University of Technology, Studentu 50, LT-51368 Kaunas, Lithuania

15:30 **Coffee Break**

In situ monitoring and advnaced characterization : Jiri BULIR & Filipe VAZ

16:00 INV **Monitoring growth processes with synchrotron radiation: structure formation during reactive and non-reactive sputter deposition** — **N 6.1**
Bärbel Krause
Karlsruhe Institute for Technology (KIT), Institute for Photon Science and Synchrotron Radiation (IPS)

16:30 **Microstructure and thermal stability of Nb nanoparticles studied by x-ray scattering methods** — **N 6.2**
Tereza Kretková, Lukáš Horák, Pavel Pleskunov, Daniil Nikitin, Jan Hanuš, Andrei Choukourov, Milan Dopita
Department of Condensed Matter Physics, Faculty of Mathematics and Physics, Charles University, Ke Karlovu 5, 121 16 Prague 2, Czech Republic, Department of Macromolecular Physics, Faculty of Mathematics and Physics, Charles University, V Holešovičkách 2, 180 00 Prague 8, Czech Republic

16:45 **Development of nanoporous crystalline ZnO with controlled porosity from molecular layer deposited zincone** — **N 6.3**
Alberto Perrotta, Richard Berger, Anna Maria Coclite
Graz University of technology Alberto Perrotta, Richard Berger, Anna Maria Coclite

17:00 **Near-field optical imaging reveals crystalline domain structures and the composition of nanomaterials with monolayer sensitivity** — **N 6.4**
Philip Schäfer, Adrian Cernescu, Andreas Huber
neaspec GmbH, Eglfinger Weg 2, 85540 Haar, Germany

17:15 **Transrotational microcrystals, nanostructures grown in amorphous film: “vacuum epitaxy” for lattice-orientation nanoengineering** — **N 6.5**
V. Yu. Kolosov
Ural Federal University, Ekaterinburg, Russia

17:30 **SURFACTANT-BASED STRATEGIES FOR MANIPULATING GROWTH OF THIN METAL FILMS ON WEAKLY-INTERACTING SUBSTRATES** — **N 6.6**
A. Jamnig, G. Abadias, K. Sarakinos
Institut Pprime, Département Physique et Mécanique des Matériaux, UPR 3346 CNRS, Université de Poitiers, SP2MI, 11 Bvd M. et P. Curie, BP 30179, F86962 Chasseneuil-Futuroscope Cedex, France, Institut Pprime, Département Physique et Mécanique des Matériaux, UPR 3346 CNRS, Université de Poitiers, SP2MI, 11 Bvd M. et P. Curie, BP 30179, F86962 Chasseneuil-Futuroscope Cedex, France, Nanoscale Engineering Division, Department of Physics, Chemistry and Biology, Linköping University, SE 581 83, Linköping, Sweden

17:45 **Direct Atomic-Scale Observation of Droplets Coalescence Driven Nucleation and Growth of Supported Bismuth Nanocrystal in the TEM** — **N 6.7**
Junjie Li, Francis Leonard Deepak
Nanostructured Materials Group, Department of Advanced Electron Microscopy, Imaging and Spectroscopy, International Iberian Nanotechnology Laboratory (INL), Avenida Mestre Jose Veiga Braga 4715-330, Portugal.

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Oxidation and wear-resistant coatings II : Juan-Carlos SANCHEZ-LOPEZ

08:30 INV **Multiscale Design of Hard and High Temperature Resistant Coatings by Computation and Experiment** — **N 7.1**
Jiechao Jiang+, P. Zeman*, J. Vlček*, E.I. Meletis+
+ Materials Science and Engineering Department, University of Texas at Arlington, USA * Department of Physics, University of West Bohemia, Czech Republic

09:00 **In situ and ex situ comparison of CrN thin film synthesis in Ar/N2 and Ar/NH3** — **N 7.2**
Emile HAYE1, Louis RASSINFOSSE1, Julien L. COLAUX2,3, Jean-Jacques PIREAUX1, Stéphane LUCAS2
1 Laboratoire Interdisciplinaire de Spectroscopie Electronique (LISE), Namur Institute of Structured Matter (NISM), University of Namur, 61 Rue de Bruxelles, 5000 Namur, Belgium 2 Laboratoire d'Analyse par Réactions Nucléaires (LARN), Namur Institute of Structured Matter (NISM), University of Namur, 61 Rue de Bruxelles, 5000 Namur, Belgium 3 Synthesis, Irradiation & Analysis of Materials (SIAM) Platform, University of Namur, 61 Rue de Bruxelles, 5000 Namur, Belgium

09:15 **Tuning structure and mechanical properties of Ta-C coatings by N-alloying and vacancy population** — **N 7.3**
T. Glechner, R. Hahn, T. Wojcik, D. Holec, S. Fritze, D. Primetzhofer, S. Kolozsvári, H. Zaid, S. Kodambaka, P.H. Mayrhofer, H. Riedl
Institute of Materials Science and Technology, TU Wien, Austria, Institute of Materials Science and Technology, TU Wien, Austria, Institute of Materials Science and Technology, TU Wien, Austria, Department of Materials Science, Montanuniversität Leoben, Austria, Department of Chemistry - Ångström Laboratory, Uppsala University, Sweden, Department of Physics and Astronomy, Uppsala University, Sweden, Plansee Composite Materials GmbH, Germany, Department of Materials Science and Engineering, University of California Los Angeles, USA, Department of Materials Science and Engineering, University of California Los Angeles, USA, Institute of Materials Science and Technology, TU Wien, Austria, Institute of Materials Science and Technology, TU Wien, Austria,

09:30 **Tribological and mechanical properties and oxidation resistance of tungsten and tungsten nitride films at temperatures up to 500** — **N 7.4**
Daniel Javdosnak, Jindrich Musil, Zbynek Soukup, Radomir Cerstvy, Stanislav Haviar, Jiri Houska
Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Univerzitni 8, CZ-30614, Plzen, Czech Republic

09:45 **Coffee Break**

Oxidation and wear-resistant coatings II (cont.) : Efstathios MELETIS

10:15 **Multi-Scale Interface Design of Biomimetic Hard and Tough Nanoceramic Thin Films** — **N 7.5**
M. Meindlhumer, R. Daniel, J. Zalesak, J. Todt, R. Pitonak, C. Mitterer, J. Keckes
Christian Doppler Laboratory for Advanced Synthesis of Novel Multifunctional Coatings at the Department of Materials Science, Montanuniversität Leoben, Leoben, Austria Department of Materials Science, Montanuniversität Leoben, Leoben, Austria Boehlerit GmbH, Austria

10:15 **Multi-Layered CrN/MoN High-Performance Protective Coatings as a Solution for Critical Raw Materials Under Extreme Conditions** — **N 7.6**
B.O. Postolnyi1,2, V.M. Beresnev3, O.V. Bondar2, K. Zaleski4, E. Coy4, S. Jurga4, P. Konarski5, L. Rebouta6, J.P. Araujo1, A.D. Pogrebnjak2
1IFIMUP and IN-Institute of Nanoscience and Nanotechnology, Department of Physics and Astronomy, Faculty of Sciences, University of Porto, 687, Campo Alegre st., 4169-007 Porto, Portugal 2Sumy State University, 2, Rymskogo-Korsakova st., 40007 Sumy, Ukraine 3V.N. Karazin Kharkiv National University, 4 Svobody Sq., Kharkiv, 61022, Ukraine 4NanoBioMedical Centre, Adam Mickiewicz University, 85, Umultowska st. 61-614 Poznań, Poland 5Tele and Radio Research Institute, 11, Ratuszowa st., 03-450 Warsaw, Poland 6Centre of Physics, University of Minho, Azurém, 4800-058 Guimarães, Portugal

10:45 **The Effect of C-Axis Orientation of Few-Layer MoS2 on Its Nano-Tribological Properties** — **N 7.7**
Michal Bodik, Peter Siffalovic, Jakub Hagara, Milan Tapajna, Martin Hulman, Michaela Sojkova, Matej Jergel, Eva Majkova
Institute of Physics, Slovak Academy of Sciences, Dubravska cesta 9, 845 11 Bratislava, Slovakia, Institute of Physics, Slovak Academy of Sciences, Dubravska cesta 9, 845 11 Bratislava, Slovakia, Centre of Excellence for Advanced Materials Application, Dubravska cesta 9, 845 11 Bratislava, Slovakia, Institute of Physics, Slovak Academy of Sciences, Dubravska cesta 9, 845 11 Bratislava, Slovakia, Institute of Electrical Engineering, Slovak Academy of Sciences, Dubravska cesta 9, 84104 Bratislava, Slovakia, Institute of Electrical Engineering, Slovak Academy of Sciences, Dubravska cesta 9, 84104 Bratislava, Slovakia, Institute of Electrical Engineering, Slovak Academy of Sciences, Dubravska cesta 9, 84104 Bratislava, Slovakia, Institute of Physics, Slovak Academy of Sciences, Dubravska cesta 9, 845 11 Bratislava, Slovakia, Institute of Physics, Slovak Academy of Sciences, Dubravska cesta 9, 845 11 Bratislava, Slovakia, Centre of Excellence for Advanced Materials Application, Dubravska cesta 9, 845 11 Bratislava, Slovakia,

11:00 **Plenary Session and Lunch Break**

Energy-related thin films : Kostas SARAKINOS

14:00 INV **New materials and processes for large area coatings** — **N 8.1**
Oliver Kappertz, Stephan Ullrich, Volker Sittinger, Michael Siemers, Andreas Pflug, Michael Vergöhl, Bernd Szyszka
Fraunhofer IST, TU Berlin

14:30 **Novel micro- and nanostructuring methods for energy conversion and thermoelectric applications** — **N 8.2**
O. Ernst1, K. Eylers1, F. Lange1, Jörn Bonse2, Jörg Krüger2 and T. Boeck1
1 Leibniz-Institut für Kristallzüchtung (IKZ), 2 Bundesanstalt für Materialforschung und –prüfung (BAM)

14:45 **Pyroelectric energy harvesting with Black-Al/Pt/Pb(ZrxTi1-x)O3 thin films.** — **N 8.3**
Joris More-Chevalier1, Petr Yudin1, Michal Novotný1, Morgane Poupon1, Christophe Cibert2, Cinthia Correa1, Přemysl Fitl1, Gilles Poullain2, and Ján Lančok1
1 Institute of Physics, Academy of Sciences of the Czech Republic, Na Slovance 2, 182 21 Prague, Czechia 2 Université de Caen Normandie, ENSICAEN, CNRS UMR 6508 CRISMAT, F-14032 Caen, France

15:00 **Development of nanostructured FTO films as transparent and diffuse electrodes for enhanced photovoltaic performances** — **N 8.4**
Soraya Lakhdar Chaouche 1,3, Daniel Bellet 3, David Muñoz-Rojas3, Viet Huong Nguyen3,, Daniel Lincot4, Matteo BALESTRIERI 4 , Alain Fave 2, Stéphane Daniele 1, Carmen Jiménez 3
1)Univ. Lyon 1, IRCELYON, CNRS-UMR 5256 - 2 avenue Albert Einstein - 69626 Villeurbanne cedex, France 2)Institute of Nanotechnology of Lyon (INL) - Bât Blaise Pascal - 7 avenue Jean Capelle - 69621 Villeurbanne cedex, France 3) Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP -3 parvis Louis Néel - CS 50257 - 38016 Grenoble cedex, France 4) Centre National de la Recherche Scientifique (CNRS UMR IPVF 30 Route Départementale 128, 91120 Palaiseau, France

15:15 **Synthesis of titanium dioxide thin films obtained by Hot Target Magnetron Sputtering** — **N 8.5**
R. Graillot Vuillecot, A. Caillard, C. Cachoncinlle, E. Millon, A-L. Thomann
Groupe de Recherches sur l'Energétique des Milieux Ionisés (GREMI) UMR 7344 Université d'Orléans/CNRS, 14 rue d'Issoudun, 45067 Orleans Cedex 2

15:30 **Coffee Break**

Energy-related thin films (cont.) :
Oliver KAPPERTZ

16:00 **Copper: The conductor of choice for transparent flexible electrodes** **N 8.6**
Philip Bellchambers, Jessica Pereira, Silvia Varagnolo, Jaemin Lee, Houari Amari, Marc Walker, Steven Huband and Ross A. Hatton
Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK, Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK, Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK, Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK, Department of Physics, University of Warwick, Coventry, CV4 7AL, UK (Current Address: Imaging Center at Liverpool (ICaL), School Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK, of Engineering & School of Physical Sciences, University of Liverpool, L69 3GQ, Liverpool, United Kingdom), Department of Physics, University of Warwick, Coventry, CV4 7AL, UK, Department of Physics, University of Warwick, Coventry, CV4 7AL, UK, Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK.

16:15 **Nanostructured Mixed Oxide Thin Films with Enhanced Photocatalytic and Self-Cleaning Properties** **N 8.7**
Salih Veziroglu, Marie Ullrich, Katharina Röder, Zubair Ghori, Josiah Shondo, Thomas Strunskus, Franz Faupel, Oral Cenk Aktas
Chair for Multicomponent Materials, Institute for Materials Science, Christian Albrechts University of Kiel, 24143 Kiel, Germany

16:30 **Innovative chemical nanolayers for substrate metallization** **N 8.8**
G. Andreatta, A. Grivel, O. Chandran, C. Allebé, A. Lachowicz, M. Despeisse, S. Lani, N. Hendricks, R. Pugin
Centre Suisse d'Electronique et de Microtechnique (CSEM), Neuchâtel, Switzerland

16:45 **Selective deposition of silver and copper thin films** **N 8.9**
Silvia Varagnolo, Houari Amari, Ross A. Hatton
Department of Chemistry, University of Warwick, CV4 7AL, Coventry, United Kingdom, Department of Physics, University of Warwick, CV4 7AL, Coventry, United Kingdom Current Address: Imaging Center at Liverpool (ICaL), School of Engineering & School of Physical Sciences, University of Liverpool, L69 3GQ, Liverpool, United Kingdom, Department of Chemistry, University of Warwick, CV4 7AL, Coventry, United Kingdom E-mail: Ross.Hatton@warwick.ac.uk

Poster Session III :
Panos PATSALAS

17:00 **Composition of the mixed surfactants nanolayers adsorbed on activated carbon** **N PIII.1**
Olga Kochkodan1, Roman Boiko1, Viktor Maksin1, Roman Zhyla1, Viktor Kochkodan2
1National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine 2Qatar Environment and Energy Research Institute, Hamad bin Khalifa University, Doha, Qatar

17:00 **Influence of nano-alumina addition in the glaze wear resistance** **N PIII.2**
M.P. Seabra (1), M.N. Capela (1), J. Carvalheiras (1), D.M. Tobaldi (1), L. Hennetier (2), A. Dias (3), J.A. Labrincha (1)
(1) Department of Materials and Ceramic Engineering/CICECO – Aveiro Institute of Materials, University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal (2) Technological Center of Ceramics and Glass, CTCV, iParque – Parque Tecnológico de Coimbra, 3040-540 Antanhol, Portugal (3) RECER, Indústria de Revestimentos Cerâmicos, S.A., Apartado 20, 3771-953 Oliveira do Bairro, Portugal

17:00 **Application of thin films in IC security** **N PIII.3**
Elham Amini, Christian Boit, Bernd Szyszka, and Jean-Pierre Seifert
Technische Universität Berlin, Germany

17:00 **Electrodes for Smart CutTM-fabricated lithium niobate-based acoustic resonators** **N PIII.4**
A. Borzì (1), G. Castellan(1), P. Perreau(1), P. Gergaud(1), F. Pierre(1), A. Reinhardt(1), M. Bousquet(1), A. Bartasyte(2)
(1) Grenoble Alpes Université, CEA-Leti, Minatec Campus, Grenoble, France (2) Institut FEMTO-ST, Besançon, France

17:00 **Study on the Growth of Tungsten Oxide Nano-rods by Thermal Oxidation for Hydrogen Sensing Properties** **N PIII.5**
Nien-Yu Wu1, Tien-Chai Lin2, Hong-Jun Wang 2, Wen-Chang Huang1, 3*
1 Green Energy Technology Research Center, Kun Shan University, No. 195, Kun-Da Rd., Yong-Kang Dist., Tainan, 71003, Taiwan, ROC 2 Department of Electrical Engineering, Kun Shan University, No. 195, Kun-Da Rd., Yong-Kang Dist., Tainan, 71003, Taiwan, ROC 3 Department of Electro-Optical Engineering, Kun Shan University, No. 195, Kun-Da Rd., Yong-Kang Dist., Tainan, 71003, Taiwan, ROC

17:00 **Introduction of functional thin-film layers at the interfaces of SOFC as an approach to enhance the cell performance** **N PIII.6**
Inyoung Jang1, Sungmin Kim1, Kangcheon Lee1, Seho Sun1, Dongsoo Lee1, Seoungcheol Myeong1, Yeongil Jung2, Taeseup Song1, Ungyu Paik1
1.Department of Energy Engineering, Hanyang University, Seoul, Republic of Korea, 133-791, 2.School of Nano & Advanced Materials Engineering, Changwon National University, Changwon, South Korea,

17:00 **Developing of Photo-Thermally Stable QD-Polymer Composite Films for Luminescent Applications** **N PIII.7**
Natalia Zawacka, Jakob Kuhs, Christophe Detavernier, Philippe Smet, Zeger Hens
Department of Chemistry, Ghent University,Krijgslaan 281/S3, 9000 Gent, Belgium, Department of Solid State Sciences, Ghent University,Krijgslaan 281/S1, 9000 Gent, Belgium

17:00 **Ge nanocrystals in TiO2 with enhanced spectral photosensitivity by photo-effects in semiconductor substrate** **N PIII.8**
I. Dascalescu 1,2, A.-M. Lepadatu 1, A. Slav 1, C. Palade 1, O. Cojocaru 1, I. Lalau 1, M. Enculescu 1, S. Iftimie 2, S. Lazanu 1, V. S. Teodorescu 1, T. Stoica 1, M. L. Ciurea 1
1 National Institute of Materials Physics, 077125 Magurele, Romania. 2 University of Bucharest, Faculty of Physics, 077125 Magurele, Romania.

17:00 **Structural Evolution of Organic Photodiode using Etalon-Electrode for Fabrication of Color Filter-Free Image Sensor** **N PIII.9**
Seongwon Yoon, Jae Un Ha, Jangwhan Cho, Syed Zahid Hassan, Dae Sung Chung
Daegu Gyeongbuk Institute of Science & Technology

17:00 **A comparative study on p-type windows for thin film silicon solar cells grown by PECVD** **N PIII.10**
Pavel Calta (1), Jiří Navrátil (2), Pavol Šutta (1), Marie Netrvalová (1), Veronika Vavruňková (1), Rostislav Medlín (1)
(1) University of West Bohemia, New Technologies - Research Centre, Univerzitní 8, 306 14 Plzeň, Czech Republic, (2) University of West Bohemia, Department of Technologies and Measurements / RICE, Faculty of Electrical Engineering, Univerzitní 8, 30614 Plzeň, Czech Republic

17:00 **Nanocomposite and nanostructured coatings for LED lighting and photocatalytic applications** **N PIII.11**
Nehed Amara, Audrey Potdevin, Mouna Messaoud, David Riassetto, Geneviève Chadeyron, Michel Langlet
Université Grenoble Alpes, CNRS, LMGP, 3 parvis Louis Néel, 38016 Grenoble, France Université Clermont Auvergne, CNRS, SIGMA Clermont, Institut de Chimie de Clermont-Ferrand (ICCF), 63000 Clermont-Ferrand, France Laboratoire de Chimie Industrielle, Ecole Nationale d?Ingénieur de Sfax, Université de Sfax, Route de Soukra Km 4,3038 Sfax, Tunisie

17:00 **Growth of Pt based nano-catalyst in vegetal glycerin liquid by magnetron sputtering** **N PIII.12**
V. Orozco-Montes1, J. Bigarre2, A. Saulduboisb3, S. Cuynet4, S. Baranton5, T. Lecas1, P. Brault1, A. Caillard1
1 Groupe de recherches sur l'Energétique des Milieux Ionisés, UMR 7344, Université d'Orléans / CNRS, 14 rue d'Issoudun, BP6744, F-45067 Orléans cedex 2 2 CEA DAM, Le Ripault, F-37260 Monts, France 3 CME, Université d'Orléans, 1 Rue de Chartres, BP 6759, 45067 Orléans cedex 2, France 4 Institut Jean Lamour, UMR 7198, Université de Lorraine / CNRS, Nancy, F-54042, France 5 Institut de Chimie des Milieux et Matériaux de Poitiers (IC2MP), UMR CNRS 7285, Université de Poitiers, 4 rue Michel Brunet, TSA 51106, Poitiers Cedex 9, France

17:00 **Characterization of Cu2O thin films used in solar cells by Raman and FTIR spectroscopy** **N PIII.13**
I. Chilibon*, R. Kumar, Ø. Nordseth, L. Fara, F. Dragan, D. Crăciunescu, C. Vasiliu, M. Rusu, S. E. Foss, E. Monakhov
1 National Institute of Research and Development for Optoelectronics (INOE-2000), Bucharest-Magurele, Str. Atomiştilor 409, Măgurele RO-077125, Romania 2 Department of Physics/Center for Materials Science and Nanotechnology (SMN), University of Oslo, P.O. Box 1048, Blindern, NO-0316 Oslo, Norway 3 Institute for Energy Technology, Instituttveien 18, 2007 Kjeller, Norway 4 University "Politehnica" of Bucharest, Spl. Independentei 313, RO-060042, Bucharest, Romania

17:00 **Deformation behavior of phage/ZnO hybrid multilayer systems** **N PIII.14**
Julia Deuschle, Vesna Srot, Pouya Moghimian, Sandra J. Facey, and Peter A. van Aken
Max Planck Institute for Solid State Research, Stuttgart, Germany

17:00 **Selective growth of ZnO nanorods on arbitrary substrates with a patterned seed via ultraviolet-assisted nanoimprint lithography** **N PIII.15**
Hyeong-Ho Park1*, Xin Zhang2, Hae Yong Jeong1, Chu-Young Cho1, Ju-Hyung Yun3, Kyung-Ho Park1*
1 Nanodevice Lab., Korea Advanced Nano Fab Center, Suwon 16229, Republic of Korea 2 Department of Chemistry and 4D LABS, Simon Fraser University, Burnaby, BC, V5A 1S6, Canada 3 Department of Electrical Engineering, Incheon National University, Incheon 406772, Republic of Korea

17:00 **Structure, Er ion defects and Emission of ZnO Nanocrystal Films Prepared by Ultrasonic Spray Pyrolysis** **N PIII.16**
Br. El Filali1, T.V. Torchynska2, J. L. Ramírez García1, J.L. Casas Espinola2 and G. Polupan3
1Instituto Politécnico Nacional, UPIITA, México City, 07320, México 2Instituto Politécnico Nacional, ESFM, México City, 07738, México 3Instituto Politécnico Nacional, ESIME, México City, 07738, México

17:00 **Surface engineering and thin film technology on nanocarbon based materials applied to sensing devices.** **N PIII.17**
Amadou L. NDIAYE*1,2, Sahal SAAD ALI1,2,3, Christelle VARENNE 1,2, Jérôme BRUNET1,2, Alain PAULY 1,2
1) Université Clermont Auvergne, CNRS, Sigma Clermont, Institut Pascal, F-63000 Clermont-Ferrand, France (2) Laboratoire d'excellence LabEX IMobS3,Université Clermont Auvergne, Aubière CEDEX (3) Institut de Chimie de Clermont-Ferrand (ICCF)-UMR 6296, Université Clermont Auvergne

17:00 **Multi-functional AgPdCu/ITO/PTFE hybrid films with high performance for flexible smart windows.** **N PIII.18**
Sunyoung Yoon, Hae-Jun Seok, Jin-Yeong Park, and Han-Ki Kim*
School of Advanced Materials Science & Engineering, Sungkyunkwan University, 2066 Seobu-ro, Jangan-gu, Suwon, Gyeonggi-do 16419, Republic of Korea

17:00 **Vanadium Oxide Based Microfabricated Gas Sensors and Their Alcohol Sensing Performance** **N PIII.19**
Alp KILIÇ, Onur ALEV, Çi?dem ÇAKIRLAR, Serkan BÜYÜKKÖSE, Zafer Ziya ÖZTÜRK
Gebze Technical University Department of Physics Kocaeli/TURKEY

17:00 **Ga:ZnO graded ITO electrodes with improved electron extraction for planar perovskite solar cells** **N PIII.20**
Hae-Jun Seok1, Sunyoung Yoon1, Azmat Ali2, Jung-Hwa Seo2, Hyun-Hwi Lee3, Na-Eun Jung4, Yeon-Jin Yi4 and Han-Ki Kim1,*
1School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Gyeonggi-do, 16419, Republic of Korea 2Department of Materials Physics, Dong-A university, Busan, Republic of Korea 3Pohang Accelerator Laboratory, POSTECH, Pohang, Kyungbuk 790-784, Republic of Korea 4Institute of Physics and Applied Physics, Yonsei University, Seoul, Republic of Korea

17:00 **Direct Writing Patterns of Metallic Thin Film by DPN Technique** **N PIII.21**
Pachiu Cristina, Carp Mihaela, Dediu Violeta
IMT Bucharest

17:00 **Effect of Energy Transfer of lanthanide ions on Upconversion luminescence** **N PIII.22**
SONG Nan WANG Feng
Department of Materials Science and Engineering, City University of Hong Kong

17:00 **Printing of structural colors on stainless steel based on grating-coupled surface plasmon resonance and guided mode resonance** **N PIII.23**
Minseok Seo, Harim Oh, Jaeyong Kim, Junho Lee, Myeongkyu Lee
Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, Korea

17:00 **Structural and dielectric properties of pure and Li-doped synthetic and bovine bone-derived hydroxyapatite in both bulk and film** **N PIII.24**
Tite, T.(1), Bogdan, I.M.(1), Balescu, L.M.(1), Stan, G.E.(1), I. Pasuk (1), G. Boni (1), L. Hrib (1)
(1)National Institute of Materials Physics, RO-077125 Magurele, Romania

17:00 **Effects of controlled selenization process on powder-fabricated Cu2GeS3 thin films** **N PIII.25**
Hak-Young Ahn 1,2, Jong-Ku Park 1, Seung Yong Lee 1,3, Byeong-Kwon Ju 2,* and So-Hye Cho 1,3,*
1 Materials Architecturing Research Center, Korea Institute of Science and Technology, Hwarangro 14-gil 5, Seongbuk-gu, Seoul 02792, Republic of Korea , 2 Display and Nanosystem Laboratory, School of Electrical Engineering, Korea University, Seoul, 02841, Republic of Korea , 3 Division of Nano & Information Technology, KIST School, UST, Korea University of Science and Technology, Seoul 02792, Republic of Korea

17:00 **Optimizing surfactant adsorption ability for high performance water-processed organic electronic device** **N PIII.26**
Jangwhan Cho, Jae Un Ha, Seongwon Yoon, Syed Zahid Hassan and Dae Sung Chung*
Department of Energy Science and Engineering, Daegu Gyeongbuk Institute of Science and Technology, Daegu, 42988, Republic of Korea

17:00 **Anti-Bacterial and Fluorescent Properties of Hydrophobic and Superhydrophobic Polypyrenes Surfaces** **N PIII.27**
Gabriela Ramos Chagas, Thierry Darmanin, Frédéric Guittard
Université Côte d'Azur, NICE Lab, IMREDD, 06200 Nice, France

17:00 **Synthesis of Acrylate Boron Fluorinated Polymers with Amphiphilic Property and Its Antifouling Behavior Research** **N PIII.28**
Rongrong Chen,a, b, Yakun Li,a, b, YanHua Feng,c, Xun Sun,a, Liang Tang,a, Kazunobu Takahashi,a, Peili Liu,c, Jun Wang,a
a. Institute of Advanced Marine Materials, College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, China b. Key Laboratory of Superlight Material and Surface Technology, Ministry of Education, Harbin Engineering University, 150001, China c. Qingdao Advanced Marine Material Technology Co., Ltd, Qingdao, 266100, China

17:00 **Fabrication of Lubricant-Infused Fibrous Porous Surface by Water-soluble Non-woven Fabrics Sacrificial Template** **N PIII.29**
M.L. YAN, H. C. YANG, R.R. CHEN, K. TAKAHASHI.
College of Materials Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, P.R. China.

17:00 **Facile fabrication of dry adhesive films based on hierarchical pillars structure of poly(dimethylsiloxane)** **N PIII.30**
Minh Canh Vu, Nhat Anh Thi Thieu, Eui-Jeong Park, Sung-Ryong Kim
Korea National University of Transportation

17:00 **Study of columnar growth and texture development of reactively sputter-deposited TiN, HfN and ZrN thin films at oblique angles** **N PIII.31**
R. Mareus, C. Mastail, A. Michel, G. Abadias
Institut Pprime, Département Physique et Mécanique des Matériaux, UPR 3346, CNRS-Université de Poitiers-ENSMA, SP2MI, Téléport 2, 86962 Futuroscope-Chasseneuil, France

17:00 **Strong Graphene Adhesion Enables Glue Application and Assembly of Suspended Wrinkles** **N PIII.32**
Liusi Yang, Mingchu Zou, Huaisheng Wu, Anyuan Cao
Peking University, Beijing, China.

17:00 **CdS1-xSex films deposited on ITO substrates by chemical solution: Structural, optical and photoelectrochemical properties** **N PIII.33**
E.A. Sanchez-Ramirez (a), F.J. Castillo-Plata (b), C. Vazquez-Morales (b), M.A. Hernandez-Perez (b), J.R. Aguilar-Hernandez (c), A. Manzo-Robledo (b), J. Sastre-Hernandez (c)
(a) Instituto Politécnico Nacional, Departamento de Ingeniería Metalúrgica - UPIIZ, Zacatecas, 98160, Mexico, (b) Instituto Politécnico Nacional, Departamento de Ingeniería en Metalurgia y Materiales, ESIQIE, CP 07738 CDMX., Mexico, (c) Instituto Politécnico Nacional, Escuela Superior de Física y Matemáticas, CP 07738 CDMX, Mexico

17:00 **A study on fluid motion in a liquid droplet and its application to the arrangement of microparticles** **N PIII.34**
Jae Sung Yoon, Eunju Yeo, Kwanoh Kim, Jeong Hwan Kim, Doo-Sun Choi, Yeong-Eun Yoo
Korea Institute of Machinery & Materials (KIMM)

17:00 **Nature-Inspired anti-reflection in visible range and selective reflection in NIR nanosurface for concentrator photovoltaic** **N PIII.35**
Seungchul Park, Youngdo Jung, Hyuneui Lim
Korea Institute of Machinary and Materials

17:00 **Silver and chitosan nanostructured coatings for improved wound dressings** **N PIII.36**
Alexandru Mihai Grumezescu1, Alina Maria Holban1,2, Valentina Grumezescu3, Ecaterina Andronescu1, Anton Ficai2
1 Faculty of Applied Chemistry and Materials Science, Politehnica University of Bucharest, Romania, 2 Faculty of Biology, University of Bucharest, Romania, 3 Laser-Surface-Plasma Interactions" Laboratory, Lasers Department, National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania

17:00 **Contact Engineering for Efficient Charge Injection in Organic Transistors with Low-cost Metal Electrodes** **N PIII.37**
Debdatta Panigrahi, Sujit Kumar, Achintya Dhar
Indian Institute of Technology Kharagpur

17:00 **Flexible Solid Block Copolymer Photonic Crystal Displays** N PIII.69
Han Sol Kang, Tae Hyun Park, Chanho Park, Seung Won Lee, Cheolmin Park
Yonsei University

17:00 **Self-holding optical modulator based on a mixed ionic-electronic conductor material** N PIII.38
Marina Muñoz-Castro1, Nicolai Walter2, Wolfram Pernice2, Hartmut Bracht1
1University of Münster, Institute of Materials Physics, D-48149 Münster, Germany
2University of Münster, Institute of Physics, D-48149 Münster, Germany

17:00 **Influence of adatom mobility on stress generation and evolution during metal film growth on weakly-interacting substrates** N PIII.39
A. Jamnig, K. Sarakinos, G. Abadias
Nanoscale Engineering Division, Department of Physics, Chemistry, and Biology, Linköping University, SE 581 83, Linköping, Sweden, Nanoscale Engineering Division, Department of Physics, Chemistry, and Biology, Linköping University, SE 581 83, Linköping, Sweden, Institut Pprime, Département Physique et Mécanique des Matériaux, UPR 3346 CNRS, Université de Poitiers, SP2MI, 11 Bvd M. et P. Curie, BP 30179, F86962 Chasseneuil-Futuroscope Cedex, France

17:00 **High-performance ITO transparent electrode films using Plasmon resonance of metal nanoparticles for photovoltaic applications** N PIII.40
H. Ferhati1, F. Djeffal1,2,* and K. Kacha1
1 LEA, Department of Electronics, University Mostefa Benboulaid-Batna 2, Batna 05000, Algeria. 2 LEPCM, University of Batna 1, Batna 05000, Algeria. *E-mail: faycal.djeffal@univ-batna.dz, faycaldzdz@hotmail.com, Tel/Fax: 0021333805494

17:00 **The influence of bilayer thickness and nitrogen pressure on the microstructure and properties of the multilayer TiSiN/TiZrN coat** N PIII.41
V. Bondariev1, A.D. Pogrebnjak2, O.V. Bondar2, Ya.O. Kravchenko2, V.M. Beresnev3, T.N. Koltunowicz1, V.I. Ivashchenko4, P. Konarski5
1. Lublin University of Technology, Lublin, Poland 2. Sumy State University, Sumy, Ukraine 3. V.N. Karazin National University, Kharkiv, Ukraine 4. I.M. Frantsevich Institute for Problems in Materials Science, NAS of Ukraine, Kyiv, Ukraine 5. Tele and Radio Research Institute, Warsaw, Poland

17:00 **Excited state relaxation dynamics as a measure of quality of graphene layers deposited by plasma based techniques** N PIII.42
Erika Rajackait?1, Domantas Peckus1, Rimas Gudaitis1, Tomas Tamulevi?ius1,2, Mindaugas Andrulevi?ius1, ?ar?nas Me?kinis1, Sigitas Tamulevi?ius1,2
1Institute of Materials Science of Kaunas University of Technology, K. Bar?ausko Str. 59, Kaunas LT-51423, Lithuania 2Department of Physics, Kaunas University of Technology, Student? Str. 50, Kaunas LT-51368, Lithuania

17:00 **High-performance gas sensors using soft-lithographically patterned ZnO quantum dot film** N PIII.43
Seung Eun Baek, Dahl-Young Khang
Yonsei University

17:00 **DNA probe functionalization of ZnO/Au nanowires grown by VLS technique: Morphological effect over bio-sensing performance** N PIII.44
A. Galdamez, A. Serrano, A. Arana, G. Santana, N. Arjona, L.G. Arriaga, Jose Tapia Ramirez, Goldie Oza,A. Dutt.
Instituto de Investigaciones en Materiales, UNAM, México D.F., México
Departamento de Genética y Biología Molecular, CINVESTAV, México D.F., México
LABMyN, CIDETEQ, Querétaro 76703, México

17:00 **Epitaxial ZrB2 thin films on Si(100) deposited by DC magnetron sputtering** N PIII.45
Claudia Schnitter, Johanna Rosen, Hans Högberg
Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-58183 Linköping, Sweden, Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-58183 Linköping, Sweden, Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-58183 Linköping, Sweden

17:00 **TiO2 nanofiber arrays for in-situ circulating tumor cells capture and recognition by MALDI-TOF-MS** N PIII.46
Meng Zhang, Jing Wang, Yong Liang
Institute of Environment and Health, Jianghan University, Wuhan, China

17:00 **Nanofabrication of Titanium Nitride Plasmonic Surfaces** N PIII.47
S. Panos, D. Tselekidou, S. Kassavetis, P. Patsalas
Physics Department, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece

17:00 **Cr–N and Cr(N,O) Coatings for Enhancement of the Corrosion Resistance of 304 Stainless Steel** N PIII.48
M. Dinu1 , E.S. Massima Mouele2 , A.C. Parau1 , A. Vladescu1, L.F. Petrik 2, Mariana Braic 1
1National Institute for Optoelectronics, 409 Atomistilor St, Magurele, Romania 2 Department of Chemistry, Environmental and Nano Sciences, University of the Western Cape, Cape Town, South Africa

17:00 **CVD-synthesized MoS2/TiO2 hybrid thin films for applications in hydrogen production** N PIII.49
Sangmin Jeong, Tri Khoa Nguyen, Jong-sang Youn, Inhwan Oh, Hari Kang, Ki-Joon Jeon
Department of Environmental Engineering, Inha University, Incheon 402-751, Korea

17:00 **Preparation of Hetero-Structured Film for Inhibiting Pitting Corrosion on Al Alloys** N PIII.50
Ai Serizawa, Takeo Koike, Kohei Watanabe, Takuhiro Oda, Takahiro Ishizaki
Department of Materials Science and Engineering, Shibaura Institute of Technology, Graduate School of Engineering and Science, Shibaura Institute of Technology

17:00 **Prediction of organic thin film morphologies** N PIII.51
Carl Degitz,Manuel Konrad,Wolfgang Wenzel
Karlsruhe Institute of Technology (KIT) and Merck KGaA Darmstadt,Karlsruhe Institute of Technology (KIT),Merck KGaA Darmstadt,Merck KGaA Darmstadt,Karlsruhe Institute of Technology (KIT)

17:00 **BIOLOGICAL RESPONSE OF TI-BASED INTERMETALLIC THIN FILMS, TO BE USED AS BIOPOTENTIAL ELECTRODES** N PIII.52
Cláudia Lopes, Víctor Gonçalves, Joel Borges, Marco S Rodrigues, Andreia Gomes, Teresa Matamá, Filipe Vaz
Cláudia Lopes (1), Víctor Gonçalves (2), Joel Borges (1), Marco Sampaio Rodrigues (1), Andreia Gomes (3), Teresa Matamá (2), Filipe Vaz (1). (1) Centro de Física, Universidade do Minho, Campus de Gualtar, 4710-057 Braga, Portugal (2) CEB, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal (3) CBMA, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal

17:00 **Simulation and Analysis of Porous Silicon Carbide Effect on Resonant Coupled Modes of i a Multilayer Sensor** N PIII.53
Benamar Bouhafs, Abdellatif Cherifi, and Mohammed Bendjebbour
University of Tlemcen, Faculty of Sciences, Theoretical Physics Laboratory. Tlemcen 13000, Algeria

17:00 **Electrodeposition of MnO2 on spray-coated nanostructured carbon framework as high performance material for energy storage** N PIII.54
Clémence Rogier(1,2), Grégory Pognon(1), Paolo Bondavalli(1), Christophe Galindo(1), Cédric Vancaeyzeele(2), Tran-Minh-Giao Nguyen(2), Pierre-Henri Aubert(2)
1- Thales Research & Technology 2- Laboratoire de Physicochimie des Polymères et des Interfaces, Université de Cergy-Pontoise

17:00 **Pressure, temperature and humidity multi-responsive nanorods based on piezoelectric Zinc Oxide and p-NIPAAm hydrogel** N PIII.55
T. Abu Ali, A. M. Coclite, Phillip Schäffner, B. Stadlober
Institute of Solid State Physics, Graz University of Technology, Graz, Austria
Institute for Surface Technologies and Photonics, Joanneum Research, Graz, Austria

17:00 **Unexpectedly strong hydrophilic character of nanocarbon materials** N PIII.56
Grzegorz Stando, Dawid Janas
Department of Organic Chemistry, Bioorganic Chemistry and Biotechnology, Silesian University of Technology, B. Krzywoustego 4, 44-100 Gliwice, Poland

17:00 **Nickel nanowires as promising catalysts for chemical transformations** N PIII.57
T. Wasiak, L. Przypis, K. Walczak, D. Janas
Department of Organic Chemistry, Bioorganic Chemistry and Biotechnology, Silesian University of Technology, B. Krzywoustego 4, 44-100 Gliwice, Poland

17:00 **Effect of Hf additive on fine structure, mechanical properties, and oxidation resistance of nanocomposite Mo-Si-B coatings** N PIII.58
Ph.V. Kiryukhantsev-Korneev, T.A. Sviridova, A.Yu. Potanin, E.A. Levashov
National University of Science and Technology &#8220,MISIS&#8221,, Leninsky pr., 4, Moscow 119049, Russia

17:00 **Effects of annealing treatment on the RF sputtering Cr-C-N coatings** N PIII.59
Linda AISSANI, Corinne NOUVEAU, Akram ALHUSSEIN
Mater sciences Department, ABBES Laghrour-Khenchela University P.O 1252, 40004, Algeria.

17:00 **Phase stability of the multilayer (TiAlSiY)N/CrN coatings with nanoscale architecture after ion implantation by heavy Au- ions** **N PIII.60**
A.D. Pogrebnjak, Ch. Kong, R. Webster, Y. Takeda, O.V. Bondar, L.S. Baymoldanova, P. Zukowski, T. Koltunowicz
Sumy State University, 2, R.-Korsakova st., 40007 Sumy, Ukraine (A.D. Pogrebnjak, O.V. Bondar) Mark Wainwright Analytical Centre, University of New South Wales, Sydney, NSW 2052, Australia (Ch. Kong, R. Webster) 3. Research Center for Advanced Measurement and Characterization, National Institute for Materials Science (NIMS), Tsukuba, Ibaraki 305-0003, Japan (O.V. Bondar, Y. Takeda) 4. D. Serikbayev East Kazakhstan State Technical University, 69, Protozanov st., 070004 Ust-Kamenogorsk, Republic of Kazakhstan (L.S. Baymoldanova) 5. Lublin University of Technology, Nadbystrzycka 38 D, 20-618 Lublin, Poland (P. Zukowski, T. Koltunowicz)

17:00 **Nanofibrous composite hemodiafiltration membrane: a facile approach towards tuning the barrier layer for enhanced performance** **N PIII.61**
Yadong Zhu, Xufeng Yu, Tonghui Zhang, Weikang Hua, Xuefen Wang
State Key Lab for Modification of Chemical Fibers and Polymer Material, Donghua University, Shanghai, 201620, P.R. China

17:00 **PAN/UiO-66-(COOH)2 nanofibrous membranes for effective recovery of Lanthanide ions and their photoluminescence performances** **N PIII.62**
Weikang Hua, Xuefen Wang
State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai, 201620, P.R. China

17:00 **Planting Carbon Nanotubes onto Supramolecular Polymer Matrixes for Waterproof Non-Contact Self-Healing** **N PIII.63**
Bo Li, Ning Ma
College of Material Science and Chemical Engineering, Harbin Engineering

17:00 **Robust superhydrophobic dual layer nanofibrous composite membrane with hierarchically structured skin for membrane distillation** **N PIII.64**
Li Deng, Peiyun Li, Kang Liu, Xuefen Wang, Benjamin S. Hsiao
Li Deng, Peiyun Li, Kang Liu, Xuefen Wang, State Key Lab for Modification of Chemical Fibers and Polymer Materials, Donghua University, Shanghai, 201620, P.R. China Benjamin S. Hsiao, Department of Chemistry, Stony Brook University, Stony Brook, NY 11794, USA

17:00 **Fabrication of self-cooling silica pyramidal structure for solar cell by using radiative cooling** **N PIII.65**
Byung Seong Bae, Sae Joong Oh, Seong Soo Choi
Hoseo University, SunMoon University

17:00 **Deposition of O-doped g-C3N4 films on Ti surface for hydrogen evolution electrodes** **N PIII.66**
M. Bondarenko, P. Silenko, Yu. Solonin, N. Gubareni, O. Khyzhun, N. Ostapovskaya
Frantsevich Institute for Problems of Materials Science of NASU, Krzhyzhanovsky St. 3, 03142 Kiev, Ukraine

17:00 **Effect of thermal annealing on the optoelectronics properties of Cu-Fe-O thin films deposited by reactive magnetron sputtering** **N PIII.67**
H. Ben Jbara1,2, M. Arab Pour Yazdi3, D. Abdelkadera1, M. Kanzari1,4 and A. Billard3
1 Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs, ENIT-Université Tunis El Manar, BP 37, Le belvédère, 1002 Tunis, Tunisie. 2 Ecole Nationale Supérieure d'Ingénieurs de Tunis, Université de Tunis , 13 Ave Taha Hussein Montfleury, 1008 Tunis, Tunisie. 3 Institut FEMTO-ST, UMR 6174 CNRS, Univ. Bourgogne Franche-Comté, UTBM, Site de Montbéliard, F-90010 Belfort Cedex, France. 4 Institut Préparatoire aux Etudes d'Ingénieurs de Tunis, Université de Tunis, Montfleury 1089 Tunis, Tunisie

17:00 **Effect of carbon fiber coating with functionalized carbon nanotubes on the fiber surface topography and the fiber-polymer interf** **N PIII.68**
Donghwan Cho, Dongkyu Lee, Oh Hyeong Kwon, and Won Ho Park
Kumoh National Institute of Technology, Chungnam National University

Friday 31 may 2019

Plasmonic and photocatalytic thin films : Albano CAVALEIRO

08:30 INV **Hybrid plasmonic-photonic nanosensor with zeptogram sensitivity** **N 9.1**
Julien Proust, Jérôme Martin, Davy Gérard, Jean-Louis Bijeon, Jérôme Plain
Light, Nanomaterials, Nanotechnologies (L2n), Institut Charles Delaunay, CNRS, Université de Technologie de Troyes, France

09:00 **Bimetallic Pt-Bi and Pt-Cu Nanoclusters grown in a Gas Aggregation Source (GAS) for glycerol electrocatalytic oxidation** **N 9.2**
William Chamorro-Coral1, Amaël Caillard1, Pascal Brault1, Christophe Coutanceau2, Stève Baranton2
1 GREMI, UMR 7344, CNRS-Université d'Orléans, BP6744, 45067 Orléans cedex 2, France, 2 IC2MP UMR7285 CNRS Université de Poitiers, TSA 51106, 86073 Poitiers cedex 9, France

09:15 **Thin films based on quantum dots, plasmonic nanostructures and hybrid composites for UV-SWIR photodetectors.** **N 9.3**
Dana Cristea, Paula Obreja, Roxana Tomescu
National Institute for R&D in Microtechnologies – IMT Bucharest, Romania

09:30 **Metasurface Photonic Materials for Efficiency Improvement in Phosphorescent P-OLED Devices** **N 9.4**
Chenguang D. Wang1 and Deirdre M. O'Carroll1,2
1Trinity College Dublin, School of Physics, College Green, Dublin 2, Ireland
2Rutgers University, Department of Materials Science and Engineering, 607 Taylor Rd., Piscataway, New Jersey 08840, USA

09:45 **Manipulation of physical properties by interplay of nanostructuring and plasmons** **N 9.5**
Yukiko Yasukawa 1, Ryosuke Hara 1, 2, Haruki Yamane 3, Masanobu Kobayashi 1
1. Chiba Institute of Technology, Narashino, Japan. 2. Nihon Dempa Kogyo Co., Ltd., Sayama, Japan. 3. Akita Industrial Technology Center, Akita, Japan.

10:00 **Coffee Break**

Plasmonic and photocatalytic thin films (cont.) : Gregory ABADIAS & Jerome PLAIN

10:30 **Nanocomposite structures exhibiting Localized Surface Plasmon Resonance obtained by sputtering techniques** **N 9.6**
N.M. Figueiredo, A.Cavaleiro
SEG-CEMMPRE Mechanical Engineering Department, University of Coimbra, 3030-788 Coimbra, Portugal

10:45 **Morphology-controlled synthesis of ZnO nanostructures by plasma afterglow oxidation process for photocatalytic applications** **N 9.7**
T. Gries, A. Imam, A. Altaweel, J. Ghanbaja, T. Belmonte
Institut Jean Lamour, CNRS UMR 7198, Université de Lorraine, Nancy, F-54000, France

11:00 **Growth of 3D Nanoporous Metallic Networks by PVD, and Their Optical and Photocatalytic Properties** **N 9.8**
Racheli Ron, Adi Salomon
Department of Chemistry, Bar Ilan Institute of Nanotechnology and Advanced Materials (BINA), Bar Ilan University.

11:15 **Engineered Photo-Electrochemical Properties of Nano-Structured SnO2** **N 9.9**
Zineb Kerrami, Anass Sibari, Omar Mounkachi, Abdelilah Benyoussef, Mohammed Benaissa
LaMCScI, Faculty of Sciences P.B. 1014, Mohammed V University Rabat

11:30 **GeSnSiO2 layers with embedded GeSn nanocrystals for sensing in SWIR** **N 9.10**
A. Slav1, C. Palade1, C. Logofatu1, I. Dascalescu1, A.M. Lepadatu1, I. Stavarache1, S. Iftimie3, V. Braic2, S. Antohe3, S. Lazanu1, V.S. Teodorescu1, D. Buca4, M.L. Ciurea1,5, T.Stoica1, M.Braic2
1National Institute of Materials Physics, 405A Atomistilor St., 077125 Magurele, Romania. 2National Institute for Optoelectronics, 409 Atomistilor St., 077125 Magurele, Romania. 3University of Bucharest, Faculty of Physics, 405 Atomistilor St., 077125 Magurele, Romania. 4Peter Grünberg Institut (PGI 9) and JARA Fundamentals of Future Information Technologies, Forschungszentrum Jülich, 52425 Jülich, Germany 5Academy of Romanian Scientists, 050094 Bucharest, Romania

11:45 **Optical monitoring of magnetron sputtered ZrN films for plasmonic applications** **N 9.11**
Jiri Bulir, Joris More Chevalier, Ladislav Fekete, Katerina Horakova, Jan Drahokoupil, Michal Novotny, Jan Lancok
Institute of Physics of the Czech Academy of Sciences, Na Slovance 2, 18221 Prague 8

12:00 **Development of plasmonic sensors based on thin films composed by Au(-Ag) nanoparticles embedded in dielectric matrixes** **N 9.12**
Joel Borges, Diana I. Meira, Marco S. Rodrigues, Filipe Vaz
Joel Borges1,2, Diana I. Meira1, Marco S. Rodrigues1, Filipe Vaz1,2 1 Centro de Física, Universidade do Minho, Campus de Gualtar, Braga, Portugal 2 SEG-CEMMPRE Mechanical Engineering Department, University of Coimbra, 3030-788 Coimbra, Portugal

12:15 **Nanostructured thin films with Au nanoparticles for plasmonic sensing** **N 9.13**
Marco S. Rodrigues, Joel Borges, Nicolas Martin, Filipe Vaz
Marco S. Rodrigues (1), Joel Borges (1), Nicolas Martin (2), Filipe Vaz (1) (1) Centro de Física, Universidade do Minho, Campus de Gualtar, Braga, Portugal 2) Institut FEMTO-ST, UMR 6174 CNRS, Univ. Bourgogne Franche-Comté, Besançon, France

12:30 **End of Symposium and Lunch**

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM O

Synthesis, processing and characterization of nanoscale multi functional oxide films VII

Symposium Organizers :

Florencio SANCHEZ, ICMAB-CSIC, Bellaterra, Spain

Maryline GUILLOUX-VIRY, University of Rennes, France

Valentin CRACIUN, INFLPR, Bucharest, Romania

Zoe BARBER, University of Cambridge, U.K.

To be published in Thin Solid Films, Elsevier

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Monday 27 may 2019

Semiconducting oxides : -

10:30 INV **Multifunctional Low Cost Metal Oxides: From Materials to Devices** **O 1.1**
Elvira Fortunato
i3N/CENIMAT, Department of Materials Science from Faculty of Science and Technology, Universidade NOVA de Lisboa and CEMOP/UNINOVA, Campus de Caparica, 2829-516 Caparica, Portugal

11:00 **What limits the conductivity of ZnO:Al thin films? A new model to link electrical properties and deposition conditions** **O 1.2**
Viet Huong Nguyen, Ulrich Gottlieb, Anthony Valla, Bruno Masenelli, Delfina Muñoz, Daniel Bellet, David Muñoz-Rojas
Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, F-38000 Grenoble, France. Univ. Grenoble Alpes, CEA, LITEN, INES, 73375 Le Bourget-du-Lac, France Institut des Nanotechnologies de Lyon, INL, CNRS-UMR5270, INSA-Lyon, 69622 Villeurbanne, France

11:15 **Understanding mobility trends in transition metal doped In2O3:M (M = Mo, Hf, Zr, Sn)** **O 1.3**
Sebastian C. Dixon[1], Hidenori Hiramatsu[2], Hideo Hosono[2], Claire J. Carmalt[1], Ivan P. Parkin[1]
[1] Materials Chemistry Centre, University College London, 20 Gordon Street, London WC1H OAJ, UK, [2] Materials Research Center for Element Strategy, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan

11:30 **β-gallium oxide Ga2O3 by plasma-assisted atomic layer deposition and post process annealing.** **O 1.4**
H. Kröncke 1*, M. Rusu 1, S. Wiesner 1, N. Maticiuc 1, I. Lauermann 1, V. Deshpande 1, C. Dubourdieu 1,2
1 Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany 2 Freie Universität Berlin, Institut für Chemie und Biochemie, Berlin, Germany

11:45 **Enhanced Mobility in Cation Doped SnO2-Based Transparent Conductors** **O 1.5**
Thomas J. Featherstone(1), Benjamin A. D. Williamson(2,3), Sanjayan S.Sathasivam (4), Jack E. N. Swallow(1), Huw Shiel(1), Leanne A. H. Jones(1), Matthew J.Smiles(1), Anna Regoutz(5), Tien-Lin Lee(6), David A. Duncan(6), Pardeep Kumar Thakur(6), Vin R. Dhanak(1), Claire J. Carmalt(4), Ivan P. Parkin(4), Tim D. Veal(1), and David O. Scanlon(2,3,6)
(1)-Stephenson Institute for Renewable Energy and Department of Physics,University of Liverpool, Liverpool, L69 7ZF, UK (2)-Department of Chemistry, University College London, 20 Gordon Street, London, WC1H 0AJ, UK (3)-Thomas Young Centre, University College London, Gower Street, London, WC1E 6BT, UK (4)-Materials Research Centre, Chemistry Department, University College London,WC1H 0AJ, UK (5)-Department of Materials, Imperial College London, London SW7 2AZ, Uk (6)-Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Didcot, Oxfordshire OX11 0DE, UK

12:00 **Novel fabrication of transparent oxide film using Flash light sintering process** **O 1.6**
Hyojun Kim1, Taehyup Lim1, Sung-Hoon Ahn2 and Caroline Sunyong Lee1,†
1. Department of Materials and Chemical Engineering, Hanyang University, Ansan, South Korea 2. Department of Mechanical and Aerospace Engineering, Seoul National University, Seoul, South Korea

12:15 **The state-of-the-art technology of oxygen-negative-ion irradiation to control carrier concentration for tin-doped In2O3 films** **O 1.7**
Yutaka Furubayashi, Tetsuya Yamamoto
Research Institute, Kochi University of Technology

12:30 **Lunch**

Semiconducting oxides : -

14:00 INV **Rapid growth of oxides onto perovskite PV through chemical vapour deposition for improved performance and mechanical protection** **O 2.1**
Robert L. Z. Hoye
University of Cambridge, UK

14:30 **Preparation and characterization of oxide Light absorber thin films for photovoltaics** **O 2.2**
C. Tenailleau, G. Salek, T.L. Le, S. Guillemet-Fritsch
CIRIMAT, CNRS-INP-UPS, Université de Toulouse, France

14:45 **How to go further in printable oxide electronic materials** **O 2.3**
Emanuel Carlos*, Rita Branquinho*, Asal Kiazadeh*, Pedro Barquinha*, Nikolaos Kalfagiannis**, Demosthenes C. Koutsogeorgis**, Asko Sneck***, Jaakko Leppäniemi***, Ari Alastalo***, Rodrigo Martins* and Elvira Fortunato*
*i3N/CENIMAT, Department of Materials Science, Faculty of Sciences and Technology, Universidade NOVA de Lisboa and CEMOP/UNINOVA, Campus de Caparica, 2829-516 Caparica, Portugal, **School of Science and Technology, Nottingham Trent University, Nottingham, NG11 8NS, UK, ***VTT Technical Research Centre of Finland Ltd., Tietotie 3, Espoo FI-02150, Finland,

15:00 **Fast processing of In-doped ZnO transparent electrodes by spray pyrolysis from aqueous solution** **O 2.4**
Nina Winkler [1,2], Adhi Rachmat Wibowo [1], Wolfgang Kautek [2], Theodoros Dimopoulos [1]
[1] AIT Austrian Institute of Technology, Center for Energy, Photovoltaic Systems, Vienna, Austria [2] University of Vienna, Department of Physical Chemistry, Vienna, Austria

15:15 **Investigation of surface structure of single-crystalline Cu2O films for chemical sensors application** **O 2.5**
Lenka Volfová (1), Misha Vorokhta (2), Jiří Bulír (1), Michal Novotný (1), Martin Vondráček (1) , Martin Vrňata (3), Ján Lančok (1)
1) Institute of Physics of the Czech Academy of Sciences, Na Slovance 2, 182 21 Prague 8, Czechia 2) Department of Surface and Plasma Science, Faculty of Mathematics and Physics, Charles University, V Holešovičkách 2, 180 00 Prague 8, Czechia 2) Department of Physics and Measurements, University of Chemistry and Technology Prague, Technická 5, 166 28 Prague 6, Czechia

15:30 **Effectively Enhanced Electrical Properties of SnO2:Sb Films Fabricated by 3rd Generation Mist CVD Using Supporting Materials** **O 2.6**
Li Liu, Mariko Ueda, Misaki Nishi, Giang T. Dang, Hiroshi Yanagimoto, Tomoko Kozaki, Toshiyuki Kawaharamura
School of Sys. Eng., Kochi Univ. of Tech., Res. Inst., Kochi Univ. of Tech., Res. Inst., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., Material Engineering Div. No.2, Toyota Motor Corporation, Raw Material Development Div. No.2, Toyota Motor Corporation, School of Sys. Eng. & Res. Inst., Kochi Univ. of Tech.

15:45 **Improvement in bias stability of Zn-O-N thin-film transistors by Si doping** **O 2.7**
Aeran Song, Kwun-Bum Chung , Hojin Lee, Jang-Yeon Kwon
Division of Physics and Semiconductor Science, Dongguk University, Seoul 04620, Republic of Korea , Division of Physics and Semiconductor Science, Dongguk University, Seoul 04620, Republic of Korea , School of Electronic Engineering, Soongsil University, Seoul 07040, Republic of Korea , School of Integrated Technology, Yonsei University, Incheon 21983, Republic of Korea

16:00 **Coffee break**

Poster session :
Valentin Craciun, Maryline Guilloux-Viry, Zoe Barber, Florencio Sánchez

16:30 **Investigations of structure and electrical properties of TiO2/CuO thin film heterostructures** **O P3.1**
Damian Wojcieszak1, Agata Obstarczyk1, Jarosław Doamradzki1, Danuta Kaczmarek1, Tomasz Kotwica1, Katarzyna Zakrzewska2, Roman Pastuszek1
1 Wroclaw University of Science and Technology, Faculty of Microsystem Electronics and Photonics, Janiszewskiego 11/17, 50-372 Wroclaw, Poland 2 AGH University of Science and Technology, Faculty of Computer Science, Electronics and Telecommunications, al. Mickiewicza 30, 30-059 Kraków, Poland

16:30 **Thermal and dielectric properties of highly packed Al2O3-resin hybrid film made by inkjet printing** **O P3.2**
Hyun Bin Kim, Seong Guk Jeong, Dong In Jeong, Seung Hee Choi, Seok Bin Kwon, Young Hyun Song, Jong Hee Kim, Dae Ho Yoon
1 School of Advanced Materials Science and Engineering, Sungkyunkwan University (SKKU), Suwon, 440-746, Republic of Korea 2 SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University(SKKU), Suwon 440-746, Republic of Korea 3 Lighting Design & Component Research Center, Korea Photonics Technology Institute (KOPTI), Gwangju, 61007, Republic of Korea

16:30 **New etching process of zinc oxide with controllable etching rate and crystal plane: experiment, calculation, and membrane applic** **O P3.3**
Jiyong Chung, Jeong Hee Lee, Kyeounghak Kim, Jaeyoung Lee, Ki Yoon Kim, Sung Jong Yoo, Jeong Woo Han, Jinsoo Kim, and Taekyung Yu
Department of Chemical Engineering, College of Engineering, Kyung Hee University, Yongin 17140, Korea

16:30 **An investigation on hydrophobic titania coatings for enhanced corrosion resistance of carbon steel by sol-gel technology** **O P3.4**
Lai Xuan Bach, Vu Thi Hanh Thu, Nguyen Si Hoai Vu, Nguyen Dang Nam
University of Science and Technology of Hanoi, 18 Hoang Quoc Viet Street, Hanoi, 100000, Vietnam, Faculty of Physics and Engineering Physics, University of Science, VNU-HCM, 227 Nguyen Van Cu Street, District 5, Ho Chi Minh City 700000, Vietnam, Institute of Fundamental and Applied Sciences, Duy Tan University, 10C Tran Nhat Duat Street, District 1, Ho Chi Minh City 700000, Vietnam

16:30 **Oxidation of self-passivating precursors for tungsten-titanium oxide alloys with tailored stability** **O P3.5**
Sebastian Siol (1), Casey Beall (1,2), Noémie Ott (1), Max Döbeli (3), S. David Tilley (2), Lars P.H. Jeurgens (1), Patrik Schmutz (1), Claudia Cancellieri (1)
(1) Empa - Swiss Federal Laboratories for Materials Science and Technology, Überlandstrasse 129, 8600 Dübendorf, Switzerland (2) University of Zurich, Department of Chemistry, Winterthurerstrasse 190, 8057 Zurich, Switzerland (3) ETH Zurich, Ion Beam Physics, Otto-Stern-Weg 5, 8093 Zurich, Switzerland

16:30 **Effect of Post Annealing on Electrical Properties of Sol-gel based IGZO Transistor with High-k Al2O3 Gate Dielectric** **O P3.6**
Tae Hyeon Kim, Esther Lee, Jee Hoon Kim, Tae Gun Jeong, Jaeun Kim, Byungjin Cho*
Department of Advanced Material Engineering, Chungbuk National University, Chungbuk 28644, Republic of Korea

16:30 **Rapid low-temperature crystallization of indium oxide films via excimer lamp-based deep-ultraviolet photoactivation** **O P3.7**
Jun-Gyu Choi, Myung-Han Yoon
School of Materials and Science and Engineering, Gwangju Institute of Science and Technology, 123 Cheomdangwagi-ro, Buk-gu, Gwangju 61005, South Korea

16:30 **All transparent multi-switching device structured with SiO2 nanoparticle embedded TiOx matrix** **O P3.8**
Sera Kwon 1, Min Jung Kim 1, Kwun-Bum Chung 1, Hojin Lee 2
1 Division of physics and semiconductir science, Dongguk University 2 School of electronic engineering, Soongsil University

16:30 **Porous CuO films as produced by electrophoretic deposition from tailored CuO nanoparticle dispersions** **O P3.9**
Lars Dörner, Patrik Schmutz, Ralf Kägi, Maksym V. Kovalenko, Lars P.H. Jeurgens
Lars Dörner1,2, Patrik Schmutz1, Ralf Kägi3, Maksym V. Kovalenko2,4, Lars P.H. Jeurgens1 1 Empa – Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Joining Technologies & Corrosion, Dübendorf, Switzerland 2 ETH Zürich, Department of Chemistry and Applied Biosciences, Zürich, Switzerland 3 Department Process Engineering, Eawag, Swiss Federal Institute of Aquatic Science and Technology, Dübendorf, Switzerland 4 Laboratory for thin films and photovoltaics, Empa – Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland

16:30 **Modelling and characterization of Al-doped zinc oxide as electrode material for microfluidic systems** **O P3.10**
Oana Tatiana Nedelcu1, Mirela Suchea1,2, Titus Sandu1, Ioan Valentin Tudose2,3, Marian Popescu1, Petronela Pascariu4, Catalin Tibeica1
1 National Institute for Research and Development in Microtechnologies - IMT Bucharest, Romania, 2 Center of Materials Technology and Photonics, School of Electrical Engineering, Technological Educational Institute of Crete, Heraklion, Greece, 3 Chemistry Faculty, University of Crete, Heraklion, Crete, Greece, 4 ”Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania

16:30 **Behavior of human mesenchymal stem cells on various metal oxide thin film coatings produced by pulsed laser deposition** **O P3.11**
Mariya Khokhlova [a,b], Mira Hammad [b,c], Eva Lhuissier [b], Adrian David [a], Wilfrid Prellier [a], Karim Boumédiene [b,c]
[a] CRISMAT, CNRS UMR 6508, ENSICAEN, 6 Bvd Maréchal Juin, 14050 Caen Cedex, France, [b] BioConnect, Université de Caen Normandie, CHU Niveau 3, 14032 Caen Cedex, France, [c] Fédération Hospitalo Universitaire Surface

16:30 **Stretchability of aluminum oxide film synthesized by plasma enhanced atomic layer deposition** **O P3.13**
Jeong-Hyun Woo, Na-Hyang Kim, Sun-Young Park, Ju-Young Kim
School of Materials Science and Engineering, UNIST (Ulsan National Institute of Science and Technology), Ulsan 44919, Republic of Korea

16:30 **Formation of transition metal oxide nanopetals and nanowiskers from oxidation of thin metallic films for photocatalysis** **O P3.14**
Chiara Maurizio (1), Niccolò T. Michieli (1), Boris Kalinic (1), Anna Marafon (1), Leonardo Girardi (2), Gian-Andrea Rizzi (2), and Giovanni Mattei(1)
(1) Physics and Astronomy Department and CNISM, University of Padova, via Marzolo 8, I-35131 Padova, Italy, (2) Department of Chemical Sciences, University of Padova, via Marzolo 1, I-35131 Padova, Italy.

16:30 **Stretchable and transparent thermally-grown silicon dioxide film for encapsulation** **O P3.15**
Na-Hyang Kim, Hangeul Kim, Jeong-Hyun Woo, Sun-Young Park, and Ju-Young Kim
School of Materials Science and Engineering, UNIST(Ulsan National Institute of Science and Technology), Ulsan 44919, Republic of Korea

16:30 **Emission, Defects and Structure of In-doped ZnO Nanocrystal Films** **O P3.16**
B. El Filali1, J.A. Jaramillo Gomez1, T.V. Torchynska2, J.L. Casas Espinola2 and L. Shcherbyna3
1Instituto Politécnico Nacional, UPIITA, México City, 07320, México 2Instituto Politécnico Nacional, ESFM, México City, 07738, México 3V. Lashkaryov Institute of Semiconductor Physics at NASU, Kyiv 03028, Ukraine

16:30 **Zinc interstitial threshold in Al-doped ZnO film** **O P3.17**
Chetan C. Singh, Emila Panda
Department of Materials Science and Engineering, Indian Institute of Technology Gandhinagar, Palaj, Gandhinagar 382355, Gujarat, India

16:30 **Highly-stretchable thermally-grown silicon dioxide thin-film encapsulation with wavy structures** **O P3.18**
Hangeul Kim, Na-Hyang Kim, Jeong-Hyun Woo and Ju-Young Kim
School of Materials Science and Engineering, UNIST(Ulsan National Institute of Science and Technology), Ulsan 44919, Republic of Korea

16:30 **Inkjet-printed aluminum-doped zinc oxide nanostructures.** **O P3.19**
O. Shavdina (1), C. Grillot (2), A. Stolz (1), F. Delorme (3), V. Bertagna (2), N. Jimmy (2), F. Giovannelli (3), C. Vautrin-Ul (2), N. Semmar (1), C. Leborgne (1).
1.Université d'Orléans/CNRS 7344, Groupe de Recherches sur l'Energétique des Milieux Ionisés 2.Université d'Orléans/CNRS UMR 7374, Interfaces, Confinement, Matériaux et Nanostructures 3.Université de Tours/ CNRS 7347, Groupe de Recherche en Matériaux, Microélectronique, Acoustique et Nanotechnologies

16:30 **Lowering the threshold for ion track formation in GaN, MgO, MgAl2O4 and Al2O3** **O P3.20**
P. Dubček1, K. Tomić1, B. Šantić1, S. Fazinić1, R. Heller2, S. Akhmadaliev2, H. Lebius3, A. Benyagoub3, F. Scholz4, O. Rettig4, L. Bröckers5, M. Schleberger5, M. Karlušić1*
1RuđerBošković Institute, Bijenička cesta 54, 10000 Zagreb, Croatia 2 Helmholtz-Zentrum Dresden-Rossendorf, Bautzner Landstrase 400, 01328 Dresden, Germany 3 CIMAP, CEA-CNRS-ENSICAEN-UCN, BP 5133, 14070 Caen Cedex 5, France 4Institut für Optoelektronik, Universität Ulm, Albert-Einstein-Allee 45, 89081 Ulm, Germany 5 Fakultätfür Physik and Cenide, Universität Duisburg-Essen, Lotharstraße 1, 47057 Duisburg, Germany

16:30 **Vacuum Ultraviolet-assisted Sol-gel Processing of Metal Oxide Thin Films** **O P3.21**
Lina Sun, Yu Kurosawa, Tsukasa Yoshida, Yoshiyuki Suzuri
Yamagata University, Japan

16:30 **Intrinsic defects in Ga2O3 causing p-type and n-type behavior** **O P3.23**
Dieter Schmeißer1*, Klaus Müller1, Karsten Henkel1, and Christoph Janowitz2
1Angewandte Physik-Sensorik, BTU Cottbus-Senftenberg, K.-Wachsmann-Allee 17, 03046 Cottbus, Germany 2Institut für Physik, Humboldt-Universität zu Berlin, Newtonstr. 15, 12489 Berlin, German

16:30 **Improvement of polycrystalline structure, surface morphology and optical properties of ITO layers by RTA treatment** **O P3.24**
P. Prepelita 1, D. Craciun 1, I. Stavarache 2, F. Garoi 1, M. Dumitru 1, C. Negrila 2, B. Sbarcea 3, V. Craciun 1
1 National Institute for Laser, Plasma and Radiation Physics, PO Box MG-36, Magurele 077125, Ilfov, Romania 2 National Institute of Materials Physics, 105 bis Atomistilor Street, PO Box MG-7, Magurele 077125, Ilfov, Romania 3 ICPE-CA, Splaiul Unirii 313, Sector 3, 74204, Bucharest, Romania

16:30 **Analysis of defect states of oxide semiconductor films with multi-cations using photo-induced current transient spectroscopy.** **O P3.25**
Hyunmin Hong1, Kwun-Bum Chung1, Choi Dukhyun 2
1. Division of Physics and Semiconductor Science, Dongguk University, Seoul 04620, Republic of Korea 2. Division of Nanostructures and Nanomaterials, Kyunghee University, Yongin 17104, Republic of Korea

16:30 **Investigation of Vertical Current in the AlOx/IGZO Heterojunction Using XPS Analysis and Atmospheric Pressure Plasma Treatment** O P3.26

Nam-Kwang Cho, Hyun-Jae Na, Youn Sang Kim
Nam-Kwang Cho 1. Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 08826, Republic of Korea, Hyun-Jae Na 1. Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 08826, Republic of Korea, Youn Sang Kim 1. Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 08826, Republic of Korea 2. Advanced Institute of Convergence Technology, Suwon 443-270, Republic of Korea

16:30 **Synthesis and characterization of silver oxide nanoparticles by an wet chemical method** O P3.27

Alina Matei (1), Vasilica Ţucureanu (1,2), Marian Cătălin Popescu (1), Cosmin Romaniţan (1,3), Bianca Cătălina Ţîncu (1,4), Marioara Avram (1)
(1) National Institute for Research and Development in Microtehnologies IMT-Bucharest, 126A, Erou Iancu Nicolae Street, 077190 Bucharest, Romania (2) Transilvania University of Brasov, Department of Materials Science, 29 Eroilor Blvd, 500036 Brasov, Romania (3) Faculty of Physics, University of Bucharest, 405 Atomistilor Street, 077125 Magurele, Romania (4) University Politehnica of Bucharest, Faculty of Applied Chemistry and Materials Science, 1-7 Polizu, 0110

16:30 **Deposition of nanostructured SnO2 coatings for sensoric applications** O P3.28

Jiri Bulir, Ladislav Fekete, Jan Drahokoupil, Martin Vondracek, Michal Novotny, Premysl Fitl, Jan Lancok
Institute of Physics of the Czech Academy of Sciences, Na Slovance 2, 18221 Prague 8, Department of Physics and Measurements, University of Chemistry and Technology Prague

16:30 **Analysis of defect states of oxide semiconductor films with multi-cations using photo-induced current transient spectroscopy** O P3.29

Hyunmin Hong1, Kwun-Bum Chung1, Choi Dukhyun 2
1. Division of Physics and Semiconductor Science, Dongguk University, Seoul 04620, Republic of Korea 2. Division of Nanostructures & Nanomaterials, Kyunghee University, Yongin 17104, Republic of Korea

16:30 **The Synthesis of ZnO NWs for the Fabrication of N-ZnO NWs/P-CZTS Structured Core/Shell Solar Cells** O P3.30

Elif PEKSU, Hakan KARAAGAC
Istanbul Technical University, Department of Physics

16:30 **Conducting indium oxide films on plastic substrates by plasma enhanced reactive thermal evaporation** O P3.31

Y. Vygranenko (1), M. Fernandes (1&2), M. Vieira (1&2), G. Lavareda (1&3), C. Nunes de Carvalho (3&4), P. Brogueira (4&5), A. Amaral (4&5)
1) CTS-UNINOVA, Campus da Caparica, 2829-516 Caparica, Portugal 2) Departamento de Engenharia Electrónica e Telecomunicações e de Computadores, ISEL, Lisbon, 1950-062, Portugal 3) Departamento de Ciência dos Materiais, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica 4) CeFEMA, Instituto Superior Técnico, Av. RoviscoPais 1, 1049-001 Lisboa, Portugal 5) Departamento de Física, Instituto Superior Técnico, Universidade de Lisboa, 1049-001 Lisboa, Portugal

16:30 **Optical characterization of high work function transparent conductive oxide thin films prepared by pulsed laser deposition** O P3.32

1 Eva Horynova, 1 Brianna Conrad, 1 Amalraj Peter Amalathas, 1 2 Lucie Abelova, 3 Ognen Pop-georgievski, 2 Zdenek Remes, 1 2 Jakub Holovsky
1 CTU Faculty of Electrical Engineering, Technicka 2, 166 27 Prague, Czech Republic, 2 Institute of Physics CAS, Cukrovarnicka 10/112, 162 00 Prague, Czech Republic, 3 Institute of Macromolecular Chemistry CAS, Heyrovskeho nam. 2, 162 06 Prague, Czech Republic,

16:30 **Modification of tungsten surfaces by thermal oxidation and subsequent reduction in H2 plasma** O P3.33

L. G. Carpen, T. Acsente, B. I Bita, V. Marascu, V. Satulu, G. Dinescu
L. G. Carpen - INFLPR, Atomistilor 409 str, Bucharest- Magurele, Romania,University of Bucharest, Faculty of Physics, Atomiştilor 405 str, Magurele, Bucharest, Romania T. Acsente - INFLPR, Atomistilor 409 str, Bucharest-Magurele, Romania B. I Bita - INFLPR, Atomistilor 409 str, Bucharest- Magurele, Romania,University of Bucharest, Faculty of Physics, Atomiştilor 405 str, Magurele, Bucharest, Romania V. Marascu - INFLPR, Atomistilor 409 str, Bucharest-Magurele, Romania,University of Bucharest, Faculty of Physics, Atomiştilor 405 str, Magurele, Bucharest, Romania V. Satulu - INFLPR, Atomistilor 409 str, Bucharest-Magurele, Romania G. Dinescu - INFLPR, Atomistilor 409 str, Bucharest- Magurele, Romania,University of Bucharest, Faculty of Physics, Atomiştilor 405 str, Magurele, Bucharest, Romania

16:30 **Comparative analysis of the structural, optical and electrical properties of Al, Mg, Sn doped n type ZnO films for applications** O P3.34

G. El Hallani 1, M. Khuili 1, N. Fazouan 2,1,*, A. Liba 1, O. Mounkachi 3, A. Mzerd 4, L. Laanab 5, E. H. Atmani 2
(1) Physical Materials Laboratory. Faculty of Sciences and Technologies, Beni Mellal, Morocco (2) Physics of Condensed Matters and Renewables Energies Laboratory. Faculty of Sciences and Technologies, Mohammedia, Morocco (3) Condensed Matter and Interdisciplinary Sciences Laboratory , Faculty of Sciences ,Rabat, Morocco (4) Physical Materials Laboratory. Faculty of Sciences, Rabat, Morocco (5) Conception Systems Laboratory, Faculty of Sciences, Rabat, Morocco
(*) Corresponding author fazouan@yahoo.fr

16:30 **Thin Film Growth Mechanism in CVD using Flow Containing Mist Droplets** O P3.35

Toshiyuki Kawaharamura, Misaki Nishi, Li Liu, Masahito Sakamoto, Phimolphan Rutthongjan, Shota Sato, Mariko Ueda, Tatsuya Yasuoka, Yuki Tagashira, Tamako Ozaki, Giang T. Dang
School of Sys. Eng., & Res. Inst., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech.,

16:30 **TCOs by sputter deposition: Impact of sputter-damage on Perovskite films for application in tandem solar cells** O P3.36

Marlene Härtel, Ruslan Muydinov, Steve Albrecht, Bernd Szyszka
Technische Universität Technologie für Dünnschicht-Bauelemente, Berlin, Deutschland, Helmholtz-Zentrum Institut für Silizium Photovoltaik, Berlin, Deutschland

16:30 **Influence of annealing on luminescence and energy transfer in ZnO films co-doped with Tb and Eu** O P3.37

N. Korsunska1, L. Borkovska1, L. Khomenkova1, O. Kolomys1, V. Strelchuk1, T. Sabov1, O. Oberemok1, X. Portier2
1V.Lashkaryov ISP of NAS of Ukraine, 45 Pr. Nauky, 03650, Kyiv, Ukraine, 2CIMAP, Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, 6 Blvd. Maréchal Juin, 14050 Caen, France

16:30 **Effect of HCl on fabrication of α-Ga2O3 by Mist CVD** O P3.38

Tatsuya Yasuoka, Masahito Sakamoto, Tamako Ozaki, Yuki Tagashira, Li Liu, Giang. T. Dang, Toshiyuki Kawaharamura
School of Systems Engineering Course, Kochi University of Technology, Intelligent Mechanical Systems Engineering Course, Kochi University of Technology, School of Systems Engineering Course, Kochi University of Technology, Intelligent Mechanical Systems Engineering Course, Kochi University of Technology, School of Systems Engineering Course, Kochi University of Technology, School of Systems Engineering Course, Kochi University of Technology, School of Systems Engineering Course & Center for Nanotechnology, Research Institute, Kochi University of Technology,

16:30 **Thermal Oxidation and the Formation of Aluminum-Oxide Layer on the Surface of 40-Micron Fe-Cr-Al Fibers** O P3.39

Osama M. Ibrahim
Mechanical Engineering Department, College of Engineering and Petroleum, Kuwait University

16:30 **Controlled Anodic Oxidation Between Iridium Oxide Formation and Titanium Anodization** O P3.40

Hansaem Jang, Jaeyoung Lee
(a) Electrochemical Reaction & Technology Laboratory (ERTL), School of Earth Sciences and Environmental Engineering (SESE), Gwangju Institute of Science and Technology (GIST), Gwangju 61005, South Korea, (a) ERTL, SESE, GIST, Gwangju 61005, South Korea, (b) Ertl Center for Electrochemistry and Catalysis, GRI, GIST, Gwangju 61005, South Korea

16:30 **Evaluation of electrode synthesized with Copper-based transition metal catalysts using UV assisted method for hydrogen evolution** O P3.41

Sangmin Jeong, Tri Khoa Nguyen, Jong-sang Youn, Inhwan Oh, Hari Kang, Ki-Joon Jeon
Department of Environmental Engineering, Inha University, Incheon 402-751, Korea

16:30 **Plasmon-phonon interaction in textured ZnO/Si structures studied by means of infrared spectroscopy** O P3.42

Ye. Venger (1), N. Korsunska (1), L. Melnichuk (1), O. Melnichuk (2), X. Portier (2), L. Khomenkova (1)
(1) V. Lashkaryov ISP of NAS of Ukraine, 45 Pr. Nauky, 03650, Kyiv, Ukraine, (2) Mykola Gogol State University of Nizhyn, 2 Hrafska Str., Nizhyn 16600, Ukraine, (3) CIMAP/ENSICAEN/Normandie Université/CEA/CNRS, 6 Blvd Marechal Juin, 14000 Caen, France

16:30 **Yttrium doped ZnO thin films and Multilayers** **O P3.43**
Halil Arslan
Andris Azens, Martins Zubkins, Juris Purans

16:30 **Thickness dependence of electrical properties of AZO films with a columnar structure** **O P3.44**
Petr Novák (1), Tomáš Kozák (2), Petra Šotová (1), Jan Očenášek (1), Rostislav Medlín (1), Marie Netrvalová (1)
(1) New Technologies – Research Centre, University of West Bohemia, Plzeň, Czech Republic, (2) Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Plzeň, Czech Republic

16:30 **Electrochromic properties of the vanadium pentoxide with oxygen flow effects** **O P3.45**
Tien-Chai Lin1, Bai-Jhong Jheng1, Nien-Yu Wu2, Wen-Chang Huang2, 3*
1 Department of Electrical Engineering, Kun Shan University, No. 195, Kun-Da Rd., Yung-Kang Dist., Tainan, 71003, Taiwan, ROC 2 Green Energy Technology Research Center, Kun Shan University, No. 195, Kun-Da Rd., Yung-Kang Dist., Tainan, 71003, Taiwan, ROC 3 Department of Electro-Optical Engineering, Kun Shan University, No. 195, Kun-Da Rd., Yung-Kang Dist., Tainan, 71003, Taiwan, ROC

16:30 **Origin of Nb2O5 Lewis Acid Catalysis for Activation of Carboxylic Acids in the Presence of Hard Base** **O P3.46**
Pussana Hirunsit,*[a] Takashi Toyao,[b,c] S. M. A. Hakim Siddiki,[b] Ken-ichi Shimizu,[b,c] Masahiro Ehara[c,d]
[a] National Nanotechnology Center (NANOTEC), Thailand Science Park, Patum thani 12120, Thailand, [b] Catalysis Research Center, Hokkaido University, Kita 21 Nishi 10, Kita-ku, Sapporo, Hokkaido 001-0021, Japan, [c] Elements Strategy Initiative for Catalysts and Batteries (ESICB), Kyoto University, Kyoto 615-8520, Japan, [d] Institute for Molecular Science, Nishigo-naka 38, Myodai-ji, Okazaki, Aichi 444-8585, Japan,

16:30 **Advanced Characterization of the effect of front layer passivation on Cu(In,Ga)Se2** **O P3.47**
M. A. Curado1,2, H. V. Alberto2, R. C. Vilão2, A. F. A. Simões2, J. M. Gil2, T. Prokscha3, A. Suter3, Z. Salman3, J. M. V. Cunha1,4, P. A. Fernandes1,6,7, O. Donzel-Gargand1,5, A. Hultqvist5, M. Edoff5,J. Leitão4,6, P. M. P. Salomé1,4
1)INL – International Iberian Nanotechnology Laboratory, Avenida Mestre José Veiga, 4715-330 Braga, Portugal 2)CFisUC,Departamento de Física, Universidade de Coimbra, 3004-516 Coimbra, Portugal 3)Laboratory for Muon Spin Spectroscopy, Paul Scherrer Institut, CH-5232 Villigen PSI, Switzerland 4) Departamento de Física, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal 5)Ångström Laboratory, Solid State Electronics, Ångström Solar Center, Uppsala University, SE-751 21 Uppsala, Sweden 6)I3N, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal 7)CIETI, Departamento de Física, Instituto Superior de Engenharia do Porto, Instituto Politécnico do Porto, Porto 4200-072, Portugal

16:30 **Influence of lithium doping on the electrical properties and ageing effect of ZnSnO thin film transistors** **O P3.48**
Byung-Hyuk Jun, In-Hwan Cho, Chan-Joong Kim
Neutron Utilization Research Division, Korea Atomic Energy Research Institute (KAERI), Republic of Korea

16:30 **Application of ZTO nanoparticles and porous silicon layer as an antireflection coating for silicon solar cells efficiency increa** **O P3.49**
Malek Atyaoui , Tayssir Ben Amara , and Hatem Ezzaouia
Laboratoire des nanostructures, des semi-conducteurs et des technologies avancées, Centre des recherches et des technologies de l'énergie, technopole de Borj-Cédria, PB :95,Hammam Lif 2050, Tunisia

16:30 **Electrical and optical properties of Al doped ZnO transparent conducting films fabricated by low temperature Spin-Spray depositi** **O P3.50**
Cheol Park1, Jae-Wook Kang2, Sukeun Yoon1, Jihoon Kim1*.
Division of Advanced Materials Engineering, Kongju National University, Cheonan, Chungchungnam 31080, Korea. Department of Flexible and Printable Electronics, Chonbuk National University, Chonbuk 54896, Korea.

Tuesday 28 may 2019

Oxide interfaces : -

08:30 INV **Freestanding oxide heterostructure membranes produced by disruptive strain relaxation** **O 4.1**
F. Miletto Granozio
CNR-SPIN, UOS Napoli

09:00 **Origin of the two-dimensional electron gas at the interface between BaSnO3/LaInO3** **O 4.2**
Toni Markurt 1, Martina Zupancic 1, Martin Albrecht 1, Wahib Aggoune 2, Claudia Draxl 2, Young Mo Kim 3, Youjung Kim 3, and Kookrin Char 3
1 Leibniz-Institut für Kristallzüchtung, Max-Born-Str. 2, 12489 Berlin, Germany, 2 Humboldt-Universität zu Berlin, Institut für Physik und IRIS, Zum Großen Windkanal 6, 12489 Berlin, Germany, 3 Institute of Applied Physics, Department of Physics and Astronomy, Seoul National University, Seoul 151-747, South Korea

09:15 **(La,Sr)MnO3 / (Ba,Sr)TiO3 interface chemical modulation and band structure tuning** **O 4.3**
J. Wolfman*, A. Ruyter*, B. Negulescu*, P. Andreazza†, C. Autret*, X. Wallart‡
* GREMAN, UMR7347 CNRS, Université de Tours, Parc de Grandmont, F-37200 Tours, France † ICMN, UMR 7374 CNRS, Université d'Orléans, 1b rue de la Férollerie, F-45071 Orléans, France ‡ Univ. Lille, CNRS, Centrale Lille, ISEN, Univ. Valenciennes, UMR 8520 -IEMN, F-59000 Lille, France

09:30 **Cofee break**

Advanced characterization : -

10:00 INV **Quantitative electron microscopy on oxides : local strain and chemistry mapping** **O 5.1**
B.Warot-Fonrose, C.Gatel, R.Arras, M.J. Casanove
CEMES-CNRS, 29 rue Jeanne Marvig, 31055 Toulouse

10:30 **STEM investigations of strain relaxation in SrRuO3 artificial atoms** **O 5.2**
Hongguang Wang, Vesna Srot, Gennadii Laskin, Jochen Mannhart, Peter A. van Aken
Max Planck Institute for Solid State Research, 70569 Stuttgart, Germany

10:45 **High-Temperature Characterization of Expansion and Defect Chemistry of Thin-Film Praseodymium Cerium Oxide** **O 5.3**
Hendrik Wulfmeier1, Silja Schmidtchen1, Thomas Defferriere2, Harry L. Tuller2, Holger Fritze1
1 Clausthal University of Technology, Institute of Energy Research and Physical Technologies, Am Stollen 19 B, D-38640 Goslar, Germany, 2 Massachusetts Institute of Technology, Department of Materials Science and Engineering, 77 Massachusetts Ave, Cambridge, MA 02139, USA

11:15 **Plenary session 1**

12:30 **Lunch**

Functional oxides : -

14:00 INV **Piezotronics and Piezo-phototronics of the Third Generation Semiconductors** **O 6.1**
Zhong Lin WANG
School of Material Science and Engineering, Georgia Institute of Technology, Atlanta, Georgia 30332-0245, USA, Beijing Institute of Nanoenergy and Nanosystems, CAS, Beijing, 100083, China

14:30 **W doped VO2 thin films, electronic and structural investigations of the MIT** **O 6.2**
M. Gaudin, M. M. Villamayor, A. Bailly, A. Ramos, P. Bouvier, S. Grenier, M. Chaker, L. Magaud, L. Laversenne
Institut Néel, CNRS, Grenoble, France, Institut Néel, CNRS, Grenoble, France, Institut Néel, CNRS, Grenoble, France, Institut Néel, CNRS, Grenoble, France, Institut Néel, CNRS, Grenoble, France, Institut Néel, CNRS, Grenoble, France, EMT, INRS, Varennes, Canada, Institut Néel, CNRS, Grenoble, France, Institut Néel, CNRS, Grenoble, France

14:45 **Key crystallographic defects that suppress superconductivity in Sr2RuO4 thin films** **O 6.3**
Carla M. Palomares García [1], A. Di Bernardo [1], G. Kimbell [1], M. E. Vickers [1], Y. Yasui [2], B. Kim [3], S. Komori [1], Y. Maeno [2], T. W. Noh [3], J. W. A. Robinson [1].
[1] Department of Materials Science & Metallurgy, University of Cambridge, United Kingdom, [2] Department of Physics, Graduate School of Science, Kyoto University, [3] Institute of Basic Science, Center for Correlated Electron Systems, Seoul National University.

15:00 **Hybrid photonic platforms based on erbium-doped oxide thin layers.** **O 6.4**
A. Ruiz-Caridad1, G. Marcaud1, J. M. Ramirez1, J. Zhang1, L. Largeau1, T. Maroutian1, S. Matzen1, C. Alonso-Ramos1, S. Collin1, G. Agnus1, S. Guerber1,2, C. Baudot2, F. Boeuf2, E. Duran-Valdeiglesias1, V. Vakarin1, E. Cassan1, D. Marris-Morini1, P. Lecoeur1, L. Vivien1.
1 Centre de Nanosciences et Nanotechnologies (C2N), Univ Paris Sud, CNRS UMR 9001, Université Paris-Saclay, Palaiseau, 91120, France. 2 Technologie R&D, STMicroelectronics, SAS, 850 rue Jean Monnet – 38920 Crolles, France

15:15 **Ferroelectric Inorganic Perovskite Oxides for Photovoltaic Applications** **O 6.5**
A. Quattropani1, D. Stoefffler2, C. Lefèvre2, J.L. Rehspringer2,G. Schmerber2, G. Versini2, M. Rastei2, B. Kundys2, S. Colis2, A. Dinia2, T. Fix 1, A. Slaoui1
1 CNRS and Université de Strasbourg, ICube Laboratory, 67037 Strasbourg, France 2 CNRS and Université de Strasbourg, Institut de Physique et Chimie des Matériaux de Strasbourg, F-67034 Strasbourg, France

15:30 INV **Oxide thin films by pulsed electron beam deposition: growth and properties** **O 6.6**
M. Nistor
National Institute for Lasers, Plasma and Radiation Physics (NILPRP), L22, PO Box. MG-36, 77125 Bucharest-Magurele, Romania

16:00 **Coffee break**

Functional oxides : -

16:30 INV **Growth of oxide films using combinatorial substrate epitaxy** **O 7.1**
Wilfrid PRELLIER
Laboratoire CRISMAT CNRS ENSICAEN

17:00 **Capabilities of ion-beam sputter-deposition using radio-frequency ion-sources – combinatorial growth and buffer layers** **O 7.2**
M. Becker, F. Michel, F. Kuhl, A. Polity, S. Chatterjee, and P. J. Klar
Institute of Experimental Physics I and Center for Materials Research, Heinrich-Buff-Ring 16, Justus Liebig University Giessen, D-35392 Giessen, Germany

17:15 **Growth of an artificial multiferroic heterostructures: Fe thin films on ferroelectric oxides** **O 7.3**
S. Basov1, M. J. Van Bael2, A. Vantomme1, and K. Temst1
1. Instituut voor Kern- en Stralingsfysica, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium 2. Laboratorium voor Vaste-Stoffysica en Magnetisme, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium

17:30 **Synaptic plasticity and meta-plasticity of NaNbO3 thin film memristor grown on TiN/SiO2/Si substrate for artificial synapse** **O 7.4**
Jong-Un Woo, Hyun-Gyu Hwang, Sung-Mean Park, Sahn Nahm
KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul 136-701, South Korea, KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul 136-701, South Korea, Department of Materials Science and Engineering, Korea University, Seoul 136-701, South Korea, KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul 136-701, South Korea and Department of Materials Science and Engineering, Korea University, Seoul 136-701, South Korea

17:45 **Hybrid Switching in SiOx RRAM Devices with Ag top Electrodes** **O 7.5**
Sherif Ibrahim, Wing Ng, Daniel Mannion, Adnan Mehonic, and Anthony J Kenyon.
Department of Electronic & Electrical Engineering, University College London, Torrington Place, London WC1E 7JE

Wednesday 29 may 2019

Ferroelectric oxides : -

08:30 INV **Soft chemistry assisted nanostructured functional oxides on Si integrated systems** **O 8.1**
J. M. Vila-Fungueiriño(1), A. Gómez (2), Q. Zhang (1,2), D. Sanchez (1), G. Saint-Girons (3), N. Mestres (2), C. Magén (4), J. Gázquez (2), R. Bachelet (3), M. Gich (2), A. Carretero-Genevrier (1) *
Institut d&#8217,Electronique et des Systemes (IES), CNRS, Universite Montpellier 2 860 Rue de Saint Priest 34095 Montpellier, France

09:00 **Control of ferroelectric polarization by light** **O 8.2**
I. Fina, F. Liu, F. Sanchez, J. Fontcuberta
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, Bellaterra 08193, Barcelona, Spain

09:15 **Enhanced dielectric properties of Pb(Zr0.2Ti0.8)O3 /SrTiO3 superlattices** **O 8.3**
M. Gharbi1, F. Le Marrec1, C. Davoisne2, L. Dupont2, J. L. Dellis1, M.G. Karkut1, A. Sylvestre3 and N. Lemée1
1 LPMC, EA 2081, University of Picardie Jules Verne, 80039 Amiens, France 2 LRCS, UMR CNRS 7314, University of Picardie Jules Verne, 80039 Amiens, France 3 University of Grenoble Alpes, CNRS, Grenoble INP, G2Elab, F-38000 Grenoble, France

09:30 **Multiferroic and electroresistance properties of Au/BaTiO3/(La,Sr)MnO3 junctions** **O 8.4**
N. Jedrecy1, C. Hebert1, V. Jagtap1, X. Portier2, A. Barbier3, J. Perriere1
1 Institut des Nanosciences de Paris (INSP), Sorbonne Université, CNRS UMR 7588, 4 place Jussieu, 75252 Paris Cedex 05, France 2 Centre de recherche sur les Ions, les MAtériaux et la Photonique (CIMAP), CEA, CNRS UMR 6252, ENSICAEN, Normandie Université, 6 Boulevard Maréchal Juin, 14050 Caen, France 3 Service de Physique de l'Etat Condensé (SPEC), CEA, CNRS UMR 3680, Université Paris Saclay, Orme des Merisiers, CEA Saclay, 91191 Gif sur Yvette Cedex, France

09:45 **New routes to design vertically aligned multiferroic nanocomposites** **O 8.5**
S. Basov 1,2,3, C. Elissalde 2, K. Temst 3, and L. Piraux 1
1. BSMA-IMCN, Université catholique de Louvain, 1 Place Croix du Sud, Louvain-la-Neuve, Belgium, 1348 2. ICMCB-CNRS, Université de Bordeaux, 87 Avenue du Docteur Schweitzer, Pessac, France, 33600 3. Instituut voor Kern- en Stralingsfysica, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium

10:00 **Coffee break**

Ferroelectric oxides : -

10:30 INV **Impact of process parameters on the ferroelectric properties of doped hafnia films** **O 9.1**
Uwe Schroeder
Namlab gGmbH, Dresden, Germany

11:00 **Effect of cation disorder on the structure and ferroelectric behavior of Hf0.5Zr0.5O2 films** **O 9.2**
Mari Napari (1), Kham M. Niang (2), Rui Wu (1), Pavel Strichovaneč (3,) César Magén (3), Andrew J. Flewitt (2), Judith L. MacManus-Driscoll (1), José A. Pardo (3,4)
(1) Department of Materials Science and Metallurgy, University of Cambridge, UK, (2) Department of Engineering, University of Cambridge, UK, (3) Institute of Materials Science of Aragón, CSIC and University of Zaragoza, Spain, (4) Institute of Nanoscience of Aragón, University of Zaragoza, Spain

11:15 **Ferroelectric hafnium/zirconium oxide solid solutions deposited by RF magnetron sputtering with a single target** **O 9.3**
Jordan Bouaziz, Nicolas Baboux, Pedro Rojo Romeo, Lucian Pintilie, Raluca Negrea, Bertrand Vilquin
Jordan Bouaziz - Université de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 Ecully cedex, France - Université de Lyon, INSA de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 7 avenue Capelle, 69621 Villeurbanne cedex, France, Nicolas Baboux Université de Lyon, INSA de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 7 avenue Capelle, 69621 Villeurbanne cedex, France, Pedro Rojo Romeo Université de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 Ecully cedex, France, Lucian Pintilie National Institute of Materials Physics, Atomiştilor 405A, 077125 Măgurele, Ilfov, Romania, Raluca Negrea National Institute of Materials Physics, Atomiştilor 405A, 077125 Măgurele, Ilfov, Romania, Bertrand Vilquin Université de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 Ecully cedex, France,

11:30 **Electroresistance in ferroelectric tunnel Hf0.5Zr0.5O2 barriers** **O 9.4**
M. C. Sulzbach, J. Lyu, X. Long, F. Sánchez, I. Fina, J. Fontcuberta
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, Bellaterra 08193, Catalonia, Spain

11:45 **In-depth mapping of ferroelectric-field effect transistor switching at submicron and atomic-scales** **O 9.5**
Xiaoyan Li 1, Vincent Garcia 2, Stéphane Fusil 2, Qiuxiang Zhu 2, Manuel Bibes 2, Agnès Barthélémy 2, Alexandre Gloter 1,
1-Laboratoire de Physique des Solides, CNRS UMR 8502, Université Paris-Sud, 91405 Orsay France, 2-Unité Mixte de Physique CNRS Thales Université Paris-Saclay 91767 Palaiseau France,

12:00 INV **Raman spectroscopy as versatile tool for characterisation of complex oxides: From ferroelastic domains to orbital ordering** **O 9.6**
C. Himcinschi *, J. Rix *, S. Brehm *, C. Röder *, J. Kortus *, K. Deepak §, W. Prellier §, I. Lindfors-Vrejoiu &, and M. Alexe
#* Institute of Theoretical Physics, TU Bergakademie Freiberg, 09596 Freiberg, Germany, § Laboratoire CRISMAT, CNRS-ENSICAEN,F-14050 Caen, France, & II. Physikalisches Institut, Universität zu Köln, D-50937, Germany, # Department of Physics, University of Warwick, Coventry CV4 7AL, United Kingdom

12:30 **Lunch**

Joint session with symposium Q : -

14:00 INV **Inkjet printed transparent piezoelectric thin films for transducers on glass** **O 10.1**
N Godard, A Mahjoub, S Girod, S Glinsek, E Defay*
Materials Research and Technology Department, Luxembourg Institute of Science and Technology, 41 rue du Brill, L-4422 Belvaux, Luxembourg

14:30 INV **About hysteresis, dielectric constant and negative capacitance in PZT capacitors** **O 10.2**
L. Pintilie, A. G. Boni, C. Chirila, L. Hrib
National Institute of Materials Physics, Atomistilor 405A, Magurele, 07715, Romania

15:00 **Increased interface roughness as a desirable feature in the growth of Pb-based thin films** **O 10.3**
Urška Gabor, Nina Daneu, Zoran Samardžija, Danilo Suvorov and Matjaž Spreitzer
Advanced Materials Department, Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia, Advanced Materials Department, Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia, Department for Nanostructured Materials, Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia, Advanced Materials Department, Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia, Advanced Materials Department, Jožef Stefan Institute, Jamova cesta 39, 1000 Ljubljana, Slovenia

15:15 **PLD growth of tetragonal tungsten bronze phase thin films in the K-Na-Nb-O system: structural and dielectric characterizations** **O 10.4**
B. Aspe12, V. Demange13, X. Castel2, Q. Simon4, M. Zaghrioui4, K. Nadaud4, S. Députier1, F. Gouttefangeas3, R. Sauleau2, M. Guilloux-Viry13
1 Univ. Rennes, CNRS, ISCR – UMR 6226, F-35000 Rennes, France, 2 Univ. Rennes, CNRS, IETR – UMR 6164, F-35000 Rennes, France, 3 Univ. Rennes, CNRS, ScanMAT – UMS 2001, F-35000 Rennes, France, 4 Univ. Tours, CNRS, GREMAN – UMR 7347, F-37000 Tours, France,

15:30 **Infrared Laser Thermal Tomography of novel Lead-free Pyroelectric Materials** **O 10.5**
Stefan Tappertzhofen, Simon Fichtner, Sebastian Bette, Thorsten Schmitz-Kempen, Bernhard Wagner, Norman Laske, Carl Van Buggenhout, Stephan Tiedke
aixACCT Systems GmbH, Aachen, Germany, Institute of Material Science, Christian-Albrechts-Universität, Kiel, Germany, Fraunhofer Institute for Silicon Technology, Itzehoe, Germany, Melexis Technologies NV, Tessenderlo, Belgium

15:45 **Structural and optical characterization of Yttrium-doped ZnO ceramics and nanostructures** **O 10.6**
A. Bembibre, A. Garitagoitia, Y. Lebsir, B. Sotillo, P. Fernández
Department of Materials Physics, Faculty of Physics, Complutense University of Madrid, Madrid, Spain.

16:00 **Coffee break**

Poster session :
Valentin Craciun, Maryline Guilloux-Viry, Zoe Barber, Florencio Sánchez

16:30 **Nanoscale electrical characterization of all-oxide 1D nanostructured optoelectronic devices by conductive-AFM techniques** **O P11.1**
Federica Rigoni, Alessandro Faccin, Pedram Ghamgosar, Arnaud Bemou, Lorena Ramirez, Alberto Vomiero, Nils Almqvist
Department of Engineering Sciences and Mathematics, Division of Material Science, Luleå University of Technology, Sweden

16:30 **Spacing-controllable iridium oxide nanotube array for biocompatible stimulating electrode applications** **O P11.2**
Po-Chun Chen (1), Wei-Chiang Huang (1), Jiashing Yu (2), Shao-Sian Li (3), Cheng-Ying Chen (4).
1 Department of Materials and Mineral Resources Engineering, National Taipei University of Technology 2 Department of Chemical Engineering, National Taiwan University 3 Graduate Institute of Biomedical Optomechatronics, Taipei Medical University 4 Center for Condensed Matter Sciences, National Taiwan University

16:30 **Molecular beam epitaxy growth of ZnMg-oxynitrides** **O P11.3**
P. John1, H. Rotella1, C. Deparis1, M. Leroux1, F. Georgi2, G. Monge2, J. Zúñiga-Pérez1
1 CNRS-CRHEA, Rue Bernard Grégory, 06560 Valbonne, France, 2 CEMEF MINES ParisTech, 1 Rue Claude Daunesse, 06904 Sophia Antipolis, France,

16:30 **Effect of background atmosphere and substrate temperature on SrO:Bi thin films produced using pulsed laser deposition with diffe** **O P11.4**
M. H. M. Abdelrehman1*, V. Craciun2, R. E. Kroon1, A. Yousif1,3, H.A.A. Seed Ahmed1,3, H. C. Swart1*
1Department of Physics, Box 339, University of the Free State, Bloemfontein 9300, South Africa 2Laser Department, National Institute for Laser, Plasma and Radiation Physics, Bucharest-Magurele, Romania 3Department of Physics, Box 321, University of Khartoum, Omdurman 11115, Sudan *Corresponding author e-mail address: hassanmma@ufs.ac.za, SwartHC@ufs.ac.za

16:30 **Dielectric properties of BNT-BT ferroelectric thin films in microwaves and millimeter waves** **O P11.5**
V. Stancu 1, L. Trupina 1, L. Nedelcu 1, V. Mihalache 1, M. G. Banciu 1, L. Huitema 2, A. Ghalem 2, A. Crunteanu 2, C. Constatinescu 3, F. Dumas-Bouchiat 3, C. Champeaux 3
1 National Institute of Materials Physics, Bucharest-Magurele, Romania, 2 XLIM UMR 7252 - CNRS / University of Limoges, Limoges, France, 3 IRCER UMR 7315 - CNRS / University of Limoges, Limoges, France

16:30 **Strain induced by hydrogen implantation in Lithium Tantalate off axis single crystals** **O P11.6**
A. Louiset, N. Cherkashin, S. Schamm-Chardon, O. Kononchuk
CEMES-CNRS and Université de Toulouse, 29 rue J. Marvig, 31055 Toulouse, France and SOITEC, Parc des Fontaines, F-38560 Bernin, France, CEMES-CNRS and Université de Toulouse, 29 rue J. Marvig, 31055 Toulouse, France, CEMES-CNRS and Université de Toulouse, 29 rue J. Marvig, 31055 Toulouse, France, SOITEC, Parc des Fontaines, F-38560 Bernin, France

16:30 **PI-MOCVD deposition of thin barium stannate films. Investigation of film nonstoichiometry** **O P11.7**
Tomas Murauskas, Valentina Plaušinaitienė
Vilnius University, Faculty of Chemistry and Geosciences

16:30 **Nanocomposites based on the transitional metal oxides** **O P11.8**
Iu. Naseka 1, S. Mulenko 2, W. Paszkowicz 3, R. Savkina 1, and A. Smirnov 1
1 V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 41 Nauky av, Kyiv 03028, Ukraine 2 G. Kurdyumov Institute for Metal Physics, National Academy of Sciences of Ukraine, 36 Vernadsky Blvd, Kyiv 03142, Ukraine 3 Institute of Physics, Polish Academy of Science, al. Lotników 32/46, PL-02-668 Warsaw, Poland

16:30 **Synthesis of Dual Phase Oxide Cathode for IT-SOFCs via Thermal Plasma** **O P11.9**
Havva Eda Aysal (1,2), Doğancan Sarı (1,2), Fatih Pişkin (1,3), Tayfur Öztürk (1,2)
(1) Center for Energy Materials and Storage Devices, Middle East Technical University, 06800 Cankaya, Ankara (2) Department of Metallurgical and Materials Engineering, Middle East Technical University, 06800 Cankaya, Ankara (3) Department of Metallurgical and Materials Engineering, Mugla Sıtkı Kocman University, 48000 Mugla

16:30 **Pulsed Laser Deposition of Thin Iron Oxide Films for Sensors** **O P11.10**
M. Kompitsas1, P. Koralli1, G. Mousdis1, G. Dorcioman2, D. Craciun2, S. Irimiciuc2, B. Hodoroaba3, P. Garoi2, and V. Craciun2, 4
1National Hellenic Research, Foundation, Theor. and Phys./Chem. Institute, Athens, Greece 2National Institute for Lasers, Plasma and Radiation Physics, M&#259,gurele, Romania 3Physics Faculty, University of Bucharest, Magurele, Romania 4Extreme Light Infrastructure-Nuclear Physics, Magurele, Romania

16:30 **Epitaxial BaTiO3 thin film on Si for non-volatile memory application** **O P11.11**
B. Wagué1, J-B. Brubach2, G. Niu3, G. Dong3, L. Dai3, P. Roy2, G. Saint-Girons1, P. Rojo-Romeo1, Y. Robach1, B. Vilquin1
1 Universite de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 Ecully Cedex, France 2 Synchrotron SOLEIL, ligne AILES, L'orme des merisiers, 91190 Saint Aubin, France 3 Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, Xi'an 710049, China.

16:30 **Comparison of epitaxial and textured BaTiO3 thin films on silicon** **O P11.12**
B. Wague1, M. Apreutesei1, J. Bouaziz1, N. Baboux2, P. Rojo Romeo1, B. Vilquin1
1 Université de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 ECULLY Cedex, FRANCE 2 Université de Lyon, INSA de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 7 avenue Capelle, 69621 VILLEURBANNE Cedex, France

16:30 **Analysis of nickel oxidation in BME MLCCs** **O P11.13**
Preetam Kumar Sharma1*, Yisong Han1, Ashlene Vennard2, Patrick Lemoine1, Maureen Strawhorne2, J. Anthony Byrne1
1NIBEC, Ulster University, Shore Road, Newtownabbey, BT37 0QB, UK, 2AVX Ltd, 5, Hillman's Way, Coleraine, BT52 2DA, UK

16:30 **OPTICALLY TRANSPARENT AND RECONFIGURABLE ANTENNA PRINTED ON FERROELECTRIC OXIDE FILM** **O P11.14**
Alexis MARTIN, Xavier CASTEL, Mohamed HIMDI, Stéphanie DEPUTIER, Maryline GUILLOUX-VIRY
Université de Rennes, CNRS, IETR – UMR 6164, F-35000 Rennes, FRANCE, Université de Rennes, CNRS, ISCR – UMR 6226, F-35000 Rennes, FRANCE

16:30 **Perovskite-spinel-garnet multiferroic nanocomposite thin films fabricated by sputtering** **O P11.15**
Hyun Kyu Jung, Tae Cheol Kim, Seung Han Lee, Dong Hun Kim
Department of Materials Science and Engineering, Myongji University, Yongin, Republic of Korea

16:30 **Magnetic property modulation of self-assembled epitaxial nanocomposite thin films grown by sputtering** **O P11.16**
Hyun Kyu Jung, Tae Cheol Kim, Seung Han Lee, HanJin Lee, Dong Hun Kim
Department of Materials Science and Engineering, Myongji University, Yongin, Republic of Korea

16:30 **Magnetic and structural properties of ultrathin LaCoO3 films grown by pulsed laser deposition** **O P11.17**
A.Kozlov, O.Dikaya, A.Goikhman, K.Maksimova
REC "Functional Nanomaterials", Immanuel Kant Baltic Federal University, 236001,Gaidara str. 6, Kaliningrad, Russia

16:30 **Study of dielectric constant of sputtered silicon oxynitride thin films in various nitrogen ambient** **O P11.18**
Chia-Yuen Chou, Cheng-Yi Liu
National Central University

16:30 **Growth of Ilmenite NiTiO3 thin films by co-sputtering: influence of substrates and processing conditions** **O P11.19**
M. Chettab, Q. Simon, P. Laffez
GREMAN, UMR 7347 University of Tours – CNRS, Tours, France

16:30 **Evolution of ferroelectric properties of Al:HfO2 thin films grown by Atomic Layer Depositions according to the thickness and rap** **O P11.20**
Silviu Vulpe a, Florin Nastase a*, Mircea Dragoman a, Adrian Dinescu a, Cosmin Romanitan a, Antoniu Moldovan b, Nicoleta Apostol c
a National Institute for Research and Development in Microtechnologies -IMT Bucharest, 077190 Bucharest, Romania b National Institute for Lasers, Plasma and Radiation Physics, PO Box MG-36, 077125 Bucharest, Romania c National Institute for Materials Physics, Atomistilor str. 405 A, Bucharest-Magurele, Romania
*Corresponding author: E-mail address: florin.nastase@imt.ro , Full postal address: National Institute for Research and Development in Microtechnologies - IMT Bucharest, 126A Erou Iancu Nicolae Street, 077190 Bucharest, Romania

16:30 **Ferroelectric properties of dopant-free hafnium oxide thin films grown by Atomic Layer Depositions** **O P11.21**
Florin Nastase a*, Silviu Vulpe a, Mircea Dragoman a, Adrian Dinescu a, Cosmin Romanitan a, Antoniu Moldovan b, Nicoleta Apostol c
a National Institute for Research and Development in Microtechnologies -IMT Bucharest, 077190 Bucharest, Romania b National Institute for Lasers, Plasma and Radiation Physics, PO Box MG-36, 077125 Bucharest, Romania c National Institute for Materials Physics, Atomistilor str. 405 A, Bucharest-Magurele, Romania
*Corresponding author: E-mail address: florin.nastase@imt.ro , Full postal address: National Institute for Research and Development in Microtechnologies - IMT Bucharest, 126A Erou Iancu Nicolae Street, 077190 Bucharest, Romania

16:30 **Thermal annealing effect on nonvolatile memory characteristics of ZnO/SiOx multilayer ReRAM devices** **O P11.22**
Jisoo Kim, Minho Im, Jung Hyun Sok, Kyoungwan Park
Department of Physics, University of Seoul, Seoul 02504, Korea

16:30 **Lead-free Ferroelectric Thin Films grown by Pulsed Laser Deposition: Microstructure and Impedance Spectroscopy** **O P11.23**
M. Becker, C.J. Burkhardt, R. Kleiner and D. Koelle
NMI Natural and Medical Sciences Institute at the University of Tuebingen and Physikalisches Institut - Experimentalphysik II and Center for Quantum Science (CQ) in LISA+ , NMI Natural and Medical Sciences Institute at the University of Tuebingen, Physikalisches Institut - Experimentalphysik II and Center for Quantum Science (CQ) in LISA+, Physikalisches Institut - Experimentalphysik II and Center for Quantum Science (CQ) in LISA+

16:30 **Role of oxygen content on properties of HfO2 films grown by pulsed laser deposition** **O P11.24**
D. Craciun1, A. M. Rostas2, S. Irimiciuc1, B. Hodoroaba3, G. Dorcioman1, P. Garoi1, A. C. Galca2, and V. Craciun1, 4
1National Institute for Lasers, Plasma and Radiation Physics, Măgurele, Romania 2National Institute for Materials Physics, Magurele, Romania 3Physics Faculty, University of Bucharest, Magurele, Romania 4Extreme Light Infrastructure-Nuclear Physics, Magurele, Romania

16:30 **Enhancing the magnetic moment of NiCo2O4 ferrimagnetic films via He-ion irradiation** **O P11.25**
Parul Pandey,1, Yugandhar Bitla,2, Matthias Zschornak,1,3, Mao Wang,1,4, Chi Xu,1,4, Jörg Grenzer,1, Dirk-Carl Meyer,3, Yi-Ying Chin,5, Hong-Ji Lin,5, Chien-Te Chen,5, Sibylle Gemming,1,6, Manfred Helm,1,4, Ying-Hao Chu,2,7,8, and Shengqiang Zhou1,
1 Helmholtz-Zentrum-Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Bautzner Landstraße 400, D-01328 Dresden, Germany 2 Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan 3 Institute of Experimental Physics, Technische Universität Bergakademie Freiberg, Freiberg, Germany 4 Technische Universität Dresden, 01062 Dresden, Germany 5 National Synchrotron Radiation Research Center, Hsinchu 300, Taiwan 6 Institute of Physics, Technische Universität, Chemnitz, Germany 7 Institute of Physics, Academia Sinica, Taipei, Taiwan 8 Material and Chemical Research Laboratories, Industrial Technology Research Institute, Hsinchu 31040, Taiwan

16:30 **A promosing electrode elaborated by combining spin coating and electrodeposition mode on titanium substrate for electrochemical** **O P11.26**
Sahar Boukchina1,2, Hanene AKROUT1, Dominique Berling3,4, Latifa Bousselmi 1
1 Laboratory of Wastewaters and Environment, Center of Water Researches and Technologies (CERTE),Technopark of Borj Cédria PB 273, Soliman 8020, Tunisia
2 National Institute of Applied Sciences and Technology (INSAT) 3 Université de Haute Alsace, Institute of Materials Science of Mulhouse (IS2M) UMR 7361, F-68100 Mulhouse, France 4 Université de Strasbourg, France

16:30 **Electrical transport in Ti-doped iron oxide films in the temperature range of 20 – 473 K** **O P11.27**
Pranab Biswas, Ardak Ainabayev, David Caffrey, Brian Walls, Daragh Mullarkey, Karsten Fleischer, Igor V. Shvets
School of Physics and Centre for Research on Adaptive Nanostructures and Nanodevices, Trinity College Dublin, Dublin 2, Ireland

16:30 **Inkjet printed oxide electrode films for solid oxide fuel cell fabrication** **O P11.28**
Leila Zouridi, George Kiriakidis, George Marnelos, Vassilios Binas
Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 71110 Heraklion, Crete, Greece and University of Crete, Department of Department of Material Science and Technology, 710 03 Heraklion, Crete, Greece, Heraklion, Crete, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 71110 Heraklion, Crete, Greece and University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece, Department of Environmental Engineering, University of Western Macedonia, Bakola & Sialvera, Kozani, GR-50100, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 71110 Heraklion, Crete, Greece and Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece

16:30 **The influence of alloying additives on the morphology of titanium oxide nanotubes fabricated via electrochemical anodization** **O P11.29**
A. Majchrowicz, A. Roguska, M. Lewandowska
A. Majchrowicz, M. Lewandowska - Faculty of Materials Science and Engineering, Warsaw University of Technology (WUT), Warsaw, Poland, A. Roguska - Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland

16:30 **Fabrication of Sn@Al2O3 core-shell nanoparticles layer for stable memory device applications** **O P11.30**
Jong-Hwan Yoon
Department of Physics, Kangwon National University, 1 Gangwondaehak-gil, Chuncheon, Gangwon-do 24341, South Korea

16:30 **Low- Resistance Molybdenum Dioxide (MoO2) Ultra-thin Crystals Grown by Chemical Vapour Deposition** **O P11.31**
Raju Mula1, Meher Wan2, Chacko Jacob*1
1-Materials Science Centre, Indian Institute of Technology, Kharagpur, West Bengal, India- 721302 2-Advanced Technology Development Centre, Indian Institute of Technology, Kharagpur, West Bengal, India- 721302

16:30 **Laser processed perovskite heterostructures for energy and environmental applications** **O P11.32**
F. Andrei1, N. Enea1, I. Boerasu1, R. Birjega1, M. Dinescu1, A. Palla-Papavlu1, V. Ion1, N.D. Scarisoreanu1, V. Leca2
1 National Institute for Laser, Plasma and Radiation Physics, Magurele, Romania
2 Extreme Light Infrastructure - Nuclear Physics, Horia Hulubei National Institute for Physics and Nuclear Engineering, Magurele, Romania

16:30 **Advances in Thin Film Growth Nanotechnology and Nanofabrication of Smart Nano-Multifunctional Metal Insulating Transition Complex Oxide Heterostructures for Femtosecond Optoelectronic Sensors and Nanodevices** **O P11.33**
Mohamed M Saad (1), Ahmed I Osman (2)
(1) School of Science and Technology, Nottingham Trent University, Nottingham, NG11 8NS, UK, (2) School of Chemistry and Chemical Engineering, Queen&#8217,s University Belfast, Belfast, BT9 5AG, UK

16:30 **Control of tunneling gap between nanocrystals by introduction of solution processed interfacial layers for wearable sensor.** **O P11.34**
Md Ashraf Hossain, Sanghyun Jeon, Junhyuk Ahn, Junsung Bang, Hyungmok Joh, and Soong Ju Oh
Department of Materials Science and Engineering, Korea University, Seoul 02841, Republic of Korea

16:30 **Influence of two-dimensional oxide nanosheet seed layers on the growth of (100) BiFeO3 thin films synthesized by CSD** **O P11.35**
V. Bouquet (1), F. Baudouin (1), V. Demange (1), S. Députier (1), S. Ollivier (1), A. Fouchet (2), M. Guilloux-Viry (1)
(1) Univ Rennes, CNRS, ISCR – UMR 6226, F-35000 Rennes, FRANCE (2) CRISMAT, CNRS UMR6508, ENSICAEN, Normandie Université, 14050 Caen Cedex 4, FRANCE

16:30 **Resistive Switching Effects of Zinc Silicate Thin Films for Nonvolatile Memory Applications** **O P11.36**
Minho Im, Jisoo Kim, Junghyun Sok, Kyoungwan Park
Department of Physics, University of Seoul, Seoul 02504, Korea

16:30 **Transition from electron accumulation to depletion at β-Ga2O3 surfaces: The role of hydrogen and the charge neutrality level** **O P11.37**
J. E. N. Swallow[1], J. B. Varley[2], L. A. H. Jones[1], J. T. Gibbon[1], L. F. J. Piper[3], V. R. Dhanak[1] and T. D. Veal[1]
[1] Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Liverpool L69 7ZF, United Kingdom [2] Lawrence Livermore National Laboratory, Livermore, California 94550, USA [3] Department of Materials Science and Engineering, Binghamton University, Binghamton, New York 13902, USA

16:30 **Oxide Nanosheets Structured Upconverting Nanofilms** **O P11.38**
Özge Saglam
Faculty of Engineering, Izmir University of Economics, Izmir, Turkey.

16:30 **Reversible magnetoelectric switching by lithium intercalation** **O P11.39**
Gesara Bimashofer, Jochen Stahn
Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institut, 5232 Villigen, Switzerland

16:30 **Pr4Ni3O10 thin films for IT-SOFC cathode: a twostep synthetic route by magnetron co-sputtering** **O P11.40**
Y. Kikuchi, 1, 2, Q. Simon, 1, A. Yamamoto, 2, P. Laffez, 1
1) GREMAN, UMR 7347 University of Tours – CNRS, Tours, France , 2) Shibaura Institute of Technology, Tokyo, Japan

16:30 **Microscopic study of ageing in multilayer ceramic capacitors** **O P11.41**
Alistair Simpson1, Patrick Lemoine1*, Preetam Kumar Sharma 1, Barry McLaughlin2, M Strawhorne2, J. Anthony Byrne1
1, NIBEC, Ulster University, Shore Road, Newtownabbey, BT37 0QB, UK 2, AVX Ltd, 5, Hillman's Way, Coleraine, BT52 2DA, UK

16:30 **Characterization of structural and ferroelectric properties of PZT thin films deposited by magnetron sputtering** **O P11.42**
A. Iljinas1, V. Stankus1, S. Balčiūnas2, M. Ivanov2, J. Banys2
1 Department of Physics, Kaunas University of Technology, Studentu str. 50, LT-51368 Kaunas, Lithuania 2 Faculty of Physics, Vilnius university, Sauletekio ave. 9/3 817 LT-10222 Vilnius, Lithuania

16:30 **Oxygen isotope tracing in transition metal oxides probed by LEIS** **O P11.43**
C. R. Stilhano Vilas Boas, J. M. Sturm, F. Bijkerk
Industrial Focus Group XUV Optics, MESA+ Institute for Nanotechnology, University of Twente

16:30 **Tailoring of Oxygen Ion Transport in Nanostructured Co-doped Ceria via Growth and Local Lattice Strain** **O P11.44**
Junsung Ahn, Ho-Il Ji, Hyoungchul Kim, Ji-Won Son, Ho Won Jang, Jong-Ho Lee
1. High-Temperature Energy Materials Research Center, Korea Institute of Science and Technology, Seoul, Republic of Korea 2. Department of Materials Science and Engineering, Research Institute of Advanced Materials, Seoul National University, Seoul, Republic of Korea

16:30 **PVD based Ni-CGO Anodic Films Optimization for SOFC application via Fuzzy and Electrochemical Modelling** **O P11.45**
Waqas Hassan Tanveer(a), John Andersen(a), Maroto valer Mercedes(a), Suk Won Cha(b)
(a) Research Centre for Carbon Solutions- Heriot Watt University, School of Engineering and Physical Sciences, EH14 4AS, Edinburgh, UK, (b) School of Mechanical and Aerospace Engineering, Seoul National University, San 56-1, Daehak dong, Gwanak-gu, Seoul 151-742, Republic of Korea

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Functional oxides : -

08:30 INV **2D metal oxide nanosheets: synthesis and applications in advanced electronic materials** — O 12.1
J.E. ten Elshof
MESA Institute for Nanotechnology, University of Twente, 7500 AE Enschede, the Netherlands

09:00 **Integration of (001)-textured La0.67Sr0.33MnO3 thin films onto glass substrates using Ca2Nb3O10- nanosheets as template layer.** — O 12.2
Alexis Boileau1, Marie Dallocchio1, Florent Baudouin2, Adrian David1, Ulrike Lüders1, Bernard Mercey1, Valérie Demange2, Maryline Guilloux-Viry2, Wilfrid Prellier1, Arnaud Fouchet1
1 CRISMAT, CNRS UMR6508, ENSICAEN, Normandie Université, 14050 Caen Cedex 4, France, 2 Univ Rennes, CNRS, ISCR – UMR 6226, F-35000 Rennes, France

09:15 **Fabrication of Two-terminal LiCoO2/TiO2 Resistive Switching Devices Based on Li Ion Intercalation/Insertion Electrodes** — O 12.3
S. P. Ioannou, E. Kyriakides and J. Giapintzakis
Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Av., PO Box 20537, 1678 Nicosia, Cyprus

09:30 **Coffee break**

Functional oxides : -

10:00 INV **Growth of epitaxial oxides by chemical and physical methods: impact on the structural and magnetic properties** — O 13.1
E. Ferreiro-Vila, L. Iglesias, J. M. Vila-Fungueiriño, F. Rivadulla
Centro de Investigación en Química Biolóxica e Materiais Moleculares (CIQUS), Universidade de Santiago de Compostela, 15782 Santiago de Compostela, Spain, Institut d'Electronique et des Systemes (IES), UMR 5214, CNRS – Universite de Montpellier, 860 rue Saint Priest, 34095 Montpellier, France.

10:30 INV **The Fermi energy in oxides: Assessing and understanding the limits using XPS** — O 13.2
Andreas Klein
TU Darmstadt, Germany

11:15 **Plenary session 2**

12:30 **Lunch**

Magnetic oxides : -

14:00 INV **Spinel Ferrite Thin Films and Heterostructures for Spintronics** — O 14.1
Arunava Gupta
Center for Materials for Information Technology (MINT), The University of Alabama, Tuscaloosa, AL, USA

14:30 **Charge compensation mechanisms in semiconducting Ca and Y co-doped bismuth iron garnet thin films** — O 14.2
Adrien Teurtrie, Elena Popova, Ekaterine Chikoidze, Niels Keller, Alexandre Gloter, Laura bocher
Laboratoire de Physique des Solides, UMR8502, 91405 Orsay, France and Groupe d'Etude de la Matière Condensée (GEMaC), UMR8635, 78035 Versailles, France , Groupe d'Etude de la Matière Condensée (GEMaC), UMR8635, 78035 Versailles, France , Groupe d'Etude de la Matière Condensée (GEMaC), UMR8635, 78035 Versailles, France , Groupe d'Etude de la Matière Condensée (GEMaC), UMR8635, 78035 Versailles, France , Laboratoire de Physique des Solides, UMR8502, 91405 Orsay, France , Laboratoire de Physique des Solides, UMR8502, 91405 Orsay, France

14:45 **Carrier driven antiferromagnetism in SrRuO3/CaRuO3 heterostructures** — O 14.3
Parul Pandey,1, Ching-Hao Chang,2, Angus Huang,3, Rakesh Rana,1, Changan Wang,1, 4, Chi Xu,1, 4, Horng-Tay Jeng,3, 5, Manfred Helm,1, 4, R. Ganesh,6, and Shengqiang Zhou,1
1 Helmholtz-Zentrum-Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Bautzner Landstraße 400, 01328 Dresden, Germany 2 Leibniz-Institute for Solid State and Materials Research, Helmholtzstraße 20, 01069 Dresden, Germany 3 Department of Physics, National Tsing Hua University, Hsinchu 30043, Taiwan 4 Technische Universität Dresden, 01062 Dresden, Germany 5 Institute of Physics, Academia Sinica, Taipei 11529, Taiwan 6 The Institute of Mathematical Sciences, HBNI, C I T Campus, Chennai 600113, India

15:00 **Study of symmetry breaking in cobalt ferrite thin films through Resonant X-ray Diffraction** — O 14.4
Elodie Martin(a), Francois Roulland(a), Daniele Preziosi(a), Geneviève Pourroy(a), N. Blanc(b,c), N. Boudet(b,c), S. Grenier(b,c), Nathalie Viart(a), Christophe Lefevre(a)
(a) : Institut de Physique de Chimie des Matériaux de Strasbourg, UMR 7504 CNRS-UdS, 23, rue du Loess, BP 43, 67034 Strasbourg Cedex 2, France , LabEx of Nanostructures in Interactions with their Environment (NIE) (b) : Université Grenoble Alpes – Institut Néel, Grenoble, 38042, France (c) : CNRS – Institut Néel, Grenoble, 38042, France

15:15 **Distribution of antiferromagnetic domains in Fe-doped NiO thin films on Ru(0001)** — O 14.5
1,2. Anna Mandziak, 2. Juan de la Figuera, 2. Guiomar Delgado Soria, 2. Jose E. Prieto, 2. Fernando Moutinho, 3. Katerina Horakova, 4. Ingo Krug, 1. Michael Foerster, 1. Lucia Aballe,
1. Alba Synchrotron Light Facility, CELLS, Barcelona E-08290, 2. Institute of Chemical Physics "Rocasolano", Madrid, 3. Institute of Physics of the Czech Academy of Sciences, 182 21 Prague 8, Czech Republic, 4. Freelance scientist, Berlin, Germany

15:30 **Atomically smooth GaFeO3 (001) thin film growth for low power spintronics.** — O 14.6
1. Suvidyakumar Homkar, Daniele Preziosi, François Roulland, Christophe Lefèvre, Sophie Barre, Gilles Versini, Cédric Leuvrey, Corinne Bouillet, Nathalie Viart, 2. Sébastien Petit-Watelot, Olivier Copie, Karine Dumesnil, Carlos Rojaz-Sanchez, 3. Morgan Trassin
1. Institut de Physique et Chimie des Matériaux de Strasbourg UMR 7504, Université de Strasbourg, 23 rue du Lœss, BP 43, 67034 , Strasbourg Cedex , 2. Institut Jean Lamour UMR 7198 CNRS, Université de Lorraine, 2 allée André Guinier, BP 50840, NANCY Cedex, France , 3. Department of Materials, ETH Zurich, Vladimir-Prelog-Weg 4, 8093, Zurich, Suisse

15:45 **Antiferromagnetic oxide/metallic oxide bilayer PLD grown thin films for pure spin current** — O 14.7
T. S Suraj, K. Sethupathy, M. S. Ramachandra Rao
Department of physics, IIT Madras, India-600036

16:00 **Coffee break**

Functional oxides : -

16:30 INV **MICAtronics: A New Platform for Flexible Electronics** — O 15.1
Ying-Hao Chu
National Chiao Tung University

17:00 **SrMoO3: A perovskite bottom electrode material with highest conductivity** — O 15.2
P. Komissinskiy1, A. Radetinac1, P. Salg1, D. Walk2, L. Zeinar1, A. Zintler1, R. Egoavil3, G. Van Tendeloo3, J. Verbeeck3, L. Molina-Luna1, R. Jakoby2, H. Maune2 & L. Alff1
1 Institute of Materials Science, Technische Universität Darmstadt, 64287 Darmstadt, Germany. 2 Institute for Microwave Engineering and Photonics, Technische Universität Darmstadt, 64283 Darmstadt, Germany. 3 EMAT, University of Antwerp, 2020 Antwerp, Belgium.

17:15 **P-type thermoelectric LaCrO3-based epitaxial thin films grown by MBE** — O 15.3
Dong Han1, Mohamed Bouras1, Rahma Moalla1, Claude Botella1, Aziz Benamrouche1, Geneviève Grenet1, Bruno Canut2, Régis Debord3, Valentina Giordano3, Stéphane Pailhès3, Guillaume Saint-Girons1, Romain Bachelet1*
1 Institut des Nanotechnologies de Lyon, INL UMR5270 CNRS, Ecole Centrale de Lyon, 69134 Ecully, France, 2 Institut des Nanotechnologies de Lyon, INL UMR5270 CNRS, INSA de Lyon, 69621 Villeurbanne, France, 3 Institut Lumière Matière, ILM UMR5306 CNRS, Université Claude Bernard Lyon 1, 69622 Villeurbanne, France

17:30 **Stacked All-inkjet-printed flexible piezoelectric generator made of BaTiO3 hybrid material** **O 15.4**

Seong Guk Jeong, Hyun Bin Kim, Hyung Wook Choi, Seung Hee Choi, Seok Bin Kwon, Young Hyun Song, Jong Hee Kim, Dae Ho Yoon
School of Advanced Materials Science and Engineering, Sungkyunkwan University (SKKU), Suwon, 440-746, Republic of Korea SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University(SKKU), Suwon 440-746, Republic of Korea Lighting Design & Component Research Center, Korea Photonics Technology Institute (KOPTI), Gwangju, 61007, Republic of Korea

17:45 **Transparent ZnO/Cu-Ti/ZnO electrode on flexible substrate** **O 15.5**

Wei-Hao Chen, Cheng-Yi Liu
Department of Chemical and Materials Engineering, National Central University, Taoyuan City, Taiwan, R. O. C.

Friday 31 may 2019

Growth and characterization : -

08:30 **Vanadium oxide thin films deposited by plasma ion assisted electron beam evaporation: connecting plasma to structural properties** **O 16.1**

M. Dias1, A. Frank2, S. Hieke2, S. Fleischmann4,5, J. Harhausen1, R. Foest1, V. Presser4,5, C. Scheu2,3, A. Kruth1
1-Leibniz Institute for Plasma Science and Technology e.V.(INP), Felix-Hausdorff-Str. 2, 17489 Greifswald, 2-Max-Planck-Institut für Eisenforschung GmbH, 40237 Düsseldorf, Germany, 3-Materials Analytics, RWTH Aachen University, Kopernikusstr. 10, 52074 Aachen, Germany, 4-INM – Leibniz Institute for New Materials, 66123 Saarbrücken, Germany 5-Saarland University, 66123 Saarbrücken, Germany

08:45 **Oxygen conditions as an important factor for controlling of the electrical properties of sputtered ZnO and AZO thin films** **O 16.2**

Petr Novák (1), Lucie Prušáková (1), Tomáš Kozák (2), Olga Bláhová (1), Zdeněk Jansa (1), Marie Netrvalová (1).
(1) New Technologies – Research Centre, University of West Bohemia, Plzeň, Czech Republic, (2)Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Plzeň, Czech Republic

09:00 **Synthesis and transfer of Ca2Nb3O10- seed layer on low cost substrate for KNbO3 and BiFeO3 growth** **O 16.3**

Florent Baudouin (1), Valérie Demange (1), Valérie Bouquet (1), Bruno Bérini (2), Sophie Ollivier (1), Stéphanie Députier (1), Arnaud Fouchet (3), Maryline Guilloux-Viry (1)
(1) Univ Rennes, CNRS, ISCR – UMR 6226, F-35000 Rennes, FRANCE (2) Groupe d'Etude de la Matière Condensée (GEMaC), Université de Versailles Saint-Quentin en Yvelines, Université Paris-Saclay CNRS, 45 avenue des Etats-Unis, 78035, Versailles, FRANCE (3) CRISMAT, CNRS UMR 6508, ENSICAEN, Normandie Université, 14050 Caen Cedex 4, FRANCE

09:15 **Oxygen Source-supported Fabrication of Yttrium Oxide Thin Films by 3rd Generation Mist CVD for Low Temperature Growth** **O 16.4**

Li Liu, Misaki Nishi, Phimolphan Rutthongjan, Shota Sato, Masahito Sakamoto, Giang T. Dang, and Toshiyuki Kawaharamura
School of Sys. Eng., Kochi Univ. of Tech., Res. Inst., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., Res. Inst., Kochi Univ. of Tech., School of Sys. Eng., Kochi Univ. of Tech., School of Sys. Eng. & Res. Inst., Kochi Univ. of Tech.

09:30 **Nano-crystallization and dielectric properties degradation in ultrathin amorphous HfO2 films induced by swift heavy ions** **O 16.5**

Li Zongzhen(1,2), Liu Jie(1), Zhai Pengfei(1), Liu Tianqi(1,2,3)
(1) Institute of Modern Physics, Chinese Academy of Sciences (CAS), Lanzhou 730000, China, (2) University of Chinese Academy of Sciences, Beijing 100049, China (3) Lanzhou University, Lanzhou 730000, China

09:45 **Large area liquid metal derived ultrathin and highly flexible two dimensional ITO** **O 16.6**

Torben Daeneke
RMIT University School Of Engineering Melbourne Australia

10:00 **Coffee break**

Growth and characterization : -

10:30 **Electron microscopic investigation of the influence of plasma parameters on VOx films deposited by a plasma ion assisted process** **O 17.1**

Anna Frank, Miguel Dias, Stefan Hieke, Angela Kruth, Christina Scheu
Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Straße 1, 40237 Düsseldorf, Germany, Leibniz Institute for Plasma Science and Technology e.V.(INP), Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany, Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Straße 1, 40237 Düsseldorf, Germany, Leibniz Institute for Plasma Science and Technology e.V.(INP), Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany, Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Straße 1, 40237 Düsseldorf, Germany, Materials Analytics, RWTH Aachen University, Kopernikusstr. 10, 52074 Aachen, Germany

10:45 **Scaling PLD oxide growth, technology push or market pull** **O 17.2**

Matthijn Dekkers, Minh D. Nguyen, Arjen Janssens
Solmates BV (for all)

11:00 **First principles mechanistic study of self-limiting oxidative adsorption of remote oxygen plasma during atomic layer deposition** **O 17.3**
Michael Nolan, Glen Fomengia, Simon. D. Elliott
Tyndall National Institute, UCC, T12 R5CP, Cork, Ireland

11:15 **Atomic layer deposition, composition and applications of Ga2O3 films** **O 17.4**
Zsófia Baji, Zoltán Szabó, Zsolt Endre Horváth, Emil Agócs
MTA EK Institute of Technical Physics and Materials Science

11:30 **Optical properties of Strontium Barium Niobate (SBN) thin films for efficient EO modulators** **O 17.5**
Surbhi Gupta 1, Ayushi Paliwal 1, Vinay Gupta 1, Monika Tomar 2,*
1. Department of Physics & Astrophysics, University of Delhi, Delhi, India 2. Department of Physics, Miranda House, University of Delhi, Delhi, India

11:45 **New strategies for Chemical Solution Deposition of nano-doped superconducting YBCO film** **O 17.6**
Valentina Pinto [a,b], Angelo Vannozzi [a], Fabio Fabbri [c], Fabrizio Mario Ferrarese [a], Achille Angrisani Armenio [a], Francesco Rizzo [a], Giuseppe Celentano [a], Rocco Carcione [b], Fabio Domenici [b], Damiano Palmieri [b], Sara Politi [b], Massimo Tomellini [b], Silvia Orlanducci [b]
[a] Superconductivity Laboratory, FSN-COND, ENEA, Via Enrico Fermi 45, 00044, Frascati (Rome), Italy [b] Department of Chemical Sciences and Technologies, Tor Vergata University, Via della Ricerca Scientifica, 00133 Rome, Italy [c] Superconductivity Laboratory, FSN-COND, ENEA, Via Anguillarese 301, 00123, Rome, Italy

12:00 **Optimizing Nanocomposites through Nanocrystal Surface Chemistry: Superconducting YBa2Cu3O7 Thin Films via Low-Fluorine Metal Org** **O 17.7**
Hannes Rijckaert,† Glenn Pollefeyt,† Max Sieger,‡ Jens Hänisch,§ Jan Bennewitz,□ Katrien De Keukeleere,† Jonathan De Roo,† Ruben Hühne,‡ Michael Bäcker,□ Petriina Paturi,□ Hannu Huhtinen,□ Maximilian Hemgesberg,# and Isabel Van Driessche,†
†Ghent University, SCRiPTS, Dept. of Inorganic and Physical Chemistry, Krijgslaan 281-S3, 9000 Ghent, Belgium ‡IFW Dresden, Institute for Metallic Materials, Helmholtzstraße 20, 01069 Dresden, Germany §Karlsruhe Institute of Technology, Institute for Technical Physics, Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany □Deutsche Nanoschicht GmbH, Heisenbergstraße 16, 53359 Rheinbach, Germany □University of Turku, Wihuri Physical Laboratory, Dept. of Physics and Astronomy, 20014 Turku, Finland #BASF SE, Advanced Materials & Systems Research, Carl-Bosch-Straße 38, 67056, Ludwigshafen am Rhein, Germany

12:15 **Multifunctional Silica Nanoparticle Films with Tunable Porosity using an Aerosol Impaction-Driven Assembly** **O 17.8**
Shannon Poges, Peter Firth, and Zachary Holman
Electrical, Computer, and Energy Engineering, Arizona State University, Tempe, Arizona USA, 85281

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM P

Dielectric nanocomposites for energy, environment and health: from fundamental to devices

Symposium Organizers :

Giancarlo RIZZA, École polytechnique, LSI, France

Simona BONINELLI, IMM-CNR, Catania, Italy

Minna HAKKARAINEN, KTH Royal Institute of Technology, Stockholm, Sweden

Domenico PACIFICI, Brown University, USA

To be published in Physica Status Solidi, Wiley

ORSAY PHYSICS
TESCAN ORSAY HOLDING

Monday 27 may 2019

10:30 **Welcome**

Inorganic Materials : Giancarlo Rizza

10:45 INV **Three Dimensional design of silver nanoparticles assemblies embedded in dielectrics: application to plasmon-enhanced scattering** — P 1.1
properties C. Bonafos1, M. Bayle2, P. Benzo1, A. Pugliara1,3,4, K. Makasheva3, G. Benassayag1, B. Pécassou1, E. Navarro5 and R. Carles1
1 CEMES-CNRS, Université de Toulouse, 29 rue Jeanne Marvig, BP 94347, F-31055 Toulouse, France 2 Institut des Matériaux Jean Rouxel, UMR 6502 CNRS/ Université de Nantes 2, rue de la Houssinière, BP 32229, 44322 Nantes Cedex 3, France 3 LAPLACE, Université de Toulouse, CNRS, UPS, INPT, 118 route de Narbonne, F-31062 Toulouse, France 4 now at UMS 3623 - Centre de Micro-Caractérisation Raimond Castaing, 3 rue Caroline Aigle, 31400 Toulouse, France 5 IPE (Instituto Pirenaico de Ecología)-CSIC, Avda. Montañana 1005, Zaragoza 50059, Spain

11:15 **Ag cluster beam deposition for TCO/Ag/TCO multilayer** — P 1.2
G. Torrisi, E. Cavaliere, F. Banfi, G. Benetti, R. Raciti, L. Gavioli, A. Terrasi
University of Catania and CNR IMM , Interdisciplinary Laboratories for Advanced Materials Physics (i-LAMP) and Università Cattolica del Sacro Cuore, FemtoNanoOptics group, Universit? de Lyon, Institut Lumière Matière (iLM), Université Lyon 1 and CNRS, Interdisciplinary Laboratories for Advanced Materials Physics (i-LAMP) and Università Cattolica del Sacro Cuore, STMicroelectronics, Stradale Primosole 50, 95100 Catania, Italy, Interdisciplinary Laboratories for Advanced Materials Physics (i-LAMP) and Università Cattolica del Sacro Cuore, University of Catania and CNR IMM,

11:30 **Liquid-assisted femtosecond laser ablation of oxide nanoparticles with applications in medical imaging diagnosis** — P 1.3
Aida Naghilou [1], Ana Subotic [1], Ruth Lahoz [2], Markus Kitzler [3], Oscar Bomati Miguel [1,4], Wolfgang Kautek [1]
[1] University of Vienna, Department of Physical Chemistry, Vienna, Austria, [2] University of Zaragoza ? CSIC, Centro de Quimica y Materiales de Aragon, Zaragoza, Spain, [3] Photonics Institute, Vienna University of Technology, Vienna, Austria, [4] Universidad de Cadiz, Departamento de Fisica de la Materia Condesada, Cadiz, Spain,

11:45 **Dielectric and ferroelectric properties of lead-free ceramic $Ca_{0.8}Nd_{0.05}K_{0.1}Ti_{0.85}Nb_{0.15}O_3$** — P 1.4
H.Kacem, Ah. Dhahri, E. Dhahri, J. Dhahri, K. Khirouni, K. Taibi.
Laboratoire de la Matière Condensée et des Nanosciences, Département de Physique, Faculté des Sciences de Monastir, Université de Monastir, 5019, Tunisia. - Faculté des Sciences, Monastir, Université de Monastir, Avenue de l'environnement, 5019, Monastir, Tunisia. - Laboratoire de Physique Appliquée, Faculté des Sciences de Sfax, BP 1171, Université de Sfax, 3000, Tunisia Laboratoire de Physique Appliquée, Faculté des Sciences de Sfax, BP 1171, Université de Sfax, 3000, Tunisia Laboratoire de la Matière Condensée et des Nanosciences, Département de Physique, Faculté des Sciences de Monastir, Université de Monastir, 5019, Tunisia. Laboratory of Physics of Materials and Nanomaterials Applied to the Environment, Faculty of Sciences of Gabes, University of Gabes, City Erriadh, 6079, Gabes, Tunisia. Laboratory of Materials Science and Engineering, Faculty of Mechanical Engineering and Process Engineering, University of Science and Technology Houari Boumediene, BP32 El Alia, Bab Ezzouar, 16111, Algiers, Algeria.

12:00 **Mechanisms of laser induced fragmentation of metallic nanoparticles.** — P 1.5
Y. Mansour, Y. Battie, A. En Naciri, N. Chaoui
LCP-A2MC, université de Lorraine

12:15 **Preparation of biodegradable Mg-HAP nanocomposite using friction stir processing** — P 1.6
Saleh Chabok, Ali Reza Eivani
School of Metallurgy and Materials Engineering, Iran University of Science and Technology, Tehran, Iran

12:30 **Lunch**

14:00 INV **Nanoparticle dynamics and plasmonic resonances in memristive devices** — P 1.7
Stefan Tappertzhofen, Giuliana Di Martino, Giorgio Divitini, Stephan Hofmann
Department of Engineering, University of Cambridge, Cambridge, United Kingdom, now with aixACCT Systems GmbH, Aachen, Germany, Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom

14:30 **Atom probe investigation of n-doped Si nanocrystals embedded in SiO_2** — P 1.8
Etienne Talbot1, Rémi Demoulin1, Sebastien Duguay1, Philippe Pareige1, Dominique Muller2, Daniel Mathiot2
1. Normandie Univ, UNIROUEN, INSA Rouen, CNRS, Groupe de Physique des Matériaux, 76000 Rouen, France. 2. ICube Laboratory, Université de Strasbourg and CNRS, B.P. 20, 67037 Strasbourg Cedex, France

14:45 **Ion shaping process of Au NPs in amorphous silicon nitride, silicon dioxide and at their interface** — P 1.9
Mota-Santiago P.1, Kremer F.2, Rizza G.3, Dufour C.4, Khomenkov V.4, Notthoff C.1, Hadley A.1, Kluth P.1
1Department of Electronic Materials Engineering, Research School of Physics and Engineering, Australian National University, Canberra ACT 2601, Australia 2Centre for Advance Microscopy, Australian National University, Canberra ACT 2601, Australia 3Ecole Polytechnique, Laboratoire des Solides Irradies (LSI) CEA/DSM/ IRAMIS, CNRS 91128 Palaiseau Cedex, France 4CIMAP/CEA/CNRS/ENSICAEN/ Universite de Caen, 6 Boulevard du Marechal Juin, 1405 Caen Cedex 4, France

15:00 **Doped ZnO in Hybrid Nanostructure for Lighting and Solar Cell Applications** — P 1.10
Y. Zhang, A. Apostoluk, B. Masenelli, S. Daniele, N. Le Bail, C. Theron, T. Cornier
1. Y. Zhang, A. Apostoluk, B. Masenelli Université de Lyon, Institut des Nanotechnologies de Lyon (INL, UMR CNRS 5270), Institut National des Sciences Appliquées de Lyon (INSA Lyon), France 2. S. Daniele, N. Le Bail, C. Theron, T. Cornier Université de Lyon, Institut de Recherches sur la Catalyse et l?Environnement de Lyon (IRCELYON, UMR CNRS 5256), Université Claude Bernard Lyon 1, France

15:15 **Electrical discharges in liquid media: a novel way for nanomaterial synthesis** — P 1.11
Ahmad Hamdan
Groupe de physique des plasmas, Département de Physique, Université de Montréal, Montréal (Qc), H3C 3J7, Canada

15:30 **coffee break**

Magnetic Nanoparticles : Simona Boninelli

16:00 **Innovative Magnetostrictive Inks Towards Monitoring Applications** — P 5.1
J. A. Silva (1), C. Gouveia (2), G. Dinis (2), H. Araújo (2), A. M. Pereira (1)
(1) IFIMUP and IN ? Institute of Nanoscience and Nanotechnology, Departamento de Física e Astronomia, Faculdade de Ciências, Universidade do Porto, 4169-007 Porto, Portugal, (2) EQS Global, Rua Joaquim Dias Rocha, n.º 354 Zona Industrial da Maia 1, sector X, 4470-211 Maia, Portugal

16:15 **Bimetallic chemically ordered FeCo Nanoparticles : from a direct chemical synthesis to application as efficient high frequency** — P 5.2
L.-M. Lacroix1, C. Garnero1, B. Warot-Fonrose2, K. Soulantika1, C. Meny3, P. Fau4, G. Viau1, P. Poveda5, B. Chaudret1
1. Université de Toulouse, UMR 5215 INSA, CNRS, UPS, Laboratoire de Physique et Chimie des Nano-Objets, Toulouse, France 2. CEMES-CNRS, Toulouse, France 3. IPCMS, Université de Strasbourg, Strasbourg, France 4. LCC, Toulouse, France 5. ST Microelectronics Tours, France

16:30 **Magneto-plasmonic nanostructures for cell targeted theranostic and their magnetophoresis characterization** — P 5.3
Valentina Piotto, Lucio Litti, Piero Riello, Moreno Meneghetti
University of Padova, University of Venezia

16:45 **Synergy effects in ferroelectric and feromagnetic polymeric composites** — P 5.4
J. Macutkevic1, D. Meisak1, A. Plyushch1, V. Samulionis1, J. Banys1, P. Kuzhir2, V. Fierro3, A. Celzard3
1- Faculty of Physics, Vilnius University, Sauletekio 9, Vilnius LT-10222, Lithuania, 2- Research Institute for Nuclear problems of Belarusian State University, Bobruiskaya Str., 11 Minsk 220030 Belarus, 3- IJL-UMR Universite de Lorraine-CNRS, ENTSIB, 27 Rue Philippe Seguin, BP 21042, Epinal Cedex 9.

17:00 **Enhanced dielectric, ferroelectric properties and magnetoelectric effect in aligned DIPAB - PVDF nanofibers doped with magnetite** — P 5.5
Vaibhav Singh Bhugra, Mohsen Maddah, Grant Williams, Thomas Nann
Vaibhav Singh Bhugra - Victoria University of Wellington (School of Chemical and Physical Sciences), Mohsen Maddah - Victoria University of Wellington (School of Chemical and Physical Sciences), Grant Williams - Victoria University of Wellington (School of Chemical and Physical Sciences), Thomas Nann- University of Newcastle (School of Mathematical and Physical Sciences)

Poster session 1 : Giancarlo Rizza

17:30 **High-K dielectric Sulphur-Selenium Alloys** **P 2.1**
Sandhya Susarla, Thierry Tsafack, Peter Samora Owuor, Anand B. Puthirath, Jordan A. Hachtel, Ganguli Babu, Amey Apte, BenMaan I. Jawdat, Martin S. Hilario, Albert Lerma, Hector A Calderon, Francisco C. Robles Hernandez, David W. Tam, Tong Li, Andrew R. Lupini, Juan Carlos Idrobo, Jun Lou, Bingqing Wei, Pengcheng Dai, Chandra Sekhar Tiwary, and Pulickel M. Ajayan
Sandhya Susarla, Thierry Tsafack, Peter Samora Owuor, Anand B. Puthirath, Ganguli Babu, Amey Apte, BenMaan I. Jawdat, Jun Lou, Chandra Sekhar Tiwary, and Pulickel M. Ajayan: Department of Materials Science and Nano-engineering, Rice University, Houston, TX, U.S.A, 77030 Jordan A. Hachtel, Juan Carlos Idrobo : Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, USA 37831 Martin S. Hilario: Air Force Research Laboratory, Kirtland Air Force Base, Albuquerque NM 87117 Albert Lerma: Leidos, Inc., Albuquerque, NM 87106 Francisco C. Robles Hernandez: The University of Houston, Mechanical Engineering Technology, Houston, TX, USA, 77204 Hector A Calderon: Instituto Politécnico Nacional, ESFM, UPALM, Zacatenco, Mexico, CDMX, Mexico, 07338 David W. Tam, Pengcheng Dai : Department of Physics and Astronomy, Rice University, U.S.A., 77030 Tong Li, Bingqing Wei : Department of Mechanical Engineering, University of Delaware, USA, 77030 Andrew R. Lupini: Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN, USA 37831 Chandra Sekhar Tiwary: Department of Materials Science and Engineering, Indian Institute of Technology, Gandhinagar, Palaj, Gandhinagar, Gujrat, India, 382355

17:30 **Transparent dielectric capacitors using 2-dimensional nanosheets** **P 2.2**
Haena Yim, Ji-Won Choi
Center for Electronic Materials, Korea Institute of Science and Technology, Seongbuk-gu, Seoul 02792, Republic of Korea

17:30 **Effect of Eu3+ and Er3+ co-substitution on luminescent properties of La2Ti2O7** **P 2.3**
A. Bayart 1, S. Leroy 1, F. Szczepanski 1, J. F. Blach 1, J. Rousseau 1, A. Katelnikovas 2, S. Saitzek 1
1 Univ. Artois, CNRS, Centrale Lille, ENSCL, Univ. Lille, UMR 8181 - UCCS - Unité de Catalyse et Chimie du Solide, F-62300 Lens, France , 2 Faculty of Chemistry and Geosciences, Vilnius University, Naugarduko 24, Vilnius, LT-03225, Lithuania

17:30 **Design of anti-bacterial devices from embedded Ag nanoparticles in silica** **P 2.4**
Hilal Balout, Nathalie Tarrat, Joel Puibasset, Simona Ispas, Fabrice Gourbilleau, Kremena Makasheva, Caroline Bonafos, Magali Benoit
CEMES, CNRS et Université Toulouse,Toulouse, France, CEMES, CNRS et Université Toulouse,Toulouse, France, ICMN, Université Orléans, Orléans, France, LCC, Université Montpellier, France, CEMES, CNRS et Université Toulouse,Toulouse, France, LAPLACE, Université Toulouse,Toulouse, France, CEMES, CNRS et Université Toulouse,Toulouse, France, CEMES, CNRS et Université Toulouse,Toulouse, France,

17:30 **Effect of the thermo-physical material properties on the ion-shaping process of Au NPs in amorphous silicon nitride, silicon dio** **P 2.5**
Mota-Santiago P.1, Kremer F.2, Rizza G.3, Dufour C.4, Khomenkov V.4, Notthoff C.1, Hadley A
1Department of Electronic Materials Engineering, Research School of Physics and Engineering, Australian National University, Canberra ACT 2601, Australia 2Centre for Advance Microscopy, Australian National University, Canberra ACT 2601, Australia 3Ecole Polytechnique, Laboratoire des Solides Irradies (LSI) CEA/DSM/IRAMIS, CNRS 91128 Palaiseau Cedex, France 4CIMAP/CEA/CNRS/ENSICAEN/Universite de Caen, 6 Boulevard du Marechal Juin, 1405 Caen Cedex 4, France

17:30 **Optical Polarimetry of Aluminium Oxide Liquid Crystal Nanocomposite Materials** **P 2.6**
Andriy V. Kityk, Piotr Pawlik, Anatoliy Andrushchak, Robert Wielgosz, Olha Kityk, Patrick Huber, Kathrin Sentker, Przemys?aw Kula, Wiktor Piecek, Petra Goering, Monika Lelonek
Czestochowa University of Technology, Czestochowa, Poland, Czestochowa University of Technology, Czestochowa, Poland, Lviv National Polytechnic University, Lviv, Ukraine, Energia Oze Sp. z o.o., Konopiska, Poland, Energia Oze Sp. z o.o., Konopiska, Poland, Hamburg University of Technology, Hamburg, Germany, Hamburg University of Technology, Hamburg, Germany, Military University of Technology, Warszawa, Poland, Military University of Technology, Warszawa, Poland, SmartMembranes GmbH, Halle, Germany SmartMembranes GmbH, Halle, Germany

17:30 **Optical properties of Ge-Bi-O glasses activated by Bi-nanoclusters** **P 2.7**
Stepanova I.V., Petrova O.B., Kolobkova E.M., Zykova M.P., Avetissov I.Ch.
D.Mendeleev University of Chemical Technology of Russia

17:30 **Electronic states of single-crystal CaF2 (111) with nanoscale phases of Ca and Si** **P 2.8**
Yokub Suvonovich Ergashov
Tashkent state technical university

17:30 **Light effect on the resistive switching properties of ITO/ZnO/p-Si devices** **P 2.9**
O. Blázquez,1,2 J. L. Frieiro,1,2 F. Bonet-Isidro,1,2 S. González-Torres,1,2 J. López-Vidrier,3 C. Guillaume,4 X. Portier,4 C. Labbé,4 P. Sanchis,5 S. Hernández,1,2 B. Garrido1,2
1MIND, Department of Engineering: Electronics, Universitat de Barcelona, Martí i Franquès 1, E-08028 Barcelona, Spain 2Institute of Nanoscience and Nanotechnology (IN2UB), Universitat de Barcelona, Av. Joan XXIII S/N, E-08028 Barcelona, Spain 3Laboratory of Nanotechnology, Department of Microsystems Engineering (IMTEK), Albert-Ludwigs-Universität Freiburg, Georges-Köhler-Allee 103, D-79110 Freiburg, Germany 4CIMAP Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, 14050 Caen, France 5Nanophotonics Technology Center, Universitat Politècnica de València, Camino de Vera s/n, E-46022 Valencia, Spain

17:30 **Effect of Tb-doping on ITO/ZnO/p-Si resistive switching devices** **P 2.10**
F. Bonet-Isidro,1,2 J. L. Frieiro,1,2 O. Blázquez,1,2 J. López-Vidrier,3 S. González-Torres, 1,2 C. Guillaume,4 X. Portier,4 C. Labbé,4 P. Sanchis,5 S. Hernandez,1,2 B. Garrido1,2
1MIND, Department of Electronics and Biomedical Engineering, Universitat de Barcelona, Martí i Franquès 1, E-08028 Barcelona (Spain) 2Institute of Nanoscience and Nanotechnology (IN2UB), Universitat de Barcelona, Av. Joan XXIII S/N, E-08028 Barcelona (Spain) 3Laboratory for Nanotechnology, Dept. of Microsystems Engineering (IMTEK), University of Freiburg, Albert-Ludwigs-University Freiburg, Georges-Köhler-Allee 103, D?79110 Freiburg (Germany) 4CIMAP Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, 14050 Caen, France 5Nanophotonics Technology Center, Universitat Politècnica de València, Camino de Vera s/n, E-46022 Valencia, Spain

17:30 **Predictions of localized surface plasmon resonances of doped nanostructures by using the Green Dyadic Method** **P 2.11**
Clément Majorel, Peter R. Wiecha, Caroline Bonafos, Vincent Paillard, Christian Girard
CEMES-CNRS, Université de Toulouse, 29 rue Jeanne Marvig, BP 94347, F-31055 Toulouse, France

17:30 **Structure and Luminescent Properties of Solid Solutions in the PbF2?EuF3 and PbF2?ErF3 Systems** **P 2.12**
M. N. Mayakova**, O.B. Petrova*, V.A. Smirnov*, A.V. Khomyakov*, V.V. Voronov**, I. Ch. Avetissov*
* - Department of Crystals Chemistry and Technology, Dmitry Mendeleev University of Chemical Technology of Russia (MUCTR), Moscow, Russia ** - Prokhorov General Physics Institute RAS, Moscow, Russia

17:30 **Dielectric and ferroelectric properties of lead-free ceramic Ca0.8Nd0.05K0.1Ti0.85Nb0.15O3** **P 2.13**
H.Kacem, Ah. Dhahri, E. Dhahri, J. Dhahri, K. Khirouni, K. Taibi.
Laboratoire de la Matière Condensée et des Nanosciences, Département de Physique, Faculté des Sciences de Monastir, Université de Monastir, 5019, Tunisia. - Faculté des Sciences, Monastir, Université de Monastir, Avenue de l'environnement, 5019, Monastir, Tunisia. - Laboratoire de Physique Appliquée, Faculté des Sciences de Sfax, BP 1171, Université de Sfax, 3000, Tunisia Laboratoire de Physique Appliquée, Faculté des Sciences de Sfax, BP 1171, Université de Sfax, 3000, Tunisia Laboratoire de la Matière Condensée et des Nanosciences, Département de Physique, Faculté des Sciences de Monastir, Université de Monastir, 5019, Tunisia. Laboratory of Physics of Materials and Nanomaterials Applied to the Environment, Faculty of Sciences of Gabes, University of Gabes, City Erriadh, 6079, Gabes, Tunisia. Laboratory of Materials Science and Engineering, Faculty of Mechanical Engineering and Process Engineering, University of Science and Technology Houari Boumediene, BP32 El Alia, Bab Ezzouar, 16111, Algiers, Algeria.

17:30 **Ion beam shaping and plamonic properties of hollow gold nanoparticles** **P 2.14**
P.-E. Coulon1, J. Amici1, M.-C. Clochard1, I. Monnet2, C. Grygiel2, V. Khomenkov2, C. Dufour2, M. Kociak3, L. Largeau4, G. Rizza1
1LSI, Ecole polytechnique, Route de Saclay, 91128 Palaiseau Cedex, France
2CIMAP, Boulevard Henri Becquerel, 14070 Caen Cedex 5, France 3LPS, Bâtiment 510, Université Paris Sud XI, 91405 Orsay, France 4C2N, Avenue de la Vauve, 91120 Palaiseau, France

17:30 **Soft-template mediated silver nanoparticles formation via galvanic replacement reaction of As(0) and its catalytic application** **P 2.15**
IMON KALYAN, ANJALI PAL
School of Nanoscience and Nanotechnology, IIT Kharagpur-721302, India, Department of Civil Engineering, IIT Kharagpur-721302, India.

17:30 **Formation of CdTe nanocrystals in SiO2/Si track templates by electrochemical deposition using two types of electrolytes** **P 2.16**
A. Akilbekov1, A. Dauletbekova1, F. Komarov2, Z. Baimukhanov1, A. Kozlovskii3, L. Vlasukova2, R. Balakhaeva1, Sh. Giniyatova1, A. Usseinov1
1L.N. Gumilyov Eurasian National University, Astana, Kazakhstan 2Belarus State University, Minsk, Belarus 3AB of Institute of Nuclear Physics, Astana, Kazakhstan

17:30 **Thin metal nanoparticle film with a gradient size distribution of nanoparticles as new thermophotovoltaic material** **P 2.17**
Borisyuk P. V., Lebedinskii Yu. Yu., Vasilyev O.S.
National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), National Research Nuclear University MEPhI (Moscow Engineering Physics Institute), Moscow Institute of Physics and Technology (State University), National Research Nuclear University MEPhI (Moscow Engineering Physics Institute)

17:30 **Nd/La, Nd/Lu-co-doped transparent lead fluoroborate nanoglass-ceramics** **P 2.19**
O.B. Petrova*, A.S. Sologub*, D.A. Velichkina*, M.P. Zykova*, A.V. Khomyakov*, M.A. Uslamina**, K.N. Nischev**, A.A. Pynenkov**, I. Ch. Avetissov*
* Department of Crystals Chemistry and Technology, Dmitry Mendeleev University of Chemical Technology of Russia, Moscow, Russia ** Physics and Chemistry Institute National Research Mordovia State University, Saransk, Russia

17:30 **ZnO phototransistors with photoactive RGB quantum dots** **P 2.20**
Soon-kyu Cha1,2 ShinYoung Jeong1,3, JoonHyun Kang1, Young Dong Kim2, Sungjun Kang4, Il Ki Han1,2
1Nanophotonics Research Center, Korea Institute of Science and Technology, 2Department of Converging Science and Technology, Kyunghee University, 3School of Electrical Engineering, Korea University, 4Department of Advanced Materials Engineering for Information and Electronics, Kyunghee University

17:30 **Effect of the size of nanoparticles on their dissolution within metal-glass nanocomposites under sustained irradiation** **P 2.21**
Thi Hai Yen Vu, Marc Hayoun, Giancarlo Rizza
Laboratoire des Solides Irradiés (LSI) Ecole polytechnique

17:30 **Gold removal from Si Nanowires grown by Vapor-Liquid-Solid method** **P 2.22**
R. A. Puglisi*, C. Bongiorno, G. Borgh1, E. Fazio1, C. Garozzo, G. Mannino, F. Neri1, G. Pellegrino, S. Scalese, and A. La Magna
CNR Istituto per la Microelettronica e Microsistemi, Strada Ottava 5, Zona Industriale, 95121 Catania, Italy, 1Dipartimento Scienze Matematiche ed Informatiche, Scienze Fisiche e Scienze della Terra, Università degli Studi di Messina, F. Stagno d&#8217,Alcontres, 31, 98166 Messina, Italy.

17:30 **Synthesis of Eu-doped Y2O3 red phosphor modification of the surface with gold nanoparticles** **P 2.23**
Vasilica ?ucureanu1,2, Alina Matei1, Andrei Avram1, Iuliana Mihalache1, Marian C?t?lin Popescu1, Cosmin Romani?an1, Bianca ?încu1, Marioara Avram1, Daniel Munteanu2
1National Institute for Research and Development in Microtehnologies (IMT-Bucharest), Erou Iancu Nicolae Street, 126A, 077190, Bucharest, Romania, 2Transilvania University of Brasov, Department of Materials Science,29 Eroilor Blvd, 500036, Brasov, Romania

17:30 **Manifestation of intrinsic dipoles in the evaporation-driven assembly of perovskite nanocubes into energy harvesting composites** **P 2.24**
Dmitry Zablotsky (a,b), Vladimir Kuzovkov (b), Eugene Kotomin (b)
(a) Institute of Physics, University of Latvia, Latvia, e-mail: dmitrijs.zablockis@lu.lv, (b) Institute of Solid State Physics, University of Latvia, Riga, Latvia

17:30 **Fine-tuning Core-shell Nanoparticle by Surface and Interface Engineering** **P 2.25**
Jianxiong Zhao, Xian Chen, Bing Chen, Feng Wang
City University of Hong Kong

17:30 **A study on the improvement of the charge migration using the high-k laminated trap in charge trap flash memory** **P 2.26**
Jinhyuk Yoo, Soonkon Kim, Byoungdeog Choi
Sungkyunkwan university and Samsung Electronics , Sungkyunkwan university , Sungkyunkwan university

17:30 **Ar Irradiation Induced Memristive Property Engineering in Single Crystalline LiNbO3 Thin Film for Neuromorphic Computing** **P 2.27**
Xinqiang Pan,1,2 Yao Shuai*,1 Chuangui Wu,1 Lu Zhang,3 Hongliang Guo,3 Hong Cheng,3 Yun Peng,1 Shijun Qiao,1 Wenbo Luo,1 Tao Wang,1 Huizhong Zeng,1 Jianwei Zhang, 2 Wanli Zhang,1 Xin Ou,4 Nan Du,5 and Heidemarie Schmidt5,6
1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu 610054, China, 2. Institute of Technical Aspects of Multimodal Systems (TAMS), Department of Informatics, Universität Hamburg, D-22527, Hamburg, Germany, 3. The Center for Robotics, University of Electronic Science and Technology of China, Chengdu 611731, China, 4. State Key Laboratory of Functional Material for Informatics, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai 200050, China, 5. Fraunhofer-Institut für Elektronische Nanosysteme, Abteilung Back-End of Line, Technologie-Campus 3, 09126 Chemnitz, Germany, 6. Leibniz-Institut für Photonische Technologien e.V. (IPHT), Albert-Einstein-Str. 9, 07745 Jena, Germany

17:30 **MORPHOLOGY AND ELECTRON PROPERTIES OF NANO-DIMENSIONAL STRUCTURES Si CREATED ON CaF2 SURFACE** **P 2.28**
Donaev S.B., Umirzakov B.E.
Tashkent state technical university

17:30 **Nanomaterials for Human Mimicking** **P 2.29**
Seon Joo Park, Oh Seok Kwon
Infectious Disease Research Center, Korea Research Institute of Bioscience and Biotechnology, Daejeon 34141, Republic of Korea

Tuesday 28 may 2019

Optics, Photonics, Plasmonics : Tom Gregorkiewicz

09:30 INV **Non-linear optical properties of semiconductor nanocrystals** **P 4.1**
Christophe Delerue
ULille, CNRS, Centrale Lille, ISEN, UPHF, UMR 8520 - IEMN, F-59000 Lille, France

10:00 INV **Perfect light trapping by nanocomposite metamaterials for sensing and energy applications** **P 4.2**
Johann Toudert
Laser Processing Group, Instituto de Óptica, IO-CSIC, Madrid, Spain

10:30 **Optical switching of bismuth nanoparticle systems upon nanosecond laser excitation** **P 4.3**
Miguel Alvarez1, Marina Garcia1, Fatima Cabello1, Emmanuel Haro-Poniatowski2, Rosalia Serna1, and Jan Siegel1
1. Laser Processing Group, Instituto de Óptica, IO-CSIC, Serrano 121, 28006 Madrid, Spain 2. Departamento de Física, 2 Departamento de Química, Universidad Autónoma Metropolitana Iztapalapa, Av. San Rafael Atlixco No. 186, Col. Vicentina, C.P. 09340, México D. F. México

10:45 **Structural and optical properties of SiP thin films** **P 4.4**
S. Geiskopf (1), M. Stoffel (1), X. Devaux (1), E. André (2), C. Carteret (2), A. Bouché (1), M. Vergnat (1), H. Rinnert (1)
(1) Université de Lorraine, CNRS, Institut Jean Lamour, 54000 Nancy, France (2) Université de Lorraine, UMR CNRS 7564, LCPME, 405 rue de Vand?uvre, 54600 Villers les Nancy, France

11:15 **Plenary Session1**

12:30 **Lunch**

14:00 INV **Topological Nanophotonics** **P 4.5**
Vincenzo Giannini, Paloma A. Huidobro, Simon Pocock
Instituto de Estructura de la Materia (IEM-CSIC), Consejo Superior de Investigaciones Científicas, Madrid, Spain, Physics Department, Imperial College London, Blackett Laboratory, London SW7 2AZ, United Kingdom, Physics Department, Imperial College London, Blackett Laboratory, London SW7 2AZ, United Kingdom

14:30 INV **Laser controlled plasmonic nanocomposite films for color image multiplexing** **P 4.6**
Nipun Sharma1, Marie Vangheluwe2, Alice Vermeulin2, Nathalie Destouches1
1. Univ Lyon, UJM?Saint?Etienne, CNRS, Institut d Optique Graduate School, Laboratoire Hubert Curien UMR 5516, F?42023, Saint-Etienne, France. Email: nathalie.destouches@univ-st-etienne.fr 2. HID Global CID, 92150 Suresnes, France

15:00 **Fabrication of ion-shaped anisotropic nanoparticles and their orientational imaging by second-harmonic generation microscopy** **P 4.7**
A. Slablab, G. Rizza
Laboratoire des Solides Irradiés (LSI) Ecole polytechnique

15:15 **Elaboration, structural and optical properties of SiO1.5 alloys doped with boron** **P 4.8**
F.Trad, X. Devaux, A. Bouché, M. Stoffel, M. Vergnat, H. Rinnert
Université de Lorraine, CNRS, IJL, F-54000 Nancy, France

15:30 **Highly Fluorescent Metal?Organic-Framework Nanocomposites for Photonic Applications** **P 4.9**
Angelo Monguzzi
Università degli Studi Milano Bicocca Department of Materials Science

15:45 **coffee break**

16:15 INV **Optical properties of all-inorganic perovskite nanocrystals** **P 3.1**
Leyre Gomez, Chris de Weerd, and Tom Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, The Netherlands

Transport, Electronics : Caroline Bonafos

16:45 INV **2D-0D heterostructures for nanoelectronics** **P 3.2**
L.D.N. Mouafo 1, F. Godel 2, G. Melinte 1, S. Hajjar-Garreau 3, B. Dlubak 2, D. Halley1, Y. Henry1, O. Ersen 1, B. Doudin 1, L. Simon 3, P. Seneor 2, J.-F. Dayen * 1.
1. Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), UMR 7504, F-67000 Strasbourg. 2. Unité Mixte de Physique, CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, 91767 Palaiseau. 3. Institut de Sciences des Matériaux de Mulhouse, CNRS-UMR 7361, Université de Haute Alsace, 3Bis, rue Alfred Werner, Mulhouse 68093.

17:15 **SiO2/Ag/ SiO2 multilayer transparent electrodes for optoelectronic devices** **P 3.3**
Giacomo Torrisi, Melanie Micali, Antonio Terrasi
University of Catania - Cnr IMM , University of Catania, University of Catania - Cnr IMM,

Wednesday 29 may 2019

Sensing : Vincenzo Giannini

09:30 INV **Polarization-resolved Surface Enhanced Raman Scattering of molecules absorbed on anysotropic nanoantennas.** P 7.1
R. Gillibert and P. G. Gucciardi
CNR IPCF - Messina (Italy)

10:00 **Low-cost synthesis of NiO nanofoam for selective room temperature NO2 detection** P 7.2
Mario Urso 1, Salvatore Gianluca Leonardi 2, Nicola Donato 2, Giovanni Neri 2, Salvatore Petralia 3, Sabrina Conoci 3, Francesco Priolo 1, Salvo Mirabella 1
1 MATIS CNR-IMM and Dipartimento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, Italy, 2 Dipartimento di Ingegneria, Università di Messina, Contrada Di Dio, 98166 Messina, Italy, 3 STMicroelectronics, Stradale Primosole 50, 95121 Catania, Italy.

10:15 **Prediction of colloidal SERS enhancement factor from extinction of clustered gold nanopheres and related applications** P 7.3
Lucio Litti, Moreno Meneghetti
Department of Chemical Sciences, University of Padova, via Marzolo 1, Padova, Italy

10:30 **Lanthanide ions activated nanofluorides as optical nanothermometers in the biological window** P 7.4
G. Lucchini 1, P. Cortelletti 1, L. Rolla 1, L. Marciniak 2, D. Hreniak 2, A. Skripka 3, F. Vetrone 3, A. Speghini 1
1 Nanomaterials Research Group, Department of Biotechnology and INSTM, Unità di Verona,Università di Verona, Strada le Grazie 15, Verona, Italia, 2 Institute of Low Temperatures and Structural Research, Polish Academy of Science, 50-422 Wroclaw, Poland, 3 Institut National de la Recherche Scientifique - Energie, Materiaux et Telecommunications (INRS - EMT), Universite du Quebec, 1650 Boul. Lionel-Boulet, Varennes, QC, J3X 1S2, Canada.

10:45 **coffee break**

11:15 **Molecular sensing with surface enhanced thermal emission spectroscopy** P 7.5
Franziska Barho, Fernando Gonzalez-Posada Flores, Laurent Cerutti, Thierry Taliercio
Univ Montpellier, CNRS, IES, UMR 5214, F-34000 Montpellier, France

11:30 **SERS detection of Alzheimer?s biomarkers by plasmonic optofluidic platforms** P 7.6
M. Banchelli (1), C. Amicucci (1), D. Ciofini (1), I. Osticioli (1), G. Ghini (2), C. D?Andrea (1), M. De Angelis (1), S. Siano (1), R. Pini (1), P. Matteini (1)
(1) Istituto di Fisica Applicata Nello Carrara, Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy (2) Cabro Spa via Setteponti 141, 52100 Arezzo, Italy

11:45 **Composite Material Based on Reduced Graphene Oxide and Metal Oxide Nanotubes: Synthesis and Sensing Properties** P 7.7
Vardan Galstyan, Andrea Ponzoni, Iskandar Kholmanov, Marta M. Natile, Antonella Glisenti, Elisabetta Comini, Giorgio Sberveglieri
Vardan Galstyan, Elisabetta Comini, Giorgio Sberveglieri (Sensor Lab, Department of Information Engineering, University of Brescia, Via Valotti 9, 25133 Brescia, Italy). Andrea Ponzoni (CNR - National Institute of Optics (INO), Via Branze 45, 25123 Brescia, Italy). Iskandar Kholmanov (Department of Mechanical Engineering, The University of Texas at Austin, Austin, TX 78712, USA). Marta M. Natile, Antonella Glisenti (CNR-Institute of Condensed Matter Chemistry and Technologies for Energy, Department of Chemical Sciences, University of Padova, Via F. Marzolo 1, 35131 Padova, Italy).

12:00 **Lunch**

Carbon, Graphene : Fabrice Gourbilleau

14:00 INV **Electroactive organic composite materials for supercapacitors** P 7.1
Milla Suominen1,2, Pia Damlin2 and Carita Kvarnström2
1University of Turku Graduate School (UTUGS): Doctoral Programme in Physical and Chemical Sciences 2Turku University Centre for Materials and Surfaces (MATSURF), Laboratory of Materials Chemistry and Chemical Analysis, University of Turku, FIN-20014 Turku, Finland

14:30 **Characterization of LSPR effects in gold nanoparticles/reduced graphene oxide composite material for plasmonic sensing applicati** P 7.2
Alessandro Fantoni, Vladan Stojkovic, Miguel Fernandes, Manuela Vieira, Elisabete C.B.A. Alegria, Ana P.C. Ribeiro, Ana Carvalho
ADEETC-ISEL-Instituto Politécnico de Lisboa, 1949-014 Lisbon, Portugal 2 CTS-UNINOVA, Caparica, Portugal ADEQ-ISEL-Instituto Politécnico de Lisboa, 1949-014 Lisbon, Portugal CQE-Instituto Superior Técnico, Universidade de Lisboa,1049-001 Lisbon, Portugal DEE-FCT-UNL , Caparica, Portugal

14:45 **Few-layer graphene based nanocomposites for potential use in dental/ biomedical applications** P 7.3
Sharali Malik, Felicite M. Ruddock, Adam H. Dowling, Kevin Byrne,Wolfgang Schmitt, Ivan Khalakhan, Yoshihiro Nemoto, Hongxuan Guo, Lok Kumar Shrestha, Katsuhiko Ariga, Jonathan P. Hill
Institute of Nanotechnology, Karlsruhe Institute of Technology (KIT), D-76131 Karlsruhe, Germany, Department of Civil Engineering, Liverpool John Moores University, Liverpool, L3 3AF, UK, Materials Science Unit, , Dublin Dental University Hospital, TCD, Lincoln Place, Dublin 2, Ireland, School of Chemistry and CRANN Institute, University of Dublin, Trinity College, Dublin 2, Ireland, Department of Surface and Plasma Science, Charles University, Czech Republic, International Center for Materials Nanoarchitectonics (WPI-MANA), NIMS, Tsukuba, Japan, Department of Advanced Materials Science, University of Tokyo, Japan

15:00 **Large-Area All-Carbon Nanocapacitors from Graphene and Carbon Nanomembranes** P 7.4
Xianghui Zhang?, Emanuel Marschewski?, Paul Penner?, Thomas Weimann?, Peter Hinze?, André Beyer? , and Armin Gölzhäuser?
? Physics of Supramolecular Systems and Surfaces, Bielefeld University, 33615 Bielefeld, Germany ? Physikalisch-Technische Bundesanstalt, 38116 Braunschweig, Germany

15:15 **coffee break**

15:45 **Synergistic mechanical properties improvement of carbon nanotubes/ graphene reinforced polyurethane hybrid nanocomposites** P 7.5
Amir Navidfar, Levent Trabzon
Faculty of Mechanical Engineering, Istanbul Technical University, Istanbul, Turkey, MEMS Research Center, Istanbul Technical University, Istanbul, Turkey,

16:00 **Optimization of direct graphene growth on dielectric substrate using chemical vapor deposition** P 7.6
Aamna AlShehhi,Irfan Saadat,Faisal Al Marzooqi, Amal Al Ghaferi
Masdar Institute of science and technology, Khalifa University

16:15 **Enhancement of Electromagnetic Interference Shielding and Radar Absorption in Magnetic Metal Filed Carbon Nanotube Via Synergeti** P 7.7
Harish Kumar Choudhary, Suryasarathi Bose, Balaram Sahoo
Materials Research Centre, Indian Institute of Science, Bangalore, India 560012
Materials Engineering, Indian Institute of Science, Bangalore, India 560012

Poster session 2 : Simona Boninelli

16:30 **Effect of incorporation of A-CNTs and RGO into alkaline niobate nanocomposites for energy harvesting application** P 8.1
Pratyusha Bhowmick (1), Koushik Biswas (1,2), Sudipto Ghosh (1,2), Rasmita Biswal (2)
(1) School of Nanoscience and Technology, Indian Institute of Technology, Kharagpur ? 721302, India (2) Metallurgical and Materials Engineering Department, Indian Institute of Technology, Kharagpur ? 721302, India

16:30 **Highly Sensitive Ultraviolet Photodetector Based On Azobenzene Derivative Contained Dielectric Film** P 8.2
Kang Eun Lee, Teahoon Park, Youngseok Oh, Jung-Keun Yoo, Moon-Kwang Um
Korea Institute of Materials Science

16:30 **Decay rate of magnetic dipoles in the vicinity of non-magnetic nanostructures** P 8.3
Clément Majorel, Peter R. Wiecha, Arnaud Arbouet, Aurélien Cuche, Vincent Paillard, Christian Girard
CEMES-CNRS, Université de Toulouse, 29 rue Jeanne Marvig, BP 94347, F-31055 Toulouse, France

16:30 **ULTRATHIN SILICON NANOWIRES AS NEW MATERIAL FOR WATER PURIFICATION** **P 8.4**

G. Munzi1, M. Agati2, M.A. El Khakani3, P. Castrucci4 S. Boninelli2
1 CNR-IMM, Via Santa Sofia 64, 95123, Catania, Italy, 2CNR-IMM, Strada VIII, 5, 95121, Catania, Italy, 3Institut national de la recherche scientifique, Centre-Énergie, Matériaux et Télécommunications (INRS-EMT), 1650 Blvd. Lionel Boulet, Varennes QC-J3X 1S2, Canada, 4Dipartimento di Fisica, Università degli Studi di Roma Tor Vergata, Via della Ricerca Scientifica 1, 00133, Roma, Italia

16:30 **Chemical synthesis of magnetic materials : the potentiality of nanoparticles** **P 8.5**

L.-M. Lacroix1, P. Moritz1, T. Leichle2, G. Viau1
1. Université de Toulouse, UMR 5215 INSA, CNRS, UPS, Laboratoire de Physique et Chimie des Nano-Objets, Toulouse, France 2. LAAS, Toulouse, France

16:30 **Study of photostability of Cu and Ag doped nanocrystals embedded in polymer matrix** **P 8.6**

L. Borkovska1, A. Rachkov2, T. Kryshtab3
1V. Lashkaryov Institute of Semiconductor Physics of the NAS of Ukraine, 45 Prospect Nauky, 03028 Kyiv, Ukraine. 2Institute of Molecular Biology and Genetics of NASU, 150 Zabolotnogo Str., 03680 Kyiv, Ukraine 3Instituto Politécnico Nacional ? ESFM, Av. IPN, Ed.9 U.P.A.L.M., 07738 Mexico D.F., Mexico

16:30 **Bio-composite Membranes for Forward Osmosis Applying Eggshell Membranes** **P 8.7**

Teayeop Kim, Sunho Park, Jangho Kim, Kyunghoon Kim
School of Mechanical Engineering, Sungkyunkwan University, Suwon, 16419, Korea, Department of Rural and Biosystems Engineering, Chonnam National University, Gwangju 61186, Korea, Department of Rural and Biosystems Engineering, Chonnam National University, Gwangju 61186, Korea, School of Mechanical Engineering, Sungkyunkwan University, Suwon, 16419, Korea,

16:30 **KINETIC AND COMPARATIVE STUDY OF THE ISOMERIZATION REACTION OF SUBSTITUTED HEPTADECAOCTA-ENE BY DFT (TD-B3LYP) AND SEMI EMPIRIC** **P 8.8**

Z. Skanderi 1* Y. Bouzaher1 Ilhem. R. Kriba2 A. Djebaili1
Z. Skanderi 1*, Y. Bouzaher1, , Ilhem. R. Kriba2, A. Djebaili1 1 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna 1- Algeria 2 Faculty of Material Sciences- Department of Chemistry - University of Batna 1- 05000- Algeria

16:30 **Gapless triboelectric nanogenerator by one-step metal oxidation process** **P 8.9**

Dukhyun Choi, Dongseob Kim
Department of Mechanical Engineering, Kyung Hee University, South Korea, Aircraft System Technology Group, Korea Institute of Industrial Technology(KITECH), South Korea

16:30 **Fabrication of Lightweight Hybrid Composite Based on Co doped CeO2/RGO-PVDF for High Electromagnetic Wave Absorption Performance** **P 8.10**

Anurima De, Bhanu Bhusan Khatua*
Indian Institute of Technology Kharagpur West Bangal 721302 India

16:30 **Dipolar Dynamics and Atmospheric Effects in ZIF-90 Metal?Organic Framework** **P 8.11**

Sergejus Balciunas (1), Mantas Sime?nas (1), Diana Pavlovaite (1), Martynas Kinka (1), Fa-Kuen Shieh (2), Kevin C.-W Wu (3), Juras Banys (1), Robertas Grigalaitis (1)
(1) Faculty of Physics, Vilnius University, Sauletekio av. 9, LT-10222 Vilnius, Lithuania (2) Department of Chemistry, National Central University, Chung-Li 32001, Taiwan (3) Department of Chemical Engineering, National Taiwan University, Taipei 10617, Taiwan

16:30 **Enhancing the single-molecule sensitivity of nanopores sensing by tailoring nanopore structures and sizes** **P 8.12**

Xun Zhou, Xue Liang, Andrew Shevshuk,* Alex Ivanov,* Joshua Edel*
Imperial College London

16:30 **Anthracene Dimer-Crosslinked Polyurethanes as Mechanoluminescent Polymeric Materials** **P 8.13**

Lei Kan, Hao Wei,* and Ning Ma *
Key Laboratory of Superlight Material and Surface Technology of Ministry of Education, College of Material Science and Chemical Engineering, Harbin Engineering University, Harbin 150001, China.

16:30 **Plasma-assisted mechanochemistry to form covalent bonds between polymers and nanofillers in nanocomposites** **P 8.14**

Jong Hyuk Park
Korea Institute of Science and Technology

19:00 **Graduate Student Award ceremony followed by the social event**

08:00 **Conclusion**

Organic Materials : Minna Hakkarainen and Ignazio Roppolo

09:30 INV **Hydroresistive Flexible Nanocomposite Films based on Organic Molecular Metal** **P 9.1**
Raphael Pfattner, Victor Lebedev, Elena Laukhina, Anna Crespi, Marta Mas-Torrent, Vladimir Laukhin, Concepció Rovira, Jaume Veciana
Institut de Ciéncia de Materials de Barcelona (ICMAB-CSIC) Campus UAB, 08193 Bellaterra (Spain) and Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN) ICMAB-CSIC, 08193 Bellaterra (Spain)

10:00 **Filler size and concentration dependence of the dielectric response of UV curable BaTiO3 based nanocomposites** **P 9.2**
C. Mendes-Felipe(1,2), P. Costa(3,4), J.L. Vilas-Vilela(1,2), S. Lanceros-Mendes(1,5)
1 BCMaterials, Basque Center for Materials, Applications and Nanostructures, UPV/EHU Science Park, E-48940 Leioa, Spain, 2 Macromolecular Chemistry Group (LABQUIMAC), Department of Physical Chemistry, Faculty of Science and Technology, University of the Basque Country (UPV/EHU), Barrio Sarriena s/n, E-48940 Leioa, Spain, 3 Center/Department of Physics, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal, 4 Institute for Polymers and Composites IPC, University of Minho, 4800-058 Guimarães, Portugal, 5 IKERBASQUE, Basque Foundation for Science, 48013 Bilbao, Spain

10:15 **Synthesis and Processing of Polymer-Nanoparticle Hybrid Materials for H2 sensing** **P 9.3**
Alicja Stola?1, Ida Östergren1, Iwan Darmadi2, Christoph Langhammer2, Christian Müller1, Kasper Moth-Poulsen1
1Dept. Chemistry and Chemical Engineering, Chalmers University of Technology, 2Dept. Physics, Chemical Physics, Chalmers University of Technology, 41296 Gothenburg, Sweden.

10:30 **Free-standing PEDOT:PSS matrix obtained by in-solution process** **P 9.4**
R. A. Puglisi*, V. Lombardo1, S. Di Franco, L. D&#8217,Urso, S. Scalese, Antonio Terrasi1 and A. La Magna.
CNR Istituto per la Microelettronica e Microsistemi, Strada Ottava 5, Zona Industriale, 95121 Catania, Italy, 1Università di Catania, Dipartimento di Fisica e Astronomia, Via S. Sofia 64, 95123, Catania, Italy

10:45 **Polymer dielectric composites with stress-sensitive nanostructures for capacitive pressure sensors** **P 9.5**
Gen-Wen Hsieh, Shih-Rong Lin, Yan-Sheng Chen
Insititute of Lighting and Energy Photonics, College of Photonics, National Chiao Tung University

11:00 **Synthesis of nano-bentonite-PVA-BC nanocomposite by electrospinning for wound dressing applications** **P 9.6**
Parisa Zeaiean Firouzabadi, Hajar Ghanbari, Nafiseh Mahmoudi, Jafar Javadpour Department of Metallurgy and Material Engineering, Iran University of Science and Technology, Tehran, Iran Department of Materials Science and Engineering, Sharif University of Technology, Azadi Avenue, P.O. Box 11365-9466, Tehran, Iran

11:15 **Plenary session 2**

12:30 **Lunch**

13:45 INV **UV-Printable and Flexible Humidity Sensors Based on Conducting/Insulating Semi-Interpenetrated Polymer Networks** **P 9.7**
Marco Sangermano
Politecnico di Torino, Dipartimento di scienza Applicata e Tecnologia C.so Duca dgeli Abruzzi 24, 10129, Torino, Italy

14:15 **POLYMER NANOCOMPOSITES BASED ON SI NANOSTRUCTURES COUPLED WITH C NANOTUBES** **P 9.8**
G. Munzi1, M. Ussia1,2, G. Gorrasi3, P. Castrucci4, M. A. El Khakani5, S. Boninelli6
1 CNR-IMM, Via Santa Sofia 64, 95123, Catania, Italy, 2 Department of Physics and Astronomy ?E. Maiorana?, University of Catania, via Santa Sofia 64, 95123, Catania, Italy, 3 Università di Salerno, Dipartimento di Ingegneria Industriale, Via Giovanni Paolo II, 132, 84084 Fisciano (SA) Italy, 4 Dipartimento di Fisica, Università degli Studi di Roma Tor Vergata, Via della Ricerca Scientifica 1, 00133, Roma, Italia, 5 Institut national de la recherche scientifique, Centre-Énergie, Matériaux et Télécommunications (INRS-EMT), 1650 Blvd. Lionel Boulet, Varennes QC-J3X 1S2, Canada, 6 CNR-IMM, Strada VIII, 5, 95121, Catania, Italy

14:30 **Chemical mapping of nanocomposites with 10 nm spatial resolution** **P 9.9**
Philip Schäfer, Andreas Huber
neaspec GmbH, Eglfinger Weg 2, 85540 Haar, Germany

14:45 **Self-assembled hybrid nanotubes for x-ray activated photodynamic therapy (X-PDT) on brain cancer** **P 9.10**
M. Campione (1), I. Villa (2), C. Villa (3), Y. Torrente (3), A. Vedda (2), A. Monguzzi (2).
1. Department of Earth and Environmental Sciences, Università degli Studi Milano Bicocca, Piazza della Scienza 4, 20126 Milan, Italy, 2. Department of Materials Science, Università degli Studi Milano Bicocca, via R. Cozzi 55, 20125 Milan, Italy, 3. Stem Cell Laboratory, Department of Pathophysiology and Transplantation, Università degli Studi di Milano, Fondazione IRCCS Ca? Granda Ospedale Maggiore Policlinico, Centro Dino Ferrari, via F. Sforza 35, 20122 Milan, Italy

15:00 **coffee break**

15:15 **Transparent Wood and its Hybrids with Nanoparticles for Optical Functionality** **P 9.11**
Ilya Sychugov, Yuanyuan Li, Sergei Popov, Lena Vasileva, Lars Berglund
KTH - Royal Institute of Technology, Stockholm, Sweden

15:30 **Hydrophobic bio-based epoxy coatings for water repellent applications** **P 9.12**
Daniel A. Bellido-Aguilar, Shunli Zheng, Yinjuan Huang, Zhong Chen.
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, 639798, Singapore.

15:45 **Modeling of nanoparticle growth in photoinduced nanocomposites based on segregated block copolymers** **P 9.0**
A. Pikulin, N. Sapogova, A. A. Smirnov, N. Bityurin
Institute of Applied Physics RAS, 46 Ul'yanov Street, 603950, Nizhny Novgorod, Russia

16:00 **A Novel Facile Method for Bijels Fabrication** **P 9.0**
Junzhi Li, Haoran Sun, Min Wang *
Department of Mechanical Engineering, The University of Hong Kong, Pokfulam Road, Hong Kong * Email: memwang@hku.hk

16:15 **coffee break**

Additive Manufacturing : Marco Sangermano

16:30 INV **Nanocomposites for DLP 3D Printing: from materials? engineering to materials? science** **P 10.1**
Ignazio Roppolo
Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy

17:00 **3D-printing of Plastic Plasmonic Hybrid Materials** **P 10.2**
Ida Östergren 1, Alicja Stolas 1, Iwan Darmadi 2, Kasper Moth-Poulsen 1, Christian Müller 1 and Christoph Langhammer 2
1, Department of Chemistry and Chemical Engineering, Chalmers University of Technology, 412 96 Göteborg, Sweden 2, Department of Physics, Chalmers University of Technology, 412 96 Göteborg, Sweden

17:15 **Exploring the DLP-3D way to fabricate bio-inspired soft actuators composed of self-organized magnetic sub-microstructures** **P 10.3**
Simone Lantean1,2, Ignazio Roppolo1, Marco Sangermano1, Giancarlo Rizza2
1Department of Applied Science and Technology (DISAT), Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy 2Laboratoire des Solides Irradiés (LSI), Ecole Polytechnique, Université Paris-Saclay, Route de Saclay, 91128 Palaiseau Cedex, France

17:30 **Additive manufacturing of polymer composites with nano-titania inclusion for green energy tasks** **P 10.4**
Igor Shishkovsky, Vladimir Scherbakov
Skolkovo Institute of Science and Technology (IS), Lebedev Physics Institute of RAS (VS)

17:45 **3D printing of highly flexible, thermal conductive and biocompatible boron nitride nanocomposites for bioelectronics** **P 10.5**
Hadis Khakbaz, Dr. Stephen Beirne, Prof. Peter C. Innis
ARC Centre of Excellence for Electromaterials Science, Intelligent Polymer Research Institute, Innovation Campus, University of Wollongong, North Wollongong, NSW 2500, Australia

SYMPOSIUM Q

Polar oxides: synthesis, science and applications

Symposium Organizers :

Athanasios DIMOULAS, NCSR Demokritos, Athens, Greece

Bertrand VILQUIN, CNRS-ECL, Ecully, France

Gustau CATALAN, ICREA and ICN2, Barcelona, Spain

Marin ALEXE, University of Warwick, U.K.

GDR OXYFUN

3ε FERRO

Perovskites and related materials : Bertrand Vilquin

08:30 INV **Ferroionic states: coupling between surface electrochemical and bulk ferroelectric functionalities on the nanoscale** Q 1.1
Stephen Jesse, Anton Ievlev, Nina Balke, Sergei V. Kalinin, Olga S. Ovchinnikova
Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, 37831, USA

09:00 **Dielectric characterization in low and high frequencies of new ferroelectric strontium and tantalum based perovskite ceramics** Q 1.2
M. Haydoura*, R. Benzerga*, C. Le Paven*, V. Laur+, A. Chevalier+, L. Le Gendre*, Y. Bai&, H. Jantunen&, F. Marlec*, A. Sharaiha*
* Univ Rennes, CNRS, IETR UMR 6164, 35042 Rennes, France. + Univ Bretagne Occidentale, CNRS, LABSTICC UMR 6285, 29 000 Brest, France. & Univ Oulu, Microelectronics Research Unit, 90014 Oulu, Finland

09:15 **Photoexcitation processes in self-assembled layered PbTiO3 thin films** Q 1.3
Lutz Mühlenbein [1], Chandra Bhal Singh [2], Young Heon Kim [3], Andriy Lotnyk [4], Yeseul Yun [1], Niranjan Ramakrishnegowda [1], David S. Knoche [1], Xinye Li [1], Akash Bhatnagar [1]
[1]: Zentrum für Innovationskompetenz SiLi-nano, Martin Luther University Halle-Wittenberg, Karl-Freiherr-von-Fritsch-Straße 3, 06120 Halle (Saale), Germany, [2]: School of Materials Science and Technology, Indian Institute of Technology, Banaras Hindu University, Varanasi-221005, India, [3]: Graduate School of Analytical Science and Technology, Chungnam National University, 99 Daehak-ro, Yuseong-gu, Daejeon 34134, Republic of Korea, [4]: Leibniz Institute of Surface Engineering (IOM), Permoserstr. 15, 04318 Leipzig, Germany

09:30 **Quantum Criticality in Ferroelectric Tetragonal Tungsten Bronze (TTB) K3Li2Ta5O15 and Pyrochlore Pb2Nb2O7** Q 1.4
Rebecca M. Smith, James F. Scott
School of Chemistry, University of St. Andrews, St. Andrews, UK KY16 9ST, Schools of Chemistry and Physics, University of St. Andrews, St. Andrews, UK KY16 9ST

09:45 **Towards negative capacitance in Pb(Zr0.2Ti0.8)O3 /SrTiO3 superlattices** Q 1.5
M. Gharbi1, A. Sené1, J. L. Dellis1, ,I. Luk'yanchuk1, F. Le Marrec1, M.G. Karkut1, A. Sylvestre2 and N. Lemée1
1 LPMC, EA 2081, University of Picardie Jules Verne, 80039 Amiens, France 2 University of Grenoble Alpes, CNRS, Grenoble INP, G2Elab, F-38000 Grenoble, France

10:00 **Coffee break**

10:30 INV **Domain configuration and atomic-scale characterization of ferroelectric interfaces** Q 1.6
A. M. Sanchez* J. J. P. Peters, G. Apachitei, R. Beanland and M. Alexe
Department of Physics, University of Warwick, Coventry, United Kingdom
*Corresponding Author: a.m.sanchez@warwick.ac.uk

11:00 **Substrate influence on structural and dielectric properties at microwaves of KNN thin films on R-cut sapphire and (100) MgO** Q 1.7
B. Aspe1, F. Cissé2, X. Castel2, S. Députier1, V. Demange1, S. Ollivier1, V. Bouquet1, R. Sauleau2, D. Cros3, V. Madrangeas3, D. Passerieux3, M. Guilloux-Viry1
1 Univ. Rennes, CNRS, ISCR – UMR 6226, F-35000 Rennes, France, 2 Univ. Rennes, CNRS, IETR – UMR 6164, F-35000 Rennes, France, 3 Univ. Limoges, CNRS, XLIM – UMR 7252, F-87000 Limoges, France,

11:15 **Ferroelectric thin films for electrically reconfigurable capacitors: investigation of the (Ba,Ca)(Ti,Zr)O3 phase diagram** Q 1.8
Q. Simon,1,2, C. J. M. Daumont,1, S. Payan,2, P. Gardes,3, P. Poveda,3, J. Wolfman,1, M. Maglione,2
1) GREMAN, UMR 7347 University of Tours – CNRS, Tours, France , 2) ICMCB, UPR 9048 CNRS – University of Bordeaux, Pessac, France , 3) STMicroelectronics, Tours, France

11:30 **Remote epitaxy of transferable single crystalline BaTiO3 on graphene buffered Ge substrates** Q 1.9
Liyan Dai1, Jinyan Zhao1, Yankun Wang1, Heping Wu1, Yanxiao Sun1, Lingyan Wang1, Peng Shi1, Zengfeng Di2, Zhongying Xue2, Zuo-Guang Ye1, Wei Ren1, Gang Niu1* *Correspondence author Gang Niu: gangniu@xjtu.edu.cn
1.Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Centre for Dielectric Research, Xi'an Jiaotong University, Xi'an 710049, China 2.Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai 200050, China

11:45 **Switching characteristic of coupled ferroelectric capacitors with self-polarization and its implication to device performance** Q 1.10
Jong-Gul Yoon
Department of Physics and Electronic Materials Engineering, University of Suwon, Republic of Korea

12:00 **Lunch**

Joint Session with Symposium O : Maryline Guilloux Viry

14:00 INV **Inkjet printed transparent piezoelectric thin films for transducers on glass** Q 2.1
Emmanuel Defay
The Luxembourg Institute of Science and Technology (LIST)

14:30 INV **About hysteresis, dielectric constant and negative capacitance in PZT capacitors** Q 2.2
L. Pintilie, A. G. Boni, C. Chirila, L. Hrib
National Institute of Materials Physics, Atomistilor 405A, Magurele, 07715, Romania

15:00 **Increased interface roughness as a desirable feature in the growth of Pb-based thin films** Q 2.3
U. Gabor, N. Daneu, Z. Samardzija, D. Suvorov and M. Spreitzer
Advanced Materials Department, Josef Stefan Institute, Ljubljana, Slovenia

15:15 **PLD growth of tetragonal tungsten bronze phase thin films in the K-Na-Nb-O system: structural and dielectric characterizations** Q 2.4
B. Aspe, V. Demange, X. Castel, Q. Simon, M. Zaghrioui, K. Nadaud, S. Députier, F. Gouttefangeas, R. Sauleau, M. Guilloux-Viry
Univ. Rennes, CNRS, France

15:30 **Infrared Laser Thermal Tomography of novel Lead-free Pyroelectric Materials** Q 2.5
Stefan Tappertzhofen, Simon Fichtner, Sebastian Bette, Thorsten Schmitz-Kempen, Bernhard Wagner, Norman Laske, Carl Van Buggenhout, Stephan Tiedke
aixACCT Systems GmbH, Aachen, Germany, Institute of Material Science, Christian-Albrechts-Universität, Kiel, Germany, Fraunhofer Institute for Silicon Technology, Itzehoe, Germany, Melexis Technologies NV, Tessenderlo, Belgium

15:45 **Structural and optical characterization of Yttrium-doped ZnO ceramics and nanostructures** Q 2.6
A. Bembibre, A. Garitagoitia, Y. Lebsir, B. Sotillo, P. Fernández
Department of Materials Physics, Faculty of Physics, Complutense University of Madrid, Madrid, Spain.

16:00 **Coffee break**

Effect of strain on polar properties : Ana Sanchez

16:15 INV **Manipulation of oxygen octahedral rotation and ferroelectricity in perovskite oxide heterostructures** Q 3.1
Tae Won Noh
1. Center for Correlated Electron Systems, Institute for Basic Science, Seoul 08826, Korea 2. Department of Physics & Astronomy, Seoul National University, Seoul 08826, Korea

16:45 **Characterization of Switchable Polarization States in Epitaxial Bismuth Ferrite Thin Films Using the Bulk Photovoltaic Effect** Q 3.2
David S. Knoche [1], Yeseul Yun [1], Niranjan Ramakrishnegowda [1], Lutz Mühlenbein [1], Xinye Li [1], and Akash Bhatnagar [1]
[1] Zentrum für Innovationskompetenz SiLi-nano, Martin Luther University Halle-Wittenberg, Karl-Freiherr-von-Fritsch-Straße, 06120 Halle (Saale), Germany

17:00 **Observation of Rotational Polarization NanoTopologies in BaTiO3-SrTiO3 Superlattices by STEM** Q 3.3
Saúl Estandía 1, Jaume Gázquez 1, Florencio Sánchez 1, Mathew Chisholm 2
1 Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, Bellaterra 08193, Barcelona, Spain , 2 Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37831, USA

17:15 **Exploring surface phonon polaritons in polar crystals: The case of SrTiO3** Q 3.4
Nikolaos Kalfagiannis (a) Elefterios Lidorikis (b)
(a): Nottingham Trent University, School of Science and Technology, Nottingham, NG11 8NS, UK. (b): University of Ioannina, Department of Materials Science and Engineering, Ioanni-na, GR-45110, Greece.

17:30 **Impact of compressive strain on thermally induced phase transitions in epitaxial, ferroelectric K1-xNaxNbO3 thin films** **Q 3.5**
L. von Helden1, L. Bogula1, P.-E. Janolin2, M. Hanke3, M. Schmidbauer1, J. Schwarzkopf1
1Leibniz Institut für Kristallzüchtung, Max-Born Str. 2, 12489 Berlin, Germany, 2Laboratoire SPMS (Structures Properties and Modeling of Solids), CNRS-École Centrale Paris, Grande Voie de Vignes, 92295 Châtenay-Malabry Cedex, France, 3Paul-Drude-Institute for Solid State Electronics, Hausvogteiplatz 5-7, 10117 Berlin, Germany

Posters session :
Athanasios Dimoulas, Bertrand Vilquin, Gustau Catalan, Marin Alexe

17:45 **Photovoltaic effect i oxide superlattice structures** **Q 4.1**
Yeseul Yun [1], Young Heon Kim [2], Niranjan Ramakrishnegowda [1], Lutz Mülenbein [1], David S. Knoche [1], Xinye Li [1], and Akash Bhatnagar [1]
[1] Zentrum für Innovationskompetenz SiLi-nano, Martin Luther University Halle-Wittenberg, Karl-Freiherr-von-Fritsch-Strasß 3, 06120 Halle (Saale), Germany
[2] Graduate school of Analytical Science and Technology, Chungnam National University, 99 Daehak-ro, Yuseong-gu, Daejeon 34134, Republic of Korea

17:45 **Photo-electronic processes in Pb(Zr0.2Ti0.8)O3 thin films.** **Q 4.2**
Niranjan Ramakrishnegowda [1], Yeseul Yun [1], Xinye Li [1], Lutz Mühlenbein [1], David S. Knoche [1], Akash Bhatnagar [1].
[1]:Zentrum für Innovationskompetenz SiLi-nano, Martin-Luther-Universität Halle-Wittenberg, Karl-Freiherr-von-Fritsch-Straße 3, 06120 Halle (Saale), Germany.

17:45 **Studies of the epitaxial PbZr0.2Ti0.8 O3 thin films capacitor structures deposited on Si substrate** **Q 4.3**
Georgia A. Boni, Cristina Chirila, Lucian D. Filip, Alin Iuga, I. Pasuk, Luminita Hrib, Lucian Trupina, Ioana Pintilie, Lucian Pintilie
National Institute of Materials Physics, Atomistilor Street no. 405A, Magurele, 077125, Romania

17:45 **Epitaxy of BaTiO3 thin film on Si for non-volatile memory application** **Q 4.4**
B. Wagué1, J-B. Brubach2, G. Niu3, G. Dong3, L. Dai3, P. Roy2, G. Saint-Girons1, P. Rojo-Romeo1, Y. Robach1, B. Vilquin1
1 Universite de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 Ecully Cedex, France 2 Synchrotron SOLEIL, ligne AILES, L'orme des merisiers, 91190 Saint Aubin, France 3 Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, Xi'an 710049, China.

17:45 **Properties of epitaxial and textured BaTiO3 thin films** **Q 4.5**
B. Wague1, M. Apreutesei1, J. Bouaziz1, N. Baboux2, P. Rojo Romeo1, B. Vilquin1
1 Université de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 ECULLY Cedex, FRANCE 2 Université de Lyon, INSA de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 7 avenue Capelle, 69621 VILLEURBANNE Cedex, France

17:45 **Effect of A-site La doping on the photoelectronic processes in BaTiO3 thin films** **Q 4.6**
Xinye Li [1] , Yeseul Yun [1], Niranjan Ramakrishnegowda [1], David Knoche [1], Lutz Mühlenbein [1], Stefan Ebbinghaus [2], Akash Bhatnagar [1]
[1]: Zentrum für Innovationskompetenz (ZIK) SiLi-nano, Martin Luther University Halle-Wittenberg, Karl-Freiherr-von-fritsch-Str. 3, 06120 Halle (Saale), Germany, [2]: Institute of Chemistry, Inorganic Chemistry, Martin Luther University Halle-Wittenberg, Kurt-Mothes-Straße 2, 06120 Halle (Saale), Germany

17:45 **Atomic layer deposited Hf0.5Zr0.5O2 Ferroelectric Films for MoS2 Field-Effect Transistors** **Q 4.7**
Ming-Yang Cha, Pei-Yao Chen, Lin Chen*, Hao Zhu, Qing-Qing Sun, and David Wei Zhang
State Key Laboratory of ASIC and System, School of Microelectronics, Fudan University, Shanghai 200433, China

17:45 **Impurity-induced phase transition in quantum paraelectric SrTiO3** **Q 4.8**
E.G. Gor'kovaya, A.G. Razumnaya, V.I. Torgashev
Faculty of Physics, Southern Federal University, Rostov-on-Don, Russia

17:45 **Creation and orientation by femtosecond laser irradiation of polar nanocrystals in silica-based glasses.** **Q 4.9**
B. Poumellec, J. Cao, F. Brisset, M. Lancry, .
MAP/SP2M/ICMMO/UPSud, Université Paris Sud in Université Paris-Saclay, France, 91405 Orsay Cedex. (Jing CAO is now at College of Chemistry and Molecular Engineering, Peking University, 100871, Beijing, P. R. China)

17:45 **Lattice Chirality and Tetramer Orbital Ordering in Tetragonal Polar MnTi2O4** **Q 4.10**
A. Rahaman1, M. Chakraborty2, T. Paramanik1, R. K. Maurya3, S. Mahana4, R. Bindu3, D. Topwal4, P. Mahadevan5, D. Choudhury1
Department Of Physics, Indian Institute of Kharagpur, Kharagpur – 721302, India, Centre of Theoretical studies, Indian Institute of Kharagpur, Kharagpur – 721302, India, School of Basic Sciences, Indian Institute of Mandi – Kamand, Himachal Pradesh – 175005, India, Institute of Physics, Sachivalaya Marg, Bhubaneswar – 751005, India, S.N. Bose National centre for Basic Sciences, Block JD, Salt Lake, Kolkata – 700098, India

17:45 **CRYSTAL STRUCTURE REFINEMENT AND INVESTIGATION OF ELECTRICAL PROPERTIES OF HEXAGONAL-BaTiO3 CERAMICS** **Q 4.11**
Fayçal Bourguiba, J Dhahri
Laboratory of Condensed Matter and Nanosciences, Faculty of Sciences of Monastir, Tunisia

17:45 **X-ray photoelectron diffraction study of relaxation and rumpling of ferroelectric domains in BaTiO3(001) thin film** **Q 4.12**
A. Pancotti1,4, J. Wang2, R. Landers3,J.J. da Silva1, N. Barrett4
1 - Universidade Federal de Jatai-GO, Unidade Acadêmica Esp. de Ciencias Exatas, Fisica, Jatai-GO, 75800-000, Brazil 2 - College of Science, Donghua University Room 541, Academy Building No. 2 No. 2999, Ren Min Road North, Songjiang District, Shanghai 201620, China 3 - Departamento de Física Aplicada, Universidade Estadual de Campinas, Caixa Postal 6165, 13083-970, Campinas, SP, Brazil 4 - SPECS/LENSIS, FR-91191 Gif-sur-Yvette, France

17:45 **Multiferroic properties of lacunari spinels** **Q 4.13**
S. Artyukhin, G. Biffi, P. Chen, I. Keszmarki
Italian Institute of Technology, Genova, Italy University of Augsburg, Germany

17:45 **The effect of substrate temperature on HfO2 based solid state incandescent lighting emission devices and performance enhancement** **Q 4.14**
Yiwei Liu, Gang Niu, Can Yang, Shengli Wu, Liyan Dai, Oliver Skibitzki
Yiwei Liu, Can Yang, Shengli Wu are with Key Laboratory for Physical Electronics and Devices of the Ministry of Education, School of Electronic and Information, Xi'an Jiaotong University, Xi'an, 710049, China (slwu@xjtu.edu.cn) Gang Niu and Liyan Dai are with Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, School of Electronic and Information, Xi'an Jiaotong University, Xi'an 710049, China. (gangniu@xjtu.edu.cn) ,Oliver Skibitzki are with IHP GmbH Leibniz-Institut für innovative Mikroelektronik, Im Technologiepark 25, Frankfurt (Oder) 15236, Germany

17:45 **The effect of MgO on manganese charge state in MgTiO3 red phosphors** **Q 4.15**
L. Borkovska1, L. Khomenkova1, I. Vorona1, T. Stara1, O. Gudymenko1, V. Kladko1, C. Labbé2, X. Portier2, T. Kryshtab3
1V. Lashkaryov Institute of Semiconductor Physics of NAS of Ukraine, 45 Pr. Nauky, Kyiv 03028, Ukraine, 2CIMAP, Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, 6 Blvd. Maréchal Juin, 14050 Caen, France, 3Instituto Politécnico Nacional – ESFM, Av. IPN, Ed.9 U.P.A.L.M., 07738 Mexico D.F., Mexico

17:45 **Electric control of antiferromagnetic-ferromagnetic phases in FeRh films** **Q 4.16**
I. Fina,1, A. Quintana,2 C. Frontera,1 J. Padilla-Pantoja,3 X. Martí,4 F. Macià,1 F. Sánchez,1 M. Foerster,5 L. Aballe,5 J. Clarkson,6 R. Ramesh,6,7 J. Sort2,8, J. Fontcuberta1
1Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, E-08193 Bellaterra, Barcelona, Spain 2Departament de Física, Universitat Autònoma de Barcelona, E-08193 Bellaterra, Barcelona, Spain 3Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, E-08193 Bellaterra, Barcelona, Spain 4Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnická 10, 162 53 Praha 6, Czech Republic 5ALBA Synchrotron Light Facility, Carrer de la Llum 2-26, Cerdanyola del Vallès, Barcelona 08290, Spain 6Department of Electrical Engineering and Computer Science, University of California, Berkeley, California 94720, USA 7Department of Physics, University of California, Berkeley, California 94720, USA 8Institució Catalana de Recerca i Estudis Avançats (ICREA), Pg. Lluís Companys 23, E-08010 Barcelona, Spain

17:45 **Indentation-induced local polarization reversal in La doped BiFeO3 ceramics** **Q 4.17**
Alikin D.O., Abramov A.S., Yuzhakov V.V., Nikitin A.V., Latushko S.I., Karpinsky D.V., Shur V.Ya., Kholkin A.L.
School of Natural Sciences and Mathematics, Ural Federal University, Ekaterinburg, Russia, School of Natural Sciences and Mathematics, Ural Federal University, Ekaterinburg, Russia, Department of Physics & CICECO – Aveiro Institute of Materials, University of Aveiro, Aveiro, Portugal, School of Natural Sciences and Mathematics, Ural Federal University, Ekaterinburg, Russia, Scientific-Practical Materials Research Centre of NAS of Belarus, Minsk, Belarus, Scientific-Practical Materials Research Centre of NAS of Belarus, Minsk, Belarus, Scientific-Practical Materials Research Centre of NAS of Belarus, Minsk, Belarus, School of Natural Sciences and Mathematics, Ural Federal University, Ekaterinburg, Russia, School of Natural Sciences and Mathematics, Ural Federal University, Ekaterinburg, Russia, Department of Physics & CICECO – Aveiro Institute of Materials, University of Aveiro, Aveiro, Portugal,

17:45 **Synthesis of nanocrystalline zeolite-like materials from high calcium fly ash** **Q 4.18**
Silviya Boycheva, Denitza Zgureva, Simona Miteva, Ivan Marinov
Technical University of Sofia, Kl. Ohridsky Blvd, 1000 Sofia, Bulgaria

17:45 **Optical control of dielectric permittivity in wide-gap aluminates** **Q 4.18**
1)Takayuki Nagai, 2)Akihide Kuwabara, 3)Yu Kumagai, 1)Ichiro Terasaki, and 1) Hiroki Taniguchi
1) Department of Physics, Nagoya University, 2) Nanostructures Research Laboratory, Japan Fine Ceramics Center, 3) Materials Research Center for Element Strategy, Tokyo Institute of Technology

17:45 **Application of hafnium oxide nanocrystals in memristors, optimization through surface chemistry** **Q 4.19**
Jonathan De Roo,1,2 Jiaying Wang,3 Zimu Zhou,3 Isabel Van Driessche,1 Alfred Crosby,4 Jonathan Owen,1 Stephen Nonnenmann.3
1. Department of Chemistry, Ghent University, Gent B-9000, Belgium 2. Department of Chemistry, Columbia University, New York, NY 10027, USA 3. Department of Mechanical and Industrial Engineering, University of Massachusetts, Amherst, Amherst, Massachusetts 01003, United States 4. Polymer Science and Engineering Department, University of Massachusetts Amherst, Amherst, Massachusetts 01003, United States

17:45 **Effect of alkali-earth/titanium substitution on the crystal and magnetic structure of BiFeO3** **Q 7.20**
U. Khomchanka, J. A. Paixão
CFisUC, Department of Physics, University of Coimbra, P-3004-516, Coimbra, Portugal

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Ferroelectric HfO2 films : Gustau Catalan

08:45 **Epitaxial stabilization of ferroelectric Hf0.5Zr0.5O2 thin films on SrTiO3(001) and Si(001)** **Q 5.1**
Jike Lyu, Ignasi Fina, Josep Fontcuberta, Florencio Sánchez
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, Bellaterra 08193, Barcelona, Spain

09:00 **Integration of ferroelectric (Hf,Zr)O2 thin films on Si and study on the graphene/ (Hf,Zr)O2 interface** **Q 5.2**
Yanxiao Sun, Gang Niu*, Yankun Wang, Liyan Dai, Lingyan Wang, Peng Shi, Wei Ren, Zuo-Guang Ye, Bertrand Vilquin
Yanxiao Sun, Gang Niu*, Yankun Wang, Liyan Dai, Lingyan Wang, Peng Shi, Wei Ren and Zuo-Guang Ye are with Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, School of Electronic and Information, Xi'an Jiaotong University, Xi'an 710049, China, Bertrand Vilquin is with Institut des Nanotechnologies de Lyon (INL) - CNRS UMR 5270, Univ. Lyon, Ecole Centrale de Lyon, Bâtiment F7, 36 av. Guy de Collongue, 69134, Ecully Cedex, France

09:15 **Sputtered ferroelectric hafnium/zirconium oxide solid solutions from a single target** **Q 5.3**
Jordan Bouaziz, Nicolas Baboux, Pedro Rojo Romeo, Lucian Pintilie, Raluca Negrea, Bertrand Vilquin
Jordan Bouaziz - Université de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 Ecully cedex, France - Université de Lyon, INSA de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 7 avenue Capelle, 69621 Villeurbanne cedex, France, Nicolas Baboux Université de Lyon, INSA de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 7 avenue Capelle, 69621 Villeurbanne cedex, France, Pedro Rojo Romeo Université de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 Ecully cedex, France, Lucian Pintilie National Institute of Materials Physics, Atomiştilor 405A, 077125 Măgurele, Ilfov, Romania, Raluca Negrea National Institute of Materials Physics, Atomiştilor 405A, 077125 Măgurele, Ilfov, Romania, Bertrand Vilquin Université de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 Ecully cedex, France,

09:30 **Record high remnant polarization in TiN/ZrxHf1-xO2/Ge metal-ferroelectric-semiconductor capacitors** **Q 5.4**
C. Zacharaki, P. Tsipas, S. Chaitoglou, R. Negrea, L. Pintilie, A. Dimoulas
1. National Center for Scientific Research "Demokritos", 15310, Athens, Greece: C. Zacharaki, P. Tsipas, S. Chaitoglou, A. Dimoulas 2. Physics Department, National and Kapodistrian University of Athens, 15772, Athens, Greece: C. Zacharaki 3. National Institute for Materials Physics, 077125, Bucharest-Magurele, Romania: R. Negrea, L. Pintilie

09:45 **Coffee break**

10:00 INV **A rhombohedral ferroelectric phase in epitaxially-strained Hf0.5Zr0.5O2 thin films** **Q 5.5**
Yingfen Wei1, Pavan Nukala1,2, Mart Salverda1, Sylvia Matzen3, Hong Jian Zhao4, Jamo Momand1, Arnoud S. Everhardt1, Graeme R. Blake1, Philippe Lecoeur3, Bart J. Kooi1, Jorge Íñiguez4, Brahim Dkhil2, Beatriz Noheda1
1Zernike Institute for Advanced Materials, University of Groningen, 9747 AG Groningen,&#8232,The Netherlands 2Laboratoire Structures, Propriétés et Modélisation des Solides, CentraleSupélec, CNRS-UMR8580, Université Paris-Saclay, 92295 Châtenay-Malabry, France. 3Center for Nanoscience and Nanotechnology, CNRS-UMR 9001, Université Paris-Saclay, 91405 Orsay, France 4 Materials Research and Technology Department, Luxembourg Institute of Science and Technology (LIST), 5 avenue des Hauts-Fourneaux, L-4362 Esch/Alzette, Luxembourg

10:30 **Electrocaloric temperature change in ferroelectric Si-doped hafnium oxide (HfO2) thin films** **Q 5.6**
C. Mart, T. Kämpfe, S. Zybell, B. Pätzold, M. Rudolph, M. Czernohorsky, W. Weinreich
Fraunhofer IPMS - Center Nanoelectronic Technologies (CNT)

10:45 **TiN/Hf0.5Zr0.5O2 interface investigation by X-ray Photoelectron Spectroscopy** **Q 5.7**
Wassim Hamouda(1), Alexandre Pancotti(1), Christophe Lubin(1), Claudia Richter(2), Uwe Schroeder(2) and Nick Barrett(1)
(1) SPEC, CEA, CNRS, Université Paris-Saclay, CEA Saclay, 91191 Gif-sur-Yvette, France (2) NaMLab gGmbH/TU Dresden, Noethnitzer Str. 64, Dresden D-01187, Germany

11:00 **Coffee break**

11:15 **Plenary session 2**

12:30 **Lunch**

Domain walls : Beatriz Noheda

14:00 INV **Using Conducting Ferroelectric Domain Walls to Realise Mobile 1D p-n Junctions** **Q 6.1**
JM Gregg
Queens University Belfast

14:30 **Controlling thermal conductivity through domain wall engineering in epitaxially-grown ferroelectric thin films** **Q 6.2**
Eric Langenberg (1,2), Dipanjan Saha (3), David Bugallo (1), Jian-Jun Wang (4), Elias Ferreiro-Vila (1), Megan Holtz (2,5), Hanjong Paik (2), David A. Muller (5), Long-Qing Chen (4), Gustau Catalan (6), Neus Domingo (6), Jonathan Malen (3), Darrell G. Schlom (2,7), Francisco Rivadulla (1).
(1) CiQUS-Universidade de Santiago de Compostela, Santiago de Compostela 15782, Spain, (2) Department of Materials Science and Engineering, Cornell University, Ithaca, New York 14853, USA, (3) Mechanical Engineering Department, Carnegie Mellon University, Pittsburgh, Pennsylvania 15213, USA, (4) Department of Materials Science and Engineering, Pennsylvania State University, State College, Pennsylvania 16802, USA, (5) School of Applied and Engineering Physics, Cornell University, Ithaca, New York 14853, USA, (6) Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC, Barcelona Institute of Science and Technology, Campus Universitat Autònoma de Barcelona, Bellaterra, 08193 Barcelona, Spain, (7) Kavli Institute at Cornell for Nanoscale Science, Ithaca, New York 14853, USA.

14:45 **Mechanically soft domain walls in ferroelectrics and the size effect** **Q 6.3**
Christina Stefani, Gustau Catalán, Neus Domingo
Catalan Institute of Nanoscience and Nanotechnology Oxide Nanophysics Group Barcelona, Spain

15:00 **Study of domain wall creep motion using photoelectron emission microscopy** **Q 6.4**
Nick Barrett. Ekhard Salje. Myriam Lachheb. Christophe Lubin.
CEA/IRAMIS/SPEC/LENSIS

15:15 **Coffee break**

15:30 **Charge-carrier localization at neutral ferroelectric domain walls in BiFeO3 with Bi vacancies** **Q 6.5**
Sabine Körbel, Stefano Sanvito
School of Physics and CRANN, Trinity College Dublin, Ireland

15:45 **Competing polar and nonpolar lattice distortions in oxide quantum wells: a new critical thickness at polar interfaces** **Q 6.6**
J. Gazquez1, M. Stengel1,2, R. Mishra3, M. Scigaj1, M. Varela4,5, M.A. Roldan5, J. Fontcuberta1, F. Sánchez1, G. Herranz1
1 Institut de Ciència de Materials de Barcelona, Campus de la UAB, 08193, Bellaterra (Spain) 2ICREA, Pg. Lluís Companys 23, 08010 Barcelona (Spain) 3Department of Mechanical Engineering and Materials Science, Washington University in St. Louis, St. Louis, MO 63130 (USA) 4Materials Science and Technology Division, Oak Ridge National Laboratory, TN 37831-6071 (USA) 5Departamento de Física de Materiales & Instituto Pluridisciplinar, Universidad Complutense de Madrid. Madrid, 28040 (Spain)

Applications : Athanasios Dimoulas

16:00 INV **Large piezoelectric response of Submicron Lead Zirconate Titanate Actuators** **Q 7.1**
Popoff Y. (1&2), Wittendorp P. (3), Tyholdt F. (3), Nielen L. (4), Schmitz-Kempen T. (4), Crocker L. (5), McCartney N. (5), Rungger I. (5), Groening O. (2), Fompeyrine J. (1)
(1) IBM Zurich Research Laboratory, Rueschlikon, Switzerland, (2) EMPA – Swiss Federal Laboratories for Materials Science and Technology, Duebendorf, Switzerland, (3) SINTEF, Oslo, Norway, (4) aixACCT Systems, Aachen, Germany, (5) National Physical Laboratory, Teddington, United Kingdom

16:30 **TUNABLE LEAKY-WAVE ANTENNA BASED ON FERROELECTRIC KTa0.5Nb0.5O3 THIN FILM** **Q 7.2**
F. CISSE(1), X. CASTEL(1), R. SAULEAU(1), R. BENZERGA(1), S. DEPUTIER(2), V. BOUQUET(2), M. GUILLOUX-VIRY(2)
(1) Univ Rennes, CNRS, IETR – UMR 6164, F-35000 Rennes, FRANCE , (2) Univ Rennes, CNRS, ISCR – UMR 6226, F-35000 Rennes, FRANCE

16:45 **Coffee break**

17:00 **Strain induced by hydrogen implantation in Lithium Tantalate off axis single crystals** **Q 7.3**
A. Louiset, N. Cherkashin, S. Schamm-Chardon, O. Kononchuk
CEMES-CNRS and Université de Toulouse, 29 rue J. Marvig, 31055 Toulouse, France and SOITEC, Parc des Fontaines, F-38560 Bernin, France, CEMES-CNRS and Université de Toulouse, 29 rue J. Marvig, 31055 Toulouse, France, CEMES-CNRS and Université de Toulouse, 29 rue J. Marvig, 31055 Toulouse, France, SOITEC, Parc des Fontaines, F-38560 Bernin, France

17:15 **Developing ferroelectric based multilayered thin films structures for new applications** **Q 7.4**
Georgia A. Boni, Lucian D. Filip, Cristina Chirila, Alin Iuga, I. Pasuk, Luminita Hrib, Lucian Trupina, Ioana Pintilie, Lucian Pintilie
National Institute of Materials Physics, Atomistilor Street no. 405A, Magurele, 077125, Romania

17:30 **Ferroelectricity and resistive switching in ferroelectric tunnel Hf0.5Zr0.5O2 barriers** **Q 7.5**
M. C. Sulzbach, J. Lyu, X. Long, F. Sánchez, I. Fina, J. Fontcuberta
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, Bellaterra 08193, Catalonia, Spain.

17:45 **Double switching process in antiserial connection of ferroelectric tunnel devices.** **Q 7.6**
I. Fina, M. Qian, F. Liu, F. Sánchez, J. Fontcuberta
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, Bellaterra 08193, Barcelona, Spain

18:00 **Closing remarks**

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM R

Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment

Symposium Organizers :

Janusz SMULKO, Gdansk University of Technology, Poland

Lars Österlund, Uppsala University, Sweden

Thomas FISCHER, University of Cologne, Germany

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WILEY

Tuesday 28 may 2019

I. Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment : Lars Österlund and Volker Sittinger

08:30 INV **New materials for energy efficiency, from windows to detection of indoor pollutants** — R 1.1
Ivan P. Parkin, Sebastian Dixon, Claire J. Carmalt, Frances Heale, Ioannis Papakonstantinou, Christian sol, Delphine Malarde, Robert Palgrave, G.Sankar and University College London

09:00 INV **Toward knowledge-based design of energy-saving windows** — R 1.2
Kostas Sarakinos
Nanoscale Engineering Division, Department of Physics, Chemistry, and Biology (IFM), Linköping University, Sweden

09:15 INV **Transition metal oxides nanoparticles engineering for energy harvesting** — R 1.3
L. Pereira*, P. Grey, A. C. Marques, A. Gonçalves, R. Correia, R. Martins, E. Fortunato
CENIMAT/I3N, Departamento de Ciência dos Materiais, Faculdade de Ciências e Tecnologia, FCT, Universidade NOVA de Lisboa and CEMOP-UNINOVA Campus da Caparica, 2829-516 Caparica (Portugal)

09:30 INV **Nanoscale Vanadium Oxide Architectures for Energy Efficient Fenestration and Photocatalysis** — R 1.4
Sarbajit Banerjee
Department of Chemistry, Texas A&M University

09:45 **A Copper-based Reversible Electrochemical Mirror Device with Switchability between Transparent, Blue, and Mirror States** — R 1.5
Alice Lee-Sie Eh, Meng-Fang Lin, Mengqi Cui, Guofa Cai, and Pooi See Lee
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798.

10:00 **COFFEE BREAK**

10:30 INV **Metamaterials to Control the Heat Flows Around Us** — R 1.6
Aaswath P. Raman
Department of Materials Science and Engineering 410 Westwood Plaza, University of California, Los Angeles (UCLA) Los Angeles, CA 90049 USA

11:00 INV **Hybrid nanooptics for energy applications** — R 1.7
Magnus P Jonsson
Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, Sweden

11:15 **PLENARY SESSION 1**

12:30 **LUNCH**

II. Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment : Pereira and Jonsson

14:00 INV **Technologies for sustainable living produced through CVD, PVD, and ALD processes** — R 2.1
Volker Sittinger, Markus Höfer, Tobias Graumann, Frank Neumann, Stephan Ulrich
Fraunhofer Institute for Surface Engineering and Thin Films IST

14:30 INV **Ultrasonic spray coating – perspective thin film technology for energy and environmental applications** — R 2.2
I. Oja Acik1, I. Dündar1, J.S. Eensalu1, A. Katerski1, E. Kärber1, M. Krichevskaya 2, M. Krunks1
1 Laboratory of Thin Films Chemical Technologies, Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia 2 Laboratory of Environmental Technology, Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

14:45 INV **Photochromic rare earth oxyhydrides for smart windows** — R 2.3
S. Cornelius, F. Nafezarefi, G. Colombi, H. Schreuders and B. Dam
Materials for Energy Conversion and Storage, Department of Chemical Engineering, Delft University of Technology, Van der Maasweg 9, NL-2629HZ Delft, The Netherlands

15:00 INV **Photochromic oxyhydrides for smart windows: the case of yttrium oxyhydride** — R 2.4
J. Montero(1)*, E.M. Baba(2), S. Zh. Karazhanov(2)
(1) Department of Engineering Sciences, Ångström Laboratory, Uppsala University, Uppsala, Sweden. (2) Solar Energy Department, Institute for Energy Technology (IFE), Kjeller, Norway

15:15 **Microwave synthesis of thermochromically active VO2 nanomaterials** — R 2.5
Matthias VAN ZELE, Klaartje DE BUYSSER
Sol-Gel Centre for Research on Inorganic Powders and Thin Film Synthesis (SCRiPTS), Department of Chemistry, Ghent University, Krijgslaan 281-S3, 9000 Ghent, Belgium

15:30 **COFFEE BREAK**

16:00 INV **Nanocrystalline layers fabricated by spray pyrolysis for energy related applications** — R 2.6
Piotr Jasiński, Bartosz Kamecki, Jakub Karczewski, Sebastian Molin
Faculty of Electronics, Telecommunications and Informatics, Gdańsk University of Technology, ul. Narutowicza 11/12, 80-233 Gdańsk, Poland, Faculty of Applied Mathematics and Physics, Gdańsk University of Technology, ul. Narutowicza 11/12, 80-233 Gdańsk, Poland,

III-POSTER: Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment : Janusz Smulko

16:30 **Work Function Tuning through Self-Assembling Monolayers of Fluorinated Molecules** — R P3.1
Laura Canil, Antonio Abate
Helmholtz Zentrum Berlin

16:30 **Photo-induced morphology transition of a multifunctional photochromic bisthienylethene molecule with switchable aggregation-indu** — R P3.2
Sheng Wang1 *,^ Fang Wang1, 2, Chengpeng Li1, Derong Cao2, Xiang Ma3
1School of Chemistry and Chemical Engineering, Lingnan Normal University, Zhanjiang 524048, China. 2School of Chemistry and Chemical Engineering, State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou, 510641, China. 3Key Laboratory for Advanced Materials and Institute of Fine Chemicals, School of Chemistry and Molecular Engineering, East China Universityof Science & Technology, Shanghai 200237, China.

16:30 **Electrochromic performance of WO3 films with different ITO layers** — R P3.3
Gamze Atak (1,2), Josè Montero Amenedo (2), İlknur Bayrak Pehlivan (2), Claes G. Granqvist (2), Gunnar A. Niklasson (2)
(1) Hacettepe University, Physics Engineering Department, 06800 Beytepe Ankara, Turkey (2) Department of Engineering Sciences, The Ångström Laboratory, Uppsala University, P.O. Box 534, SE-751 21 Uppsala, Sweden

16:30 **Carbon Nanotube Reinforced Magnesium Composites** — R P3.4
Shatha AlMarri, Dr. Qianqian Li, Prof. Milo Shaffer
Dept. Aerospace Engineering - Imperial College London Dept. Chemistry - Imperial College London

16:30 **Modulation of visible and near-infrared transmittance based on electrochromic and thermochromic hybrid structures** — R P3.5
Sang Jin Lee12, Dong Soo Choi3, Sahn Nahm2, Seung Ho Han1, Tae Young Kim4
1Electronic Convergence Materials and Device Research Center, Korea Electronics Technology Institute, 2Department of Materials Science and Engineering, Korea University, 3Department of Materials Physics, Dong-A University, 4Department of Bionanotechnology, Gachon University

16:30 **Trimetallic oxide 2D nanostructures for efficient water oxidation** — R P3.6
Hemam Rachna Devi and K.K. Nanda
Materials Research centre, Indian Institute of Science

16:30 **Reduced SrTiO3-supported Bimetallic PtCu Alloy Nanoparticles for Preferential Oxidation of CO in Excess Hydrogen** — R P3.7
Noopur Jain, Ahin Roy, N Ravishankar
Materials Research Centre, Indian Institute of Science

16:30 **Carbon-rich silicon oxycarbide fibers for energy storage application** **R P3.8**
Zhongkan Ren, Shakir Mujib, Giorgia Franchin, Paolo Colombo, Gurpreet Singh
Gurpreet Singh, Zhongkan Ren, Shakir Mujib: Mechanical and Nuclear Engineering Dept., Kansas State University, Manhattan, KS, United States. Giorgia Franchin, Paolo Colombo: Industrial Engineering, University of Padova, Padova, Italy.

16:30 **Facile water purification methods using magnetic nanoparticles and organophosphonates** **R P3.9**
Hyoungwon Park, Marco Sarcletti, Marcus Halik
Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Department of Materials Science, Organic Materials & Devices (OMD), Martensstraße 7, 91058 Erlangen, Germany

16:30 **Metal oxide multi-layer color glass by radio frequency magnetron sputtering for building integrated photovoltaic system** **R P3.10**
Akpeko Gasonoo, Hyeon-Sik Ahn, Jae-Hyun Lee, Min-Hoi Kim, Chang-Jae Yu, Yoonseuk Choi
Hanbat National University, Hanyang University

16:30 **Electrochemical investigation of diamond thin films growth in deuterium-based plasma by PACVD process** **R P3.11**
Michał Sobaszek 1, Anna Dettlaff 1, Barbara Wilk 2
1 Metrology and Optoelectronics, Gdansk University of Technology, Narutowicza 11/12, 80-233 Gdansk, Poland 2 Faculty of Civil and Environmental Engineering, Gdansk University of Technology, Narutowicza 11/12, 80-233 Gdansk, Poland

16:30 **Magnetocaloric effects of Eu3 -doped GdVO4 nanopowders Synthesized by microwave-assisted hydrothermal methods** **R P3.12**
Sungmyung Ryu, Jae-Woong Lee, Beong-Ki Cho, and Chunghee Nam
Department of Photonics and Sensors, Hannam Univ., Korea , School of Materials Science and Engineering, GIST, Korea

16:30 **3D printable integrated porous membranes for passive sampling devices** **R P3.13**
Umme Kalsoom†‡, Chowdhury Kamrul Hasan†§□, Laura Tedone†, Christopher Desire†, Feng Li†‡, Michael C. Breadmore†‡§ , Pavel N. Nesterenko†‡§ , and Brett Paull†‡§
† Australian Centre for Research on Separation Science (ACROSS), School of Natural Sciences, University of Tasmania, Private Bag 75, Hobart, Tasmania 7001, Australia ‡ ARC Centre of Excellence for Electromaterials Science (ACES), School of Natural Sciences, University of Tasmania, Sandy Bay, Hobart, Tasmania 7001, Australia § ARC Training Centre for Portable Analytical Separation Technologies (ASTech), School of Natural Sciences, University of Tasmania, Private Bag 75, Hobart, Tasmania 7001, Australia □ Department of Environmental Science, School of Environmental Science and Management, Independent University, Bangladesh, Dhaka, 1229, Bangladesh

16:30 **PREPARATION AND CHARACTERISATION OF SILICA NANOPARTICLE FROM PALM KENNEL (ELAEIS GUINESIS) SHELL ASH** **R P3.14**
Kingsley O. Ukoba, Patrick E. Imoisili and Tien-Chien Jen
University of Johannesburg, Johannesburg, South Africa Kingsway and University Road, Auckland Park, 2092, PO Box 524, Auckland Park, 2006

16:30 **Characteristics of anti-pollution properties of functional coating according to the annealing method for the cover glass of BIPV** **R P3.15**
Chang Yeon Lee, Se Jin Jung, and Wonseok Choi*
Department of Electrical Engineering, Hanbat National University, Daejeon 305-719, Korea

16:30 **Novel route for preparation of silica aerogel powders** **R P3.16**
Martin Timusk, Triin Kangur, Martin Järvekülg
University of Tartu, Institute of Physics, W. Ostwaldi Str. 1, 50411 Tartu, Estonia

16:30 **Ultrathin Pd-based Nanosheets for Catalytic Applications** **R P3.17**
Hongfei Cheng, Nailiang Yang, Hua Zhang*
Center for Progammable Materials, School of Materials Science and Engineering, Nanyang Technological University, Singapore

16:30 **Characterization of a 17 – 4 PH stainless steel obtained through Hot Isostatic Pressing (HIP) for automotive applications** **R P3.18**
M. Dabalà (1), M. Polyakova(2)
(1) University of Padova, (2) Nosov Magnitogorsk State Technical University

16:30 **Optimal Fluence in Gd-doped YBCO Coated Conductors for 1.83 GeV Ta Ion Irradiation** **R P3.19**
Li Liu(1,2), Jie Liu (1), Pengfei Zhai(1), Jian Zeng(1), Peipei Hu(1,2), Zongzhen Li(1,2)
1. Institute of Modern Physics, Chinese Academy of Sciences(CAS), Lanzhou 730000, PR China, 2. University of Chinese Academy of Sciences(UCAS), Beijing 100049, PR China

16:30 **Crystal Phase-based Epitaxial Growth of Hybrid Noble Metal Nanostructures on 4H/fcc Au nanowires** **R P3.20**
Jiawei Liu, Qipeng Lu, Hua Zhang
Center for Programmable Materials, School of Materials Science and Engineering, Nanyang Technological University, Singapore

16:30 **Effect of thermomechanical treatment on deformational behavior of ferromagnetic Fe-Ni-Co-Ti alloy under uniaxial tension** **R P3.21**
Anatoliy Titenko1, Lesya Demchenko2, Mustafa Babanli3, Larysa Kozlova1, Tie-Zhen Ren4, Yaroslav Titenko2
1 Institute of Magnetism, National Academy of Sciences and Ministry of Education and Science of Ukraine, 36-b, Akademika Vernadskoho Blvd., Kyiv 03142, Ukraine, 2 National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute», 37, Peremohy Ave., Kyiv 03056, Ukraine, 3 Azerbaijan State University of Oil and Industry, 20, Azadliq Ave., Baku, AZ1010, Azerbaijan, 4 Hebei University of Technology, Guangrong Road 8, Hongqiao district, TianJin, 300130, China

16:30 **A solution-based approach on nano-scaled thermochromic vanadium dioxide for thermal efficiency on buildings** **R P3.22**
Leila Zouridi, Xanthi Chatzidimitriou, Dora Dragani, Elias Aperathitis, Emmanuel Gagaoudakis, George Kiriakidis, Vassilios Binas
Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 71110 Heraklion, Crete, Greece and University of Crete, Department of Department of Material Science and Technology, 710 03 Heraklion, Crete, Greece, Heraklion, Crete, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 71110 Heraklion, Crete, Greece and University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 71110 Heraklion, Crete, Greece and University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 71110 Heraklion, Crete, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 71110 Heraklion, Crete, Greece and University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 71110 Heraklion, Crete, Greece and University of Crete, Department of Physics, 710 03 Heraklion, Crete, Greece, Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 71110 Heraklion, Crete, Greece and Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece,

16:30 **Carrageenan-based electrolytes containing neodymium triflate** **R P3.23**
S. C. Nunes1,2, S. M. Saraiva1, R. F. P. Pereira3, H. M.R. Gonçalves4, M. M. Silva3, L. D. Carlos5, P. Almeida2, R. A. S. Ferreira5, M. C. Gonçalves1,4 and V. de Zea Bermudez1,4
1 Chemistry Department, University of Trás-os-Montes e Alto Douro, Vila Real, Portugal 2 Chemistry Department, University of Beira Interior, Covilhã, Portugal 3 Chemistry Department, University of Minho, Braga, Portugal 4 CQ-VR, University of Trás-os-Montes e Alto Douro, Vila Real, Portugal 5 Physics Department, University of Aveiro, Aveiro, Portugal

16:30 **Interfacial charge transfer and transport dynamics in lead halide perovskite films** **R P3.24**
Yasuhiro Tachibana1,2
1 School of Engineering, RMIT University, Bundoora, VIC 3083, Australia 2 Project Research Center for Fundamental Sciences, Faculty of Science, Osaka University, 1-1 Machikaneyama, Toyonaka, Osaka 560-004, Japan

16:30 **Functionalisation of Silicon Oxide electrospun nanofibres for the Separation of Heterogeneous Azeotropes** **R P3.25**
Eva Loccufier, Jozefien Geltmeyer, Lode Daelemans, Dagmar R. D'hooge, Klaartje De Buysser, Karen De Clerck
Ghent University

16:30 **Urethane-based polyol modified epoxy-based structural adhesives for lightweight vehicles** **R P3.26**
Seunghan Shin, Hee-woong Park, Se Won Bae
Green Chemistry & Materials Group, Korea Institute of Industrial Technology (KITECH), Cheonan, CN 31056, Republic of Korea

16:30 **Low emissivity glass for high energy efficient windows using SIZO/Ag/SIZO structure** **R P3.27**
Jin Young Hwang1, Byoung Keun Kim1, Jae Hoon Lee2, Young Tae Chae2 and Sang Yeol Lee1,*
1,*Department of Semiconductor Engineering, Cheongju University, Cheongju, Chungbuk 360-764, South Korea 2Department of Architectural Engineering, Cheongju University, Cheongju, Chungbuk 360-764, South Korea *Corresponding author.

16:30 **Bifunctional solar electrocatalytic water splitting using CIGS solar modules and WO3-based electrolyzers** **R P3.28**
İlknur Bayrak Pehlivan (1),*, Gamze Atak (1),(2), Olof Stolt (3), Claes G. Granqvist (1), Gunnar A. Niklasson (1), Lars Stolt (3), and Tomas Edvinsson (1)
(1) Department of Engineering Sciences, The Ångström Laboratory, Uppsala University, P.O. Box 534, SE-751 21 Uppsala, Sweden (2) Hacettepe University, Physics Engineering Department, 06800 Beytepe Ankara, Turkey (3) Solibro Research AB, Vallvägen 5, SE-75651 Uppsala, Sweden

16:30 **Air Conditioning System of TIPV Based Electrical Vehicle** **R P3.29**
Se Yeon Park, Ji Min Seo*, Soo Ho Park, Jin Uk Choi and Dong Chan Shin
Department of Materials Science and Engineering, Chosun University, Gwangju, Korea, *presenting author

16:30 **Preparation of carbon nanotubes and boron nitride by self-assembly for high thermal conductivity** **R P3.30**
Minh Canh Vu, Nhat Anh Thi Thieu, Eui-Jeong Park, Sung-Ryong Kim
Korea National University of Transportation

16:30 **The stability study of current thermochromic smart coating with diverse polymer host matrix** **R P3.32**
Young Kwang Kim, Jun Woo Son
Department of Materials Science and Engineering, Pohang University of Science and Technology (POSTECH), Pohang 37673, Republic of Korea

16:30 **Synergistic mechanical properties improvement of carbon nanotubes/graphene reinforced polyurethane hybrid nanocomposites** **R P3.33**
Amir Navidfar, Levent Trabzon
Faculty of Mechanical Engineering, Istanbul Technical University, Istanbul, Turkey, MEMS Research Center, Istanbul Technical University, Istanbul, Turkey,

16:30 **High strength and low coefficient of thermal expansion aluminium matrix hybrid composites for thermal management applications** **R P3.34**
Jamuna Sethi, Siddhartha Das, Karabi Das
Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, West Bengal, India, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, West Bengal, India, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, West Bengal, India

16:30 **Thermochromic Properties of Chemical Vapor Deposited Fluorine doped VO2 Thin Films for Smart Window applications** **R P3.35**
Sriluxmi Srimuruganantha, Ivan P. Parkin, Claire J. Carmalt
Sriluxmi Srimuruganantha, Chemistry Department, UCL, Ivan P. Parkin, Chemistry Department, UCL, Claire J. Carmalt, Chemistry Department, UCL

16:30 **Hollow Pr6O11 nanospheres and their application as a chemoresistive CO2 sensor** **R P3.36**
Cecilia A. Zito12, Ann-Christin Dippel3, Diogo Paschoalini Volanti1, Dorota Koziej2
1 São Paulo State University UNESP, Rua Cristóvão Colombo 2265, 15054000 São José do Rio Preto, Brazil, 2 University of Hamburg, Center for Hybrid Nanostructures, Luruper Chaussee 149, 22761 Hamburg, Germany, 3 Deutsches Elektronensynchrotron DESY, Notkestraße 85, 22607 Hamburg, Germany

16:30 **Thick silica foam films with aerogel-like thermal conductivity and bulk density** **R P3.37**
Triin Kangur, Martin Järvekülg, Martin Timusk
University of Tartu, Institute of Physics, Tartu, Estonia

16:30 **Nitrogen doped W oxide films for electrochromic applications** **R P3.38**
Gamze Atak (1,2), İlknur Bayrak Pehlivan (2), Josè Montero Amenedo (2), Daniel Primetzhofer (3), Tomas Edvinsson (2), Claes G. Granqvist (2), Gunnar A. Niklasson (2)
(1) Hacettepe University, Department of Physics Engineering, 06800 Beytepe, Ankara, Turkey, (2) Department of Engineering Sciences, The Ångström Laboratory, Uppsala University, P.O.Box 534, SE-75121 Uppsala, Sweden, (3) Department of Physics and Astronomy, Applied Nuclear Physics, Uppsala University, SE-75120 Uppsala, Sweden

16:30 **Highly sensitive 2-butanone sensor based on ZnO hollow spheres** **R P3.39**
Tarcísio M. Perfecto, Diogo P. Volanti
Laboratory of Materials for Sustainability (LabMatSus), Ibilce, São Paulo State University (Unesp), R. Cristóvão Colombo, 2265, S. J. Rio Preto, Brazil

16:30 **Photophysical characterization of lanthanide (Ln3+) molecular complexes coordinated in 2,2'-bipyridine-6,6'-dicarboxylate ligand** **R P3.40**
Pariya Nazari1, Carolin Dee2, Michael Seitz2, Ian Howard1, 3, Bryce S. Richards1, 3, and Andrey Turshatov1
1 Institute of Microstructure Technology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76344, Eggenstein-Leopoldshafen, Germany. 2 Institute of Inorganic Chemistry, University of Tübingen, 72076, Tübingen, Germany. 3 Light Technology Institute, Karlsruhe Institute of Technology, Engesserstrasse 13, 76131 Karlsruhe, Germany.

16:30 **Multiphase cathode for molten carbonate fuel cells** **R P3.41**
Aleksandra Łysik, Tomasz Wejrzanowski, Jarosław Milewski, Wen Xing, Christelle Denonville
Aleksandra Łysik, Tomasz Wejrzanowski: Faculty of Materials Science and Engineering, Warsaw University of Technology, Wołoska 141, 02-507 Warsaw, Poland, Jarosław Milewski: Institute of Heat Engineering, Faculty of Power and Aeronautical Engineering, Warsaw University of Technology Nowowiejska 21/25, 00-665 Warsaw, Poland, Wen Xing, Christelle Denonville: SINTEF Industry, Department of Sustainable Energy Technology, Forskningsveien 1, Oslo, Norway

16:30 **Tuning electro/optical properties of transparent boron-doped carbon nanowalls grown on optical glasses** **R P3.42**
Mattia Pierpaoli1, Mateusz Ficek2, Michał Rycewicz2, Mirosław Sawczak3, Jakub Karczewski4, Maria Letizia Ruello1 and Robert Bogdanowicz2
1 Department of Materials, Environmental Sciences and Urban Planning, Università Politecnica delle Marche, Ancona, Italy, 2 Department of Metrology and Optoelectronics, Faculty of Electronics, Telecommunication and Informatics, Gdańsk University of Technology, Gdańsk, Poland 3 Polish Academy of Sciences, The Szewalski Institute of Fluid-Flow Machinery Fiszera 14, 80-231 Gdansk, Poland, 4 Faculty of Applied Physics and Mathematics, Department of Solid State Physics, Gdansk University of Technology, 11/12 Narutowicza Str. 80-233 Gdansk, Poland

16:30 **Polymer/ZnO Nanowires Composite Membranes via Capillary Rise Infiltration (CaRI)** **R P3.43**
Hong-Huy Tran (1), Daeyeon Lee (2), David Riassetto (1)
(1) Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, F-38000 Grenoble, France (2) Department of Chemical and Biomolecular Engineering, University of Pennsylvania, Philadelphia, Pennsylvania 19104, United States

16:30 **Cr-doped Nanosized Amorphous Titania as Novel, Efficient and Cost Effective Cool-Colored Nanopigments** **R P3.44**
Shehab A. Mansour1,2, Ibrahim Eldafatry2, Ragab A. Elsad2, El-Sayed M. Farag2
1 Advanced Materials/Solar Energy and Environmental Sustainability (AMSEES) Laboratory, Menoufia University, Faculty of Engineering, Shebin El-Kom, Egypt
2 Basic Engineering Science Department, Faculty of Engineering, Menoufia University, Shebin El-Kom, Egypt

16:30 **Study of green proton conducting electrolytes based on Carrageenan and different plasticizers** **R P3.45**
S. C. Nunes1,2, R. F. P. Pereira3, M. M. Silva3, P. Almeida2, V. de Zea Bermudez1,4, M. C. Gonçalves1,4,*
1 Chemistry Department, University of Trás-os-Montes and Alto Douro, Vila Real, Portugal, 2 Chemistry Department, University of Beira Interior, Covilhã, Portugal, 3 Chemistry Department, University of Minho, Braga, Portugal, 4 CQ-VR, University of Trás-os-Montes e Alto Douro, Vila Real, Portugal.

16:30 **Temperature distribution of supercapacitors prepared by various technologies** **R P3.46**
Stanisław Galla, Arkadiusz Szewczyk, Janusz Smulko, Łukasz Lentka
Gdańsk University of Technology, Faculty of Electronics, Telecommunications and Informatics, Department of Metrology and Optoelectronics

16:30 **Reduced SrTiO3-supported bimetallic PtCu alloy nanoparticles for Preferential Oxidation of CO in Excess Hydrogen** **R P3.47**
Noopur Jain, Ahin Roy, N. Ravishankar
Materials Research Centre, Indian Institute of science

16:30 **Transformation of waste printed circuit boards to a value-added nano-structured homogeneous alloy applicable in nanofluid** **R P3.48**
Sayyed Rasoul Khayyam Nekouei, Farshid Pahlevani, Veena Sahajwalla
Centre for Sustainable Materials Research and Technology (SMaRT), School of Materials Science and Engineering, UNSW Sydney 2052, Australia

16:30 **From End-of-Life Nd-Fe-B magnets to Pr3+/Dy3+ doped Nd2O3 nanoparticles** **R P3.49**
Samane Maroufi Rasoul Khayyam Nekouei Veena Sahajwalla
SMaRT Centre, School of Materials Science and Engineering, UNSW

16:30 **Luminescence thermometer based on thermal shifting of charge transfer band in Gd2O2S:Eu3+** **R P3.50**
Ngei Katumo, Guojun Gao, Felix Laufer, Bryce S. Richards, and Ian Howard.
Ngei Katumo, Guojun Gao, Felix Laufer, Bryce S. Richards, Ian Howard. Institute of Microstructure Technology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76344, Eggenstein-Leopoldshafen, Germany. Bryce S. Richards, Ian Howard. Light Technology Institute, Karlsruhe Institute of Technology, Engesserstrasse 13, 76131 Karlsruhe, Germany.

16:30 **Reduced SrTiO3-supported Bimetallic PtCu Alloy Nanoparticles for Preferential Oxidation of CO in Excess Hydrogen** **R P3.51**
Noopur Jain, Ahin Roy, N Ravishankar
Materials Research Centre, Indian Institute of Science

16:30 **Simultaneous electrochemical and color impedance measurements of electrochromic systems in transmittance mode: background noise determination and test measurement on WO3** **R P3.52**
Edgar A. Rojas-González, Gunnar A. Niklasson.
Department of Engineering Sciences, The Ångström Laboratory, Uppsala University, P.O. Box 534, SE-751 21 Uppsala, Sweden

16:30 **Potentiostatic Rejuvenation of Electrochromic W&#8211,Ti Oxide Thin films** **R P3.53**
Idris Sorar,a,b, &#304,lknur Bayrak Pehlivan,a, Edgar A. Rojas-González,a, Claes G. Granqvist,a, Gunnar A. Niklasson,a
a) Department of Engineering Sciences, The Ångström Laboratory, Uppsala University, P.O. Box 534, SE-75121 Uppsala, Sweden b) Department of Physics, Hatay Mustafa Kemal University, TR-31060 Antakya/Hatay, Turkey

Wednesday 29 may 2019

IV. Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment : Anand and Palgrave

08:30 INV **Multichromism in Vanadium Oxides as Smart Materials** **R 4.1**
A. Rougier
ICMCB -UMR5026

09:00 INV **Sustainable Smart Windows for Energy-Efficient Buildings** **R 4.2**
Verónica de Zea Bermudez
Chemistry Department and CQ-VR, University of Trás-os-Montes e Alto Douro, 5000-811 Vila Real, Portugal.

09:15 **Flexible electrochromic devices with durability enhanced Ni-W oxide as a counter electrode** **R 4.3**
Sang Jin Lee12, Sahn Nahm2, Seung Ho Han1
1Electronic Convergence Materials & Device Research Center, Korea Electronics Technology Institute, 2Department of Materials Science and Engineering, Korea University

09:30 **Study of coloration mechanism in chromogenic thin films through optical dispersion analysis** **R 4.4**
Tomasz Jedrzejak, Jaroslaw Domaradzki, Michal Mazur, Tomasz Kotwica, Agata Obstarczyk, Roman Pastuszek
Wroclaw University of Science and Technology, Faculty of Microsystem Electronics and Photonics, Janiszewskiego 11/17, 50-372 Wroclaw, Poland

09:45 **Engineered Nanocomposite Materials for Energy Efficient Smart Dynamic Windows** **R 4.5**
Pelin Yilmaz, Mirko Magni, Massimo Melis, Monica Della Pirriera, Michele Manca
IIT- CBN - Fondazione Istituto Italiano di Tecnologia - Center for Biomolecular Nanotechnologies, Dipartimento di Chimica, Università degli Studi di Milano, LEITAT Technological Center

10:00 **COFFEE BREAK**

V. Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment : Christiansen and Niklasson

10:30 INV **In-liquid plasma treatment of TiO2 nanoparticles for enhancing the photocatalytic activities** **R 5.1**
Chiaki Terashima
Tokyo University of Science

11:00 INV **Visible light active photocatalysis for anti-microbial applications** **R 5.2**
Suresh C. Pillai1,2*
1 Nanotechnology and bio-engineering Research Group, Department of Environmental Science, Institute of Technology Sligo, Ireland, 2 Centre for Precision Engineering, Materials and Manufacturing Research (PEM), Institute of Technology Sligo, Ireland, pillai.suresh@itsligo.ie

11:15 INV **Metal-modified semiconductor photocatalysts for the effective abatement of aqueous ammonia** **R 5.3**
Maria Vittoria Dozzi (1), Gianluigi Marra (2), Elena Selli (1)
(1) Dipartimento di Chimica, Università degli Studi di Milano, Via Golgi 19, 20133 Milano, Italy, (2) Renewable Energy and Environmental R&D, Istituto Eni Donegani, Via Fauser 4, I-28100 Novara, Italy

11:30 INV **Plasma CVD Grown Semiconductor Metal Oxide Thin Films and Hetero-interfaces for Energy Technologies** **R 5.4**
Sanjay Mathur, Thomas Fischer
Institute of Inorganic Chemistry, University of Cologne, Greinstr. 6, 50939 Cologne (Germany)

11:45 **Visible light driven Ag NPs decorated α-NiMoO4 nanorod for Tetracycline degradation, mechanism, and pathways** **R 5.5**
Schindra Kumar Ray, Soo Wohn Lee
Research Center for Eco Multi-Functional Nano Materials, Sun Moon University, Korea

12:00 **Photocatalysts having heterogeneity in crystal structure and homogeneity in elements** **R 5.6**
Heechae Choi and Sanjay Mathur
Institute of Inorganic Chemistry, University of Cologne, Germany

12:15 **A simulation comparison of acidic and alkaline electrolysis for integrated photovoltaic-electrolyzer devices** — **R 5.8**
İ. Bayrak Pehlivan (1), U. Malm (2), P. Neretnieks (2), M. Mueller (3), K. Welter (3), S. Haas (3), S. Calnan (4), A. Canino (5), S. M. S. Privitera (6), S. A. Lombardo (6), L. Stolt (2), T. Edvinsson (1), and M. Edoff (1)
(1) Department of Engineering Sciences, Uppsala University, P.O. Box 534, SE-75121 Uppsala, Sweden (2) Solibro Research AB, Vallvagen 5, Uppsala 75651, Sweden (3) Forschungszentrum Juelich GmbH, Wilhelm Johnen Strasse, Juelich 52428, Germany (4) PVcomB, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Schwarzschildstrasse 3, Berlin 12489, Germany (5) ENEL Greenpower, Contrada Blocco Torrazze, Zona Industriale, Catania 95121, Italy (6) Consiglio Nazionale Delle Ricerche CNR-IMM, Zona Industriale, Ottava Strada, 5, Catania 95121, Italy

12:30 **LUNCH**

VI. Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment : Rougier and De Zea Bermudez

14:00 INV **Optical coatings with sub-wavelength dielectric nanostructures for light manipulation functions** — **R 6.1**
Srinivasan Anand
KTH Royal Institute of Technology, Department of Applied Physics, Electrum 229, S16440 Kista, Sweden.

14:30 INV **Ultrathin photovoltaic absorbers of SnS, experiments and simulations** — **R 6.2**
Andrii A. Voznyi,1,2 Oleksandr V. Bilousov,1 Björn Landeke-Wilsmark1 and Carl Hägglund1*
1 Dept. Engineering Sciences, Solid State Electronics, Uppsala University, Box 534, SE-751 21 Uppsala, Sweden 2 Faculty of Electronics and Informational Technologies, Sumy State University, 2 Rymsky Korsakov Str., 40007 Sumy, Ukraine *carl.hagglund@angstrom.uu.se

14:45 INV **Towards Lead Free Hybrid Solar Absorbers - fundamentals of the Vacancy Ordered Double Perovskites** — **R 6.3**
Robert G. Palgrave, David O. Scanlon
Department of Chemistry, University College London, 20 Gordon St. London, WC1H 0AJ

15:00 INV **Origin of Low Photovoltage in FeS2 Based Extremely Thin-Film Solar Cell: Debates and Misconceptions** — **R 6.4**
Mohammad Ziaur Rahman, Tomas Edvinsson
Department of Solid-State Physics, Angstrom Laboratory, University of Uppsala, Sweden

15:15 **Plasmonic solar control coating** — **R 6.5**
Martin Bauch, Theodoros Dimopoulos, Stephan Trassl
AIT-Austrian Institute of Technology, Photovoltaic Systems, Giefinggasse 4, 1210 Vienna, Austria, AIT-Austrian Institute of Technology, Photovoltaic Systems, Giefinggasse 4, 1210 Vienna, Austria, HUECK FOLIEN GmbH, Gewerbepark 30, 4342 Baumgartenberg, Austria

15:30 **UV/Vis light-induced photodarkening in optical fibres for indoor solar applications** — **R 6.6**
G.M. Lo Piccolo* (a,b), A. Alessi (c), A. Morana (c), A. Boukenter (c), S. Girard (c), Y. Ouerdane (c), F. Paredes (d), F. Montagnino (d), F.M. Gelardi (a), S. Agnello* (a,e), M. Cannas (a)
(a) University of Palermo, Department of Physics and Chemistry, Via Archirafi 36, 90123 Palermo, Italy, (b) University of Catania, Department of Physics and Astronomy, Via Santa Sofia 64, 95123 Catania, Italy, (c) Univ Lyon, UJM-Saint-Etienne, CNRS, Graduate School Optics Institute, Laboratoire Hubert Curien UMR 5516, F-42023, Saint-Étienne, France, (d) IDEA s.r.l., Contrada Molara, Zona Industriale III Fase, 90018 Termini Imerese (PA), Italy, (e) University of Palermo, ATeN Center, Viale delle Scienze Edificio 18, 90128 Palermo, Italy

15:45 **COFFEE BREAK**

VII: Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment : Domaradzki and Pillai

16:15 INV **Additive manufacturing of ceramics for energy technologies and bio-medical applications - enhancing functionality and improving materials and devices through correlative microscopy** — **R 7.1**
S.H. Christiansen
Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitnerpl. 1, 14109 Berlin, Germany

16:45 **Light scattering materials for energy-related application: Determination of absorption and scattering coefficients.** — **R 7.2**
Junxin Wang 1, Annica M. Nilsson 1, David Barrios 2, William E. Vargas 3, Ewa Wäckelgård 1, Gunnar A. Niklasson 1*
1 Department of Engineering Sciences, The Ångström Laboratory, Uppsala University, P.O. Box 534, SE-75121 Uppsala, Sweden, 2 Universidad Politécnica Salesiana, Guayaquil, Ecuador, 3 Centro de Investigación en Ciencia e Ingeniería de Materiales and Escuela de Física, Universidad de Costa Rica, 2060 San José, Costa Rica

17:00 **Efficient and flexible transparent electrodes for green buildings: a brief review** — **R 7.3**
Daniel Bellet1, Dorina Papanastasiou1, Joao Resende1,2, Viet Huong Nguyen1, Carmen Jiménez1, David Muñoz-Rojas1
1 Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, 38000 Grenoble, France 2 Univ. Grenoble Alpes, Université Savoie Mont Blanc, CNRS, Grenoble INP, LEPMI, 38000 Grenoble, France

17:15 **Improving rf-sputtered vanadium dioxide thin films for the use as window glazings for smart windows** — **R 7.4**
F. Kuhl, H. Giese, M. Becker, A. Polity, P. J. Klar
Institute of Experimental Physics I and Center for Materials Research (ZfM/LaMa), Justus Liebig University Giessen, Heinrich-Buff-Ring 16, DE-35392 Giessen, Germany

17:30 **All dielectric reflector metasurface covering the entire near-infrared region of solar spectrum** — **R 7.5**
Eunjong Kim, Sangwon Baek, Jae Yong Park, and Jong-Lam Lee
Department of Materials Science and Engineering, Pohang University of Science and Technology, Pohang, Korea Division of Advanced Materials Science, Pohang University of Science and Technology, Pohang, Korea

17:45 **Room-Temperature Switching materials** — **R 7.6**
Yulong Wu1, Peng Meng1, Quan Zhang1, Zhiyuan Tan1, Guoan Cheng1,2, Xiaoling Wu1,2, Ruiting Zheng1 ,2
1. Key Laboratory of Radiation Beam Technology and Materials Modification of Ministry of Education, College of Nuclear Science and Technology, Beijing Normal University, Beijing 100875, P. R. China 2. Beijing Radiation Center, Beijing 100875, P. R. China

19:00 **Graduate Student Award ceremony followed by the social event**

VIII. Hybrid Interface Materials for Energy Applications : Kim and Fischer

08:30 INV **Towards thermoelectrics based on the elements of hope** — R 8.1
Mathias S. Wickleder, Christopher James
University of Cologne Institute of Inorganic Chemistry

09:00 INV **Lead-Free Piezoelectric Materials for High-Temperature Piezoelectric and Pyroelectric Energy Harvesters** — R 8.2
Ausrine Bartasyte, Giacomo Clementi, Vincent Astié, Sabina Kuprenaite, Samuel Margueron, and Bernard Dulmet
FEMTO-ST Institute, University of Franche-Comté, France

09:30 **Aligned Effect of Cubic-phase BaTiO3 Nanoparticles in Piezoelectric Performance** — R 8.3
Je Moon YUN, Kwang Ho KIM
1. Global Frontier R&D Center, Pusan National University, Republic of Korea 2. Global Frontier R&D Center and School of Materials Science and Engineering, Pusan National University, Republic of Korea

09:45 **Template-assisted fabrication of PEDOT:PSS/GST nanowires array hybrid composites for high thermoelectric performance** — R 8.4
Jae-Hong Lim
Department of Materials Science and Engineering, Gachon University

10:00 **COFFEE BREAK**

10:30 INV **Metal Organic Frameworks for Energy Related Applications** — R 8.5
Christian Serre, Sujing Wang, Farid Nouar, Antoine Tissot
Institute of Porous Materials of Paris, Ecole Normale Supérieure, Ecole Supérieure de Physique et de Chimie Industrielles de Paris, CNRS, PSL University, 75005 Paris, France

11:00 **Computational Structure Prediction of MOFs for Energy and Environmental Applications** — R 8.6
Mohammad Wahiduzzaman, Sujing Wang, Ji Sun Lee, Christian Serre, Jong-San Chang, Sabine Devautour-Vinot, Guillaume Maurin
Institut Charles Gerhardt Montpellier, UMR 5253 CNRS, Université Montpellier, Montpellier, France, Institut des Matériaux Poreux de Paris, FRE 2000 CNRS, Ecole Normale Supérieure, Ecole Supérieure de Physique et de Chimie Industrielles de Paris, Paris Research University, 75005 Paris, France, Research Group for Nanocatalyst and Chemical Safety Research Center, Korea Research Institute of Chemical Technology (KRICT, Daejeon, South Korea,

11:15 **PLENARY SESSION 2**

12:30 **LUNCH**

IX. Hybrid Interface Materials for Energy Applications : Serre and Bartasyte

14:00 INV **Chemically-processed metal oxide nanostructures for supercapacitors** — R 9.1
Nanasaheb M. Shinde*, Kwang Ho Kim a,b
a National Core Research Centre for Hybrid Materials Solution, Pusan National University, 30, Jangjeon-dong, Geumjung-gu, Busan 609-735, Republic of Korea
b Global Frontier R&D Center for Hybrid Interface Materials, Pusan National University, 30, Jangjeon-dong, Geumjung-gu, Busan 609-735, Republic of Korea.

14:30 INV **Directed Self-Assembly of Block Copolymers on Chemically Modified Graphene** — R 9.2
Sang Ouk Kim
National Creative Research Initiative Center for Multi-Dimensional Directed Nanoscale Assembly Department of Materials Science & Engineering, KAIST, Daejeon 34141, Republic of Korea

14:45 **New Materials Solutions for EUV Lithography** — R 9.3
Jinho Ahn
Hanyang University

15:00 **Polymer-Quantum Dot Hybrid Nanocomposites Based on Block Copolymer Frameworks for Optoelectronic Applications** — R 9.4
Yeon Sik Jung
Korea Advanced Institute of Science and Technology (KAIST)

15:15 **High sensitivity and low cost infrared photodetector using a gated graphene/ semiconductor heterojunction** — R 9.5
Byoung Hun Lee, Kyung Eun Chang, Sihyun Kim, Taejin Yoo, Min Gyu Gwon
Gwangjun Institute of Science and Technology

15:30 **Electron microscopic approach toward unveiling metal-insulator transition in vanadium oxides** — R 9.6
Si-Young Choi
Department of Materials Science and Engineering, Pohang University of Science and Technology

15:45 **COFFEE BREAK**

X. Hybrid Interface Materials for Energy Applications : Wickleder and Andreu

16:15 INV **Hybrid Energy Storage Materials Enabling Ultrafast Charging, High Energy Density, and Robust Cycle Life** — R 10.1
Jeung Ku Kang
Korea Advanced Institute of Science and Technology (KAIST)

16:45 **One-step Synthesis of Fe, Co, Ni on Selective N-doped Carbon as Oxygen Reduction Reaction electrocatalyst in Zinc-air battery** — R 10.2
Seonghee Kim, Oi Lun Li
Schools of Materials Science and Engineering, Pusan National University

17:00 **High-Performance of K2V6O16•2.7H2O nanorod as Cathode Material for Aqueous Zinc-Ion Battery** — R 10.3
Jeonggeun Jo, Seokhun Kim, Sohyun Park, Jaekook Kim
Chonnam National University

17:15 **Sorption-Driven Energy Applications by Porous Metal-Organic Framework Materials** — R 10.4
Jong-San Chang, U-Hwang Lee, Ji Woong Yoon, Kyung Ho Cho, Young Kyu Hwang, and Christian Serre
Research Group for Nanocatalyst, Korea Research Institute of Chemical Technology (KRICT), Gajeong-ro 141, Yuseong, Daejeon 34114, Republic of Korea, Institut des Matériaux Poreux de Paris, FRE 2000 CNRS, ENS, ESPCI, Paris Research University, 75005 Paris, France

17:30 **Magnetoelectric Composites for Energy Harvesting Applications** — R 10.5
Jungho Ryu, Shashank Priya, Kwan-Ho Kim
Yeungnam University, Pennsylvania State University, Pusan National University

17:45 **A simple and effective methods to achieve high quality of perovskite film for high performance perovskite solar cells** — R 10.6
Sung Heum Park, Yanliang Liu, Yongchao Ma, Jung Hyun Jeong, Kwang Ho Kim
aDepartment of Physics, Pukyong National University, Busan, Korea , bHybrid Interface Materials Global Frontier Research Group, Pusan National University, Busan 608-737, South Korea

18:00 **First-principles-based machine learning method for innovative design of energy materials** — R 10.7
Jeemin Hwang, Seunghyo Noh, Joonhee Kang, Hyunwook Jung, Hoje Chun, Byungchan Han*
Department of Chemical & Biomolecular Engineering, Yonsei University, Seoul 03722, Korea

XI. Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment : Fischer and Sekino

08:30 INV **Gas sensor devices based on non-stoichiometric tin oxide** **R 11.1**
Pedro Henrique Suman, Martin Schwellberger Barbosa, Anderson André Felix, Ranilson Angelo da Silva, Marcelo Ornaghi Orlandi
São Paulo State University - UNESP, Department of Physical Chemistry, Brazil.

09:00 INV **Organometallic halide perovskites: Tuning physical functionalities via light and electrochemistry** **R 11.2**
Mahshid Ahmadi1, Eric S. Muckley2, Ilia N. Ivanov2, Matthias Lorenz2, Jeremy Tisdale1, Bin Hu1, Liam Collins2, Sergei V. Kalinin2
1- Joint Institute for Advanced Materials, Department of Materials Science and Engineering, University of Tennessee, Knoxville 37996, USA 2- Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37831, USA

09:15 **Nanostructured electrochemical sensors for detecting toxic organic compounds (formaldehyde, acrylamide) in living enviroments wi** **R 11.3**
Kristina Zuzek Rozman1,2, Spela Trafela1,2, Anja Drame1,2, Urska Kavcic3, Igor Karlovits3, Saso Sturm1,2
1 Jozef Stefan Institute, Ljubljana, Slovenia, 2 Jozef Stefan International Postgraduation School, Ljubljana, Slovenia 3 Pulp and paper Institute, Ljubljana, Slovenia

09:30 **Development of a rapid, room-temperature and self-powered metal-halide gas sensor in few steps** **R 11.4**
Konstantinos Brintakis, Athanasia Kostopoulou, Emmanuel Stratakis
Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology-Hellas (FORTH), P.O. Box 1385, Heraklion 70013, Crete, Greece, Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology-Hellas (FORTH), P.O. Box 1385, Heraklion 70013, Crete, Greece, Institute of Electronic Structure and Laser (IESL), Foundation for Research and Technology-Hellas (FORTH), P.O. Box 1385, Heraklion 70013, Crete, Greece Physics Department, University of Crete, 71003 Heraklion, Crete, Greece

09:45 **Multimodal 3D nanobridges** **R 11.5**
Nishchay A. Isaac, Leslie Schlag, Johannes Reiprich, Simeon Katzer, Helene Nahrstedt, Jörg Pezoldt, Thomas Stauden, Heiko O. Jacobs
Technische Universität Ilmenau FG Nanotechnologie Gustav-Kirchhoff-Str. 1 98693 Ilmenau

10:00 **COFFEE BREAK**

XII. Smart materials for green buildings and vehicles: towards energy efficiency, energy utilization, and a healthy interior environment : Ahmadi and Orlandi

10:30 INV **Nano-hybridization of titania nanotubes and their photochemical and physicochemical multifunctions** **R 12.1**
Kota Tsukatani(1), Sunghun Eom(1), Satoshi Tsukuda(2), Tomoyo Goto(1), Sung Hun Cho(2), and Tohru Sekino(2)*
1 The Institute of Scientific and Industrial Research, Osaka University, Ibaraki, Osaka 567-0047, Japan 2 Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Miyagi 980-8577, Japan *sekino@sanken.osaka-u.jp

10:45 **Lasting Superhydrophobicity of ZnO Nano-Wires (NW) Network and Their Application for Anti-Icing and Anti-Fouling** **R 12.2**
Youngjin Kim and David RIASSETTO*
Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, F-38000 Grenoble, France

11:00 **Sol-gel processed silica based highly transparent self- cleaning coatings for solar glass covers** **R 12.3**
Deepanjana Adak, Raghunath Bhattacharyya, Hiranmay Saha, Pradipta Sankar Maiti,
Centre of Excellence for Green Energy and Sensor Systems, Indian Institute of Engineering Science and technology, Shibpur, Howrah 711103, West Bengal, India, Department of Chemistry, Ben-Gurion University of the Negev, Beer-Sheva 84105, Israel

11:15 **Bioinspired self-cleaning plasma-processed polymeric materials for vehicular interiors** **R 12.4**
Hernando S. SALAPARE III, Thierry DARMANIN, Sonia AMIGONI, Frédéric GUITTARD
Université Côte d'Azur, NICE Lab, IMREDD, Nice 06200, France, Université Côte d'Azur, NICE Lab, IMREDD, Nice 06200, France, Université Côte d'Azur, NICE Lab, IMREDD, Nice 06200, France, Université Côte d'Azur, NICE Lab, IMREDD, Nice 06200, France and University of California Riverside, Department of Bioengineering, Materials Science and Engineering Building, Riverside, CA 92521 U.S.A.

11:30 **Visible light driven Ag NPs decorated &#945,-NiMoO4 nanorod for Tetracycline degradation, mechanism, and pathways** **R 12.5**
Schindra Kumar Ray, Soo Wohn Lee
Research Center for Eco Multi-Functional Nano Materials, Sun Moon University, Korea.

11:45 **Activation of three phase boundaries on Pt loaded CeOx nanowire/C cathode in PEFCs by using electron beam irradiation method** **R 12.6**
Toshiyuki MORI,1 Shunya YAMAMOTO,2 Shigeharu ITO,3 Noriko ISAKA,1 and Akira SUZUKI,1
1. National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan 2. National Institutes for Quantum and Radiological Science and Technology (QST), Takasaki, Gunma, Japan 3. National Institute of Technology, Tsuruoka College (Tsuruoka KOSEN), Tsuruoka, Yamagata, Japan

SYMPOSIUM S

ANIM 3: advances and enhanced functionalities of anion-controlled new inorganic materials

Symposium Organizers :

Hiroshi KAGEYAMA, Kyoto University, Japan

Houris KABBOUR, CNRS-ENSCL, France

James RONDINELLI, Northwestern University, USA

Songhak YOON, Fraunhofer IWKS, Germany

CRYSTAL IMPACT

Monday 27 may 2019

OXIDES / OXIDES-HYDRIDES / : Mike Hayward

09:00 INV **Anionic Electron and Hydride in Compounds for Emerging Functionality** **S 1.1**
Hideo Hosono
Materials Research Center for Element Strategy, Tokyo Institute of Technology, Japan

09:30 **Site selectivity of hydride in early transition metal Ruddlesden-Popper oxyhydrides** **S 1.2**
Olivier Hernandez 1, Gregory Geneste 2, Takeshi Yajima 3,4, Yoji Kobayashi 3, Masatoshi Okura 3, Kouhei Aidzu 3, Cédric Tassel 3, Serge Paofai 1, Clemens Ritter 6, Hiroshi Kageyama 3,5
1 Institut des Sciences Chimiques de Rennes,Univ Rennes, France, 2 CEA DAM Ile-de-France (DIF), Arpajon, France, 3 Department of Energy and Hydrocarbon Chemistry, Kyoto University, Japan, 4 Institute for Solid State Physics, The University of Tokyo, Japan, 5 CREST, Japan Science and Technology Agency (JST), Japan, 6 Institut Laue-Langevin, Grenoble, France

09:45 **Yttrium and Rare-Earth Oxyhydrides: a New Class of Mixed Anion Compounds** **S 1.3**
S. Cornelius, F. Nafezarefi, G. Colombi, S. Eijt, D. Chaykina, B. Dam
Chemical Engineering, Faculty Applied Science, Delft University of Technology, The Netherlands

10:00 **COFFEE BREAK**

OPTICAL PROPERTIES AND MIXED ANION : Shinichi Kikkawa

10:30 INV **Hydride ions and oxygen vacancies in severely-reduced primitive cubic perovskites** **S 2.1**
Katsuro Hayashi, Hiroshi Watanabe, Hirofumi Akamatsu, George Hasegawa
Kyushu University, 744 Motooka, Fukuoka 819-0395, Japan

11:00 **Designing Band Structure of Sillen-Aurivillius Perovskites for Visible-Light Water Splitting** **S 2.2**
Daichi Kato, Ryu Abe, Hiroshi Kageyama
Department of Energy and Hydrocarbon Chemistry, Kyoto University, Japan

11:15 **Luminescence of layered mixed-anion perovskites** **S 2.3**
Hiraku Ogino, Yuki Iwasa, Kohei Yamanoi, Toshihiko Shimizu, Nobuhiko Sarukura, Jumpei Ueda, Setsuhisa Tanabe
Electronics and Photonics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan

11:30 **Near UV-excited photoluminescence of rare-earth-doped oxyhydrides Sr2LiSiO4H:RE (RE = Eu2+, Ce3+)** **S 2.4**
Tong Wu,a Asako Ishikawa,Satoru Matsuishi
Materials Research Center for Element Strategy, Tokyo Institute of Technology,Japan

11:45 **Strategies to combine small band gaps and ferroelectricity for photocatalytic water-splitting with mixed anion perovskites** **S 2.5**
Nathalie Vonrüti, Ulrich Aschauer
University of Bern, Switzerland, University of Bern, Switzerland

12:00 **LUNCH BREAK**

DESIGN AND MODELING : James Rondinelli

14:00 INV **Topochemical Synthesis of Layered Chalcogenides Based on the Reactivity of Chalcogen Dimers** **S 3.1**
Shunsuke Sasaki, Dalel Driss, Melanie Lesault, Elodie Grange, Jean-Yves Mevellec, Etienne Janod, Benoît Corraze, Sylvian Cadars, Maria Teresa Caldes, Catherine Guillot-Deudon, Stéphane Jobic, Laurent Cario*
1 Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, Nantes, France

14:30 **Pressure dependent structure-property relationships in oxyfluoride KNaNbOF5** **S 3.2**
Richard J. Saballos 1, Sheel Sanghvi 1, Jaye K. Harada 1,2, Ching-Hwa A. Chen 2, Prof. Steven D. Jacobsen 3,4, Kenneth R. Poeppelmeier, Sossina M. Haile 1,2,4, James M. Rondinelli 1,4
1 Department of Materials Science and Engineering, Northwestern University, USA, 2 Department of Chemistry, Northwestern University, USA, 3 Department of Earth and Planetary Sciences, Northwestern University, USA, 4 Applied Physics Graduate Program, Northwestern University, USA

14:45 **Catalytic and interface functionality by anion order in oxynitrides** **S 3.3**
Silviya Ninova, Hassan Ouhbi, Ulrich Aschauer
Department of Chemistry and Biochemistry, University of Bern, Switzerland

15:00 **Synthesis, characterizations and DFT study of new (halide)-chalcogenides phases** **S 3.4**
Batoul Almoussawi, Gauthier Lefèvre, Adlane Sayede, Angel Arevalo-Lopez and Houria Kabbour
Unité de catalyse et de chimie du solide (UCCS), France

15:15 **Photocatalytical activity of Sr2TaO3N bulk and surfaces by density functional theory** **S 3.5**
Maria Bouri, Ulrich Aschauer
Department of Chemistry and Biochemistry, University of Bern, Switzerland

15:30 **COFFEE BREAK**

INNOVATIVE SYNTHESIS 1 : Songhak Yoon

16:00 INV **Soft Chemistry to tune structures and properties in layered oxide chalcogenides** **S 4.1**
Simon Clarke
Department of Chemistry, University of Oxford, UK

16:30 **Spray-flame synthesis (SFS) of the nanosized LaMO3 (M = Fe, Co) perovskites from metal nitrate precursors** **S 4.2**
Steven Angel 1, Julian Neises 1, Maik Dreyer 2, Klaus Friedel-Ortega 2, Malte Behrens 2, Christof Schulz 1, Hartmut Wiggers 1
1 IVG, Institute for Combustion and Gas Dynamics - Reactive Fluids and CENIDE, University of Duisburg-Essen, Germany, 2 Faculty of Chemistry, University of Duisburg-Essen, Germany

16:45 **Preparation of calcium tantalum oxynitride nanosheet by exfoliation of a layered oxynitride and their photocatalytic activity** **S 4.3**
Shintaro Ida, Takumi Ideta, Keisuke Awaya, Michio Koinuma
Department of Chemistry, Kumamoto University, Japan

POSTER SESSION : .

17:00 **Photon Upconversion in Manganese (II) Activated Semiconductor through Er3+ Co-doping** **S 5.1**
Xin Zhang, Feng Wang
Department of Materials Science and Engineering, City University of Hong Kong, Hong Kong SAR

17:00 **The Nature of Hydrogen in Yttrium Dihydride and Photochromic Oxyhydrides examined by uSR** **S 5.2**
Diana Chaykina 1, Tom de Krom 2, Giorgio Colombi 1, Thomas Prokscha 3, Steffen Cornelius 1, Stephan Eijt 2, Bernard Dam 1
1 Department of Chemical Engineering, Delft University of Technology, The Netherlands, 2 Department of Radiation Science and Technology, Delft University of Technology, The Netherlands, 3 Laboratory for Muon Spin Spectroscopy, Paul Scherrer Institut, Switzerland

17:00 **On the Differences between Photochromic Rare-Earth Oxyhydrides and Non-Photochromic Hydroxides** **S 5.3**
G. Colombi 1, S. Cornelius 1, A. Longo 2, D. Chaykina 1, B. Dam 1
1 Department of Chemical Engineering, Delft University of Technology, The Netherlands, 2 Dutch-Belgian Beamline, ESRF, France

17:00 **Reactive sputtering as a versatile technique to deposit oxynitride and oxyfluoride thin films for photocatalytic applications** **S 5.4**
A. Bousquet, S. Ibrahim, F. Zoubian, P. Bonnet, C. Taviot-Guého, J. Cellier, E. Tomasella, M. Sarakha
Institut de Chimie de Clermont-Ferrand (ICCF), Université Clermont, France

17:00 **Stepwise topochemical fluorination of SrCrO3 perovskite via a superstructure oxide phase** **S 5.5**
Yoshihiro Tsujimoto 1, Yu Su 1, Kotaro Fujii 2, Masatomo Yashima 2, Kazunari Yamaura 1
1 National Institute for Materials Science, Japan 2 Tokyo Institute of Technology, Japan

17:00 **The structure and magnetic properties in co-doping hexagonal Y0.3Lu0.7MnO3 single crystal** **S 5.6**
Wei Sun 1, Pengyu Cheng 1, Yifei Fang 1,2, Jinyan Ning 1, Zhihan Wang 1, Fei Chen 1, Yingying Chen 1, Jincang Zhang 1*
1 Materials Genome Institute, Shanghai University, China, 2 Department of Physics, Fudan University, China

17:00 **Single Crystal Growth of Sillén-Aurivillius Perovskite Oxyhalides** **S 5.7**
Chengchao Zhong, Daichi Kato, Kotaro Fujii, Masatomo Yashima, Yasuhiro Fujii, Akitoshi Koreeda, Ryu Abe, Hiroshi Kageyama
1 Department of Energy and Hydrocarbon Chemistry Kyoto University, Japan 2 Department of Chemistry, Tokyo Institute of Technology, Japan 3 Department of Physical Sciences, Ritsumeikan University, Japan

17:00 **Preferential oxidation (PROX) of CO with spray-flame made LaMnO3 perovskite nanoparticles** **S 5.8**
Steven Angel 1, Juan David Tapia 2, Jaime Gallego 2, Christof Schulz 1, Hartmut Wiggers 1
1 Institute for Combustion and Gas Dynamics, University of Duisburg-Essen, Germany, 2 Institute of Chemistry, University of Antioquia, Republic of Colombia

17:00 **Preparation and Magnetic Properties of Co-based Heusler alloys by mechanical alloying** **S 5.9**
Dong-Hyeon Seo, Chung-Hyo Lee
Department of Advanced Materials Science and Engineering, Mokpo National University, Republic of Korea

Tuesday 28 may 2019

INNOVATIVE SYNTHESIS 2 : Houria Kabbour

09:00 INV **Perovskite based modular compounds** **S 6.1**
Joke Hadermann
Electron microscopy for Materials research (EMAT), University of Antwerp, Belgium

09:30 **Ammonolysis-Free Synthesis of GaN:ZnO Solid Solution from Zn?Ga Layered Double Hydroxide Using Urea as the Nitriding Agent** **S 6.2**
Kiyofumi Katagiri 1, Yuki Hayashi 1, Risa Yoshiyuki 1, Kei Inumaru 1, Tomoki Uchiyama 2, Noriyuki Nagata 2, Yoshiharu Uchimoto 2, Akinobu Miyoshi 3, and Kazuhiko Maeda 3
1 Department of Applied Chemistry, Hiroshima University, Japan, 2 Graduate School of Human and Environmental Studies, Kyoto University, Japan, 3 Department of Chemistry, Tokyo Institute of Technology, Japan

09:45 **Original synthesis of molybdenum nitrides: Impact of using cluster compounds as precursors** **S 6.3**
Kévin Guy 1,2,4, Stéphane Cordier 1, Franck Tessier 1, Fabien Grasset 2,3, Helena Kaper 4, Tetsuo Uchikoshi 2,3, David Lechevalier 2, Caroline Tardivat 4
1 Univ. Rennes, CNRS, Institut des Sciences Chimiques de Rennes, France, 2 CNRS-Saint-Gobain-NIMS, NIMS, Japan, 3 Research Center for Functional Materials, NIMS, Japan, 4 LSFC, CNRS-Saint-Gobain Recherche Provence, France

10:00 **COFFEE BREAK**

10:30 **Producing unusual Ta4+ in perovskite-type oxynitrides** **S 6.4**
Cora Bubeck 1, Marc Widenmeyer 1, Alexandra T. De Denko 2, Gunther Richter 3, Mauro Coduri 4, Eduardo Salas Colera 4, Eberhard Goering 5, Songhak Yoon 1,6, Frank E. Osterloh 2, Anke Weidenkaff 1,6,7
1 Institute for Materials Science, University of Stuttgart, Germany 2 Department of Chemistry, University of California, USA, 3 Central Scientific Facility Materials, Max Planck Institute for Intelligent Systems, Germany, 4 European Synchrotron Radiation Facility (ESRF), France, 5 Modern Magnetic Systems, Max-Planck-Institute for Intelligent Systems, Germany, 6 Fraunhofer IWKS, Germany, 7 Department of Materials and Earth Sciences, Technische Universität Darmstadt, Germany

10:45 **Potassium tin oxide thin-film transistor with p-type characteristics fabricated in solution process** **S 6.5**
Sung Haeng Cho, Sooji Nam, Su-Jae Lee
Electronics Telecommunications Research Institute (ETRI), Republic of Korea

11:15 **PLENARY SESSION**

12:30 **LUNCH BREAK**

ELECTRONIC AND MAGNETIC PROPERTIES : Hiroshi Kageyama

14:00 INV **Alkali and transition metal fluoride-phosphates as perspective** **S 8.1**
Evgeny V. Antipov
Department of Electrochemistry, Lomonosov Moscow State University, Russia

14:30 **Characterizing the Polar Phase Transition in KNaNbOF5 and its Implications for Potential Ferroelectricity** **S 8.2**
Jaye K Harada 1, Po-Hsiu Chien 2, Haoyu Liu 2, Ching-Hwa A Chen 3, Nenian Charles 1, Michael Holland 3, Yan-Yan Hu 2,4, Kenneth R Poeppelmeier 1,3, James M Rondinelli 1
1 Department of Materials Science and Engineering, Northwestern University, Evanston, USA, 2 Department of Chemistry and Biochemistry, Florida State University, USA, 3 Department of Chemistry, Northwestern University, USA, 4 Center of Interdisciplinary Magnetic Resonance, National High Magnetic Field Laboratory, USA

14:45 **Design and DFT Study in the (oxy)-chalcogenides phases A3MX(Q,Q&#8217,)7 (A= Ba, Sr, La, M= transition metal, X= V, Si and Q= O, S)** **S 8.3**
Bastien Leclercq, Sarah Nicoud, Olivier Mentré, Houria Kabbour
Unité de Catalyse et de Chimie du Solide, Université de Lille, France

15:00 **Utilization of mixed anions to develop thermoelectric materials** **S 8.4**
Takao Mori, Naoki Sato, Fainan Failamani, Hyoungwon Son
1 National Institute for Materials Science (NIMS), Japan, 2 University of Tsukuba, Japan

15:15 **Double-anionic Substitution in Perovskite-type Oxides** **S 8.5**
Marc Widenmeyer 1, Songhak Yoon 1,2, Joachim Häcker 1,3, Anke Weidenkaff 1,2,4
1 Institute for Materials Science, University of Stuttgart, Germany, 2 Fraunhofer IWKS, Germany, 3 Institute of Engineering Thermodynamics, German Aerospace Center, Germany, 4 Department of Materials and Earth Sciences, Technische Universität Darmstadt, Germany

15:30 **COFFEE BREAK**

INNOVATIVE SYNTHESIS 3 : .

16:00 INV **From 3d transition metals (Ti/Fe) oxy-hydroxy-fluorides to larger cations (In/Ce) oxy-fluorides and fluoro-sulfides: polyanionic structures to tailor the band gap** **S 9.1**
Mathieu Duttine, Nicolas Penin, Etienne Durand, Anthony Chiron and Alain Demourgues
ICMCB-CNRS-University of Bordeaux, France

16:30 **Thermal annealing of perovskite oxynitride films as a strategy to achieve stoichiometric (Sr2Ta2O7)100-x(La2Ti2O7)x oxide compos** **S 9.2**
C. Le Paven 1, L. Le Gendre 1, M. Haydoura 1, R. Benzerga 1, F. Marlec 1, A. Sharaiha 1, F. Tessier 2, F. Cheviré 2
1 Univ Rennes, CNRS, IETR UMR 6164, France 2 Univ Rennes, CNRS, ISCR UMR 6226, France

16:45 **Combustion Synthesis of Fluorine-Doped Indium Oxide Thin Films: Synthesis, Defect Structure, and Charge Transport Properties** **S 9.3**
Aritra Sil 1, Laleh Avazpour 2, Elise Goldfine 3, Qing Ma 4, Wei Huang 1, Binghao Wang 1, Michael J. Bedzyk 3, Julia E. Medvedeva 2, Antonio Facchetti 1,5, Tobin J. Marks 1
1 Department of Chemistry, Northwestern University, USA, 2 Department of Physics, Missouri University of Science and Technology, USA, 3 Department of Materials Science and Engineering, Northwestern University, USA, 4 Northwestern Synchrotron Research Center, Advanced Photon Source, USA, 5 Flexterra Inc., USA

17:00 INV **Redox activity of cation lone pairs in multi-component semiconductors** **S 9.4**
Sunghyun Kim and Aron Walsh
Department of Materials, Imperial College London, UK

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM T

2D semiconductors: applications and perspectives

Symposium Organizers :

Alexander GRÜNEIS, University of Cologne, Germany

Maria CAPORALI, CNR-ICCOM, Florence, Italy

Stefan HEUN, CNR-Nano, Pisa, Italy

Thomas SZOPEK, McGill University, Montréal, Canada

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Monday 27 may 2019

Synthesis and Growth 1 : Thomas Szkopek

09:00 INV **Fabrication of Xenes for a two-dimensional nanotechnology platform** **T 1.1**
Alessandro Molle, Christian Martella, and Carlo Grazianetti
CNR-IMM, unit of Agrate Brianza, via C. Olivetti 2, 20864 Agrate Brianza (MB), Italy

09:30 **Controlled Chemical Vapor Deposition Synthesis of Two-Dimensional Tin-Derivative Chalcogenides: From Heterostructures to Alloys** **T 1.2**
Ren-Jie Chang, Yuewen Sheng, Gyeong Hee Ryu, Nhlakanipho Mkhize, Tongxin Chen, Yang Lu, Jun Chen, Harish Bhaskaran, Jamie H. Warner
Department of Materials, University of Oxford, Parks Road, Oxford OX1 3PH, United Kingdom

09:45 **Narrow photoluminescence and Raman peaks of epitaxial MoS2 on graphene/Ir(111)** **T 1.3**
Niels Ehlen, Joshua Hall, Boris V. Senkovskiy, Martin Hell, Jun Li, Alexander Herman, Dmitry Smirnov, Alexander Fedorov, Vladimir Yu Voroshnin, Giovanni Di Santo, Luca Petaccia, Thomas Michely and Alexander Grüneis
II. Physikalisches Institut, Universität zu Köln, Zülpicher Straße 77, 50937 Köln, Germany, Institute of Solid State and Materials Physics, Technische Universität Dresden, 01062 Dresden, Germany, IFW Dresden, Helmholtzstraße 20, 01069 Dresden, Germany, Helmholtz-Zentrum Berlin für Materialien und Energie, Elektronenspeicherring BESSY II, Albert-Einstein-Straße 15, 12489 Berlin, Germany, Elettra Sincrotrone Trieste, Strada Statale 14km 163.5, 34149 Trieste, Italy

10:00 **Coffee Break**

Synthesis and Growth 2 : Alessandro Molle

10:30 INV **Novel Quantum Spin Hall Paradigm and Edge States in Bismuthene** **T 2.1**
Jörg Schäfer
Department of Physics, University of Würzburg, Germany

11:00 **2D Materials as Solid Lubricants: Effects of Humidity and Tribo-Catalysis** **T 2.2**
Maria Clelia Righi
Dipartimento di Scienze Fisiche, Informatiche e Matematiche, Università di Modena e Reggio Emilia, Via Campi 213/A, 41125 Modena, Italy, CNR-Institute of Nanoscience, S3 Center, Via Campi 213/A, 41125 Modena, Italy

11:15 **Direct synthesis of the colloidal 1T WSe2 nanoflowers** **T 2.3**
Maria Sokolikova, Cecilia Mattevi
Imperial College London, Department of Materials, London, SW7 2AZ, UK

11:30 **A scalable nanowire lithography for highly stretchable graphene nanoribbons springs** **T 2.4**
Chuan Liu,1 Haiguang Ma,1 Shaobo Zhang,1 Junzhuan Wang,1 Jun Xu,1 and Linwei Yu1,2*
1. National Laboratory of Solid State Microstructures/School of Electronics Science and Engineering, 2 School of Physics, Nanjing University, 210093 Nanjing, China 2. LPICM, Ecole Polytechnique/CNRS, 91128 Palaiseau, France

11:45 **Wafer scale pulsed thermal deposition of binary and ternary transition metal dichalcogenide monolayers and heterostructures** **T 2.5**
Niklas Mutz,1 Tino Meisel,2 Holm Kirmse,2 Soohyung Park,2 Nikolai Severin,3 Jürgen P. Rabe,3 Emil J.W. List-Kratochvil,1 Norbert Koch,3 Christoph T. Koch,3 Sylke Blumstengel,1 and Sergey Sadofev2
1) Institut für Physik, Institut für Chemie and IRIS Adlershof, Humboldt-Universität zu Berlin, Berlin, Germany, 2) Institut für Physik, Humboldt-Universität zu Berlin, Berlin, Germany, 3) Institut für Physik and IRIS Adlershof, Humboldt-Universität zu Berlin, Berlin, Germany

12:00 **A novel method for the synthesis of 2D materials** **T 2.6**
Stela Canulescu1*, Yu-Chuan Lin2, Raymond Unocic2, Xiahan Sang2, Kristian S. Thygesen3, Alex A. Puretzky2, Ilia N. Ivanov2, David B. Geohegan2 and Jørgen Schou1
1) Department of Photonics Engineering, Technical Institute of Denmark, DK-4000 Roskilde, Denmark 2) Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, USA 3) Department of Physics, Technical University of Denmark, 2800, Kgs. Lyngby, Denmark

12:15 **Towards the integration of MBE grown Epitaxial Blue-Phosphorene (epi-P) in functional devices** **T 2.7**
C. Martella (1), G.Faraone (1,2), C. Grazianetti (1), E. Bonera (2) and A.Molle (1)
(1) IMM-CNR, Agrate Unit, via C. Olivetti 2, I-20864, Agrate Brianza (MB), Italy, (2) Dipartimento di Scienza dei Materiali, Università di Milano-Bicocca, via Cozzi 53, I-20125 Milan, Italy

12:30 **Lunch**

Van der Waals heterostructures 1 : Paulina Plochocka

13:45 INV **Molecular beam epitaxy of transition metal disulphides using Graphene on Ir(111) as a substrate** **T 3.1**
Thomas Michely
II. Physikalisches Institut, Universität zu Köln, Germany

14:15 **Epitaxially ordered alkanes on two-dimensional black phosphorous as passivating and electrically insulating multilayers** **T 3.2**
Margherita Bolognesi,(a) Marco Brucale,(a)* Andrea Lorenzoni,(a) Federico Prescimone,(a) Salvatore Moschetto,(a) Vladimir V. Korolkov,(b) Matteo Baldoni,(a) Manuel Serrano-Ruiz,(c) Maria Caporali,(c) Francesco Mercuri,(a) Elena Besley,(d) Michele Muccini,(a) Maurizio Peruzzini,(c) Peter H. Beton,(b) and Stefano Toffanin (a)*
a) Istituto per lo Studio dei Materiali Nanostrutturati (ISMN) - Consiglio Nazionale delle Ricerche (CNR), Via P. Gobetti 101, 40129 Bologna, Italy, b) School of Physics and Astronomy, University of Nottingham, Nottingham NG7 2RD, UK, c) Istituto di Chimica dei Composti Organometallici (ICCOM) - Consiglio Nazionale delle Ricerche (CNR), Via Madonna del Piano 10, 50019 Sesto Fiorentino, Florence, Italy, d) School of Chemistry, University of Nottingham, Nottingham NG7 2RD, UK

14:30 **Semiconducting van der Waals Interfaces as Artificial Semiconductors** **T 3.3**
Nicolas Ubrig, Evgeniy Ponomarev, Daniil Domaretskiy, Ignacio Gutierrez, and Alberto F. Morpurgo
Department of Quantum Matter Physics, University of Geneva

14:45 **Magnetic doping and van der Waals growth of 2D-TMDs studied by photoelectron spectroscopy and band structure imaging** **T 3.4**
M. Gay [1], O. Renault [1], M.T. Dau [2], C. Vergnaud [2], C. Alvarez [3], H. Okuno [3], A. Marty [2], M. Jamet [2]
[1] Univ. Grenoble Alpes, CEA, LETI, 38000 Grenoble, France [2] Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, INAC-spintec, 38000 Grenoble, France [3] Univ. Grenoble Alpes, CEA, INAC-MEM, 38000 Grenoble, France

15:00 **High peak-to-valley Current Ratio in SnSe2/MoTe2 tunnel diode** **T 3.5**
Juchan Lee,a Ngoc Thanh Duong,a Seungho Bang,a,b Chulho Park,a Jiseong Jang,a Mun Seok Jeong*a,b
aDepartment of Energy Science, Sungkyunkwan University (SKKU), Suwon 16419, Republic of Korea. bCenter for Integrated Nanostructure Physics, Institute for Basic Science (IBS), Suwon 16419, Republic of Korea

15:15 **Strained bubbles in van der Waals heterostructures as local emitters of photoluminescence with adjustable wavelength** **T 3.6**
A. V. Tyurnina, D. A. Bandurin, E. Khestanova, V. G. Kravets, M. Koperski, F. Guinea, A. N. Grigorenko, A. K. Geim, I. V. Grigorieva
University of Manchester, UK

15:30 **P-N diode in few-layer ReS2/WSe2 Heterostructure** **T 3.7**
Chulho Park, Ngoc Thanh Duong, Seungho Bang, Duc Anh Nguyen, Hye Min Oh, Mun Seok Jeong
1. Department of Energy Science, Sungkyunkwan University, Suwon 16419, Korea
2. Center for Integrated Nanostructure Physics (CINAP), Institute for Basic Science (IBS), Sungkyunkwan University, Suwon 16419, Korea

15:45 **Lateral Asymmetric Heterostructures for Red-Channel Light Emitters based on 2D Materials Grown by Chemical Vapour Deposition** **T 3.8**
Yuewen Sheng, Jamie H. Warner.
Department of Materials, University of Oxford, Parks Road, Oxford OX1 3PH, United Kingdom

16:00 **Coffee Break**

Van der Waals heterostructures 2 : Thomas Michely

16:30 INV **Excitons in MoS2/MoSe2 Van der Waals heterostructures** **T 4.1**
Paulina Plochocka
Laboratoire National des Champs Magnétiques Intenses, CNRS

17:00 **Reactivity of Silane compounds with few-layer black phosphorus** **T 4.2**
Inigo Iglesias,a Andrea Ienco, a Maria Caporali, a Martina Banchelli, b Paolo Matteini, b Manuel Serrano-Ruiz, a Maurizio Peruzzini. a
a CNR-ICCOM, Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy, b CNR-IFAC, Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy

17:15 **Probing the linear dichroism of TiS3-ZrSe3 crossed heterojunction** **T 4.3**
Yung-Ting Chang, Ming-Pei Lu, Cheng-Yan Chen, Hui-Hsuan Huang
National Tsing Hua University Department of Materials Science and Engineering, National Nano Device Laboratories, Hsinchu 300, Taiwan

17:30 **Ordering and electronic properties in graphene-like CBN 2D alloys - Monte Carlo and Tight Binding studies** **T 4.4**
Agnieszka Jamróz, Jacek A. Majewski
Faculty of Physics, Warsaw University, Warsaw, Poland

17:45 **Electrical characterization of MoS2 Field Effect Transistors synthesized by indirect Atomic Layer Deposition** **T 4.5**
R. Mahlouji, A. Sharma, M.A. Verheijen, V. Vandalon, W.M.M. Kessels, A.A. Bol
Eindhoven University of Technology (Tu/e)

18:00 **Graphene band modification in proximity with low temperature antiferromagnet insulator RuCl3** **T 4.6**
Soudabeh Mashhadi(1), Youngwook Kim(1), Marko Burghard(1), Jurgen Smet, Klaus Kern(2)
(1)Max Planck Institute for Solid State Research, Heisenbergstrasse 1, D-70569 Stuttgart, Germany, (2)Institut de Physique, Ecole Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland

18:15 **Photon detection based on Ferrocene-Graphene Junctions** **T 4.7**
J. Trasobares, M. Calero, F. J. Urbanos, M. Acebrón, R. Miranda, D. Granados
a IMDEA Nanociencia, Cantoblanco, 28049, Madrid, Spain b Dep. Física de la Materia Condensada and IFIMAC, Universidad Autónoma de Madrid, Cantoblanco, 28049,Madrid, Spain

Optical Spectroscopy : Valeria Nicolosi

08:30 INV **Optical spectroscopy and interlayer coupling in atomically-thin graphene-transition metal dichalcogenide heterostructures** **T 5.1**
Etienne Lorchat (1), Guillaume Froehlicher (1), Cédric Robert (2), Delphine Lagarde (2), Luis Parra-Lopez (1), Takashi Taniguchi (3), Kenji Watanabe (3), Xavier Marie (2), Stéphane Berciaud (1)
Etienne Lorchat, Guillaume Froehlicher, Luis Parra Lopez, Stéphane Berciaud: (1) Université de Strasbourg, CNRS, IPCMS, UMR 7504, F-67000 Strasbourg, France Cédric Robert, Delphine Lagarde, Xavier Marie: (2) Université de Toulouse, INSA-CNRS-UPS, LPCNO,135 Avenue de Rangueil, 31077, Toulouse, France Takashi Taniguchi, Kenji Watanabe: (3) National Institute for Materials Science, Tsukuba, Ibaraki 305-0044, Japan

09:00 **Probing the electronic band structure of MoTe2 by means of photoreflectance under high pressure** **T 5.2**
R. Oliva, T. Wozniak, F. Dybala, J. Kopaczek, P. Scharoch and R. Kudrawiec
Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology, Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland

09:15 **Competing effect of pressure on excitons binding energy and band-gap evolution in 2H-WSe2** **T 5.3**
Edoardo Martino (a,b), Florian Le Mardelé (b), Francesco Capitani (c), Pizzochero Michele (d), Wu Quansheng (d), Carsten Putzke (e), Helmuth Berger (a), Philip J. W. Moll (e), Oleg V. Yazyev (d), László Forró (a), Ana Akrap (b)
(a) Laboratory of Physics of Complex Matter, Ecole Polytechnique Federale de Lausanne (EPFL), CH-1015 Lausanne ,Switzerland (b) Department of Physics, University of Fribourg, CH-1700 Fribourg, Switzerland (c) Synchrotron SOLEIL, 91192 Gif-sur-Yvette Cedex, France (d) National Centre for Computational Design and Discovery of Novel Materials MARVEL, Ecole Polytechnique Federale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland (e) Laboratory of Quantum Materials, Ecole Polytechnique Federale de Lausanne (EPFL), CH-1015 Lausanne ,Switzerland

09:30 **Modulation of Exciton and Trion Emission Intensity in WS2 via Coupling with SPR of Au Nanoparticle** **T 5.4**
Achintya Singha1, Tara Shankar Bhattacharya1, Sreemanta Mitra1,2, Prasanna Kumar Mondal3, and Shib Shankar Singha1
1Department of Physics, Bose Institute, 93/1, A.P.C Road, Kolkata, 700009, India. 2Department of Physics, Indian Institute of Science, Bangalore 560012, India 3Department of Physics, Surendranath College, 24/2 M. G. Road, Kolkata 700009, India

09:45 **Quantitative Nanoscale Absorption Mapping: a novel technique to probe optical properties of 2D materials at the nanoscale** **T 5.5**
M. Negri1, L. Francaviglia1, W. Wei2, D. Dumcenco, A. Daniil1, G. Salviati3, V. Swaminathan4, F. Fabbri5, A. Kis2, A. Fontcuberta i Morral1
1 Laboratoire des Matériaux Semiconducteurs, École Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland, 2 Electrical Engineering Institute and Interdisciplinary Center for Electron Microscopy (CIME), École Polytechnique Fédérale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland, 3 Institute for Materials for Electronics and Magnetism (IMEM-CNR), Parco Area delle Scienze 37/A, 43124 Parma, Italy, 4 U.S. Army RDECOM-ARDEC, Fuze Precision Armaments and Technology Directorate, Picatinny Arsenal, NJ, USA, 5 NEST, Istituto Nanoscienze – CNR, Scuola Normale Superiore, Piazza San Silvestro 12, I-56127 Pisa, Italy,

10:00 **Coffee Break**

10:30 **The roll-to-roll deposition of 2D nanoflake films of TMDs for optoelectronic applications** **T 5.6**
Rebekah A. Wells, Hannah Johnson, Sachin Kinge, Kevin Sivula
Rebekah A. Wells, Kevin Sivula: Laboratory for Molecular Engineering of Optoelectronic Nanomaterials, École polytechnique fédérale de Lausanne (EPFL), Hannah Johnson, Sachin Kinge: Toyota Motor Europe NV/SA

10:45 **Unveiling defect-related Raman mode of monolayer tungsten disulfide via tip-enhanced resonance Raman scattering** **T 5.7**
Chanwoo Lee1,2, Byeong Geun Jeong1, Seok Joon Yun2, Young Hee Lee1,2,3, Seung Mi Lee4, Mun Seok Jeong1,2
1Department of Energy Science, Sungkyunkwan University, 2Center for Integrated Nanostructure Physics, Institute for Basic Science (IBS), 3Department of Physics, Sungkyunkwan University, 4Korea Research Institute of Standards and Science (KRISS)

11:15 **PLENARY SESSION 1**

12:30 **Lunch**

Functionalization : Stephane Berciaud

13:45 INV **Liquid-phase exfoliated two-dimensional nanosheets: synthesis, characterisation and applications** — T 6.1
Valeria Nicolosi
Trinity College Dublin, School of Chemistry, CRANN Institute, AMBER & I-Form Centres, Dublin 2. Ireland

14:15 **Palladium/Black Phosphorus Nanohybrid: Unraveling the Nature of Pd-P Interaction and Application in Catalysis** — T 6.2
Matteo Vanni,a Manuel Serrano-Ruiz,a Andrea Giaccherini,b Francesco d'Acapito,c Antonio Massimiliano Mio,d Giuseppe Nicotra,d Francesca Telesio,e Stefan Heun,e Martina Banchelli,f Paolo Matteini,f Maria Caporali,a Maurizio Peruzzini a
a CNR-ICCOM, Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy. b Department of Earth Sciences, University of Florence, Via La Pira 4, Firenze, 50121, Italy c CNR-IOM-OGG, c/o European Synchrotron Radiation Facility - LISA CRG, Grenoble, France. d CNR-IMM Istituto per la Microelettronica e Microsistemi, VIII strada 5, I-95121 Catania, Italy. e NEST, Istituto Nanoscienze–CNR and Scuola Normale Superiore, Piazza San Silvestro, 12, 56121 Pisa, Italy. f CNR-IFAC, Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy.

14:30 **Observation of photoluminescence enhancement in WS2 monolayers upon treatment with oleic acid ligands** — T 6.3
Arelo Tanoh, Hope Bretscher, Cyan Williams, James Xiao, Geraud Delport, Akshay Rao
Arelo Tanoh, Hope Bretscher, James Xiao, Geraud Delport, Akshay Rao - Department of Optoelectronics, Cavendish Laboratory, Cambridge, JJ Thompson Avenue, CB3 0HE, Cambridge, England, Cyan Williams - Department of Chemistry, Lensfield Rd, Cambridge CB2 1EW, Cambridge, England

14:45 **Chemical functionalization of transition metal dichalcogenide monolayers for optoelectronic applications** — T 6.4
Zhaojun Li, Hope Bretscher, James Xiao, Akshay Rao
University of Cambridge, Cambridge, U.K.

15:00 **Study of the electronic properties of funcionalized graphene with diazonium chemistry** — T 6.5
Gina Ambrosio1,2, Giovanni Drera1, Lakshya Daukiya2, Giovanni di Santo3, Luca Petaccia3, Steven De Feyter2, Luigi Sangaletti1, and Stefania Pagliara1
1 I-LAMP and Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Via dei Musei 41, 25121 Brescia, Italy 2 Division of Molecular Imaging and Photonics, Department of Chemistry, KU Leuven, Celestijnenlaan 200F, 3001 Leuven, Belgium 3 Elettra Sincrotrone Trieste, Strada Statale 14 km 163.5, 34149 Trieste Italy

15:15 **Enhanced carrier injection characteristics of MoS2 field-effect transistors via directly deposited organic thiol-molecules** — T 6.6
Kyungjune Cho1†, Jinsu Pak1, Jae-Keun Kim1, Jiwon Shin1, Seungjun Chung2 and Takhee Lee1*
1) Department of Physics and Astronomy, Seoul National University, Seoul, 08826, Korea, 2) Photoelectronic Hybrid Research Center, Korea Institute of Science and Technology, Seoul, 02792, Korea † rudwnsdk2@gmail.com * tlee@snu.ac.kr

15:30 **Highly Efficient Anisotropic 1T'-Phase ReS2xSe2(1-x) (x = 0 – 1) Nanodots for Electrocatalytic Hydrogen Evolution Reaction (HER)** — T 6.7
Thu Ha Tran, Zhuangchai Lai, Hua Zhang
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore

15:45 **Non-covalent interactions between 2D black phosphorous and boronic derivatives of pyrene** — T 6.8
Salvatore Moschetto, Margherita Bolognesi, Mariachiara Trapani, Federico Prescimone, Claudia Ferroni, Gabriele Manca, Andrea Ienco, Lucia Calucci, Silvia Borsacchi, Maria Caporali, Manuel Serrano-Ruiz, Michele Muccini, Maurizio Peruzzini, Mariangela Castriciano and Stefano Toffanin
CNR-ISMN, CNR-ICCOM, CNR-ISOF

16:00 **Coffee Break**

Poster Session 1 : Thomas Szkopek

16:30 **A One-Pot Fabrication of Chlorin e6-loaded MoS2 Nanosheet and Its Application to Cancer Phototherapy** — T P1.1
Gang Liu1, Qin Hongmei1, Tsukuru Amano2, Fumi Yoshino2, Naoki Komatsu1
1 Graduate School of Human and Environmental Studies, Kyoto University, Sakyo-ku, Kyoto 606-8501, Japan 2 Department of Obstetrics and Gynecology, Shiga University of Medical Science, Seta Tsukinowa-cho, Otsu, Shiga 520-2192, Japan

16:30 **Fabrication of MoS2/GaN heterojunction and its photoresponse investigation** — T P1.2
Monika Moun, Rajendra Singh
Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110016, India

16:30 **Band Structure Engineering : Hybrid-nanostructure Comprised of 2D group V elements and Topological Insulators** — T P1.3
Cheng-Maw Cheng1,2, S. H. Su3, Pei-Yu Chuang3, Wei-Chuan Chen1, Shih-Chang Weng1, Ku-Ding Tsuei1, Chao-Kuei Lee2,4, , Shih-Hsun Yu5, Mitch Ming-Chi Chou5, Hung-Duen Yang2, J.C.A. Huang3, Tay-Rong Chang3, Horng-Tay Jeng6
1National Synchrotron Radiation Research Center, Hsinchu 300, Taiwan
2Department of Physics, National Sun Yat-sen University, Kaohsiung 80424, Taiwan
3Department of Physics, National Cheng Kung University, Taiwan 701, Taiwan
4Department of Photonics, National Sun Yat-sen University, Kaohsiung 80424, Taiwan 5Department of Materials and Optoelectronics Science, National Sun Yat-sen University, Kaohsiung 80424, Taiwan 6Department of Physics, National Tsing Hua University, Hsinchu 30013, Taiwan

16:30 **Studying the Dielectric Function of Monolayer MoS2 on Temperature Dependence based on Parametric Model** — T P1.4
Van Long Le, Tae Jung Kim, Han Gyeol Park, Chinh Tam Le,Yong Soo Kim, Hoang Tung Nguyen, Xuan Au Nguyen, Wonjun Lee, Yong Jai Cho, Hyun Mo Cho, Young Dong Kim, Sang Woo Kang, Sang Jun Lee, Yeong Ho Kim, Won Chegal
Kyung Hee University,Kyung Hee University,Kyung Hee University,University of Ulsan,University of Ulsan,Kyung Hee University,Kyung Hee University,Kyung Hee University,Korea Research Institute of Standards and Science,Korea Research Institute of Standards and Science,Kyung Hee University,Korea Research Institute of Standards and Science,Korea Research Institute of Standards and Science,Korea Research Institute of Standards and Science,Korea Research Institute of Standards and Science

16:30 **CsPbBr3 and black phosphorus nanosheets nanocomposite for photocatalytic application** — T P1.5
L. Bergamini(a,c), N. Sangiorgi(a), M. Serrano-Ruiz(b), M. Caporali(b), M. Peruzzini(b), A. Sanson(a)
(a)CNR-ISTEC, Via Granarolo, 64, 48018 Faenza (RA), Italy (b)CNR-ICCOM, Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy (c)Università degli studi di Parma, Dipartimento di Chimica, Parco area delle scienze 17/A, 43124 Parma

16:30 **Lubricating properties of phosphorene by means of ab initio calculations** — T P1.6
Gabriele Losi
Dipartimento di Scienze Fisiche, Informatiche e Matematiche, Università di Modena e Reggio Emilia, Via Campi 213/A, 41125 Modena, Italy

16:30 **A Simple Circuit Transfer Technique onto Arbitrary Substrates using TMDs as a channel** — T P1.7
Hyebin Lee, Kookjin Lee, Yanghee Kim, Hyunjin Ji, Junhee Choi, Minsik Kim, Jae-Pyoung Ahn, Gyu-Tae Kim
School of Electrical Engineering, Korea University, 145 Anam-ro, Seongbuk-gu, Seoul 02841, Republic of Korea, Department of Materials Science and Engineering, Korea Institute of Science and Technology, Seoul 02792, Republic of Korea, Department of Energy Science, Sungkyunkwan University, Suwon 16419, Republic of Korea, Department of Physics, Ewha Womans University, 52 Ewhayeodae-gil, Seodaemun-gu, Seoul 03760, Republic of Korea

16:30 **Annealing Effect on a Band Alignment in van der Waals Heterostructures** — T P1.8
Romanov R.I., Lebedinskii Yu.Yu., Myakota D.I., Chouprik A.A., Novikov S.M., Markeev A.M.
Moscow Institute of Physics and Technology, Institutskii lane 9,141700 Dolgoprudny, Moscow Region, Russian Federation

16:30 **Self-powered photosensing circuit through integration of n-MoTe2 FET and perovskite photovoltaic cell** — T P1.9
Yeonsu Jeong, Ji Hoon Park, June Yeong Lim, Han Sol Lee, Seongil Im
Van der Waals Materials Research Center, Institute of Physics and Applied Physics, Yonsei University

16:30 **Graphene nanomechanical resonators for mass sensor applications** **T P1.10**
Dong Hoon Shin, JunHee Choi, Min Hee Kwon, Hyun-Jung Jeong, Joo-Hee Yoon, and Sang Wook Lee
Department of Physics, Ewha Womans University, Seoul 03760 Korea

16:30 **High Temperature Instability of WS2 monolayers, grown by chemical vapor deposition.** **T P1.11**
S. Pace 1, G. Piccinini 1-2, S. Forti 1, N. Mishra 1, F. Fabbri 3-1, C. Coletti 1-4
1 CNI@NEST, Istituto italiano di tecnologia, Piazza San Silvestro 12, Pisa, Italy, 2 NEST, Scuola Normale Superiore, Piazza San Silvestro 12, I-56127 Pisa, Italy, 3 NEST, Istituto Nanoscienze – CNR, Scuola Normale Superiore, Piazza San Silvestro 12, I-56127 Pisa, Italy, 4 Graphene Labs, Istituto italiano di tecnologia, Via Morego 30, Genova, Italy,

16:30 **MoS2 nanoparticles-polymer hybrid nanofibers with superior waveguiding capability** **T P1.12**
Alberto Portone 1-2, Luigi Romano 1-2, Vito Fasano 1, Riccardo Di Corato 1-3, Andrea Camposeo 2, Filippo Fabbri 2, Francesco Cardarelli 4, Dario Pisignano 5 and Luana Persano 2
1) Dipartimento di Matematica e Fisica 'Ennio De Giorgi', Università del Salento, via Arnesano, I-73100 Lecce, Italy, 2) NEST, Istituto Nanoscienze – CNR, Scuola Normale Superiore, Piazza San Silvestro 12, I-56127 Pisa, Italy, 3) Center for Biomolecular Nanotechnologies (CBN), Istituto Italiano di Tecnologia, Via Barsanti, I-73010 Arnesano (LE), Italy, 4) NEST, Scuola Normale Superiore, Piazza San Silvestro 12, I-56127 Pisa, Italy, 5) Dipartimento di Fisica, Università di Pisa, Largo B. Pontecorvo 3, I-56127 Pisa,

16:30 **2D Material Liquid Crystal Nanocomposites for Optoelectronic and Photonic Devices** **T P1.13**
Benjamin Hogan, Monica Craciun, Anna Baldycheva
University of Exeter, College of Engineering Mathematics and Physical Sciences, Exeter, EX4 4QF, UK

16:30 **Spectroscopic Manifestation of Inter- and Intravolley Double Electron-Phonon Resonance Processes in Single- and Bilayer Graphene** **T P1.14**
V. Strelchuk, A. Nikolenko, Yu. Stubrov, V. Gubanov, A. Naumenko, L. Ogorodnyk, N. Bulavina, and L. Bulavin
V. Strelchuk, A. Nikolenko, Yu. Stubrov - V.Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 45 Nauki Pr., 03028, Kyiv, Ukraine V. Gubanov, A. Naumenko, L. Ogorodnyk, N. Bulavina, L. Bulavin - Taras Shevchenko National University of Kyiv, 64/13 Volodymyrs'ka St., 01601, Kyiv, Ukraine

16:30 **Charge transport in reduced graphene oxide, from single sheet to thin film** **T P1.15**
Alessandro Kovtun 1, Andrea Candini 1, Andrea Liscio 1, Marco Affronte 2, Vincenzo Palermo 3
1 Istituto per la Sintesi Organica e la Fotoreattività (ISOF-CNR), via Gobetti 101, 40129 Bologna, Italy 2 Dipartimento di Scienze Fisiche, Informatiche e Matematiche «FIM», Via G. Campi, 213/a, 41125 Modena, Italy. 3 Chalmers University of Technology - SE-412 96 Gothenburg, Sweden

16:30 **Graphene electrical properties modulated by swift heavy ion irradiation** **T P1.16**
J. Zeng, J. Liu, J.L. Duan, S.X. Zhang, P.F. Zhai, P.P Hu and Y.M. Sun
Institute of Modern Physics, Chinese Academy of Sciences (CAS), Lanzhou 730000, PR China

16:30 **In Situ Characterization of Mechanical and Electrical Properties of Two-Dimensional Molybdenum Disulfide** **T P1.17**
Lok Wing WONG, Jiong ZHAO
Department of Applied Physics, The Hong Kong Polytechnic University

16:30 **Minimum conductivity and shot noise anomalies in shifted bilayer graphene** **T P1.18**
A. Daboussi 1,2, L. Mandhour 1,3 and S. Jaziri 1,4
1. Université de Tunis El Manar, Faculté des Sciences de Tunis, Laboratoire de Physique de la Matière Condensée, Campus Universitaire Tunis, El Manar, 2092 Tunis, Tunisie. 2. Ecole Supérieure Privée d'ingénierie et de communication, 85-87 Rue Palestine, 1002 Tunis, Tunisie. 3. Université de Tunis El Manar, Institut Supérieur des Technologies Médicales de Tunis, 9 Rue Zouhair Essafi ,1006 Tunis, Tunisie. 4. Université de Carthage, Faculté des Sciences de Bizerte, Laboratoire de Physique des Matériaux, Jarzouna, 7021 Bizerte, Tunisie.

16:30 **Highly enhanced quantum yield of a monolayer photodetector by PVP encapsulated Ag nanowires** **T P1.19**
Seungho Bang[1,2], Juchan Lee[1], Seok Joon Yun[1,2], Ngoc Thanh Duong[1], Hyun Kim[1,2], Mun Seok Jeong[1,2,*]
[1]Department of Energy Science, Sungkyunkwan University, Suwon 16419, Republic of Korea [2]Center for Integrated Nanostructure Physics, Institute for Basic Science, Sungkyunkwan University, Suwon 16419, Republic of Korea

16:30 **Platinum based group 10 TMDs 2D materials used as saturable absorber for pulse laser generation** **T P1.20**
Ping Kwong Cheng, Chun Yin Tang, Yuen Hong Tsang
Department of Applied Physics, The Hong Kong Polytechnic University

16:30 **Conductive atomic force microscopy investigation of the current injection mechanisms to MoS2 grown by chemical vapor deposition** **T P1.21**
F. Giannazzo (1), M. Bosi (2), F. Fabbri (3), G. Greco (1), S. Di Franco (1), R. Lo Nigro (1), E. Schilirò (1), F. Roccaforte (1)
(1) IMM-CNR, Strada VIII, 5, 95121 Catania, Italy (2) IMEM-CNR, Area delle scienze 37A, 43124 Parma, Italy (3) NEST, Istituto Nanoscienze - CNR, Scuola Normale Superiore, Piazza San Silvestro 12, I-56127 Pisa, Italy.

16:30 **Interaction of 2D layered gallium selenide with water** **T P1.22**
S.I. Drapak (1, 2), Y.B. Khalavka (2), V.D. Fotiy (1), O.I. Fediv (3)
(1) Photon-Quartz Design & Technology Ltd., Chernivtsi, 58032, Ukraine, e-mail: sdrapak@ukr.net, (2) Institute of Biology, Chemistry and Bioresources, Yuriy Fedkovych Chernivtsi National University, Chernivtsi, 58012, Ukraine, (3) Bukovinian State Medical University, Chernivtsi, 58000, Ukraine.

16:30 **Contribution of highly selective and sensitive biosensors for the glucose detection Based on graphene** **T P1.23**
O Zeggai ,M Belarbi ,A Ouledabbes
Department of common core, Faculty of Exact Sciences and Informatics, Hassiba Ben Bouali University, BP 151, 02000 Chlef, Algeria Research Unit of Materials and Renewable Energies (URMER), Abou Bekr Belkaïd University, B.P. 119, Tlemcen, Algeria

16:30 **A gate-free monolayer WSe2 pn diode** **T P1.24**
Jhih-Wei Chen, Shun-Tsung Lo, Sheng-Chin Ho, Sheng-Shong Wong, Thi-Hai-Yen Vu, Xin-Quan Zhang, Yi-De Liu, Yu-You Chiou, Yu-Xun Chen, Jan-Chi Yang, Yi-Chun Chen, Ying-Hao Chu, Yi-Hsien Lee, Chung-Jen Chung, Tse-Ming Chen, Chia-Hao Chen, Chung-Lin Wu
Department of Physics, National Cheng Kung University/Department of Materials Science and Engineering, National Tsing Hua University/Department of Materials Science and Engineering, National Chiao Tung University/Center for Micro/Nano Science and Technology, National Cheng Kung University/National Synchrotron Radiation Research Center (NSRRC)

16:30 **Coexistence of indirect- and direct-bandgap excitons in monolayer WSe2** **T P1.25**
Marco van der Laan[1], Antonio Capretti[1], Kevin Kramer[1], Seok Joon Yun[2], Ji-Hee Kim[2], Young Hee Lee[2] and Tom Gregorkiewicz[1]
1. Institute of Physics, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands, 2. Center for Integrated Nanostructure Physics (CINAP), Institute for Basic Science (IBS), Sungkyunkwan University, Suwon 16419, Korea

16:30 **Transport Properties of P-Type 2D MoSe2 Field Effect Transistor** **T P1.26**
Hüseyin Şar* , Mehmet BAY , Nihan K. Perkgoz , Feridun Ay
Department of Electrical and Electronics Engineering, Eskisehir Technical University, Eskişehir, 26555, Turkey

16:30 **Analysis of the effect of grain boundaries on noise generation and electrical conduction of MoS2 field effect transistors** **T P1.27**
Jae-Keun Kim1, Younggul Song1, Tae-Young Kim1, Kyungjune Cho1, Jinsu Pak1, Jiwon Shin1, Seungjun Chung2, and Takhee Lee1
1Department of Physics and Astronomy, Seoul National University, Seoul 08826, Korea ,2Photo-electronic Hybrids Research Center, Korea Institute of Science and Technology, Seoul 02792, Korea

16:30 **Adsorption of gas molecules on transition metal atom-decorated germanene: a DFT study** **T P1.28**
A.N. Sosa, F. de Santiago, J.E. Santana, H. Muñoz, A. Miranda,
Instituto Politécnico Nacional, ESIME-Culhuacán, Av. Santa Ana 1000, C. P. 04430, Ciudad de México, México.

16:30 **Atomistic Insights of Multiple Stacking Faults in CdTe Thin-Film Photovoltaics** **T P1.29**
Michael J. Watts*, Roger Smith, Pooja Goddard*
Loughborough University, Epinal Way, Loughborough, Leicestershire, LE11 3TU, UK

16:30 **Synthesis and electrical properties of 2D materials based devices** **T P1.30**
Vishakha Kaushik, Branson D Belle, Øystein Dahl, Pintu Das, Bodh R. Mehta
Thin Film Lab, Department of Physics, Indian Institute of Technology Delhi, New Delhi, India, SINTEF INDUSTRY, Forskeningsveien 1,Oslo, Norway, SINTEF INDUSTRY, Forskeningsveien 1,Oslo, Norway, Department of Physics, Indian Institute of Technology Delhi, New Delhi, India, Thin Film Lab, Department of Physics, Indian Institute of Technology Delhi, New Delhi, India

16:30 **STM Study of Exfoliated Few Layer Black Phosphorus Annealed in Ultrahigh Vacuum** **T P1.31**

A. Kumar1, F. Telesio1, S. Forti2, A. Al Temimy2, C. Coletti2, M. Serrano-Ruiz3, M. Caporali3, M. Peruzzini3, F. Beltram1, and S. Heun1
1NEST, Istituto Nanoscienze-CNR and Scuola Normale Superiore, Piazza San Silvestro 12, 56127 Pisa, Italy, 2 Centre for Nanotechnology Innovation @ NEST, Istituto Italiano di Tecnologia, Piazza San Silvestro 12, 56127 Pisa, Italy, 3 Istituto di Chimica dei Composti Organometallici (CNR-ICCOM), Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy

16:30 **Transport and optoelectronic properties of few layer palladium diselenide films with graphene electrodes** **T P1.32**

Viktoryia Shautsova, Yuewen Sheng, Jamie Warner
University of Oxford

16:30 **First-principles molecular dynamics simulations of layered WS2 materials** **T P1.33**

Dmitry Bocharov(a), Inga Jonane(a), Alexei Kuzmin(a), Matthias Krack(b)
(a)Institute of Solid State Physics, University of Latvia, Kengaraga street 8, LV-1063 Riga, Latvia (b)Paul Scherrer Institute, CH-5232 Villigen, Switzerland

16:30 **Conductance quantization of graphene constrictions formed by atomic force microscope-based lithography** **T P1.34**

Péter Kun*, Gergely Dobrik*, Péter Nemes-Incze*, István Endre Lukács*, Bálint Fülöp**, Szabolcs Csonka**, Levente Tapasztó*
* Hungarian Academy of Sciences, Centre for Energy Research, Institute of Technical Physics and Materials Science, Budapest, Hungary, ** Department of Physics, Budapest University of Technology, Budapest, Hungary

16:30 **Carrier density tuning in WS2 monolayers via photochlorination** **T P1.35**

I. Demeridou, I. Paradisanos, Yuanyue Liu, N. Pliatsikas, P. Patsalas, S. Germanis, N. T. Pelekanos, W. A. Goddard III, G. Kioseoglou, E. Stratakis
Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, Heraklion, 71110, Crete, Greece Department of Physics, University of Crete, Heraklion, 71003, Crete, Greece Materials and Process Simulation Center and The Resnick Sustainability Institute, California Institute of Technology, Pasadena, California 91125, United States Physics Department, Aristotle University of Thessaloniki, Thessaloniki, 54124, Greece Department of Materials Science and Technology, University of Crete, Heraklion, 71003 Crete, Greece Department of Mechanical Engineering and Texas Materials Institute, University of Texas at Austin, Austin, Texas 78712, United States

16:30 **Ultrafast transient evolution of excitons and biexcitons in layered WS2 at room temperature** **T P1.36**

Rup Kumar Chowdhury1, Snehasish Nandy1, Sayantan Bhattacharya1, Manobina Karmakar1, Shivakiran B N Bhaktha1, Prasanta Kumar Datta1, Arghya Taraphder1 2, Samit K Ray1 3
1 Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur 721302, India, 2 Centre for Theoretical Studies, Indian Institute of Technology Kharagpur, W.B. 721302, India, 3 S. N. Bose National Centre for Basic Sciences, Kolkata 700106, India

16:30 **Study of Optical and Electrical Properties of Graphene on ZnO** **T P1.37**

Yi-Hang Ku(1 2), Lo-Yueh Chang(2), Hung-Wei Shiu(1), Yen-Chien Kuo(1), Shangjr Gwo(2), Chi-Liang Chen(1), Chia-Hao Chen(1)
(1)National Synchrotron Radiation Research Center, Hsinchu, 30076, Taiwan (2) Department of Physics, National Tsing-Hua University, Hsinchu, 30013, Taiwan

16:30 **Electronic Structure of MoX2 (X = S, Se, Te)** **T P1.38**

L.A.H. Jones[1], Zongda Xing [2], J.E.N. Swallow [1], H. Shiel [1], T.J. Featherstone [1], M.J. Smiles [1], T.L. Lee [3], P.K. Thakur [3], V.R. Dhanak [1], D.O. Scanlon [2] [3], T.D. Veal [1]
[1] Stephenson Institute for Renewable Energy and Department of Physics, University of Liverpool, Liverpool L69 7ZF, United Kingdom [2] Department of Chemistry, University College London, 20 Gordon Street, London WC1H 0AJ, United Kingdom [3] Diamond Light Source Ltd., Diamond House, Harwell Science and Innovation Campus, Didcot, Oxfordshire OX11 0DE, United Kingdom

16:30 **Critical behavior of the layered ferromagnet Fe1/4TaS2** **T P1.39**

Chenhui Zhang, Ye Yuan, Peng Li, Yan Wen, Junwei Zhang, Xixiang Zhang
King Abdullah University of Science and Technology, Material Science and Engineering

16:30 **Characterization of two-dimensional black phosphorus for inkjet printing** **T P1.40**

Ho Young Jun, Eon Ju Lee, Si Ok Ryu*
School of Chemical Engineering, Yeungnam University, 280 Daehak-ro, Gyeongsan 712-749, South Korea

16:30 **MoS2-xTex for photovoltaics and digital electronics** **T P1.41**

A. V. Krivosheeva, V. L. Shaposhnikov, A. L. Danilyuk, V. E. Borisenko
Belarusian State University of Informatics and Radioelectronics, P. Browka str. 6, 220013 Minsk, Belarus

16:30 **2H-1T' structural phase transformation in strained two-dimensional alloy of molybdenum tungsten diselenide** **T P1.42**

Amey Apte(1), Vidya Kochat(1), Pankaj Rajak(2), Aravind Krishnamoorthy(2), Praveena Manimunda(3), Jordan A. Hachtel(4), Juan Carlos Idrobo(4), Syed Asif Syed Amanulla(3), Priya Vashishta(2), Aiichiro Nakano(2), Rajiv K. Kalia(2), Chandra Sekhar Tiwary(1), Pulickel M. Ajayan(1)
(1)Department of Materials Science and Nano Engineering, Rice University, Houston, Texas 77005, United States (2)Collaboratory for Advanced Computing and Simulations, Department of Physics and Astronomy, Department of Computer Science, Department of Chemical Engineering and Materials Science, and Department of Biological Sciences, University of Southern California, Los Angeles, California 90089-0242, United States (3)Bruker Nano Surfaces, Eden Prairie, Minnesota 55344, United States (4)Center for Nanophase Materials Science, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37831, United States

16:30 **Exploration of Exciton Behavior in Atomically Thin WS2 Layers by Ionic Gating** **T P1.43**

Xin He, Zehui Zhang, Chenhui Zhang, Yang Yang, Ming Hu, Weikun Ge, Xixiang Zhang
Physical Science and Engineering Division (PSE), King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia Institute of Mineral Engineering, Division of Materials Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, PR China School of Physics, Peking University, Beijing 100871, PR China

16:30 **Near-field optical microscopy for the determination of carrier distributions in nano-platelets with 10 nm resolution** **T P1.44**

Philip Schäfer, Aina Reich, Andreas Huber
neaspec GmbH, Eglfinger Weg 2, 85540 Haar, Germany

16:30 **Synaptic cell with enhanced weight update system by parallel connection of Van Der Waals heterostructures.** **T P1.45**

Hyojoon Ryu, Seunghwan Seo, Beomseok Kang, and Prof. Jinhong Park.
Semiconductor R&D Center, Samsung Electronics Co. Ltd., Hwasung, Korea, Department of Electrical and Computer Engineering, Sungkyunkwan University, Suwon, Korea, Department of Electrical and Computer Engineering, Sungkyunkwan University, Suwon, Korea, Department of Electrical and Computer Engineering, Sungkyunkwan University, Suwon, Korea, Department of Electrical and Computer Engineering, Sungkyunkwan University, Suwon, Korea,

16:30 **Iridium Oxide and Ruthenium Oxide Nanosheets for Enhanced Oxygen Evolution Catalysis in Acidic Medium** **T P1.46**

Sourav Laha,1 Daniel Weber,1,2 Yonghyuk Lee,3 Filip Podjaski,1,4 Leslie M. Schoop,1,5 Karsten Reuter3 and Bettina V. Lotsch1,2,6
1 Max Planck Institute for Solid State Research, Heisenbergstrasse 1, 70569 Stuttgart, Germany. 2 Ludwig-Maximilians-Universität München, Butenandtstrasse 5-13, 81377 Munich,Germany. 3 Department of Chemistry, Chair of Theoretical Chemistry and Catalysis Research Center, Technische Universität München, Lichtenbergstraße 4, 85748 Garching, Germany 4 Ecole Polytechnique Fédérale de Lausanne, Station 12, 1015 Lausanne, Switzerland 5 Department of Chemistry, Princeton University, Princeton, New Jersey 08540, USA 6 Nanosystems Initiative Munich (NIM) and Center for Nanoscience (CeNS), Schellingstraße 4, 80799 Munich, Germany

16:30 **Prediction of low energy phase transition in metal doped MoTe2 from first principle calculations** **T P1.47**

Nicolas Onofrio, Abhinav Kumar, Alejandro Strachan
Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong SAR?, Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong SAR, School of Materials Engineering and Birck Nanotechnology Center Purdue University, West Lafayette, IN 47906 USA

16:30 **Hole Doping and Strain in Phosphorous Doped Epitaxial MoSe2 Monolayer** **T P1.48**

Yipu Xia1, Junqiu Zhang1, Hao Tian2, Zhoubin Yu3, Bo Wang3,4, Yue Feng2, Bin Li2, Wingkin Ho1, Hu Xu2, Chang Liu2, Chuanhong Jin3,4, and Maohai Xie1
1.Physics Department, The University of Hong Kong, Pokfulam Road, Hong Kong, 999077, China, 2.Department of Physics, Southern University of Science and Technology, Shenzhen, Guangdong 518055, China, 3.State Key Laboratory of Silicon Materials, School of Materials and Engineering, Zhejiang University, Hangzhou, Zhejiang, 310027, China, 4.School of Physical Science and Technology, Lanzhou University, Lanzhou 730000, China,

16:30 **Suppressing Ambipolar Characteristics of WSe2 Field Effect Transistors Using Graphene Oxide** **T P1.49**
Hye Min Oh1, Chulho Park1, Seungho Bang1,2, Seok Joon Yun1,2, Ngoc Thanh Duong, and1 Mun Seok Jeong1,2*
1, Department of Energy Science Sungkyunkwan University 2,Center for Integrated Nanostructure Physics (CINAP) Institute for Basic Science (IBS)

16:30 **Non-Classical Longitudinal Magneto-Resistance in Anisotropic Black Phosphorus** **T P1.50**
F. Telesio,1 N. Hemsworth,2 W. Dickerson,2 M. Petrescu,3 V. Tayari,2 Oulin Yu,3 D. Graf,4 M. Serrano-Ruiz,5 M. Caporali,5 M. Peruzzini,5 M. Carrega,1 T. Szkopek,2 S. Heun,1 and G. Gervais,3
1: NEST, Istituto Nanoscienze-CNR and Scuola Normale Superiore, I-56127 Pisa, Italy, 2: Department of Electrical and Computer Engineering, McGill University, Montreal, Quebec, H3A 2A7, Canada, 3: Department of Physics, McGill University, Montreal, Quebec, H3A 2T8, Canada, 4: National High Magnetic Field Laboratory, Tallahassee, FL 32310, United States, 5: Istituto Chimica dei Composti OrganoMetallici-CNR, I-50019 Sesto Fiorentino, Italy.

16:30 **Controllable phase transition and indirect to direct band gap crossover of the few-layer 2H-MoS2 via long range electron layer doping** **T P1.51**
Krishna P Dhakal,1 Ganesh Ghimire,1,2 Kyungwha Chung,1 Yeji Kim,1,2 Sung Wng Kim,*1,2 Jeongyong Kim*1,2
1Department of Energy Science, Sungkyunkwan University (SKKU), Suwon 16419, Republic of Korea. 2Center for Integrated Nanostructure Physics, Institute for Basic Science (IBS), Suwon 16419, Republic of Korea

16:30 **First-Principles Investigations of Transition Metal Doped Monolayer Nitrides as Efficient Catalysts for the Water Oxidation** **T P1.52**
Qiuhua Liang, Geert Brocks, Xueqing Zhang, Anja Bieberle-Hütter
Qiuhua Liang1,2, Geert Brocks2,3, Xueqing Zhang1,2, Anja Bieberle-Hütter1,2* 1 Electrochemical Materials and Interfaces, Dutch Institute for Fundamental Energy Research (DIFFER), Eindhoven, the Netherlands 2. Center for Computational Energy Research (CCER), Eindhoven, the Netherlands 3. Faculty of Science and Technology and MESA Institute for Nanotechnology, University of Twente, Enschede, the Netherlands

16:30 **Electroluminescence from multi-particle exciton complexes in monolayer WSe2** **T P1.53**
Aday J. Molina-Mendoza, Matthias Paur, Rudolf Bratschitsch, Kenji Watanabe, Takashi Taniguchi, and Thomas Mueller
Vienna University of Technology, Institute of Photonics, Gußhausstraße 27-29, 1040 Vienna, Austria., Institute of Physics and Center for Nanotechnology, University of Münster, Wilhelm-Klemm-Strasse 10, 48149 Münster, Germany. , National Institute for Materials Science, 1-1 Namiki, Tsukuba, 305-0044 Japan.

16:30 **Direct laser writing of graphene nanoribbon structures** **T P1.54**
Yannic Falke, Boris Senkovskiy, Prof. Alexander Grüneis
II. Physikalisches Institut, Universität zu Köln, Zülpicher Strasse 77, 50937 Köln, Germany

Surface Science 1 : Keun Su Kim

08:30 INV **Single atom modification of 2D semi-conductors: fabrication and electronic structure engineering** **T 7.1**
Quentin M. Ramasse (1,2), Demie Kepaptsoglou (1), Fredrik Hage (1), Trevor P. Hardcastle (2), Hans Hofsäss (3), Eoghan O'Connell (4), Ursel Bangert (4)
(1) SuperSTEM Laboratory, SciTech Daresbury Campus, Daresbury WA4 4AD, United Kingdom, (2) School of Chemical and Process Engineering, University of Leeds, Leeds LS2 9JT, United Kingdom, (3) II Physikalisches Institut, Georg-August-Universität Göttingen, Friedrich-Hund-Platz 1, 37077 Göttingen,Germany, (4) Department of Physics and Energy and Bernal Institute, University of Limerick, Ireland

09:00 **A single Co atom-MoS2 catalyst for HDO reaction: The role of vacancy site and dopant** **T 7.2**
Chirawat Chitpakdee, Anchalee Junkaew, and Supawadee Namuangruk
National Nanotechnology Center, National Science and Technology Development Agency, 111 Thailand Science Park, Paholyothin Rd., Klongluang, Pathumthani 12120, Thailand

09:15 **Experimental determination of electron-phonon coupling constant and thermal expansión of natural MoS2** **T 7.3**
G. Anemone, A. Al Taleb, G. Benedek, A. Castellanos-Gomez, D. Farías.
Departamento de Física de la Materia Condensada, Universidad Autónoma de Madrid, 28049 Madrid, Spain, IMDEA-Nanociencia, 28049 Madrid, Spain, Instituto de Ciencia de Materiales de Madrid. Consejo Superior de Investigaciones Científicas, 28049 Madrid, Spain, Dipartimento di Scienza dei Materiali, Universita di Milano-Bicocca, 20125 Milano, Italy

09:30 **Surface potential study of hydrothermally grown MoS2 nanoflowers** **T 7.4**
Dr. Navnita Kumari, D. Varandani
Department of Physics, M.D.D.M. College, B.R.A.B.U. Muzaffarpur, Bihar Thin film laboratory, IIT Delhi, Hauzkhash-110016, New Delhi

09:45 **Effects of the Fermi Level Energy on the Adsorption of O2 to Monolayer MoS2** **T 7.5**
Philip Klement 1, Christina Steinke 3, Sangam Chatterjee 1, Tim Wehling 3, Martin Eickhoff 2
1 Institute of Experimental Physics I and Center for Materials Research, Justus Liebig University Giessen, D-35392 Giessen, Germany, 2 Institute of Solid State Physics, University of Bremen, D-28359 Bremen, Germany, 3 Institute for Theoretical Physics and Bremen Center for Computational Material Sciences, University of Bremen, D-28359 Bremen, Germany

10:00 **Coffee Break**

Surface Science 2 : Quentin Ramasse

10:30 INV **Two-dimensional Dirac fermions in black phosphorus** **T 8.1**
Keun Su Kim
Department of Physics, Yonsei University, Seoul 03722, Korea

11:00 **Atomic scale study of grown-in acceptor states in black phosphorus** **T 8.2**
M. Wentink[1], J. Gaberle[2], M. Aghajanian[3], J. Lischner[3], A. Mostofi[3], S.R. Schofield[2], N. Curson[1], A.L. Shluger[2], A.J. Kenyon[1]
[1]: Department of Electronic and Electrical Engineering, University College London, UK, [2]: Department of Physics, University College London, UK, [3]: Department of Materials, Imperial College London, UK,

11:15 **Functionalization of Phosphorene 2D material: A computational Investigation** **T 8.3**
Gabriele Manca, Andrea Ienco, Maurizio Peruzzini, Carlo Mealli
Consiglio Nazionale delle Ricerche-Istituto di Chimica dei Composti Organometallici (CNR-ICCOM) Via Madonna del Piano 10, Sesto Fiorentino

11:30 **MOCVD and atomic scale characterization of 2D indium nitride layers** **T 8.4**
Béla Pécz1, Ildikó Cora1, Patrick Fiorenza2, Giuseppe Nicotra2, Filippo Giannazzo2, Per O.A. Persson3, Rositza Yakimova3, and Anelia Kakanakova3
1 Institute for Technical Physics and Materials Sci., Energy Research Centre, Hungarian Academy of Sciences, 1121 Budapest, Konkoly-Thege u. 29-33 2 Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e Microsistemi, Strada VIII, n. 5, Zona Industriale, 95121, Catania, Italy 3 Department of Physics, Chemistry and Biology, Linköping University, SE-581 83 Linköping, Sweden

11:45 **Variation of graphene energy level investigated by synchrotron radiation X-ray photoelectron spectroscopy** **T 8.5**
Forest Shih-Sen Chien, Dr. Chia-Hao Chen, Dr. Chi-Yuan Lin
Department of Applied Physics, Tunghai University, Taichung, Taiwan National Synchrotron Radiation Research Center, Hsinchu, Taiwan

12:00 **Quantum transport in exfoliated graphene on ultrathin crystalline beta-Si3N4** **T 8.6**
Sedighe Salimian,1 Shaohua Xiang,1 Stefano Colonna,2 Fabio Ronci,2 Marco Fosca,2 Francesco Rossella,1 Fabio Beltram,1 Roberto Flammini2, and Stefan Heun1
1 NEST, Istituto Nanoscienze-CNR and Scuola Normale Superiore, Piazza San Silvestro 12, 56127 Pisa, Italy 2 CNR-ISM Istituto di Struttura della Materia, Via del Fosso del Cavaliere 100, 00133 Roma, Italy

12:15 **Substrate-dependent doping process of monolayer graphene by thermal treatments in oxygen** **T 8.7**
A. Armano [a,b,*], G. Buscarino [a,c,d], M. Cannas [a], F. M. Gelardi [a], F. Giannazzo [d], F. Lo Nigro [d], E. Schilirò [d], S. Agnello [a,c,d]
[a] University of Palermo, Department of Physics and Chemistry, Via Archirafi 36, 90123 Palermo, Italy, [b] University of Catania, Department of Physics and Astronomy, Via Santa Sofia 64, 95123 Catania, Italy, [c] University of Palermo, ATeN Center, Viale delle Scienze Edificio 18, 90128 Palermo, Italy, [d] National Research Council of Italy-Institute for Microelectronics and Microsystems, Strada VIII 5, 95121 Catania, Italy.

12:30 **Lunch**

16:00 **Coffee Break**

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Devices 1 : Maria Caporali

08:30 INV **Science and technology of van der Waals semiconductors** **T 9.1**
Antonio Politano
University of L'Aquila, Department of Physical and Chemical Sciences, via Vetoio, 67100 L'Aquila (AQ), Italy

09:00 **Van der Waals Junction Field Effect Transistors Based on Transition Metal Dichalcogenides** **T 9.2**
June Yeong Lim, Yeonsu Jeong, Han Sol Lee, and Seongil Im
Van der Waals Materials Research Center, Yonsei University, 50 Yonsei-ro, Seodaemun-gu, Seoul 03722, Korea

09:15 **Large-Area WSe2 and MoS2 Films for p-n Heterojunction Device Arrays** **T 9.3**
Sian-Hong Tseng, Ping-Hsuan Feng, Wan-Hua Ho, and Ming-Yen Lu
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 300, Taiwan

09:30 **Direct nanofabrication of lateral P-N homo-junctions based on MoS2 flakes** **T 9.4**
Fernando Jiménez Urbanos, Jorge Trasobares, Victor Marzoa, Rodolfo Miranda, Daniel Granados
IMDEA Nanociencia, Cantoblanco, 28049, Madrid, Spain, IMDEA Nanociencia, Cantoblanco, 28049, Madrid, Spain, IMDEA Nanociencia, Cantoblanco, 28049, Madrid, Spain, IMDEA Nanociencia, Cantoblanco, 28049, Madrid, Spain and Dep. Física de la Materia Condensada and IFIMAC, Universidad Autónoma de Madrid, Cantoblanco, 28049,Madrid, Spain, IMDEA Nanociencia, Cantoblanco, 28049, Madrid, Spain

09:45 **MoTe2 Homojunction PIN Diode for 1300 nm Infrared Detection** **T 9.5**
Han Sol Lee, Juneyeong Lim, Yeonsu Jeong, Seongil Im
Van der Waals Materials Research Center, Department of Physics and Applied Physics, Yonsei University

10:00 **Coffee Break**

10:30 **Strongly Unipolar n-type Two-Dimensional Black Phosphorus Transistors with Cu Contact Electodes** **T 9.6**
Ziyuan Lin, Jingli Wang, Jiewei Chen, Xuyun Guo, Chao Xu, Mingqiang Liu, Bilu Liu, Ye Zhu, Yang Chai
Department of Applied Physics, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, People's Republic of China, Shenzhen Geim Graphene Center (SGC), Tsinghua–Berkeley Shenzhen Institute (TBSI), Tsinghua University, Shenzhen, Guangdong, People's Republic of China

10:45 **Ohmic contact engineering in few-layer black phosphorus field effect transistors** **T 9.7**
Francesca Telesio1, Gwenael le Gal1, Manuel Serrano-Ruiz2, Federico Prescimone3, Stefano Toffanin3, Maurizio Peruzzini2 and Stefan Heun1
1 NEST, Istituto Nanoscienze-CNR and Scuola Normale Superiore, Piazza San Silvestro 12, 56127 Pisa, Italy, 2 Istituto di Chimica dei Composti Organometallici (CNR-ICCOM), Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy, 3 Istituto per lo Studio dei Materiali Nanostrutturati (CNR-ISMN), Via Piero Gobetti, 101, 40129 Bologna, Italy

11:15 **PLENARY SESSION 2**

12:30 **Lunch**

Liquid Phase Exfoliation : Maurizio Peruzzini

13:45 INV **Liquid exfoliation of layered crystals** **T 10.1**
Claudia Backes
Chair of Applied Physical Chemistry, Heidelberg University, Im Neuenheimer Feld 253, 69120 Heidelberg, Germany

14:15 **Structural and electronic properties of metal/black phosphorus nanohybrids through STEM/EELS/EDX at atomic resolution** — T 10.2
Antonio M Mio, Enzo Rotunno, Antonio Politano, Ioannis Deretzis, Antonino La Magna, Manuel Serrano-Ruiz, Maria Caporali, Maurizio Peruzzini, Corrado R Spinella, Giuseppe Nicotra
CNR-IMM Istituto per la Microelettronica e Microsistemi, zona industriale VIII strada 5, I-95121 Catania, Italy, CNR-ICCOM, Via Madonna del Piano 10, 50019 Sesto Fiorentino, Italy

14:30 **Solution processable electronic grade ultrathin tin (II) sulfide (SnS) for electronic device application** — T 10.3
Abdus Salam Sarkar1, Konstantinos Rogdakis2, Efthymis Serpetzoglou1, Ioannis Konidakis1, George Kioseoglou3, Emmanuel Kymakis2 and Emmanuel Stratakis1
1Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas, Heraklion, 700 13 Crete, Greece. 2Center of Materials Technology and Photonics and Electrical Engineering Department, Technological Educational Institute (TEI) of Crete, Heraklion, 71004 Crete, Greece 3Department of Materials Science and Technology, University of Crete, Heraklion, 710 03 Crete, Greece

14:45 **Ultrathin colloidal binary and ternary copper chalcogenide 2D nanosheets** — T 10.4
Anne C. Berends, Kelly Brouwer, Serena Busatto, Ward van der Stam, Celso de Mello Donega
Debye Institute for Nanomaterials Science, Utrecht University, The Netherlands

15:00 **Synthesis and characterization of novel nanosheets using Pt-based layered materials** — T 10.5
Asami Funatsu, Sae Hanamura, Shintaro Ida
Kumamoto University

15:15 **Synthesis of wafer scale 2D GaN and InN using a liquid metal synthesis strategy** — T 10.6
Torben Daeneke
RMIT University School of Engineering 124 Latrobe Street Melbourne Australia

15:30 **Interfacial synthesis of wafer-sized two dimensional polymer crystal.** — T 10.7
Hafeesudeen Sahabudeen, Renhao Dong, Zhikun Zheng, Xinliang Feng
Department of Chemistry and Food Chemistry & Center for Advancing Electronics Dresden, Technische Universität Dresden, 01062 Dresden, Germany.

15:45 **MoTe2 layers and Mo6Te6 nanowires grown by molecular beam epitaxy** — T 10.8
Janusz Sadowski, Bartłomiej Seredyński, Zuzanna Ogorzałek, Anna Kaleta, Sławomir Kret, Bogusława Kurowska, Marta Bilska, Adam Kwiatkowski, Marta Gryglas-Borysiewicz, Wojciech Pacuski
Janusz Sadowski, Institute of Physics Polish Academy of Sciences Warsaw Poland, Faculty of Physics University of Warsaw Poland, Department of Physics and Electrical Engineering, Linnaeus University, Kalmar, Sweden, Bartłomiej Seredyński, Faculty of Physics University of Warsaw Poland, Zuzanna Ogorzałek, Faculty of Physics University of Warsaw Poland, Anna Kaleta, Institute of Physics Polish Academy of Sciences Warsaw Poland, Sławomir Kret, Institute of Physics Polish Academy of Sciences Warsaw Poland, Bogusława Kurowska, Institute of Physics Polish Academy of Sciences Warsaw Poland, Marta Bilska, Institute of Physics Polish Academy of Sciences Warsaw Poland, Adam Kwiatkowski, Faculty of Physics University of Warsaw Poland, Marta Gryglas-Borysiewicz, Faculty of Physics University of Warsaw Poland, Wojciech Pacuski, Faculty of Physics University of Warsaw Poland

16:00 **Coffee Break**

Poster Session 2 : Thomas Szkopek

16:30 **Growth of antimonene multi-layers on germanium by MOCVD** — T P2.1
R. Cecchini (1), Christian Martella (1,2), Claudia Wiemer (1), Alessio Lamperti (1), Alberto Debernardi (1), Lucia Nasi (3), Laura Lazzarini (3), Alessandro Molle (1), Massimo Longo (1)
(1) CNR-IMM, Unit of Agrate Brianza, Via C. Olivetti 2, I-20864 Agrate Brianza (MB), Italy, (2) CNR-ISC, U.O.S. Sapienza, I-00185 Roma, Italy, (3) CNR-IMEM, Parco Area delle Scienze, 37/a, I-43124, Parma, Italy.

16:30 **An efficient and scalable production of 2D material dispersions using hexahydroxytriphenylene as a versatile exfoliant** — T P2.2
Gang Liu, Naoki Komatsu
Graduate School of Human and Environmental Studies, Kyoto University, Sakyo-ku, Kyoto 606-8501, Japan

16:30 **Real time optical observation and control of atomically thin transition metal dichalcogenide synthesis** — T P2.3
Hamid Reza Rasouli 1*, Naveed Mehmood 1, Onur Çakıroğlu 2, T. Serkan Kasırga 1,2
1) UNAM – Institute of Materials Science and Nanotechnology, Bilkent University, Ankara 06800, Turkey 2) Department of Physics, Bilkent University, Ankara 06800, Turkey

16:30 **Doping in 2D transition metal dichalcogenides MoSe2 using magnetic dopant Mn on mica substrate** — T P2.4
C. Vergnaud1 2 3, M.T. Dau 1 2 3, M. Gay 1 4, C. Alvarez 1 5, A. Marty 1 2 3, C. Beigné 1 2 3, D. Jalabert 1 5, O. Renault 1 4, H. Okuno 1 5, and M. Jamet 1 2 3
1)Universit´e Grenoble Alpes, F-38000 Grenoble, France 2)CEA, INAC-SPINTEC, F-38000 Grenoble, France 3)CNRS, INAC-SPINTEC, F-38000 Grenoble, France 4)CEA, LETI, Minatec Campus, F-38054 Grenoble, France 5)CEA, INAC-MEM, F-38000 Grenoble, France

16:30 **Van der Waals solid phase epitaxy to grow large-area manganese-doped MoSe2 few-layers on SiO2/Si** — T P2.5
Céline Vergnaud 1, Maxime Gay 2, Carlos Alvarez 3, Minh-Tuan Dau 1, François Pierre 2, Denis Jalabert 3, Christophe Licitra 2, Alain Marty 1, Cyrille Beigné 1, Olivier Renault 2, Hanako Okuno 3, and Matthieu Jamet 1
1 Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, INAC-SPINTEC, 38000 Grenoble, France 2 Univ. Grenoble Alpes, CEA, LETI, Minatec Campus, 38000 Grenoble, France 3 Univ. Grenoble Alpes, CEA, INAC-MEM, 38000 Grenoble, France

16:30 **Crystal Growth and Exfoliation of a Novel 2D Material Based on B-N Interactions** — T P2.6
Simone d?Agostino, Luca Fornasari, Elisa Boanini, Giacomo Bergamini, Raffaello Mazzaro, Fabrizia Grepioni, Dario Braga
Simone d?Agostino(1), Luca Fornasari(1), Elisa Boanini(1), Giacomo Berrgamini(1), Raffaello Mazzaro(2), Fabrizia Grepioni(1), Dario Braga(1) (1) Dipartimento di Chimica ?G. Ciamician?, Università di Bologna, Via F. Selmi 2, 40126 Bologna, Italy. (2) Department of Engineering Sciences and Mathematics, Luleå Tekniska Universitet, 97187 Luleå, Sweden. CNR-IMM, Area della Ricerca di Bologna, Via P. Gobetti 101, 40129 Bologna, Italy

16:30 **Investigation on Transistor Devices Based on 2D WSe2 Synthesized by Unique Co-sputtering Method** — T P2.7
Jae Hyeon Nam, Hye Yeon Jang, Byungjin Cho*
Department of Advanced Material Engineering, Chungbuk National University, Chungbuk 28644, Republic of Korea *E-mail address: bjcho@chungbuk.ac.kr

16:30 **Hydrogen-Free Synthesis of Monolayer WSe2 from ZnSe Precursor** — T P2.8
Mauro Och1, Pawel Palczynski1, Evgeny Alexeev2, Alexander Tartakovskii2, Cecilia Mattevi1* * Corresponding author: c.mattevi@imperial.ac.uk
1 Department of Materials, Imperial College London, London SW7 2AZ, United Kingdom 2 Department of Physics, University of Sheffield, Sheffield S10 2TN, United Kingdom

16:30 **Formation of few and mono-layered WS2 sheets using DMSO Solvent-based exfoliation** — T P2.9
M. Esfandiari, S. Kamaei, M. Rajabali and S. Mohajerzadeh
Thin Film and Nanoelectronic Lab, School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran

16:30 **The Growth of Well-Oriented 2-D SnS Thin Films at Low Temperatures by Atomic Layer Deposition** — T P2.10
1)2) In-Hwan Baek, 1)3) Jung Joon Pyeon, 4) Han Sol Lee, 5) Seong Ho Han, 5) Taek-Mo Chung, 6) Jeong Hwan Han, 2) Cheol Seong Hwang, 1) Seong Keun Kim
1) Center for Electronic Materials, Korea Institute of Science and Technology, Seoul, 02792, South Korea 2) Department of Materials Science and Engineering, and Inter-University Semiconductor Research Center, Seoul National University, Seoul, 08826, South Korea 3) 3KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, 02841, South Korea 4) Advanced Analysis Center, Korea Institute of Science and Technology, Seoul, 02792, South Korea 5) Division of Advanced Materials, Korea Research Institute of Chemical Technology, Daejeon, 34114, South Korea 6) Department of Materials Science and Engineering, Seoul National University of Science and Technology, Seoul, 01811, South Korea

16:30 **The 2D and 3D extension of long pyrene-fused N-heteroacenes** — T P2.11
Benlin Hu, Martin Baumgarten
Max Planck Institute for Polymer Research, Ackermannweg 10, D-55128, Germany

16:30 **Molybdenum Disulfide Ultrathin Films Deposition by Magnetron Sputtering As the Step to 2D Nanoelectronics** **T P2.12**
Belikov Andrey Ivanovich, Kyaw Zin Phyo, Kalinin Vladimir Nikolaevich, Syomochkin Alexandr Ivanovich
Bauman Moscow State Technical University (BMSTU), Moscow, Russia

16:30 **Al-induced crystallization of SiOx films by a layer exchange mechanism** **T P2.13**
Jong-Hwan Yoon
Department of Physics, Kangwon National University, 1 Gangwondaehak-gil, Chuncheon Gangwon-do 24341, Republic of Korea

16:30 **MoS2 nanosheets grown by CVD methods** **T P2.14**
A. Lamperti(1), C. Martella(1,2), P.P. Tummala(3), E. Kozma(4), G. Scavia(4), U. Giovanella(4), M. Bollani(5), L. Nobili(3), A. Molle(1)
(1) IMM-CNR, Agrate Brianza Unit, via C. Olivetti 2, I-20864, Agrate Brianza (MB), Italy (2) ISC-CNR, U.O.S. Sapienza, I-00185 Roma, Italy (3) Politecnico di Milano, Dipartimento di Chimica, Materiali e Ingeneria Chimica, Via Mancinelli 7, I-20131 Milano, Italy (4) ISMAC-CNR, via A. Corti 12, I-20133, Milano, Italy (5) IFN-CNR, piazza L. Da Vinci 32, I-20133, Milano, Italy

16:30 **High-performance 2D MoS2/Si Heterojunction Photodetector Using a 2D MoS2 Deposited by Plasma Sputtering** **T P2.15**
Hye Yeon Jang, Jae Hyeon Nam, Byungjin Cho*
Department of Advanced Material Engineering, Chungbuk National University, Chungbuk 28644, Republic of Korea E-mail address: bjcho@chungbuk.ac.kr

16:30 **Highly crystalline nickel silicon sheets on silicon substrates using hydrogen plasma treatment** **T P2.16**
M. Hosseini, M. Vakili-tabatabaee, M.Joharifar, M. Rajabali and S. Mohajerzadeh
Thin Film and Nanoelectronic Lab, School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran

16:30 **Rare-earth doped 2D-MoS2 for optoelectronic and photonic device applications** **T P2.17**
C. Maddi1, R. Ashwin2, KV. Adarsh2, A. J. Scott1, A. Jha1
1School of Chemical and Process Engineering, Faculty of Engineering, University of Leeds, Leeds, UK 2Department of Physics, Indian Institute for Science Education and Research, IISER-Bhopal, India

16:30 **Transparent p-MoTe2 2D transistors enabled by oxygen-plasma treated ultrathin MoOx contact media** **T P2.18**
Ji Hoon Park, Yongjae Cho, Minju Kim, Yeonjin Yi, Seongil Im
Department of Physics, Yonsei University

16:30 **Synthesis and spectroscopic characterization of crystalline MoS2 films** **T P2.19**
G. Mariotto1, A.N. Barbosa2, M. Giarola1, C.D. Mendoza2, M. Zanatta1, F.L. Freire Jr.2
1 Dipartimento di Informatica, Università degli Studi di Veron, Italy, 2 Departamento de Fisica, Pontifícia Universitade Catolica do Rio de Janeiro, Brazil.

16:30 **Large area growth of MoS2 monolayers by a vapor-phase-assisted MoO3-x/H2S reaction** **T P2.20**
Devendra Pareek†1*, Marco A. Gonzalez,†1, Jannik Zohrabian1, Mohamed H. Sayed1,3, Volker Steenhoff2, Colleen Lattyak2, Martin Vehse2, Carsten Agert2, Jürgen Parisi1, Sascha Schäfer1, Levent Gütay1
1: Institute of Physics, Carl von Ossietzky University of Oldenburg, Oldenburg, Germany, 2: DLR Institute of Networked Energy Systems, Oldenburg, Germany, 3: Current address: Solid State Physics Department, National Research Centre, 12311 Dokki, Giza, Egypt, †Authors contributed equally to this work

16:30 **Single-crystal 2D heterostructure on wafer scale** **T P2.21**
Soo Min Kim, Ki Kang Kim
KIST, Dongguk Univ.

16:30 **Encapsulating 2D silicon towards real world applications** **T P2.22**
J. Mock, M. Kloberg, B. Rieger, M. Becherer
Chair of Nanoelectronics, Department of Electrical and Computer Engineering, Technical University of Munich, Germany, Wacker-Chair of Macromolecular Chemistry, Department of Chemistry, Technical University of Munich, Germany, Wacker-Chair of Macromolecular Chemistry, Department of Chemistry, Technical University of Munich, Germany, Chair of Nanoelectronics, Department of Electrical and Computer Engineering, Technical University of Munich, Germany

16:30 **Effect of gamma irradiation on CVD MoS2** **T P2.23**
Aditya Singh, Monika Moun and Rajendra Singh
Department of Physics, Indian Institute of Technology Delhi, New Delhi, India

16:30 **Tranfer-free and catalyst-free synthesis of graphene on Si(100) and SiO2 substrates by microwave plasma enhanced chemical vapor** **T P2.24**
R. Gudaitis, A, Vasiliauskas, M. Andrulevičius, S. Tamulevičius, Š. Meškinis
Kaunas University of Technology, Institute of Materials Science, Baršausko 59, Kaunas, Lithuania

16:30 **Controlled growth of edge-enriched MoS2 flakes and their application to develop high-sensitive and room temperature gas senor** **T P2.25**
Abhay.V Agarwal and Mukesh Kumar
Functional and Renewable Energy Materials Laboratory, Department of Physics, Indian Institute of Technology Ropar, Punjab, India-140001

16:30 **Tailoring of exciton photoluminescence emission in WS2 monolayers** **T P2.26**
R. Kaupmees 1, M. Grossberg 1, J. Krustok 1,2
1 Department of Materials and Environmental Technology, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia, 2 Division of Physics, Tallinn University of Technology, Ehitajate tee 5, 19086 Tallinn, Estonia

16:30 **Low Temperature Synthesis of Single Phase Two-Dimensional SnSx by Atomic Layer Deposition** **T P2.27**
Jung Joon Pyeon, In-Hwan Baek, Seong Ho Han, Sung Ok Won, Taek-Mo Chung, Jeong Hwan Han, Chong-Yun Kang, Seong Keun Kim
Jung Joon Pyeon, In-Hwan Baek, Chong-Yun Kang, Seong Keun Kim, Center for Electronic Materials, Korea Institute of Science & Technology, Seoul, Korea Jung Joon Pyeon, Chong-Yun Kang, KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, Korea Seong Ho Han, Taek-Mo Chung, Division of Advanced Materials, Korea Research Institute of Chemical Technology, Daejeon, Korea Sung Ok Won, Advanced Analysis Center, Korea Institute of Science and Technology, Seoul, Korea Jeong Hwan Han, Department of Materials Science and Engineering, Seoul National University of Science and Technology, Seoul, Korea

16:30 **Effects of Forming Gas Annealing on large area PtSe2** **T P2.28**
Gioele Mirabelli1, Lee Walsh1, Shubhadeep Bhattacharjee1, Farzan Gity1, Conor P.Cullen3, Cormac O'Coileain3, Scott Monaghan1, Niall McEvoy3, Roger Nagle1, Paul K. Hurley1,2, Ray Duffy1
1Tyndall National Institute, University College Cork, Cork, Ireland, 2 School of Chemistry, University College Cork, Ireland, 3School of Chemistry and CRANN, Trinity College Dublin, Dublin 2, Ireland,

16:30 **Evolution of Ultrathin Few-layer Phosphorene through Direct Crystallization of Thin Film Red Phosphorous** **T P2.29**
M. Rajabali, S. Mohajerzadeh
Thin Film and Nanoelectronic Lab, School of Electrical and Computer Engineering, University of Tehran, Tehran, Iran

16:30 **Two Stage Process for Wafer-Scale 2D MoS2 Growth via Sulphurization of Atomic Layer Deposited Molybdenum Oxide** **T P2.30**
Myakota D.I., Lebedinskii Yu. Yu., Romanov R.I., Chouprik A.A., Kozodaev M.G. and Markeev A.M.
Moscow Institute of Physics and Technology, Institutskii Lane 9,141700 Dolgoprudny, Russian Federation

16:30 **Readily Available Stock Solid of MoS2 and WS2 Nanosheets through Solid-Phase Exfoliation by Ball Milling** **T P2.31**
Gang Liu, Naoki Komatsu
Graduate School of Human and Environmental Studies, Kyoto University, Sakyo-ku, Kyoto 606-8501, Japan

16:30 **Large scale structure mapping of 2D materials** **T P2.32**
Benedikt Haas1, Johannes Müller1, Gerardo Algara-Siller2, Xiaomin Xu1, Norbert Koch1, Christoph T. Koch1
1 Institut für Physik, Humboldt-Universität zu Berlin, Berlin, Germany, 2 Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany

16:30 **Rare Earth Ions Adsorption on Ultrathin Graphitic Carbon Nitride** **T P2.33**
Saikat Kumar Kuila* , T K Kundu *E-mail: saikatkuila@gmail.com
Research Scholar*, Professor, Department of Metallurgical and Materials Engineering, Indian institute of Technology Kharagpur, West Bengal, India-721302.

16:30 **Functionalization of Silicane** **T P2.34**
Marc Julian Kloberg, Bernhard Rieger
WACKER-Chair of Macromolecular Chemistry, Technical University of Munich, Alberta/Technical University of Munich International Graduate School (ATUMS, IRTG 2022)

16:30 **Epitaxial growth and characterization of 2D layered Boron rich B(Al)N ternary alloys** **T P2.35**
Suresh Sundaram1,2, Adama Mballo1, Phuong Vuong1, Yacine Halfaya1, Tinh Tran3, Xiaohang Li3 and Abdallah Ougazzaden2,4,*
1CNRS, UMI 2958, G T - CNRS, 2 rue Marconi, 57070 Metz, France 2GT Lorraine, 2 rue Marconi, 57070 Metz, France 3King Abdullah University of Science and Technology (KAUST), Saudi Arabia 4Georgia Institute of Technology, School of Electrical and Computer Engineering, GT-Lorraine, 57070 Metz, France

16:30 **Screw-Dislocation Driven Growth of Few-Layer Graphene Spirals** **T P2.36**
Roland Yingjie Tay, Hyo Ju Park, Jinjun Lin, Zhi Kai Ng, Lin Jing, Hongling Li, Minmin Zhu, Siu Hon Tsang, Zonghoon Lee, Edwin Hang Tong Teo*
Roland Yingjie Tay, Jinjun Lin, Zhi Kai Ng, Lin Jing, Hongling Li, Minmin Zhu, Siu Hon Tsang, Edwin Hang Tong Teo School of Electrical and Electronic Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore Hyo Ju Park, Zonghoon Lee School of Materials Science and Engineering, Ulsan National Institute of Science and Technology (UNIST), Ulsan 44919, Republic of Korea

16:30 **Synthesis of graphene nanoribbon arrays on germanium** **T P2.37**
Panlin Li, Zhongying Xue, Tianbo Wang, Zengfeng Di, Miao Zhang*
State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai 200050, China

16:30 **Direct growth of patterned graphene on germanium** **T P2.38**
Tianbo Wang, Panlin Li, Zhongying Xue, Zengfeng Di, Miao Zhang*
State Key Laboratory of Functional Materials for Informatics, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai, 200050, China

16:30 **Salt-assisted chemical vapor deposition of two-dimensional transition metal dichalcogenides** **T P2.39**
LI Shisheng, Eda Goki
International Center for Young Scientists (ICYS) and International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS)

16:30 **Heterojunction Photodiode based on 2D TMDs Synthesized by an Atmospheric-Pressure Plasma-Enhanced Chemical Vapor Deposition** **T P2.40**
Byungjin Cho
Department of Advanced Material Engineering, Chungbuk National University, Chungbuk 28644, Republic of Korea

16:30 **Amino-Functionalized Graphene Quantum Dots: A great platform for tunable luminescence, magnetic and energy transfer related apply** **T P2.41**
Rajarshi Roy
Plasma Technologies, CEITEC, Masaryk Univerity, Czech Republic, Brno

16:30 **Self-Limiting Growth of High-Quality 2D Monolayer MoS2 by Direct Sulfurization Using Precursor-Soluble Substrates for Advanced Field-Effect Transistors and Photodetectors** **T P2.42**
Yang Lu, Jamie H. Warner
Department of Materials, University of Oxford, Parks Road, Oxford OX1 3PH, United Kingdom

16:30 **Ferroelectric polarization-mediated phase engineering in MoTe2 layers for memristive switching** **T P2.43**
Hye-Jin Jin, William Jo
Department of Physics, Ewha Womans University, Seoul, Korea

Friday 31 may 2019

Devices 2 : Antonio Politano

08:30 INV **Atomically thin membranes in motion and their applications** **T 11.1**
H.S.J. van der Zant
Kavli Institute of Nanoscience, Delft University of Technology, The Netherlands

09:00 **3D printed microsupercapacitors from 2D material inks** **T 11.2**
Apostolos Panagiotopoulos, Chiara Grotta, Peter Sherrell & Cecilia Mattevi
Department of Materials, Imperial College London

09:15 **Resistive random-access memory (ReRAM) devices based on 2D halide perovskites with high ON/OFF ratio and enhanced air stability** **T 11.3**
Hyojung. Kim, Ho Won Jang
Department of Materials science and Engineering, Seoul National University, Seoul, Korea

09:30 **Hot electron transistors with 2D materials base layer for ultra-high frequency applications** **T 11.4**
F. Giannazzo (1), G. Greco (1), E. Schilirò (1), R. Lo Nigro (1), I. Deretzis (1), A. La Magna (1), F. Roccaforte (1), F. Iucolano (2), S. Ravesi (2), P. Prystawko (3), P. Kruszewski (3), M. Leszczyński (3), E. Frayssinet (4), A. Michon (4), Y. Cordier (4)
(1) CNR-IMM, Strada VIII, 5, Zona Industriale, 95121 Catania, Italy (2) STMicroelectronics, Stradale Primosole 50, 95121 Catania, Italy (3) TopGaN, Prymasa TysiÄclecia 98 01-424 Warsaw, Poland (4) CNRS-CRHEA, Rue Bernard Gregory, 06560 Valbonne, France

09:45 **Highly selective TiO2/Ti3C2Tx MXene gas sensors via formation of inter-flake Schottky barriers** **T 11.5**
Junghoon Choi(1), Seon Joon Kim(2), Soo-Yeon Cho(1), Yong-Jae Kim(1), Kangho Park(1), Hohyung Kang(3), Yury Gogotsi(1), Hee-Tae Jung(1)
(1)Department of Chemical and Biomolecular Engineering (BK-21 Plus), Korea Advanced Institute of Science and Technology (KAIST), Daejeon 34141, Korea, (2)Materials Architecturing Research Center, Korea Institute of Science and Technology (KIST), Seoul 02792, Korea, (3)A.J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, Pennsylvania 19104, United States

10:00 **Coffee Break**

Electronic Transport : Alexander Grueneis

10:30 INV **Electron hydrodynamics: Introduction and Status** **T 12.1**
Denis Bandurin
Massachusetts Institute of Technology, Cambridge, Massachusetts 02139, USA

11:00 **Dirac excitons in 2D transition-metal dichalcogenides -- the role of the Berry curvature** **T 12.2**
M. Trushin (1,2), M. O. Goerbig (3), W. Belzig (2)
Centre for Advanced 2D Materials, National University of Singapore, 6 Science Drive 2, 117546, Singapore , Department of Physics, University of Konstanz, D-78457 Konstanz, Germany , Laboratoire de Physique des Solides, Université Paris-Sud, Université Paris-Saclay, CNRS UMR 8502, F-91405 Orsay, France

11:15 **Investigation of hybrid Josephson junctions for topological applications** **T 12.3**
M. Carrega 1, S. Guiducci 1, G. Biasiol 2, F. Taddei 1, H. Courtois 3, L. Sorba 1, F. Beltram 1 and S. Heun 1
1 NANO-CNR, Istituto Nanoscienze & Scuola Normale Superiore, 2 IOM CNR, Laboratorio TASC, Area Science Park, 34149 Trieste, Italy, 3 Univ. Grenoble Alpes, CNRS, Institut Neel, 25 avejnue des martirs, 38042 Grenoble (France)

11:30 **Very Large Tunneling Magnetoresistance in Layered Magnetic Semiconductor CrI3** **T 12.4**
Zhe Wang, Ignacio Gutiérrez-Lezama, Nicolas Ubrig, Martin Kroner, Marco Gibertini, Takashi Taniguchi, Kenji Watanabe, Ataç Imamoğlu, Enrico Giannini, Alberto F. Morpurgo
Department of Quantum Matter Physics, University of Geneva, 24 Quai Ernest Ansermet, CH-1211, Geneva, Switzerland Zhe Wang, Ignacio Gutiérrez-Lezama, Nicolas Ubrig, Marco Gibertini, Enrico Giannini & Alberto F. Morpurgo Group of Applied Physics, University of Geneva, 24 Quai Ernest Ansermet, CH-1211, Geneva, Switzerland Zhe Wang, Ignacio Gutiérrez-Lezama, Nicolas Ubrig, Marco Gibertini & Alberto F. Morpurgo Institute of Quantum Electronics, ETH Zürich, CH-8093, Zürich, Switzerland Martin Kroner & Ataç Imamoğlu National Institute for Materials Science, 1-1 Namiki, Tsukuba, 305-0044, Japan Takashi Taniguchi & Kenji Watanabe

11:45 **Electronic structure of TMDC van-der-Waals heterostructures** **T 12.5**
C. Salazar^1, G. C. Constantinescu^2, N.W. Wilson^1, N.D.M. Hine^1
(1) Department of Physics, University of Warwick (2) TCM Group, Cavendish Laboratory, University of Cambridge

12:00 **Atomically precise edge-contact engineering for valley selection in few-layer MoS2** **T 12.6**
Xiangbin Cai, Zefei Wu, Xu Han, Jiangxiazi Lin, Tianyi Han, Junwei Liu, Ding Pan, Ning Wang
Department of Physics and Center for Quantum Materials, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China

12:15 **The role of native defects and impurity atoms on the doping of multilayer MoS2** **T 12.7**
Lida Ansari, Scott Monaghan, Paul K. Hurley, and Farzan Gity
Tyndall National Institute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland

SYMPOSIUM U

Hybrid composites incorporating low dimension materials for sensors and clean energy applications

Symposium Organizers :

Clara SANTATO, Polytechnique Montréal, Canada

Daniel CHUA, National University of Singapore

Elisabetta COMINI, University of Brescia, Italy

Isabella CONCINA, Lulea

Engineering functional performances through materials synthesis and assembly : Isabella Concina Vincenzo Guidi

14:00 INV **Exploiting Graphene to stabilize Chromium compounds on Ni(111): from Cr carbide intercalation to high-quality ultrathin Cr oxide** — U 1.1
A. Brambilla, A. Picone, A. Lodesani, M. Finazzi, L. Duò, F. Ciccacci
Dipartimento di Fisica, Politecnico di Milano, Piazza Leonardo da Vinci 32, 20133 Milano, Italy

14:30 **Large Dielectric Constant Enhancement in MXene Percolative Polymer Composites** — U 1.2
Shaobo Tu+, Qiu Jiang+, Xixiang Zhang* and Husam N. Alshareef*
Materials Science and Engineering, Physical Sciences and Engineering Division, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia

14:45 **Tuning the Thermoelectric Performance of Hybrid Polymer/Nanoparticle Composites via Stoichiometric Control** — U 1.3
Katherine A. Mazzio,[a,b] Britta Ryll,[d] Jens Niederhausen,[a,b] Johannes Frisch,[b] Danny Kojda,[d] Monika Raja Thulasimani,[a,b,c] Klaus Habicht,[d,e] Simone Raoux[a,b,c]
[a] Insitut für Nanospektroskopie, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Albert-Einstein-Str. 15, 12489 Berlin, Germany [b] Energy Materials In-Situ Laboratory (EMIL), Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Albert-Einstein-Str. 15, 12489 Berlin, Germany [c] Institut für Physik, Humboldt Universität zu Berlin, Newton-Str. 15, 12489 Berlin, Germany [d] Department Methods for Characterization of Transport Phenomena in Energy Materials, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany [e] Institut für Physik und Astronomie, Universität Potsdam, Karl-Liebknecht-Str. 24-25, 14476 Potsdam, Germany

15:00 **Reversible hydrostatic strain demonstrated in gold nanoparticle supported graphene induced by high intensity laser irradiation** — U 1.4
András Pálinkás, Péter Kun, Zoltán Osváth
Institute of Technical Physics and Materials Science (MFA), Centre for Energy Research, Hungarian Academy of Sciences, 1525 Budapest, P.O. Box 49, Hungary

15:15 **Layer-by-Layer Self-assembly of Pillared Two-dimensional Multilayers for Highly Volumetric Capacitance Storage** — U 1.5
Weiqian Tian1, 2, Armin VahidMohammadi3, Zhen Wang1, 2, Liangqi Ouyang1, Majid Beidaghi3*, Mahiar M. Hamedi1, 2, *
1 Department of Fibre and Polymer Technology, KTH Royal Institute of Technology, Teknikringen 56, 10044 Stockholm, Sweden 2 Wallenberg Wood Science Centre, Department of Fibre and Polymer Technology, KTH Royal Institute of Technology, Teknikringen 56, 10044 Stockholm, Sweden 3 Department of Mechanical and Materials Engineering, Auburn University, Auburn, Alabama 36849, United States.

15:30 **Thermal protection of organic molecules with graphene at SERS-sensing: experiment and simulation** — U 1.6
S. Redko, A. Dolgiy, A. Shapel, I. Komissarov, N. Kovalchuk, S. Zavatski, N. Khinevich, H. Bandarenka
Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus

15:45 **Incorporating foreign elements in graphene using ultra-low energy ion implantation** — U 1.7
R. Villarreal(a), P.-C. Lin(a), H. Bana(a), K. Verguts(b c), S. Brems(c), S. de Gendt(b c), M. Auge(d), H. Hoffsäss(d), C. Van Haesendonck(e), L. M. C. Pereira(a)
(a) Institute for Nuclear and Radiation Physics, KU Leuven, BE-3001 Leuven, Belgium, (b) Departement Chemie, KU Leuven, BE-3001 Leuven, Belgium, (c) Interuniversitair Micro-Electronica Centrum (imec) vzw, BE-3001 Leuven, Belgium, (d) II. Institute of Physics, University of Göttingen, Göttingen 37077, Germany, (e) Solid-State Physics and Magnetism Section, KU Leuven, BE-3001 Leuven, Belgium

16:00 **coffee break**

16:30 **Films of 2D materials prepared at a liquid/liquid interface for electrochemical energy storage and energy generation** — U 1.8
Dr. Neena S John
Scientist Centre for Nano and Soft Matter Sciences, Jalahalli, Bengaluru-560013, India

16:45 **Stability of single molecule magnets grafted to graphene** — U 1.9
Aleksei Koshevarnikov, Manel Mabrouk, Jacek A. Majewski
Faculty of Physics, University of Warsaw, ul. Pasteura 5, 02-093 Warszawa, Poland

17:00 **Raman Spectroscopy as a Tool for Characterisation of Liquid Dispersed Particles** — U 1.10
Benjamin Hogan, Monica Craciun, Anna Baldycheva
University of Exeter, College of Engineering Mathematics and Physical Sciences, Exeter, EX4 4QF, UK

17:15 **Multi-functional Covellite CuS** — U 1.11
Ng Zhen Quan, Cavin1,2,3, Tan Kuan Khoon, Royston,2,4 Ashutosh Rath,2 Andrew T.S. Wee 1,3 Daniel H. C. Chua,2,*
1 NUS Graduate School for Integrative Sciences and Engineering, National University of Singapore 2 Department of Materials Science and Engineering, National University of Singapore 3 Department of Physics, National University of Singapore, Singapore Singapore 4 Globalfoundries, Singapore

17:30 **Locally probing adatoms on graphene using perturbed angular correlation spectroscopy** — U 1.12
A. S. Fenta (1,2,3), C. O. Amorim (2), J. N. Gonçalves (2), N. Fortunato (2), T. M. Mendonça (3), M. B. Barbosa (4), P.-C. Lin (1), R. Villarreal (1), E. Moyen (5), Youngwoo Kim (6), D. Pribat (5), Y. Kadi (3), S. Cottenier (7,8), V. S. Amaral (2), J. G. Correia (3,9), L. M. C. Pereira (1)
(1) KU Leuven, Instituut voor Kern-en Stralingsfysica, 3001 Leuven, Belgium, (2) Physics Department and CICECO, University of Aveiro, 3810-193 Aveiro, Portugal, (3) CERN, 1211 Geneva, Switzerland, (4) IFIMUP and IN-Institute of Nanoscience and Nanotechnology, Universidade do Porto, 4169-007 Porto, Portugal, (5) Department of Energy Science, Sungkyunkwan University, Suwon 16419, Republic of Korea, (6) Advanced Display Research Center (ADRC), Department of Information Display, Kyung Hee University, Seoul 02447, Republic of Korea, (7) Center for Molecular Modeling, Ghent University, 9052 Zwijnaarde, Belgium, (8) Department of Electrical Energy, Metals, Mechanical Constructions and Systems, Ghent University, 9052 Zwijnaarde, Belgium, (9) C2TN, Instituto Superior Técnico, Campus Tecnológico e Nuclear, Lisbon, Portugal.

Engineering functional performances through materials synthesis and assembly I : Elisabetta Comini

17:45 **Experimental Study of the Charge Transfer Effects in Graphene-Metal Nanoparticles Hybrid Composites** — U 2.1
M. Censabella, V. Torrisi, G. Compagnini, M. G. Grimaldi, F. Ruffino
M. Censabella Dipartimento di Fisica e Astronomia “Ettore Majorana”, Università di Catania, via S. Sofia 64, 95123 Catania, Italy CNR-IMM via S. Sofia 64, 95123 Catania, Italy, V. Torrisi BRIT (Bio-nanotech Research Innovation Tower), Università di Catania, via S. Sofia 89, 95123 Catania, Italy, G. Compagnini Dipartimento di Scienze Chimiche, Università di Catania, Viale A. Doria 6, Catania 95125, Italy, M. G. Grimaldi Dipartimento di Fisica e Astronomia “Ettore Majorana”, Università di Catania, via S. Sofia 64, 95123 Catania, Italy CNR-IMM via S. Sofia 64, 95123 Catania, Italy, F. Ruffino Dipartimento di Fisica e Astronomia “Ettore Majorana”, Università di Catania, via S. Sofia 64, 95123 Catania, Italy CNR-IMM via S. Sofia 64, 95123 Catania, Italy,

17:45 **Engineering functional coatings for UV damage detection based on graphene/DNA interface** — U 2.1
M.Gabriella Santonicola (1), Elisa Toto (1), Susanna Laurenzi (2)
(1) Department of Chemical Materials and Environmental Engineering, Sapienza University of Rome, Italy, (2) Department of Astronautical Electrical and Energy Engineering, Sapienza University of Rome, Italy

17:45 **Carbon nanotube ink based thermoelectric devices fabricated by direct printing on a flexible cable** — U 2.6
Kyung Tae Park, Jung Ah Lim, Chong Rae Park , Heesuk Kim
Kyung Tae Park, Dr. Jung Ah Lim, Dr. Heesuk Kim (Korea Institute of Science and Technology) Kyung Tae Park, Prof. Chong Rae Park (Seoul National University)

17:45 **Facile deposition and enhanced sensing properties of platinum nanoparticulate films for AlGaN/GaN based hydrogen sensors** — U 2.22
Hyeong-Ho Park1, Hae Yong Jeong1, Chu-Young Cho1, Manjeet Kumar2, Ju-Hyung Yun2, Kyung-Ho Park1*
1 Nanodevice Lab., Korea Advanced Nano Fab Center (KANC), Suwon 16229, Republic of Korea 2 Department of Electrical Engineering, Incheon National University, Incheon 406772, Republic of Korea

17:45 **Controlled Ultrafine Nanoporous Gold film by Simple Modified Dealloying Method** — U 2.14
Xufen Xiao, Wenhui Ou, Yangyang Li
Department of Materials Science and Engineering, City University of Hong Kong, Hong Kong

17:45 **Soft synthesis of luminescent hybrid materials based on metal-organic phosphors and PbF2 powder** **U 2.15**
O.B. Petrova*, K.I. Runina*, A.V. Khomyakov*, R.I. Avetisov*, M.N. Mayakova**, I.V. Taydakov***, I.Ch. Avetissov*
* Department of Crystals Chemistry and Technology, Dmitry Mendeleev University of Chemical Technology of Russia, Moscow, Russia ** Prokhorov General Physics Institute RAS, Moscow, Russia *** P.N. Lebedev Physical Institute RAS, Moscow, Russia

17:45 **Novel graphene/TiO2/PVDF composite nano and micro fibers fabrication and properties** **U 2.16**
I. V. Tudose1, C. Pachiu2, P. Pascariu3, S. Mihaila2, M. Popescu2, O.N. Ionescu2, E. Koudoumas1, M. Suchea 1,2*
1 Center of Materials Technology and Photonics, School of Engineering, Technological Educational Institute of Crete, Heraklion, Greece 2 National Institute for Research and Development in Microtechnologies (IMT-Bucharest), 126 A, Erou Iancu Nicolae Street, P.O. Box 38-160, 023573 Bucharest, Romania 3 "Petru Poni" Institute of Macromolecular Chemistry, Aleea Grigore Ghica Voda, 41A, Iasi 700487, Romania * mira.suchea@imt.ro , mirasuchea@staff.teicrete.gr

17:45 **Selective enhanced ion transport in graphene oxide membrane/conical nanopore system** **U 2.17**
Huijun Yao, Yuhua Dong, Yaxiong Cheng, Jinglai Duan, Dan Mo, Jian Zeng, Youmei Sun and Jie Liu
Institute of Modern Physics, Chinese Academy of Sciences

17:45 **Spectral signatures of structural phase transformations in 1T-TaS2 intercalated with C6H12N2 (Triethylenediamine)** **U 2.18**
1. M. K. Kinyanjui, 2. J. Holzbock , 2. M. Linden, 1. J. Koster, 1. U. Kaiser
1. Central Facility of Electron Microscopy, Ulm University, Albert Einstein Allee 11, 89068 Ulm, Germany, 2. Institut für Anorganische Chemie II, Ulm University Albert Einstein Allee 11,89081 Ulm.

17:45 **MoS2-lipid bilayer complex structures for bionanoelectronic devices** **U 2.19**
Yunjeong Park, Byunggil Kang, Changgu Lee, Kyunghoon Kim
School of Mechanical Engineering, Sungkyunkwan University (SKKU), SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University (SKKU), School of Mechanical Engineering, Sungkyunkwan University (SKKU), School of Mechanical Engineering, Sungkyunkwan University (SKKU)

17:45 **Synthesis of Lanthanide-doped ScF3 nanoparticles and used as luminescence thermometry** **U 2.20**
Biyun Ren, Wei Kong, Xueqing Yang, Feng Wang
Department of Materials Science and Engineering, City University of Hong Kong, Hong Kong

17:45 **Bottom-up liquid phase synthesis of copper hydroxide based nanostructures: from 1D to 2D** **U 2.21**
R. Bhusari, J. S. Thomann, P. Grysan, R. Leturcq
Materials Research and Technology Department, Luxembourg Institute of Science and Technology, Luxembourg

17:45 **Hierarchical MoS2 wrinkle system for efficient hydrogen evolution** **U 2.22**
Woo-Bin Jung, Hee-Tae Jung
National Laboratory for Organic Opto-Electronic Materials, Department of Chemical and Biomolecular Engineering (BK-21 plus), Korea Advanced Institute of Science and Technology, Daejeon 305-701, South Korea , National Laboratory for Organic Opto-Electronic Materials, Department of Chemical and Biomolecular Engineering (BK-21 plus), Korea Advanced Institute of Science and Technology, Daejeon 305-701, South Korea

17:45 **Highly single crystalline MoO< sub>3< /sub> Nanowires doped with ReO< sub>3< /sub> nanocrystals and its electrical properties** **U 2.23**
Hyomin Yoo, Sohyun Jeon and Myung Hwa Kim*
Department of Chemistry & Nano Science, Ewha Womans University, Seoul, 120-750

17:45 **Highly single crystalline RuO2 nanorods on electrospun carbon nanofibers and its application for electrochemical capacitors** **U 2.8**
Sohyun Jeon< sup>1< /sup>, Hyomin Yoo< sup>1< /sup>, Ji Hwan Jeong< sup>2< /sup>, Bo-Hye Kim< sup>2< /sup>* and Myung Hwa Kim< sup>1< /sup>*
< sup>1< /sup>Department of Chemistry & Nano Science, Ewha Womans University, Seoul, 120-750, Korea < sup>2< /sup>Department of Science Education, Chemistry Education Major, Daegu University, 201 Daegudae-ro, Gyeongsan-si, Gyeongsangbuk-do, 712-714, Republic of Korea

17:45 **3D-Printed Electrical Circuits and Origami Electronics Using Percolative Metallic Doughs** **U 2.24**
Yejin Jo(1)(2), Sungmook Jung(2), Youngmin Choi(1)(2), Sunho Jeong(1)(2)*
(1)Department of Chemical Convergence Materials, University of Science and Technology (UST), 217 Gajeongro, Yuseong-gu, Daejeon 305-350, Korea. (2) Division of Advanced Materials, Korea Research Institute of Chemical Technology (KRICT), 141 Gajeongro, Yuseong-gu, Daejeon 305-350, Korea.

17:45 **NEW MANUFACTURING METHOD OF THREE-DIMENSIONAL WOVEN PREFORMS AND THEIR COMPOSITES** **U 2.25**
Minchang Sung, Jewook Yang, Hyun Joon Yang, and Woong-Ryeol Yu
Department of Materials Science and Engineering, Seoul National University, 599 Gwanak-ro, Gwanak-gu, Seoul 151-742, Republic of Korea

17:45 **Synergistic mechanical properties improvement of carbon nanotubes/ graphene reinforced polyurethane hybrid nanocomposites** **U 2.26**
Amir Navidfar, Levent Trabzon
Faculty of Mechanical Engineering, Istanbul Technical University, Istanbul, Turkey, MEMS Research Center, Istanbul Technical University, Istanbul, Turkey,

17:45 **Property Enhancement in Polymer-clay Nanocomposite Induced by Sonication** **U 2.28**
Razonado IAC, Suarnaba EGT, Madriaga LV and Diaz LL
Department of Mining, Metallurgical and Materials Engineering, College of Engineering, University of the Philippines - Diliman

17:45 **Graphene loaded Polymer Fibres by Pressurised Gyration** **U 2.29**
Dr Sunthar Mahalingam
University College London

17:45 **Fabrication of graphene with oxidized/non-oxidized dual surfaces** **U 2.30**
Jinseok Choi1, Jongseong Ryu1, Yeojin Choi1, Tae Kyun Lee1, Sung Jin An1
1 Department of Advanced Materials Science and Engineering, Kumoh National Institute of Technology

17:45 **Facile synthesis and characterization of UiO-66(Zr) using microwave-assisted continuous flow** **U 2.31**
Jinsoo Kim, The Ky Vo, Kye Sang Yoo, Daekeun Kim
Department of Chemical Engineering, Kyung Hee University, Korea, Department of Chemical Engineering, Kyung Hee University, Korea, Department of Chemical and Biomolecular Engineering, Seoul National University of Science and Technolgy, Korea, Department of Environmental Engineering, Seoul National University of Science and Technolgy, Korea

17:45 **Robust triazine-based porous crystal** **U 2.32**
Sun-Min Jung, Dongwook Kim, Dongbin Shin, Javeed Mahmood, Noejung Park, Myoung Soo Lah, Hu Young Jeong, Jong-Beom Baek
Sun-Min Jung, Javeed Mahmood, Jong-Beom Baek: School of Energy and Chemical Engineering/ Center for Dimension Controllable Organic Frameworks, Ulsan National Institute of Science and Technology (UNIST), 50, UNIST, Ulsan 44919, South Korea Dongwook Kim: Department of Chemistry/ Center for Catalytic Hydrocarbon Functionalizations, Institute for Basic Science, Korea Advanced Institute of Science and Technology, Daejeon 34141, South Korea Dongbin Shin, Noejung Park: Department of Physics, UNIST, South Korea Myoung Soo Lah: Department of Chemistry, UNIST, South Korea Hu Yeong Jeong:UNIST Central Research Facilities (UCRF), UNIST, South Korea

17:45 **Inkjet-printed flexible WPT module with a configuration of Ag/PI hybrid inductor coil embedded into 3D NZF with a matching CAP** **U 2.33**
Murali Bissannagari1, Jae-Wook Kang2, Sukeun Yoon1, Jihoon Kim1*
Division of Advanced Materials Engineering, Kongju National University, Cheonan, Chungchungnam 31080, Korea. Department of Flexible and Printable Electronics, Chonbuk National University, Chonbuk 54896, Korea

Advanced materials for sensing : Luca Ottaviano Elisabetta Comini

09:00 INV **Graphene-based composites for gas sensing and cation trapping applications** **U 3.1**
V. Guidi1, M. Valt1, A. Gaiardo2, B. Fabbri1
1) Department of Physics and Earth Sciences, University of Ferrara, via G. Saragat 1/C - 44122 Ferrara, Italy, 2) Micro Nano Facility, Bruno Kessler Foundation, Via Sommarive 18 - 38123 Trento, Italy

09:30 **Hybrid Nano Composite of One Dimensional Organic and Inorganic Nano Materials for Flexible and Multi-functional Sensor** **U 3.2**
Teahoon Park, Nari Kim, Kang Eun Lee, Youngseok Oh, Jung-Keun Yoo, and Moon-Kwang Um
Korea Institute of Materials Science (KIMS)

09:45 **Air pollution sensors based on PLD-sensitized CVD-graphene** **U 3.3**
Raivo Jaaniso, Harry Alles, Tea Avarmaa, Artjom Berholts, Tauno Kahro, Valter Kiisk, Margus Kodu, Marek Parts, Riho Raabe, Indrek Renge
University of Tartu, W. Ostwald st 1, Tartu 50411, Estonia

10:00 **coffee break**

10:30 **Directionally-oriented Carbon Nanotube-PDMS Conductive Films with Enhanced Sensitivity as Wide-range Stretchable Strain Sensors** **U 3.4**
Mehmet O. Tas (a), Mark. A. Baker (b), Jedidiah Bentz (c), Keir Boxshall (c), Vlad Stolojan (a)
(a) Advanced Technology Institute, Department of Electronic Engineering, University of Surrey, Guildford, GU2 7XH, UK (b) Department of Mechanical Engineering Sciences, University of Surrey, Guildford, GU2 7XH, UK (c) Smiths Interconnect, 8851 SW Old Kansas Ave., Stuart, Florida 34997, USA

10:45 **Highly Selective Sensing of H2S Gas by a CuO/SiO2 Nanocomposite** **U 3.5**
Andrej Paul, Christian Weinberger, Thorsten Wagner, Michael Tiemann
Paderborn University, Department of Chemistry, Warburger Str. 100, D-33098 Paderborn, Germany

11:00 **High-sensitivity magnetic field sensors based on metglas / bidomain lithium niobate composites** **U 3.6**
A.V. Turutin1,2, J.V. Vidal3, I.V. Kubasov2, A.M. Kislyuk2, D.A. Kiselev2, S.P. Kobeleva2, M.D. Malinkovich2, Y.N. Parkhomenko2, A.L. Kholkin3,4, N.A. Sobolev1,2
1 Department of Physics and I3N, University of Aveiro, 3810-193 Aveiro, Portugal, 2 National University of Science and Technology MISiS, 119049 Moscow, Russia, 3 Department of Physics and CICECO - Aveiro Institute of Materials, University of Aveiro, 3810-193 Aveiro, Portugal, 4 ITMO University, St. Petersburg 197101, Russia

11:15 **Chemical approach towards enhancing the sensitivity of graphene oxide based humidity sensors** **U 3.7**
Cosimo ANICHINI*, Alessandro ALIPRANDI*, Artur CIESIELSKI*, Paolo SAMORÌ*
* Université de Strasbourg, CNRS, Institut de Science et d'Ingénierie Supramoléculaires, F-67083 Strasbourg, France

11:30 **ELECTROFUNCTIONALIZATION OF SURFACES AND MODULATION OF THE ENERGY BARRIERS IN ORGANIC HETEROJUNCTIONS – BASED SENSORS** **U 3.8**
M. Bouvet, M. Mateos, R. Meunier-Prest
Institut de Chimie Moléculaire de l'Université de Bourgogne, Université de Bourgogne Franche-Comté, Dijon, FRANCE, marcel.bouvet@u-bourgogne.fr

11:45 **Graphene/Amorphous-Silicon Photodiode Integrated with Silicon MOSFET for Wide Input Dynamic Range Optical Detection** **U 3.9**
Klaus Yung-Jane Hsu, Bo-Chang Li, Chun-Yu Kuo, and Po-Wen Chiu
Institute of Electronics Engineering, National Tsing Hua University, Hsinchu, Taiwan

Challenges in modulating functionalities: catalysis, energy conversion and storage : Alberto Brambilla Isabella Concina

14:30 **Fluorescence quenching and enhanced Raman scattering in graphene used for sensing micro- and nanoplastics in food** **U 4.1**
G. Sarau1,2, B. E. Oßmann3,4, H. Holtmannspötter3, M. Pischetsrieder4, W. Dicke3, and S. Christiansen1,2,5
1. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, 2. Max Planck Institute for the Science of Light, Staudtstr. 2, 91058 Erlangen, Germany, 3. Bavarian Health and Food Safety Authority, Eggenreuther Weg 43, 91058 Erlangen, Germany, 4. Food Chemistry Unit, Department of Chemistry and Pharmacy - Emil Fischer Center, University of Erlangen-Nuremberg, Nikolaus-Fiebiger-Str. 10, 91058 Erlangen, Germany, 5. Physics Department, Freie Universität Berlin, Arnimallee 14, 14195 Berlin, Germany

14:45 **Bio-inspired noble metal-free catalytic nanomaterials for H2 evolution** **U 4.2**
Hannah Johnson, Adina Morozan, Camille Roiron, Chuc T. Nguyen, Sachin Kinge, Phong D. Tran, Vincent Artero
Toyota Motor Europe: Hannah Johnson, Sachin Kinge CEA Grenoble: Adina Morozan, Camille Roiron, Vincent Artero University of Science and Technology of Hanoi: Chuc T. Nguyen, Phong D. Tran

15:00 **High gain fully inorganic perovskite -graphene hybrid photodetector and its photostability** **U 4.3**
Abhijith Surendran, Ye Tao, Raihana Begum, Xuechao Yu, Subodh G. Mhaisalkar, Qi Jie Wang, and Wei Lin Leong
School of Electrical and Electronic Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore Centre for OptoElectronics and Biophotonics, School of Electrical and Electronic Engineering & The Photonics Institute, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore. Energy Research Institute @ NTU (ERI@N) Nanyang Technological University, 50 Nanyang Drive, X-Frontier Block, Level 5, Singapore 637553, Singapore

15:15 **Characterization of porous structures generated by bipolar electrochemical etching on highly p-doped Ge(100) 4"- Wafers** **U 4.4**
Waldemar Schreiber, Stefan Janz
Waldemar Schreiber Fraunhofer Institute for Solar Energy Systems Heidenhofstr. 2 79110 Freiburg, Stefan Janz Fraunhofer Institute for Solar Energy Systems Heidenhofstr. 2 79110 Freiburg

15:30 **Silver Decorated Zinc Stannate Nanocubes Based Piezoelectric Nanogenerator for Efficient Green Energy Harvesting Application** **U 4.5**
Sarbaranjan Paria and Bhanu Bhusan Khatua*
Materials Science Centre Indian Institute of Technology Kharagpur Kharagpur - 721302, India

15:45 **Preparation and Rheological Performances of LLM-105 Explosives Ink Based on 3D Printing Technology** **U 4.6**
Jialin Cai, Guan Luo, Haijiang Yu
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, Sichuan, CHINA 621900

16:00 **coffee break**

16:30 **Synergistic Evaluation of Electrocatalytic Properties of Metal-Carbon Composite Bi-functional Catalysts for OER/ORR** **U 4.9**
Dong In Jeong, Hyung Wok Choi, Seong Guk Jeong, Mohit Kumar, Bong Kyun Kang, Dae Ho Yoon
School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Suwon 440-746, Republic of Korea, School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea, School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea, Electronic Materials and Decvice Research Center, Korea Electronics Technology Institute, 25, Saenari-ro, Bundang-gu, Seongnam-si, Gyeong gi-do, Republic of Korea, School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea

16:45 **A effective strategy to enhance kinetics of the oxygen evolution reaction by a single phase of spinel Co2RhO4 nanotubes** **U 4.10**
Myung Hwa Kim
Department of Chemistry & Nanoscience, Ewha Womans University, Seoul, 120-750, Korea

17:00 **Mesoporous CoxN@Amorphous N-doped Carbon Nanocubes for the Oxygen Evolution Reaction** — U 4.11

Hyung Wook Choi, Dong In Jeong, Hyun Bin Kim, Seong Guk Jeong, Bong Kyun Kang, Dae Ho Yoon
SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Suwon 16419, Korea, School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea, School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea, School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea, Electronic Materials and Device Research Center, Korea Electronics Technology Institute, Seongnam 463-816, Korea, School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea

Daniel ChuaRational Materials design toward functional performances : Daniel Chua

18:00 **Gd0.1Ce0.9O2-δ (GDC) embedded Ba0.5Sr0.5Co0.8Fe0.2O3-δ (BSCF) nanofibers via electrospinning as a cathode for solid oxide fuel c** — U P5.1

Chanho Kim1, Jiseok Kwon1, Seho Sun1, Jeongheon Kim1, Dongsoo Lee1, Seoungcheol Myeong1 Yeongil Jung2, Taeseup Song1*, Ungyu Paik1*
1Department of Energy Engineering, Hanyang University, Seoul, Republic of Korea, 133-791, 2School of Nano & Advanced Materials Engineering, Changwon National University, Changwon, South Korea

18:00 **Performance and durability of composite filter for decrease of scattered radiation in the operation of C-arm** — U P5.2

MIN SEOK JEON, JAE-HOON LEE, KYUNG-HOON KIM, JAE-SANG HAM, KI HYUK SUNG
Korea Testing Laboratory, Korea Testing Laboratory, Korea Institute of Ceramic Engineering and Technology, MSLINE Eng., Seoul National Uninersity Bundang Hospital

18:00 **Voltage tunable two-color barrier infrared detectors using InGaAsSb/InAsSb absorbers** — U P5.3

Yeongho Kim, Vivek Mohan More, Minsoo Kwak, Jiyeon Jeon, Jun Oh Kim, Won Chegal, Sang Jun Lee
Division of Industrial Metrology, Korea Research Institute of Standards and Science, Daejeon 34113, Korea, Department of Physics, Yeungnam University, Gyeongsan 38541, Korea, Department of Electrical Engineering, Sejong University, Seoul 05006, Korea, Advanced Instrumentation Institute, Korea Research Institute of Standards and Science, Daejeon 34113, Korea

18:00 **Inkjet-printed graphene electrodes for dye-sensitized solar cells** — U P5.4

David Dodoo-Arhin Richard C.T. Howe, Guohua Hu, Yinghe Zhang,Pritesh Hiralal, Abdulhakeem Bello, Gehan Amaratunga,Tawfique Hasan
Cambridge Graphene Centre, University of Cambridge, 9 JJ Thomson Avenue, Cambridge, CB3 0FA, UK Department of Material Science and Engineering, University of Ghana, P.O. Box Lg 77, Accra-Legon, Ghana Faculty of Science and Engineering, Waseda University, Tokyo, Japan Department of Engineering, University of Cambridge, 9 JJ Thomson Avenue, Cambridge, CB3 0FA, UK Department of Physics, University of Pretoria, Pretoria, 0028, South Africa

18:00 **Patterned Graphene as a Selective Detector for Early-Stage Lung Cancer Diagnosis** — U P5.5

Benjamin Hogan, Evgeniya Kovalska, Anna Baldycheva
University of Exeter, College of Engineering Mathematics and Physical Sciences, Exeter, EX4 4QF, UK

18:00 **Flexible triboelectric nanogenerator based on iron oxide reinforced polyvinylidene fluoride nanocomposite** — U P5.6

Bushara Fatma*, Ritamay Bhunia, Shashikant Gupta, Vivek Verma and Ashish Garg
Department of Material Science and Engineering, Indian Institute of Technology Kanpur, Kanpur 208016, India

18:00 **Gas sensing properties of Au@SnO2 core-shell nanoparticles to H2S** — U P5.7

Ha-nui Choi, Hu-Jun Lee, Gautam K. Naik and Yeon-Tae Yu*
Division of Advanced Materials Engineering and Research centre for Advanced Materials Development, Chonbuk National University, Jeonju 54896, South Korea

18:00 **Smart color changing thermochromic conductive fiber responsive to strain** — U P5.8

Chaebeen Kwon, Sanggeun Lee and Taeyoon Lee*
Nanobio Device Laboratory, School of Electrical and Electronic Engineering, Yonsei University, 50 Yonsei-ro, Seodaemun-Gu, Seoul, Korea 03722

18:00 **Environmental and operational stability of water-gated organic field effect transistors: the case of poly-3-hexylthiophene** — U P5.9

R.A. Picca1,2, K. Manoli1, E. Macchia1,3, A. Tricase1, C. Di Franco4, N. Cioffi1,2, G. Scamarcio4,5, L. Torsi1,2,3
1 Dipartimento di Chimica - Università degli Studi di Bari “Aldo Moro” - Bari (I), 2 CSGI (Centre for Colloid and Surface Science) – Bari (I), 3 Center for Functional materials, The Faculty of Science and Engineering – Åbo Akademi University – Turku (FI), 4 CNR - Istituto di Fotonica e Nanotecnologie, Sede di Bari (I), 5 Dipartimento Interateneo di Fisica “M. Merlin” - Università degli Studi di Bari – “Aldo Moro” - Bari (I)

18:00 **Carbon dioxide sensing behavior of LFCO – ZnO thin film: the role of multilayers and composites** — U P5.10

Tynee Bhowmick(a), Sudip Nag(b) and S.B. Majumder(a)
(a) Materials Science Centre, Indian Institute of Technology, Kharagpur, India,
(b) Electronics and Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, India

18:00 **Graphene based fiber for wearable humidity and nitrogen dioxide sensor** — U P5.11

Seon–Jin Choi, Ji–Soo Jang, Hayoung Yu, Il–Doo Kim*, Hyeonsu Jeong*
Seon–Jin Choi, Ji–Soo Jang, Il–Doo Kim Korea Advanced Institute of Science and Technology (KAIST) Hayoung Yu, Hyeonsu Jeong Korea Institute of Science and Technology (KIST)

18:00 **Laser Direct Writing of Organic-Inorganic Perovskite Patterns for Photovoltaic Applications** — U P5.12

A. Palla Papavlu1, B. Yang2, K. Xiao2, D.B. Geohegan2, M. Dinescu1
1. National Institute for Lasers, Plasma, and Radiation Physics, Lasers Department, Magurele 077125, Romania 2. Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37831, USA

18:00 **Electrochemical properties and hydrogen storage mechanism of perovskite-type oxide LaGaO3 for Ni-MH secondary batteries** — U P5.13

Abbes Kaabi, Mohamed Tliha, Chokri Khaldi, Jilani Lamloumi
University of Tunis, Laboratory of Mechanics, Materials and Processes, Group of Metal Hydrides, ENSIT(ExESSTT), Tunis,Tunisia.

18:00 **Preparation and Oxygen Sensing Properties of BVIMTFSI/VIM/C5H4F8O Multicomponent Electrolyte** — U P5.14

Jingyuan Liu, Wenyan Yin
Harbin Engineering University, Harbin Engineering University

18:00 **An Efficient Flexible Piezoelectric Nanogenerator Based on ZTO/PVDF Nanocomposite for Bio-mechanical Energy Harvesting** — U P5.15

Suman Kumar Si and Bhanu Bhusan Khatua*
Materials Science Centre, Indian Institute of Technology, Kharagpur-721302

18:00 **Shape-adaptable MXene for Electronics** — U P5.16

Tae Hyun Park, Seunggun Yu, Han Sol Kang, Chanho Park, Seung Won Lee, and Cheolmin Park
Yonsei University

18:00 **The integration of metallic nanowires-based force sensors on hand-held surgical tools** — U P5.17

Phillip Lee
Korea Institute of Science and Technology

18:00 **Layer-by-Layer Assembly Assisted Titania Nanoshells on Mesoporous Silica for Photocatalytic Reactions** — U P5.18

Bomin Kim, Min Jae Ko, Bongjun Yeom
Department of Chemical Engineering, Hanyang University

18:00 **Effect of doping and nanocomposite approach on selection of CO and NO2 gases for sensing applications** — U P5.19

Habeebur Rahman, B. R. Mehta
Indian Institute of Technology Delhi

18:00 **New generation of sol-gel transducers for optical chemical sensors working in biological media** — U P5.20

M.Bonnel, D.Riassetto, D.Bucci, A.Morand, M.Langlet
Univ.Grenoble Alpes, CNRS, Grenoble INP, LMGP, F-38000 Grenoble, France , Univ.Grenoble Alpes, CNRS, Grenoble INP, IMEP-LaHC, F-38000 Grenoble, France

18:00 **High selective hydrogen sensing properties of Pd-Au@ZnO core-shell nanoparticles** — U P5.21

Hu-Jun Lee, Ha-Nui Choi, Gautam K. Naik and Yeon-Tae Yu
Division of Advanced Materials Engineering and Research Centre for Advanced Materials Development, Chonbuk National University, Jeonju 54896, South Korea

18:00 **Amperometric caracterisation of gold based glucose sensor coated with nafion in neutral and alkaline environment** **U P5.22**
Adrian Olejnik, Katarzyna Siuzdak, Adam Cenian, Katarzyna Grochowska
The Szewalski Institute of Fluid-Flow Machinery, Polish Academy of Sciences, Centre for Plasma and Laser Engineering, 14 Fiszera st., 80-231 Gdańsk, Poland

18:15 **Hybrid thermal interface material for high-temperature waste heat recovery** **U P5.23**
Duckjong Kim (a), Chihyun Kim (a,b), Jinsung Park (b), Tae Young Kim (c)
(a) Korea Institute of Machinery and Materials, (b) Korea University, (c) Chonbuk National University

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Light interaction and management in complex systems : Isabela Concina Daniel Chua

08:45 INV **Layer and photoluminescence engineering of Molybdenite.** **U 6.1**
Luca Ottaviano (1), Stefano Palleschi (1), Gianluca D'Olimpio (1), Antonio Politano (1), Paola Benassi (1), Michele Nardone (1), Giuseppe Moccia (2), Roberto Alfonsetti (2) , Onofrio Antonio Cacioppo (2).
1) Department of Physical and Chemical Sciences (DSFC) Università degli Studi dell'Aquila, Via Vetoio 10, 67100 L'Aquila (ITALY) 2) Lfoundry (a SMIC Company) Via Pacinotti Avezzano, (Italy)

09:15 **Probing structural variations of graphene oxide and reduced graphene oxide using methylene blue adsorption method** **U 6.2**
Buddini Nissanka, Dilushan R. Jayasundara
Department of Physics, University of Colombo, Sri Lanka.

09:30 **Giant enhancement in photoresponse via engineering of photo-induced electron transfer** **U 6.3**
G V Sai Manohar, S B Krupanidhi, K K Nanda
MRC,Indian Institute of Science

09:45 **Photoelectrochemical reactions as a probe for plasmon resonance and exciton interaction in mesoporous materials.** **U 6.4**
Mathieu MAILLARD, Nelly COUZON, Laurence BOIS, Lucian ROIBAN, Fernand CHASSAGNIEUX, Arnaud BRIOUDE
a. Université de Lyon, Université Claude Bernard LYON1, Laboratoire des Multimatériaux et Interfaces, UMR CNRS 5615, F-69622 Villeurbanne, France b. Matériaux Ingénierie et Science, UMR CNRS 5510, INSA de Lyon, Université de Lyon, F- 69621 Villeurbanne, France

10:00 **coffee break**

10:15 **Plasmonic Metasurfaces of Au Nanoplates for Nanophotonic Applications** **U 6.5**
R. A. Hughes, S. D. Golze, S. Neretina
University of Notre Dame, College of Engineering, Notre Dame, IN, USA

10:30 **Design of nanocarbon materials properties through surface functionalization: new functional materials for sensor applications** **U 6.6**
Sahal SAAD ALI*1,2,3, Alain PAULY 1,2, Christelle VARENNE 1,2, Jérôme BRUNET1,2, Amadou L. NDIAYE*1,2
(1) Université Clermont Auvergne, CNRS, Sigma Clermont, Institut Pascal, F-63000 Clermont-Ferrand, France, (2) Laboratoire d'excellence LabEX IMobS3,Université Clermont Auvergne, Aubière CEDEX (3) Institut de Chimie de Clermont-Ferrand (ICCF)-UMR 6296, Université Clermont Auvergne

10:45 **Ti3C2 MXene paper for the effective adsorption and controllable release of aroma molecules** **U 6.7**
Ciou Jing-Hao, Lee Pooi See*
Author Address: School of Materials Science and Engineering, Nanyang Technological University, 639878798, Singapore, E-mail: pslee@ntu.edu.sg
*Corresponding Author

11:15 **PLENARY SESSION 2**

12:30 **lunch**

Wearable sensors and sensors for health : Daniel Chua

14:00 **Silicon nanowires covered by bimetallic noble metal nanoparticles for SERS detection of the bacterial biomarker Pyocyanin** **U 7.1**
S. N. Agafilushkina, O. Žukovskaja, K.Weber, V. Sivakov, D. Cialla-May, J. Popp, L. A. Osminkina
Physics Department, Lomonosov Moscow State University, Leninskie Gory, 119991 Moscow, Russia, Friedrich Schiller University Jena, Institute of Physical Chemistry and Abbe Center of Photonics, Helmholtzweg 4, 07745 Jena, Germany, Research Campus Infectognostic, Philosophenweg 7, 07743 Jena, Germany, Leibniz Institute of Photonic Technology, Albert-Einstein-Str. 9, 07745 Jena, Germany, Institute for Biological Instrumentation of Russian Academy of Sciences, 142290 Pushchino, Moscow Region, Russia

14:15 **Development of conductive core and insulative shell fibers using CNT spinning and braiding processes and their use in sensors** **U 7.2**
Hyun Joon Yang, Jin Yong Lee, Woong-Ryeol Yu
Department of Materials Science and Engineering and Research Institute of Advanced Materials (RIAM), Seoul National University, Seoul, Korea

14:30 **Wearable and Flexible High Sensitive Sensors based on Graphene and 2D TMDC** **U 7.3**
Choon-Gi Choi1,2
1Graphene Research Lab. Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea 2School of ETRI (ICT-Advanced Device Technology), University of Science and Technology (UST), Daejeon, Korea Email address of presenting author: cgchoi@etri.re.kr

14:45 **Direct printing of sensors and biosensors onto flexible substrates via laser-induced transfer** **U 7.4**
Alexandra Palla-Papavlu, Anca Bonciu, Mihaela Filipescu, Maria Dinescu
National Institute for Lasers, Plasma, and Radiation Physics, Magurele, ZIP 077125, Romania

15:00 **Fabrication of Carboxymethyl cellulose and Graphene Oxide Bio-Nanocomposites for Flexible Nonvolatile Resistive Switching Memo** **U 7.5**
Tao Liu, Wei Wu, Kai-Ning Liao, Vellaisamy A. L. Roy, Zhong-Zhen Yu, Robert K. Y. Li*
Department of Materials Science and Engineering, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong SAR, China

15:15 **2D-0D heterostructures for single electron electronics and nanospintronics.** **U 7.6**
L.D.N. Mouafo 1, F. Godel 2, G. Melinte 1, S. Hajjar-Garreau 3, B. Dlubak 2, D. Halley1, Y. Henry1, O. Ersen 1, B. Doudin 1, L. Simon 3, P. Seneor 2, J.-F. Dayen* 1.
1. Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), UMR 7504, F-67000 Strasbourg. 2. Unité Mixte de Physique, CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, 91767 Palaiseau. 3. Institut de Sciences des Matériaux de Mulhouse, CNRS-UMR 7361, Université de Haute Alsace, 3Bis, rue Alfred Werner, Mulhouse 68093.

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM V

Laser interactions with materials: from fundamentals to applications

Symposium Organizers :

Mihaela FILIPESCU, INFLPR, Bucharest, Romania

Stephan BARCIKOWSKI, University Duisburg-Essen, Germany

Tatiana ITINA, CNRS-University of Lyon, France

Thomas LIPPERT, PSI, Villigen, Switzerland

To be published in Aplied Surface Science, Elsevier

Fundamentals of laser-material processing and nanofabrication : Tatiana Itina

09:00 INV **Atomistic modeling the formation of metal and metal oxide nanoparticles under ablation conditions** — V 1.1
Florent Calvo, G. Daniel Förster
Laboratoire Interdisciplinaire de Physique, CNRS and Universite Grenoble Alpes, Laboratoire d'Etude des Microstructures, ONERA and CNRS

09:30 **UV Laser annealing of Diamond-Like Carbon layers: a process to produce transparent conductive electrodes and components** — V 1.2
F. Stock1, F. Antoni1, D. Aubel2, S. Hajjar-Garreau2, D. Muller1
1 ICube, D-ESSP, 23 rue du Loess, 67037 Strasbourg - France , 2 IS2M, 15 rue Jean Starcky 68057 Mulhouse - France

09:45 **Toward a Janus Cluster: Regiospecific Decarboxylation of Ag44(4-MBA)30@ Ag Nanoparticles** — V 1.3
Dr. Indranath Chakraborty
‡ Fachbereich Physik and Center for Hybrid Nanostructure (CHyN), Universität Hamburg, 22761 Hamburg, Germany.

10:00 **Coffee break**

10:30 INV **Atomistic modeling of the generation of nanoparticles and periodic surface structures by pulses laser ablation in liquid** — V 1.4
Cheng-Yu Shih, Chaobo Chen, Maxim V. Shugaev, Iaroslav Gnilitskyi, Leonid V. Zhigilei
University of Virginia, Department of Materials Science and Engineering, 395 McCormick Road, Charlottesville, VA 22904, USA, Research Center for Applied Sciences, Academia Sinica, 128 Academia Road, Section 2, Nangang, Taipei 11529, Taiwan, University of Modena and Reggio Emilia, Reggio Emilia, Italy

11:00 **Ripples formation on pre-patterned surfaces** — V 1.5
Stella Maragkaki, Emmanuel Stratakis
Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas (IESL-FORTH)

11:15 **Damage processes in ruthenium thin films induced by femtosecond laser pulses with varying incident photon energy** — V 1.6
I. Milov (1), N. Medvedev (2,3), V. Lipp (4), D. Ilnitsky (5,6), K. Migdal (5,6), V. Zhakhovsky (5,6), V. Khokhlov (5), Yu. Petrov (5,7), V. Shepelev (5,8), N. Inogamov (5,6), B. Ziaja (4,9), I.A. Makhotkin (1,10), E. Louis (1), and F. Bijkerk (1)
(1) MESA+ Institute for Nanotechnology, University of Twente, Drienerlolaan 5, 7522 NB Enschede, The Netherlands, (2) Institute of Physics, Czech Academy of Sciences, Na Slovance 2, 182 21 Prague 8, Czech Republic, (3) Institute of Plasma Physics, Czech Academy of Sciences, Za Slovankou 3, 182 00 Prague 8, Czech Republic, (4) Center for Free-Electron Laser Science CFEL, Deutsches Elektronen-Synchrotron DESY, Notkestrasse 85, 22607 Hamburg, Germany, (5) Landau Institute for Theoretical Physics, Russian Academy of Sciences, Chernogolovka 142432, Russia, (6) Dukhov Research Institute of Automatics (VNIIA), Rosatom, Moscow 127055, Russia, (7) Moscow Institute of Physics and Technology, Institutskiy Pereulok 9, Dolgoprudny, Moscow Region 141700, Russia, (8) Institute for Computer-Aided Design of the Russian Academy of Sciences, Vtoraya Brestskaya 19/18, Moscow 123056, Russia, (9) Institute of Nuclear Physics, Polish Academy of Sciences, Radzikowskiego 152, 31-342 Krakow, Poland, (10) IMEC, Kapeldreef 75, 3001 Leuven, Belgium

11:30 **Chemical effects during the formation of femtosecond laser-induced periodic surface structures** — V 1.7
J. Bonse, S.V. Kirner, T. Wirth, H. Sturm, D. Spaltmann, J. Krüger
Bundesanstalt für Materialforschung und -prüfung (BAM)

11:45 **High aspect ratio voids and micro-cracks formation with vector Bessel beams** — V 1.8
Justas Baltrukonis, Orestas Ulčinas, Titas Gertus, Vytautas Jukna, Sergej Orlov
Center for Physical Sciences and Technology, Industrial laboratory for photonic technologies, Saulėtekio av. 3, Vilnius, Lithuania

12:00 **Lunch**

Formation and applications of nanoparticles and nanostructures : Jörn Bonse

14:00 INV **Laser heating of gold nanoparticles. Applications in physics, chemistry and biology** — V 2.1
Guillaume Baffou
Institut Fresnel

14:30 **Laser ablation of n-PERT silicon solar cells for metallization issues: understanding the mechanism to enhance performances** — V 2.2
Cécile Molto 1,2,3, Solène Bechu 2,3, Jung Eun Lee 2, Jan Nekarda 4, Varun Arya 4, Muriel Bouttemy 2,3, Arnaud Etcheberry 2,3, Etienne Drahi 2,5, Pierre-Philippe Grand 1,2, Anne-Marie Goncalves 2,3
1 EDF R&D, IPVF, 30 route départementale 128, 91120 Palaiseau, France, 2 Institut Photovoltaïque d'Ile-de-France (IPVF), 30 route départementale 128, 91120 Palaiseau, France, 3 Institut Lavoisier de Versailles (ILV), Université de Versailles Saint-Quentin-en-Yvelines, Université Paris-Saclay , 45 avenue des États-Unis, 78035 Versailles, France, 4 Fraunhofer Institute for Solar Energy Systems ISE, Heidenhofstrasse 2, 79110 Freiburg im Breisgau, Germany, 5 TOTAL GRP-New Energies, Tour Coupole 32ème étage, 2 Place Jean Millier--La Défense 6, 92078 Paris La Défense Cedex

14:45 **Using optical resonances to control heat generation and propagation in silicon nanostructures** — V 2.3
Stefano Danesi, Ivano Alessandri
INSTM-UdR Brescia, via Branze 38, 25123 Brescia, Italy Department of Mechanical and Industrial Engineering, via Branze 38, 25123 Brescia, Italy Department of Information Engineering, University of Brescia, via Branze 38, 25123 Brescia, Italy INO-CNR, via Branze 38, 25123 Brescia, Italy

15:00 **On the mechanisms of metal nanoparticle formation in CW laser-irradiated thin porous films** — V 2.4
Hongfeng Ma, Said Bakhti, Zeming Liu, Nipun Sharma, Yaroslava Andreeva, Anton Rudenko, Francis Vocanson, Daniel S. Slaughter, Nathalie Destouches, Tatiana Itina
Laboratoire Hubert Curien, UMR CNRS 5516, UJM-Saint-Etienne, Univ. Lyon, Campus Manufacture, Saint-Etienne, 42000, France, Chemical Sciences, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA, ITMO University, Kronverkskiy Pr. 49, St. Petersburg 197101, Russia

15:15 **High-throughput laser nanopatterning with acoustically shaped light** — V 2.5
Salvatore Surdo, Alessandro Zunino, Alberto Diaspro, Martí Duocastella
Nanophysics Department, Istituto Italiano di Tecnologia, Via Morego 30, 16163, Genova, Italy.

15:30 **Coffee break**

16:00 **Experimental realization of vortical Bessel beams with engineered focal line for laser micromachining applications** — V 2.6
Ernestas Nacius, Pavel Gotovski, Sergej Orlov, Orestas Ulčinas, Titas Gertus
State research institute Center for Physical Sciences and Technology, Industrial Laboratory for Photonic Technologies, Sauletekio ave 3 LT-10222, Vilnius, Lithuania

16:15 **Phase transformations of metals under conditions of intense laser influences** — V 2.7
K. V. Khishchenko
Joint Institute for High Temperatures RAS, Moscow, Russia

Poster :
Nicu Scarisoreanu, Cristian Focsa, Stela Canulescu

16:30 **Corrosion resistance and mechanical properties of titanium with multimodal topography, after laser processing** — V P3.1
D. Kuczynska-Zemla (1), A. Sotniczuk (1), M. Pisarek (2), P. Kwasniak (1), H. Garbacz (1)
(1) Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland, (2) Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland

16:30 **Pulsed laser-induced phase conversion of TiO2NTs modified by transition metal species** — V P3.2
Łukasz Haryński, Jakub Wawrzyniak, Piotr Kupracz, Jakub Karczewski, Katarzyna Grochowska, Katarzyna Siuzdak
The Szewalski Institute IMP PAN, 80-231 Gdańsk, Fiszera 14 st., Poland, Gdańsk University of Technology, 80-233 Gdańsk, Narutowicza 11/12 st., Poland

16:30 **Laser Induced Backward Transfer of metal and 2D nanostructures** **V P3.3**
Manto Logotheti, Simos Papazoglou, Filimon Zacharatos, Ioanna Zergioti
School of Applied Mathematics and Physical Science, National Technical University of Athens, Zografou Campus, 15780, GR

16:30 **Light-driven processing of resonant and non-resonant nanostructure** **V P3.4**
Stefano Danesi, Marco Gandolfi, Luca Carletti, Nicolò Bontempi, Costantino De Angelis, Francesco Banfi, Ivano Alessandri.
INSTM-UdR Brescia, via Branze 38, 2513 Brescia, Italy, Department of Mechanical and Industrial Engineering, via Branze 38, 2513 Brescia, Italy, Interdisciplinary Laboratories for Advanced Materials Physics (I-LAMP) and Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Via Musei 41, 25121 Brescia, Italy, Laboratory of Soft Matter and Biophysics, Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium, Department of Information Engineering, University of Brescia, via Branze 38, 2513 Brescia, Italy, 6INO-CNR, via Branze 38, 2513 Brescia, Italy.

16:30 **Influence of the RF addition on the properties of PZT thin films deposited by PLD** **V P3.5**
Mihaela Filipescu1, Gheorghe Dinescu1, Nicu D. Scarisoreanu1, Floriana Craciun2, Maria Dinescu1*
1 National Institute for Laser, Plasma and Radiation Physics,Atomistilor 409, 077125 Magurele, Romania 2CNR-Istituto di Struttura della Materia, Area della Ricerca di Roma - Tor Vergata, Via del Fosso del Cavaliere, 100, 00133, Rome, Italy

16:30 **A new laser enhanced aerosol assisted chemical vapor deposition for thin film growth in electro-optical devices.** **V P3.6**
S. Sanchez1, G. García-Mandayo1, I. Ayerdi1, M. Hopkinson2, D. Li3, S.M. Olaizola1, E. Castaño1
1 Ceit and Tecnun, University of Navarra, San Sebastian, Spain, 2 Department of electronic and electrical engineering, University of Sheffield, Sheffield, UK, 3 JR3CN&IRAC, University of Bedforshire, Luton, UK,

16:30 **Carbon based materials produced by Pulsed Laser Deposition from targets obtained by hydrothermal carbonization of biomasses.** **V P3.7**
A. De Bonis, A. Galasso, M. Curcio, A. Santagata, R. Teghil
A. De Bonis, A. Galasso, M. Curcio, R. Teghil Dipartimento di Scienze, Universita della Basilicata, Via dell'Ateneo Lucano 10, 85100 Potenza, Italy A. Santagata CNR-ISM, U.O.S. Tito Scalo, C.da S. Loja, 85050 Tito Scalo, Italy

16:30 **Laser machining of Li-ion battery electrodes** **V P3.8**
Christopher Smith, James Shaw-Stewart
WMG, M-Solv

16:30 **Multiple structure formation and molecule dynamics in transient plasmas generated by laser ablation of graphite** **V P3.9**
Stefan Andrei Irimiciuc1, Bianca Hodoroaba2, Georgiana Bulai3, Silviu Gurlui3, Valentin Craciun1
1National Institute for Laser, Plasma and Radiation Physics – NILPRP, 409 Atomistilor Street, Bucharest, Romania, 2University of Bucharest, Faculty of Physics, Bucharest-Magurele, Romania, 2Faculty of Physics, Atmosphere Optics, Spectroscopy and Lasers Laboratory, "Alexandru Ioan Cuza" University of Iasi, 700506 Iasi, Romania

16:30 **Revealing the distinct structural and plasmonic properties of gold nanosponges through FIB nanotomographical reconstruction** **V P3.10**
Hauke Honig, Dong Wang, Erich Runge, Christoph Lienau, Peter Schaaf
TU Ilmenau, Institute of Materials Science and Engineering and Institute of Micro and Nanotechnologies, 98693 Ilmenau, Germany, TU Ilmenau, Institute of Materials Science and Engineering and Institute of Micro and Nanotechnologies, 98693 Ilmenau, Germany, TU Ilmenau, Institute of Physics and Institute of Micro and Nanotechnologies, 98693 Ilmenau, Germany, University of Oldenburg, Institute of Physics, Center of Interface Science, 26129 Oldenburg, Germany, TU Ilmenau, Institute of Materials Science and Engineering and Institute of Micro and Nanotechnologies, 98693 Ilmenau, Germany,

16:30 **Influence of laser texturing on the wetting characteristics of PTFE** **V P3.11**
A. Riveiro (1), T. Abalde (1), R. Soto (1), J. del Val (1), P. Pou (1), R. Comesaña (2), F. Lusquiños (1), J. Pou (1)
(1) Applied Physics Department, University of Vigo ETSII, Lagoas-Marcosende, 9. Vigo, 36310, SPAIN, (2) Materials Eng., Applied Mech., and Construction Dpt., Universidade de Vigo, EEI Vigo, SPAIN

16:30 **Noble metal –modified TiO2 nanoparticles for photocatalytic applications** **V P3.12**
M. Scarisoreanu1, A.G. Ilie1, C. Fleaca1, A.M. Banici1,2, I.P. Morjan1, E. Dutu1,I.I. Lungu1 , F. Dumitrache1 , V.Teodorescu 3, A. Sandulescu4, I. Balint4
1 National Institute for Lasers, Plasma and Radiation Physics, 077125, Magurele-Bucharest, Romania, 2 University of Craiova, Faculty of Mathematics and Natural Sciences, 200585, Craiova, Romania 3 National Institute of Materials Physics, Magurele, Romania 4Romanian Acad, Inst Phys Chem Ilie Murgulescu, 202 Spl Independentei, Bucharest 060021, Romania

16:30 **On acoustical registration of irradiated surface displacement during nanosecond laser-metal interaction** **V P3.13**
A.A. Samokhin, E.V. Shashkov, N.S. Vorob'ev, A.E. Zubko
Prokhorov General Physics Institute of the Russian Academy of Sciences, 119991, Moscow, Vavilov Str., 38

16:30 **Photonic effects of noble metal-enriched glasses induced by direct laser patterning** **V P3.14**
N.E. Stankova1, N.N. Nedyalkov1, A.S. Nikolov1, E. Iordanova2, , G. Yankov2, V. Mihajlov2, L. Aleksandrov3, R. Iordanova3
1 Institute of Electronics, Bulgarian Academy of Sciences, 72 Tzarigradsko Chaussee blvd., 1784 Sofia, Bulgaria, 2 Institute of Solid State Physics, Bulgarian Academy of Sciences, 72 Tsarigradsko shousse blvd., 1784 Sofia, Bulgaria, 3 Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Acad. Georgi Bonchev str. bld.11, 1113 Sofia, Bulgaria,

16:30 **Magnetic-plasmonic alloy and core-shell nanoparticles by laser ablation in liquid: formation mechanisms and applications** **V P3.15**
Vincenzo Amendola,1, Elti Cattaruzza,2, Anna Tymoczko,3, Marius Kamp,4, Lorenz Kienle,4, Christoph Rehbock,3, Stephan Barcikowski,3
1- Department of Chemical Sciences, University of Padova, via Marzolo 1, I-35131 Padova, Italy 2- Department of Molecular Sciences and Nanosystems, Università Ca' Foscari Venezia, via Torino 155/b, I-30172 Venezia-Mestre, Italy 3- Technical Chemistry I and Center for Nanointegration Duisburg-Essen (CENIDE), University Duisburg-Essen, Universitätstr. 7, 45141 Essen, Germany 4- Faculty of Engineering CAU Kiel, Institute for Materials Science, Synthesis and Real Structure, Kaiserstraße 2, 24143 Kiel, Germany

16:30 **Ultra-short pulse laser micromachining of NiCr alloy sheet metal** **V P3.16**
Linda Pabst, Robby Ebert, Horst Exner
Laserinstitute Hochschule Mittweida

16:30 **Towards efficient growth of transparent Mo oxides by PLD** **V P3.17**
A. Mariscal1, S. Negrete-Aragón2,3, M. García-Pardo1, E. Soria1,4, C. Sánchez-Aké 3, J. Gonzalo1, R. Serna1
1 Laser Processing Group, Instituto de Optica, IO-CSIC, Serrano 121, 28006 Madrid, Spain 2 Facultad de Ciencias, UNAM, Av. Universidad 3000, Circuito Exterior S/N, Coyoacán, 04510, Ciudad Universitaria, Ciudad de México, México 3 Grupo de Fotofísica y Películas Delgadas, Departamento de Micro y Nanotecnologías, Instituto de Ciencias Aplicadas y Tecnología, UNAM, Av. Universidad 3000, Circuito Exterior S/N, Coyoacán, 04510, Ciudad Universitaria, Ciudad de México, México 4 SAFTRA Photonics, Jesenná 5, 040 01 Košice Slovakia.

16:30 **Laser ablated silicon nanoparticles with controllable dissolution rate as light absorbance agents for photohyperthermia applicat** **V P3.18**
A.Yu. Kharin1 ,V.A. Oleshenko2,1, A.F. Alykova2, O.V. Karpukhina3, A. A. Grigoryev1,2, , N.V. Karpov1, S.M. Klimentov1, V.V. Bezotosniy2, I.N. Zavestovskaya1, 2 , A.V. Kabashin1,4, V.Yu. Timoshenko1,2,5
1 National Research Nuclear University MEPhI (Moscow Engineering Physics Institute) Kashirskoe sh., 31, 115409, Moscow, Russia 2 Lebedev Physical Institute of the Russian Academy of Sciences, 53 Leninskiy Prospekt, 199991, Moscow, Russia 3 Lomonosov Moscow State University, Faculty of Biology, Leninskie Gory 1, 119991, Moscow, Russia 4Aix-Marseille University, UMR 7341 CNRS, LP3, Campus de Luminy–Case 917, 13288 Marseille Cedex 9, France 5 Lomonosov Moscow State University, Faculty of Physics, Leninskie Gory 1, 119991, Moscow, Russia

16:30 **Laser-based Synthesis of Gold Nanostructures to Design an Optical Sensor of Glyphosate** **V P3.19**
A. L. Sortino, M. Censabella, G. Munzi, S. Boninelli, F. Ruffino, V. Privitera
A. L. Sortino CNR-IMM via S. Sofia 64, 95123 Catania, Italy, M. Censabella CNR-IMM via S. Sofia 64, 95123 Catania, Italy Dipartimento di Fisica e Astronomia "Ettore Majorana", Università di Catania, via S. Sofia 64, 95123 Catania, Italy, G. Munzi CNR-IMM via S. Sofia 64, 95123 Catania, Italy, S. Boninelli CNR-IMM Strada VIII, 5, 95121 - Catania, Italy, F. Ruffino CNR-IMM via S. Sofia 64, 95123 Catania, Italy Dipartimento di Fisica e Astronomia "Ettore Majorana", Università di Catania, via S. Sofia 64, 95123 Catania, Italy, V. Privitera CNR-IMM via S. Sofia 64, 95123 Catania, Italy,

16:30 **SERS of neonicotinoid insecticides assisted by Ag and Au nanostructures** **V P3.20**
P.A. Atanasov*1, N.N. Nedyalkov1, N. Fukata2, W. Jevasuwan2, T. Subramani2
1Institute of Electronics, Bulgarian Academy of Sciences, Tsarigradsko Chaussee 72, Sofia 1784, Bulgaria 2International Center for Materials for NanoArchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba 305-0044, Japan

16:30 **Selective rear side ablation of aluminum thin layers with ultrashort pulsed laser radiation** **V P3.21**
Tina Viertel, Linda Pabst, Robby Ebert, Horst Exner
Laserinstitute Hochschule Mittweida

16:30 **Synthesis of Vanadium oxides by Pulsed Laser Deposition and Rapid Thermal Annealing** **V P3.22**
Erieta-Katerina Koussi, Florent Bourquard, Teddy Tite, Florence Garrelie, Yves Jourlin
Université de Lyon, Université Jean Monnet-Saint-Étienne, CNRS, Institut d'Optique Graduate School, Laboratoire Hubert Curien UMR 5516, F-42023, Saint-Étienne, France

16:30 **Silver nanoparticles synthesized by laser ablation in isopropanol: extraordinarily stability** **V P3.23**
Maria Chiara Sportelli (a,b), Maurizio Clemente (a), Margherita Izzi (a), Annalisa Volpe (b), Antonio Ancona (b), Rosaria Anna Picca (a,c), Gerardo Palazzo (a,c), Nicola Cioffi (a,c)
(a) Chemistry Department, University of Bari "Aldo Moro", via E. Orabona 4, 70126, Bari, Italy, (b) IFN-CNR, Physics Department "M. Merlin", via Amendola 173, 70126, Bari, Italy, (c) CSGI (Center for Colloid and Surface Science) c/o Dept. Chemistry, via Orabona 4, 70125, Bari, Italy.

16:30 **Conductive Polyaniline Micro-Patterns Assembly by a Photo-Induced Microbubble** **V P3.24**
Eitan edri, Nina Armon, Udi Greenberg and Hagay Shpaisman
Bar-Ilan University, Department of Chemistry and Institute for Nanotechnology and Advanced Materials, Ramat Gan 5290002, Israel.

16:30 **Strain engineering and heavy doping of epitaxially grown Ge-on-Si by pulsed laser melting** **V P3.25**
E. Napolitani(1), R. Milazzo(1), A. Ballabio(2), J. Frigerio(2), Y. Hou(3), M. Scuderi(4), K. Gallacher(5), R. Millar(5), V. Giliberti(6), L. Baldassarre(6), F. Mazzamuto(7), K. Huet(7), M. Ortolani(6), D.J. Paul(5), G. Nicotra(4), G. Capellini(3,8), and G. Isella(2)
(1) Dipartimento di Fisica e Astronomia, Università di Padova and CNR-IMM, Via Marzolo 8, I-35131 Padova, Italy, (2) L-NESS, Dipartimento di Fisica, Politecnico di Milano, Polo di Como, Via Anzani 42, I-22100 Como, Italy, (3) IHP, Im Technologiepark 25, D-15236 Frankfurt (Oder), Germany (4) IMM-CNR, Z. I. VIII Strada 5, I-95121 Catania, Italy (5) School of Engineering, University of Glasgow, Rankine Building, Oakfield Avenue, Glasgow G12 8LT, United Kingdom, (6) Dipartimento di Fisica, Sapienza Università di Roma, Piazzale Aldo Moro 5, I-00185 Rome, Italy (7) Laser systems and solutions of Europe (LASSE), SCREEN Semiconductor Solutions Co., Ltd., 14-38 rue Alexandre, Bldg D, 92230 Gennevilliers, France, (8) Dipartimento di Scienze, Università degli Studi Roma Tre, I-00154 Roma, Italy

16:30 **Controllable spatial array of optical Bessel vortices with independent axial intensity distributions for laser microprocessing** **V P3.26**
Sergej Orlov, Paulius Šlevas, Pavel Gotovski, Justas Baltrukonis, Vytautas Jukna, Orestas Ulčinas, Titas Gertus
State research institute Center for Physical Sciences and Technology, Industrial Laboratory for Photonic Technologies, Sauletekio ave 3, LT-10222, Vilnius, Lithuania

16:30 **Synthesis of titanium oxide based materials for photocatalysis device produced by pulsed laser deposition** **V P3.27**
Satoshi Kurumi, Kaoru Suzuki
Nihon University

16:30 **Laser fabrication of black copper surfaces to reduce the optical reflectivity and secondary electron yield** **V P3.28**
Pierre Lorenz1, Marcel Himmerlich2, Martin Ehrhardt1, Mauro Taborelli2, Béla Hopp3, Klaus Zimmer1
1 Leibniz Institute of Surface Engineering (IOM), Permoserstraße 15, 04318 Leipzig, Germany 2 CERN, European Organization for Nuclear Research, 1211 Geneva 23, Switzerland 3 University of Szeged, Dóm tér 9, Szeged 6720, Hungary

16:30 **Laser-induced melting and reshaping of µm- and sub-µm pre-structured chromium layers: experiment and theory** **V P3.29**
Pierre Lorenz1, Michael Klöppel-Gersdorf2, Igor Zagoranskiy1, Martin Ehrhardt1, Frank Frost1, Klaus Zimmer1
1 Leibniz Institute of Surface Engineering (IOM), Permoserstraße 15, 04318 Leipzig, Germany, 2 Fraunhofer-Institut für Verkehrs- und Infrastruktursysteme IVI, Zeunerstraße 38, 01069 Dresden

16:30 **Laser impulse transfer measurements and real-time targeting system** **V P3.30**
M. Barbuta1, A. Marcu2, F.Dumitrache2, C.Fleaca2, R.Ungureanu2, A. Achim2, C.Diplasu2, G.Giubega2, M.Serbanescu2
1Faculty of Applied Sciences, "Politehnica" University, Splaiul Independentei nr. 313, 060042 Bucharest, Romania 2 Center for Advanced Laser Technologies (CETAL), National Institute for Laser, Plasma and Radiation Physics (INFLPR), Atomistilor 409, Magurele 077125, Romania.

16:30 **Fabrication of periodic patterns on titanium using direct laser interference lithography** **V P3.32**
D. Kuczynska-Zemla (1), P. Kwasniak (1), M. Pisarek (2), A. Chlanda (1), M. Spychalski (1), R. Ostrowski (3), A. Rycyk (3), H. Garbacz (1)
(1) Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland, (2) Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland, (3) Institute of Optoelectronics, Military University of Technology, Warsaw, Poland

16:30 **Mechanistic investigation of the cellular uptake of nano-silver using AgAu alloy nanoparticles** **V P3.33**
Christoph Rehbock, Frederic Stein, Stephan Barcikowski, Meike Stiesch
Technical Chemistry I, University of Duisburg-Essen, Essen, Germany, christoph.rehbock@uni-due.de , Technical Chemistry I, University of Duisburg-Essen, Essen, Germany, frederic.stein@uni-due.de , Technical Chemistry I, University of Duisburg-Essen, Essen, Germany, stephan.barcikowski@uni-due.de , Department of Prosthetic Dentistry and Biomedical Materials Science, Hannover Medical School, Hannover, Germany, stiesch.Meike@mh-hannover.de

16:30 **Atomistic simulation of laser ablation of silicon** **V P3.34**
LN Kolotova, SV Starikov
Joint Institute for High Temperatures of the Russian Academy of Sciences

16:30 **Surface Metallization of AlN substrates with Mo thin films by pulsed laser deposition** **V P3.35**
Z. Harajli, M. Soueidan, D. Fabregue, Z. Herro, M. Tabbal
Materials Science and Engineering Department, INSA Lyon, 25 Avenue Jean Capelle 69621 Villeurbanne, France, Department of Physics, Lebanese University Faculty of Sciences 2, P.O. Box 90656, Jdeidet El-Metn, Lebanon, Lebanese Atomic Energy Commission - CNRS, Airport Road, PO Box 11-8281, Beirut, Lebanon, Department of Physics, American University of Beirut, Bliss St., P.O. Box: 11-0236, Beirut, Lebanon,

16:30 **Molecular dynamics simulation of the thermophysical properties of copper in a wide range of temperature and pressure** **V P3.36**
A.V. Mazhukin, V.I. Mazhukin, M.M. Demin, A.V. Shapranov, A.A. Aleksashkina
Keldysh Institute of Applied Mathematics of RAS, National Research Nuclear University MEPhI

16:30 **PULSED LASER DEPOSITION IN MAGNETIC FIELD AS A ROUTE FOR FABRICATION OF ORIENTED COMPOSITE NANOWIRES** **V P3.37**
Ru.G. Nikov1,*, A.Og. Dikovska1, S. Amoruso2,3, G. Ausanio2,3, N.N. Nedyalkov1
1 Institute of Electronics, Bulgarian Academy of Sciences 72 Tsarigradsko Chaussee, 1784 Sofia, Bulgaria 2 Dipartimento di Fisica, Università di Napoli Federico II, Via Cintia I-80126 Napoli, Italy 3 CNR-SPIN UOS Napoli, Via Cintia I-80126 Napoli, Italy

16:30 **Large area, short wavelength processing system with high depth control** **V P3.38**
Ralph Delmdahl, Jean-Luc Tapié, Matthias Trenn, Arnold Gillner
Coherent LaserSystems GmbH & Co. KG, Hans-Boeckler-Str. 12, Goettingen, Germany, Fraunhofer ILT, Steinbachstr. 15, 52074 Aachen, Germany

16:30 **Micro-Nano-structured Surface by Ultra-fast Laser Processing** **V P3.39**
JyotsnaDutta Majumdar1**, Renu Kumari1,2+, Wilhelm Pfleging3,5*,Heino Besser3
#1Dept. of Metal. & Maters. Eng., I. I. T. Kharagpur, W. B. &#8211, 721302 2Dept. of Metal. & Maters. Engg., NIT, Jamshedpur, Jharkhand 3 Karlsruhe Institute of Technology, IAM-AWP, P.O. Box 3640, 76021 Karlsruhe, Germany 5 Karlsruhe Nano Micro Facility, H.-von-Helmholtz-Pl. 1, 76344 Egg.-Leopoldshafen, Germany

16:30 **Acetylcholinesterase-Polyethylenimine hybrid and multilayered interfaces obtained by laser method for DMMP and DIMP detection** **V P3.40**
Valentina Dinca1, Cristian Viespe1, Nicu Scarisoreanu1, Simona Brajnicov1, Izabela Constantinoiu1, Laurentiu Rusen1, Toader Constantin Nicolae2, Maria Dinescu1
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele RO, Bucharest, Romania 2 Scientific Research Center for CBRN Defense and Ecology, Bucharest, Romania

16:30 **Photo-Induced Heat Generation in Non-Plasmonic Nanoantennas** **V P3.41**
Stefano Danesi, Marco Gandolfi, Luca Carletti, Nicolò Bontempi, Costantino De Angelis, Francesco Banfi, Ivano Alessandri.
INSTM-UdR Brescia, via Branze 38, 2513 Brescia, Italy Department of Mechanical and Industrial Engineering, via Branze 38, 2513 Brescia, Italy Interdisciplinary Laboratories for Advanced Materials Physics (I-LAMP), Via Musei 41, 25121 Brescia, Italy Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Via Musei 41, 25121 Brescia, Italy Laboratory of Soft Matter and Biophysics, Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium Department of Information Engineering, University of Brescia, via Branze 38, 2513 Brescia, Italy INO-CNR, via Branze 38, 2513 Brescia, Italy

16:30 **Femtosecond laser and electrochemical treatment of titanium alloys for medical application in miniaturized leadless pacemakers** **V P3.42**
J. Bonse (1), C. Plamadeala (2), P. Fosodeder (2), M. Muck (2), O. Armbruster (2), H. Habibzadeh (2), W. Baumgartner (3), A. Weth (3), C. Steinwender (4), H. Blessberger (4), J. Kellermair (4), S. V. Kirner (1), J. Krüger (1), A. Shaukat Lone (5), A. W. Hassel (5), J. Heitz (2)
(1) Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany, (2) Institute of Applied Physics, Johannes Kepler University Linz, Austria, (3) Institute of Biomedical Mechatronics, Johannes Kepler University Linz, Austria, (4) Department of Cardiology, Kepler University Hospital Linz, Austria, (5) Christian Doppler Laboratory for Combinatorial Oxide Chemistry (at ICTAS), Johannes Kepler University Linz, Austria

16:30 **Fabrication of colloidal water solution of silver nanoparticles using femtosecond laser ablation in view of ophthalmological app** **V P3.43**
A. S. Nikolov (1), E. Iordanova (2), G. Yankov (2), N. E. Stankova (1), K. Tz. Koev (1, 3), N. N. Nedyalkov (1), L. A. Avramov (1), D. B. Karashanova (4)
(1) Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee, 1784 Sofia, Bulgaria, (2) Institute of Solid State Physics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee, 1784 Sofia, Bulgaria, (3) Chair of Emergency Medicine, Department of Ophthalmology, Medical University □ Sofia, 8 Bjalo More str., 1000 Sofia, Bulgaria, (4) Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, Acad. G. Bonchev street, bl. 109, 1113 Sofia, Bulgaria,

16:30 **Comparative Raman study of graphene growth from solid carbon source on Si (100) and SiO2 substrates by combining pulsed laser de** **V P3.44**
Yannick Bleu, Florent Bourquard, Anne-Sophie Loir, Christophe Donnet, Florence Garrelie
Université de Lyon, Université Jean Monnet-Saint-Etienne, CNRS, Institut d'Optique Graduate School, Laboratoire Hubert Curien UMR 5516, F-42023, SAINT-ETIENNE, France

16:30 **Laser dewetting behaviors of Ag and Au thin films on glass and Si substrates: experiments and theoretical considerations** **V P3.45**
Harim Oh, Minseok Seo, Jaeyong Kim, Junho Lee, Myeongkyu Lee*
Yonsei university

16:30 **Laser-induced dewetting of metal thin films for template-free plasmonic color printing** **V P3.46**
Harim Oh, Minseok Seo, Jaeyong Kim, Junho Lee, Myeongkyu Lee*
Yonsei university

16:30 **W&V Titania nanocomposites photocatalytic efficiency improvement through laser pyrolysis synthesis** **V P3.47**
Alina Ilie 1, Monica Scarisoreanu 1, Claudiu Fleaca 1, Ana-Maria Banici 1 , Lavinia Gavrila-Florescu1, Elena Dutu 1, Florian Dumitrache 1, Valentin Teodorescu2, Anca Vasile3, Ioan Balint 3
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania
2 National Institute of Materials Physics, Magurele, Romania 3 Romanian Acad, Inst Phys Chem Ilie Murgulescu, 202 Spl Independentei, Bucharest 060021, Romania

16:30 **Platinum-seeding protocols for pristine and nitrogen-doped nanocarbons produced via laser pyrolysis for fuel cell applications** **V P3.48**
A. Tiliakos1, C. Fleaca1, L. Gavrila-Florescu1, I.P. Morjan, A. Marinoiu2, E. Tanasa3, F. Dumitrache1
1. National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Str., PO Box MG-36, Magurele, Ilfov, Romania 2. National Research and Development Institute for Cryogenic and Isotopic Technologies, ICSI Rm. Valcea, 4 Uzinei Street, Ramnicu Valcea, Valcea, Romania 3. Politehnica" University of Bucharest, Faculty of Applied Chemistry and Materials Sciences, 1-7 Gh. Polizu Str., Bucharest, Romania

16:30 **Diagnostics of the laser-modified structure of Cd1-xMnxTe crystals surface using electron channeling images in SEM** **V P3.49**
Strebezhev V.M., Yuriychuk I.M., Strebezhev V.V, Bondarenko D.V., Danigevych O.R.
Physical, Technical and Computer Sciences Institute, Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine

16:30 **Iron-based nanoparticles/halloysite nanotubes filled alginate beads for hyperthermia drug delivery** **V P3.50**
Fleaca C., Dumitrache F., Lungu I., Badoi A., Banita S.
NILPRP, Atomistilor 409, Magurele-Bucharest, Romania

16:30 **Characterization of active materials based on functionalized carbon nanowalls for sensing applications** **V P3.51**
A.F. Bonciu1,2, E. Sirjita1,2, S. Vizireanu1, G. Dinescu1, A. Palla-Papavlu1,*, M. Dinescu1
1) National Institute for Lasers, Plasma and Radiation Physics, Magurele, Bucharest, 077125, Romania, 2) University of Bucharest, Faculty of Physics, RO 077125, Magurele, Romania *Corresponding author: alexandra.papavlu@inflpr.ro

16:30 **Pulse duration dependence of ultrafast-laser-induced modifications in silicon at 1.55 µm wavelength** **V P3.52**
Amlan Das1, Andong Wang1, Mario Garcia-Lechuga1, Olivier Utéza1, Jan Siegel2, David Grojo1
1Aix-Marseille Université, CNRS, LP3, UMR 7341-13288 Marseille, France, 2Laser Processing Group, Instituto de Optica, Consejo Superior de Investigaciones Científica (IO-CSIC), Serrano 121, 28006 Madrid, Spain

16:30 **THE EFFECT OF LIGHT IRRADIATION ON THE GAS-SENSING PROPERTIES OF NANOCOMPOSITES BASED ON ZnO AND NOBLE-METAL NANOPARTICLES** **V P3.53**
T. Dilova1, G. Atanasova1, A. Og. Dikovska2, N. N. Nedyalkov2
1Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Acad. G. Bonchev str., bl. 11, 1113 Sofia, Bulgaria, 2Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee, Sofia 1784, Bulgaria

16:30 **Prototype cranial mesh prostheses produced by laser additive manufacturing** **V P3.54**
D. Chioibasu, A. C. Popescu
Center for Advanced Laser Technologies - CETAL, National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania

16:30 **Polymer-Imprinted Computer Generated Holograms for Security Applications** **V P3.55**
Joo Yeon Kim1*, Seung-Yeol Lee2, Chi Young Hwang1, Sanghoon Cheon1, SeongMok Cho1, Tae Youb Kim1and Chi-Sun Hwang1
1Reality Display Research Section, Electronics and Telecommunications Research Institute (ETRI), Daejeon 34129, Korea 2School of Electronics Engineering, Kyungpook National University, Buk-gu, Daegu 41566, Korea

Tuesday 28 may 2019

Pulsed laser deposition : Maria Dinescu

08:30 INV **Atomically Controlled Complex Oxide Growth by Pulsed Laser Deposition** V 4.1
Guus Rijnders
MESA+ Institute for Nanotechnology, University of Twente, POBox 217, 7500AE, Enschede, The Netherlands

09:00 **Pulsed laser deposition of CdS/ CuIn0.7Ga0.3Se2/ Mo multi-layer structure for thin film solar cells** V 4.2
Ch.Nicolaou1a, A. Zacharia2, A. Delimitis3, G. Itskos2, and J. Giapintzakis1b
1 Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Av., PO Box 20537, 1678 Nicosia, Cyprus, 2 Experimental Condensed Matter Physics Lab, Department of Physics, University of Cyprus, 75 Kallipoleos Av., PO Box 20537, 1678 Nicosia, Cyprus, 3 Department of Mechanical and Structural Enginering and Materials Science, University of Stavanger, N-4036 Stavanger, Norway

09:15 **Pulsed Laser Co-Deposition of Carbon and Boron for Boron-doped Graphene Synthesis** V 4.3
Yannick Bleu (1), Florent Bourquard (1), Vincent Barnier (2), Anne-Sophie Loir (1), Florence Garrelie (1), Christophe Donnet (1)
(1) Université de Lyon, Université Jean Monnet-Saint-Étienne, CNRS, Institut d'Optique Graduate School, Laboratoire Hubert Curien UMR 5516, F-42023, Saint-Étienne, France , (2) Mines Saint-Etienne, Univ Lyon, CNRS, UMR 5307 LGF, Centre SMS, F - 42023 Saint-Étienne France

09:30 **Dynamics of a V-shape plasma produced by excimer laser ablation of graphite** V 4.4
Cristian Ursu, Bogdan George Rusu, Mihaela Olaru, Petru Edward Nica, Cristian Focsa
Laboratory of Polymeric Materials Physics, "Petru Poni" Institute of Macromolecular Chemistry, 41 A Gr. Ghica Voda Alley, Iasi 700487, Romania, Department of Physics, "Gheorghe Asachi" Technical University, Iasi, 700050, Romania, Univ. Lille, CNRS, UMR 8523, PhLAM – Physique des Lasers, Atomes et Molécules, CERLA – Centre d'Etudes et de Recherches Lasers et Applications, F-59000 Lille, France

09:45 **Coffee break**

10:30 INV **Plasma mirrors for high power laser experiments** V 4.5
M.O. Cernaianu*, P. Ghenuche*, D. Ursescu*, Y. Hayashi**, H. Habara**, F. Negoita*, D. Stutman* and K. A. Tanaka*
* - Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH) – Extreme Light Infrastructure – Nuclear Physics (ELI-NP), Bucharest-Magurele, Romania ** - Graduate School of Engineering, Osaka University, Osaka, Japan

11:00 **Controlled Europium luminescent emission enhancement by noble metal nanostructured surfaces prepared by PLD** V 4.6
E. Soria [1,2], A. Mariscal [1], J. Gonzalo [1], R. Serna [1]
[1] Laser Processing Group, Instituto de Optica, IO-CSIC, Serrano 121, 28006 Madrid, Spain, [2] SAFTRA Photonics, Jesenná 5, 040 01 Košice Slovakia.

11:15 **Plenary Session 1**

12:30 **Lunch**

Laser interactions with soft materials and biological applications : Johannes Pedarnig

14:00 INV **Road to ultra-low switching Energy Memories to artificial neurons** V 5.1
T. Venkatesan*, Sreetosh Goswami*, Li Changjian*, Chen Jingsheng*, Abhijeet Patra*, Viknish Krishnan Kutty* and Sreebrata Goswami**
* NUSNNI, T-Labs Building, National University of Singapore, Singapore 117411
**Association for Cultivation of Sciences, Jadavpur Kolkata, India 700032

14:30 **Biocompatible biological-derived hydroxyapatite coatings with antimicrobial activity** V 5.2
L. Duta1, M.C. Chifiriuc2,3, G.E Stan4, F.N. Oktar5,6, V. Craciun1
1National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania 2Department of Microbiology, Faculty of Biology, University of Bucharest, Bucharest, Romania 3Research Institute of the University of Bucharest (ICUB), Earth, Environmental and Life Sciences Division, Bucharest, Romania 4National Institute of Materials Physics, Magurele, Romania 5Department of Bioengineering, Faculty of Engineering, University of Marmara, Istanbul, Turkey 6Advanced Nanomaterials Research Laboratory (ANRL), University of Marmara, Istanbul, Turkey

14:45 **Nanostructure and Mechanism of Metal Deposition by Laser Induced Photo-Thermal Reduction** V 5.3
Ehud Greenberg, Nina Armon , Hagay Shpaisman
Department of Chemistry and Institute for Nanotechnology and Advanced Materials, Bar-Ilan University, Ramat Gan 5290002, Israel

15:00 **Laser nanostructuring of PEDOT:PSS and its influence on the electrical properties** V 5.4
E. Gutiérrez1, I. Gabaldón2, M.C. García-Gutiérrez1, A. Nogales1, A. Rodríguez-Rodríguez1, A. Cirera2, A. Varea2, A. Vilà2, T.A. Ezquerra1, E. Rebollar3
1Instituto Estructura de la Materia (IEM-CSIC), Serrano 121, 28006 Madrid, Spain, 2Departament d'Enginyeries: Electrònica, IN2UB-Universitat de Barcelona, 08028 Barcelona, Spain, 3Instituto de Química-Física Rocasolano (IQFR-CSIC), Serrano 119, 28006 Madrid, Spain

15:15 **Fabrication of hierarchical structures by LIPSS formation on pre-patterned polymer** V 5.5
Martin Ehrhardt1, Shengying Lai1,2, Pierre Lorenz1, Joachim Zajadacz1, Bing Han3, Klaus Zimmer1*
1 Leibniz Institute of Surface Engineering (IOM), Leipzig 04318, Germany 2 School of Science, Nanjing University of Science & Technology, Nanjing 210094, P.R. China 3 Advanced Launching Co-innovation Center, Nanjing University of Science & Technology, Nanjing 210094, P.R. China *E-mail: klaus.zimmer@iom-leipzig.de

15:30 **Coffee break**

16:00 **Growth of poly-GeSn thin-film on glass substrates by green CW laser annealing** V 5.6
Ryo Matsumura, Wipakorn Jevasuwan, Naoki Fukata
International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS)

16:15 **Influence of the deposition parameters on the properties of silicon carbide thin films grown by PLD** V 5.7
Karima Tabakkouht, Mohamed Oujja, Mikel Sanz, Esther Rebollar, María Sánchez-Arenillas, J. F. Marco, Marta Castillejo, Rebeca de Nalda
Instituto de Química Física Rocasoalno, Consejo Superior de Investigaciones Científicas, C/ Serrano 119, 28006 Madrid

Laser ablation in liquids and nanoparticles formation : Stephan Barcikowski

08:30 INV **Dynamics of laser-induced cavitation bubbles at a solid-liquid interface** — V 6.1
David Amans (1), Tim Hupfeld (2), Gaétan Laurens (1), Samy Merabia (1), Stephan Barcikowski (2), and Bilal Gökce (2)
1- Univ Lyon, Université Claude Bernard Lyon 1, CNRS, Institut Lumière Matière, F-69622 Lyon, France 2- Technical Chemistry I and Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Universitaetsstrasse 7, 45141 Essen, Germany

09:00 **Laser synthesis of transition-metal carbide by short and ultra-short laser ablation in liquid** — V 6.2
A. De Bonis, A. Galasso, A. Santagata, R. Teghil
A. De Bonis, A. Galasso, R. Teghil Dipartimento di Scienze, Università della Basilicata, Potenza, Italy A. Santagata UOS Potenza, CNR-ISM, Tito Scalo (PZ), Italy

09:15 **High yield one step laser synthesis of core-shell Fe-Au nanoparticles is influenced by target composition and nanoparticle size** — V 6.3
A.Tymoczko1, M. Kamp2, C. Rehbock1, U.Schürmann2, O. Prymak1, L. Kienle2, S. Barcikowski1,
1 University of Duisburg-Essen, Technical Chemistry I and Center for Nanointegration Duisburg-Essen (CENIDE), Universitätsstr. 7, 45141 Essen, Germany 2 University of Kiel, Technical Department, Synthesis and Real structure, TEM- Centrum, Kaiserstr. 2, 24143 Kiel

09:30 **Laser synthesis of nanocomposites for laser-based 3D Printing** — V 6.4
Bilal Gökce, Tim Hupfeld, René Streubel, Michael Schmidt, Johannes Henrich Schleifenbaum, Stephan Barcikowski
Technical Chemistry I, University of Duisburg-Essen, Germany, Technical Chemistry I, University of Duisburg-Essen, Germany, Technical Chemistry I, University of Duisburg-Essen, Germany, Department of Photonic Technologies, University of Erlangen-Nuremberg, Germany, Digital Additive Production, RWTH Aachen University, Germany, Technical Chemistry I, University of Duisburg-Essen, Germany,

09:45 **Coffee break**

10:30 INV **Comprehensive view on nonlinear energy deposition and hydrodynamic effects in large-band-gap materials** — V 6.5
Alfred Vogel, Xiao-Xuan Liang, Sebastian Freidank, and Norbert Linz
University of Lübeck

11:15 **Multicomponent Hybrid Nanosystems for Photodynamic Therapy** — V 6.6
N.Kutsevol, A.Naumenko, V.Chekhun
N.Kutsevol, A.Naumenko - Taras Shevchenko National University of Kyiv, Kyiv, Ukraine V.Chekhun - R.E. Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology, National Academy of Sciences of Ukraine, Kyiv, Ukraine

11:30 **Role of solvent in composite particles formation during pulsed laser irradiation process** — V 6.7
Zaneta Swiatkowska-Warkocka1, Tatiana Itina2, Alexander Pyatenko3, Naoto Koshizaki4, Marta Wolny-Marszalek1
1. Institute of Nuclear Physics, Krakow, 31-342, Poland, 2. Laboratoire Hubert Curien, 42000 Saint-Etienne. France, 3. National Institute of Advanced Industrial Science and Technology, Tsukuba, 305-8565, Japan, 4. Hokkaido University, Sapporo, 060-8628, Japan.

11:45 **Synthesis of multi-color luminescent ZnO nanoparticles by short and ultra-short pulsed laser ablation** — V 6.8
P. Camarda, L. Vaccaro, A. Sciortino, F. Messina, G. Buscarino, S. Agnello, F.M. Gelardi, M. Cannas
University of Palermo, Department of Physics and Chemistry, via Archirafi 36, I-90123, Palermo, Italy

12:00 **Lunch**

Diagnostics : Mihaela Filipescu

14:00 INV **Laser Ablation of Metals in Organic Solvents: Carbonization for Core-shell Structure and Its Electrochemical Applications** — V 7.1
Changhao Liang, Dongshi Zhang, Chao Zhang, Jun Liu
Institute of Solid State Physics, Hefei Institutes of Physical Science, Chinese Academy of Sciences, Hefei 230031, China

14:30 **Cu nanoparticles by laser ablation in liquids: Synthesis, characterization and antibacterial activity** — V 7.2
Mónica Fernández1, Jesús del Val1, Mohamed Boutinguiza1, Antonio Riveiro1, Rafael Comesaña2, Fernando Lusquiños1, Cristian Covarrubias3, Fabiola Bastias3, Leyla Gómez4, Juan Pou1
1.Applied Physics Department, University of Vigo, Spain. 2.Materials Eng., Applied Mech., and Construction Dpt., University of Vigo, Spain. 3.Laboratory of Nanobiomaterials, Institute for Research in Dental Sciences, Faculty of Dentistry, University of Chile, Independencia, Santiago, Chile 4.Laboratory of Microbiology, Department of Patology, Faculty of Dentistry, University of Chile, Independencia, Santiago, Chile

14:45 **Quantized Electronic Doping Towards Atomically Controlled 'Charge-Engineered' Semiconductor Nanocrystals** — V 7.3
Valerio Pinchetti,1 Chiara Capitani,1,2 Graziella Gariano,2 Carlo Santambrogio,3 Mirko Prato,4 Rosaria Brescia,4 Andrea Camellini,5 Abhinav Anand,1 Margherita Zavelani-Rossi,5 Francesco Meinardi,1 Scott A. Crooker,6 & Sergio Brovelli1
1 Dipartimento di Scienza dei Materiali, Università degli Studi di Milano – Bicocca, Via R. Cozzi 55, I-20125, Milano, Italy, 2 Glass to Power SpA, Via F. Daverio 6, I-20135, Milano, Italy, 3 Dipartimento di Scienze dell'Ambiente e del Territorio e di Scienze della Terra, Università degli Studi Milano-Bicocca, Piazza della Scienza, I-20125 Milano, Italy, 4 Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy, 5 Dipartimento di Energia, Politecnico di Milano and IFN-CNR, Milano, Italy. 6 National High Magnetic Field Laboratory, Los Alamos National Laboratory, Los Alamos, New Mexico, 87545, United States.

15:00 **Space-and time-resolved plasma diagnostics of transient plasmas generated by short and ultra-short laser ablation** — V 7.4
S.A. Irimiciuc1, S. Gurlui2, P. Nica3, B. Hodoroaba4, M. Agop3, C. Focsa5
1National Institute for Laser, Plasma and Radiation Physics – NILPRP, 409 Atomistilor Street, Bucharest, Romania 2Faculty of Physics, Atmosphere Optics, Spectroscopy and Lasers Laboratory "Alexandru Ioan Cuza" University of Iasi, 700506 Iasi, Romania 3Department of Physics, "Gh. Asachi" Technical University, 700050 Iasi, Romania 4University of Bucharest, Faculty of Physics, Bucharest – Magurele, Romania 5Univ. Lille, CNRS, UMR 8523 - PhLAM - Physique des Lasers, Atomes et Molécules, F-59000 Lille, France

15:15 **Surface plasmon polaritons and periodic heating of metals** — V 7.5
P.N. Terekhin (1, 2), P.D. Ndione (1), S.T. Weber (1), B. Rethfeld (1)
1 - Department of Physics and OPTIMAS Research Center, Technische Universität Kaiserslautern, Erwin-Schroedinger-Strasse 46, 67663 Kaiserslautern, Germany 2 - National Research Centre "Kurchatov Institute", Kurchatov Sq. 1, 123182 Moscow, Russia

15:30 **Coffee break**

16:00 **Laser ablation and plasma spectroscopy of soft rubber: Influence of sample thickness on ablation rate and emission intensity** — V 7.6
Stefan Trautner (1), Chantal Zeppenfeld (1), Gerald Schwödiauer (1), Wolfgang Spendelhofer (2), Johannes Lackner (2), Johannes D. Pedarnig (1)
(1) Institute of Applied Physics, Johannes Kepler University, 4040 Linz, Austria, (2) KRAIBURG Austria GmbH & Co. KG, 5132 Geretsberg, Austria

16:15 **Laser assisted development of Transition Metal Dichalcogenide based nanomaterials indicatively for field electron emission appli** — V 7.7
Kyriaki Savva, Bojana Višić, Ronit Popovitz-Biro, Athanasia Kostopoulou, Christina Lanara, Emmanuel Stratakis and Reshef Tenne
Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 71110 Heraklion, Physics Department, University of Crete, Heraklion, 71004 Crete, Greece Weizmann Institute of Science, 7610001 Rehovot, Israel

19:00 **Graduate Student Award ceremony followed by the social event**

Laser writing of materials and applications : Alexandra Palla-Papavlu

08:30 INV **Developing by laser synthesis SERS-based sensors for drug detection** — V 8.1
P.M. Ossi
Dipartimento Energia, Politecnico di Milano, via Ponzio 34-3, 20133 Milano Mi, Italy

09:00 **Spatially controlled laser induced reactions: a novel dry chemistry** — V 8.2
V. H. Nguyen, C. Masse de la Huerta, S. Quessada, L. A. Angurel, L. C. Estepa, G. F. de la Fuente, D. Muñoz-Rojas
Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, F-38000 Grenoble, France. ICMA(CSIC-Univ. Zaragoza), 50018, Zaragoza, Spain

09:15 **Double pulse experiment with dielectrics: From basic mechanisms to enhanced ablation efficiency** — V 8.3
Stéphane Guizard (1), Allan Bildé (2), Ahmed Maghraoui (1), Alexandros Mouskeftaras (3), Willem Boutu (1), Hamed Merdji (1).
1: Laboratoire Interactions Dynamique Lasers, CEA Saclay, 91191 Gif Sur Yvette France, 2: Laboratoire des Solides Irradiés, CEA/CNRS/Ecole Polytechnique, 91118 Palaiseau,France, 3: Aix-Marseille University, CNRS, LP3, Marseille 13009, France.

09:30 **Improving the high temperature oxidation resistance of Ti-beta21S alloy by laser shock peening** — V 8.4
A. KANJER1, K. CHEVEAU1, L. LAVISSE1, P. PEYRE2, C. GORNY2, P. BERGER3, A. TIDU4, C. SHUMAN4, V. OPTASANU1, T. MONTESIN1, M.C. MARCO DE LUCAS1
1 Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB), UMR 6303 CNRS-Université Bourgogne Franche-Comté (UBFC), 9 Av. A. Savary, BP 47 870, F-21078 Dijon Cedex, 2 Laboratoire PIMM, UMR 8006 CNRS/Arts & Métiers ParisTech, 151 Bd Hôpital, F-75013 PARIS, 3 NIMBE, CEA, CNRS, Université Paris-Saclay, CEA-Saclay, F-91191 Gif sur Yvette, 4 LEM3-UMR-CNRS 7239, 7 rue Félix Savart, BP 15082, F-57013 Metz Cedex 03

09:45 **Coffee break**

10:30 INV **Pulsed Lasers and Metal Oxide Semiconductors: the synergy for new applications** — V 8.5
Paloma Fernández
Dept. Physics of Materials, Faculty of Physics, University Complutense

11:00 **Laser-induced forward transfer of conductive screen-printing inks** — V 8.6
P. Sopeña (1,2), J.M. Fernández-Pradas (1,2), P. Serra (1,2)
(1) Department of Applied Physics, Universitat de Barcelona, Martí i Franquès 1, 08028, Barcelona, Spain (2) Institute of Nanoscience and Nanotechnology (IN2UB), Universitat de Barcelona, Av. Diagonal 645, 08028, Barcelona, Spain

11:15 **The photoelectrochemical response of Eu doped BiFeO3 thin films deposited by PLD** — V 8.7
I. Boerasu1, R. Birjega1, N.D. Scarisoreanu1, M. Dinescu1, N. Enea1, V. Ion1, V. Leca2
1National Institute for Laser, Plasma and Radiation Physics, Magurele, Romania, 2 Extreme Light Infrastructure - Nuclear Physics, Horia Hulubei National Institute for Physics and Nuclear Engineering, Magurele, Ilfov, Romania

11:15 **Plenary Session 2**

11:30 **Polarization independent geometrical phase elements inscribed in the glass by femtosecond laser pulses** — V 8.9
Sergej Orlov, Pavel Gotovski, Paulius Šlevas, Justas Baltrukonis, Vytautas Jukna, Orestas Ulčinas, Titas Gertus
Center for Physical Sciences and Technology, Industrial laboratory for photonic technologies, Sauletekio ave 3, LT-10257 Vilnius, Lithuania

11:45 **Laser induced melting and solidification dynamics of bismuth nanoparticles embedded in alumina** — V 8.10
Miguel Alvarez1, Marina Garcia1, Fatima Cabello1, Emmanuel Haro-Poniatowski2, Rosalia Serna1, and Jan Siegel1
1. Laser Processing Group, Instituto de Óptica, IO-CSIC, Serrano 121, 28006 Madrid, Spain 2. Departamento de Física, 2 Departamento de Química, Universidad Autónoma Metropolitana Iztapalapa, Av. San Rafael Atlixco No. 186, Col. Vicentina, C.P. 09340, México D. F. México

12:00 **Lunch**

Laser induced periodic structures : Esther Rebollar

14:00 **Ultrafast dynamics of phase transition in Chalcogenide Phase-Change Materials** — V 9.1
P. Martinez, J. Gaudin, I. Papagiannouli, V. Blanchet, D. Descamps, C. Fourment, S. Petit, J. Y. Raty, N. Bernier, J.-B. Dory, P. Noé
CEntre Lasers Intenses et Applications, 43 rue Pierre Noailles, 33405 Talence, France , CEntre Lasers Intenses et Applications, 43 rue Pierre Noailles, 33405 Talence, France ,CEntre Lasers Intenses et Applications, 43 rue Pierre Noailles, 33405 Talence, France ,CEntre Lasers Intenses et Applications, 43 rue Pierre Noailles, 33405 Talence, France ,CEntre Lasers Intenses et Applications, 43 rue Pierre Noailles, 33405 Talence, France ,CEntre Lasers Intenses et Applications, 43 rue Pierre Noailles, 33405 Talence, France ,CEntre Lasers Intenses et Applications, 43 rue Pierre Noailles, 33405 Talence, France , Université de Liège, Institut de Physique B,5B-4000 Sart-Tilman, Belgium - Univ. Grenoble Alpes, CEA, LETI, MINATEC Campus, F-38054 Grenoble, France , Univ. Grenoble Alpes, CEA, LETI, MINATEC Campus, F-38054 Grenoble, France , Univ. Grenoble Alpes, CEA, LETI, MINATEC Campus, F-38054 Grenoble, France , Univ. Grenoble Alpes, CEA, LETI, MINATEC Campus, F-38054 Grenoble, France

14:15 **Role of laser wavelength on femtosecond laser ablation of fused silica: fluence threshold and crater topography** — V 9.2
Mario Garcia-Lechuga, Olivier Utéza, Nicolas Sanner, David Grojo
Aix Marseille Université, CNRS, LP3, UMR7341, 13288 Marseille, France

14:30 **Surface-enhanced Raman spectroscopy of graphene integrated with plasmonic black silicon** — V 9.3
M. Kanidi1,2, A. Dagkli3, N. Kelaidis4,5, D. Palles1, S. Aminalragia-Giamini4,6, J. Marquez-Velasco4,7, A. Colli8, A. Dimoulas4, E. Lidorikis3, M. Kandyla1, E.I. Kamitsos1
1Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, 48 Vasileos Constantinou Avenue, 11635 Athens, Greece, 2Department of Material Science, University of Patras, University Campus, 26504 Rio, Greece, 3Department of Materials Science and Engineering, University of Ioannina, 45110 Ioannina, Greece, 4Institute of Nanoscience and Nanotechnology, National Center for Scientific Research 'Demokritos', 15310 Athens, Greece, 5Faculty of Engineering, Environment and Computing, Coventry University, Priory Street, Coventry CV1 5FB, UK, 6Department of Physics, University of Athens, Zografou University Campus, 15784 Athens, Greece, 7Department of Physics, National Technical University of Athens, 9 Iroon Polytechniou st., 15780 Athens, Greece, 8Cambridge Graphene Centre, University of Cambridge, Cambridge CB3 0FA, UK

14:45 **Analysis of multielemental thin films by calibration-free laser-induced breakdown spectroscopy** — V 9.4
Catalin-Daniel Constantinescu [1], Emanuel Axente [2], Frédéric Pelascini [3], Jörg Hermann [4]
[1] University of Limoges / CNRS, SPCTS, 87068 Limoges, France, [2] National Institute for Lasers, Plasma and Radiation Physics, 77125 Măgurele, Ilfov, Romania, [3] Cetim Grand Est, 67305 Schiltigheim, France, [4] Aix-Marseille University / CNRS, LP3, 13009 Marseille, France

15:00 **Influence additional heating on phase structure, resistivity of intermetallic SMA fabricated by SLM process** — V 9.5
Igor Shishkovsky, Vladimir Scherbakov
Igor Shishkovsky - Skolkovo Institute of Science and Technology, Vladimir Scherbakov - Lebedev Physics Institute of RAS

15:15 **Controlled Environment Excimer Laser Annealing (CEELA) – Low-loss materials engineering for IR plasmonics** — V 9.6
J. A. Hillier, D. C. Koutsogeorgis, S. Camelio, P. Patsalas, W. M. Cranton, A. Nabok, N. Kalfagiannis*
School of Science and Technology, Nottingham Trent University, Clifton Lane, Nottingham, NG11 8NS, UK, School of Science and Technology, Nottingham Trent University, Clifton Lane, Nottingham, NG11 8NS, UK, Institut Pprime, Université de Poitiers, TSA 41123, 86073 Poitiers cedex 9, France, Aristotle University of Thessaloniki, Department of Physics, GR-54124 Thessaloniki, Greece, Faculty of Science, Technology and Arts, Sheffield Hallam University, Howard St., Sheffield, S1 1WB, United Kingdom, Faculty of Science, Technology and Arts, Sheffield Hallam University, Howard St., Sheffield, S1 1WB, United Kingdom, School of Science and Technology, Nottingham Trent University, Clifton Lane, Nottingham, NG11 8NS, UK

15:30 **Coffee break**

16:00 **Crystalline orientation vs. dielectric properties of highly tunable Ba2/3Sr1/3TiO3 in metal-insulant-metal (MIM) microcapacitors** **V 9.7**
Michael GAUDIN (1), Pascal MARCHET (1), Laure HUITEMA (2), Aurelian CRUNTEANU (2), Frederic DUMAS-BOUCHIAT (1), Corinne CHAMPEAUX (1), Catalin CONSTANTINESCU (1)
(1) IRCER (UMR 7315) - CNRS / University of Limoges, F-87068 Limoges, France
(2) Xlim (UMR 7252) - CNRS / University of Limoges, F-87060 Limoges, France

16:15 **Oxide formation and period variation of LIPSS on Ti6Al4V: the role of accumulated fluence and repetition rate** **V 9.8**
Noemí Casquero, Miguel Martinez-Calderon, Alejandro San-Blas, Angela Veiga, Mikel Gomez-Aranzadi, Santiago M. Olaizola, Ainara Rodriguez
a CEIT-IK4, Manuel Lardizabal 15, 20018 Donostia / San Sebastián, Spain b Universidad de Navarra, Tecnun, Manuel Lardizabal 13, 20018 Donostia / San Sebastián, Spain

16:30 **Comparison of laser ablation in water and air with different laser classes regarding productivity and economic feasibility** **V P10.2**
S. Stephan, R. Streubel, C. McDonnell, H. P. Huber, S. Barcikowski, B. Gökce
University of Duisburg-Essen, Technical Chemistry I and Center of Nanointegration Duisburg-Essen (CENIDE), Universitaetsstrasse 7, Essen D-45141, University of Applied Sciences Munich, Department of Applied Sciences and Mechatronics, Lothstr. 34, 80335 Munich

16:30 **Designing and manufacturing of sensors based on oxide nanoparticles for pollutants monitoring** **V P10.3**
Alina Irina CĂLUGĂR 1,2, Marius DUMITRU 1, Antoniu MOLDOVAN 1, Mihaela FILIPESCU 1, Maria DINESCU 1
1 The National Institute for LaserS, Plasma & Radiation Physics (INFLPR), Atomistilor Street, No.409,Magurele city, Ilfov county, Postal code: RO-077125, Romania P.O. Box MG-36 2 University of Bucharest, Faculty of Physics, 405 Atomistilor, P.O. BOX MG-11, 077125, Magurele, Ilfov, Romania

16:30 **Plasmonic behavior of nanocomposites of fluoride with metal nanoparticles fabricated by pulsed laser deposition and evaporation** **V P10.4**
S. Chertopalov, T. Zikmund, J.Bulíř, M. Novotný, E. Marešová, L. Volfová, J. Lančok
Institute of Physics of CAS, Na Slovance 2, Prague, 18221, Czech Republic

16:30 **Excimer laser annealing of thermally evaporated SnSb4S7 thin films: Optical and structural properties** **V P10.5**
N. Khemiri, D. Abdelkader, F. Antoni, M. Kanzari
Université Tunis El Manar, Ecole Nationale d'Ingénieurs de Tunis, Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs, BP37, 1002 Le Belvédère, Tunis, Tunisie Université de Tunis El Manar, Institut Préparatoire aux Etudes d'Ingénieurs El Manar, BP 244, Tunis 2092, Tunisie ICube-Laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie, Université de Strasbourg-CNRS, 23, rue du Loess, 67037 Strasbourg Cedex, France

16:30 **The role of electron pressure in the problem of femtosecond laser action on metals** **V P10.6**
V.I. Mazhukin, M.M. Demin, A.V. Shapranov, A.V.Mazhukin
Keldysh Institute of Applied Mathematics of RAS, National Research Nuclear University MEPhI

16:30 **Laser assisted fabrication of germanium-tin and silicon-tin alloyed nanocrystals** **V P10.7**
N. Tarasenka, V. Kiris, A. Nevar, N. Tarasenko
B.I. Stepanov Institute of Physics, National Academy of Sciences of Belarus

16:30 **Laser treatments of polymers** **V P10.8**
A. Guarnaccio 1, C. Belviso 2, A. Santagata 1*, P. Dolce 1, E. Lucia 1, G. Grippo 1, D. Mollica 1, A. Bellucci 3, A. De Stefanis 3, F. Toschi 3, D. M. Trucchi 3, V. Valentini 3, F. Cavalcante 2, A. Lettino 2, L. Medici 2, P. P. Ragone 2, S. Orlando 1 (* corresponding author)
1 CNR – ISM, Sede di Tito Scalo, Zona Industriale di Tito Scalo, 85050 (PZ), Italy, 2 CNR – IMAA, Zona Industriale di Tito Scalo, 85050 (PZ), Italy, 3 CNR – ISM, Sede di Montelibretti, Via Salaria Km 29,300, 00016 Montelibretti (RM), Italy.

16:30 **Micro and nanostructured ceria films targeting the in vitro response of osteosarcoma cells** **V P10.9**
A.F. Bonciu 1,2, S. Iosub 3, M. Filipescu 1,V. Dinca and M. Dinescu 1
1) National Institute for Lasers, Plasma and Radiation Physics, Magurele, Bucharest, 077125, Romania 2) University of Bucharest, Faculty of Physics, RO 077125, Magurele, Romania, 3) Institute of Biochemistry of the Romanian Academy, 060031 Bucharest, Romania,

16:30 **ALL OPTICAL FORMATION AND DECOMPOSITION OF SILVER NANOPARTICLES IN GLASS** **V P10.10**
N. Nedyalkov1, M. Koleva1, N. Stankova1, R. Nikov1, A. Dikovska1, L. Aleksandrov2, R. Iordanova2, E. Iordanova3, G. Yankov3, K. Grochowska4, G. Sliwinski4
1Institute of Electronics, Bulgarian Academy of Sciences, Tzarigradsko shousse 72, Sofia 1784, Bulgaria, 2Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Acad. Georgi Bonchev str. bld.11, 1113 Sofia, Bulgaria, 3Institute of Solid State Physics, Bulgarian Academy of Sciences, 72 Tzarigradsko Chaussee, 1784, Bulgaria, 4Department of Photophysics, The Szewalski Institute, Polish Academy of Sciences, Fiszera 14, Gdańsk 80-231, Poland

16:30 **Effects of substrate material and substrate-assisted laser patterning on material properties of CdSe thin films** **V P10.11**
H.H. Gullu 1, O. Bayrakli Surucu 2, M. Terlemezoglu 3,4,5, C. Emir 1, and M. Parlak 4,5
1-Department of Electrical and Electronics Engineering, Atilim University, Ankara 06830, Turkey, 2-Department of Physics, Kirsehir Ahi Evran University, Kirsehir 40200, Turkey, 3-Department of Physics, Tekirdag Namık Kemal University, Tekirdag 59030, Turkey, 4-Department of Physics, Middle East Technical University, Ankara 06800, Turkey, 5-Center for Solar Energy Research and Applications (GÜNAM), Middle East Technical University, Ankara 06800, Turkey

16:30 **Chemical study on laser shock peeninig effects on first stage of high temperature pure titanuim oxidation in air** **V P10.12**
L. LAVISSE1, O. HEINTZ1, P. BERGER2, M. SAINT-JEAN1, P. PEYRE3, C. GORNY3, V. OPTASANU1, T. MONTESIN1, M.C. MARCO DE LUCAS1
1Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB), UMR 6303 CNRS-Université Bourgogne Franche-Comté (UBFC), 9 Av. A. Savary, BP 47 870, F-21078 Dijon Cedex 2 NIMBE, CEA, CNRS, Université Paris-Saclay, CEA-Saclay, F-91191 Gif sur Yvette 3 Laboratoire PIMM, UMR 8006 CNRS/Arts & Métiers ParisTech, 151 Bd Hôpital, F-75013 PARIS

16:30 **Mechanical and microstructural studies of laser-shock peening: influence on the oxidation of pure titanium in air** **V P10.13**
L. LAVISSE1, L. HU2, C. SCHUMAN2, P. PEYRE3, C. GORNY3, V. OPTASANU1, T. MONTESIN1, M.C. MARCO DE LUCAS1, A. TIDU2
1Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB), UMR 6303 CNRS-Université Bourgogne Franche-Comté (UBFC), 9 Av. A. Savary, BP 47 870, F-21078 Dijon Cedex 2 LEM3-UMR-CNRS 7239, 7 rue Félix Savart, BP 15082, F-57013 Metz Cedex 03 3 Laboratoire PIMM, UMR 8006 CNRS/Arts & Métiers ParisTech, 151 Bd Hôpital, F-75013 PARIS

16:30 **Luminescent hybrid materials synthesis by laser treatment of thin films** **V P10.14**
R. Saifutyarov*, A. Barkanov*, O. Petrova*, I. Taydakov**, A. Akkuzina*, A. Khomyakov*, A. Lipatiev*, V. Sigaev*, V. Korshunov***, R. Avetisov*, I. Avetissov*
*Dmitry Mendeleev University of Chemical Technology of Russia **P. N. Lebedev Physical Institute, Russian Academy of Science *** Bauman Moscow State Technical University

16:30 **Incubation phenomenon and LIPSS formation on oxide and metal thin films by ultrashort laser beam** **V P10.15**
T.T.D. Huynh1, M. Tabbal2, AL. Thomann1, H. Rabat1, E. Millon1, N. Semmar1
1- GREMI-UMR 7344-CNRS-University of Orleans, 14 rue d'Issoudun, BP6744, 45071 Orleans Cedex2, France 2- Department of Physics, American University of Beirut, Bliss St., P.O. Box: 11-0236, Beirut, Lebanon 1107 2020.

16:30 **Strategies and issues for Ge hyperdoping by pulsed laser melting** **V P10.16**
R. Milazzo,(1,5) C. Carraro,(1,5) G. Impellizzeri,(2) J. Frigerio,(3) A. Ballabio,(3) A. Pecora,(4) A. Sanson,(1) D. De Salvador,(1,5) D. Scarpa,(5) A. Andrighetto,(5) A. Portavoce,(6) D. Mangelinck,(6) M. Ortolani,(7) G. Isella,(3) G. Fortunato,(4) A. Carnera,(1) and E. Napolitani(1,2,5)
(1) Dipartimento di Fisica e Astronomia, Università di Padova, Via Marzolo 8, I-35131 Padova, Italy, (2) CNR-IMM, via S Sofia 64, I-95123, (3) L-NESS, Dipartimento di Fisica, Politecnico di Milano, Polo di Como, Via Anzani 42, I-22100 Como, Italy, (4) CNR-IMM, Via del Fosso del Cavaliere 100, 00133 Roma, Italy, (5) Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali di Legnaro, Viale dell'Università 2, 35020 Legnaro (PD), Italy, (6) IM2NP, CNRS-Universités d'Aix-Marseille et de Toulon, Faculté de saint Jérôme, 13397 Marseille, France, (7) Dipartimento di Fisica, Sapienza Università di Roma, Piazzale Aldo Moro 5, I-00185 Rome, Italy,

16:30 **Control of silicon surface wettability by laser treatment and hot-wire CVD fluoropolymer deposition** **V P10.17**
Sergey V. Starinskiy 1,2, Alexander V. Bulgakov 1,3, Elizaveta Gatapova 1,2, Yuri G. Shukhov 1, Veronica Sulyaeva 4, Nikolay Timoshenko 1, Alexey Safonov 1
1 Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia 2 Novosibirsk State University, Russia 3 HiLASE Centre, Institute of Physics ASCR, Dolni Brezany, Czech Republic 4 Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia

16:30 **Silicon properties in a wide range of temperature including the critical region** **V P10.18**
O.N. Koroleva, A.V. Mazhukin, V.I. Mazhukin
Keldysh Institute of Applied Mathematics of RAS, National Research Nuclear University MEPhI

16:30 **Electrical field influence on Ag nanowires formation in the process of pulsed laser ablation in water** **V P10.19**
A. Nikolov (1), N. Stankova (1), N. Nedyalkov (1) and D. Karashanova (2)
(1) Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee, 1784 Sofia, Bulgaria (2) Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, Acad. G. Bonchev str., bld. 109, 1113 Sofia, Bulgaria

16:30 **Pulsed Laser Deposition of Thin Oxide Films for fs-Laser Mirrors** **V P10.20**
D. Craciun1, I. Anghel1, S. Irimiciuc1, B. Hodoroaba2, G. Dorcioman1, P. Garoi1, O. Uteza3, and V. Craciun1, 4
1National Institute for Lasers, Plasma and Radiation Physics, Măgurele, Romania, 2Physics Faculty, University of Bucharest, Magurele, Romania, 3Laboratoire LP3, Universite de Marseille, Campus de Luminy, Marseille, France, 4Extreme Light Infrastructure-Nuclear Physics, Magurele, Romania

16:30 **Second harmonic generation (SHG) in pentacene thin films grown by matrix assisted pulsed laser evaporation (MAPLE)** **V P10.21**
Iulian IONITA (1), Adrian BERCEA (2),(3), Simona BRAJNICOV (2),(4), Andreea MATEI (2), Valentin ION (2), Valentina MARASCU (1),(2), Bogdana MITU (2), Catalin CONSTANTINESCU (3)
(1) University of Bucharest, Faculty of Physics, RO-077125 Magurele (Bucharest), Romania (2) INFLPR - National Institute for Lasers, Plasma, and Radiation Physics, RO-077125 Magurele (Bucharest), Romania (3) IRCER (UMR 7315) - CNRS / University of Limoges, F-87068 Limoges, France (4) University of Craiova, Faculty of Sciences, RO-200585 Craiova, Romania

16:30 **Laser ablation in liquid in the presence of external magnetic field as a method for synthesis of one-dimensional nanostructures** **V P10.22**
Ro.G. Nikov1, N.N. Nedyalkov1, D.B. Karashanova2
1 Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee, Sofia 1784, Bulgaria 2 Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, G. Bonchev Street, bl. 109, Sofia 1113, Bulgaria

16:30 **Iodine-doped nanocarbons synthesized by laser pyrolysis as Pt-free microporous/catalyst layer for fuel cell applications** **V P10.23**
L. Gavrila-Florescu1, C. Fleaca1, A. Tiliakos1, I. Morjan1, A. Ilie1, E. Dutu1, C. Mihailescu1, A. Marinoiu2, G. Prodan3, F. Dumitrache1
1. National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Str., PO Box MG-36, Magurele, Ilfov, Romania 2. National Research and Development Institute for Cryogenic and Isotopic Technologies, ICSI Rm. Valcea, 4 Uzinei Street, Ramnicu Valcea, Valcea, Romania 3. Faculty of Mechanical, Industrial and Marine Engineering, "Ovidius" University, Mamaia Bd. 124, Constanta, Romania

16:30 **Laser induced random patterns in GST materials: from fundamental investigations to anti-counterfeiting appli-cation.** **V P10.24**
P. Martinez(1), J. Gaudin(1), I. Papagiannouli(1), V. Blanchet(1), D. Descamps(1), B. Fabre(1), S. Petit(1), A. Lévy(2), J. Marthelot(3), N. Bernier(4), J.-B. Dory(4),P. Noé(4)
(1) CEntre Lasers Intenses et Applications, 43 rue Pierre Noailles, 33405 Talence, France (2) Sorbonne Universités, CNRS, UMR 7588, Institut des Nanosciences de Paris, Cedex-05-Paris, 75252, France (3) Princeton, Department of Chemical and Biological Engineering, Princeton University, Princeton, NJ 08540, United States (4) Univ. Grenoble Alpes, CEA, LETI, MINATEC Campus, F-38054 Grenoble, France

16:30 **Photochromic films obtained via Matrix Assisted Pulsed Laser Evaporation** **V P10.25**
L.N. Dumitrescu1, A. Vlad1*, R. Birjega1, A. Matei1, M. Dinescu1, R. Zavoianu2, M. Secu3, V. Raditoiu4, M.C. Corobea4
1National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Str., 077125 Bucharest, Magurele, Romania 2University of Bucharest, Faculty of Chemistry, Department of Chemical Technology and Catalysis, 4-12 Regina Elisabeta Bd., Bucharest, Romania 3National Institute for Materials Physics, P.O. Box MG-7, 77125 Bucharest-Magurele, Romania 4RomaniacNational R.&D. Institute for Chemistry and Petrochemistry, ICECHIM, 202 Splaiul Independentei Str., CP-35-274, 060021 Bucharest, Romania

16:30 **n-type heavy doping of Ge by Sb deposition and pulsed laser melting** **V P10.26**
C. Carraro(1,2), R. Milazzo(1,2), F. Sgarbossa(1,2), G. Maggioni(1,2), W. Raniero(2), S. Carturan(1,2), D. Scarpa(2), L. Baldassarre(3), M. Ortolani(3), A. Ballabio(4), G. Isella(4), S. Modak(5), L. Chernyak(5), A. Andrighetto(2), D.R. Napoli(2), D. De Salvador(1,2) and E. Napolitani(1,2)
(1) Dipartimento di Fisica e Astronomia, Università di Padova, Via Marzolo 8, I-35131 Padova, Italy, (2) Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali di Legnaro, Viale dell'Università 2, 35020 Legnaro (PD), Italy, (3) Dipartimento di Fisica, Sapienza Università di Roma, Piazzale Aldo Moro 5, I-00185 Rome, Italy, (4) Dipartimento di Fisica, L-NESS, Politecnico di Milano, Polo di Como, Via Anzani 42, I-22100 Como, Italy (5) Department of Physics, University of Central Florida, Orlando, FL 32816 USA

16:30 **A Facile Route for the Synthesis of Graphene Nanosheets Using Laser Ablation of Flexible Graphite at 1064 nm laser wavelength** **V P10.27**
M. Jalili 1, H. Ghanbari 2, R. Malekfar 1
1 Atomic and Molecular Physics Group, Department of Physics, Faculty of Basic Sciences, Tarbiat Modares University, Tehran, P.O.Box 14115-175, I.R. IRAN 2 School of Metallurgy & Materials Engineering, Iran University of Science and Technology (IUST), Narmak, Tehran, Iran

16:30 **Laser Induced Forward Transfer of silver nano-inks for high resolution flexible interconnections: the effect of electromigration** **V P10.28**
F. Zacharatos, K. Andritsos, I. Theodorakos, I. Zergioti
National Technical University of Athens, Physics Department, Iroon Polytehneiou 9, 15780, Zografou, Athens, GR

16:30 **Influence of pulse duration on the selective ablation of a thin SiO2 layer on silicon substrate** **V P10.29**
Linda Pabst, Robby Ebert, Horst Exner
Laserinstitute Hochschule Mittweida

16:30 **Preparation by the laser pyrolysis method of carbon based active elements for energy generation** **V P10.30**
E. Dutu1, M. Scarisoreanu1, A. Ilie1, F. Dumitrache1, C. Fleaca1, L. Florescu-Gavrila1, I. P. Morjan1, A. Tiliakos1, A. Badoi1, A-M. Banici1, A. Smarandache1, E. Tanasa2
1 National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania,, 2 Politehnica University of Bucharest, Bucharest, Romania

16:30 **Interaction of MSCs with fs laser textured surfaces** **V P10.31**
L. Rusen1, L. E. Sima2, A. Bonciu1,3,I. Anghel1, V. Dinca1, and M. Dinescu1
1National Institute for Lasers, Plasma and radiation Physics, Bucharest, Romania
2Institute of Biochemistry of the Romanian Academy IBAR, Bucharest, Romania
3University of Bucharest, Faculty of Physics, Bucharest, Romania

16:30 **Fabrication of smart flexible biosensors by laser transfer** **V P10.32**
A.F. Boncіu1,2, A. Palla-Papavlu1, V. Dinca1, M. Filipescu1 and M. Dinescu1
1) National Institute for Lasers, Plasma and Radiation Physics, Magurele, Bucharest, 077125, Romania, 2) University of Bucharest, Faculty of Physics, RO 077125, Magurele, Romania, *Corresponding author: Alexandra.papavlu@inflpr.ro

16:30 **Optical limiting potential of reduced graphene oxide based films, solutions and silico-phosphate composites** **V P10.33**
A. Petris1, C. Vasiliu2*, S. Mei3#, J. Yang3, S. Etemadi4 , R. Wendelbo4, P. Gheorghe1, L. Ionel1, L. Rusen1, A. M. Iordache1, M.Elisa1
1.National Institute for Laser, Plasma and Radiation Physics, 409 Atomistilor Str., Magurele, Romania, 2.National R&D Institute for Optoelectronics – INOE 2000, 409 Atomistilor Str., Magurele, Romania, 3. 4. Abalonyx AS, Forskningsveien 1, 0373 Oslo, Norway

16:30 **Hybrid organic-inorganic thin films based on zinc phthalocyanine and zinc oxide deposited by MAPLE** **V P10.34**
M. Socol1*, N. Preda1*, C. Breazu1, A. Costas1, O. Rasoga1, A. Stanculescu1, G. Popescu-Pelin2, G. Socol2
1National Institute of Material Physics,405A Atomistilor Street, PO Box MG-7, 077125, Bucharest-Magurele, Romania 2National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, PO Box MG-36, 077125, Bucharest-Magurele, Romania

16:30 **Effect of ITO electrode patterning on the properties of MAPLE prepared organic heterostructures based on non-fullerene acceptor** **V P10.35**
A.Stanculescu1, C.Breazu1,4, M.Socol1, O.Rasoga1, N.Preda1, T.Ivan2, A.M.Solonaru2, M.Grigoras2, F.Stanculescu 3, G.Socol 4, M.Girtan5
1National Institute of Materials Physics, 405A Atomistilor Street, P.O. Box MG-7, Bucharest-Magurele, 077125 Romania, sanca@infim.ro, 2P. Poni Institute of Macromolecular Chemistry, 41 A Gr. Ghica Voda Alley, 700487-Iasi, Romania, 3University of Bucharest, Faculty of Physics, 405 Atomistilor Street, P.O. Box MG-11, Bucharest-Magurele, 077125 Romania, 4National Institute for Laser, Plasma and Radiation Physics, Str. Atomistilor, Nr. 409, PO Box MG-36, Magurele, Bucharest, 077125, Romania, 5Laboratoire LPHIA, Université d'Angers, LUNAM, 2 Bd. Lavoisier 49045, Angers, France

16:30 **Effect of surface modification by femtosecond laser on Zirconia based ceramics for screening of cell-surface interactions** **V P10.36**
A. Daskalova1, I. Bliznakova1, L. Angelova1, A. Carvalho 2, 3, 4, A. Trifonov 5, C. Nathala 6, H. Declercq 7, F. Monteiro 2, 3, 4, I. Buchvarov 5
1 Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee Blvd., 1784, Sofia, Bulgaria, 2 i3S - Instituto de Investigação e Inovação em Saúde, U. Porto, Porto, Portugal, 3 INEB - Instituto de Engenharia Biomédica, U. Porto, Porto, Portugal, 4 Faculdade de Engenharia, Departamento de Engenharia Metalúrgica e Materiais, U. Porto, Porto, Portugal, 5 Faculty of Physics, St. Kliment Ohridski University of Sofia, 5 James Bourchier Blvd., 1164, Sofia, Bulgaria, 6 High Q lasers Gmbh, Spectra Physics, 9 Feldgut, 6830 Rankweil, Austria, 7 Department of Basic Medical Sciences, Ghent University, De Pintelaan 185 6B3, 9000 Gent, Belgium

16:30 **Lamellar montmorillonite thin films obtained by laser techniques** **V P10.37**
A. Matei, A. Vlad, R. Birjega, M. D. Ionita, E. R. Ionita, V. Marascu, A. Lazea-Stoyanova
National Institute for Lasers, Plasma, and Radiation Physics, 409 Atomistilor Street, 077125 Magurele, Romania

16:30 **Third-order nonlinear optical response of ordered arrays of plasmonic gold nanoparticles prepared by ion implantation and NSL** **V P10.38**
José M. Zárate-Reyes, Oswaldo Sánchez-Dena, Alberto Peralta-Angeles, Erick Flores-Romero, Carlos A. Luna-Mayo, Cecilia Salinas, Juan-Carlos Cheang-Wong, Alejandro Reyes-Esqueda
José M. Zárate-Reyes, Oswaldo Sánchez-Dena, Alberto Peralta-Angeles, Carlos A. Luna-Mayo, Cecilia Salinas, Juan-Carlos Cheang-Wong, Alejandro Reyes-Esqueda, Instituto de Física, Universidad Nacional Autónoma de México, Cd. Universitaria, Coyoacan, Ciudad de México, 04510, México. Erick Flores-Romero, Catedrático CONACYT, Instituto de Física, UNAM, Ciudad de México, México.

16:30 **Controlled picosecond laser writing of Ag-SiO2 nanocomposite metasurfaces for plasmonics** **V P10.39**
Y.M. Andreeva-1, V.V. Koval-1, R.A. Zakoldaev-1, M.M. Sergeev-1, F. Vocanson-2, and T.E. Itina-1,2
1-ITMO University, 49 Kronverkskiy pr., 197101, Saint-Petersburg, Russia
2-Laboratoire Hubert Curien, UMR CNRS 5516, UJM-Saint-Etienne, Univ. Lyon, Campus Manufacture, Saint-Etienne, France

16:30 **Piezoelectric properties of PVDF – BCTZ thin films obtained by laser deposition techniques** **V P10.40**
N. ENEA1, N.D. SCARISOREANU1, V. ION1 , V. DINCA1, F. ANDREI1, D. MANICA2, M. DINESCU1 and F. CRACIUN3
1) National Institute for Laser, Plasma and Radiation Physics, 409 Atomistilor St, RO-077125, Magurele, Romania, 2)University of Bucharest, Faculty of Physics, 405 Atomistilor St, RO-077125, Magurele, Romania, 3) CNR-Instituto dei Sistemi Complessi, Via del Fosso del Cavaliere 100, I-00133, Rome, Italy

16:30 **Study of the physical properties of P3HT, PCBM and Si:PCPDTBT thin films based photovoltaic structures** **V P10.41**
Alina Irina CĂLUGĂR1,2,Sorina IFTIMIE1, Adrian RADU1, Maria DINESCU2, Vlad-Andrei ANTOHE1, Lucian ION1, and Stefan ANTOHE,1,3,*
1University of Bucharest, Faculty of Physics, 405 Atomistilor, P.O. BOX MG-11, 077125, Magurele, Ilfov, Romania 2The National Institute for Laser, Plasma & Radiation Physics (INFLPR), Atomistilor Street, No.409,Magurele city, Ilfov county, Postal code: RO-077125, Romania P.O. Box MG-36 3Academy of Romanian Scientists, 54 Splaiul Independentei, 030167, Bucharest, Romania Corresponding author: santohe@solid.fizica.unibuc.ro, phone: +4021 4574535, fax: +4021 4574418, 405Atomistilor, P.O. BOX MG-11, 077125, Magurele, Ilfov, Romania

16:30 **FABRICATION OF Ag/ZnO NANOSTRUCTURES FOR SERS APPLICATIONS** **V P10.42**
M. E. Koleva1, N. N. Nedyalkov1, Ru. Nikov1, Ro. Nikov1, V.I. Nuzhdin2, V.F. Valeev2, Y.N. Osin2, A.L. Stepanov2
1Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee blvd., Sofia 1784, Bulgaria, 2Kazan Physical-Technical Institute, Russian Academy of Sciences, 420029, Kazan, Russia

16:30 **Characterization of energy transfer processes in Er3+/Yb3+ co-doped alumino-silicate glasses under selective Er3+ excitation** **V P10.43**
E. Cantelar (1), G. Lifante (1), L. Grima (2), J.I. Peña (2), D. Sola (3)
(1) Departamento de Física de Materiales, Facultad de Ciencias, Universidad Autónoma de Madrid, 28049 Madrid, Spain, (2) Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza-CSIC, Dpto. Ciencia y Tecnología de Materiales y Fluidos, 50.018 Zaragoza, Spain, (3) Laboratorio de Óptica, Centro de Investigación en Óptica y Nanofísica Universidad de Murcia, Campus Espinardo, 30.100 Murcia, Spain,

16:30 **Ultrafast laser writing of diffraction gratings in ophthalmic polymers: A study of thermal and non-thermal regimes** **V P10.44**
D. Sola (1), J.R. Vázquez de Aldana (2), P. Artal (1)
(1) Laboratorio de Óptica, Centro de Investigación en Óptica y Nanofísica, Universidad de Murcia, 30100 Murcia, Spain, (2) Aplicaciones del Láser y Fotónica, University of Salamanca, 37008 Salamanca, Spain,

16:30 **Optical properties of CuInS2:Na thin films irradiated by excimer laser** **V P10.45**
D. Abdelkader, F. Antoni, M. Kanzari,
Université de Tunis ElManar, Ecole Nationale d'Ingénieurs de Tunis, Laboratoire de Photovoltaïque et Matériaux Semiconducteurs, BP37, 1002 Le Belvédère, Tunis, Tunisia ICube-Laboratoire des Sciences de l'Ingénieur, de l'Informatique et de l'Imagerie, Université de Strasbourg-CNRS, 23, rue du Loess, 67037 Strasbourg Cedex, France

16:30 **Terahertz and optical properties of Ba0.6Sr0.4TiO3 thick films grown by PLD** **V P10.46**
L. Nedelcu, G. Annino*, C. Chirila, L. Trupina, A. C. Galca, M. G. Banciu
National Institute of Materials Physics, Bucharest-Magurele, Romania, *Istituto per i Processi Chimico-Fisici, IPCF-CNR, Pisa, Italy

16:30 **Oxide heterostructures obtained by pulsed laser deposition** **V P10.47**
V. Ion, N. D. Scarisoreanu, A. Andrei, N. Enea, F. Andrei, A. Moldovan, A. Bonciu and M. Dinescu
National Institute for Laser, Plasma and Radiation Physics, Magurele, Bucharest, Romania

16:30 **Study on plasma properties of reactive Al/Ni multilayers induced by pulsed laser** **V P10.48**
Yao Wang Yong Li Zongren Xing Duo Tang Liang Wang
Institute of chemical materials, CAEP

16:30 **Preparation of CNTs aerogel loaded with B/KNO3 pyrotechnics with high surface area and superior laser ignition performance** **V P10.49**
Wang Liang, Wang Zhihao, Tang Duo
Institute of Chemical Materials

16:30 **Epitaxial growth of iridium thin films: a comparison between plasma vs. laser processing** **V P10.50**
Adrian BERCEA (1), Lucian TRUPINA (2), Liviu NEDELCU (2), Gabriel BANCIU (2), Laure HUITEMA (3), Aurelian CRUNTEANU (3), Frédéric DUMAS-BOUCHIAT (1), Corinne CHAMPEAUX (1), Catalin CONSTANTINESCU (1)
(1) IRCER UMR 7315 - CNRS / University of Limoges, Limoges, France (2) INFM - National Institute for Materials Physics, Bucharest, Romania (3) XLIM UMR 7252 - CNRS / University of Limoges, Limoges, France

16:30 **Laser bio-surfaces micro engineering for controlled regulation of cell response** **V P10.51**
V. Dinca1, L.E. Sima2, M. Icriverzi2,3, A. Bonciu1,4, S. Brajnicov1, L. Rusen1, A. Roseanu2, A. Campean3 and M. Dinescu1
1National Institute for Lasers, Plasma and radiation Physics, Bucharest, Romania 2Institute of Biochemistry of the Romanian Academy IBAR, Bucharest, Romania 3University of Bucharest, Faculty of Biology, Bucharest, Romania 4University of Bucharest, Faculty of Physics, Bucharest, Romania

16:30 **ZnO Nanolaser with h-BN Insulator on Epitaxially Grown Aluminum Substrate** **V P10.52**
Han Huang, Lih Juann Chen
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan, Republic of China

16:30 **Nolinear optical properties of metal-organic framworks** **V P10.53**
Chen Zhihui1, Vaishali Anandrao Sawant1, Monalisa Garai1, Hong Sheng Quah1,2, Jagadese J. Vittal1& Xu Qing-Hua1,2
1. Department of Chemistry, National University of Singapore, 3 Science Drive 3, Singapore 117543, 2. NUS Graduate School for Integrative Sciences & Engineering (NGS), Singapore 117456.

16:30 **Magnetic and structure properties of doping ions of Cr3 in the multiferroics YGa3(BO3)4.** **V P10.54**
A.A. Prokhorov1, L.F. Chernush2, R. Minikayev3, J. Lančok1, A.D. Prokhorov2
1 Institute of Physics AS CR, Na Slovance 2, 18221 Prague, Czech Republic 2 A.A. Galkin Donetsk Institute for Physics and Engineering, R. Luxembourg 72, 83114 Donetsk 3 Institute of Physics, P.A.S., al. Lotnikow 32/46, 02-668, Warsaw, Poland

16:30 **In-depth study of laser-induced graphene as electrode material for electrochemical sensors** **V P10.55**
Arne Behrent, Antje J. Baeumner
Institute of Analytical Chemistry, Chemo- and Biosensors, University of Regensburg, Germany

16:30 **One-step laser carbonization of electrospun nanofibers enabling high performance miniaturized electrochemical sensors** **V P10.56**
Nongnoot Wongkaew,Marcel Simsek, Palaniappan Arumugam, Arne Behrent, Sheela Berchmans, Antje J. Baeumner
Institute of Analytical Chemistry, Chemo- and Biosensors, University of Regensburg, Germany, Council of Scientific and Industrial Research- Central Electrochemical Research Institute, India

16:30 **Synthesis of a nano-composite based on laser reduced GO and sputtered ZnO thin films for efficient ozone detection** **V P10.57**
Bruno Sanches de Lima Valmor Roberto Mastelaro
Sao Carlos Institute of Physics, University of Sao Paulo, 565-905 São Carlos, SP, Brazil

16:30 **The study of novel luminescent materials using TR-XEOL and XEOL at multifunctional Hard X-ray Nanoprobe** **V P10.58**
Bi-Hsuan Lin
National Synchrotron Radiation Research Center, Hsinchu 30076, Taiwan

16:30 **Bioactive Glass on Mg/Mg alloys substrates for biodegradable, nutritious coatings of implants** **V P10.59**
Anita Visan1, Natalia Mihailescu1, Anton Ficai2, Mihai Adrian Sopronyi1, Gianina Popescu Pelin1, Nicolae-Cristian, Mihailescu1, Mihaela Bojan1, José M.F. Ferreira3 and Ion N. Mihailescu1
1National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Street, Magurele, Ilfov, RO-77125, Romania, 2Politehnica University of Bucharest, Faculty of Applied Chemistry and Material Science, 1-7 Polizu Str., 011061 Bucharest, Romania, 3Department of Ceramics and Glass Engineering, University of Aveiro, CICECO, 3810-193 Aveiro, Portugal,

Friday 31 may 2019

Novel laser patterning and processing applications : Thomas Lippert

08:30 **Comparison of nanostructures formed on Nb using fs near-IR and ps UV pulsed lasers** **V 11.1**
A. Cubero 1, E. Martínez 1, L.A. Angurel 1, G.F. de la Fuente 1, R. Navarro 1, H. Legall 2, J. Krüger 2, J. Bonse 2.
1 - ICMA (Instituto de Ciencia de Materiales de Aragón, CSIC-Universidad de Zaragoza), Zaragoza, Spain, 2 - BAM (Bundesanstalt für Materialforschung und –prüfung), Berlin, Germany.

08:45 **Mitigating Chromatic Dispersion with Hybrid Optical Metasurfaces** **V 11.2**
Rajath Sawant, Purva Bhumkar, Alexander Y. Zhu, Peinan Ni, Federico Capasso, Patrice Genevet
[Rajath Sawant, Purva Bhumkar,Peinan Ni,Patrice Genevet - CNRS CRHEA, Université Côte d'Azur, rue Bernard Gregory, Sophia Antipolis 06560, Valbonne, France] [Alexander Y. Zhu, Federico Capasso - John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA 02138, USA]

09:00 **Short pulse laser patterning processes for manufacturing of organic photovoltaics** **V 11.3**
C. Kapnopoulos1, E. Mekeridis2, A. Zachariadis1, P. Prodromidis1, A. Laskarakis1, C. Gravalidis1, S. Logothetidis1
1 Lab for Thin Films - Nanobiomaterials - Nanosystems & Nanometrology (LTFN), Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece 2 Organic Electronic Technologies (OET), Antoni Tritsi 21B, 57001 Thessaloniki, Greece

09:15 **Optical control in a single-molecular electrochemical sensor** **V 11.4**
Lin Chai
Dr Artem Bakulin (AB)□□Dr Aleksandar Ivanov (AI)□Prof Joshua B. Edel (JBE)

09:30 **Laser surface processing of Li-ion battery electrodes** **V 11.5**
Jen Manerova, Dominika Gastol, Chris Smith, Matthew Capener, Anna Alvarez-Reguera, Emma Kendrick, Vannessa Goodship, James Shaw-Stewart, Ben Millsom
University of Warwick, M-Solv Ltd, and University of Birmingham

09:45 **Coffee break**

10:30 **Biological characterization of titanium subjected to the direct laser interference lithography** **V 11.6**
D. Kuczy?ska-Zem?a (1), E. Kije?ska-Gawro?ska (1), M. Pisarek (2), P. Kwa?niak (1), P. Borowicz (2), H. Garbacz (1)
(1) Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland, (2) Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland

10:45 **High speed imaging monitoring of molten pool and spatter produced during laser processing of metal matrix nanocomposites** **V 11.7**
Andrei Popescu1, Marc Leparoux2
1. Center for Advanced Laser Technologies - CETAL, National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania 2. Laboratory for Advanced Materials Processing, EMPA, Feuerwerkerstrasse 39, 3602 Thun, Switzerland

11:00 **Dispersion Measurement of Femtosecond Pulses Through Band-Gap Edges of Cholesteric Liquid Crystals** **V 11.8**
Maxim Neradovskiy, Aurélie Jullien, Umberto Bortolozzo, Stefania Residori, Adriana Scarangella, Michel Mitov
Institut de Physique de Nice, Université de Nice Sophia-Antipolis, CNRS UMR 7010, 1361 route des Lucioles, 06560 Valbonne, France, Institut de Physique de Nice, Université de Nice Sophia-Antipolis, CNRS UMR 7010, 1361 route des Lucioles, 06560 Valbonne, France, Institut de Physique de Nice, Université de Nice Sophia-Antipolis, CNRS UMR 7010, 1361 route des Lucioles, 06560 Valbonne, France, Institut de Physique de Nice, Université de Nice Sophia-Antipolis, CNRS UMR 7010, 1361 route des Lucioles, 06560 Valbonne, France, Centre d'Elaboration de Matériaux et d'Etudes Structurales, CNRS UPR 8011, University Paul-Sabatier, 31055 Toulouse, France, Centre d'Elaboration de Matériaux et d'Etudes Structurales, CNRS UPR 8011, University Paul-Sabatier, 31055 Toulouse, France

11:15 **Pulsed laser annealing for advanced technology nodes: modeling and calibration** **V 11.9**

K. Huet 1, J. Aubin 1, B. Curvers 1, A. Verstraete 1, B. Lespinasse 1, F. Mazzamuto 1, A. Sciuto 2, S.F. Lombardo 2, A. La Magna 2, P. Acosta-Alba 3, L. Dagault 3, S. Kerdiles 3
1 Laser Systems and Solutions of Europe, SCREEN Semiconductor Solutions, Co., Ltd., 14-30 rue Alexandre, 922230 Gennevilliers, FRANCE,2 CNR-IMM, VIII Strada 5, 95121 Catania, ITALY,3 Univ. Grenoble Alpes, CEA, LETI, 38000 Grenoble, France

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

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SYMPOSIUM W

Semiconductor nanostructures towards electronic and opto-electronic device applications - VII

Symposium Organizers :

Ivan MORA-SERO, Universitat Jaume I, Castello, Spain

Iwan MOREELS, Ghent University, Belgium

Jean-Charles RIBIERE, Zheijang University, Hangzhou, China

Sergio BROVELLI, University of Milano-Bicocca, Italy

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Monday 27 may 2019

Colloidal nanocrystals - Applications : Iwan Moreels

09:00 INV **Infrared PbS Colloidal Quantum Dot Optoelectronics: Light emission and detection from the short to the long wave infrared** — W 1.1
Gerasimos Konstantatos
Functional Optoelectronic Nanomaterials Group ICFO - Institut de Ciencies Fotoniques Av. Carl Friedrich Gauss 3, Castelldefels 08860, Barcelona, Spain

09:30 **Triplet-Triplet Annihilation based Photon Up-conversion in Hybrid Molecule–Semiconductor Nanocrystal Systems** — W 1.2
Alessandra Ronchi, Paolo Brazzo, Mauro Sassi, Luca Beverina, Jacopo Pedrini, Francesco Meinardi, Angelo Monguzzi
Dipartimento di Scienza dei Materiali, Università degli Studi Milano Bicocca via R. Cozzi 55, 20125 Milan, Italy

09:45 **TIPS-Tetracene-PbS Quantum dot Hybrid Materials for Singlet-Fission based Photomultiplication** — W 1.3
Victor Gray, Jesse Allardice, Simon Dowland, Zhilong Zhang, James Xiao, Neil Greenham, Akshay Rao
University of Cambridge, Cambridge, UK, Uppsala University, Uppsala, Sweden., University of Cambridge, Cambridge, UK, University of Cambridge, Cambridge, UK, University of Cambridge, Cambridge, UK, University of Cambridge, Cambridge, UK, University of Cambridge, Cambridge, UK,

10:00 **Effects of proton irradiation on the optical properties of colloidal quantum dots embedded in polymers for dosimetry application** — W 1.4
E. Zanazzi1,2, M.Favaro1,2, A. Ficorella1,2, L. Pancheri1,2, G. F. Dalla Betta1,2, A. Quaranta1,2
1 Department of Industrial Engineering, University of Trento, Via Sommarive 9, I-38123, Povo, Trento, Italy 2 INFN - TIFPA, Via Sommarive 14, I-38123, Povo, Trento, Italy

10:15 **Coffee break**

Heavy-metal-free colloidal nanocrystals : Sergio Brovelli

10:30 INV **Innovations in indium phosphide chemistry and characterization for emissive applications** — W 2.1
Brandi Cossairt, Jennifer Stein, Kira Hughes, Nayon Park, William Holden, Gerald Seidler, Daniel Gamelin
University of Washington

11:00 **Interfacial Oxidation and the Photoluminescence of InP-Based Core/Shell Quantum Dots** — W 2.2
Mickael D. Tessier, Edwin A. Baquero, Dorian Dupont, Valeriia Grigel, Yannick Coppel, Zeger Hens, Céline Nayral, Fabien Delpech.
Physics and Chemistry of Nanostructures and Center for Nano and Biophotonics, Ghent University, Ghent, Belgium. SIM vzw, Technologiepark 935, BE-9052 Zwijnaarde, Belgium Université de Toulouse, INSA, UPS, CNRS, Laboratoire de Physique et Chimie des Nano-Objets, Toulouse, France. Departamento de Química, Facultad de Ciencias, Universidad Nacional de Colombia, Sede Bogotá, 111321 Bogotá, Colombia. Laboratoire de Chimie de Coordination, CNRS, UPR 8241, Université de Toulouse, Toulouse, France.

11:15 **NIR fluorescent Cu-In-Se-based colloidal quantum dots via partial cation exchange** — W 2.3
Josephine F.L. Lox, Zhiya Dang, Volodymyr Dzhagan, Dietrich R.T. Zahn, Vladimir Lesnyak
Physical Chemistry, TU Dresden, Germany (Josephine F.L. Lox), Department of Nanochemistry, Istituto Italiano di Tecnologia, Italy (Zhiya Dang), Semiconductor Physics, Chemnitz University of Technology, Germany (Volodymyr Dzhagan, Semiconductor Physics, Chemnitz University of Technology, Germany (Dietrich R.T. Zahn), Physical Chemistry, TU Dresden, Germany (Vladimir Lesnyak)

11:30 **Understanding the growth mechanism of InP and its role in the design of alloyed III-V nanomaterials for emissive applications** — W 2.4
Max R. Friedfeld, Jennifer L. Stein, Nayon Park, Brandi M. Cossairt
Department of Chemistry, University of Washington

11:45 **The Importance of Precursor Chemistry: Monodisperse Red/NIR Emitting InP Synthesized at Low Temperature.** — W 2.5
B. F. P. McVey,1 R. A. Swain,1 B. Chaudret,1 C. Nayral,1 F. Delpech,1
1 Laboratoire de Physique et Chimie des Nano-Objets (LPCNO) University of Toulouse, France

12:00 **Colloidal InSb quantum dots** — W 2.6
Serena Busatto, Mariska de Ruiter, Celso de Mello Donega
Debye Institute for Nanomaterials Science, Utrecht University, The Netherlands

12:15 **Evidence of exciton fine structure effects reveal the intrinsic origin of the optical properties of I-III-VI2 nanocrystals** — W 2.7
Abhinav Anand, Matteo L. Zaffalon, Graziella Gariano, Chiara Capitani, Valerio Pinchetti, Scott A. Crooker, Sergio Brovelli
Dipartimento di Scienza dei Materiali, Università degli Studi di Milano - Bicocca, Milano, Italy, Dipartimento di Scienza dei Materiali, Università degli Studi di Milano - Bicocca, Milano, Italy, Glass To Power SpA, Rovereto, Italy, Glass To Power SpA, Rovereto, Italy, Dipartimento di Scienza dei Materiali, Università degli Studi di Milano - Bicocca, Milano, Italy, Magnetic Field Laboratory, Los Alamos, NM, USA, Dipartimento di Scienza dei Materiali, Università degli Studi di Milano - Bicocca, Milano, Italy,

12:30 **Lunch break**

Lasers and light-emitting diodes : Iván Mora Seró

14:00 INV **Near infrared perovskite light-emitting diodes with a high external quantum efficiency over 20%** — W 3.1
Feng Gao
Department of Physics, Chemistry and Biology (IFM), Linköping University, Linköping 58183, Sweden.

14:30 **High Sn-content GeSn/SiGeSn heterostructures as MIR photodiodes and LEDs** — W 3.2
M. Bertrand, N. Pauc, A. Quintero, R. Khazaka, J. Aubin, Q. M. Thai, J. Chrétien, L. Casiez, P. Rodriguez, A. Chelnokov, J.M. Hartmann, V. Calvo, V. Reboud
Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, INAC, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, INAC, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, INAC, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, INAC, F-38000, Grenoble, France,Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France

14:45 **Low threshold and cw optically pumped laser emission in tensile strained GeSn microdisks** — W 3.3
A. Elbaz[1,2], K. Pantzas[1], N. von den Driesch[4,5], G. Patriarche[1], N. Zerounian[1], E. Herth[1], X. Checoury[1], S. Sauvage[1], I. Sagnes[1], A. Foti[3], R. Ossikovski[3], D. Grützmacher[4,5], F. Boeuf[2], P. Boucaud[6], D. Buca[5], M. El Kurdi[1]
[1] Center for Nanoscience and Nanotechnology, C2N UMR 9001, CNRS, Université Paris Sud, Université Paris Saclay, 91120 Palaiseau, France [2] STMicroelectronics, Rue Jean Monnet 38054 Crolles, France [3] LPICM CNRS-Ecole polytechnique, 91120 Palaiseau, France [4] JARA-Institute Green IT, RWTH Aachen, 52062 Aachen, Germany [5] Peter Grünberg Institute (PGI 9) and JARA-Fundamentals of Future Information Technologies, Forschungszentrum Jülich, 52425 Jülich, Germany [6] Université Côte d'Azur, CRHEA-CNRS, 06560 Valbonne, France

15:00 **Uniaxial tensile strain in GeSn microbridges for tunable laser sources** — W 3.4
Jérémie Chrétien, Nicolas Pauc, Francesco Armand Pilon, Mathieu Bertrand, Quang-Minh Thai, Rami Khazaka, Hans Sigg, Jerome Faist, Alexei Chelnokov, Vincent Reboud, Jean-Michel Hartmann, Vincent Calvo
Jérémie Chrétien, Univ. Grenoble Alpes, CEA, INAC-Pheliqs, F-38000, Grenoble, France , Nicolas Pauc, Univ. Grenoble Alpes, CEA, INAC-Pheliqs, F-38000, Grenoble, France , Francesco Armand Pilon, Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, 5232 Villigen PSI, Switzerland, Institute for Quantum Electronics, ETH Zürich, 8093 Zürich, Switzerland , Mathieu Bertrand, Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France , Quang-Minh Thai, Univ. Grenoble Alpes, CEA, INAC-Pheliqs, F-38000, Grenoble, France , Rami Khazaka, Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France , Hans Sigg, Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, 5232 Villigen PSI, Switzerland , Jerome Faist, Institute for Quantum Electronics, ETH Zürich, 8093 Zürich, Switzerland , Alexei Chelnokov, Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France , Vincent Reboud Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France , Jean-Michel Hartmann, Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France , Vincent Calvo, Univ. Grenoble Alpes, CEA, INAC-Pheliqs, F-38000, Grenoble, France

15:15 **AlGaN/AlN nanowires for electron-pumped UV emitters** **W 3.5**
I. Dimkou (1), A. Ajay (2), E. Bellet-Amalric (2), M. I. Den Hertog (3), F. Donatini (3), A. Grenier (1), S. T. Purcell (4), and E. Monroy (2)
(1) CEA-Leti, 17 av. des Martyrs, 38000 Grenoble, France. (2) Univ. Grenoble-Alpes, CEA-INAC-PHELIQS, 17 av. des Martyrs, 38000 Grenoble, France. (3) Univ. Grenoble-Alpes, CNRS-Institut Néel, 25 av. des Martyrs, 38000 Grenoble, France. (4) Univ. Lyon, Universite Claude Bernard Lyon 1, CNRS, Institut Lumière Matière, 69622 Lyon, France.

15:30 **Wide emission-spectrum NIRLED based on efficient photon-recycling** **W 3.6**
Zoltán Szabó, Vilmos Rakovics
HAS Centre for Energy Research

15:45 **Excited state intramolecular proton transfer - thermally activated delayed fluorescence red emitters for OLEDs** **W 3.7**
Abhishek Kumar Gupta, Cheng Lian, Kou Yoshida, Eli Zyaman-Colman, Ifor D. W. Samuel
Abhishek Kumar Gupta, Cheng Lian, Kou Yoshida, Ifor D. W. Samuel (Organic Semiconductor Centre, SUPA, School of Physics and Astronomy, University of St. Andrews, St. Andrews, Fife, KY16 9SS, UK.) Abhishek Kumar Gupta, Eli Zyaman-Colman (Organic Semiconductor Centre, EaStCHEM School of Chemistry, University of St Andrews, St Andrews, Fife, KY16 9ST, UK.)

16:00 **Coffee break**

Poster Session I : Moreels - Brovelli - Mora Seró

16:30 **Doping induced assembly of conjugated polymer into nanowires** **W P1.1**
Jaehyun Park, Minhyeok Moon and Eunji Lee*
School of Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju 61005, Republic of Korea

16:30 **Elaboration and characterization of thin layers of SiP lamellar alloys** **W P1.2**
S. Geiskopf (1), M. Stoffel (1), X. Devaux (1), E. André (2), C. Carteret (2), A. Bouché (2), M. Vergnat (1), H. Rinnert (1)
(1) Université de Lorraine, CNRS, Institut Jean Lamour, 54000 Nancy, France (2) Université de Lorraine, UMR CNRS 7564, LCPME, 405 rue de Vandœuvre, 54600 Villers-les-Nancy, France

16:30 **Micro-photoluminescence analysis of carbon dots-graphene composites** **W P1.3**
G. Faggio (a) , G. Messina (a), N. Lisi (b), T. Dikonimos (b), A. Capasso (c), F. Giannazzo (d), E. Schilirò (d), A. Armano (e, f), G.Buscarino (d,e), A. Sciortino (e), F. Messina (e), M. Cannas (e), F.M. Gelardi (e), S. Agnello (d,e)
(a) DIIES Dept., University “Mediterranea”, Via Graziella, Loc. Feo di Vito, 89122, Reggio Calabria, Italy (b) ENEA, DTE PCU IPSE, Casaccia Research Centre, Via Anguillarese 301, Rome, Italy (c) International Iberian Nanotechnology Laboratory, 4715-330 Braga, Portugal (d) CNR-IMM, Strada VIII 5, 95121 Catania, Italy (e) University of Palermo, Dept. of Physics and Chemistry, Via Archirafi, 36, 90123, Palermo, Italy (f) University of Catania, Dept. of Physics and Astronomy, Via Santa Sofia 64, 95123 Catania, Italy.

16:30 **Reference Samples for Quantitative Characterisation of Nanostructured Semiconductors using Optical and Electrical Scanning Probe** **W P1.4**
Sebastian Wood, Filipe Richheimer, Ruth Rawcliffe, Maxim Shkunov, and Fernando Castro
National Physical Laboratory, Teddington, Middlesex, UK. Advanced Technology Institute, Faculty of Engineering & Physical Sciences, University of Surrey, Guildford, UK.

16:30 **Growth and optical properties of GaAs/ZnSe core/shell Nanowires** **W P1.5**
M.M.Jansen, T. Rieger, G. Schmidt, M. Luysberg, L. Kibkalo, E. Neumann, N. Demarina, D. Grützmacher, A. Pawlis
Peter-Grünberg-Institute 9, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Peter-Grünberg-Institute 9, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Peter-Grünberg-Institute 9, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Peter-Grünberg-Institute 8, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Peter-Grünberg-Institute 2, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Peter-Grünberg-Institute 9, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany, Peter-Grünberg-Institute 9, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany

16:30 **Optical tunability of MoS2-Ag core-shell structure via laser-assisted photo-reduction for SERS application** **W P1.6**
Yoonkyung Lee, Eunpa Kim, Hyeongkeun Kim, Kyunghoon Kim
School of Mechanical Engineering, Sungkyunkwan University, Suwon 16419, Republic of Korea, Semiconductor R&D Center, Samsung Electronics, Hwaseong 18448, Republic of Korea, Korea Electronics Technology Institute (KETI), Seongnam 13509, Republic of Korea, School of Mechanical Engineering, Sungkyunkwan University, Suwon 16419, Republic of Korea

16:30 **Study of the chemical composition and the luminescent spectra of Lanthanide-doped oxides** **W P1.7**
Rasa Changizi, Spark Zhang, Torsten Schwarz, Christina Scheu
Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Straße 1, Düsseldorf 40239, Germany

16:30 **Synthesis of ultrafine nanocrystalline Tb:ZnGa2O4 by a Facile, 10 minute Microwave Method and Novel Rapid Annealing Technique** **W P1.8**
Suresh D. Kulkarni, Deepak Hebbar N, K. S. Choudhari, S. A. Shivashankar, Santhosh C
Department of Atomic and Molecular Physics, Manipal Academy of Higher Education, Manipal, Karnataka, India-576104 Centre for Nano Science and Engineering, Indian Institute of Science, Bengaluru, Karnataka, India

16:30 **Studies on Optical and Electrical Properties of Alloyed HgCdTe quantum Dots for Photodetector Applications** **W P1.9**
Janani, Koteswara Rao
Janani, Department of Physics, Indian Institute of Science, Bangalore Koteswara Rao, Department of Physics, Indian Institute of Science, Bangalore

16:30 **Quantitatively Resolved 3D Morphological Stability of P3HT Nanowire-Based BHJ Films against Light Irradiation by TEM Tomography** **W P1.10**
Seon-Mi Jin1,2, Jinwoo Nam1,2, Chang Eun Song3, BongSoo Kim4, Eunji Lee1*
1. School of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Gwangju 61005, Republic of Korea. 2. Graduate School of Analytical Science and Technology, Chungnam National University, Daejeon 34134, Republic of Korea. 3. Center for Solar Energy Materials, Korea Research Institute of Chemical Technology (KRICT), Daejeon 34114, Republic of Korea. 4. Department of Chemistry, Ulsan National Institute of Science and Technology (UNIST), Ulsan 44919, Republic of Korea.

16:30 **Influence of Time Inversion and Spin-Orbit Interaction on Dispersion of Electronic States in Graphite and TMDs** **W P1.11**
V. Gubanov, A. Naumenko, I. Dotsenko, M. Biliy, M.Sabov
Taras Shevchenko National University of Kyiv, 64/13 Volodymyrs’ka St., 01601, Kyiv, Ukraine

16:30 **Directed Assembly of Au-Tipped 1D Inorganic Nanostructures via Nanolithographic Docking** **W P1.12**
Avichai Marcovici*, Guillaume Le Saux* ,Viraj Bhingardive* , Pazit Rukenstein** , Kobi Flomin**, Karam Shreteh** , Roxana Golan*** , Taleb Mokari**, and Mark Schvartzman*
*Department of Materials Engineering, **Department of Chemistry, ***Ilse Katz Institute for Nanoscale Science and Technology, Ben-Gurion University of the Negev, Beer-Sheva, 8410501, Israel

16:30 **Development of Polytriphenylamine acrylate -Carbon Nanotube composite with Increased Charge Transfer** **W P1.13**
Afshin Dianatdar , Francesco Picchioni, Ranjita K. Bose
Department of Chemical Engineering, Engineering and Technology Institute Groningen (ENTEG), University of Groningen, Nijenborgh 4, 9747AG Groningen, The Netherlands

16:30 **Tuning the emission of InGaAs quantum dots by controlled insertion of an Al submonolayer by self-assembly molecular beam epitaxy** **W P1.14**
E.-M. Pavelescu (1), O. Ligor (1), Per-Erik Vullum (2), S. Kadkhodazadeh (3), E. Luna (4), A. Trampert (4), G. Sek (5), J.-P. Reithmaier (6)
(1) National Institute for Research and Development in Microtechnologies, Erou Iancu Nicolae 126A, 077190, Voluntari, Bucharest, Romania, (2) SINTEF Industry, 7465 Trondheim, Norway, (3) Danchip/Center for Electron Nanoscopy (CEN), Technical University of Denmark, Kgs. Lyngby 2800, Denmark, (4) Paul-Drude-Institut für Festkörperelektronik, Hausvogteiplatz 5–7, 10117 Berlin, Germany, (5) Institute of Physics, Wroclaw Institute of Technology, Wybrzeze Wyspianskiego 27, 50-370 Wroclaw, Poland, (6) Institute of Nanostructure Technologies and analytics, Technische Physik, Universitaet Kassel, Heinrich-Plett-Str. 40, 34132 Kassel, Germany.

16:30 **Electronic structure and composition of porous silicon nanopowders** **W P1.15**
S.Yu. Turishchev1, E.V. Parinova1, O.A. Chuvenkova1, A. Pisliaruk1, Yermukhamed3, T. Ming2, D.A. Koyuda1, V. Sivakov2
1 Voronezh State University, Voronezh, Russia, 2 Leibniz Institute of Photonic Technologies, Jena, Germany 3 al-Farabi Kazakh National University, Almaty, Kazakhstan

16:30 **Understanding the role of Si doping in GaAs NWs: enhanced luminescence and overcome polytypism** **W P1.16**
N. Ben Sedrine (a), R. Ribeiro-Andrade (b),(f), A. Gustafsson (c), M. R. Soares (d), J. Bourgard (a), J. P. Teixeira(a), P. M. P. Salomé (b),(e), M. R. Correia (a), M. V. B. Moreira (f), A. G. De Oliveira (f), J. C. González (f), and J. P. Leitão (a)
(a) Departamento de Física and I3N, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal (b) International Iberian Nanotechnology Laboratory (INL), Avenida Mestre José Veiga, 4715-330 Braga, Portugal (c) Solid State Physics and NanoLund, Box 118, Lund University, Lund SE-22100, Sweden (d) Laboratorio Central de Analises, Universidade de Aveiro, 3810-193 Aveiro, Portugal (e) Departamento de Física, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal (f) Departamento de Física, Universidade Federal de Minas Gerais, 30123-970 Belo Horizonte, Minas Gerais, Brazil

16:30 **Determining piezoelectric coefficient of III-Nitride bulk, thin film and nanowire by piezoresponse force microscopy** **W P1.17**
L. Jaloustre(1,2), S. Le-Denmat (1), F. Dahlem (2), and R. Songmuang (1)
1) Univ. Grenoble Alpes, CNRS, Grenoble INP, Institut Néel, 38000 Grenoble, France 2) Laboratoire de Tribologie et Dynamique des Systemes, UMR CNRS 5513, Ecole Centrale de Lyon, 69134 Ecully Cedex, France

16:30 **Selective area epitaxy and doping mechanisms of GaAs-based nanowires grown on Si** **W P1.18**
Elizaveta Lebedkina, Stela Canulescu,Elizaveta Semenova
Department of Photonics Engineering, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark

16:30 **Tuning the Size and optical properties of Silicon Carbide Nanoparticles using No-Photon Excitation Chemistry** **W P1.19**
David Beke, Jan Valenta, Adam Gali
Wigner Research Centre for Physics Charles University, Wigner Research Centre for Physics

16:30 **Exciton Coupling to Shell Phonons in Giant-Shell CdSe/CdS Nanocrystals Investigated by Resonant Raman Spectroscopy** **W P1.20**
Miao-Ling Lin, Mario Miscuglio, Anatolii Polovitsyn, Yu-Chen Leng, Beatriz Martín-García, Iwan Moreels, Ping-Heng Tan, and Roman Krahne
Miao-Ling Lin, Yu-Chen Leng, Ping-Heng Tan,State Key Laboratory of Superlattices and Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, 100083, China, andCenter of Materials Science and Optoelectronics Engineering, University of Chinese Academy of Sciences, Beijing 100190, China, Beatriz Martín-García, Roman Krahne, Istituto Italiano di Tecnologia (IIT), Via Morego 30, 16163 Genoa, Italy, Anatolii Polovitsyn, Iwan Moreels, Department of Chemistry, Ghent University, Krijgslaan 281-S3, 9000 Gent, Belgium

16:30 **Engineered Ge1-xSnx¬ (x= 0.09-0.30) Nanowires and Branched Ge1-xSnx¬ Heterostructure** **W P1.21**
Subhajit Biswas, Jessica Doherty, Justin Holmes
School of Chemistry, ERI and Tyndall National Institute, University College Cork, Cork, T12 YN60, Ireland

16:30 **Al5Si5+δN12, a new Nitride semiconductor** **W P1.22**
Philippe Vennéguès 1, Roy Dagher 1, Liverios Lymperakis 2, Vincent Delaye 3, Ludovic Largeau 4, Adrien Michon 1
1: Université Côte d'Azur, CNRS, CRHEA rue Bernard Grégory 06560 Valbonne, FRANCE 2: Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf, GERMANY 3: Université Grenoble Alpes, CEA LETI 17 rue des Martyrs 38054 Grenoble, FRANCE 4: Université Paris-Sud - Université Paris-Saclay, C2N 10 Boulevard Thomas Gobert, 91120 Palaiseau, FRANCE

16:30 **Plasma enhanced atomic-layer deposition of GaP with Ar plasma treatment** **W P1.23**
A.V. Uvarov 1, A.S. Gudovskikh 1, 2
1 St.Petersburg National Research Academic University RAS, St. Petersburg, Russia 2 St. Petersburg Electrotechnical University "LETI", St. Petersburg, Russia

16:30 **Solution phase microwave process to realize nanoporous ruby and its phase dependent photoluminescence** **W P1.24**
K.S. Choudhari, Deepak Hebbar N., Suresh D. Kulkarni, Santhosh C., Sajan D. George
Department of Atomic and Molecular Physics, Manipal Academy of Higher Education, Manipal, Karnataka, 576104, India Centre for Applied Nanosciences, Manipal Academy of Higher Education, Manipal, Karnataka, 576104, India

16:30 **Optoelectronics properties of CuInxGa(1-x)Se2 thin films obtained by electrodeposition in different back contact method for solar** **W P1.25**
Amal Bouich, Bouchaib Hartiti, Shafi Ullah, Hanif Ullah, Mohamed Ebn Touhami, Bernabé Mari,D.M.F. Santos,
MAC&PM Laboratory, ANEPMAER Group FSTM, Hassan II Casablanca UniversityB.P 146, Mohammedia,Morocco Laboratory LMEE, Faculty of science, BP 133, Kenitra, Morocco Centre Universitaire d'Analyse, d'Expertise, de Transfert de Technologie et d'Incubation, Kenitra, Morocco IST-ULisboa, Portugal ICTP-UNESCO-IAEA, Trieste, Italy Institut de Disseny i Fabricació, Universitat Politècnica de València. Camí de Vera s/n 46022 València, Spain.

16:30 **Facet dependent ligand binding establishes crown growth as an excellent passivation strategy for 2D CdSe nanoplatelets** **W P1.26**
Jari Leemans, Shalini Singh, Iwan Moreels, Zeger Hens
Physics and Chemistry of Nanostructures, Department of Chemistry, Ghent University

16:30 **Quantized Electronic Doping Towards Atomically Controlled 'Charge-Engineered' Semiconductor Nanocrystals** **W P1.27**
Valerio Pinchetti,1 Chiara Capitani,1,2 Graziella Gariano,2 Carlo Santambrogio,3 Mirko Prato,4 Rosaria Brescia,4 Andrea Camellini,5 Abhinav Anand,1 Margherita Zavelani-Rossi,5 Francesco Meinardi,1 Scott A. Crooker,6 & Sergio Brovelli1
1 Dipartimento di Scienza dei Materiali, Università degli Studi di Milano – Bicocca, Via R. Cozzi 55, I-20125, Milano, Italy, 2 Glass to Power SpA, Via F. Daverio 6, I-20135, Milano, Italy, 3 Dipartimento di Scienze dell'Ambiente e del Territorio e di Scienze della Terra, Università degli Studi Milano-Bicocca, Piazza della Scienza, I-20125 Milano, Italy, 4 Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy, 5 Dipartimento di Energia, Politecnico di Milano and IFN-CNR, Milano, Italy. 6 National High Magnetic Field Laboratory, Los Alamos National Laboratory, Los Alamos, New Mexico, 87545, United States.

16:30 **Biocompatible Type-II InP/ZnO Quantum Dot: A Novel Photoelectrode Material For Neural Interfaces** **W P1.28**
Houman Bahmani Jalali [1], Mohammad Mohammadi Aria [1], Ugur Meric Dikbas [2], Sadra Sadeghi [3], Baskaran Ganesh Kumar [4], Mehmet Sahin [5], Ibrahim Halil Kavakli [3,6], Cleva W. Ow-Yang [7], and Sedat Nizamoglu [1,3,4]
[1] Department of Biomedical Science and Engineering, Koç University, Istanbul 34450, Turkey [2] Department of Molecular Biology and Genetics, Koç University, Istanbul 34450, Turkey [3] Department of Material Science and Engineering, Koç University, Istanbul 34450, Turkey [4] Department of Electrical and Electronics Engineering, Koç University, Istanbul 34450, Turkey [5] Department of Materials Science and Nanotechnology Engineering, Abdullah Gul University, Kayseri 38080, Turkey [6] Department of Chemical and Biological Engineering, Koç University, Istanbul 34450, Turkey [7] Department of Material Science and Nano Engineering, Sabanci University, Istanbul 34956, Turkey

16:30 **SiSn island formation using Sn as a growth catalyst on the Si(100) surface by MBE** **W P1.29**
A.I. Nikiforov, V.A. Timofeev, V.I. Mashanov, S.A. Teys, M.Yu. Esin, T.A. Gavrilova, D.V. Gulyaev
Rzhanov Institute of Semiconductor Physics, Siberian Branch of the Russian Academy of Sciences

16:30 **Nonradiative Energy Transfer in the Hybrids of Doped and Undoped 2D Semiconductor Quantum Wells** **W P1.30**
Aydan Yeltik, Murat Olutas, Manoj Sharma, Kivanc Gungor, Hilmi Volkan Demir
Aydan Yeltik, Murat Olutas, Manoj Sharma, Kivanc Gungor, Hilmi Volkan Demir Department of Physics, Department of Electrical and Electronics Engineering, and UNAM–Institute of Materials Science and Nanotechnology, Bilkent University, Ankara 06800, Turkey. Hilmi Volkan Demir LUMINOUS! Center of Excellence for Semiconductor Lighting and Displays, School of Electrical and Electronics Engineering, School of Physical and Mathematical Sciences, Nanyang Technological University, Nanyang Avenue 639798, Singapore.

16:30 **Concerted Photoluminescence of Electrochemically Self-Assembled CuSCN / Stylbazolium Dye Hybrid Thin Films** **W P1.31**
Kyota Uda1, Yuki Tsuda1, Shuji Okada1, Ryohei Yamakado1, Lina Sun1, Yoshiyuki Suzuri1, Matthew Schuette White2, Madalina Furis2, Philipp Stadler3, Oleg Dimitriev4, Tsukasa. Yoshida1
1, Yamagata University, Yonezawa, Yamagata, Japan 2, University of Vermont, Burlington, VT, United States 3, Johannes Kepler University, Linz, Austria 4, National Academy of Science of Ukraine, Kiev, Ukraine

16:30 **Mechanical and electronic properties of tin carbide nanowires** **W P1.32**
Alma Marcos-Viquez, Luis A. Pérez, A. Trejo
Instituto Politécnico Nacional, ESIME Culhuacán, Instituto de Física, Universidad Nacional Autónoma de México, Instituto Politécnico Nacional, ESIME Culhuacán. .

16:30 **Luminescent properties of Zn2GeO4 nanoparticles embedded in ZnO** **W P1.33**
G. Cristian Vásquez, Calliope Bazioti, Augustinas Galeckas, Klaus Magnus Johansen, Øystein Prytz, Lasse Vines
University of Oslo, Centre for Materials Science and Nanotechnology, 0318 Oslo, Norway

16:30 **Quantum dot particles as anisotropic emitters for luminescent solar concentrator** **W P1.34**
Natalia Zawacka, Kristiaan Neyts, Philippe Smet, Zeger Hens
PCN group, Department of Chemistry, Ghent University, Belgium, LCP group, Department of Electronics and Information Systems, Ghent University, Belgium, LumiLab group, Department of Solid State Sciences, Ghent University, Belgium, PCN group, Department of Chemistry, Ghent University, Belgium

16:30 **Investigation on the interplay of carrier and energy transfer mechanism in carbon quantum dots and organic semiconductors** **W P1.35**
Anu Babusenan, C. Vijayan, Jayeeta Bhattacharyya
Department of Physics, Indian Institute of Technology Madras, India 600036

16:30 **Systematic Study into the Synthesis of Colloidal Transition Metal Dichalcogenide Nanocrystals** **W P1.36**
Pengshang Zhou, Pieter Schiettecatte, Zeger Hens, Shalini Singh
Physics and Chemistry of Nanostructures Group (PCN), Department of Chemistry, Gent University, 9000 Gent, Belgium

16:30 **Precise control of Optical Properties of 2D Semiconducting Nanoplatelets via Surface Passivation** **W P1.37**
Jaehan Jung
Department of Materials Science and Engineering, Hongik University, Sejong, South Korea

16:30 **Influence of the excitation power on the optical properties of InAs/GaAs quantum dots capped with Strain-Reducing Layer: GaAs1?x** **W P1.38**
Afef Ben Mansour, Adnen Melliti, Abd Majid Salhi, Radhouane Chtourou
National Higher Engineering School of Tunis. National Higher Engineering School of Tunis. IBN Rochd University Hospital Center. Tunis Center for Research and Energy Technologies.

16:30 **B Doping Control and Characterization on Al-Catalyzed Si Nanowires and p-Si/i-Ge Core-Shell Nanowires** **W P1.39**
Wipakorn Jevasuwan, Xiaolong Zhang, Thiyagu Subramani, Ryo Matsumura and Naoki Fukata
National Institute for Maeterials Science (NIMS)

16:30 **Towards self-assembled nanodielectrics on germanium** **W P1.40**
Mohamed-Amine Guerboukha 1, Virginie Gadenne 1, Younal Ksari 1, Bruno Jousselme 2, David Tomecek3, Martin Hruska 3, Jan Vlcek 3, Premysl Fitl 3, Martin Vrnata 3, Jean-Manuel Raimundo 4, Lionel Patrone 1
1- Aix Marseille Univ, Université de Toulon, CNRS, IM2NP UMR 7334, Yncréa Méditerranée, ISEN Toulon, Maison du Numérique et de l'Innovation, Place G. Pompidou, 83000 Toulon, France, & Campus de St Jérôme, 13397 Marseille Cedex 20, France, 2- Laboratory of Innovation in Surface Chemistry & Nanosciences (LICSEN), DSM/IRAMIS/NIMBE, CEA Saclay, F-91191 Gif-sur-Yvette Cedex, France , 3- University of Chemistry and Technology, Prague, Technicka 5, 166 28 Prague 6 –Dejvice, Czech Republic, 4- Aix-Marseille Université, CINaM UMR CNRS 7325, case 913,13288 Marseille cedex 09, France

16:30 **Structural, optical and magnetic properties of 500 keV Xe3+ ions irradiated GaN/sapphire oriented films** **W P1.41**
Preetam Singh1, Santanu Ghosh1, Arvind Singh1, Sunil Kumar1, Sunil Ojha2 and Pankaj Srivastava1
1 Department of Physics, Indian Institute of Technology Delhi, New Delhi-110016, India 2 Inter University Accelerator Centre, Aruna Asaf Ali Marg, New Delhi, 110067, India

16:30 **Formation of Ge nanocrystals from Ge-doped SiO2/TaZrOx superlattices** **W P1.42**
Florian Honeit, Jan Beyer, Johannes Heitmann
Institute of Applied Physics, TU Bergakademie Freiberg Leipziger Straße 23 D-09599 Freiberg, Germany

16:30 **The influence of H2O2 concentration on the structural and optical properties of porous silicon nanowires produced by MACE** **W P1.43**
K.A. Gonchar1, D.V. Moiseev1, I.V. Bozhev 1, L.A. Osminkina1,2
1 Physics Department, Lomonosov Moscow State University, Leninskie Gory 1, 119991 Moscow, Russia, 2 Institute for Biological Instrumentation of Russian Academy of Sciences, 142290 Pushchino, Moscow Region, Russia

16:30 **Nanostructured Hematite Decorated with Gold Nanoparticles and Cytochrome c: Potential Applications in Spintronics and Nanorobots** **W P1.44**
Lucivaldo R. Menezes, Guilherme Sombrio, Tiago Rodrigues, José A. Souza, Iseli L. Nantes-Cardoso
Center of Natural Sciences and Humanities, Federal University of ABC, Santo André, SP, Brazil

16:30 **Cadmium free quantum dots for LED package with the high color rendering index** **W P1.45**
Min-Sang Lee(1), Jeong-Mi Lee(1), Yong-Chae Yoon(1), Jae-Ho Choi(1), Bong-Min Choi(2), Sun-Tae Hwang(2), Gwi-Hwa Lee(2), Chang-Joo Han(3), Kwang-Yeal Lee(4), Yong-Hyun Kim(5), Dae-Hee Won(6), Young-Ki Lee(7)
(1) QDM, #310, Bd.67, 460, Iksan-daero, Iksan-si, 54538, Korea (2) OD Tech, 165, Dunsan 1-ro, Bongdong-eup, Wanju-gun, 55315, Korea (3) SOLts, #2303, 13, Heungdeok 1-ro, Giheung-gu, Yongin-si, Gyeonggi-do, 16954, Korea (4) Sewon HF, 257-29, Wanjusandan 2-ro, Bongdong-eup, Wanju-gun, 55318, Korea (5) Korea Photonics Technology Institute, 9, Cheomdan venture-ro 108beon-gil, Buk-gu, Gwangju, 61007, Korea (6) Wonkwang University, 460, Iksan-daero, Iksan-si, 54538, Korea (7) Uiduk University, 261, Donghae-daero, Gangdong-myeon, Gyeongju-si, 38004, Korea

16:30 **Effect of strain on the exciton emission in CdSe-based heteronanoplatelets** **W P1.46**
Jordi Llusar, Josep Planelles, Juan I. Climente
Departament de Química Física i Analítica, Universitat Jaume I, E-12080, Castelló de la Plana, Spain

Light-matter interactions in advanced semiconductor nanostructures : Sergio Brovelli

08:30 INV **Strong light-matter coupling in monolayer transition metal dichalcogenides and 2D perovskites** — W 4.1
Dario Ballarini
CNR-Nanotec

09:00 **Dirac antidot superlattices for electrons in III-V semiconductors** — W 4.2
N. A. Franchina Vergel, A. Tadjine, L.C. Post, M. Berthe, Y. Lambert, F. Vaurette, D. Yarekha, L. Desplanque, C. Coinon, X. Wallart, D. Stiévenard, C. Delerue, B. Grandidier.
Univ. Lille, CNRS, Centrale Lille, ISEN, Univ. Valenciennes, UMR 8520 - IEMN, F-59000 Lille, France I Condensed Matter and Interfaces, Debye Institute for Nanomaterials Science, Utrecht University, 3584 CC Utrecht, The Netherlands.

09:15 **Exciton-Polaron Interaction as a Pathway to Free-Charge Carrier Generation in Organic Semiconductor Devices** — W 4.3
Haripriya V K, Subhamoy Sahoo, Sanjoy Jena, Prashanth Kumar Manda, Amogh Kumar Baranwal, Dr. Soumya Dutta, Dr. Jayeeta Bhattacharyya, Dr. Debdutta Ray Department of Electrical Engineering, IIT Madras, Chennai, India – 600036,Department of Physics, IIT Madras, Chennai, India – 600036,Department of Electrical Engineering, IIT Madras, Chennai, India – 600036,Department of Electrical Engineering, IIT Madras, Chennai, India – 600036,Department of Electrical Engineering, IIT Madras, Chennai, India – 600036,Department of Physics, IIT Madras, Chennai, India – 600036,Department of Electrical Engineering, IIT Madras, Chennai, India – 600036

09:30 **Epsilon-Near-Zero Resonant Tunneling Modes in Metal/Insulator/Metal Nanocavities** — W 4.4
Vincenzo Caligiuri, Milan Palei, Giulia Biffi, Sergey Artyukhin, Liberato Manna, Roman Krahne
Vincenzo Caligiuri, Milan Palei, Giulia Biffi, Sergey Artyukhin, Liberato Manna, Roman Krahne: Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy
Milan Palei, Giulia Biffi: Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, Via Dodecaneso, 31, 16146 Genova, Italy

09:45 **Coffee break**

Light-matter interactions in advanced semiconductor nanostructures : Iwan Moreels

10:15 **Semiconductors Meta-Optics: Fabrication and Applications** — W 4.5
G. Brière 1, P. Ni 1, S. Héron 1, S. Chenot 1, S. Vézian 1, V. Brandli 1, B. Damilano 1, J.Y Duboz 1, M. Iwanaga 2 and P. Genevet 1
1 Université Côte d'Azur, CNRS, Centre de Recherche sur l'Hétéro-Epitaxie et ses Applications, 1 Rue Bernard Gregory, 06560, Sophia-Antipolis, France, 2 National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba 305-0044, Japan,

10:30 **Intersubband plasmons induced negative refraction at mid-IR frequency in heterostructured semiconductor metamaterials** — W 4.6
Mario Ferraro1, Adrian Hierro2, Miguel Montes Bajo2, Julen Tamayo-Arriola2, Nolwenn Le Biavan1, Maxime Hugues1, Jose M. Ulloa2, Massimo Giudici3, Jean Michel Chauveau1, and Patrice Genevet1
1-Université Cote d'Azur, CNRS, CRHEA, rue Bernard Gregory, Sophia Antipolis 06560 Valbonne, France 2-ISOM, Universidad Politécnica de Madrid, Avda. Complutense 30, 28040 Madrid, Spain 3-Université Cote d'Azur, CNRS, InPhyni, Route des Lucioles, Sophia Antipolis 06560 Valbonne, France

10:45 **Dynamic Tuning of Plasmonic Structures using Phase Change Materials** — W 4.7
S. Cunningham, J. J. Gough, C. Hrelescu, S.B Porter, P. Stamenov, A. Louise Bradley
School of Physics and CRANN, Trinity College Dublin, AMBER

11:15 **Plenary Session 1**

12:30 **Lunch break**

Semiconductor nanowires - synthesis and applications : Iván Mora Seró

14:00 INV **Compound semiconductor nanowires synthesis and sustainability aspects** — W 5.1
Anna Fontcuberta i Morral
Laboratory of Semiconductor Materials, Institute of Materials, School of Engineering, Ecole Polytechnique Fédérale de Lausanne Institute of Physics, School of Basic Sciences, Ecole Polytechnique Fédérale de Lausanne

14:30 **Catalyst-free growth of strongly confined ultrathin InAs nanowires** — W 5.2
Fabio del Giudice (1,2), Daniel Ruhstorfer (1), Hubert Riedl (1), Markus Döblinger (3), Jonathan Finley (1), Gregor Koblmüller (1,2)
1 : Walter Schottky Institut, Physik Department, and Center for Nanotechnology and Nanomaterials, Technische Universität München, Am Coulombwall 4, 85748 Garching, 2 : International Graduate School for Science and Engineering (IGSSE), Technische Universität München, Boltzmannstraße 17, 85748 Garching, 3: Department of Chemistry, Ludwig-Maximilians-University (LMU)

14:45 **Analytic Description of Zincblende-Nanowire Cross Sections for the Evaluation of Experimental Data: Metrology Down to the Atom** — W 5.3
D. König(a,b), S. C. Smith(c)
(a) Integrated Material Design Centre (IMDC), University of NSW, Sydney, Australia
(b) Institute of Semiconductor Electronics (IHT), RWTH Aachen University, Germany
(c) Research School of Physics and Engineering, The Australian National University, Canberra, Australia

15:00 **Silicon nanowire solar cells with µc-Si:H absorbers for tandem radial junction devices** — W 5.4
Letian DAI (1,2,3), Martin FOLDYNA (2), Isabelle MAURIN (3), José ALVAREZ (1), Weixi WANG (2), Eric NGO (2), Jean-Paul KLEIDER (1), Jean-Luc MAURICE (2), Thierry GACOIN (3), Pere ROCA i CABARROCAS (2)
1. GeePs, CNRS, CentraleSupélec, Univ. Paris-Sud, Université Paris-Saclay, Sorbonne Universités, 11 rue Joliot-Curie, Plateau de Moulon, 91192 Gif-sur-Yvette Cedex, France, 2. LPICM, CNRS, Ecole Polytechnique, Université Paris-Saclay, Route de Saclay, 91128 Palaiseau Cedex, France, 3. LPMC, CNRS, Ecole Polytechnique, Université Paris-Saclay, Route de Saclay, 91128 Palaiseau Cedex, France

15:15 **Light-emitting InAs nanowires grown by MOVPE directly on flexible plastic substrates** — W 5.5
Vladislav Khayrudinov (1)*, Tuomas Haggren (1), Maxim A. Remennyy (2), Prokhor A. Alekseev (2), Boris A. Matveev (2), and Harri Lipsanen (1)
(1)Department of Electronics and Nanoengineering, Aalto University, P.O. Box 13500, FI-00076, Finland (2) Ioffe Institute, 194021, St. Petersburg, Russia

15:30 **ZnO-CuO core-shell radial heterojunction nanowires: synthesis, properties and optoelectronic applications** — W 5.6
A. Costas, C. Florica, N. Preda, N. Apostol, A. Kuncser, A. Nitescu and I. Enculescu National Institute of Material Physics, PO Box MG7, 077125, Magurele, Romania

15:45 **Atomic, electronic structure and composition synchrotron investigations of top-down silicon nanowires covered by MOCVD tin oxide** — W 5.7
E.V. Parinova1, V. Sivakov2, O.A. Chuvenkova1, D.A. Koyuda1, D. Marchenko3, R. Ovsyannikov3, R.G. Chumakov4, S.I. Kurganskii1, O.I. Dubrovskii1, M.D. Manyakin1, D.A. Schleusener2, S.Yu. Turishchev1
1 Voronezh State University, Voronezh, Russia, 2 Leibniz Institute of Photonic Technologies, Jena, Germany, 3 Helmholtz-Zentrum-Berlin, Berlin, Germany, 4 NRC "Kurchatov institute", Moscow, Russia

16:00 **Coffee break**

Sensing applications : Iwan Moreels

16:30 INV **Integration of micro and nano lasers into live cells for optical barcoding and sensing** — W 6.1
Marcel Schubert, Alasdair Fikouras, Markus Karl, James M.E. Glackin, Andrew Morton, Soraya C. Caixeiro, Graham A. Turnbull, Ifor D.W. Samuel, Andrea Di Falco, Malte C. Gather
SUPA, School of Physics and Astronomy, University of St Andrews, Scotland, UK

17:00 **Ultra-Sensitive and Fast Plasmonic Room-Temperature Gas Sensors by Ultraporous Nanoparticle Networks** — W 6.2
Professor Antonio Tricoli, Dr Zelio Fusco
Nanotechnology Research Laboratory, College of Engineering and Computer Science, Australian National University

17:15 **Nanoscale local magnetic heating monitored with quantum dots nanothermometers for catalysis applications (T>100°C)** **W 6.3**
G. Muraille, S. Faure, B. Mc Vey, R. Swain, J.M. Asensio, J. Carrey, B. Chaudret, F. Delpech, C. Nayral
LPCNO Université de Toulouse, CNRS, INSA, UPS, France

17:30 **Label-free optical biosensors based on fractal silicon nanowires** **W 6.4**
M.J. Lo Faro1,2,3, A.A. Leonardi1,2,3,4, D. Morganti1,2, P. Musumeci1, B. Fazio2, G. Palazzo5, L. Torsi5, F. Priolo1,3,6, A. Irrera2.
1 Dipartimento di Fisica e Astronomia “Ettore Majorana”, Università di Catania, Via Santa Sofia 64, 95123 Catania, Italy, 2 CNR-IPCF, Istituto per i Processi Chimico-Fisici, V.le F. Stagno D’Alcontres 37, 98158 Messina, Italy, 3 MATIS CNR-IMM, Istituto per la Microelettronica e Microsistemi, Via Santa Sofia 64, 95123 Catania, Italy, 4 INFN sezione di Catania, Via Santa Sofia 64, 95123 Catania, Italy, 5 Dipartimento di Chimica, Università degli Studi di Bari “Aldo Moro”, via Orabona 4, 70126 Bari, Italy 6 Scuola Superiore di Catania, Via Valdisavoia 9, 95123 Catania, Italy,

17:45 **Titanium dioxide Columnar Thin Film Coupled with Gold Nanoislands for Label-free Plasmonic Biodetection** **W 6.5**
Chen Xu, Chi-Man Lawrence Wu
Department of Materials Science and Engineering, City University of Hong Kong, Hong Kong SAR□China

Wednesday 29 may 2019

2D layered nanomaterials : Pieter Geiregat

08:30 INV **Room-temperature valley contrasting properties in hybrid systems based on atomically-thin semiconductors** **W 7.1**
Etienne Lorchat (1), Stefano Azzini (2), Thibault Chervy (2), Takashi Taniguchi (3), Kenji Watanabe (3), Thomas Ebbsen (2), Cyriaque Genet (2), Stéphane Berciaud (1)
Etienne Lorchat, Stéphane Berciaud: (1) Université de Strasbourg, CNRS, IPCMS, UMR 7504, F-67000 Strasbourg, France Stefano Azzini, Thibault Chervy, Thomas Ebbsen, Cyriaque Genet: (2) ISIS & icFRC, Université de Strasbourg and CNRS, UMR 7006, F-67000 Strasbourg, France Takashi Taniguchi, Kenji Watanabe: (3) National Institute for Materials Science, Tsukuba, Ibaraki 305-0044, Japan

09:00 **The Challenges of Iron Germanide Phase Control on the Nanoscale** **W 7.2**
Alexandre Sodreau, Benjamin Mc Vey, Sonia Mallet-Ladeira, Sébastien Lachaize, Lise-Marie Lacroix, Karinne Miqueu, Jean-Marc Sotiropoulos, David Madec, Céline Nayral and Fabien Delpech
LPCNO, Université de Toulouse, CNRS, INSA, UPS, 135 avenue de Rangueil, 31077 Toulouse, France. E-mail:: fdelpech@insa-toulouse.fr Université de Toulouse, UPS, LHFA (Laboratoire Hétérochimie Fondamentale et Appliquée), UMR/CNRS 5069, 118, Route de Narbonne, 31062 Toulouse Cedex 09, France. Laboratoire de Chimie de Coordination, UPR-CNRS 8241, 205 route de Narbonne, 31077 Toulouse Cedex, France. CNRS/UNIV PAU & PAYS ADOUR, Institut des Sciences Analytiques et de Physico-Chimie pour l’Environnement et les Matériaux (IPREM, UMR CNRS 5254), Hélioparc, 2 Avenue du Président Angot, 64053 Pau Cedex 09, France.

09:15 **A Family of Homogeneous Fluorescent Carbon Dots for Optoelectronic Applications** **W 7.3**
Alice Sciortino[a], Nicolò Mauro[b], Gianpiero Buscarino[a,c], Luisa Sciortino[a], Radian Popescu[d], Reinhard Schneider[d], Gaetano Giammona[b], Dagmar Gerthsen[d], Marco Cannas[a], Fabrizio Messina[a,c]
[a] Dipartimento di Fisica e Chimica, Università degli Studi di Palermo, Via Archirafi 36, 90123 Palermo, Italy, [b] Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF) , Università degli Studi di Palermo, Via Archirafi 32, 90123 Palermo, Italy, [c] CHAB – ATeN Center, Università degli Studi di Palermo, Viale delle Scienze, Edificio 18, 90128 Palermo, Italy, [d] Laboratory for Electron Microscopy, Karlsruhe Institute of Technology, Engesserstrasse 7, 76131 Karlsruhe, Germany,

09:30 **Heat transfer at the nanoscale in Van der Waals materials** **W 7.4**
Emmanuel Baudin, Christophe Voisin, Bernard Plaçais
Laboratoire de Physique de l’École normale supérieure, ENS, Université PSL, CNRS, Sorbonne Université, Université Paris-Diderot, Sorbonne Paris Cité, Paris, France

09:45 **Light emitting devices based on van der Waals Heterostructures with plasmonic nanocavities.** **W 7.5**
Viktoryia Shautsova, Yuewen Sheng, Qianyang Zhang, Linlin Hou, Yingqiu Zhou, Jamie Warner
University of Oxford

10:00 **Coffee break**

Photodetectors and solar cells : Zeger Hens

10:30 **High-performance vacuum-deposition processed near-infrared organic photodiode based on heterojunction of ClInPC and C60** **W 8.1**
Young-Sam Park, Chul Woong Joo, Juhee Kim, Jaehyun Moon, Kang Me Lee, Jae-Eun Pi, Seung-Youl Kang, Seong-Deok Ahn, Nam Sung Cho, and Dae Sung Chung
Electronics and Telecommunications Research Institute (ETRI), Daegu Gyeongbuk Institute of Science and Technology (DGIST)

10:45 **High Performance Optoelectronic Devices Based on Bright Perovskite Nanocrystals Synthesized at Room Temperature** **W 8.2**
S. Christodoulou, F. Di Stasio, I. Ramiro, S. Pradhan, Y. Bi, A. Stavrinadis, G. Konstantatos
ICFO—Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology, Av. Carl Friedrich Gauss, 3, 08860 Castelldefels (Barcelona), Spain

11:00 **Ultra-fast Hybrid Photodetector Sensitive to 1.54 µm Radiation Based on Plasmonic Au Nanorods and Pt Mircowire** **W 8.3**
Hengyang Xiang, Zhelu Hu, Laurent Billot, Lionel Aigouy and Zhuoying Chen
LPEM, ESPCI Paris, PSL Research University, CNRS, Sorbonne Université, 10 Rue Vauquelin, F-75005 Paris, France

11:15 **Intraband Photoresponse in the Mid- and Long-Wave Infrared by Robust Heavily Doped PbS Colloidal Quantum Dot Films** **W 8.4**
I. Ramiro, O. Özdemir, S. Christodoulou, S. Gupta, M. Dalmases, and G. Konstantatos
ICFO—Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology, Av. Carl Friedrich Gauss, 3, 08860 Castelldefels (Barcelona), Spain ICREA—Institució Catalana de Recerca i Estudis Avançats, Passeig Lluís Companys 23, 08010 Barcelona, Spain

11:30 **Embedded nano-structured Sb2Se3 in poly-Si TFT for the fabrication of flexible photo-detector with amplified response** **W 8.5**
Cheng yu Lee1*, Wen-Hsien Huang2, Jia-Min Shieh2, Chang-Hong Shen2, Yu-Lun Chueh1
1Material Science and engineering, National Tsin Hua university, Hsin Chu city, Taiwan, 2Taiwan Semiconductor Research Institute, National Applied Research Laboratories, Hsin-Chu city, Taiwan

11:45 **All-Solution Processed All-Organic Optical Upconversion Device** **W 8.6**
Karen Strassel (1,2), Santhanu Panikar Ramanandan (1,2), René Schneider (1), Frank Nüesch (1,2), Roland Hany*(1)
1) Empa – Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland 2) EPFL - Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

12:00 **Highly Efficient Inverted Structural Quantum Dot Solar Cells** **W 8.7**
Ruili Wang, Xiaoyuan Liu, Zhijun Ning*
School of Physical Science and Technology, ShanghaiTech University

12:30 **Lunch break**

III-V and group-IV nanostructures and devices : Gregor Koblmueller

14:00 INV **Monolithic integration of III-V compounds on Si for applications in nanoelectronics and nanophotonics** **W 9.1**
Heike Riel
IBM - Zürich

14:30 **Vapor-Solid Selective Area Molecular Beam Epitaxy and N-Type Doping of Catalyst-Free GaAs:Si Nanowires on Silicon** **W 9.2**
D. Ruhstorfer, S. Mejia, H. Riedl, J. J. Finley, G. Koblmüller
Walter Schottky Institute & Physics Dept., TU Munich, 85748 Garching, Germany

14:45 **First principles design and experimental validation of porous silicon photonic resonators** **W 9.3**
Alessio Palavicini, Chumin Wang
Instituto de Investigaciones en Materiales, Universidad Nacional Autonoma de Mexico, Ciudad de Mexico, Mexico

15:00 **Enhanced light extraction in GeSn photonic crystal laser** **W 9.4**
Quang Minh Thai, Nicolas Pauc, Jérémie Chrétien, Mathieu Bertrand, Joris Aubin, Alexei Chelnokov, Jean-Michel Hartmann, Vincent Reboud, Vincent Calvo
University Grenoble Alpes, CEA, INAC-Pheliqs, 38000 Grenoble, France University Grenoble Alpes, CEA-Leti, Minatec, 17-rue des Martyrs, 38000 Grenoble, France

15:15 **Electroluminescence enhancement in silicon nanophotonic resonators** **W 9.5**
Sebastian W. Schmitt 1, Klaus Schwarzburg 1, Catherine Dubourdieu 1,2
1 Helmholtz - Zentrum Berlin für Materialien und Energie, Hahn-Meitner Platz 1, 14109 Berlin, Germany 2 Freie Universität Berlin, Institut für Chemie und Biochemie, Takustr. 3, 14195 Berlin, Germany

15:30 **Low temperature PE-ALD of GaN nucleation layer for growth on Si substrates** **W 9.6**
A.S. Gudovskikh, A.V. Uvarov, A. M. Mizerov, and A.D. Bouravleuv
St. Petersburg Academic University RAS, St. Petersburg, Russia

15:45 **Bidirectional communication using visible light: optical sensing and detection** **W 9.7**
M. Vieira (1,2,3), M. A. Vieira(1,2), P. Louro (1,2), P. Vieira (1,4)
1Electronics Telecommunication and Computer Dept. ISEL/IPL 1959-007,Lisbon, Portugal, 2 CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal, . 3 DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal, 4 Instituto de Telecomunicações, Instituto Superior Técnico, 1049-001, Lisboa, Portugal.

16:00 **Coffee break**

Poster Session II : Moreels - Brovelli - Mora Seró

16:30 **Laser-microstructured ZnO/Si heterojunction photodetectors with enhanced performance** **W P2.1**
George Chatzigiannakis1, Konstantina Nikolaidou1,2, Spiros Gardelis2, Maria Kandyla1
1National Hellenic Research Foundation, Theoretical and Physical Chemistry Institute, 48 Vasileos Constantinou Avenue, 11635 Athens, Greece, 2National and Kapodistrian University of Athens, Physics Department, Panepistimiopolis Zografos, 15784 Athens, Greece

16:30 **Structural and Optical Characterization of GaAsN Light-Emitting Structures Formed by Using N+ Implantation into AlN/GaAs** **W P2.2**
N.A. Sobolev1, V.I. Sakharov1, I.T. Serenkov1, A.D. Bondarev1, K.V. Karabeshkin1, E.V. Fomin1, A.E. Kalyadin1, V.M. Mikoushkin1, M.P. Shcheglov1, E.I. Shek1, E.V. Sherstnev1, V.I. Vdovin2
1Ioffe Institute, 194021 St. Petersburg, Russia, 2Rzhanov Institute of Semiconductor Physics, 630090 Novosibirsk, Russia

16:30 **Bias dependent dielectric properties study of La0.8Ba0.1Ca0.1Mn0.85Co0.15O3 at room temperature.** **W P2.3**
Gdaiem Mohamed Amara*, N. Hamdaoui, Chaker Rayssi, J. Dhahri
1 Laboratory of Condensed Matter and Nanosciences, Department of Physics, Faculty of Sciences of Monastir, 5019, Tunisia. 2 .1 Laboratory of Energy and Materials, Department of Physics, High School of Sciences and Technologies of Sousse Hammam, University of Sousse, Hammam Sousse, Tunisia. 2.2 Laboratory of Energy and Materials, Department of Physics, Research Group of Nano-Materials for Telecommunications, Higher Institute of Computer and Communication Technologies, University of Sousse, Hammam Sousse, Tunisia. 3 Laboratory of Condensed Matter and Nanosciences, Department of Physics, Faculty of Sciences of Monastir, 5019, Tunisia. 4 Laboratory of Condensed Matter and Nanosciences, Department of Physics, Faculty of Sciences of Monastir, 5019, Tunisia.

16:30 **Simultaneous growth of multi-color emitting InGaN/GaN microcrystal arrays for flexible micro-LED application** **W P2.4**
Dong Won Yang, Jae Hyung Lee, Suhan Kim, Suhee Jang, Sang Il Lee, and Won Il Park
Division of Materials Science and Engineering, Hanyang University

16:30 **Surface Analysis of Plasma Pretreated Sapphire Substrate for AlN Buffer Layer** **W P2.5**
Dongjin Byun*, Woo Seop Jeong, Seunghee Cho, Min Joo Ahn, Doo Won Lee, Kyu-Yeon Shim, Seong Ho Kang
Korea University (KU)

16:30 **Fabrication and optical properties of quantum-dot light emitting diode with quantum dot quantum well structures** **W P2.6**
Joo In Lee
Center for nanocharacterization, Industrial Metrology, Korea Research Institute of Standards and Science, South Korea

16:30 **Compliant Hybrid Carbon Nanotube Micro-probes for testing Si at Wafer-level before Packaging** **W P2.7**
Mehmet O. Tas (a), Mark. A. Baker (b), Vishal Musaramthota (c), Hasan Uppal (c), Mateus G. Masteghin (a), Jedidiah Bentz (c), Keir Boxshall (c), Vlad Stolojan (a)
(a) - Advanced Technology Institute, Department of Electronic Engineering, University of Surrey, Guildford, GU2 7XH, UK (b) - Department of Mechanical Engineering Sciences, University of Surrey, Guildford, GU2 7XH, UK (c) - Smiths Interconnect, 8851 SW Old Kansas Ave., Stuart, Florida 34997, USA

16:30 **Photovoltaic Response of Graphene-on-GaN Schottky Junction Photodiodes** **W P2.8**
Jae Hyung Lee, Dong Won Yang, Jae Hyeok Shin, Won Il Park
Division of Materials Science and Engineering, Hanyang University, Seoul 04763, Republic of Korea.

16:30 **Investigation of low temperature inductively coupled plasma chemical vapor deposition for flexible electronics** **W P2.9**
K. Yang, O. De Sagazan, L. Pichon, A. C. Salaun, N. Coulon
IETR, Microelectronics and Microsensors Department, University of Rennes 1, UMR CNRS 6164

16:30 **Ultra-thin Silicon On Insulator lateral PiN-like diodes for THz microbolometer passive imaging** **W P2.10**
Jérémy Blond, Abdelkader Aliane, Jérôme Meilhan, Laurent Dussopt
Univ. Grenoble Alpes, F-38000 Grenoble, France / CEA, DRT, LETI, F-38054 Grenoble, France

16:30 **Tandem SiC heterostructures as receivers in vehicular communications** **W P2.11**
M. A. Vieira(1,2), M. Vieira (1,2,3), P. Louro (1,2) , P. Vieira (1,4)
1Electronics Telecommunication and Computer Dept. ISEL, R. Conselheiro Emídio Navarro, 1949-014 Lisboa, Portugal Tel: +351 21 8317290, Fax: +351 21 8317114, mv@isel.ipl.pt , 2 CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal, 3 DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal, 4 Instituto de Telecomunicações, Instituto Superior Técnico, 1049-001, Lisboa, Portugal.

16:30 **Study on ultraviolet sensitivity of InGaN-based p-i-n photodetectors with different In composition in the active layer** **W P2.12**
Hyun-Jin Lee, Seung-Hye Baek, Hee Wung Kim and Sung-Nam Lee*
Korea Polytechnic University

16:30 **Effect of Ni thickness on optical and electrical properties of Al:ZnO-Ni-Al:ZnO photodetectors** **W P2.13**
Hee-Wung Kim, Hyun-Jin Lee, Seung-Hye Baek, Sung-Nam Lee*
Optoelectronic Materials & Devices Lab., Department of Nano-Optical Engineering, Korea Polytechnic University, Siheung, 15073, Korea

16:30 **GeSn microdisk encapsulated by SiN stressor for laser applications** **W P2.14**
Jérémie Chrétien, Anas Elbaz, Nicolas Pauc, Konstantinos Pantzas, Etienne Herth, Isabelle Sagnes, Gilles Patriarches, Mathieu Bertrand, Quang-Minh Thai, Alexei Chelnokov, Vincent Reboud, Jean-Michel Hartmann, Moustafa El Kurdi, Vincent Calvo
Jérémie Chrétien, Univ. Grenoble Alpes, CEA, INAC-Pheliqs, F-38000, Grenoble, France , Anas Elbaz, Centre de Nanosciences et de Nanotechnologies, C2N UMR9001 CNRS-Université Paris-Sud, 91120 Palaiseau, France , Nicolas Pauc, Univ. Grenoble Alpes, CEA, INAC-Pheliqs, F-38000, Grenoble, France , Konstantinos Pantzas, Centre de Nanosciences et de Nanotechnologies, C2N UMR9001 CNRS-Université Paris-Sud, 91120 Palaiseau, France , Etienne Herth, Centre de Nanosciences et de Nanotechnologies, C2N UMR9001 CNRS-Université Paris-Sud, 91120 Palaiseau, France , Isabelle Sagnes, Centre de Nanosciences et de Nanotechnologies, C2N UMR9001 CNRS-Université Paris-Sud, 91120 Palaiseau, France , Gilles Patriarches, Centre de Nanosciences et de Nanotechnologies, C2N UMR9001 CNRS-Université Paris-Sud, 91120 Palaiseau, France , Mathieu Bertrand, Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France , Quang-Minh Thai, Univ. Grenoble Alpes, CEA, INAC-Pheliqs, F-38000, Grenoble, France , Alexei Chelnokov, Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France , Vincent Reboud, Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France , Jean-Michel Hartmann, Univ. Grenoble Alpes, CEA, LETI, F-38000, Grenoble, France , Moustafa El Kurdi, Centre de Nanosciences et de Nanotechnologies, C2N UMR9001 CNRS-Université Paris-Sud, 91120 Palaiseau, France , Vincent Calvo, Univ. Grenoble Alpes, CEA, INAC-Pheliqs, F-38000, Grenoble, France ,

16:30 **A study of carrier confinement by SiGeSn layers in GeSn-based mid-infrared light emitting diodes** **W P2.15**
L. Casiez(1), M. Bertrand(1), A. Quintero(1), Q. M. Thai(2), J. Chrétien(2), N. Pauc(2), R. Khazaka(1), J. Aubin(1), P. Rodriguez(1), A. Chelnokov(1), J.M. Hartmann(1), V. Calvo(2), V. Reboud(1)
(1) Univ. Grenoble Alpes, CEA, LETI 17 rue des Martyrs, 38000, Grenoble, France
(2) Univ. Grenoble Alpes, CEA, INAC 17 rue des Martyrs, 38000, Grenoble, France

16:30 **One Step Solution for Light Extraction Efficiency of Quantum Dot (QD) Display Using High-Aspect-Ratio Light Recycling Wall** **W P2.16**
Haeju Yun, Wonseok Choi, Yongjae Kim, Geuntae Yun, Soo-Yeon Cho, Hee-Tae Jung
Haeju Yun 1. Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST) 2. Samsung Display R&D Center, Product Research Team , Wonseok Choi Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST) , Yongjae Kim Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST) , Geuntae Yun Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST) , Soo-Yeon Cho Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST) , Hee-Tae Jung Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST) ,

16:30 **Electrotransmission study of built-in electric field in InGaN/GaN LED with quantum wells** **W P2.17**
Aslanyan. A.E.1, Avakyants L.P.1, Chervyakov A.V.1, Turkin A.N.1, Mirzai S.S.1, Mazalov A.V.2, Sabitov D.R.2, Kureshov V.A.2, Marmaluk A.A.2
1Physics Department, M.V. Lomonosov Moscow State University, Leninskie Gory 1 b. 2, Moscow, Russia, 119991, 2POLYUS Research Institute of M.F. Stelmakh, Vvedenskogo St. 1, b.3, Moscow, Russia, 117342

16:30 **Photoreversible effect in photocurrent spectra of green LED InGaN/GaN heterostructures** **W P2.18**
Aslanyan A.E.1, Avakyants L.P.1, Chervyakov A.V.1, Turkin A.N.1, Mazalov A.V.2, Sabitov D.R.2, Kureshov V.A.2, Marmaluk A.A.2
1Physics Department, M.V. Lomonosov Moscow State University, Leninskie Gory 1 b. 2, 119991, Moscow, Russia, 2POLYUS Research Institute of M.F. Stelmakh, Building 1, 3 Vvedenskogo St., 117342, Moscow, Russia

16:30 **Effect of Xe swift heavy ion radiation on the optical properties of III-nitride nanostructures** **W P2.19**
J. Cardoso1, N. Ben Sedrine1, M. C. Sequeira2, K. Lorenz2,3, T. Monteiro1, and M. R. Correia1
1Departamento de Física e I3N, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal 2IPFN, Instituto Superior Técnico, Campus Tecnológico e Nuclear, Estrada Nacional 10, P-2695-066 Bobadela LRS, Portugal 3Instituto de Engenharia de Sistemas de Computadores-Microsystems and Nanotechnology (INESC-MN), Rua Alves Redol, 1000-029 Lisboa, Portugal

16:30 **Air Tunnel Fabrication in GaN/Sapphire for Chemical Lift-off** **W P2.20**
Dongjin Byun*, Hyun-A Ko, Woo Seop Jeong, Seunghee Cho, Min Joo Ahn, Doo Won Lee, Kyu-Yeon Shim, Seong Ho Kang
Korea University (KU)

16:30 **MOCVD-grown AlGaN/GaN superlattice structure tailored for bright red emitting diode** **W P2.21**
N. Ben Sedrine1,*, J. Rodrigues1, D. Nd. Faye2, M. Bockowski3, V. Hoffmann4, M. Weyers4, K. Lorenz2,5, M. R. Correia1 and T. Monteiro1
1Departamento de Física e I3N, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal 2IPFN, Instituto Superior Técnico, Campus Tecnológico e Nuclear, Estrada Nacional 10, P-2695-066 Bobadela LRS, Portugal 3Institute of High Pressure Physics, Polish Academy of Sciences, 01-142 Warsaw, Poland 4Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Gustav-Kirchhoff-Straße 4, 12489 Berlin, Germany 5Instituto de Engenharia de Sistemas de Computadores-Microsystems and Nanotechnology (INESC-MN), Rua Alves Redol, 1000-029 Lisboa, Portugal

16:30 **Sensing Characteristics of Dual-gated Field-Effect Transistor (FET) of Silicon Nanowire defined by LOCOS Process** **W P2.22**
Seungwan Seo1 and Jeong-A Kim1, Dong Jun Moon1, Sung Keun Yoo1*
1 Medical Device Development Center, Osong Medical Innovation Foundation, Cheongju-si,

16:30 **Indoor navigation based on bidirectional Visible Light Communication** **W P2.23**
P. Louro1,2, M. Vieira1,2,3, M. A. Vieira1
1Electronics Telecommunication and Computer Dept. ISEL, R. Conselheiro Emídio Navarro, 1959-007 Lisboa, Portugal 2 CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal. 3 DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal. 1Electronics Telecommunication and Computer Dept. ISEL, R. Conselheiro Emídio Navarro, 1959-007 Lisboa, Portugal, 2 CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal, 3 DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal.

16:30 **Gain and laser threshold simulation for GeSn using local empirical pseudopotential method.** **W P2.24**
Quang Minh Thai, Nicolas Pauc, Mathieu Bertrand, Jérémie Chrétien, Rami Khazaka, Joris Aubin, Alexei Chelnokov, Jean-Michel Hartmann, Vincent Reboud, Vincent Calvo
University Grenoble Alpes, CEA, INAC-Pheliqs, 38000 Grenoble, France University Grenoble Alpes, CEA-Leti, Minatec, 17-rue des Martyrs, 38000 Grenoble, France

16:30 **The mechanism of the Sn/Bi/Sn and Sn/BiZn/Sn thin film solder deposition by electron beam evaporator** **W P2.25**
Yue-Kai Tang, Cheng-Yi Liu
National Central University

16:30 **Enhanced selectivity of SnO2 based electronic nose for air pollutant detection** **W P2.26**
Manjeet Kumar, Vishwa Bhatt*, Ha Trang Nguyen, Ju-Hyung Yun
Department of Electrical Engineering, Incheon National University, Incheon 406772, South Korea

16:30 **Enhanced performance of a Graphene/Oxide/n-GaAs (Alloy) Schottky Barrier Solar cell by means of a GaAs/AlGaAs multi-quantum wel** **W P2.27**
AC Varonides
Physics and Electrical Engineering Dept University of Scranton Scranton, PA 18510 USA

16:30 **Band mixing and localisation effects in direct-gap group-IV alloys: implications for device applications** **W P2.28**
Christopher A. Broderick (1,2) Michael D. Dunne (1,2) Daniel S. P. Tanner (1) Edmond J. O'Halloran (1,3) Amy C. Kirwan (1,2) Stefan Schulz (1) Eoin P. O'Reilly (1,2)
(1) Tyndall National Institute, Dyke Parade, Cork T12 R5CP, Ireland(2 (2) Department of Physics, University College Cork, Cork T12 YN60, Ireland (3) School of Chemistry, University College Cork, Cork T12 YN60, Ireland

16:30 **Multi-probe electrical characterization of axial pn-contacts of GaAs-nanowires** **W P2.29**
Andreas Nägelein, Cornelia Timm, Matthias Steidl, Peter Kleinschmidt, Thomas Hannappel
TU Ilmenau, Institute for Physics, Fundamentals of energy materials, Ilmenau, Germany

16:30 **MOF-derived Hollow Hierarchical Co3O4 nanocages with Tunable Size and Morphology: Sensitive/Selective Detection of Methylbenzene** **W P2.30**
Young-Moo Jo,† Tae-Hyung Kim,† Chul-Soon Lee,† Kyeorei Lim,† Chan Woong Na,‡ and Jong-Heun Lee*†
† Department of Materials Science and Engineering, Korea University, Seoul 02841, Republic of Korea ‡ Dongnam Regional Division, Korea Institute of Industrial Technology, Busan 46938, Republic of Korea

16:30 **Visible Light Detection Phototransistor with Heterogeneous Double Layer Consisted of Inorganic CsPbIxBr3-x and In-Ga-Zn-O** **W P2.31**
Hyun-Jae Na, Nam-Kwang Cho, Eun Goo Lee, Jintaek Park, Sung-Eun Lee, Junhee Lee, Changik Im, Youn Sang Kim
Hyun-Jae Na Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University , Nam-Kwang Cho Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University , Eun Goo Lee Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University , Jintaek Park Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University , Sung-Eun Lee Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University , Junhee Lee Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University , Changik Im Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University , Youn Sang Kim 1. Program in Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University 2. Advanced Institute of Convergence Technology

16:30 **Water stable photocatalysts based on zinc oxide and copper oxide core-shell nanowires** **W P2.32**
Camelia FLORICA,`* Andreea COSTAS,* Nicoleta PREDA,* Mihaela BEREGOI,* Andrei KUNCSER,* Nicoleta APOSTOL,* Cristina POPA,** Gabriel SOCOL,** Victor DICULESCU,* Ionut ENCULESCU*
*National Institute of Materials Physics, Atomistilor Str., No. 405A, Magurele, Romania **National Institute for Laser, Plasma and Radiation Physics, Atomistilor Str., No. 409, Magurele, Romania `camelia.florica@infim.ro

16:30 **Crystalline InGaZnO Nanowires for High-Mobility Electronic Devices** **W P2.33**
Fangzhou Li, Ruoting Dong, and Johnny C. Ho.
City university of Hongkong

16:30 **Morphology regulation of 3D orderly superhydrophobic SERS substrate and its real application in environmental monitoring** **W P2.34**
Jian Huang, Qian Zhang, Tingting Kong, Wenzhen Wang
Xi'an Shiyou University

16:30 **Minimum conductivity and shot noise anomalies in shifted bilayer graphene** **W P2.35**
A. Daboussi 1,2, L. Mandhour 1,3, and S. Jaziri 1,4
1. Université de Tunis El Manar, Faculté des Sciences de Tunis, Laboratoire de Physique de la Matière Condensée, Campus Universitaire Tunis, El Manar, 2092 Tunis, Tunisie. 2. Ecole Supérieure Privée d'ingénierie et de communication, 85-87 Rue Palestine, 1002 Tunis, Tunisie. 3. Université de Tunis El Manar, Institut Supérieur des Technologies Médicales de Tunis, 9 Rue Zouhair Essafi ,1006 Tunis, Tunisie. 4. Université de Carthage, Faculté des Sciences de Bizerte, Laboratoire de Physique des Matériaux, Jarzouna, 7021 Bizerte, Tunisie.

16:30 **Piezo-phototroinc Enhanced Self-biased UV Photodetection in Light Trapping Ordered ZnO 1D nanorod/PEDOT:PSS Schottky Diodes** **W P2.36**
Poulomi Chakrabarty1, Meneka Banik2, Narendar Gogurla3, Samit Kumar Ray*,1,3,4 and Rabibrata Mukherjee* 1,2
1School of Nanoscience and Technology, 2Instability and Soft Patterning Laboratory, Department of Chemical engineering, 3Department of Physics, Indian Institute of Technology Kharagpur, West Bengal, India, 721302, 4Currently at S.N. Bose National Centre for Basics Sciences, Kolkata,India *Author to whom correspondences should be addressed. Tel: 91–3222 283912, e–mail: rabibrata@che.iitkgp.ernet.in

16:30 **One dimensional ZnO nanostructures: growth control and chemical sensors performance** **W P2.37**
Abderrahim Moumen, Navpreet Kaur, Dario Zappa, Nicola Poli, Elisabetta Comini
SENSOR Laboratory, University of Brescia, Via D. Valotti 9, 25133 Brescia, Italy

16:30 **Shape-Deformable Self-Healing Electroluminescence Displays with Viscoelastic Light-emitting Composite** **W P2.38**
Seung Won Lee, Han Sol Kang, Chanho Park, Tae Hyun Park, Cheolmin Park
Department of Materials Science and Engineering, Yonsei University

16:30 **Numerical simulation of InGaN/GaN light-emitting diode with a special designed electron-blocking layer** **W P2.39**
QUOC-HUNG PHAM, JYH-CHEN CHEN
Department of Mechanical Engineering, National Central University

16:30 **New High Triplet Energy Host Material for Deep Blue Thermally Activated Delayed Fluorescent Organic Light-emitting Diodes** **W P2.40**
Ju Young Lee, Dae Hyun Ahn, Hyuna Lee, Jang Hyuk Kwon
Kyung Hee University

16:30 **Modeling and optimization of feedback field-effect transistors using TCAD simulation** **W P2.41**
Sola Woo, Sangsig Kim*
Department of Electrical Engineering, Korea University, 145 Anam-ro, Seongbuk-gu, Seoul, 02841, Republic of Korea.

16:30 **Electron transport phenomena at Al/heavily doped degenerate ZnO nanoparticles in quantum dots LEDs** **W P2.42**
Yeonju Lee, Hong Hee Kim, Won Kook Choi
Korea Institute of Science and Technology

16:30 **Role of strain relaxation layer on carrier recombination and escaping lifetimes in superlattice solar cell structures** **W P2.43**
Tsubasa Nakamura1, Ryohei Iwanaga1, Tsubasa Aki1, Airi Watanabe1, Tetsuo Ikari1, Masakazu Sugiyama2, and Atsuhiko Fukuyama1
1Faculty of Engineering, University of Miyazaki, 1-1 Gakuen Kibanadai-Nishi, Miyazaki 889-2192, Japan, 2Research Center for Advanced Science and Technology, The University of Tokyo, Bunkyo-ku, Tokyo 113-0032, Japan

16:30 **2D Photonic Crystal Layer Assisted Thiosilicate Ceramic Plate with Red-emitting Film for High Quality w-LEDs** **W P2.44**
Wubin Dai, Jia Zhou, Man Xu
School of Materials Science and Engineering, Wuhan Institute of Technology

16:30 **Effect of InGaN active layer structure on local breakdown phenomenon in the GaN-based light-emitting diode** **W P2.45**
Seung-Hye Baek and Sung- Nam Lee*
Optoelectronic Materials & Devices Laboratory, Department of Nano-Optical Engineering, Korea Polytechnic University

16:30 **Optically switchable organic light-emitting transistors** **W P2.46**
Lili Hou1,4, Xiaoyan Zhang1,4, Giovanni F. Cotella2, Giuseppe Carnicella2, Martin Herder3, Bernd M. Schmidt3, Michael Pätzel3, Stefan Hecht3,*, Franco Cacialli2,*, Paolo Samorì1,*
1 Université de Strasbourg, CNRS, ISIS, 8 alleé Gaspard Monge, 67000 Strasbourg, France. Email: samori@unistra.fr 2 Department of Physics and Astronomy (CMMP Group) and London Centre for Nanotechnology, University College London, Gower Street, London WC1E 6BT, United Kingdom. Email: f.cacialli@ucl.ac.uk 3 Department of Chemistry & IRIS Adlershof, Humboldt-Universität zu Berlin, Brook-Taylor-Str. 2, 12489 Berlin, Germany. Email: sh@chemie.hu-berlin.de 4 Present address: Department of Chemistry and Chemical Engineering, Chalmers University of Technology, 412 96 Gothenburg, Sweden.

16:30 **Optical absorption beyond the Yablonovitch limit with light funnel arrays** **W P2.47**
Sarah Sowmya Priya Konedana1, Eitan Vaida1, Vitaly Viller1, Gil Shalev1,2*
1 Department of Electrical & Computer Engineering, Ben-Gurion University of the Negev, POB 653, Beer-Sheva 8410501, Israel 2 The Ilse-Katz Institute for Nanoscale Science & Technology, Ben-Gurion University of the Negev, POB 653, Beer-Sheva 8410501, Israel.

16:30 **SWCNTs transistor integrated with high-k dielectric for a low-powered memory device** **W P2.48**
Seyoung Oh1, Byungjin Cho1
1Department of Advanced Material Engineering, Chungbuk National University, Cheongju 28644, Korea

16:30 **Resistive switching with chalcogenide thin film** **W P2.49**
B. Zhang1, T. Wagner1,2
1Department of General and Inorganic Chemistry, Faculty of Chemical Technology, University of Pardubice, Studentska 573, 532 10 Pardubice, Czech Republic, 1,2Center of Materials and Nanotechnologies, Faculty of Chemical Technology, University of Pardubice, Nam. Cs. Legii 565, 53002 Pardubice, Czech Republic

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Colloidal nanocrystals - surfaces and self-assembly : Celso De Mello Donega

08:30 INV **Transient heating of semiconductor nanoparticles** **W 10.1**
Matthew S. Kirschner(1), Benjamin T. Diroll(2), Peijun Guo(2), Alexandra Brumberg(1), Samantha M. Harvey(1), Ariel A. Leonard(1), Xiaoyi Zhang(2), Lin X. Chen(1,2), Richard Schaller(1,2)
(1) Department of Chemistry, Northwestern University, Evanston, Illinois, United States (2) Argonne National Laboratory, Lemont, Illinois, United States

09:00 **Probing Solvent–Ligand Interactions in Colloidal Nanocrystals by the NMR Line Broadening** **W 10.2**
Jonathan De Roo,1,2* Nuri Yazdani,3 Emile Drijvers,1,4 Alessandro Lauria,5 Jorick Maes,1,4 Jonathan S. Owen,2 Isabel Van Driessche,1 Markus Niederberger,5 Vanessa Wood,3 Jose C. Martins,6 Ivan Infante,7 Zeger Hens.1,4
1 Department of Chemistry, Ghent University, Gent B-9000, Belgium 2 Department of Chemistry, Columbia University, New York, NY 10027, USA 3 Department of Information Technology and Electrical Engineering, ETH Zurich, 8092 Zürich, Switzerland 4 Center of Nano and Biophotonics, Ghent University, B-9000 Gent, Belgium 5 Laboratory for Multifunctional Materials, Department of Materials, ETH Zurich, Vladimir-Prelog-Weg 5, 8093 Zürich, Switzerland 6 Department of Organic and Macromolecular Chemistry, Ghent University, Gent B-9000, Belgium 7 Department of Theoretical Chemistry and Amsterdam Center for Multiscale Modeling (ACMM), VU University Amsterdam, 1081 HV Amsterdam, The Netherlands

09:15 **Investigations of the Self-Assembly of Nanoparticles into Supercrystals** **W 10.3**
A. Reichhelm, D. Haubold, A. Eychmüller
TU Dresden, Physical Chemistry, Bergstraße 66b, 01062 Dresden

09:30 **Post-polymerisation Functionalisation of Near-IR Emissive Semiconducting Polymer Nanoparticles** **W 10.4**
Chi Cheng Huang, Adam Creamer, Molly M. Stevens, Martin Heeney
Department of Chemistry, Imperial College London, London, SW7 2AZ, UK, Department of Chemistry, Imperial College London, London, SW7 2AZ, UK. Centre for Plastic Electronics, Imperial College London, London, SW7 2AZ, UK, Department of Materials, Imperial College London, London, SW7 2AZ, UK. Department of Bioengineering, Imperial College London, London, SW7 2AZ, UK. Institute of Biomedical Engineering, Imperial College London, London, SW7 2AZ, UK, Department of Chemistry, Imperial College London, London, SW7 2AZ, UK. Centre for Plastic Electronics, Imperial College London, London, SW7 2AZ, UK

09:45 **Coffee break**

Colloidal nanocrystals - surfaces and self-assembly : Iwan Moreels

10:15 **Engineering the surfaces of halide perovskite nanocubes to form large area close packed monolayer and patterned nanostructures** **W 10.5**
Biplab K Patra, Harshal Agrawal and Erik Garnett
Post Doc

10:30 **Control of doping in infrared nanocrystals** **W 10.6**
Bertille Martinez, Nicolas Goubet, Clément Livache, Junling Qu, Audrey Chu, Charlie Gréboval, Julien Ramade, Emmanuel Lhuillier
Institut des Nanosciences de Paris, Sorbonne Université, Paris, France, Laboratoire de la Molécule aux Nano-objets: Réactivité, Interactions et Spectroscopies, Sorbonne Université, Paris, France, Laboratoire de Physique et d'Étude des Matériaux, ESPCI Paris, PSL University, Paris, France, Institut des Nanosciences de Paris, Sorbonne Université, Paris, France, Institut des Nanosciences de Paris, Sorbonne Université, Paris, France, Institut des Nanosciences de Paris, Sorbonne Université, Paris, France, Institut des Nanosciences de Paris, Sorbonne Université, Paris, France, Institut des Nanosciences de Paris, Sorbonne Université, Paris, France

10:45 **Surface Chemistry of 2D Nanocrystals** **W 10.7**
Zeger Hens, Pieter Schiettecatte, Shalini Singh, Jose C Martins
Zeger Hens, Pieter Schiettecatte, Shalini Singh Ghent University, Department of Chemistry, Physics and Chemistry of Nanostructures Jose C Martins Ghent University, Department of Chemistry, NMR and Structural Analysis

11:15 **Plenary Session 2**

12:30 **Lunch break**

2D and doped colloidal nanocrystals : Richard Schaller

14:00 INV **Lead Halide Perovskite Nanocrystals: The Interplay between Morphology and Opto(electronic) Properties** — W 11.1
Alexander Urban
Ludwig-Maximilians-Universtität München

14:30 **Kinetically driven self-assembly of semiconductor nanoplatelets** — W 11.2
Rebecca Momper, Henry Halim, Ewald Johannes, Andreas Riedinger
Max-Planck-Institute for Polymer Research, Ackermannweg 10, 55128 Mainz, Germany

14:45 **Optical Gain Spectroscopy of Solution Processable 2D Materials : A Playground for Excitons, Molecules and Free Carriers** — W 11.3
Renu Tomar, Ivo Tanghe, Aditya Kulkarni, Kai Chen, Justin Hodgkiss, Laurens Siebbeles, Dries van Thourhout, Zeger Hens, Pieter Geiregat
Physics and Chemistry of Nanostructures, Ghent University, Belgium, Center for Nano – and Biophotonics, Ghent University, Belgium, Photonics Research Group, Ghent University, Belgium, Opto-Electronic Materials Section, TU Delft, The Netherlands , School of Chemical and Physical Sciences, Victoria University of Wellington, Wellington, New Zealand.

15:00 **Charge transfer dynamics across CsPbBr3-CdSe nanoplatelet hybrids coupled by molecular linkers** — W 11.4
Swayandipta Dey,Hagai Cohen, Iddo Pinkas,Hong Lin, Miri Kazes, Dan Oron
Swayandipta Dey, Miri Kazes, Dan Oron, Department of Physics of Complex Systems, Weizmann Institute of Science, Rehovot, Israel, 7610001 Hagai Cohen, Iddo Pinkas, Department of Chemical research support, Weizmann Institute of Science, Rehovot, Israel, 7610001 Hong Lin, State Key Laboratory of New Ceramics and Fine Processing, School of Materials Science and Engineering, Tsinghua University, Beijing 100084, China

15:15 **On the nature of two-photon absorption in colloidal CdSe nanoplatelets** — W 11.5
Josep Planelles, Alexander W. Achtstein, Riccardo Scott, Nina Owschimikow, Ulrike Woggon, Juan I. Climente
Departament de Química Física i Analítica, Universitat Jaume I, E-12080, Castelló de la Plana, Spain, Institute of Optics and Atomic Physics, Technical University of Berlin, 10623, Berlin, Germany, Institute of Optics and Atomic Physics, Technical University of Berlin, 10623, Berlin, Germany, Institute of Optics and Atomic Physics, Technical University of Berlin, 10623, Berlin, Germany, Institute of Optics and Atomic Physics, Technical University of Berlin, 10623, Berlin, Germany, Departament de Química Física i Analítica, Universitat Jaume I, E-12080, Castelló de la Plana, Spain,

15:30 **Probing Charge Carrier Dynamics in Mercury Telluride Nanocrystal Based Infrared Photodetectors** — W 11.6
Clément Livache, Nicolas Goubet, Bertille Martinez, Junling Qu, Audrey Chu, Charlie Gréboval, Julien Ramade, Benoit Dubertret, Emmanuel Lhuillier
Laboratoire de Physique et d'Étude des Matériaux, ESPCI Paris, PSL University, Paris, France , Laboratoire MONARIS, Sorbonne Université, Paris, France, INSP, Sorbonne Université, Paris, France , INSP, Sorbonne Université, Paris, France , INSP, Sorbonne Université, Paris, France , INSP, Sorbonne Université, Paris, France , INSP, Sorbonne Université, Paris, France , Laboratoire de Physique et d'Étude des Matériaux, ESPCI Paris, PSL University, Paris, France , INSP, Sorbonne Université, Paris, France

15:45 **Trap-Mediated Two-Step Sensitization of Manganese Dopants in Perovskite Nanocrystals** — W 11.7
Valerio Pinchetti, Abhinav Anand, Quinten A. Akkerman, Davide Sciacca, Monica Lorenzon, Francesco Meinardi, Marco Fanciulli, Liberato Manna, Sergio Brovelli
Valerio Pinchetti, Abhinav Anand, Davide Sciacca, Monica Lorenzon, Francesco Meinardi, Marco Fanciulli, Sergio Brovelli Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via R. Cozzi 55, IT-20125 Milano, Italy. Quinten A. Akkerman, Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, via Dodecaneso 31, IT-16146 Genova, Italy. Liberato Manna, Istituto Italiano di Tecnologia, via Morego 30, IT-16163 Genova, Italy

16:00 **Coffee break**

Electronic devices : Iván Mora Seró

16:30 INV **Compound-semiconductor, non-volatile, random-access memories (NVRAM) with ultra-low switching energies** — W 12.1
Manus Hayne, Dom Lane, Ofogh Tizno, Peter Hodgson and Andrew RJ Marshall
Department of Physics, Lancaster University, Lancaster LA1 4YB, UK

17:00 **Non-volatile optical multi-level memory transistors exploiting photochromism and a ferroelectric gate insulator** — W 12.2
Marco Carroli (1), Martin Herder (2), Egon Pavlica (3), Gvido Bratina(3), Stefan Hecht (2), Emanuele Orgiu (1), Paolo Samorì (1)
(1) Nanochemistry Laboratory, ISIS/UMR CNRS 7006, Université de Strasbourg, 8 allée Gaspard Monge, 67000 Strasbourg, France, (2) Department of Chemistry & IRIS Adlershof, Humboldt-Universität zu Berlin, Brook-Taylor-Straße 2, 12489 Berlin, Germany, (3) Laboratory for Organic Matter Physics, University of Nova Gorica, Vipavska 13, SI-5000 Nova Gorica, Slovenia.

17:15 **Solution-sheared semiconductor and dielectric films optimized for high-performance organic transistors** — W 12.3
Katherina Haase, Cecilia Teixeira da Rocha, Jakob Zessin, Mike Hambsch, Stefan Mannsfeld
Technische Universität Dresden, Center for Advancing Electronics Dresden (cfaed) & Department for Electrical and Computer Engineering, Helmholtzstr. 18, 01069 Dresden, Germany

17:30 **Fully printed electrolyte-gated field-effect transistors and logics using graphene passive structures** — W 12.4
Surya Abhishek Singaraju(1), Jasmin Aghassi-Hagmann(1,3), Horst Hahn(1,2), Ben Breitung(1)
(1) Institue of Nanotechnology (INT), Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen 76344, Germany (2) KIT-TUD Joint Research Laboratory, Institute of Materials Science, Technische Universität Darmstadt (TUD), Darmstadt 64287, Germany (3) Department of Electrical Engineering and Information Technology, Offenburg University of Applied Sciences, Offenburg 77652, Germany

17:45 **Investigating the Memristive Behavior of Hydrothermally Grown TiO2 Nanorod Arrays** — W 12.5
Carola Ebenhoch*, Julian Kalb*, Joohyun Lim**, Christina Scheu**, Lukas Schmidt-Mende*
*Department of Physics, University of Konstanz, 78457 Konstanz, Germany **Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Straße 1, 40237 Düsseldorf, Germany

18:00 **Size Dependent Electrical Properties of Fins** — W 12.6
S. Folkersma (a,b,1), J. Bogdanowicz (a), P. Favia (a), L. Wouters (a), K. Paredis (a), A. Vohra (a,b), C. Porret (a), R. Loo (a), D. H. Petersen (c), O. Hansen (c), H. H. Henrichsen (d), P. F. Nielsen (d), L. Shiv (d) and W. Vandervorst (a,b)
(a) IMEC, Kapeldreef 75, B-3001 Leuven, Belgium (b) Instituut voor Kern- en Stralingsfysika, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium (c) Department of Micro- and Nanotechnology, Technical University of Denmark, DTU Nanotech Building 345 East, DK-2800 Kgs. Lyngby, Denmark (d) CAPRES A/S, DTU Science Park, Building 373, DK-2800 Kgs. Lyngby, Denmark
(1) email address: steven.folkersma@imec.be

18:15 **Graphene electronic devices with asymmetric electrodes for high speed performances** — W 12.7
Jeong Sang Lee, Hyunsu Ju, Jeon-Kook Lee*
Center for opto-electronic materials and devices Korea Institute of Science and Technology Seoul 02792, Korea *corresponding author: jkleemc@kist.re.kr.

III-V quantum dots and quantum wells : Juan Climente

08:30 INV **InP-based Quantum Dot Materials and Devices for Fibre-Based Optical Communication** — W 13.1
Johann Peter Reithmaier (1), Mohamed Benyoucef (1), Gadi Eisenstein (2)
(1) Technische Physik, Institute of Nanostructure Science and Technology (INA), Center of Interdisciplinary Nanoscience and Technology (CINSaT), University of Kassel, Germany (2) Electrical Engineering Department and Russell Barrie Nanotechnology Institute (RBNI), Technion - Israel Institute of Technology, Haifa 32000, Israel

09:00 **Potential of photon down-shifting by InP based Quantum dots for Enhancing the Efficiency and yield of thin film CZTSe and CIGSe** — W 13.2
Hippolyte Hirwa, Teoman Taskesen, Jürgen Parisi, Levent Gütay
Carl von Ossietzky University of Oldenburg

09:15 **Current Challenges and Future Direction for AlGaN Based UV-B LEDs grown by LP-MOVPE** — W 13.3
M. Ajmal Khan1*, Noritoshi Maeda1, Masafumi Jo2, Yoichi Yamada2, Hideki Hirayama1
1RIKEN Center for Advanced Photonics (RAP), 2-1, Hirosawa, Wako, Saitama 351-0198, Japan 2Faculty of Engineering, Yamaguchi University, 2-16-1 Tokiwadai, Ube, Yamaguchi, 755-8611, Japan

09:30 **Spin-orbit currents, spin-transfer torque and anomalous tunneling in III-V heterostructures probed by advanced kp methods.** — W 13.4
Duy Quang To*1, T.-L. Hoai Nguyen1, Viatcheslav Safarov1, H.-J. Drouhin1, Henri Jaffres2
1Laboratoire des Solides Irradiés, Ecole Polytechnique, Palaiseau, France, 2UMPhy CNRS-Thales, CNRS, Palaiseau, France

09:45 **Role of wetting layer on the anomalous temperature dependence of the photoluminescence peak energies of GaAs quantum dots.** — W 13.5
Yuhei Ezoe1, Yudai Miyauchi1, Tetsuo Ikari1, Takaaki Mano2 and Atsuhiko Fukuyama1
1Faculty of Engineering, University of Miyazaki, 1-1 Gakuen Kibanadai-Nishi, Miyazaki 889-2192, Japan, 2Quantum Dot Research Center, National Institute for Materials Science, 1-2-1 Sengen, Tsukuba, Ibaraki 305-0047, Japan

10:00 **Coffee break**

Semiconductor nanowires - growth and characterization : Sergio Brovelli

10:30 INV **Monolithic integration of long-wavelength GaAs-(In,Al)GaAs nanowire lasers on silion** — W 14.1
Thomas Stettner (1), Paul Schmiedeke (1), Jochen Bissinger (1), Andreas Thurn (1), Daniel Ruhstorfer (1), Jonathan Finley (1) and Gregor Koblmüller (1)
1 Walter Schottky Institut, Physik Department, and Center for Nanotechnology and Nanomaterials, Technische Universität München, Am Coulombwall 4, 85748 Garching, Germany

11:00 **Nanobeam X-ray fluorescence investigation on in situ Zn-doped nanowires reveals gradients and unintentional doping** — W 14.2
Andrea Troian 1, Gaute Otnes 2, Xulu Zeng 2, Lert Chayanun 1, Vilgaile Dagyte 2, Susanna Hammarberg 1, Rainer Timm 1, Damien Salomon 3, Anders Mikkelsen 1, Magnus Borgström 2, Jesper Wallentin 1
1 Synchrotron Radiation Research and NanoLund, Lund University, Lund, Sweden, 2 Solid State Physics and NanoLund, Lund University, Lund, Sweden, 3 European Synchrotron Radiation Facility, Grenoble, France,

11:15 **Tuning MBE-grown AlxGa1-xN nanowires on Si for red solid-state nano-emitters** — W 14.3
J. Cardoso1, D. Nd. Faye2, B. Daudin3, K. Lorenz2,4, T. Monteiro1, M. R. Correia1 and N. Ben Sedrine1,*
1Departamento de Física e I3N, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal 2IPFN, Instituto Superior Técnico, Campus Tecnológico e Nuclear, Estrada Nacional 10, P-2695-066 Bobadela LRS, Portugal 3Univ. Grenoble Alpes, CEA/CNRS Group, “Nanophysique et Semiconducteurs”, F-38000 Grenoble, France 4Instituto de Engenharia de Sistemas de Computadores-Microsystems and Nanotechnology (INESC-MN), Rua Alves Redol, 1000-029 Lisboa, Portugal

11:30 **Growth and characterization of in-plane germanium nanowires on nano-patterned substrates** — W 14.4
Felix Lange (1, 2), Owen Ernst (2) , Dr. Thomas Teubner (2), Dr. Oliver Skibitzki (3), Dr. Torsten Boeck (2)
(1) Brandenburg University of Technology Cottbus-Senftenberg, (2) Leibniz-Institut für Kristallzüchtung, (3) Leibniz-Institute innovations for high performance microelectronics

11:45 **In-Situ Observation of Σ3 {112} Twin Boundary Motion at Atomic Resolution in III-V Nanowires** — W 14.5
James A. Gott 1, Richard Beanland 1, H. Aruni Fonseka 1, Jonathan J.P. Peters 1, Yunyan Zhang 2, Huiyun Liu 2, Ana M. Sanchez 1
1 Department of Physics, University of Warwick, Coventry CV4 7AL United Kingdom, 2 Department of Electronic and Electrical Engineering, University College London, Torrington Place, London WC1E 7JE United Kingdom

12:00 **Thermoelectric Transport in GaAs-AlGaAs Core-Shell Modulation-Doped Nanowires** — W 14.6
Sergej Fust, Jonathan Becker, Damon James Carrad, Dominik Irber, Jakob Seidl, Anton Faustmann, Bernhard Loitsch, Gerhard Abstreiter, Jonathan James Finley, Gregor Koblmüller.
Walter Schottky Institute and Physics Department., TU Munich, Garching, 85748, Germany

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM X

Silicon carbide and related materials for energy saving applications

Symposium Organizers :

Francesco LA VIA, CNR-IMM, Catania, Italy

Mike JENNINGS, University of Warwick, U.K.

Peter WELLMANN, FAU, Erlangen, Germany

To be published in Materials, MDPI

SIKA Silicon Carbide

PVA TePla Crystal Growing Systems

Monday 27 may 2019

09:00 **WELCOME ADDRESS to SYMPOSIUM X**

SiC Growth & Epitaxy : Francesco LA VIA

09:15 INV **Dislocation formation during physical vapor transport growth of 4H-SiC crystals** — X X-Ia.1
Noboru Ohtani
Kwansei Gakuin University, School of Science and Technology

09:45 **Influence of morphological changes in the source material on the growth interface of 4H-SiC Single Crystals** — X X-Ia.2
Matthias Arzig, Michael Salamon, Norman Uhlmann, Peter J. Wellmann
Crystal Growth Lab Materials Department 6 (i-meet) University of Erlangen-Nürnberg (FAU) 91058 Erlangen Germany, Fraunhofer Institute for Integrated Circuits Development Center for X-Ray Technology (EZRT) 90768 Fürth Germany, Fraunhofer Institute for Integrated Circuits Development Center for X-Ray Technology (EZRT) 90768 Fürth Germany, Crystal Growth Lab Materials Department 6 (i-meet) University of Erlangen-Nürnberg (FAU) 91058 Erlangen Germany

10:00 **Analysis of the basal plane dislocation density and thermomechanical stress during 100 mm PVT growth of 4H-SiC** — X X-Ia.3
Johannes Steiner, Melissa Roder, Andreas Danilewsky,
Johannes Steiner, Crystal Growth Lab, Materials Department 6 (i-meet), FAU Erlangen-Nuremberg, Martensstr. 7, D-91058 Erlangen, Germany, Melissa Roder, Andreas Danilewsky, Kristallographie, Institut für Geowissenschaften, University Freiburg, D-79104, Germany,

10:15 **Coffee Break**

SiC Growth & Epitaxy : Noboru OHTANI

10:45 **High temperature annealing of Carbon coating on Silicon to create the 3C-SiC thin film.** — X Ib.1
M. Zielinski 1), S. Monnoye 1), H. Mank 1), F. Torregrosa 2), G. Grosset 2), Y. Spiegel 2)
1) NOVASiC, Savoie Technolac, BP267, F-73375 Le Bourget-du-Lac Cedex, France, 2) ION BEAM SERVICES, 13790 Peynier, France

11:00 **3C-SiC growth on Inverted Silicon Pyramids (ISP) sustrate.** — X Ib.2
F. La Via1, M. Zielinski2, F. Mancarella3, C. Calabretta1, C. Bongiorno1, M. Zimbone1
1 CNR-IMM, Strada VIII 5, 95121, Catania, Italy 2 NOVASiC, Savoie Technolac, BP267, F-73375 Le Bourget-du-Lac Cedex, France 3 CNR-IMM, Via P. Gobetti 101, 40129, Bologna, Ital

11:15 **Growth of large area bulk-like 3C-SiC (100) using 3C-SiC-on-Si in vapor phase growth** — X Ib.3
P. Schuh, F. La Via, M. Mauceri, M. Zielinski, P. J. Wellmann
Crystal Growth Lab Materials Department 6 (i-meet) FAU Erlangen-Nuremberg Martensstr. 7 D-91058 Erlangen Germany, CNR-IMM, sezione die Catania Stradale Primosole 50 I-95121 Catania Italy, LPE S.P.A. Sedicicesima Strada I-95121 Catania Italy, NovaSiC rue Bernard Gregory 06560 Valbonne France, Crystal Growth Lab Materials Department 6 (i-meet) FAU Erlangen-Nuremberg Martensstr. 7 D-91058 Erlangen Germany

11:30 **4 inches 3C-SiC bulk growth by hetero-epitaxy-melting-homo-epitaxy (HEMHE) process** — X Ib.4
R. Anzalone#, M. Mauceri°, M. Zimbone§, E.G. Barbagiovanni§#, C. Calabretta§, A. Alberti§, F. La Via§
STMicroelectronics, Stradale Primosole 50, 95121, Catania, Italy ° LPE, Strada XVI, 95121, Catania, Italy § CNR-IMM, Strada VIII 5, 95121, Catania, Italy

11:45 **CVD growth of 3C-SiC on AlN/Si and AlN/Sapphire templates: modification of the structural properties of AlN during SiC growth.** — X Ib.5
M. Portail1, S. Rennesson1, L. Nguyen1, E. Frayssinet1, A. Courville1, P. Vennégues1, A. Michon1, F. Semond1, Y. Cordier1 and M. Zielinski2
1) CNRS-CRHEA, 06560 Valbonne, France, 2) NOVASiC, 73375 Le Bourget du Lac, France

12:00 **Lunch**

SiC Related Materials : Haiyan OU

13:15 INV **Gallia: Surprising electronic properties** — X II.1
E.Chikoidze1*, D. J. Rogers2, A.Perez-Tomas3, C.Sartel, F. H. Teherani2, H. abdelwahab1, T. Tchelidze4, C. Ton-That5, V.Sallet1, J.von Bardeleben6, M.Jennings7, Y .Dumont1
1Université de Versailles- CNRS, Université Paris-Saclay, France 2Nanovation, France 3Catalan Institute of Nanoscience and Nanotechnology, Spain 4Tbilisi State University, Georgia 5University of Technology Sydney, Australia 6INSP, Siorbonne University, France 7Swansea University, UK

13:45 INV **An overview on normally-off GaN transistor technology** — X II.2
F. Roccaforte 1, G. Greco 1, P. Fiorenza 1, F. Iucolano 2
1. CNR-IMM, Catania (Italy), 2. STMicroelectronics, Catania (Italy)

14:15 **Broad range of growth and surface phenomena in the MOCVD of AlN on SiC with epitaxial graphene** — X II.3
A. Kakanakova* (1), N. Suwannaharn (1), C.-W. Hsu (1), I. Shtepliuk (1), I.G. Ivanov (1), R. Yakimova (1), F. Giannazzo (2), I. Cora (3), and B. Pécz (3)
(1) Linköping University, Linköping, Sweden (1), (2) CNR-IMM, Catania, Italy, (3) MTA EK MFA, Budapest, Hungary

14:30 **Highly uniform Al2O3 thin films onto monolayer epitaxial graphene on silicon carbide by seed-layer-free atomic layer deposition** — X II.4
E. Schilirò (1), R. Lo Nigro (1), S. Di Franco (1), F. Roccaforte (1), I. Deretzis (1), A. La Magna (1), A. Armano (2,3), S. Agnello (2,1), B. Pecz (4), I. G. Ivanov (5), R. Yakimova (5), F. Giannazzo (1)
(1) CNR-IMM, Strada VIII, 5 95121, Catania, Italy (2) University of Palermo, Department of Physics and Chemistry, Via Archirafi 36, 90123 Palermo, Italy (3) Department of Physics and Astronomy, University of Catania, Via Santa Sofia 64, 95123 Catania, Italy (4) Institute for Technical Physics and Materials Science Research, Centre for Energy Research, HAS, 1121 Konkoly-Thege 29-33, Budapest, Hungary (5) Department of Physics, Chemistry and Biology, Linköping University, Linköping SE-58183, Sweden

14:45 **Short Break**

SiC Novel Applications : Fabrizio ROCCAFORTE

15:00 INV **Fluorescent silicon carbide for white light source** — X III.1
Haiyan Ou 1, Yi Wei 1, Li Lin 1, Abebe Tilahun Tarekegne 1, Weifang Lu 1, Yiyu Ou 1, Berit Herstrøm 2, Flemming Jensen 2, Meng Liang 3, Zhiqiang Liu 3, Xiaoyan Yi 3, Valdas Jakubavicius 4, Mikael Syväjävi 4, Philipp Schuh 5, Peter Wellmann 5
1) Department of Photonics Engineering, Technical University of Denmark, Ørsteds Plads 345A, Kongens Lyngby DK-2800, Denmark, 2) DTU Danchip, Technical University of Denmark, Ørsteds Plads 347, Kongens Lyngby DK-2800, Denmark, 3) Semiconductor Lighting R&D Center, Institute of semiconductors, CAS, No.A35,QingHua East Road, Haidian District, Beijing, PR China, 4) Department of Physics, Chemistry and Biology, Linköping University, SE-58183 Linköping, Sweden, 5) Materials of Electronics and Energy Technology, University of Erlangen-Nuremberg, 91058 Erlangen, Germany

15:30 **Size dependent photocatalytic activity of SiC nanoparticles in the quantum confinement regime** — X III.2
David Beke, Klaudia Horváth, Katalin Kamarás Adam Gali
Wigner Research Centre for Physics, Wigner Research Centre for Physics, Wigner Research Centre for Physics, Wigner Research Centre for Physics,

SiC Processing & Devices : Philippe GODIGNON

15:45 **Comprehensive investigation of Si/SiC integrated devices by low temperature direct wafer bonding** — X IVa.1
Vinayak Chavan1, Mary White1, Richard Murphy1, Alan Blake1, Dan O&#8217,Connell1, Alan Hydes1, Colin Lyons1, Joe O&#8217,Brien1, Enrico Caruso1, Nicolas Cordero1, Lida Ansari1, Feargal Nolan1, Dermot Houston1, Alex Thomas Lonergan2, Colm O&#8217,Dwyer2, Scott Monaghan1, Paul K. Hurley1,2, and Farzan Gity1
1 Tyndall National Institute, University College Cork, Lee Maltings, Dyke Parade, Cork, Ireland 2 Chemistry Department, University College Cork, Cork, Ireland

16:00 **Electrical activation of n-type and p-type ion-implanted 4H-SiC upon high temperature annealing** — **X IVa.2**
M. Spera 1,2,3), D. Corso 1), S. Di Franco 1), G. Greco 1), A. Severino4), P. Fiorenza1), F. Giannazzo1), F. Roccaforte 1)
1) CNR-IMM , Strada VIII n. 5 Zona - Industriale - 95121 Catania, Italy, 2) Department of Physics and Astronomy, University of Catania, via Santa Sofia 64, 95123, Catania, Italy, 3) Department of Physics and Chemistry, University of Palermo, via Archirafi 36, 90123, Palermo, Italy, 4) STMicroelectronics, Stradale Primosole, 50, 95121 Catania, Italy Catania Italy

16:15 **Interplay of metals and epitaxial graphene on SiC** — **X IVa.3**
Ivan Shtepliuk 1, Mikhail Vagin 1,2, Ziyauddin Khan 2, Ivan G. Ivanov 1, Tihomir Iakimov 1, Bela Pecz 3, Filippo Giannazzo 4, Kostas Sarakinos 1, Rositsa Yakimova 1
1 Department of Physics, Chemistry and Biology, Linköping University, SE-58183, Linköping, Sweden, 2 Laboratory of Organic Electronics Department of Science and Technology Linköping University, SE-601 74 Norrköping, Sweden, 3 Institute for Technical Physics and Materials Science, Research Centre for Natural Sciences,Hungarian Academy of Sciences, P.O. Box 49, H-1525 Budapest, Hungary, 4 Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e Microsistemi, Strada VIII, n. 5, Zona Industriale, 95121, Catania, Italy

Symposium X, Poster Session,
SiC & Related Materials : Mike JENNINGS, Francesco LA VIA, Peter WELLMANN

16:30 **Effect of Si cap layer on the grown of 3C-SiC by using a Si1-xGex buffer layer** — **X P/V.1**
M Zimbone 1), M. Zielinski 2), E.G.Barbagiovanni 1), C. Calabretta 1) F. La Via 1)
1) CNR Institute for Microelectronics and Microsystems 95121 - Catania, Italy - Strada VIII, 5, Italy 2) Savoie Technolac - Arche Bat.4 Allée du Lac d'Aiguebelette BP 267 73375 Le Bourget du Lac Cedex, France

16:30 **Performances and power efficiency of Ni/4H-SiC Schottky diodes with contact inhomogeneity used for high temperature monitoring** — **X P/V.2**
Gheorghe Pristavu, Gheorghe Brezeanu, Razvan Pascu, Florin Draghici, Marian Badila
University Politehnica of Bucharest, University Politehnica of Bucharest, National Institute for Research and Development in Microtechnologies, University Politehnica of Bucharest, University Politehnica of Bucharest,

16:30 **Comparison of achievable contrast features in Computed Tomography observing the growth of a 4H-SiC bulk crystal** — **X P/V.3**
Michael Salamon, Matthias Arzig, Peter J. Wellmann, Norman Uhlmann
Fraunhofer Development Center X-ray Technology, Fürth, Germany, Crystal Growth Lab, University Erlangen-Nuremberg, Erlangen, Germany, Crystal Growth Lab, University Erlangen-Nuremberg, Erlangen, Germany, Fraunhofer Development Center X-ray Technology, Fürth, Germany,

16:30 **4H-SiC dislocations propagation study from substrate to epi-layer** — **X P/V.4**
R. Anzalone, N. Piluso, A. Severino, C. Rapisarda and S. Coffa
STMicroelectronics, stradale primosole 50, 95100 Catania (IT)

16:30 **Electrical evaluation of 4H-SiC devices by Epitaxial process refine** — **X P/V.5**
Nicolò Piluso, Alberto Campione, Simona Lorenti, Enzo Fontana, M.A. Di Stefano, Salvo Coffa
STMicroelectronics

16:30 **Thermo-physical properties of water - ethylene glycol mixture based boron nitride nanofluids** — **X P/V.6**
Monisha Michael, Aparna Zagabathuni, Sudipto Ghosh, Shyamal Kumar Pabi
Indian Institute of Technology Kharagpur, Indian Institute of Technology Kharagpur, Indian Institute of Technology Kharagpur, Adamas University Barasat

16:30 **Structural and electrical uniformity of hydrogen intercalated epitaxial graphene on SiC probed by micro-Raman mapping and scanni** — **X P/V.7**
I. Shtepliuk (1), F. Giannazzo (2), I. G. Ivanov (1), T. Iakimov (1), A. Kakanakova-Georgieva (1), E. Schilirò (2), P. Fiorenza (2), B. Pecz (3), R. Yakimova (1)
(1) Department of Physics, Chemistry and Biology, Linköping University, SE-581 83 Linköping, Sweden (2) Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e Microsistemi, Strada VIII, n. 5, Zona Industriale, 95121, Catania, Italy (3) Institute for Technical Physics and Materials Science Research, Centre for Energy Research, HAS, 1121 Konkoly-Thege 29-33, Budapest, Hungary

16:30 **Limitations during vapor phase growth of bulk (100) 3C-SiC** — **X P/V.8**
P. Schuh, F. La Via, M. Mauceri, P. J. Wellmann
Crystal Growth Lab Materials Department 6 (i-meet) FAU Erlangen-Nuremberg Martensstr. 7 D-91058 Erlangen Germany, CNR-IMM, sezione die Catania Stradale Primosole 50 I-95121 Catania Italy, LPE S.P.A. Sedicicesima Strada I-95121 Catania Italy, Crystal Growth Lab Materials Department 6 (i-meet) FAU Erlangen-Nuremberg Martensstr. 7 D-91058 Erlangen Germany

16:30 **3C-SiC growth on 2 inch hexagonal SiC – influence of seed polarity and off-orientation** — **X P/V.9**
Valdas Jokubavicius, Reza Yazdi, Rositsa Yakimova, Mikael Syväjärvi
Linkoping University, IFM, Linkoping, Sweden

16:30 **Morphology change of SiC microtube according to annealing temperature.** — **X P/V.10**
Subin Ahn, Jungwon Bang, Yoonjoo Lee, Wooteck Kwon
Energy & Environment Division, Korea Institute of Ceramic Engineering and Technology

16:30 **Ohmic metallizations and gate dielectrics on cubic silicon carbide** — **X P/V.11**
F. Roccaforte 1, M. Spera 1,2,3, G. Greco 1, R. Lo Nigro 1, M. Zielinski 4, F. La Via 1, F. Giannazzo 1, P. Fiorenza 1
1. CNR-IMM, Catania (Italy), 2. Univ. Catania (Italy), 3. Univ. Palermo (Italy), 4. NOVASiC (France)

16:30 **Influence of oxygen-plasma treatment on in situ SiN/AlGaN/GaN MOS Heterostructure FET with SiO2 gate insulator** — **X P/V.12**
Hyungtak Kim, Ho-young Cha
Hongik University

16:30 **Optimization of the SiC powder source material for improved process conditions during PVT growth of SiC boules** — **X P/V.13**
Oda Marie Ellefsen*, Matthias Arzig+, Johannes Steiner+, Peter Wellmann+, Paal Runde*
*SIKA, Postbox 113, 4792 Lillesand, Norway +Crystal Growth Lab, Materials Department 6,FAU, Erlangen, Germany

Tuesday 28 may 2019

SiC Defects : Peter WELLMANN

08:30 INV **Evaluation of Defects in Bulk SiC** — X VIa.1
Michael Dudley
Dept. of Materials Science & Chemical engineering, Stony Brook University, Stony Brook NY 11794-2275, USA

09:00 **Optical and electrical properties of single ion-tracks in crystalline SiC** — X VIa.2
G. Cristian Vásquez, Augustinas Galeckas, Klaus Magnus Johansen, Lasse Vines, Bengt Gunnar Svensson
University of Oslo, Centre for Materials Science and Nanotechnology, 0318 Oslo, Norway

09:15 **Local structure analysis around boron in SiC using neutron holography** — X VIa.3
K. Hayashi 1, M. Goto 1, K. Ohoyama 2, Y. Fukumoto 2, N. Happo 3, M. Lederer 4, P. Wellmann 4
1 Nagoya Institute of Technology, 2 Ibaraki University, 3 Hiroshima City University, 4 Friedrich-Alexander-University Erlangen-Nürnberg

09:30 **Temperature dependent carrier lifetime measurements on free-standing 4H-SiC epilayer** — X VIa.4
Jan Beyer, Masashi Kato, Nadine Schüler, Kay Dornich, Johannes Heitmann
JB, JH: Institute of Applied Physics, TU Bergakademie Freiberg, D-09596 Freiberg, Germany, MK: Department of Electrical and Mechanical Engineering, Nagoya Institute of Technology, Nagoya 466-8555, Japan, NS, KD: Freiberg Instruments GmbH, Delfter Str. 6, D-09599 Freiberg, Germany

09:45 **Coffee Break**

SiC Defects : Michael DUDLEY

10:15 **Generation and Annihilation of Stacking Faults in 3C-SiC on Anti-Phase Grain Boundary** — X X–VIb.1
E. G. Barbagiovanni, C. Bongiorno, M. Zimbone, C. Calabretta, F. La Via
CNR-IMM, Strada VIII 5, 95121, Catania, Italy

10:30 **Electrical nano-characterization of cubic silicon carbide by scanning probe microscopy** — X X–VIb.2
F. Giannazzo (1), P. Fiorenza (1), M. Spera (1,2,3), G. Greco (1), M. Zielinski (4), F. La Via (1), F. Roccaforte (1)
(1) Consiglio Nazionale delle Ricerche – Istituto per la Microelettronica e Microsistemi (CNR-IMM), Strada VIII, n.5 Zona Industriale, I-95121 Catania, Italy (2) Department of Physics and Astronomy, University of Catania, Via Santa Sofia, 64, 95123, Catania, Italy (3) Department of Physics and Chemistry, University of Palermo, Via Archirafi, 36, 90123, Palermo, Italy (4) NOVASiC, Savoie Technolac, BP267, F-73375 Le Bourget-du-Lac Cedex, France

10:45 **Investigation of near infrared photoluminescence in cubic silicon carbide** — X X–VIb.3
Michael SCHOELER, Maximilian LEDERER, Clemens BRECHT, Peter J. WELLMANN
Crystal Growth Lab, Materials Department 6 (i-MEET), Friedrich-Alexander-University (FAU), Martensstr.7, Erlangen 91058, Germany

11:00 **PLENARY SESSION 1**

12:30 **Lunch**

SiC Modeling & Defects : Emilio SCALISE

13:45 **Modelling of dislocations in semiconductors** — X VIIa.1
Stefan Sandfeld1 , Binh Duong Nguyen1, Alexander Rausch2
1Institute of Mechanics and Fluid Dynamics, The Micromechanical Materials Modelling group, Technische Universität Bergakademie Freiberg (TUBAF), Lampadiusstraße 4, 09596 Freiberg, Germany 2 Chair of Materials Science and Engineering for Metals (WTM), Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Martensstraße 5, 91058 Erlangen, Germany

14:00 **Kinetic growth modeling of 3C-SiC micro-crystals on Si pillars** — X VIIa.2
M. Albani, R. Bergamaschini, E. Scalise, F. Montalenti, L. Miglio
L-NESS and Dept. of Materials Science, University of Milano-Bicocca 20125 Milano, Italy

14:15 **Ab-initio calibrated growth kinetics simulation of SiC substrates and nano-particles** — X VIIa.3
G. Fisicaro, I. Deretzis, F. La Via and A. La Magna
Consiglio Nazionale delle Ricerche - Istituto per le Microelettronica e Microsistemi Z.I. VIII Strada 5, I95121 Catania, Italy

14:30 **Structural, compositional and electrical investigations of the grown polyoxides for SiC-MOS devices** — X VIIa.4
Razvan Pascu1, Mihaela Kusko1, Cosmin Romanitan1, Petre Osiceanu2, Gheorghe Pristavu3, Gheorghe Brezeanu3
1.National Institute for Research and Development in Microtechnologies, 2. 'Ilie Murgulescu' Institute of Physical Chemistry, Romanian Academy 3.Electronics, Telecommunications and Information Technology, University Politehnica Bucharest.

14:45 **The effect of the defects in the substrate on the electrical characteristics of 4H-SiC Schottky barrier diode** — X VIIa.5
Moonkyong Na 1, Wook Bahng 1, Juyeon Keum 1, In Ho Kang 1, Jung Hyun Moon 1, Han Seok Seo 2, Tai Hee Eun 2, Myoung Chul Chun 3
1 Korea Electrotechnology Research Institute (KERI), Changwon, 51543, Korea, 2 Research Institute of Industrial Science & Technology (RIST), Pohang, 37673, Korea, 3 POSCO, Seoul, 06194, Korea

15:00 **Short Break**

SiC Modeling & Defects : Stefan SANDFELD

15:15 **Multiple stacking fault formation via the evolution of related dislocations by molecular dynamics simulations** — X VIIb.1
Luca Barbisan {1}, Anna Marzegalli {2}, Andrey Sarikov {1}{3}, Francesco Montalenti {2}, and Leo Miglio {3}
{1} Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via R. Cozzi 55, 20125 Milano, Italy, {2} L-NESS and Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via R. Cozzi 55, 20125 Milano, Italy, {3} V. Lashkarev Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 45 Nauki avenue, 03028 Kiev, Ukraine

15:30 **From the crystal free energy of SiC polytypes to the stacking faults formation energy: a DFT-based lattice-dynamics approach.** — X VIIb.2
Emilio Scalise, Anna Marzegalli, Francesco Montalenti, Leonida Miglio
Department of Materials Science, University of Milano Bicocca

15:45 **Structural and electronic properties of antiphase boundaries in 3C-SiC from first principles calculations** — X VIIb.3
I. Deretzis, G. Fisicaro, M. Zimbone, E. Barbagiovanni, F. La Via, A. La Magna
CNR-IMM, VIII strada 5, 95121 Catania, Italy

16:00 **Comparative molecular dynamics simulation study of the extended defects behavior in 3C-SiC phase with two different potentials** — X VIIb.4
Andrey Sarikov {1, 2}, Anna Marzegalli {3}, Luca Barbisan {1}, and Leo Miglio {3}
1 Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via R. Cozzi 55, 20125 Milano, Italy 2 V. Lashkarev Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 45 Nauki avenue, 03028 Kiev, Ukraine 3 L-NESS and Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via R. Cozzi 55, 20125 Milano, Italy

16:15 **Coffee Break**

SiC Processing & Devices : Mike JENNINGS

16:45 INV **SiC power devices and their processing** — X IVb.1
Philippe Godignon
Centro Nacional de Microelectronica (CNM-CSIC), Carrer dels Tillers, Campus UAB, 08193 Cerdanyola, Barcelona - Spain

17:15 **Formation of Ni-based ohmic contact on SiC by means of laser annealing** — X IVb.2
Paolo Badalà 1, Simone Rascunà 1, Brunella Cafra 1, Emanuele Smecca 2, Massimo Zimbone 2, Anna Bassi 1, Corrado Bongiorno 2, Cristiano Calabretta 2, Fabrizio Roccaforte 2, Francesco La Via 2, Mario Saggio 1, Antonino La Magna 2 and Alessandra Alberti 2
1 STMicroelectronics, Zona Industriale Stradale Primosole, 50 - 95121 Catania, Italy
2 CNR-IMM, Zona Industriale Strada VIII, 5 - 95121 Catania, Italy

17:30 **Laser Annealing of P ion implanted 4H-SiC epitaxial layers** **X IVb.3**
C. Calabretta1-2), M. Zimbone2), S. Boninelli2), A. Pecora3), A. Castiello3), G. Fortunato2), L. Calcagno4), L. Torrisi1), and F. La Via2)
1) MIFT, Università degli studi di Messina, Viale F. Stagno d'Alcontres, 31 - 98166 Messina, Italy, 2) CNR-IMM, VIII Strada, 5, 95121 Catania, Italy, 3) CNR-IMM, Via del Fosso del Cavaliere, 100 - 00133 Roma, 4) DFA, Università degli studi di Catania, Via S. Sofia 64, 95123 Catania, Italy,

17:45 **Interface chemistry and electric properties of 4H-SiC/SiO2 and the influence of annealing atmospheres** **X IVb.4**
Anna Regoutz
1 Department of Materials, Imperial College London, Exhibition Road, London SW7 2AZ, United Kingdom.

18:00 **The advantages of hexagonal lateral MOSFET cell design in 3C-SiC** **X IVb.5**
Peter J Ward(*), Ahmed Nejim(**)
(*) PWCE, Wesum House, Hemington, Peterborough PE8 5QJ, UK. (**) Silvaco Europe Ltd, Compass Point, St. Ives, Cambridgeshire, PE27 5JL, UK.

18:15 **CLOSING REMARKS of SYMPOSIUM X**

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM Y

Studying the materials chemistry in solution utilizing X-Ray spectroscopic and scattering studies

Symposium Organizers :

Dorota KOZIEJ, University of Hamburg, Germany

Karena CHAPMAN, Argonne National Laboratory, USA

Kirsten JENSEN, University of Copenhagen, Denmark

Serena DE BEER, MPI – CEC, Mülheim an der Ruhr, Germany

Monday 27 may 2019

Session 1 : Dorota Koziej

09:00 INV **In situ X-ray scattering studies of nanocrystal nucleation and growth** **Y 1.1**
Bo Brummerstedt Iversen
Department of Chemistry & iNANO, Aarhus University, DK-8000 Aarhus C, Denmark

09:30 **Total structure of ZrO2 nanocrystals synthesized in tri-n-octylphosphine oxide.** **Y 1.2**
Jonathan De Roo,1,4 Soham Banerjee,5 Hannes Rijckaert,1 Katrien De Keukeleere,1 Fabien Delpech,2 Yannick Coppel,3 Zeger Hens,1 Isabel Van Driessche,1 Jonathan Owen,4 Simon Billinge5
1. Department of Chemistry, Ghent University, Gent B-9000, Belgium 2. INSA, UPS, CNRS, Laboratoire de Physique et Chimie des Nano-Objets (LPCNO), Universitéde Toulouse, 31077 Toulouse cedex 9, France 3. Laboratoire de Chimie de Coordination, CNRS, UPR 8241, Université de Toulouse, 31077 Toulouse cedex 9, France 4. Department of Chemistry, Columbia University, New York 10027, United States 5. Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory, Upton, NY 11973, USA

09:45 **Understanding the formation of nanocrystals in supercritical fluids, an in situ story** **Y 1.3**
Gilles Philippot (1), Aimery Auxemery (1), Denis Testemale(2), Jean-Louis Hazemann(2), Bo Iversen(3) & Cyril Aymonier (1)
(1) CNRS, Univ. Bordeaux, Bordeaux INP, ICMCB, UMR 5026, F-33600 Pessac, France, (2) CNRS, Université Grenoble Alpes, Institut NEEL, F-38000 Grenoble, France (3) Center for Materials Crystallography, Department of Chemistry and iNANO, Aarhus University, Aarhus, Denmark

10:00 **Coffee Break**

10:30 INV **In situ characterization toolbox for studying nucleation and growth of piezoelectric oxide thin films and nanostructured materia** **Y 1.4**
Mari-Ann Einarsrud
Department of Materials Science and Engineering, NTNU Norwegian University of Science and Technology, Trondheim, Norway

11:00 **Magnetic characterization of SPION in solution using RIXS-MCD** **Y 1.5**
Juliusz Kuciakowski 1 2, Angelika Kmita 1, Dorota Lachowicz 1, Krzysztof Pitala 1 2, Magdalena Wytrwał 1, Sara Lafuerza 3, James Ablett 4, Amélie Juhin 5, Dorota Koziej 6, Marcin Sikora 1
1. ACMiN, AGH University of Science and Technology, Kraków, Poland, 2. PACS, AGH University of Science and Technology, Kraków, Poland, 3. European Synchrotron Radiation Facility, Grenoble, France, 4. Synchrotron SOLEIL, Gif-sur-Yvette, France, 5. IMPMC, Sorbonne Universités, UMR CNRS 7590, Paris, France, 6, CHyN, Hamburg University, Hamburg, Germany

11:15 **Use of Total X-ray Scattering to determine structure and attributes of the growth mechanism of sub-10 nm iron oxide particles** **Y 1.6**
Dr. Susan R Cooper, Asst. Prof. Kirsten Jensen, Prof. James Hutchison
University of Copenhagen, University of Oregon

11:30 **In situ XANES for the determination of Ce oxidation state in garnet-type nanocrystals synthesized by solvothermal route** **Y 1.7**
Alexandra CANTARANO, Denis TESTEMALE, Alain IBANEZ, Géraldine DANTELLE
Institut Néel, CNRS UPR 2940, 25 avenue des Martyrs, 38042 GRENOBLE Cedex 09, FRANCE

11:45 **Characterization of the structural properties of colloidal suspensions through Advanced Light Scattering.** **Y 1.8**
Coline Bretz, Andrea Vaccaro, Andreas C. Völker
LS Instruments, Fribourg, Switzerland, http://www.lsinstruments.ch

12:00 **Lunch**

Session 2 : Karena Chapman

14:00 INV **Charge carrier dynamics and trapping in transition metal oxides** **Y 2.1**
M. Chergui
Lab. of Ultrafast Spectroscopy (LSU) Lausanne Centre for Ultrafast Science (LACUS) Ecole Polytechnique Fédérale de Lausanne ISIC, FSB, Station 6 CH-1015 Lausanne, Switzerland

14:30 INV **RIXS for hydrogen bond of liquid water at interfaces** **Y 2.2**
Y. Harada (1,2,3), K. Yamazoe (2), J. Miyawaki (1,2,3), Y.-T. Cui (2,3), Y. Higaki (4,5), Y. Inutsuka (4), D. Murakami (4,5), M. Tanaka (4,5) and A. Takahara (4,5)
1: Department of Advanced Materials Science, The University of Tokyo, Japan, 2: Institute for Solid State Physics, The University of Tokyo, Japan. 3: Synchrotron Radiation Research Organization, The University of Tokyo, Japan. 4: Graduate School of Engineering, Kyushu University, Japan. 5: Institute for Materials Chemistry and Engineering, Kyushu University, Japan

15:00 **Surfactant-free synthesis of Pt nanoparticles: solvent-dependent growth mechanisms probed by XAS and in-situ SAXS studies** **Y 2.3**
Jonathan Quinson l1], Sarah Neumann [2], Laura Kacenauskaite [1], Alessandro Zana [3], Jacob J. K. Kirkensgaard [4], Søren B. Simonsen [5], Luise Theil Kuhn [5], Mehtap. Oezaslan [6], Sebastian Kunz [2], Matthias Arenz [3]
[1] University of Copenhagen, Chemistry Department, Universitetsparken 5, 2100 Copenhagen Ø, Denmark [2] University of Bremen, Institute for Applied and Physical Chemistry, Leobenerstraße, 28359 Bremen, Germany [3] Niels Bohr Institute, University of Copenhagen, Universitetsparken 5, 2100 Copenhagen Ø, Denmark [4] Technical University of Denmark, Imaging and Structural Analysis, Department of Energy Conversion and Storage, Frerikborgvej 399, 4000 Roskilde, Denmark [5] Carl von Ossietzky Universität Oldenburg, School of Mathematics and Science Department of Chemistry, 26111 Oldenburg, Germany [6] University of Bern, Department of Chemistry and Biochemistry, Freiestrasse 3 CH-3012 Bern, Switzerland

15:15 **Understating the formation of materials: simultaneous in-situ luminescence and synchrotron-based X-ray diffraction analysis** **Y 2.4**
Dr. Huayna Terraschke
Institute of Inorganic Chemistry, University of Kiel

15:30 **Formation Mechanism of Molybdenum Dioxide - Controlling Defect Concentration via Solvent Properties** **Y 2.5**
Troels Lindahl Christiansen, Mikkel Juelsholt, Kirsten M. Ø. Jensen
Department of Chemistry, University of Copenhagen

15:45 **In situ synchrotron studies during hydrothermal synthesis of SrxBa1-xNb2O6** **Y 2.6**
Ola G. Grendal, Anders B. Blichfeld, Dong Hou, Satoshi Tominaka, Sverre M. Selbach, Tor Grande, Mari-Ann Einarsrud
Department of Material Science and Engineering, NTNU Norwegian University of Science and Technology, 7034 Trondheim, Norway, Department of Material Science and Engineering, NTNU Norwegian University of Science and Technology, 7034 Trondheim, Norway, Department of Material Science and Engineering, NTNU Norwegian University of Science and Technology, 7034 Trondheim, Norway, International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan, Department of Material Science and Engineering, NTNU Norwegian University of Science and Technology, 7034 Trondheim, Norway, Department of Material Science and Engineering, NTNU Norwegian University of Science and Technology, 7034 Trondheim, Norway, Department of Material Science and Engineering, NTNU Norwegian University of Science and Technology, 7034 Trondheim, Norway

16:00 **Coffee Break**

Poster session : Kirsten Jensen

16:30 **Combining in-situ HERFD-XANES and total X-ray scattering to catch the full picture of CoO nanoparticle formation in solution** **Y 2.1**
Cecilia Zito12, Lukas Grote23, Krzysztof Pitala4, Ann-Christin Dippel3, Kristina Kvashnina5, Stephen Bauters5, Dorota Koziej2
1 São Paulo State University UNESP, Rua Cristóvão Colombo 2265, 15054000 São José do Rio Preto, Brazil, 2 University of Hamburg, Center for Hybrid Nanostructures, Luruper Chaussee 149, 22761 Hamburg, Germany, 3 Deutsches Elektronensynchrotron DESY, Notkestraße 85, 22607 Hamburg, Germany, 4 Academic Center for Materials and Nanotechnology, AGH University of Science and Technology, Kawiory, 30-001 Krakow, Poland, 5 European Synchrotron Radiation Facility ESRF, 71 Avenue des Martyrs, 38000 Grenoble, France

16:30 **Following the Atomic Ordering Transformation of PdCu Nanoparticles Through In Situ Pair Distribution Function Analysis** **Y 2.2**
Jette K. Mathiesen and Kirsten M. Ø. Jensen
Department of Chemistry, University of Copenhagen, DK-2100 Copenhagen Ø

16:30 **Research possibilities at the new in situ and nano X-ray diffraction beamline at PETRA III** **Y 2.3**
D.V.Novikov, R.Grifone, J.Raabe, A.Khadiev
DESY Photon Science, Notkestrasse 85, 22607 Hamburg, Germany

16:30 **Experimental study of the new absorber Cu2NiSnS4 thin films prepared by spray method** **Y 2.4**
S. Dridi1,2*, N. Bitri1, S. Mahjoubi 1, F. Chaabouni1
1:Université de Tunis El Manar, Ecole Nationale d'Ingénieurs de Tunis, Laboratoire de Photovoltaïque et matériaux semi-conducteurs, 1002, Tunis, Tunisie.
2:Université de Tunis, Ecole Nationale Supérieure d'Ingénieurs de Tunis.

16:30 **Bridging solid state [Ln(DOTA)]- structures with solution properties** **Y 2.5**
Maria Storm Thomsen, Thomas Just Sørensen
Thomas Just Sørensen tjs@chem.ku.dk

16:30 **Characterization of the formation of metal oxido clusters by complex modelling of PDF and SAXS** **Y 2.6**
Andy S. Anker, Troels Lindahl Christiansen, Marcus Weber, Martin Schmiele, Erik Brok, Emil T. S. Kjaer, Pavol Juhás, Rico Thomas, Michael Mehring and Kirsten M. Ø. Jensen
Nanoscience Center and Department of Chemistry, University of Copenhagen, Nanoscience Center and Department of Chemistry, University of Copenhagen, Institute of Chemistry, Chemnitz, Niels Bohr Institute, University of Copenhagen, Nanoscience Center and Department of Chemistry, University of Copenhagen, Niels Bohr Institute, University of Copenhagen, Nanoscience Center and Department of Chemistry, University of Copenhagen, Nanoscience Center and Department of Chemistry, University of Copenhagen, Computational Science Initiative, Brookhaven National Laboratory, Chemistry, University of Copenhagen, Chemistry, University of Copenhagen, Nanoscience Center and Department of Chemistry, University of Copenhagen

16:30 **Spectral imaging study of Li-ion battery materials using synchrotron-based XANES nano-imaging technique** **Y 2.7**
Jae Yeon Park, Jitendra Pal Singh, Jun Lim, Sangsul Lee
Pohang Accelerator Laboratory

16:30 **Investigations of Nano- and Microstructures of X-ray Mirror Coatings for Astronomical Instrumentation** **Y 2.8**
Atefeh Jafari1, Desiree Della Monica Ferreira1, Lan Mai Vu1, Sara Svendsen1, Sonny Massahi1, Shima Kadkhodazadeh3, Takeshi Kasama3, Brian Shortt2, Finn Erland Christensen1
1-DTU Space, Technical University of Denmark, 2800, Kongens Lyngby, Denmark, 2. European Space Agency (ESTEC), Keplerlaan 1, PO Box 299, 2200 AG, Noordwijk, Netherlands, 3. Center for Electron Nanoscopy, Technical University of Denmark, Fysikvej, 2800, Kongens Lyngby, Denmark

16:30 **Waveguide-resonance propagation of radiation fluxes as a source of new material preparation** **Y 2.9**
V.K. Egorov, E.V. Egorov
IMT RAS, Chernogolovka, Moscow district, Russia 142432, IMT RAS, Chernogolovka, Moscow district, Russia, 142432 and RUDN, Moscow Russia

16:30 **Surface Reducibility Engineered Catalytic MnO2-Pt Nanohybrid for CO oxidation: Insights into the Crystallographic and Electronic** **Y 2.10**
Noopur Jain, Ahin Roy. N Ravishnakar
Materials Research Centre, Indian Institute of Science

16:30 **Characterizing the surface reconstruction of metastable spinel oxides for water oxidation** **Y 2.11**
Yan Duan
Shengnan Sun, Yuanmiao Sun, Shibo Xi, Xiao Chi, Qinghua Zhang, Xiao Ren, Jingxian Wang, Samuel Jun Hoong Ong, Yonghua Du, Lin Gu, Alexis Grimaud, Zhichuan J. Xu

Tuesday 28 may 2019

Session 3 : Kirsten Jensen

08:30 INV **Chemistry at the Edge: Combining High Energy X-ray Scattering and Spectroscopic Analyses of Thin-Film and Molecular Catalysts at** **Y 3.1**
David M. Tiede, Gihan Kwon, Karen Mulfort, and Alex B. F. Martinson
David M. Tiede, Chemical Sciences Division Argonne National Laboratory, Gihan Kwon, National Synchrotron Light Source, Brookhaven National Laboratory, Upton, New York, USA, Karen Mulfort, Chemical Sciences Division Argonne National Laboratory, Alex B. F. Martinson, Material Science Division, Argonne National Laboratory, Argonne, Illinois, USA,

09:00 **In-situ Atomic Scale Structure Elucidation of Nanocatalyst under Electrochemical Conditions using X-ray Absorption Spectroscopy** **Y 3.2**
Nicholas M. Bedford
School of Chemical Engineering, University of New South Wales

09:15 **Ultrathin gold nanowires: atomic structure, growth mechanism and self-assembly followed by in situ HE-XRD, SAXS and XAS** **Y 3.3**
R. Kumar Ramamoorthy, J. A. Vargas, L.-M. Lacroix, P. Roblin, S. Teychené, M. Imperor, V. Petkov, G. Viau
(1) Université de Toulouse, LPCNO, UMR 5215 INSA CNRS UPS, Toulouse, France (2) Department of Physics, Central Michigan University, Mt. Pleasant, Michigan, United States (3) Université de Toulouse, LGC, CNRS, INPT, UPS, Toulouse, France (4) Laboratoire de Physique de Solides, UMR 8502, Université Paris-Sud, Orsay, France

09:30 **Coffee Break**

10:00 INV **X-ray Spectroscopy Techniques Probing (Re)Active Species in Homogeneous Oligomerisation Catalysis** **Y 3.4**
Moniek Tromp
University of Groningen, Zernike Institute for Advanced Studies, Chair of Materials Chemistry, Groningen, Then Netherlands

10:30 **Monitoring the formation of oxide catalysts in suspension by total scattering experiments** **Y 3.5**
Ezgi Onur Şahin, Gun-hee Moon, Harun Tüysüz, Candace K. Chan, Wolfgang Schmidt, Claudia Weidenthaler
Ezgi Onur Şahin, Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany, Gun-hee Moon, Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany, Harun Tüysüz, Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany, Candace K. Chan, Arizona State University, Tempe, USA, Wolfgang Schmidt, Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany, Claudia Weidenthaler, Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany

10:45 **Time-resolved X-ray spectroelectrochemistry for the study of CO2-reducing electrocatalysts** **Y 3.6**
Khaled Cheaib (1,2), Daniela Mendoza (1,3), Elodie Anxolabéhère-Mallart (3), Marc Robert (3), Zakaria Halime (2), Benedikt Lassalle-Kaiser (1)
1 Synchrotron SOLEIL, l'Orme des Merisiers, 91192 Gif-sur-Yvette, France. 2 Institut de Chimie Moléculaire et des Matériaux d'Orsay, Université Paris Sud, 91190 Orsay, France. 3 Laboratoire d'Electrochimie Moléculaire, Université Paris Diderot, 15 rue Jean-Antoine de Baïf, 75205 Paris, France.

11:15 **Plenary Session**

12:30 **Lunch**

Session 4 : Serena De Beer

14:00 INV **Simultaneous data collection of X-ray spectroscopy and crystallography for studying water oxidation reaction in nature** **Y 4.1**
Chatterjee, R.(1), Young, I. D.(1), Ibrahim, M.(2), Fuller, F. D.(1,3), Lassalle, L.(1), Gul, S.(1), Fransson, T.(4), Brewster, A. S.(1), Alonso-Mori, R.(3), Hussein, R.(2), Dobbek, H.(2), Bergmann, U.(4), Sauter, N. K.(1), Zouni, A.(2), Messinger, J.(5), Kern, J.(1), Yachandra, V. K.(1), Yano, J.(1)
(1) Molecular Biophysics and Integrated Bioimaging Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA, (2) Institut für Biologie, Humboldt-Universität zu Berlin, D-10099 Berlin, Germany, (3) LCLS, SLAC National Accelerator Laboratory, Menlo Park, CA 94025, USA, (4) Stanford PULSE Institute, SLAC National Accelerator Laboratory, Menlo Park, CA 94025, USA, (5) Department of Chemistry - Ångström, Molecular Biomimetics, Uppsala University, SE 75237 Uppsala, Sweden.

14:30 INV **Decorating nanoporous materials for energy-related applications** **Y 4.2**
Ana E. Platero-Prats
Departamento de Química Inorgánica, Universidad Autónoma de Madrid

15:00 **Mechanisms for Tungsten Oxide Nanoparticle formation in Solvothermal Synthesis: From Polyoxometalates to crystalline materials** **Y 4.3**
Mikkel Juelsholt, Troels Lindahl Christiansen and Kirsten M. Ø. Jensen
Department of Chemistry and Nanoscience Center, University of Copenhagen

15:15 **In situ X-ray Diffraction Studies during Aqueous Chemical Solution Deposition of BaTiO3 Thin Films** **Y 4.4**
Kristine Bakken, Anders Bank Blichfeld, Dong Hou, Julia Glaum, Tor Grande, Mari-Ann Einarsrud
Department of Materials Science and Engineering, NTNU Norwegian University of Science and Technology, 7034 Trondheim, Norway

15:30 **Local disorder and structure relation with magnetic exchange interactions in A2Mo2-yMnyO7 pyrochlores** **Y 4.5**
C. Castellano, G. Berti, F. Rubio-Marcos, G. Lamura, S. Sanna, E. Salas-Colera, A. Brambilla, Á. Muñoz-Noval, L. Duò, F. Demartin
Dipartimento di Chimica, Università degli Studi di Milano, via Golgi 19, 20133 Milano, Italy, Department of Chemical Physics, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Faradayweg 4-6, 14195 Berlin, Germany, Electroceramic Department, Instituto de Cerámica y Vidrio, CSIC, Kelsen 5, 28049 Madrid, Spain, CNR-SPIN, corso Perrone 24, 16146 Genova, Italy, Department of Physics and Astronomy, University of Bologna, 40127 Bologna, Italy, Instituto de Ciencia de Materiales de Madrid, ICMM, CSIC, Sor Juana Inés de la Cruz 3, 28049, Cantoblanc, Madrid, Spain and Spanish CRG BM25 SpLine, ESRF 71 Avenue des Martyrs CS 40220 FR - 38043 Grenoble, France, Dipartimento di Fisica, Politecnico di Milano, piazza Leonardo da Vinci 32, 20133 Milano, Italy, Laboratory Universidad Complutense de Madrid Facultad de Ciencias Físicas Ciudad Universitaria ES - 28040 Madrid, Spain, Dipartimento di Fisica, Politecnico di Milano, piazza Leonardo da Vinci 32, 20133 Milano, Italy, Dipartimento di Chimica, Università degli Studi di Milano, via Golgi 19, 20133 Milano, Italy

15:45 **Chemical Bonding in 2D MXenes Investigated by X-ray Spectroscopy** **Y 4.6**
Martin Magnuson
Thin Film Physics Division, Department of Physics, Chemistry and Biology, IFM, Linköping University, SE-58183 Linköping, Sweden.

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM Z

Advanced quantitative transmission electron microscopy: materials research in several dimensions

Symposium Organizers :

Eva OLSSON, Chalmers University of Technology, Gothenburg, Sweden

Martina LUYSBERG, Research Centre Jülich, Germany

Mathieu KOCIAK, CNRS-Université Paris-Sud, Orsay, France

Paul MIDGLEY, University of Cambridge, U.K.

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DENS solutions
INNOVATIONS THAT MATTER

Functional imaging:
Detecting atomic structure& chemical properties in energy materials, oxides, semiconductors and (topological) insulators : Martina Luysberg

13:45 INV **Structure-property relationships of materials at high spatial, energy or momentum resolution** — Z 1.1
Quentin Ramasse
SuperSTEM, SciTech Daresbury Campus, Keckwick Lane, Daresbury WA4 4AD, United Kingdom

14:15 **Using transmission electron microscopy to facilitate GaN-based electronic device optimization: Chemical inhomogeneities, strain mapping, defect identification and electronic characterization** — Z 1.2
P. Specht
Dept. of Mat.Sci. and Eng., University of California, Berkeley CA 94720, USA

14:30 **Revealing atomic structure and oxidation states of dopants in nanoparticles for migration-promoted oxygen exchange capacity** — Z 1.3
Xiangbin Cai, Kaiyun Chen, Xiang Gao, Mingzi Sun, Guanyu Liu, Bolong Huang, Junkai Deng, Jefferson Zhe Liu, Antonio Tricoli, Ning Wang, Christian Dwyer, Ye Zhu
Department of Physics and Center for Quantum Materials, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong, China, MOE Key Laboratory for Nonequilibrium Synthesis and Modulation of Condensed Matter, State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, China, Nanotechnology Research Laboratory, Research School of Engineering, Australian National University, Canberra, ACT 2601, Australia, Department of Applied Physics, Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, China, Department of Physics, Arizona State University, Tempe, Arizona 85287, USA, Department of Mechanical Engineering, The University of Melbourne, Parkville, Victoria, Australia,

14:45 **How sharp are atomically sharp interfaces in complex functional oxide heterostructures?** — Z 1.4
Peter A. van Aken
Stuttgart Center for Electron Microscopy, Max Planck Institute for Solid State Research, Stuttgart, Germany

15:15 **Multimodal Electron Microscopy, Identifying Surface Modes in new Topological Materials** — Z 1.5
David C. Bell (1,2) Cigdem Ozsoy-Keskinbora(1,2), Kundan Chaudhary (1), Michele Tamagnone(1), Yunbo Ou(3), Takehito Suzuki(3), Jagadeesh Moodera(2,3) and Joseph G Checkelsky(2,3)
1 School of Engineering and Applied Sciences, Harvard University, Cambridge MA U.S.A. 2. Center for Integrated Quantum Materials, Cambridge MA U.S.A. 3 Department of Physics, MIT, Cambridge MA U.S.A.

15:30 **Coffee break**

16:30 **Electron tomography initiating a novel building concept of step bunching in epitaxial III-V layers on Si** — Z 1.6
M. Niehle (1), J.-B. Rodriguez (2), L. Cerutti (2), E. Tournié (2), A. Trampert (1)
(1) Paul-Drude-Institut, Hausvogteiplatz 5-7, 10117 Berlin, Germany, (2) Université Montpellier - CNRS, IES, UMR 5214, Montpellier F-34000, France,

16:45 **Atomic Structure Analysis of a Second Order Ruddlesden-Popper Ferrite – a High-Resolution STEM Study** — Z 1.7
J. Lammer (a,b), C. Berger (c), D. Knez (b), P. Longo (d), G. Kothleitner (a,b), N. Schrödl (c), E. Bucher (c), A. Egger (c), R. Merkle (e), W. Sitte (c), J. Maier (e), W. Grogger (a,b)
(a) Graz Centre for Electron Microscopy (ZFE), Steyrergasse 17, 8010 Graz, Austria, (b) Institute of Electron Microscopy and Nanoanalysis (FELMI), Graz University of Technology, Steyrergasse 17, 8010 Graz, Austria, (c) Chair of Physical Chemistry, Montanuniversitaet Leoben, Franz-Josef-Straße 18, 8700 Leoben, Austria, (d) Gatan Inc., 5794 W Las Positas Blvd, Pleasanton, CA 94588, USA, (e) Max Planck Institute for Solid State Research, Heisenbergstraße 1, 70569 Stuttgart, Germany

17:00 **Refinement Approaches in the Diffraction Geometry of the Rotation Electron Diffraction Method** — Z 1.8
Andreas Delimitis1, Jon Gjønnes2, Vidar Hansen1
1 Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger, N-4036, Stavanger, Norway, 2 Department of Physics, University of Oslo, Gaustadalleen 21, N-0371, Oslo, Norway

17:15 **Modelling radiolysis damage in Metal-Organic Frameworks with STEM-EELS** — Z 1.9
István-Zoltán Jenei*, Zhehao Huang*, Dawei Feng**, Xiaodong Zou*, Thomas Thersleff*
* Department of Materials and Environmental Chemistry, Stockholm University, Stockholm, SE-10691, Sweden, ** Department of Chemical Engineering, Stanford University, Stanford, CA, USA

17:30 **Capturing damage in Si nano spheres during lithiation** — Z 1.10
Pu Hu, Utkarsh Ahuja, Katerina E. Aifantis
University of Florida, U.S.A.

17:45 **Analytical S/TEM - focused ion beam-based platform for multidimensional multiscale characterization of energy storage materials** — Z 1.11
Vladimir P. Oleshko
Materials Science and Engineering Division, Materials Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD 20899 USA

18:00 **The Role of Defects in Light Activated Growth Modes of Gold Nanoplates** — Z 1.12
Svetlana Neretina, Spencer D. Golze, Robert D. Neal, and Robert A. Hughes
College of Engineering, University of Notre Dame, IN 46556, United States

18:15 **Morphology and composition evolution of the highly active FePtCu catalyst by aberration corrected STEM** — Z 1.13
X. Chen1, Y. Wang1, H. B. Wang2, T. Wu2, P. Ruterana3, H. Wang2, and P.A. van Aken1
1. Max-Planck-Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany 2. Faculty of Physics and Electronic Science, Hubei University, 430062 Wuhan, China 3. CIMAP UMR 6252, ENSICAEN, 6 Boulevard Maréchal Juin, F-14050 Caen, France

Detecting (magnetic) fields in the electron microscope : Eva Olsson

08:30 INV **Imaging and mapping of fields using a (S)TEM** — Z 2.1
J. Zweck (1), P. Melzl (1), K. Müller-Caspary (2), S. Pöllath (1), A. Rosenauer (3), F. Schwarzhuber (1), J. Wild (1)
(1) Physics Faculty, University of Regensburg, Germany, (2) Jülich Research Center, Jülich, Germany, (3) Institute of Solid State Physics, University of Bremen, Bremen, Germany

09:00 **Néel-type magnetic skyrmions in multilayers of heavy metals and ferromagnets investigated using off-axis electron holography** — Z 2.2
T. Denneulin (1), J. Caron (1), A. Kovács (1) , M. Hoffmann (2), S. Blügel (2), M. Raju (3), A. Soumyanarayanan (4), C. Panagopoulos (3), and R. E. Dunin-Borkowski (1)
(1) Ernst Ruska Centre for Microscopy and Spectroscopy with Electrons and Peter Grünberg Institute, Forschungszentrum Jülich, 52425 Jülich, Germany. (2) Peter Grünberg Institute and Institute for Advanced Simulation, Forschungszentrum Jülich, 52425 Jülich, Germany. (3) Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, 637371 Singapore. (4) Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore.

09:15 **Magnetic measurements with high spatial resolution** — Z 2.3
Jan Rusz, Shunsuke Muto, Xiaoyan Zhong, Thomas Thersleff, Juan-Carlos Idrobo Uppsala University, Uppsala, Sweden, Nagoya University, Nagoya, Japan, Tsinghua University, Tsinghua, China, Stockholm University, Stockholm, Sweden, Oak Ridge National Laboratory, Tennessee, USA

09:30 **Coffee Break**

10:30 **Influences of lens aberration and specimen tilt on atomic resolution differential phase contrast STEM images** — Z 2.4
Julius Bürger, Jörg K. N. Lindner
Paderborn University, Department of Physics, Germany

10:45 **Directly mapping of magnetic fields in strained manganite films using off-axis electron holography** — Z 2.5
Qianqian Lan1, Chuanshou Wang2, Jan Caron1, Thibaud Denneulin1, András Kovács,1 Lei Jin1, Xiaoyan Zhong3, Rafal E. Dunin-Borkowski1
1 Ernst Ruska-Centre (ER-C) and Institute for Microstructure Research (PGI-5), Forschungszentrum Jülich, 52425 Germany. 2 Max Planck Institute of Microstructure Physics, Weinberg 2, 06120 Halle, Germany. 3 National Center for Electron Microscopy in Beijing, School of Materials Science and Engineering, Tsinghua University, Beijing 100084, P.R. China.

11:15 **PLENARY SESSION 1**

12:30 **Lunch**

Quantitative microscopy and spectroscopy : Mathieu Kociak

13:45 INV **Quantifying 3D atomic structures of nanomaterials and their dynamics using model-based scanning transmission electron microscopy** — Z 3.1
S. Van Aert1, A. De wael,1 J. Fatermans1, I. Lobato1, A. De Backer1, L. Jones2, A.J. den Dekker3, and P.D. Nellist4
1 EMAT, University of Antwerp, Belgium, 2 Trinity College Dublin, the University of Dublin, Ireland, 3 Imec-Vision Lab, University of Antwerp, Belgium, 4 Department of Materials, University of Oxford, United Kingdom

14:15 **Effects of decay and resonance phenomena of bound electron states in atomic-resolution STEM imaging and spectroscopy** — Z 3.2
1) Tadas Paulauskas, 2) Robert F. Klie
1) Center for Physical Sciences and Technology, Dept. of Optoelectronics, Vilnius, Lithuania 2) University of Illinois at Chicago, Dept. of Physics, Chicago, IL, USA

14:30 **Quantitative comparison of momentum-resolved STEM and off-axis electron holography at atomic resolution** — Z 3.3
Florian Winkler, Juri Barthel, Knut Müller-Caspary, Rafal E. Dunin-Borkowski
Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons (ER-C), Forschungszentrum Jülich, 52425 Jülich, Germany

14:45 **Electron tomography on inert substrate supported solid oxide fuel cells** — Z 3.4
Matthias Meffert1,Florian Wankmüller2,Johannes Schmieg1,Heike Störmer1,André Weber2,Jean-Claude Njodzefon3,Piero Lupetin3,Ellen Ivers-Tiffée2,Dagmar Gerthsen1
1 Laboratory for Electron Microscopy (LEM), Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe/Germany, 2 Institute for Applied Materials (IAM-WET), Karlsruhe Institute of Technology (KIT), 76131, Karlsruhe/Germany, 3 Robert Bosch GmbH, Robert Bosch Campus 1, 71272 Renningen/Germany,

15:00 **Composition and Structure Analysis of Ba1.015Zr0.8-xCe0.2YxO3 Proton Conductors** — Z 3.9
Dan Zhou, Wilfried Sigle, Yuanye Huang, Rotraut Merkle, Joachim Maier, Peter A. van Aken
Max Planck Institute for Solid State Research, Stuttgart 70569, Germany

15:15 **Ultra low voltage 4D-STEM mapping in a transmission-SEM** — Z 3.5
Benedikt Haas, Johannes Müller, Christoph T. Koch
Institut für Physik & IRIS Adlershof, Humboldt-Universität zu Berlin, Berlin, Germany

15:30 **Coffee Break**

Microscopy in several dimensions: Poster Session : Sandra van Aert

16:30 **The Study on the Lattice Distortion of Sigma Precipitates in CoCrFeNiMo High Entropy Alloy** — Z P4.1
Sheng-Yun Su1?, Yi-Ting Fan2, Yan-Jie Su2, Chun-Wei Huang3, Ming-Hung Tsai2 and Ming-Yen Lu1
1 Department of Materials Science and Engineering, National Tsing Hua University, Taiwan 2 Department of Materials Science and Engineering, National Chung Hsing University, Taiwan 3 Material and Chemical Research Laboratories, Industrial Technology Research Institute, Taiwan

16:30 **Oxidation behavior of TiAlN coatings and alloyed with metallic elements** — Z P4.2
Fangyu Guo, Jianchuan Wang, David Holec, Yong Du
Central South University, Montanuniversität Leoben

16:30 **Probing metal-to-insulator transition in V2O3 nanostructures under variable-temperature stimuli** — Z P4.3
Laura Bocher, Xiaoyan Li, Alexandre Gloter, Jean Denis Blazit, Marcel Tencé, Mathieu Kociak, Odile Stéphan
Laboratoire de Physique des Solides Université Paris-Sud Bât. 510 91120 Orsay

16:30 **STEM-EDXS tomography of a co-sintered solid oxide fuel cell anode** — Z P4.4
Felix Jung1, Matthias Meffert1, Piero Lupetin2, Dagmar Gerthsen1
1 Laboratory for Electron Microscopy (LEM), Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe/Germany, 2 Robert Bosch GmbH, Robert Bosch Campus 1, 71272 Renningen/Germany,

16:30 **Microstructure studies of Fe-based nanocrystalline soft magnetic alloys using advanced transmission electron microscopy** — Z P4.5
1 Viktoriia Basykh, 2 Jarosław Ferenc, Grzegorz Cieślak, Tadeusz Kulik
1 National Technical University of Ukraine «Igor Sikorsky Kyiv Polytechnic Institute», Metal Physics Department, Prosp. Peremohy 37, Kyiv, Ukraine, 03056, 2 Warsaw University of Technology, Faculty of Materials Science and Engineering, Woloska str. 141, Warsaw, Poland, 02-507,

16:30 **Anomalous structural deformation near the tricritical point of ferroelectric Pb(Zr,Ti)O3 revealed by quantitative TEM** — Z P4.6
Xian-Kui Wei1,*, Bi-Xia Wang2, Yu-Juan Xie2, Chun-Lin Jia1,3, Rafal E. Dunin-Borkowski1, Zuo-Guang Ye2,4,*
1Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons and Peter Grünberg Institute, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany
2Department of Chemistry and 4D LABS, Simon Fraser University, 8888 University Drive, Burnaby, British Columbia, V5A 1S6, Canada 3School of Electronic and Information Engineering, Xi'an Jiaotong University, Xi'an 710049, China 4Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, Xi'an 710049, China

16:30 **Study of grain boundaries in ceria polycrystals using analytical electron microscopy** — Z P4.7
Zheng Ma, Lei Jin, Rafal E. Dunin-Borkowski
Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons and Peter Grünberg Institute, Forschungszentrum Jülich, Germany,

16:30 **In situ TEM study of sidewall effects on the growth of Ge nanowires by the Vapour-Liquid-Solid technique** **Z P4.8**
Éric NGO, Federico PANCIERA, Weixi WANG, Martin FOLDYNA, Pere ROCA I CABARROCAS, Ileana FLOREA, Laurent TRAVERS, Jean-Christophe HARMAND, Gilles PATRIARCHE, Laetitia VINCENT, Charles RENARD, Daniel BOUCHIER, Jean-Luc MAURICE
LPICM, CNRS, École polytechnique, 91228 Palaiseau, France I C2N, CNRS, Université Paris-Sud-11, Université Paris-Saclay, 91228 Palaiseau, France

16:30 **The role of size and gaseous atmosphere during thermally-driven in situ TEM crystallization of Titania Amorphous Nanotubes** **Z P4.9**
Alberto Casu 1, Andrea Falqui 1, Andrea Lamberti 2, Stefano Stassi 2, Stefano Bianco 2, Marco Fontana 3, Mara Serrapede 3
1 King Abdullah University of Science and Technology, BESE Division - NABLA Lab, Thuwal, Saudi Arabia, 2 Politecnico di Torino, Torino, Italy, 3 IIT - Center for Sustainable Future Technologies, Torino, Italy

16:30 **Imaging of LLZO solid electrolyte interfaces by electron microscopy** **Z P4.10**
Johannes Schmieg1, Julian Szász2, Ellen Ivers-Tiffée2, Dagmar Gerthsen1
1 Laboratory for Electron Microscopy (LEM), Karlsruhe Institute of Technology (KIT), Engesserstr. 7, 76131 Karlsruhe/Germany, 2 Institute for Applied Materials (IAM-WET), Karlsruhe Institute of Technology (KIT), Adenauerring 20b, 76131, Karlsruhe/Germany,

16:30 **TEM and diffraction study of plastic and elastic relaxation of core shell hetero-nanowires based on ternary semiconductors** **Z P4.11**
S. Kret1, D. Janaszko1, S. Kryvyi1 A. Kaleta1, B. Kurowska1, M.Bilska1, J. Turczyński1 J. Płachta1, P.Wojnar1, J. Sadowski1,2,3
1Institute of Physics Polish Academy of Sciences, al. Lotników 32/46, 02-668 Warsaw, Poland 2Department of Physics and Electrical Engineering, Linnaeus University, SE-391 82 Kalmar, Sweden 3 Department of Physics, University of Warsaw, Pasteura 5, Warsaw, Poland

16:30 **In situ TEM studies by means of bend-contour technique: “transrotational” crystal growth in thin amorphous films** **Z P4.12**
V. Yu. Kolosov
Ural Federal University, Ekaterinburg

16:30 **Electron Energy Loss Spectra Simulation for Plexcitons using Classical Electrodynamics** **Z P4.14**
Jaeyeon Jo, Sangmin Lee, Miyoung Kim*
Department of Materials Science and Engineering and Research Institute of Advanced Materials, Seoul National University, Seoul, 08826, Korea

16:30 **Characterization and control of mass transport in a MEMS-based Nano-Cell for quantitative in situ liquid electrochemical TEM** **Z P4.15**
Anne France Beker*, Ronald G. Spruit*, J. Tijn van Omme*, Hongyu Sun*, Shibabrata Basak^ and H. Hugo Pérez Garza*
* DENSsolutions: Informaticalaan 12, Delft, 2628ZD,The Netherlands, ^Storage of Electrochemical Energy - Faculty of Applied Sciences- TUDelft, Mekelweg 15, 2629JB, Delft, The Netherlands

16:30 **Defects of Complex Alloys with Giant Unit Cells** **Z P4.16**
Zhanbing He
State Key Laboratory for Advanced Metals and Materials University of Science and Technology Beijing

16:30 **Substituting silicon in graphene and carbon nanotubes through intermittent vacancies** **Z P4.17**
Heena Inani1, Kimmo Mustonen1, Erxiong Ding2, Aqeel Hussain2, Esko Kauppinen2 and Jani Kotakoski1
1 Faculty of Physics, University of Vienna, Boltzmanngasse 5, A-1090, Vienna, Austria, 2 Faculty of Physics, University of Vienna, Boltzmanngasse 5, A-1090, Vienna, Austria

16:30 **Nanoscale Phase Separation in Improved Efficiency Bi-doped Mg2Si1-x-ySnxGey Thermoelectric Materials** **Z P4.18**
Andreas Delimitis1, Elli Symeou2, Theodora Kyratsi2
1 Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger, N-4036, Stavanger, Norway, 2 Department of Mechanical and Manufacturing Engineering, University of Cyprus, CY-1678 Nicosia, Cyprus

16:30 **In-situ TEM annealing of nanoporous gold nanowires for the observation of the coarsening behavior** **Z P4.19**
Adrien Chauvin,1 Leopoldo Molina-Luna,2 Pierre-Yves Tessier,3 and Abdel-Aziz El Mel3
1. Charles University in Prague, Ke Karlovu 3, 121 16 Praha 2, Czech Republic, 2. Technische Universität Darmstadt, Institute for Materials Science, Alarich-Weiss-Strasse 2, 64287 Darmstadt, Germany, 3. Institut des Matériaux Jean Rouxel, Université de Nantes, CNRS, 2 rue de la Houssinière B.P. 32229, 44322 Nantes cedex 3, France

16:30 **Topological matter/Superconductor interfaces: Towards realization of Majorana zero modes for quantum computing** **Z P4.21**
Abdur R. Jalil1, Gregor Mussler1, Peter Schueffelgen1, Lidia Kibkalo1, Helen E. Valencia2, Joachim Mayer, Detlev Grützmacher1, Martina Luy2sberg1
1 Peter Grünberg Institute, Research Centre Jülich, 52425 Jülich, Germany, 2 Ernst Ruska Centre, Research Centre Jülich, 52425 Jülich, Germany,

16:30 **Experimental investigation on the austenite to martensitic transformation and stress-strain partitioning in high carbon steel at** **Z P4.22**
Amborish Banerjee, B. Gangadhara Prusty, Saroj Bhattacharyya
UNSW Sydney Australia

16:30 **Towards an in situ TEM based correlation of texture controlled thin film growth and switching characteristics in filamentar[...]** **Z P4.23**
A. Zintler, R. Eilhardt, N. Kaiser, S. Petzold, L. Alff, L. Molina-Luna
Technische Universität Darmstadt, Darmstadt, Germany

16:30 **Detailed transmission electron microscopy studies of crystal nucleation and crystal growth-controlled type bulk metallic glasses** **Z P4.24**
Dmitri V. Louzguine-Luzgin
WPI Advanced Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan

16:30 **ELECTRON MICROSCOPY STUDY OF NEW COMPONENT FOR IT-SOFC** **Z P4.25**
Khalid Boulahya, [a] Susana Garcia Martin[a] and Ulises Amador [b]
[a] Dpto. de Química Inorgánica, Facultad de Ciencias Químicas, UCM, E-28040 Madrid, Spain. [b] Universidad San Pablo-CEU, Facultad de Farmacia, E-28668, Madrid, Spain

16:30 **Advances in STEM-EMCD for mapping magnetic moments in various scattering geometries** **Z P4.26**
Thomas Thersleff*, Linus Schönström*, Shunsuke Muto**, Jan Rusz***
* Department of Materials and Environmental Chemistry, Stockholm University, Stockholm, SE-10691, Sweden, ** Institute of Materials and Systems for Sustainability, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan, *** Department of Physics and Astronomy, Uppsala University, SE-75120, Uppsala, Sweden

16:30 **Correlative EBIC-TEM-APT on Cu(In,Ga)Se2 solar cells** **Z P4.27**
Jens Keutgen1, Mohit Raghuwanshi1, Martina Luysberg2, Oana Cojocaru-Mirédin1
1 I. Physikalisches Institut (IA) RWTH Aachen, 52056 Aachen, Germany., 2 Ernst Ruska-Centre (ER-C) for Microscopy and Spectroscopy with Electrons Research Centre Jülich

16:30 **Composition Analysis at Elevated Temperatures, EDS for In-Situ Electron Microscopy** **Z P4.28**
Meiken Falke, Igor Nemeth
Bruker Nano GmbH

16:30 **Characterization of tin antimony sulfide SnSb4S7 nanopowder by transmission electron microscopy and X-ray diffraction** **Z P4.29**
N. Khemiri, A. Jebali, M. Kanzari
Université Tunis El Manar, Ecole Nationale d’Ingénieurs de Tunis, Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs, BP37, 1002 Le Belvédère, Tunis, Tunisie

16:30 **Integrated Differential Phase Contrast (iDPC) STEM for low Z detection and for high contrast low dose imaging applications** **Z P4.30**
Anil Yalcin
Thermo Fisher Scientific Achtseweg Noord 5, 5651 GG Eindhoven, The Netherlands

16:30 **Substrate-Induced Epitaxy as a Synthetic Lever for the Design of Heterostructured Nanomaterials** **Z P4.31**
Robert A. Hughes, Arin A. Preston, and Svetlana Neretina
College of Engineering, University of Notre Dame, IN 46556, United States

Structural properties of van der Waals and beam sensitive materials : Paul Midgeley

08:30 INV **Understanding interfaces and bend defects in van der Waals materials and heterostructures** — Z 5.1
S J Haigh 1,2 W. Li 1,2 A P Rooney 1,2 W. Zhao 3 F Ding 3 R Gorbachev2 R Young 1,2
1. School of Materials, University of Manchester, UK 2. National Graphene Institute, University of Manchester, UK 3. Institute of Textiles and Clothing, Hong Kong Polytechnic University, Hung Hom, Hong Kong

09:00 **Revealing the 3D structure of graphene defects and electron-beam induced out-of-plane dynamics** — Z 5.2
Christoph Hofer1, Christian Kramberger2, Viera Skakalova3, Mohammad Monzam3, Kimmo Mustonen3, Clemens Mangler3, Andreas Mittelberger3, Toma Susi3, Jani Kotakoski3 and Jannik C. Meyer1
1 University of Tuebingen, Germany, 2 Vienna University of Technology, Austria, 3 University of Vienna, Austria

09:15 **Engineering disorder in charge density waves using electron-irradiation-induced lattice defects in thin 1T-TaSe2 layers.** — Z 5.3
1. M. K. Kinyanjui, 2.T. Björkman , 1.T. Lehnert , 1.J. Koster , 3,4. A. V. Krasheninnikov , 1. U. Kaiser
1. Central Facility of Electron Microscopy, Ulm University, Ulm, Germany, 2.Department of Natural Sciences, Åbo Akademi, Turku, Finland , 3. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany, 4. Department of Applied Physics, Aalto University, 00076 Aalto, Finland

09:30 **Coffee Break**

10:30 **Mapping nanoscale properties of beam-sensitive materials using secondary electrons** — Z 5.4
Nicola Stehling1, Robert Masters1, Kerry J. Abrams1, Martina Azzolini1, Mauritzio Dapor2, Jan Schäfer3, Chris Holland1, Cornelia Rodenburg1
1 Department of Materials Science and Engineering, University of Sheffield, Sir Robert Hadfield Building, Mappin Street, Sheffield S1 3JD 2 European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*) Strada delle Tabarelle, 286, I-38123 Villazzano TRENTO (TN) 3 Leibniz Institute for Plasma Science and Technology, Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany

10:45 **New insights into polymer pyrolysis by in situ transmission electron microscopy** — Z 5.5
C. N. Shyam Kumar1,2,, Manuel Konrad1, Venkata Sai Kiran3 Chakravadhanula3, 4,Simone Dehm1, Di Wang1,4, Wolfgang Wenzel1, Ralph Krupke1, 2, Christian Kübel1,2,3,4
1 Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany, 2Department of Materials and Earth Sciences, Technical University Darmstadt, Darmstadt, Germany 3 Helmholtz Institute Ulm, 4 Karlsruhe Nano Micro Facility, Karlsruhe Institute of Technology, Karlsruhe, Germany,

12:00 **Lunch**

In-situ Microscopy: Detecting growth phenomena, chemical reactions, phase transformations and more : Sarah Haigh

13:45 INV **Real-time TEM observations of III-V nanowire growth** — Z 6.1
Federico Panciera
Centre for Nanoscience and Nanotechnology, CNRS, Université Paris-Sud, Université Paris-Saclay.

14:15 **Correlating growth kinetics of III-V nanowires with seed particle composition using environmental TEM** — Z 6.2
Daniel Jacobsson (1,2), Carina B. Maliakkal (2,3), Marcus Tornberg (2,3), Axel R. Persson (1,2), Robin Sjökvist (1,2), L. Reine Wallenberg (1,2), Kimberly A. Dick (1,2,3)
1 nCHREM / Centre for Analysis and Synthesis, Lund University, 22100, Lund, Sweden, 2 NanoLund, Lund University, 22100, Lund, Sweden, 3 Division of Solid State Physics, Lund University, 22100, Lund, Sweden

14:30 **Evolution of wurtzite (Ga,Mn)As structure in nanowires shells during in-situ annealing in TEM** — Z 6.3
A.Kaleta1, S.Kret1, S. Kryvyi1, K.Morawiec1, P.Dłużewski1, B. Kurowska1, M. Bilska1, K. Gas1, M. Sawicki1, J.Sadowski1,2,3
1Institute of Physics, Polish Academy of Sciences, Warszawa, Poland 2Faculty of Physics, University of Warsaw, Poland 3Department of Physics and Electrical Engineering, Linnaeus University, Kalmar, Sweden

14:45 **Ultrafast coherent Transmission Electron Microscopy with a high brightness laser-driven cold field emission source microscope: i** — Z 6.4
Giuseppe Mario Caruso1, Sébastien Weber1, Mathieu Kociak2, Florent Houdellier1, Arnaud Arbouet1
1 CEMES-CNRS, 29 Rue Jeanne Marvig, 31055 Toulouse, FRANCE-EU, 2 Laboratoire de Physique des Solides, Univ. Paris-Sud, Bat 510, UMR CNRS 8502, Orsay 91400, FRANCE-EU,

15:00 **Ultrafast Transmission Electron Microscopy of Irreversible Transitions in Nanoparticles** — Z 6.5
A.KHAMMARI(1), M.PICHER(1), S.SINHA(1), J.SUN(1), T. LAGRANGE(2), F.BANHART(1)
(1) Institut de Physique et de Chimie des Matériaux de Strasbourg (IPCMS), Université de Strasbourg, CNRS, Strasbourg, France (2) Interdisciplinary Centre for Electron Microscopy (CIME), École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

15:15 **Cation exchange reactions at the solid sate by in situ TEM/STEM** — Z 6.6
Andrea Falqui1, Alberto Casu1, Davide Deiana2
1.King Abdullah University of Science and Technology (KAUST), Biological and Environmental Sciences and Engineering (BESE) Division, NABLA Lab, 23955-6900 Thuwal, Saudi Arabia 2. Centre Interdisciplinaire de Microscopie Electronique (CIME), Ecole Polytechnique Federale de Lausanne, Lausanne CH-1015, Switzerland.

15:30 **Coffee Break**

16:30 **Atomic-scale dynamic observation reveals temperature-dependent multistep nucleation pathways in crystallization** — Z 6.7
Junjie Li, Francis Leonard Deepak
Nanostructured Materials Group, Department of Advanced Electron Microscopy, Imaging and Spectroscopy, International Iberian Nanotechnology Laboratory (INL), Avenida Mestre Jose Veiga Braga 4715-330, Portugal.

16:45 **Enabling nanoscale flexoelectricity at extreme temperature by tuning cation diffusion** — Z 6.8
L. Molina-Luna 1, S. Wang 1, Y. Pivak 2, A. Zintler 1, H.H. Pérez-Garza 2, R. G. Spruit 2, Q. Xu 2, M. Yi 1, B.-X. Xu 1, M. Acosta 1
1.Technische Universität Darmstadt 2. DENSsolutions

17:00 **In-situ Transmission Electron Microscopy Annealing for Crystallization and Phase Stability Studies of (InxGa1-x)2O3 alloys** — Z 6.9
Toni Markurt 1, Charlotte Wouters 1, Piero Mazzolini 2, Patrick Vogt 2, Oliver Bierwagen 2, Christopher Sutton 3, and Martin Albrecht 1
1 Leibniz-Institut für Kristallzüchtung, Max Born Str. 2, 12489 Berlin, Germany, 2 Paul-Drude-Institut für Festkörperelektronik, Hausvogteiplatz 5-7, 10117 Berlin, Germany, 3 Fritz-Haber-Institut der Max-Planck-Gesellschaft, Faradayweg 4-6, 14195, Berlin, Germany

17:15 **Quantitative tracking of catalytic metallic nanoparticles on their support during in situ gaseous ETEM** — Z 6.10
Thierry Epicier1, Lysa Gramoli2, Christophe Ducottet3
1MATEIS, UMR 5510, INSA-Lyon, CNRS, Université Lyon 1, Université de Lyon, 69621 Villeurbanne Cedex, F, 2 Laboratoire Hubert Curien UMR 5516, UJM-Saint-Étienne, CNRS, 3 IOGS, Université de Lyon, 42023 Saint-Étienne, F and MATEIS, UMR 5510, INSA-Lyon, CNRS, Université Lyon, CNRS, Université Lyon 1, Université de Lyon, 69621 Villeurbanne Cedex, F,

17:30 **Microstructural Study of Phase-dependent Redox Behaviour of MnO2: Implications on Recyclability and Catalysis** — Z 6.11
Noopur Jain, N Ravishankar
Materials Research Centre, Indian Institute of Science, India

17:45 **Advanced characterization of alloys by using ex- and in-situ high resolution Scanning Transmission Electron Microscopy** — Z 6.12
Mihaela Albu1, Gerald Kothleitner2, Ferdinand Hofer2
1 Graz Centre for Electron Microscopy, Steyrergasse 17, 8010 Graz, Austria. 2 Institute of Electron Microscopy and Nanoanalysis, Graz University of Technology, Steyrergasse 17, 8010 Graz

18:00 **Kinetic modelling and experimental validation of the combined radiolysis and temperature effect on the gold nanoparticles dynami** **Z 6.13**

Saso Sturm [1], Anze Prasnikar [3], Nejc Hodnik [3], Nina Kotevsek [1], Blaz Likozar [3], Kristina Zuzek Rozman [1], Bojan Ambrozic [1,2]
[1] Jo?ef Stefan Institute, Department for Nanostructured Materials, Jamova 39, Ljubljana, Slovenia [2] Jo?ef Stefan International Postgraduate School, Jamova 39, Ljubljana, Slovenia [3] National Institute of Chemistry, Department of Catalysis and Chemical Reaction Engineering, Hajdrihova 19, Ljubljana, Slovenia

19:00 **Graduate Student Award ceremony followed by the social event**

SYMPOSIUM AA

Computations for materials discovery, design and the role of data

Symposium Organizers :

Ivano CASTELLI, Technical University of Denmark

Vladan STEVANOVIC, Colorado School of Mines, USA

To be published in JPhys Materials and JPhys Energy, IOP Publishing

Monday 27 may 2019

Accelerated materials discovery : -

09:15 INV **Computational materials discovery using the USPEX code** — AA 1.1
Artem R. Oganov
Skolkovo Institute of Science and Technology, 3 Nobel St., 121205 Moscow, Russia

09:45 **JARVIS: database and tools to accelerate materials discovery and characterization** — AA 1.2
Kamal Choudhary
NIST, Maryland, USA

10:00 **Coffee break**

2D materials : -

10:30 INV **High-throughput modeling and design of novel 2D materials** — AA 2.1
Kristian Thygesen
Technical University of Denmark, Department of Physics

11:00 **A Map of the Inorganic Ternary Metal Nitrides** — AA 2.2
Wenhao Sun1*, Christopher Bartel2, Elisabetta Arca3, Sage Bauers3, Bethany Matthews4, Bernardo Orvañanos5, Bor-Rong Chen,6 Michael F. Toney,6 Laura T. Schelhas,6 William Tumas3, Janet Tate,4 Andriy Zakutayev3, Stephan Lany3, Aaron Holder2,3*, Gerbrand Ceder1,7
1 Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, California 94720, USA, 2 Department of Chemical and Biological Engineering, University of Colorado, Boulder, Colorado 80309, USA, 3 National Renewable Energy Laboratory, Golden, Colorado 80401, USA, 4 Department of Physics, Oregon State University, Corvallis, Oregon 97331, USA, 5 Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139, 6 SLAC National Accelerator Laboratory, Menlo Park, CA, 94025, USA., 7 Department of Materials Science and Engineering, UC Berkeley, Berkeley, California 94720, USA

11:15 **2DMatPedia: A Library of 2D materials by top-down and bottom-up approaches** — AA 2.3
Yuan Ping Feng (1,2), Jun Zhou (1), Lei Shen (3), and Miguel Dias Costa (2)
(1) Department of Physics, National University of Singapore, Singapore, (2) Centre for Advanced Two-Dimensional Materials, National University of Singapore, Singapore, (3) Department of Mechanical Engineering, National University of Singapore, Singapore

11:30 **Versatile electrical behavior of 1T-TiS2 elucidated from a theoretical study** — AA 2.4
Adrien Stoliaroff, Camille Latouche, Stéphane Jobic
Institut des Matériaux Jean Rouxel

11:45 INV **Accelerating the discovery of new thermoelectric materials** — AA 2.5
Eric Toberer
Physics Dept., Colorado School of Mines

12:15 **Design of metastable materials: Heterostructural alloys and novel nitrides** — AA 2.6
Stephan Lany
National Renewable Energy Laboratory

12:30 **Lunch**

Quantum materials and Polymers : -

14:00 INV **Discovery of new ferromagnetic two-dimensional materials from computational screening** — AA 3.1
Daniele Torelli, Kristian S. Thygesen, Thomas Olsen
Technical University of Denmark

14:30 **Hybridization effects in 2D magnetic tunnel junctions** — AA 3.2
Simon M.-M. Dubois, Bruno Dlubak, Jean-Christophe Charlier, Pierre Seneor
Unité mixte de Physique CNRS/Thales & Institute of Condensed Matter and Nanosciences ,UCLouvain, Unité mixte de Physique CNRS/Thales, Institute of Condensed Matter and Nanosciences, UCLouvain, Unité mixte de Physique CNRS/Thales

14:45 **Modelling of fingerprints of defect pattern and external fields in electronic and transport properties of graphene** — AA 3.3
Taras Radchenko, Valentyn Tatarenko, Ihor Sahalianov, Yuriy Prylutskyy
G.V. Kurdyumov Institute for Metal Physics of the N.A.S. of Ukraine, Taras Shevchenko National University of Kyiv, Ukraine

15:00 **Modelling and Characterising Synthetic Polymer Membrane lytic Ability on Charged Binary Lipid Bilayers (DOPS/POPC)** — AA 3.5
Yuting Liu
Fernando Bresme, Rongjun Chen, John Seddon

15:15 **Effect of side chain pendants on hydrated perfluorosulfonic acid polymer electrolyte membranes: MD simulation approach** — AA 3.6
Sung Hyun Kwon, Haisu Kang, Ji Hye Lee, Sunbo Shim, Jinhee Lee, Dong Sun Lee, Chi Myung Kim, Seung Geol Lee
Department of Organic Material Science and Engineering, Pusan National University, Department of Organic Material Science and Engineering, Pusan National University, Department of Organic Material Science and Engineering, Pusan National University, Hyundai Motor Company, Hyundai Motor Company, Hyundai Motor Company, Hyundai Motor Company, Department of Organic Material Science and Engineering, Pusan National University

15:30 **Design of Novel Organic Semiconductors** — AA 3.7
Pascal Friederich (1), Franz Symalla (2), Artem Fediai(1),Velimir Meded(1), Alexander Colsmann(3),Mario Ruben(1), Wolfgang Wenzel(1)
(1)Institute of Nanotechnology, Karlsruhe Institute of Technology, Germany. (2) Nanomatch GmbH, Karlsruhe, Germany (3)Light Technology Institute, Karlsruhe Institute of Technology, Germany.

15:45 **A dynamic picture of charge transport networks in amorphous organic semiconductors: the case of ITIC acceptors** — AA 3.8
Micaela Matta, Richard J. Gowers, Craig T. Chapman, George C. Schatz
Department of Chemistry, Northwestern University, Evanston, IL (United States) and Department of Chemistry, University of Liverpool, Liverpool (United Kingdom), Department of Chemistry, University of New Hampshire, Durham, NH (United States), Department of Chemistry, University of New Hampshire, Durham, NH (United States), Department of Chemistry, Northwestern University, Evanston, IL (United States)

16:00 **Dispersion Corrected Density Functional Theory Studies on PVDF/Hydrated Aluminium Nitrate Composite System** — AA 3.9
Ranjini Sarkar, T. K. Kundu
Indian Institute of Technology Kharagpur, Indian Institute of Technology Kharagpur

16:15 **Insights into the distribution of Nafion ionomer and dispersion solvent on catalyst layer in PEMFC using MD simulation** — AA 3.10
Ji Hye Lee, Gisu Doo, Sung Hyun Kwon, Sungyu Choi, Hee-Tak Kim, Seung Geol Lee
Department of Organic Material Science and Engineering, Pusan National University, Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), Department of Organic Material Science and Engineering, Pusan National University, Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), Department of Organic Material Science and Engineering, Pusan National University

16:30 **Coffee break**

Poster session : -

17:00 **Design and Optimization Method for Symmetric MRI Magnet Modified with Ferromagnetic Shell** — AA P.1
Akash Oraon, Rajneesh Oraon, Sudipto Ghosh, Shampa Aich, Gautam Sinha
Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, India, Cognizant Technology Solutions, Noida 201304, India, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, India, Department of Metallurgical and Materials Engineering, Indian Institute of Technology Kharagpur, India, Raja Ramanna Centre for Advanced Technology, Indore 452013, India.

17:00 **Improving efficiency of propane dehydrogenation in Ni catalyst by surface doping** **AA P.2**
Anchalee Junkaew1, Tinnakorn Saelee2, Supawadee Namuangruk1, Nawee Kungwan2
1 National Nanotechnology Center (NANOTEC), National Science and Technology Development Agency, Pathumthani, 12120, Thailand. 2 Department of Chemistry, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand

17:00 **Characterisation of the water wettability of functionalized graphene: ab initio modelling study.** **AA P.3**
Marcin Roland Zemła, Tomasz Wejrzawnoski
Faculty of Materials Science and Engineering, Warsaw University of Technology, Wołoska 141, 02-507 Warsaw, Poland

17:00 **STRUCTURAL AND ELECTRONIC PROPERTIES OF Sr2FeNbO6 UNDER HIGH PRESSURE** **AA P.4**
J. L. Rosas1, J. M. Cervantes2, J. A. León-Flores1, M. Romero3, E. Carvajal2, R. Escamilla1
1 Universidad Nacional Autónoma de México, Instituto de Investigaciones en Materiales, A.P. 70-360, Ciudad de México, 04510, México, 2 Instituto Politécnico Nacional, Escuela Superior de Ingeniería Mecánica y Eléctrica-Culhuacán, Av. Santa Ana 1000, Ciudad de México, 04440, México, 3 Universidad Nacional Autónoma de México, Facultad de Ciencias, A.P. 70-399, Ciudad de México, 04510, México,

17:00 **Mechanical properties of 3D nanotubes network from beta zeolites templates: A molecular dynamics study** **AA P.5**
Eliezer F. Oliveira, Leonardo D. Machado, Douglas S. Galvão
State University of Campinas (UNICAMP), Campinas-SP, Brazil, Federal University of Rio Grande do Norte (UFRN), Natal-RN, Brazil.

17:00 **Ab initio thermoelectric properties of the d-metallic nanoclustered model materials** **AA P.6**
Kurelchuk Uliana N., Borisyuk Petr V., Vasiliev Oleg S.
National Research Nuclear University MEPhI (Moscow Engineering Physics Institute) 115409, Russian Federation, Moscow, Kashirskoe shosse, 31.

17:00 **Structural and optical properties of hybrid halide perovskite (CH3NH3PbI3) investigated by DFT and TD-DFT simulations.** **AA P.7**
Miłosz Martynow [1], Damian Głowienka [1], Jędrzej Szmytkowski [1], Yulia Galagan [2], Julien Guthmuller [1].
[1] Faculty of Applied Physics and Mathematics, Gdańsk University of Technology. Narutowicza 11/12, 80-233 Gdańsk, Poland, [2] TNO/Solliance. High Tech Campus 21, Eindhoven 5656AE, Netherlands

17:00 **Ab initio charge transport simulation of amorphous small molecule organic semiconductors** **AA P.8**
Simon Kaiser, Franz Symalla, Pascal Friederich, Tobias Neumann, Timo Strunk, Wolfgang Wenzel
Karlsruhe Institute of Technology (KIT), Germany, Nanomatch GmbH, Germany, Karlsruhe Institute of Technology (KIT), Germany & University of Toronto, Canada, Nanomatch GmbH, Germany, Nanomatch GmbH, Germany, Karlsruhe Institute of Technology (KIT), Germany

17:00 **Hysteretic phase transitions of IrTe2: a unified picture from ab initio approaches** **AA P.9**
Gabriele Saleh, Sergey Artyukhin
Istituto Italiano di Tecnologia, Via Morego 30, Genova, Italy

17:00 **AB-INITIO AND DFT STUDY OF THE ISOMERISATION KINETICS OF SUBSTITUTED ICOSADECA-ENE** **AA P.10**
Z. Skanderi1* A. Djebaili1 Ilhem. R. Kriba2 Y. Ahmane3
1 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna- Algeria 2 Faculty of Material Sciences- Department of Chemistry - University of Batna 1- 05000- Algeria 3 Faculty of Sciences- Department of Chemistry - University of Biskra- Algeria

17:00 **Ab initio molecular dynamics calculations of ScF3 temperature dependent structural properties** **AA P.11**
D. Bocharov(a), M. Krack(b), Yu. Rafalskij(a), A. Kalinko(c), A. Kuzmin(a), J. Purans(a), S. E. Ali(d), F. Rocca(e)
(a) Institute of Solid State Physics, University of Latvia, Kengaraga street 8, LV-1063 Riga, Latvia (b) Paul Scherrer Institute, CH-5232 Villigen, Switzerland (c) Department Chemie, Naturwissenschaftliche Fakultät, Universität Paderborn, Warburger Straße 100, 33098 Paderborn, Germany (d) Physics Department, Faculty of Science Suez Canal University, Ismailia, Egypt (e) IFN-CNR, Institute for Photonics and Nanotechnologies, Unit FBK-Photonics of Trento, Via alla Cascata 56/C, I-38123 Povo (TN), Italy

17:00 **Molecular oxygen dissociation on Au12M clusters with M = Cu, Ag or Ir** **AA P.12**
Laura M. Jiménez-Díaz, Alma L. Marcos-Viquez, Luis A. Pérez
Instituto de Física, Universidad Nacional Autónoma de México, Apartado Postal 20-364, C.P. 04510, Ciudad de México, México, Instituto Politécnico Nacional, ESIME Culhuacán, Av. Santa Ana 1000, C.P. 04430, Ciudad de México, México

17:00 **Computational design of lightweight steels: thermodynamics, diffusion, volume and yield strength predictions** **AA P.13**
Weisen Zheng, Huahai Mao, Yanlin He, Malin Selleby, John Ågren, Xiao-Gang Lu, Jinyan Ning, Yingying Chen
Weisen Zheng, Yanlin He: School of Materials Science and Engineering, Shanghai University, 200444 Shanghai, China, Huahai Mao, Malin Selleby, John Ågren:Department of Materials Science and Engineering, KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden, Xiao-Gang Lu, Jinyan Ning, Yingying Chen: Materials Genome Institute, Shanghai University, 200444 Shanghai, China

17:00 **Intramolecular charge transfer in boron-doped diamond - protein system: first-principle studies towards voltammetric sensing dev** **AA P.14**
Bartłomiej Dec, Robert Bogdanowicz
The authors gratefully acknowledge financial support from National Centre for Science and Development Grant Techmatstrateg No. 347324 2015/16/T/ST7/00469.

17:00 **Sr2FeMo1-xNbxO6 ELECTRONIC STRUCTURE, A FIRST PRINCIPLES STUDY** **AA P.15**
J. L. Rosas, J. M. Cervantes, J. A. León-Flores, M. Romero, J. A. Arenas, E. Carvajal, R. Escamilla
Universidad Nacional Autónoma de México - Instituto de Investigaciones en Materiales, Instituto Politécnico Nacional-Escuela Superior de Ingeniería Mecánica y Eléctrica Unidad Culhuacán, Universidad Nacional Autónoma de México-Facultad de Ciencias, Universidad Nacional Autónoma de México, Instituto de Física

17:00 **Role of Ru on Selective Catalytic Reduction of NO with NH3 over Ru-doped CeO2 catalyst: A theoretical study** **AA P.16**
Chirawat Chitpakdee, Anchalee Junkaew, and Supawadee Namuangruk
National Nanotechnology Center (NANOTEC), National Science and Technology Development Agency, 111 Thailand Science Park, Pathum Thani 12120, Thailand

17:00 **Using the interaction with small molecules to control mechanical and electronic properties of Graphenylene and Porous Graphene** **AA P.17**
Gustavo Guarise Pereira, Ricardo Paupitz
Sao Paulo State University (UNESP), Brasil

17:00 **Photoinduced charge transfer from macrocyclic dyes to wurtzite surface: insight from DFT** **AA P.18**
V. V. Golovanova, N. V. Tkachenko, T. T. Rantala, J.R. Morante, V. V. Golovanov
IREC, Catalonia Institute for Energy Research, Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs, Barcelona, Catalonia, Spain, Department of Chemistry and Bioengineering, Tampere University of Technology, P.O. Box 541, FI-33101, Tampere, Finland, Department of Physics, Tampere University of Technology, P.O. Box 692, FI-33101, Tampere, Finland, Center for Innovation Technologies, South-Ukrainian National University, Staroportofrankovskaya Str. 26, 65008, Odessa, Ukraine

17:00 **Energy profiles and the charge transport in small quantum structures** **AA P.19**
B. Santic
R. Boskovic Insitute, Zagreb, Croatia

17:00 **Mathematical Modeling of Silicon Purification under the Conditions of Electromagnetic Stirring** **AA P.20**
Sergey M. Karabanov (1), Dmitry V. Suvorov (1), Dmitriy Y. Tarabrin (1), Andrey A. Trubitsyn (1), Andrey E. Serebryakov (1), Evgeny V. Slivkin (1), Andrey S. Karabanov (2), Oleg A. Belyakov (2)
1 - Ryazan State Radio Engineering University, 2 - Helios Resource Ltd.

17:00 **Mathematical Modeling of Silicon Purification by Vacuum Refining and Plasma-Chemical Purification under the Conditions of Electr** **AA P.21**
Sergey M. Karabanov (1), Dmitry V. Suvorov (1), Dmitriy Y. Tarabrin (1), Andrey A. Trubitsyn (1), Andrey E. Serebryakov (1), Evgeny V. Slivkin (1), Andrey S. Karabanov (2), Oleg A. Belyakov (2)
1 - Ryazan State Radio Engineering University, 2 - Helios Resource Ltd.

17:00 **Study of the Effect of Diffuse Contamination on the mc-Si Quality by 3D Visualization of Photoluminescence Images** **AA P.22**
Sergey M. Karabanov (1) s, Dmitry V. Suvorov (1), Dmitriy Y. Tarabrin (1), Andrey E. Serebryakov (1), Evgeny V. Slivkin (1), Andrey S. Karabanov (2), Oleg A. Belyakov (2)
Ryazan State Radio Engineering University(1), Helios Resource Ltd. (2)

17:00 **Magnetic properties of bulk and monolayer FeSe** **AA P.23**
Chang-Youn Moon
Korea Research Institute of Standards and Science

17:00 **Cation ordering in PrBaCoTa(Nb)O6 double perovskites: Ab Initio insight and experimental studies** **AA P.24**
Politov B.V., Marshenya S.N., Mychinko M.Yu., Suntsov A.Yu., Shein I.R., Kozhevnikov V.L.
Politov B.V. - Institute of solid state chemistry UB RAS Suntsov A.Yu. - Institute of solid state chemistry UB RAS Shein I.R. - Institute of solid state chemistry UB RAS Kozhevnikov V.L. - Institute of solid state chemistry UB RAS Mychinko M.Yu. - Institute of solid state chemistry UB RAS Marshenya S.N. - Institute of solid state chemistry UB RAS

17:00 **Minimum conductivity and shot noise anomalies in shifted bilayer graphene** **AA P.25**
A. Daboussi 1,2, L. Mandhour 1,3 and S. Jaziri 1,4
1. Université de Tunis El Manar, Faculté des Sciences de Tunis, Laboratoire de Physique de la Matière Condensée, Campus Universitaire Tunis, El Manar, 2092 Tunis, Tunisie. 2. Ecole Supérieure Privée d'ingénierie et de communication, 85-87 Rue Palestine, 1002 Tunis, Tunisie. 3. Université de Tunis El Manar, Institut Supérieur des Technologies Médicales de Tunis, 9 Rue Zouhair Essafi ,1006 Tunis, Tunisie. 4. Université de Carthage, Faculté des Sciences de Bizerte, Laboratoire de Physique des Matériaux, Jarzouna, 7021 Bizerte, Tunisie.

17:00 **Modeling hydrofluoric (HF) acid functionalization of graphene-CNT (g- CNT) hybrids for field emission** **AA P.26**
Aarti Tewari, Santanu Ghosh, and Pankaj Srivastava
Nanostech Laboratory, Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110016, India

17:00 **Structure-property-performance interrelationship of 5,5-bitetrazole-1,1-diolate based energetic ionic salts: A comparative study** **AA P.28**
B. Moses Abraham, Vikas D. Ghule, and G. Vaitheeswaran
Advanced Centre of Research in High Energy Materials (ACRHEM), University of Hyderabad, Prof. C. R. Rao Road, Gachibowli, Hyderabad-500046, Telangana, India, Department of Chemistry, National Institute of Technology, Kurukshetra, 136119 Haryana, India, School of Physics, University of Hyderabad, Prof. C. R. Rao Road Gachibowli, Hyderabad 500046, Telangana, India.

17:00 **Multiphase equation of state for molybdenum at high temperatures and pressures** **AA P.29**
K. V. Khishchenko
Joint Institute for High Temperatures RAS, Moscow, Russia

17:00 **Accelerated search for energetically favorable PrBa0.5Sr0.5Co1.5Fe0.5O5+δ solid solution using genetic algorithm** **AA P.30**
Jun-Yeong Jo, Ki-Yung Kim, In-Gyu Choi, and Yeong-Cheol Kim
School of Energy Materials and Chemical Engineering, KOREATECH, Cheonan, Republic of Korea

17:00 **COMPUTATIONAL OPTIMIZATION OF LIGHT ABSORBING DYES FOR THE PRODUCTION OF SOLAR FUELS** **AA P.31**
Jelena Belić, Prof. Dr. Lucas Visscher
VU Amsterdam, De Boelelaan 1105, 1081 HV Amsterdam

17:00 **Theoretical study of the static polarizability and second hyperpolarizability of substituted hexadecaocta-ene by AM1, PM3, PM6 a** **AA P.32**
D. Taharchaouche1 Z. Skanderi1* Ilhem. R. Kriba2 Y. Bouzaher1 A. Djebaili3
D. Taharchaouche1, Z. Skanderi1*, Ilhem. R. Kriba2, Y. Bouzaher1, A. Djebaili3 1 Faculty of Sciences- Department of Chemistry - University of Batna 2- Algeria 2 Faculty of Material Sciences- Department of Chemistry - University of Batna 1- 05000- Algeria 3 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna 1- Algeria

17:00 **Molecular design of acceptors for non-fullerene organic solar cells** **AA P.33**
Anastasia Markina1, Frédéric Laquai2, Denis Andrienko1,2
Max Planck Institute for Polymer Research, Mainz, Germany King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), Physical Sciences and Engineering Division (PSE), Material Science and Engineering Program (MSE), Thuwal 23955-6900, Kingdom of Saudi Arabia

17:00 **Phase transition at stepped SrTiO3 low index surfaces: Prediction from the first principles** **AA P.34**
S. Piskunov, I. Isakovica, A. I. Popov, E.A. Kotomin
Institute of Solid State Physics, University of Latvia, 8 Kengaraga Str., Riga LV1063, Latvia

17:00 **Characterization and Simulation of FTO/Co-ZnO/CuO hetero-junction structure** **AA P.35**
Samar Dabbabi1, Tarek Ben Nasr1, Mejda Ajili1, A. Garcias-Loureiro2, Najoua Kamoun1
1. Université Tunis El Manar, Faculté des Sciences de Tunis, Département de Physique, LR99ES13 Laboratoire de Physique de la Matière Condensée (LPMC), 2092 Tunis, Tunisia 2. Centro Singular de Investigación en Tecnoloxías de Información (CiTIUS), Universidad de Santiago de Compostela, España

17:00 **Mesoscale modeling of vertically aligned carbon nanotube forests: Phase transformation as a mechanism of mechanical deformation** **AA P.36**
Bernard K. Wittmaack, Alexey N. Volkov, Leonid V. Zhigilei
Department of Materials Science and Engineering, University of Virginia, Charlottesville, Virginia, USA, Department of Mechanical Engineering, University of Alabama, Tuscaloosa, Alabama, USA

17:00 **Cubicity as selection criterion for photo-active new materials discovery** **AA P.37**
BOURDAIS Stéphane
IMRA EUROPE SAS 220, rue Albert Caquot 06904 Sophia-Antipolis FRANCE

17:00 **New FPGA Firmware for Multi-Para Probe Card Relay Control using ROM data file** **AA P.38**
Kisub Lim, Sung-Ho Joo, Gyu-Yeol Kim, Sang-Kyu Yoo, Je-Young Park, Jae-Wook Jeon
Kisub Lim, Jae-Wook Jeon College of Information and Communication Engineering Sungkyunkwan University, Suwon City 440-746, Republic of Korea, Kisub Lim, Sung-Ho Joo, Gyu-Yeol Kim, Sang-Kyu Yoo, Je-Young Park Memory Devision, Samsung Electronics Co.Ltd., Hwasung City 445-330, Republic of Korea,

17:00 **Neural network potential for double perovskite solid solution cathode PrBa0.5Sr0.5Co1.5Fe0.5O5-δ of solid oxide fuel cells** **AA P.39**
Yurie Kim1, Jun-Yeong Jo2, Ki-Yung Kim2, and In-Gyu Choi2, and Yeong-Cheol Kim2
1Department of Creative IT Engineering, POSTECH, Pohang, Republic of Korea, 2School of Energy Materials and Chemical Engineering, KOREATECH, Cheonan, Republic of Korea

17:00 **The first-principles study of hydrogen-vacancy complexes in diamond** **AA P.40**
Marcin Roland Zemła, Kamil Czelej, Piotr Śpiewak
Faculty of Materials Science and Engineering, Warsaw University of Technology, Wołoska 141, 02-507 Warsaw, Poland.

17:00 **KINETIC AND COMPARATIVE STUDY OF THE ISOMERIZATION REACTION OF SUBSTITUTED TETRADECAHEPTA-ENE BY AB-INITIO AND DFT METHOD** **AA P.41**
Z. Skanderi1 Ilhem. R. Kriba2 A. Djebaili1*
1 Laboratory of chemistry and environmental chemistry L.C.C.E - university of batna 1- Algeria 2 Faculty of Material Sciences- Department of Chemistry - University of Batna 1- 05000- Algeria

17:00 **Multi-phase field model of localized corrosion kinetics with corrosion products formation** **AA P.42**
Talha Qasim Ansari, San-Qiang Shi
The Hong Kong Polytechnic University, Kowloon, Hong Kong

17:00 **Development and reliability of high-throughput crystallographic data measurement tool** **AA P.43**
Kenjiro FUJIMOTO, Akihisa AIMI, Yusuke YAMADA, Shingo MARUYAMA
Department of Pure and Applied Chemistry, Faculty of Science and Technology, Tokyo University of Science, Japan, Department of Applied Chemistry, School of Engineering, Tohoku University, Japan

17:00 **A kinetic Monte Carlo simulation of filament formation in memristive devices** **AA P.44**
Michael Rinderle, Maximilian Speckbacher, Marc Tornow, Alessio Gagliardi
Department of Electrical and Computer Engineering, Technical University of Munich, Karlstrasse 45, 80333 Munich, Germany

17:00 **First-principles determination of quasi-Fermi level profiles across molecular junctions** **AA P.45**
Juho Lee, 1† Hyeonwoo Yeo,1† Han Seul Kim,2 and Yong-Hoon Kim1*
1 School of Electrical Engineering, Korea Advanced Institute of Science and Technology (KAIST), 291 Daehak-ro, Daejeon, 34141, Korea 2 Center for Division of National Supercomputing Research and Development, Korea Institute of Science and Technology Information (KISTI), 245 Daehak-ro, Yuseong-gu, Daejeon 34141

17:00 **Mathematical Modeling of Silicon Purification by Vacuum Refining and Plasma-Chemical Purification under the Conditions of Electr** **AA P.46**
Sergey M. Karabanov (1), Dmitry V. Suvorov (1), Dmitriy Y. Tarabrin (1), Andrey A. Trubitsyn (1), Andrey E. Serebryakov (1), Evgeny V. Slivkin (1), Andrey S. Karabanov (2), Oleg A. Belyakov (2)
1 - Ryazan State Radio Engineering University, 2 - Helios Resource Ltd.

17:00 **Application of differential scanning calorimetry for estimation of plastic deformation stored energy after nanostructuring** **AA P.47**
K. Pivovarova(1), M. Polyakova(1), M. Dabala'(2)
(1) Nosov Magnitogorsk state technical university, (2) Padova University

17:00 **High Throughput Virtual Screening for Singlet Fission Materials** **AA P.48**
D. Padula, O. Omar, T. Nematiaram, A. Troisi
University of Liverpool, Dept of Chemistry, Liverpool, United Kingdom EMPA, Dübendorf, Switzerland

17:00 **Efficient phosphorescence and delayed fluorescence at room temperature from a hydrocarbon: can theory explain it?** **AA P.49**
Bernardo de Souza[1], Giliandro Farias[1], Matthieu Rouzières[2], Pierre Dechambenoit[2], Fabien Durola[2], Harald Bock[2], Cristian A. M. Salla[3], Ivan H. Bechtold[3].
[1] Federal University of Santa Catarina, Chemistry Department, Brazil. [2] Centre de Recherche Paul Pascal, Université Bordeaux I, France. [3] Federal University of Santa Catarina, Physics Department, Brazil.

17:00 **The analysis from first principles of hydrogen, phosphorus, and vacancies clusters in diamond** **AA P.50**
P. Kamińska, M. Zemła, K. Czelej, P. Śpiewak
Faculty of Materials Science and Engineering, Warsaw University of Technology, Wołoska 141, 02-507 Warsaw, Poland,

17:00 **Package yield prediction using machine learning with imaged wafer test data in semiconductor manufacturing** **AA P.51**
Jun-Suk Choi, Jee-Hyong Lee
Samsung Electronics, Sungkyunkwan University

17:00 **Modelling and understanding the impact of point defects in materials for CIGS devices: CdIn2S4 and β-In2S3 as test cases.** **AA P.52**
Camille Latouche, Adrien Stoliaroff, Stéphane Jobic
Institut des Matériaux Jean Rouxel – Université de Nantes, CNRS, 2 rue de la Houssinière, BP 32229, 44322Nantes Cedex 3, France

17:00 **Design principles for charge carrier mobility and anisotropic orientation of organic semiconductors** **AA P.53**
Pascal Friederich, Reinder Coehoorn, Florian von Wrochem, Mario Ruben, Wolfgang Wenzel
P. F.: Department of Chemistry, University of Toronto Institute of Nanotechnology, Karlsruhe Institute of Technology, R. C.: Department of Applied Physics, Eindhoven University of Technology, F.v.W.: Sony Europe Ltd., Zn Deutschland, M.R.: Institute of Nanotechnology, Karlsruhe Institute of Technology, W.W.: Institute of Nanotechnology, Karlsruhe Institute of Technology

17:00 **"Assessing and improving machine learning model predictions of polymer glass transition temperatures"** **AA P.54**
Manav Ramprasad, Dr. Chiho Kim, Anurag Jha
Wheeler High School, Georgia Institute of Technology, Georgia Institute of Technology

17:00 **Thermodynamic Modelling of Viscosity and Cooling characteristics of Titania Slag** **AA P.55**
S. K. Saida, T. K. Kundu
Indian Institute of Technology-Kharagpur, West Bengal, India-721302

17:00 **Wetting Dynamics of Two-Immiscible Liquids: A Molecular Dynamics Simulation Study** **AA P.56**
Awais Mahmood, Chen Shuai, Chen Chaolang, and Wang Jiadao
State Key Laboratory of Tribology, Tsinghua University, Beijing, 100084, China

17:00 **Body centered phase of Cu at high temperature and pressure** **AA P.57**
Urmimala Dey, Nilanjan Mitra, and A. Taraphder
Centre for Theoretical Studies, Indian Institute of Technology, Kharagpur-721302, India, Centre for Theoretical Studies, Indian Institute of Technology, Kharagpur-721302, India, Civil Engineering Department, Indian Institute of Technology, Kharagpur-721302, India, Centre for Theoretical Studies, Indian Institute of Technology, Kharagpur-721302, India, Department of Physics, Indian Institute of Technology, Kharagpur-721302, India, School of Basic Sciences, Indian Institute of Technology, Mandi, HP 175005 India.

17:00 **First-principles study of structural, electronic and thermodynamic properties of CaZrS3, SrZrS3 and BaZrS3 compounds.** **AA P.58**
D. Maouche and S. Berri
Laboratory for Developing New Materials and their Caracterizations, Université Ferhat Abbas UFAS1, Sétif, Algeria.

17:00 **Structural and mechanical properties of buckled honeycomb germanene quantum dots** **AA P.60**
Te-Hua Fang*, Chen Fang-Yi
Department of Mechanical Engineering, National Kaohsiung University of Science and Technology, Kaohsiung 80778, Taiwan

17:00 **Predicting novel two-dimensional pentagonal metal phosphides for efficient nitrogen fixation** **AA P.60**
Yiran Ying, Xin Luo, Haitao Huang
a. Department of Applied Physics, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, P.R. China b. School of Physics, Sun Yat-sen University, Guangzhou, Guangdong Province, P.R. China

17:00 **Material and Structural Optimization of metal nanowire/AAO composites for high-temperature solar thermal application** **AA P.61**
Yuefeng Hu□Xiu Li Si, Xiaoling Wu, Guo An Cheng,and Rui Ting Zheng
College of Nuclear Science and Technology, Beijing Normal University, Beijing 100875, PR China

17:00 **Way to Break Silicon Dimers: First-principles simulations for SrTiO3/Si heterostructures** **AA P.62**
Wen-Yi Tong, Eric Bousquet, and Philippe Ghosez
Theoretical Materials Physics, Q-MAT, CESAM, University of Liege (B5), B-4000 Liege, Belgium

Tuesday 28 may 2019

Quantum materials 1 : -

08:30 INV **The fundamentals of Transparent Oxides revisited: Band gap formation in classic Mott insulators and spontaneous non-stoichiometr** — AA 4.1
Alex Zunger
University of Colorado

09:00 **Combining high-throughput and high-performance computing for the discovery of new photo-sensitized ferroelectric structures** — AA 4.2
Jose J. Plata, Javier Amaya Suárez, Antonio M. Márquez, J. Fdez. Sanz
Universidad de Sevilla, Department of Physical Chemistry, Faculty of Chemistry, E-41012, Sevilla, Spain

09:15 **Determination of low-strain supercell representations of interfaces** — AA 4.3
Ulrik Grønbjerg Vej-Hansen, Line Jelver, Peter Mahler Larsen, Daniele Stradi, Søren Smidstrup, Karsten Wedel Jacobsen, Kurt Stokbro
Synopsys Denmark Aps, Fruebjergvej 3, DK-2100 Copenhagen, Denmark, Synopsys Denmark Aps, Fruebjergvej 3, DK-2100 Copenhagen, Denmark and Department of Physics, Technical University of Denmark, DK-2800 Kongens Lyngby, Denmark, Department of Physics, Technical University of Denmark, DK-2800 Kongens Lyngby, Denmark, Synopsys Denmark Aps, Fruebjergvej 3, DK-2100 Copenhagen, Denmark, Synopsys Denmark Aps, Fruebjergvej 3, DK-2100 Copenhagen, Denmark, Department of Physics, Technical University of Denmark, DK-2800 Kongens Lyngby, Denmark, Synopsys Denmark Aps, Fruebjergvej 3, DK-2100 Copenhagen, Denmark

09:30 **Coffee break**

Quantum materials 2 : -

10:00 INV **High-throughput computational search for novel topological materials** — AA 5.1
Oleg V. Yazyev
Institute of Physics, Ecole Polytechnique Fédérale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland

10:30 **A two-density approach to the general many-body problem and a proof of principle for small atoms and molecules** — AA 5.2
Thomas Pope Werner A Hofer
School of Natural and Environmental Sciences, Newcastle University, Newcastle NE1 7RU, United Kingdom

10:45 **Electronic Structures and Energy Applications of Layered Materials** — AA 5.3
Hong Seok Kang, Tekalign Terfa Debela, Hafiz Ghulam Abbas
Department of Nano & Advanced materials, Jeonju University, Republic of Korea, Institute of Advanced Materials, Jeonju University, Republic of Korea, Department of Nanoscience and Nanotechnology, Jeonbuk National University, Republic of Korea.

11:15 **PLENARY SESSION 1**

12:30 **Lunch**

Artificial intelligence 1 : -

13:45 INV **A Universal Machine Learning algorithm for large-scale screening of materials** — AA 6.1
George E. Froudakis*
Department of Chemistry, University of Crete, Voutes Campus, GR-71003 Heraklion, Crete, Greece * frudakis@uoc.gr

14:15 **Machine learning for predicting charge transfer integrals in organic thin films** — AA 6.2
Michael Rinderle, Jonas Lederer, Waldemar Kaiser, Alessio Gagliardi
Department of Electrical and Computer Engineering, Technical University of Munich, Karlstrasse 45, 80333 Munich, Germany

14:30 **Artificial neural network potential for molecular dynamics simulations** — AA 6.3
Anastasiia Doinychko, Nicolas Onofrio
Laboratoire d'informatique de Grenoble, Université Grenoble Alpes, Grenoble, France, Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong SAR

14:45 **Information technology for the construction of multi-scale models in problems of computational materials science** — AA 6.4
Karine ABGARYAN
Dorodnicyn Computing Centre, Federal Research Center "Computer Science and Control" of Russian Academy of Sciences

15:00 INV **Charting materials-properties spaces.** — AA 6.5
Luca M. Ghiringhelli
Fritz Haber Institute of the Max Planck Society

15:30 **Artificial Intelligence and Materials Innovation – Materials Informatics** — AA 6.6
Tong-Yi Zhang
Materials Genome Institute, Shanghai University, Shanghai, China

15:45 **Materials Discovery with the Amsterdam Modeling Suite** — AA 6.7
Thomas Soini, Ole Carstensen, Fedor Goumans
Software for Chemistry & Materials

16:00 **Coffee break**

Artificial intelligence 2 : -

16:30 INV **Combining Polymorphism and Machine Learning for Materials Discovery** — AA 7.1
Fedwa El-Mellouhi
Qatar Environment and Energy Research Institute (QEERI), Hamad Bin Khalifa University, Qatar Foundation, P.O. Box 34110, Doha, Qatar.

17:00 **Understanding Materials Properties through Microscopy Characterization and Machine Learning Image Segmentation** — AA 7.2
Dr. Alisa Stratulat
Carl Zeiss Microscopy

17:15 **Unlocking hyperspectral scanning electron microscope image data information – experimental validation through Principal componen** — AA 7.3
Nicola Stehling, Robert Masters, Martina Azzolini, Maurizio Dapor, Cornelia Rodenburg
NS, RM, CR: Department of Materials Science and Engineering, University of Sheffield, Sir Robert Hadfield Building, Mappin Street, Sheffield S1 3JD MA, MD: European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*) Strada delle Tabarelle, 286, I-38123 Villazzano TRENTO (TN)

17:30 INV **Thin-film materials libraries for the data-driven discovery and investigation of new materials** — AA 7.4
Alfred Ludwig
Institute for Materials, Faculty of Mechanical Engineering, Ruhr University Bochum, Bochum, Germany

18:00 **Bayesian Optimization based Machine Learning for Adaptive Materials Experiments** — AA 7.5
Quan Qian
School of Computer Engineering & Science, Shanghai University, Shanghai, China 200444 Materials Genome Institute, Shanghai University, Shanghai, China 200444

18:15 **Density functional theory based kinetic Monte Carlo simulation of Cr segregation process in bcc-Fe-Cr alloys.** — AA 7.6
Marcin Roland Zemła (1), J. S. Wróbel (1), C.-C. Fu (2), F. Soisson (2), T. Wejrzawnoski (1)
(1) Faculty of Materials Science and Engineering, Warsaw University of Technology, Wołoska 141, 02-507 Warsaw, Poland. (2) DEN-Service de Recherches de Métallurgie Physique, CEA, Université Paris-Saclay, F-91191, Gif-sur-Yvette, France

18:30 **Modelling Defect Structures in TCO** — AA 7.7
Qing Hou, Alexey A. Sokol, John Buckeridge, Scott M. Woodley, C. Richard A. Catlow
Kathleen Lonsdale Materials Chemistry, Department of Chemistry, University College London, 20 Gordon Street, London WC1H 0AJ

Quantum materials 2 : -

08:30 INV **Structural Predictions for Correlated Electron Materials** AA 8.1
Kristjan Haule
Rutgers University, USA

09:00 **Stabilization and Self-passivation of Symmetrical Grain Boundary in CdTe by Mirror Symmetry Breaking** AA 8.3
Ji-Sang Park
Department of Materials, Imperial College London, Exhibition Road, London SW7 2AZ, UK

09:15 **Theoretical investigation of oxygen defects in highly hydrogenated graphene, synthesised by Birch reduction** AA 8.4
Piotr Kucia
Department of Chemistry, Imperial College London

09:30 **Self-consistent site-dependent DFT+U study of stoichiometric and defective SrMnO3** AA 8.5
C. Ricca, I. Timrov, M. Cococcioni, N. Marzari, and U. Aschauer
Department of Chemistry and Biochemistry and National Centre for Computational Design and Discovery of Novel Materials MARVEL, University of Bern, CH-3012 Bern, Switzerland, Theory and Simulation of Materials (THEOS) and National Centre for Computational Design and Discovery of Novel Materials MARVEL, Ecole Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland, Theory and Simulation of Materials (THEOS) and National Centre for Computational Design and Discovery of Novel Materials MARVEL, Ecole Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland, Theory and Simulation of Materials (THEOS) and National Centre for Computational Design and Discovery of Novel Materials MARVEL, Ecole Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland, Department of Chemistry and Biochemistry and National Centre for Computational Design and Discovery of Novel Materials MARVEL, University of Bern, CH-3012 Bern, Switzerland,

09:45 **An analytical model for the excitation power density dependence of two-photon upconversion in lanthanide-doped micropowders** AA 8.6
Reetu Joseph, Carlos Jiménez, Dmitry Busko, Damien Hudry, Guojun Gao, Andrey Turshatov, Ian Howard, and Bryce Richards
Reetu Joseph, Carlos Jiménez, Dmitry Busko, Damien Hudry, Guojun Gao, Andrey Turshatov, Ian Howard, Bryce Richards Institute of Microstructure Technology, Karlsruhe Institute of Technology, Hermann-von-Helmholtz-Platz 1, 76344, Eggenstein-Leopoldshafen, Germany Ian Howard, Bryce Richards Light Technology Institute, Karlsruhe Institute of Technology, Engesserstrasse 13, 76131 Karlsruhe, Germany

10:00 **Coffee break**

Materials by design (batteries) : -

10:30 INV **The role of descriptors in materials design** AA 9.1
Axel Groß
Institute of Theoretical Chemistry, Ulm University, and Helmholtz Institute Ulm, 89081 Ulm/Germany

11:00 **A computational screening to obtain new Li-ion conductors and deepen our understanding of ionic diffusion in solids** AA 9.2
Leonid Kahle, Nicola Marzari
Theory and Simulation of Materials (THEOS), and National Centre for Computational Design and Discovery of Novel Materials (MARVEL), École Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland

11:15 **Modeling of Thermodynamic and Transport Phenomena in Disordered Battery Cathode Materials Using Cluster Expansion Formalism** AA 9.3
Jin Hyun Chang, Juan Maria García-Lastra, Tejs Vegge
Department of Energy Conversion and Storage, Technical University of Denmark, Department of Energy Conversion and Storage, Technical University of Denmark, Department of Energy Conversion and Storage, Technical University of Denmark

11:30 INV **From computer to lab: end-to-end materials discovery with electronic structure theory and machine learning** AA 9.4
Stefano Sanvito
School of Physics and CRANN, Trinity College Dublin Ireland

12:00 **Phase Stability, Magnetic States Stability of Fe2CoAl Heusler Alloy: A Density Functional Theory (DFT) Study** AA 9.5
Aquil Ahmad*, S. K. Srivastava and A. K. Das
Department of Physics, Indian Institute of Technology, Kharagpur, India-721302

12:15 **Band-structure calculations of the Co2FeAl Heusler alloy: half-metallic ferromagnetism and its structural and magnetic stability** AA 9.6
Aquil Ahmad1*, S. K. Srivastava, A. K. Das
Department of Physics, Indian Institute of Technology, Kharagpur-721302 India

12:30 **Lunch**

Materials by design (semiconductors) : -

14:00 INV **Designing &#8220,Manufacturable&#8221, Materials with Materials-Property Searches and Machine-Learning-Enabled Optimization** AA 10.1
Zhe Liu1*, Nick Twyman1,2*, Felipe Oviedo1, Z. Ren3, S.I.P. Tian3, Sara Bonner1, Shijing Sun1, Benji Maruyama5, Pieremanuele Canepa6, Aron Walsh2, Vladan Stevanovic4, Tonio Buonassisi1
1 Massachusetts Institute of Technology, Cambridge, MA 02139, USA 2 Imperial College London, Exhibition Road, London SW7 2AZ, United Kingdom 3 Singapore-MIT Alliance for Research and Technology, 138602 Singapore 4 Colorado School of Mines, 1500 Illinois Street, Golden, Colorado 80401, USA 5 Air Force Research Laboratory, Dayton, Ohio 45433, USA 6 National University of Singapore, 119077 Singapore *Equal contributors

14:30 **Towards novel light harvesting systems based on metal-organic frameworks: investigations from first principle calculations** AA 10.2
Mariana Kozlowska, Xiaojing Liu, Michael Adams, Ian Howard, Lars Heinke, Wolfgang Wenzel, Christof Wöll
Institute of Nanotechnology, Institute of Functional Interfaces, Institute of Microstructure Technology, Karlsruhe Institute of Technology (KIT), 76344 Eggenstein- Leopoldshafen, Germany

14:45 **Metastable rocksalt ZnO is p-type dopable** AA 10.3
Anuj Goyal, Vladan Stevanović
Colorado School of Mines, Golden, CO 80401, USA

15:00 INV **Computational design of functional semiconductors for optoelectronic applications** AA 10.4
Lijun Zhang
School of Materials Science and Engineering, Jilin University, Changchun 130012, China

15:30 **Designing and Screening of non-oxide semiconductors for tandem cells** AA 10.5
Ramya Kormath Raghupathy, Hendrik Wiebeler, Ram Kuchana, Thomas D. Kühne, and Hossein Mirhosseini
Dynamics of Condensed Matter and Center for Sustainable Systems Design, Chair of Theoretical Chemistry, University of Paderborn, Warburger Str. 100, D–33098 Paderborn, Germany

15:45 **Computational Exploration of Next-Generation Materials for Power Electronics** AA 10.6
Prashun Gorai, Robert McKinney, Andriy Zakutayev, Vladan Stevanovic
Colorado School of Mines, National Renewable Energy Laboratory, Golden, CO 80401, USA.

16:00 **Coffee break**

Materials by design 1 : -

16:30 INV **Computations of materials in nuclear industry for material ageing assessment: the challenge of data production and exploitation** AA 11.1
Julien Vidal
EDF R&D, Department MMC, Les Renardières, F-77250 Moret sur Loing, France

17:00 **Testing and prediction of mechanical properties for AISI 300 series steels** AA 11.2
Goran Vukelic, Josip Brnic
University of Rijeka, Faculty of Maritime Studies, Rijeka, Croatia, University of Rijeka, Faculty of Engineering, Rijeka, Croatia

17:15 **Theoretical Investigation of Mg-based alloys for hydrogen storage** AA 11.3
Gauthier Lefevre, Sebastien Saitzek, Rachel Desfeux, Adlane Sayede
Univ. Artois, CNRS, Centrale Lille, ENSCL, Univ. Lille, UMR 8181 – UCCS – Unité de Catalyse et Chimie du Solide, F-59000 Lille, France

17:30 **Thermodynamic description of storage ability of nanoporous materials: Lattice dynamics and first-principles methods** **AA 11.4**
R. V. Belosludov [1], O. S. Subbotin [2,3], R. K. Zhdanov [2,3], Yu. Yu. Bozhko [2,3], K. V. Gets [2,3], Y. Kawazoe [4], V. R. Belosludov [2,3]
[1] Institute for Materials Research, Tohoku University, Sendai, Japan [2] Nikolaev Institute of Inorganic Chemistry, Novosibirsk, Russia [3] Novosibirsk State University, Novosibirsk, Russia [4] New Industry Hatchery Center, Tohoku University, Sendai, Japan

17:45 **Strategically functionalized MOFs for enhanced water adsorption** **AA 11.5**
Rafaela-Maria Giappa1*, Emmanuel Klontzas 1, 2 , Emmanuel Tylianakis3 and George Froudakis1
1 Department of Chemistry, University of Crete, Voutes Campus, GR-71003 Heraklion, Crete, Greece 2 National Hellenic Research Foundation, V. Constantinou Ave. 48, 11635, Athens, Greece 3 Department of Materials Science and Technology, University of Crete, Voutes Campus, GR-71003 Heraklion, Crete, Greece * rafaelagiappa@gmail.com

18:00 **High-throughput modelling of hydrogen in carbon nanostructures: simulations and comparisons with experiment** **AA 11.6**
C. Guedj1, L. Jaillet2, S. Redon3
1 Univ. Grenoble Alpes, CEA, LETI, 38000 Grenoble, France 2 Univ. Grenoble Alpes, CNRS, Inria, Grenoble INP*, LJK, 38000 Grenoble, France *Institute of Engineering Univ. Grenoble Alpes 3 OneAngstrom, https://www.oneangstrom.com

18:15 **Colision dynamics of fullerenes on Graphenylene and Porous Graphene membranes - a theoretical study** **AA 11.7**
Ricardo Brandolt, Ricardo Paupitz
Sao Paulo State University (UNESP)

18:30 **Modelling the surface morphology of a nanostructured titania thin film** **AA 11.8**
Yicun Huang, Sarah L. Masters, Susan P. Krumdieck, Catherine M. Bishop
Department of Mechanical Engineering, University of Canterbury, School of Physical and Chemical Sciences, University of Canterbury, Department of Mechanical Engineering, University of Canterbury, Department of Mechanical Engineering, University of Canterbury,

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

Materials by design 2 : -

08:30 INV **Computational design and exploration of nitride semiconductors** **AA 12.1**
Fumiyasu Oba
MSL-IIR & MCES, Tokyo Institute of Technology, Japan, CMI2, MaDIS, National Institute for Materials Science, Japan

09:00 **High-Entropy Alloys as a Discovery Platform for Electrocatalysis** **AA 12.2**
Thomas A. A. Batchelor, Jack K. Pedersen, Simon J. Winther, Ivano E. Castelli, Karsten W. Jacobsen, Jan Rossmeisl
T. Batchelor - Department of Chemistry, University of Copenhagen, J. Pedersen - Department of Chemistry, University of Copenhagen, S. Winther - Department of Chemistry, University of Copenhagen, I, Castelli - Department of Energy Conversion and Storage, Technical University of Denmark, K. Jacobsen - Department of Physics, Technical University of Denmark, J. Rossmeisl - Department of Chemistry, University of Copenhagen

09:15 **Data-driven creation of an inorganic nanotube database** **AA 12.3**
Felix Tim Bölle , August Edwards Guldberg Mikkelsen, Tejs Vegge, Ivano E. Castelli
Felix Tim Bölle - Atomic Scale Materials Modelling, Department of Energy Conversion and Storage, Technical University of Denmark, August Edwards Guldberg Mikkelsen - Atomic Scale Materials Modelling, Department of Energy Conversion and Storage, Technical University of Denmark, Tejs Vegge - Atomic Scale Materials Modelling, Department of Energy Conversion and Storage, Technical University of Denmark, Ivano E. Castelli - Atomic Scale Materials Modelling, Department of Energy Conversion and Storage, Technical University of Denmark,

09:30 **Coffee break**

Materials by design 3 : -

10:00 INV **Computationally driven experimental discovery of new stable nitride materials** **AA 13.1**
Andriy Zakutayev
National Renewable Energy Laboratory

10:30 **Ab initio random structure searching - principles and future directions** **AA 13.2**
Joseph R. Nelson, Chris J. Pickard
Department of Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Road, Cambridge CB3 0FS, United Kingdom, Advanced Institute for Materials Research, Tohoku University, 2-1-1 Katahira, Aoba, Sendai 980-8577, Japan

10:45 **TTT Relations for Ferroelectrics near the Polymorphic Phase Boundary: Insights from a New Model for BZT-BCT** **AA 13.3**
Catherine M. Bishop, Oscar A. Torres-Matheus, R. Edwin Garcia
Mechanical Engineering, University of Canterbury, Private Bag 4800, Christchurch, 8140, New Zealand, Mechanical Engineering, University of Canterbury, Private Bag 4800, Christchurch, 8140, New Zealand, School of Materials Engineering, Purdue University, Neil Armstrong Hall of Engineering 701 West Stadium Avenue, West Lafayette, IN 47907, USA

11:15 **PLENARY SESSION 2**

12:30 **Lunch**

Battery materials 1 : -

13:45 INV **Thermodynamics and Ion Mobility of Battery Materials** **AA 14.1**
Pieremanuele Canepa(a)
(a) Department of Materials Science and Engineering, National University of Singapore, 117575 Singapore

14:15 **Defect Chemistry of LaGaO3 doped with divalent cations** **AA 14.2**
Julia Savioli, Graeme W. Watson
School of Chemistry and CRANN, Trinity College Dublin

14:30 **Atomistic modelling of A2BO4 materials: H2O and CO2 incorporation** **AA 14.3**
Adam McSloy 1, Peter R. Slater 2, Paul Kelly 1, Pooja M. Panchmatia*1
1 Department of Chemistry, Loughborough University, Loughborough LE11 3TU, UK 2 School of Chemsitry, University of Birmingham, Birmingham B15 2TT, UK

14:45 **Synergy of Experiments and Simulations for Advanced Materials Discovery: Fast Ion Conductors for Energy Applications** **AA 14.4**
Dr. Ivana Radosavljevic Evans, Dr. Joseph Peet, Dr. Andrea Piovano, Prof. Mark Johnson
Department of Chemistry Durham University Durham DH1 3LE UK Institut Laue Langevin 71 Avenue des Martyrs 38000 Grenoble France

15:00 INV **Predicting Ionic and Electronic Conductivity in Disordered, Mixed Conducting Perovskites from Modeling and Simulation** **AA 14.5**
Elif Ertekin
Department of Mechanical Science and Engineering and Materials Research Laboratory, University of Illinois at Urbana-Champaign, Urbana IL 61801, USA

15:30 **Accelerated design of solid state batteries** **AA 14.6**
Anastassia Sorkin, Haomin Chen, Stefan Adams
Department of Materials Science and Engineering, National University of Singapore

15:45 **The Initials Stages of Magnesium Corrosion** **AA 14.7**
Lushi Cheng
Supervisors: Dr Clotilde Cucinotta and Prof. Nicholas Harrison

16:00 **Coffee break**

Battery materials 2 : -

16:30 **Dispersion Corrected Density Functional Theory Studies on PVDF/Hydrated Aluminium Nitrate Composite System** **AA 15.1**
Ranjini Sarkar, T.K. Kundu
Indian Institute of Technology Kharagpur, Indian Institute of Technology Kharagpur

16:45 **Silver Tarnishing Mechanism Revealed by Molecular Dynamics Simulations** **AA 15.3**
Gabriele Saleh, Stefano Sanvito, Chen Xu
Istituto Italiano di Tecnologia, Via Morego 30, Genova, Italy, School of Physics, AMBER and CRANN institute, Trinity College Dublin, College Green, Dublin 2, Ireland, Nokia Bell Labs, 600 Mountain Avenue, Murray Hill, NJ, USA

17:00 **Stabilizing negative-pressure polymorphs through heterostructural alloying** **AA 15.4**
Sebastian Siol (1), Aaron Holder (2,3), Stephan Lany (2), Andriy Zakutayev (2)
(1) EMPA, Swiss Federal Laboratories for Science and Technology, CH-8600 Dübendorf, Switzerland (2) National Renewable Energy Laboratory, Golden, Colorado 80401, United States (3) University of Colorado, Boulder, Colorado 80309, United States

17:15 **Temperature-dependent structure of Pt nanoparticles: bridging theoretical modeling and experiment via neural network** **AA 15.5**
Janis Timoshenko, Mahdi Ahmadi, Farzad Behafarid, Beatriz Roldan Cuenya
Department of Interface Science, Fritz-Haber-Institute of the Max Planck Society, 14195 Berlin, Germany, Department of Physics, University of Central Florida, Orlando, FL 32816, USA, Department of Physics, University of Central Florida, Orlando, FL 32816, USA, Department of Interface Science, Fritz-Haber-Institute of the Max Planck Society, 14195 Berlin, Germany and Department of Physics, University of Central Florida, Orlando, FL 32816, USA

17:30 **Intrinsic point defects in kesterite-type Cu2ZnGeSe4 compound semiconductors** **AA 15.6**
Daniel Fritsch (1), Susan Schorr (1,2)
(1) Department Structure and Dynamics of Energy Materials, Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, (2) Department of Geosciences, Freie Universität Berlin, Malteserstr. 74-100, 12249 Berlin, Germany

17:45 **Towards a Room Temperature Molecular Magnet** **AA 15.7**
Claire Tjokrowidjaja
Professor Nicholas Harrison, Professor Sandrine Heutz

18:00 **Materials by Design: Doping impact on the electronic properties of advanced absorbers materials** **AA 15.8**
1. P. Palacios, 2. G. García, 2. P. Sanchez-Palencia, 3. J.E. Castellanos, 4. A. Montero-Alejo, 4. E. Menéndez-Proupin, 5. J. C. Conesa, 2. P. Wahnón
1. Instituto de Energía Solar and Dept. FAIAN, E.T.S.I. Aeronáutica y del Espacio, Universidad Politécnica de Madrid, Spain, 2. Instituto de Energía Solar and Dept. TFB, E.T.S.I. Telecomunicación, Universidad Politécnica de Madrid, Spain, 3. Universidad de Guanajuato, Dept. Estudios Multidisciplinarios, Yacatitas, Yuriria, Gto. C.P. 36940 México. 4. Departamento de Física, Facultad de Ciencias, Universidad de Chile, Santiago, Chile 5. Instituto de Catálisis y Petroleoquímica, CSIC, Marie Curie 2, 28049 Madrid, Spain.

18:15 **Ab initio evaluation of photophysical properties of molecular nanocrystals** **AA 15.9**
Giulia Biffi, Francesco Segatta, Vincenzo Caligiuri, Marco Garavelli, Roman Krahne,Ivan Rivalta
Istituto Italiano di Tecnologia, Optoelectronics,Genova, Italy - Università degli Studi di Bologna, Dipartimento di Chimica Industriale “Toso Montanari”, Bologna, Italy - Università degli Studi di Genova, Dipartimento di Chimica e Chimica Industriale, Genova, Italy , Università degli Studi di Bologna, Dipartimento di Chimica Industriale “Toso Montanari”, Bologna, Italy , Istituto Italiano di Tecnologia, Optoelectronics,Genova, Italy , Università degli Studi di Bologna, Dipartimento di Chimica Industriale “Toso Montanari”, Bologna, Italy , Istituto Italiano di Tecnologia, Optoelectronics,Genova, Italy , Università degli Studi di Bologna, Dipartimento di Chimica Industriale “Toso Montanari”, Bologna, Italy - Université de Lyon, École Normale Supérieure de Lyon, CNRS, Université Claude Bernard Lyon 1, Laboratoire de Chimie UMR 5182, F-69342, Lyon, France

E-MRS Spring Meeting 2019

IUMRS - ICAM International Conference on Advanced Materials

May 27-31 | Acropolis Congress Centre | Nice | France

SYMPOSIUM BB

Cultural heritage – science, materials and technology

Symposium Organizers :

Anne BOURQUILLON, C2RMF, Paris, France

Giuseppina PADELETTI, CNR, Rome, Italy

Joao Pedro VEIGA, Universidade Nova de Lisboa, Portugal

OUR HERITAGE: WHERE THE PAST MEETS THE FUTURE

2018 EUROPEAN YEAR OF CULTURAL HERITAGE

Horizon 2020 European Union Funding for Research & Innovation

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Tuesday 28 may 2019

09:30 **Welcome and Opening Session - G. Padeletti, J.P. Veiga, A. Bouquillon**

Conservation of Organic Materials : G. Padeletti

09:45 **Molecular and hybrid nanomaterials for the prevention of biodeterioration of cultural heritage objects** **BB 1.1**
Isabel Franco Castillo [1], Archismita Misra [2], Daniel P. Müller [2], Carolina González [1], Stéphanie Eyssautier-Chuine [3], Andreas Ziegler [4], Jesús M. de la Fuente [1], Scott G. Mitchell [1], Carsten Streb [2]
[1] Instituto de Ciencia de Materiales de Aragón (ICMA-CSIC), [2] Institute of Inorganic Chemistry I, Ulm University, [3] Université de Reims Champagne-Ardenne, [4], Central Unit Electron Microscopy, Ulm University

10:15 **Strengthening and deacidification of paper: a single-step treatment based on alkaline nanoparticles and cellulose nanocrystals** **BB 1.2**
Qingmeng Xu, Giovanna Poggi, Claudio Resta, Michele Baglioni,§, Rodorico Giorgi, Piero Baglioni*§ § No kinship exists among these authors
CSGI and Chemistry Department, University of Florence, Via della Lastruccia 1 – 50019 Sesto Fiorentino (FI), Italy.

10:30 **Surface enhanced Raman spectroscopy (SERS)-based methodology for the detection of degradation markers in plastic artworks** **BB 1.3**
Massimo Lazzari, Daniela Reggio, Manuel Gómez
Center for Research in Biological Chemistry and Molecular Materials (CIQUS), University of Santiago de Compostela, Spain

10:45 **Investigation of wood aging through NMR relaxometry** **BB 1.4**
Leila Rostom1, Denis Courtier-Murias2, Sabine Caré3
1 PhD Student, Laboratoire Navier, UMR 8205, Ecole des Ponts, IFSTTAR, CNRS, UPE, Marne-la-Vallée, France [email: leila.rostom@enpc.fr)] 2 Researcher, Laboratoire Navier, UMR 8205, Ecole des Ponts, IFSTTAR, CNRS, UPE, Marne-la-Vallée, France [email: denis.courtier-murias@ifsttar.fr)] 3 Researcher, Laboratoire Navier, UMR 8205, Ecole des Ponts, IFSTTAR, CNRS, UPE, Marne-la-Vallée, France [email: sabine.care@ifsttar.fr)]

11:15 **Plenary Session 1**

12:30 **Lunch**

Consolidation of Cultural Heritage Materials : J.P. Veiga

14:00 **Consolidation of archaeological unbaked clay tablets with Tetra-Ethyl-Ortho-Silicate (TEOS): role of smectite and kaolinite** **BB 2.1**
Atika Chemmi1,2,3, Corinne Soulie1, Ann Bourges4, Jean-Didier Mertz4, Gilles Wallez2,3, Anne Liegey5, and Anne Bouquillon2,3
1 Laboratoire Matière Molle et Chimie (MMC), CNRS : UMR7167, PSL Research University 10 rue Vauquelin 75005 PARIS, France 2 Institut de Recherche de Chimie de Paris (IRCP), PSL Research University, 11 rue Pierre et Marie Curie 75005 Paris, France 3 Centre de Recherche et de Restauration des Musées de France (C2RMF), 14 quai François Mitterrand 75001 Paris, France 4 Laboratoire de Recherche des Monuments Historiques (LRMH), Ministère de la Culture et de la Communication, CRC USR 3224, 29 rue de Paris 77420 Champs-sur-Marne, France 5 Conservator, 12 rue J.-B. Potin, 92170 Vanves

14:30 **Organic-inorganic nano-composites for the consolidation of adobe** **BB 2.2**
Rachel Camerini, David Chelazzi, Rodorico Giorgi, Piero Baglioni
CSGI and Department of Chemistry, University of Florence, via della Lastruccia 3-50019, Sesto Fiorentino, Italy

Metal corrosion - Conservation Processes : A. Bouquillon

14:45 **Nanoscale anticorrosive protection of pipe organ metallic materials** **BB 3.1**
Antje Quade1,2, T. Schumann1, Jan Schäfer2, Christoph Kumpe3, Dirk Eule3, Wolfgang Skorupa1
1 Institute of Ion Beam Physics and Materials Research, Helmholtz Zentrum Dresden Rossendorf, Bautzner Landstraße 400, D-01328 Dresden, Germany , 2 Leibniz Institute for Plasma Science and Technology, Felix-Hausdorff-Str. 2, D-17489 Greifswald, Germany , 3 Hermann Eule Orgelbau GmbH, Wilthener Str. 6, D-02625 Bautzen, Germany

15:00 **The challenge of heritage copper objects analysis by electron spectroscopies: stability to UHV and irradiation** **BB 3.2**
Maëva L'HERONDE (1,2),Muriel BOUTTEMY (2), Florence MERCIER-BION (1), Delphine NEFF (1), Arnaud ETCHEBERRY (2), Philippe DILLMANN (1)
(1) LAPA-IRAMAT, NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay, 91191 Gif-sur-Yvette France, (2) Institut Lavoisier de Versailles (ILV), Université de Versailles Saint-Quentin-en-Yvelines, Université Paris-Saclay, 45 avenue des États-Unis, 78035 Versailles, France.

15:15 **Multiscale study of interactions between corrosion product layer formed on heritage Cu objects and organic protection treatments** **BB 3.3**
Maëva L'HERONDE, Muriel BOUTTEMY, Delphine NEFF, Florence MERCIER-BION, Emilande APCHAIN, Arnaud ETCHEBERRY, Philippe DILLMANN
UMR 3685/CEA-CNRS, Institut Lavoisier de Versailles - Université de Versailles Saint-Quentin-en-Yvelines - Université Paris-Saclay, UMR 3685/CEA-CNRS , UMR 3685/CEA-CNRS, UMR 3685/CEA-CNRS, Institut Lavoisier de Versailles - Université de Versailles Saint-Quentin-en-Yvelines - Université Paris-Saclay, UMR 3685/CEA-CNRS ,

15:30 **Al2O3 Nano-Coatings to Protect Metal Art Objects from Atmospheric Corrosion** **BB 3.4**
R. Wiesinger1, L. Pagnin1, P. Baloh2, H. Grothe2, M. Schreiner1
1 Institute of Science and Technology in Art, Academy of Fine Arts Vienna, Schillerplatz 3, Vienna, 1010, Austria e-mail.r.wiesinger@akbild.ac.at 2 Institute of Materials Chemistry, Vienna University of Technology, Getreidemarkt 9/165, Vienna,1060, Austria

15:45 **Conservation and maintenance of historic buildings steel sheet roofs. A model to assemble and disseminate evidence based knowle** **BB 3.5**
Källbom
Gothenburgh University, Department of Conservation

16:00 **Coffee Break**

HERACLES Project Outcomes : G. Padeletti

16:30 **Recent developments on multifunctional materials designated for gypsum consolidation. An insight on negative and positive effect** **BB 4.1**
Ioannis E. Grammatikakis, Eirini Armakola, Konstantinos D. Demadis
Crystal Engineering, Growth and Design Laboratory, Department of Chemistry, University of Crete, Heraklion, Crete, GR-71003, Greece

16:45 **Calcium-binding consolidants for mineral gypsum stones from the Minoan Palace of Knossos: Performance and structure/activity cha** **BB 4.2**
Konstantinos D. Demadis, Ioannis E. Grammatikakis, Eirini Armakola
Crystal Engineering, Growth and Design Laboratory, Department of Chemistry, University of Crete, Heraklion, Crete, GR-71003, Greece

17:00 **The use of concrete in the reconstruction of the Palace of Knossos in Crete, Greece: from Sir Arthur Evans to modern times** **BB 4.3**
Antonella Curulli (1), Fernanda Carvalho (2), Elissavet Kavoulaki (3), Elpida Politaki (3), Elissavet Katsaveli (3), Aristeidis Dokoumetzidis (3), Maria Margarida R. A. Lima (2), Giampiero Montesperelli (4), Sara Ronca (5), Giuseppina Padeletti (1), João Pedro Veiga (2)
(1) CNR Consiglio Nazionale delle Ricerche, ISMN—Instituto per lo Studio dei Materiali Nanostrutturati, Via Salaria km 29.5, Monterotondo, 00015 Rome, Italy. (2) CENIMAT/I3N—Centro de Investigação em Materiais, UNINOVA—Instituto de Desenvolvimento de Novas Tecnologias, Departamento de Ciência dos Materiais, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, Portugal. (3) EPHORATE of Antiquities of Heraklion, Xanthoudidou & 1 Chatzidaki str, Heraklion 71202, Greece. (4) Dipartimento di Ingegneria dell'Impresa, Università di Roma Tor Vergata, INSTM—Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, via della Ricerca Scientifica, 00133 Rome, Italy. (5) Dipartimento di Scienze della Terra, La Sapienza Università di Roma, P.le Aldo Moro 5, 00185 Rome, Italy.

Wednesday 29 may 2019

New Technologies and Imaging for CH Investigation : tbd

09:30 **Non-destructive 3D structural imaging of medieval polychromy: the study case of the applied brocade technique** — BB 5.1
Florian Kergourlay1, Pauline Martinetto1, Nils Blanc1, Nathalie Boudet1, Stephan Arnaud1, Pierre Bordet1, Jean-Louis Hodeau1, Catherine Dejoie2, Florence Lelong3, Sophie Champdavoine3, Frédéric Fabre3, Thomas Guiblain3, Emeline Pouyet4
1 Univ. Grenoble Alpes-CNRS-Grenoble INP, Institut Néel, 38000 Grenoble, France 2 European Synchrotron Radiation Facility, 38000 Grenoble, France 3 Arc-Nucleart, CEA, 38000 Grenoble, France 4 Northwestern University/Art Institute of Chicago Center for Scientific Studies in the Arts (NU-ACCESS), IL 60208, USA

10:00 **Synchrotron microtomography for cultural heritage, a bright future for the ESRF** — BB 5.2
Paul Tafforeau
European Synchrotron Radiation Facility

10:15 **Coffee Break**

10:45 **Internal structure observation of «Venus and sailor» by Salvador Dalí** — BB 5.3
Kaori FUKUNAGA*(1), Yoshimi UENO(2), Yasunobu ITO(3)
1 National Institute of ICT 2 CRS Corporation 3 Ikea Museum of 20th Century Art * Corresponding author: kaori@nict.go.jp

11:15 **Investigations of Ancient Egyptian animal mummies by multiscale propagation phase-contrast synchrotron microtomography** — BB 5.4
Camille Berruyer 1 2, Stéphanie Porcier 3 4, and Paul Tafforeau 1
1 European Synchrotron Radiation Facility, 71 avenue des Martyrs, 38000 Grenoble Grenoble 2 ArchéOrient UMR 5133, Maison de l'Orient et de la Méditerranée Jean Pouilloux, 7 rue Raulin, 69365 Lyon 3 Archéologie des Sociétés Méditerranéennes, rue du Professeur Henri Serre, 34090 Montpellier 4 HiSoMa UMR 5189, Maison de l'Orient et de la Méditerranée Jean Pouilloux, 7 rue Raulin, 69365 Lyon

11:30 **Development of new methods and analytical strategies which benefit the exploration of written heritage** — BB 5.5
Federica Cappa1, Simon Brenner4, Wilfried Vetter1, Manfred Schreiner1, Heinz Miklas2, Claudia Rapp3, Robert Sablatnig4, Bernadette Fruehmann1, Guadalupe Piñar5, Katja Sterflinger5, Patricia Engel6
1 Institute of Natural Sciences and Technology in the Arts, Academy of Fine Arts Vienna, Schillerplatz 3, 1010 Vienna, Austria 2 Institute of Slavonic Studies, University of Vienna, Spitalgasse 2, Hof 3, 1090 Vienna, Austria 3 Institute of Byzantine and Modern Greek Studies, University of Vienna, Postgasse 7, 1010 Vienna, Austria 4 Computer Vision Lab, TU Wien, Favoritenstrasse 9-11, 1040 Vienna, Austria 5 Institute for Biotechnologies, University of Natural Resources and Life Sciences, Vienna, Muthgasse 18, 1190 Wien 6 European Research Centre for Book and Paper Conservation &#8211, Restoration, Danube University, Krems, Dr.-Karl-Dorrek-Straße 30, 3500 Krems

Innovative Societies : tbd

11:45 **Crossover generalists as facilitators in societal transition contexts** — BB 6.1
Mikael Syväjärvi, Svjetlana Stekovic and Mariana Gustafsson
Department of Physics, Chemistry and Biology, Linköping University, Sweden, Department of Management and Engineering, Linköping University, Sweden, Department of Management and Engineering, Linköping University, Sweden

12:00 **Lunch**

Poster Session : G. Padeletti, J.P. Veiga, A. Bouquillon

14:00 **Reconstructing anticorrosive historical paints** — BB P1.1
Källbom
Gothenburgh University

14:00 **Roman glass from Aquileia: an archaeological and multi-analytical study** — BB P1.2
Giulia Moro (a), Serena Panighello (a) , Emilio Orsega (a), Ligia Maria Moretto (a), Luciana Mandruzzato (c), Arianna Traviglia (b-d)
(a) Department of Molecular Sciences and Nanosystems, Ca' Foscari University of Venice, Italy (b) Department of Environmental Sciences, Informatics and Statistics, Ca' Foscari University of Venice, Italy (c) Arxe s.n.c., Trieste, Italy (d) Center for Cultural Heritage Technology, Italian Institute of Technology, Italy

14:00 **Black Crusts in the Palace of Knossos, Crete, Greece: an HERACLES Project Case Study** — BB P1.3
Fernanda Carvalho (1), Antonella Curulli (2), Elissavet Kavoulaki (3), Elpida Politaki (3), Elissavet Katsaveli (3), Aristeidis Dokoumetzidis (3), Maria Margarida R. A. Lima (1), Giampiero Montesperelli (4), Sara Ronca (5), Giuseppina Padeletti (2), João Pedro Veiga (1)
(1) CENIMAT/I3N—Centro de Investigação em Materiais, UNINOVA—Instituto de Desenvolvimento de Novas Tecnologias, Departamento de Ciência dos Materiais, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, Portugal. (2) CNR Consiglio Nazionale delle Ricerche, ISMN—Instituto per lo Studio dei Materiali Nanostrutturati, Via Salaria km 29.5, Monterotondo, 00015 Rome, Italy. (3) EPHORATE of Antiquities of Heraklion, Xanthoudidou & 1 Chatzidaki str, Heraklion 71202, Greece. (4) Dipartimento di Ingegneria dell'Impresa, Università di Roma Tor Vergata, INSTM—Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali, via della Ricerca Scientifica, 00133 Rome, Italy. (5) Dipartimento di Scienze della Terra, La Sapienza Università di Roma, P.le Aldo Moro 5, 00185 Rome, Italy.

14:00 **Image-Based Quantitative Analysis of Foxing Stains on Old Printed Paper Documents** — BB P1.4
Gyuho Kim*, Jung Gon Kim**, Kitaek Kang** and Woo Sik Yoo**
*Kongju National University, Kongju, Choong Nam, 32588, Korea, **WaferMasters, Inc., Dublin, CA 94568, USA

Technologies and Materiality : tbd

14:45 **Multi-scale investigation of body-glaze interface in French Renaissance ceramics** — BB 7.1
Marie Godet (1), Gauthier Roisine (2,3), Daniel Caurant (2,3), Odile Majérus (2,3), Laurent Cormier (1), Nicolas Menguy (1), Anne Bouquillon (2,3)
1. Institut de Minéralogie, de Physique des Matériaux et de Cosmochimie (IMPMC), CNRS UMR 7590, MNHN, IRD UMR206, Sorbonne-Université, Paris, France. 2. Chimie ParisTech, PSL Research University, CNRS, Institut de Recherche de Chimie de Paris (IRCP), Paris, France 3. Centre de Recherche et de Restauration des Musées de France (C2RMF), PSL Research University, CNRS, Institut de Recherche de Chimie de Paris (IRCP), Paris, France

15:00 **Characterization of Jian Wares within the scope of Blue Print Monographic Programme** — BB 7.2
Tugce Akkas *, Gulsu Simsek
Koc University Surface Science and Technology Center (KUYTAM), Rumelifeneri Yolu, Sariyer, 34450, Istanbul, Turkey

15:15 **The nano-technology in Roman opaque red glass. Archaeometric investigation on red sectilia from Lucius Verus Villa in Rome** — BB 7.3
Mario Bandiera a) b), Patrice Lehuédé c), Marco Verità d), Isabel Biron c), Marcia Vilarigues a) b)
(a) VICARTE, Research Unit Vidro e Ceramica para as Artes, FCT/UNL, Campus Caparica, 2829-516 Caparica, Portugal, (b) Dep. de Conservacao e Restauro, FCT/UNL, Campus Caparica, 2829-516 Caparica, Portugal, (c) C2RMF, Centre de Recherche et de Restauration des Museés de France, Palais du Louvre – Porte des Lions 14, Quai François Mitterrand 75001 Paris, (d) LAMA laboratory, Iuav University, Venice (Italy)

15:30 **The Chiaravalle cross: results of a multidisciplinary study** — BB 7.4
Daniela Di Martino1, Giulia Benati2, Roberto Alberti3, Sandro Baroni4, Carlo Bertelli5, Franco Blumer6, Letizia Caselli7, Roberta Cattaneo1, Costanza Cucini8, Fabio D&#8217,Amico9, Tommaso Frizzi3, Elisabetta Gagetti10, Michele Gironda3, Giuseppe Gorini1, Lorenzo Lazzarini11, Maya Musa12, Enrico Perelli Cippo13, Maria Pia Riccardi14
1Dip. Fisica &#8220,G. Occhialini&#8221,, Università degli Studi di Milano-Bicocca, Milan (I), 2 Veneranda Fabbrica del Duomo di Milano, Milan (I), 3 XGLab, Bruker, Milan (I), 4 Fondazione Maimeri, Milan (I) 5 University of Lausanne (CH), 6 Franco Blumer Restauro Metalli, Bergamo (I), 7 Università IUAV, Venice (I), 8 Lab.»Métallurgies et Cultures», CNRS, IRAMAT Université de Technologie Belfort Montbéliard (F), 9Jewels Designed for You Dubai (UAE), 10Independent researcher, Milan (I),11LAMA, Università IUAV, Venice (I), 12GECI, Milan (I), 13 Istituto di Fisica del Plasma &#8220,P. Caldirola&#8221,, Consiglio Nazionale delle Ricerche, Milan (I), 14 Dip. di Scienze della Terra e dell&#8217,Ambiente, Università degli Studi di Pavia, Pavia (I).

15:45 **Coffee Break**

16:15 **Comparison of aluminium alloys from aircraft of 4 nations involved in WWII conflict using multiscale analyses & archival study** **BB 7.5**

Toufa OUISSI(ab), Gilles COLLAVERI(c), Philippe SCIAU(a), Jean-Marc OLIVIER(b), Magali BRUNET(a)
(a) CEMES, UPR 8011 CNRS, Toulouse France
(b) FRAMESPA, UMR 5136, Toulouse University Jean-Jaurès, Toulouse France (c) Aerocherche www.aerocherche.fr

16:30 **Creatures of the gods among us? A multi-analytical based approach for characterization of embalming materials of animal mummies from the Musée des Confluences, Lyon** **BB 7.6**

Milan Markovi&#263,1, Stéphanie Porcier2,3, Cathy Vieillescazes1, Carole Mathe1
1 IMBE UMR7263/ IRD237, Avignon University/ CNRS/ IRD/ AMU, Restoration Engineering of Natural and Cultural Heritage F-84000, Avignon, France. 2 ASM UMR 5140 &#8220,Archéologie des Sociétés Méditerranéennes&#8221,, CNRS/ UPV/ MCC/ INRAP, F-34090 Montpellier, France 3 HiSoMA UMR 5189 &#8220,Histoire et Sources des Mondes Antiques&#8221,, CNRS, F-69007 Lyon, France 4 Confluences Museum, Lyon, France.

16:45 **Closing Remarks and Preparation of Next Day Visit to Museum**

19:00 **Graduate Student Award ceremony followed by the social event**

Thursday 30 may 2019

10:00 **Visit to a Museum in Nice (Update soon)**

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presenting authors only

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AMIDANI Lucia, J/o-3.4
AMINA Adala, H/p-2.67
AMINI Elham, N/p-III.3
AN Boohyun, J/o-2.21
AN Manli, M/p-7.64
ANAND Abhinav, G/o-10.2; W/o-11.7
ANAND Srinivasan, R/inv-6.1
ANDERSSON Peter, J/o-3.19
ANDREATTA Gaëlle, N/o-8.8
ANDREEVA Yaroslava, V/p-10.39
ANDRICEVIC Pavao, G/p- 15.29
ANGEL Steven, S/o-4.2; S/p-5.8
ANICHINI Cosimo, U/o-3.7
ANKER Andy Sode, Y/p-2.6
ANSARI Lida, T/o-12.7
ANSARI Talha, AA/p-.42
ANTIPOV Evgeny V., S/inv-8.1
ANTONIADOU Maria, B/p-5.5; B/p-5.37; G/p- 15.10; H/p-2.51
ANZALONE Ruggero, X/p-/V.4
AOUSGI Fethi, H/p-2.65
APTE Amey, T/p-1.42
ARAYAMPARAMBIL Jeethu Jiju, C/p-15.38
ARCA Elisabetta, E/inv-5.1
ARCINIEGAS Milena, G/o-3.1
ARENA Federica, L/p-2.21
ARFAOUI Mohamed, N/p-II.11
ARMAND Michel, C/inv-6.4
ARMANO Angelo, T/o-8.7
ARMATAS Gerasimos, H/p-2.61
ARNAULT Jean-Charles, M/inv-8.2
ARORA Kanika, N/p-I.34
ARSLAN Halil, O/p-3.43
ARTIGA Alvaro, L/o-12.4
ARTYUKHIN Sergey, Q/p-4.13
ARZIG Matthias, X/o-X-Ia.2
ASAFA Tesleem, N/p-I.68
ASCHAUER Elias, N/o-2.3; N/p-II.35
ASCHAUER Ulrich, S/o-3.3
ASEN Asenov, D/inv-11.2
ASLANYAN Artem, W/p-2.17; W/p-2.18
ASPE Barthelemy, Q/o-2.4; Q/o-1.6
ASPE Barthélemy, O/o-10.4
ASPERMAIR Patrik, K/o-5.2
ASSAM Linda, G/p- 15.3
ATAK Gamze, R/p-3.3; R/p-3.38
ATAK Haluk, J/o-3.18
ATANASOV Petar, V/p-3.20
ATCHESON Gwenael, N/p-I.7
ATTOU Loubaba, C/p-15.27
AUGER Maria A, J/o-2.11
AUGUSTYNSKI Jan, A/inv-1.5
AVETISSOV Igor, U/p-2.15; V/p-10.14; P/p-2.7; P/p-2.12; P/p-2.19
AVIREDDY Hemesh, C/p-15.39; F/o-2.3
AYSAL Havva Eda, O/p-11.9
AZAIEZ Khaoula, D/p-1.22
AZINA Clio, J/o-2.5
AZOUGH Feridoon, I/o-5.5

B

BABUSENAN Anu, W/p-1.35
BACKES Claudia, T/inv-10.1
BADALA Paolo, X/o-IVb.2
BAE Sang Hyun, I/p-1.4
BAE Se Won, L/p-1.42
BAEK In-Hwan, T/p-2.10
BAEK Sanghoon, K/p-7.12
BAEK Sangwon, N/p-I.20
BAEK Seung Eun, N/p-III.43
BAEK Seung-Hye, W/p-2.45
BAFFOU Guillaume, V/inv-2.1
BAHMANI JALALI Houman, N/p-I.50; W/p-1.28
BAHRAM Abdollahi Nejand Asl, G/o-12.3
BAI Lu, C/p-7.75
BAI Xue, C/o-9.2
BAI Zhenyuan, J/o-1.2
BAJI Zsófia, N/p-II.27; O/o-17.4
BAKHIT Babak, N/o-5.3
BAKKEN Kristine, Y/o-4.4
BAKR Osman M., G/inv-5.1
BALAZ Peter, I/p-2.5
BALEIZAO Carlos, B/p-5.9
BALKAN Timucin, H/p-1.20
BALL Vincent, L/p-2.46
BALLARINI Dario, W/inv-4.1
BANCHELLI Martina, P/o-7.6
BANDARENKA Hanna, U/o-1.6
BANDIERA Mario, BB/o-7.3
BANDURIN Denis, T/inv-12.1
BANERJEE Amborish, Z/p-4.22
BANERJEE Arindam, L/p-1.15
BANERJEE Debosmita, M/o-2.3
BANERJEE Sarbajit, R/inv-1.4
BANG Seungho, T/p-1.19
BANTHIA Swastika, N/p-I.37
BAO Xin, M/p-7.36
BAOQUAN Sun, B/p-5.72
BARAN Derya, B/inv-11.1
BARANOWSKI Michal, G/o-8.4; G/p-15.31
BARAWI MORAN Mariam, A/o-9.3
BARBISAN Luca, X/o-VIIb.1
BARDE Fanny, C/inv-15.4
BARDIZZA Giorgio, B/p-5.36
BAROZZINO Gabriella, C/p-7.19
BARR Maïssa, G/p- 15.21
BARRIERE Frederic, L/p-2.1
BARTASYTE Ausrine, R/inv-8.2
BARZGARVISHLAGHI Mahsa, H/p-2.30
BASKAR Senthilkumar, C/p-15.8; C/p-15.73
BASOV Sergey, O/o-7.3; O/o-8.5
BASTIDE Stephane, H/o-9.4
BASU Nandita, N/p-I.8
BASYKH Viktoriia, Z/p-4.5
BATCHELOR Thomas, AA/o-12.2
BATISTA Victor S., A/inv-10.9
BAUCH Martin, R/o-6.5
BAUDIN Emmanuel, W/o-7.4
BAUDOUIN Florent, O/o-16.3
BAYRAK PEHLIVAN Ilknur, R/o-5.8; R/p-3.28
BECHU Solène, V/o-2.2
BECKER Martin, O/o-7.2
BECKER Maximilian, O/p-11.23
BECKER-KOCH David, B/o-3.3
BECUWE Matthieu, C/o-4.4
BEDFORD Nicholas, Y/o-3.2
BEHRENT Arne, V/p-10.55
BEKE David, L/o-10.2; W/p-1.19; X/o-III.2
BEKER Anne France, Z/p-4.15
BELIC Jelena, AA/p-.31
BELIKOV Andrey, N/p-I.10
BELL David, Z/o-1.5
BELLET Daniel, E/o-1.5; E/p-21.22; R/o-7.3
BELLIDO AGUILAR Daniel Angel, P/o-9.12
BELOSLUDOV Rodion, AA/o-11.4
BEN SEDRINE Nebiha, W/o-14.3; W/p-1.16; W/p-2.19; W/p-2.21
BENAMAR Bouhafs, N/p-III.53
BENFDILA Arezki, D/o-9.4
BENSON Michael, J/p-1.12
BENTO Rodrigo, H/p-2.32
BERCIAUD Stéphane, T/inv-5.1; W/inv-7.1
BERENCÉN Yonder, D/p-1.32
BERGAMASCHINI Roberto, X/o-VIIa.2
BERGAMINI Linda, T/p-1.5
BERHAULT Gilles, H/p-2.36
BERLANGA Carlos, C/o-14.5
BERRET Jean-François, L/o-1.4
BERRUYER Camille, BB/o-5.4
BERTHEBAUD David, I/o-7.3
BERTRAND Mathieu, W/o-3.2
BETTAMIN Luca, L/o-5.4
BEYER Jan, X/o-VIa.4
BHATT Vishwa, C/p-7.62; W/p-2.26
BHAURIYAL Preeti, C/p-7.40
BHOWMICK Pratyusha, P/p-8.1
BHOWMICK Tynee, U/p-5.10
BHUGRA Vaibhav Singh, P/o-5.5
BHUSARI Rutuja, U/p-2.21
BIAN Qingzhen, L/p-2.20
BIANCA Tincu, N/p-II.3
BICHON Marie, C/o-1.2
BIFFI Giulia, AA/o-15.9
BIHAR Eloise, K/o-8.4
BILLET Jonas, C/p-15.88
BIMASHOFER Gesara, O/p-11.39
BIRLA Liliana, M/o-1.5
BIRNAL Pierre, N/o-3.3
BIRROZZI Adele, C/p-7.9
BISCARNI Fabio, K/inv-6.1
BISHOP Catherine, N/o-3.6; AA/o-13.3
BISSANNAGARI Murali, U/p-2.33
BISWAS Gautam, J/p-1.15
BISWAS Pranab, H/p-1.27
BISWAS Subhajit, W/p-1.21
BISWAS Sudipta, M/p-7.82
BIYING Zhuang, M/p-7.71
BIYUN Ren, H/p-2.17; U/p-2.20
BLÁZQUEZ Oriol, P/p-2.9
BLEU Yannick, V/p-3.44
BLOND Jérémy, W/p-2.10
BOCHAROV Dmitry, T/p-1.33; AA/p-.11
BOCHER Laura, Z/p-4.3
BODIK Michal, N/o-7.7
BODIN Charlotte, C/o-2.5
BODNARCHUK Maryna, G/inv-11.1
BOERASU Iulian, V/o-8.7
BOGATU Cristina, H/p-1.59
BOGDAN Maria-Iuliana, L/p-1.27; L/p-1.35
BOGDANOWICZ Robert, R/p-3.42
BOHN Bernhard, G/o-11.5
BOILEAU Alexis, O/o-12.2
BOKINALA Moses Abraham, AA/p-.28
BOLDYREVA Aleksandra, B/o-2.4
BÖLLE Felix Tim, AA/o-12.3
BOLOGNESI Margherita, T/o-3.2
BONAFOS Caroline, P/inv-1.1; P/p-2.4
BONCIU Anca Florina, V/p-3.51; V/p-10.9; V/p-10.32
BONDARENKO Marina, H/p-2.62; N/p-III.66
BONDARIEV Vitalii, N/p-III.41
BONET ISIDRO Ferran, P/p-2.10
BONFIGLIO Annalisa, K/inv-8.1
BONI Andra Georgia, Q/o-7.4; Q/p-4.3
BONKERUD Julie, H/p-2.31
BONNEL Morgane, U/p-5.20
BONNET Angélique, S/p-5.4
BONNET Pierre, H/p-2.7
BONSE Jörn, V/o-1.7; V/p-3.42
BORGES Joel, N/o-9.12; N/p-III.52
BORISYUK Petr, D/p-1.9
BORKOVSKA Lyudmyla, O/p-3.37; Q/p-4.15; P/p-8.6
BORODIN Vladimir, J/o-1.10
BORTOLETO José Roberto Ribeiro, E/p-20.23; E/p-20.28
BORTOLOTTI Carlo, K/o-4.6
BORZI Aurelio, N/p-III.4
BOSE Sourav, B/p-5.53
BOUAOUINA Boudjemaa, N/p-II.36
BOUAZIZ Jordan, O/o-9.3; Q/o-5.3
BOUCHAL Roza, C/o-17.4
BOUCHIAT Vincent, K/inv-5.1
BOUICH Amal, W/p-1.25
BOUKHCHINA Sahar, O/p-11.26
BOULAHYA Khalid, Z/p-4.25
BOULET Pascal, E/o-12.5
BOUQUET Valérie, O/p-11.35
BOURDAIS Stéphane, AA/p-.37
BOURGUIBA Fayçal, Q/p-4.11
BOURI Maria, S/o-3.5
BOURQUARD Florent, V/o-4.3
BOUTEYRE Paul, G/p- 15.12
BOUTINGUIZA Mohamed, N/p-I.41; V/o-7.2
BOUTTEMY Muriel, BB/o-3.2
BOUVET Marcel, U/o-3.8
BOWKER Michael, H/inv-1.1
BOYCHEVA Silviya, Q/p-4.18
BOYLE Con, H/o-10.4
BOZAL-GINESTA Carlota, A/o-2.7
BRAIC Mariana, N/p-II.59; N/p-III.48
BRAIC Viorel, N/p-II.48; N/p-II.61
BRAMBILLA Alberto, U/inv-1.1
BRANZI Lorenzo, F/p-6.15
BRASSAT Katharina, L/o-11.5
BRAUN Artur, A/inv-1.4
BREAZU Carmen, V/p-10.35
BRESSER Dominic, C/o-6.5
BRETZ Coline, Y/o-1.8
BRIERE Gauthier, W/o-4.5
BRIGHI Matteo, C/o-5.2
BRINTAKIS Konstantinos, R/o-11.4
BRODERICK Christopher, W/p-2.28
BROMLEY Michael, J/o-1.13
BRONNEBERG Aafke, A/o-4.5
BROWN Nicholas, J/o-2.16
BROWNE Michelle, M/o-10.3
BRUMMERSTEDT IVERSEN Bo, Y/inv-1.1
BRUN Nicolas, L/inv-5.1; M/p-7.19; M/p-7.67
BUBECK Cora Maren, S/o-6.4
BUGA Mihaela, C/p-15.95
BUI Tan Tan, C/p-7.83
BÜLBÜL Ezgi, L/o-1.2; N/p-I.19
BULIR Jiri, N/o-9.11; O/p-3.28
BULLOCK James, D/inv-2.1
BUNDA Viktor, G/p- 15.5; H/p-1.14
BUONASSISI Tonio, AA/inv-10.1
BÜRGER Julius, Z/o-2.4
BUSATTO Serena, W/o-2.6
BUSSCHER Henk J., L/inv-9.1
BUTORIN Sergei, J/o-4.10
BYEON Seung-Ah, L/o-14.6
BYRNE John A. , H/p-1.40
BYUN Dongjin, W/p-2.5; W/p-2.20

C

C A Mithun, G/o-13.4
CABALLERO Raquel, E/o-6.7
CABALLERO-CALERO Olga, I/p-2.16
CABAS VIDANI Antonio, E/p-21.7
CAFFREY David, E/o-5.4
CAHOON James, D/inv-10.1
CAI Jialin, U/o-4.6
CAI Junzhuo, M/o-2.5
CAI Lu, J/o-1.14
CAI Xiangbin, T/o-12.6; Z/o-1.3
CAILLARD Amael, N/p-III.12
CAILLAT Thierry, I/o-6.7
CAINA Darwin, D/o-10.3; K/o-8.4
CALABRETTA Cristiano, X/o-IVb.3
CALIGIURI Vincenzo, W/o-4.4
CALTA Pavel, N/p-III.10
CALVO Florent, V/inv-1.1
CALVO Mauricio, G/o-12.5
CAMISASCA Adalberto, M/o-9.3
CAMPIONE Marcello, P/o-9.10
CANEPA Pieremanuele, C/o-5.3; AA/inv-14.1
CANIL Laura, B/p-5.4; R/p-3.1
CANNAS Marco, D/o-14.6; V/o-6.8
CANTARELLA Maria, H/o-0.0
CANULESCU Stela, E/o-5.3; T/o-2.6
CAO Jiupeng, B/p-5.67
CAO Yameng, W/p-1.4
CAO Yong, C/p-15.87
CAPEK Jiri, H/o-1.2
CAPPA Federica, BB/o-5.5
CAPPIA Fabiola, J/o-3.13
CARABETTA Joseph, C/p-15.29
CARDOSO Iseli , W/p-1.44
CARIO Laurent, S/inv-3.1
CARLI Stefano, L/o-3.6
CARLOS Emanuel, O/o-2.3

inv = invited / o = oral / p = poster

CARMINATI Saulo, A/o-10.3
CARPEN Lavinia Gabriela, O/p-3.33
CARRARO Chiara, D/p-1.26; V/p-10.26
CARREGA Matteo, T/o-12.3
CARRETERO-GENEVRIER Adrian, O/inv-8.1
CARROLI Marco, W/o-12.2
CARTER Emily, A/inv-1.3
CARUSO Giuseppe Mario, Z/o-6.4
CARUSO Viviana Carmela Linda, L/p-1.37
CARVALHO Fernanda, BB/p-1.3
CASIEZ Lara, W/p-2.15
CASSINELLI Marco, I/o-8.6
CASTELLANO Carlo, Y/o-4.5
CASTELLI Ivano Eligio, C/o-14.4
CASU Alberto, Z/p-4.9
CAUSSE Jeremy, J/o-4.5
CAVACO Adriana, K/o-8.3
CAVALEIRO Albano, N/o-9.6
CECCHINI Raimondo, I/o-4.8
CENSABELLA Maria, U/p-2.1
CERATTI Davide, B/o-4.2
CERNAIANU Mihail, V/inv-4.5
CERVANTES CERVANTES José Miguel, C/p-7.66; AA/p-.4
CHA Hyojung, H/o-14.2
CHAE Hongsik, L/o-3.5
CHAEWON Kim, J/o-2.6
CHAGAS Gabriela, N/p-I.25; N/p-III.27
CHAI Lin, V/o-11.4
CHAIMAE Azahaf, I/p-2.18
CHAKARAVARTHY Srikanth, I/p-1.13
CHAKRABARTY Poulomi, W/p-2.36
CHAKRABORTY Indranath, L/o-2.4; V/o-1.3
CHAKRABORTY Prantik, J/o-1.18
CHAMBON Sylvain, B/inv-10.1
CHAMORRO-CORAL William, N/o-9.2
CHANDRA Amreesh, C/p-15.45
CHANG Ching Chen, C/p-15.60
CHANG Jin Hyun, AA/o-9.3
CHANG Jong-San, R/o-10.4
CHANG Ren-Jie, T/o-1.2
CHANG Won Suk, M/p-7.102
CHANG Yee-Shin, H/p-2.57
CHANG Yung-Ting, T/o-4.3
CHANGHAO Liang, V/inv-7.1
CHANGIZI Rasa, W/p-1.7
CHARRIER Anne, N/p-I.67
CHATURVEDI Neha, B/o-10.2
CHAUDHARY Bhumika, G/o-4.4; G/p-15.32
CHAUVIN Adrien, N/o-4.2; Z/p-4.19
CHAVAROT-KERLIDOU Murielle, H/inv-2.6
CHAVHAN Madhav, M/o-3.4
CHAYKINA Diana, S/p-5.2
CHEGAL Won, T/p-1.4
CHELAZZI David, BB/o-2.2
CHEMMI Atika, BB/o-2.1
CHEN Bingling, K/o-8.7
CHEN Cheng-Ying, E/o-12.1
CHEN Chia-Hao, T/p-1.37
CHEN Geng, K/o-2.1
CHEN Jin-Ming, C/p-7.80
CHEN Jyh-Chen, W/p-2.39
CHEN Miao-Miao, M/o-7.13
CHEN Peilin, L/o-4.4
CHEN Pin-Jung, C/p-15.76
CHEN Po-Chun , L/p-2.7; O/p-11.2
CHEN Rongrong, N/p-III.28
CHEN Shengli, J/p-1.11
CHEN Wei Hao, O/o-15.5
CHEN Xu, Z/o-1.13
CHEN Yu-Cheng, H/p-2.59
CHEN Zhihui, V/p-10.53
CHENG Cheng-Maw, T/p-1.3
CHENG Guo-An, C/p-15.85
CHENG Hongfei, R/p-3.17
CHENG Hui-Ming, M/inv-1.1
CHENG Jianli, C/p-15.82
CHENG Junye, M/p-7.90
CHENG Lushi, AA/o-14.7
CHENG Ping Kwong, T/p-1.20
CHENGCHAO Zhong, S/p-5.7
CHENYANG Lu, J/o-2.18
CHERGUI Majed, Y/inv-2.1
CHERKOUK Charaf, C/p-7.26
CHETTAB Meriem, O/p-11.19
CHI Yuwu, M/inv-5.1
CHIA-YUEN Chou, O/p-11.18
CHIEN Forest, T/o-8.5
CHIKOIDZE Ekaterine, X/inv-II.1
CHILIBON Irinela, F/p-6.11; N/p-III.13
CHIOIBASU Diana, V/p-3.54
CHITPAKDEE Chirawat, T/o-7.2
CHNANI Ahmed, H/o-14.5
CHO Ara, E/p-20.16; E/p-20.17; E/p-21.2; E/p-21.9
CHO Byungjin, T/p-2.40
CHO Donghwan, N/p-III.68
CHO Jangwhan, N/p-III.26
CHO Jun-Sik, D/p-1.12
CHO Kyungjune, T/o-6.6
CHO Nam-Kwang, O/p-3.26
CHO Sung Haeng, S/o-6.5
CHO Won Seok, N/p-I.21
CHO Younghyun, M/p-7.106
CHOI Choon-Gi, U/o-7.3
CHOI Heechae, H/o-7.2; R/o-5.6
CHOI Hyung Wook, U/o-4.11
CHOI Jaewon, C/p-15.84
CHOI Junghoon, T/o-11.5
CHOI Jun-Gyu, O/p-3.7
CHOI Junsuk, AA/p-.51
CHOI Seong Soo, L/p-2.43; N/p-III.65
CHOI Si-Young, R/o-9.6
CHOI Won-Kook, W/p-2.42
CHOI Wonseok, M/p-7.12
CHOI Wonseok, R/p-3.15
CHOI Yoonseuk, R/p-3.10
CHOU Syun-Hong, M/o-4.1
CHOUDHARI Khoobaram, W/p-1.24
CHOUDHARY Harish Kumar, P/o-7.7
CHOUDHARY Kamal, AA/o-1.2
CHOWDHURY Ananya, C/p-15.25
CHOWDHURY Rup Kumar, T/p-1.36
CHOWDURY Md Shahjahan Kabir, L/p-1.30; M/p-7.55
CHRETIEN Jérémie, W/o-3.4; W/p-2.14
CHRISTENSEN Christian Kolle, C/o-12.5
CHRISTIANSEN Silke, R/inv-7.1
CHRISTODOULOU Sotirios, W/o-8.2
CHRISTOFI Aristi, N/p-II.44
CHROSTOWSKI Marta, D/o-3.4
CHU Wenjing, M/p-7.37
CHU Ying-Hao, O/inv-15.1
CHUEH William C., C/inv-9.3
CHUNG Dae Sung, N/p-I.58
CHUNG Jihoon, F/p-6.22
CHUNG Jiyong, O/p-3.3
CHUNG Kwun-Bum, O/p-3.29
CHUNG Seh-Hoon, F/p-6.23
CHUNG You Jung, L/o-10.3
CHYMO Filip, A/p-3.7
CIAVATTI Andrea, G/o-3.2
CICVARIC Katarina, I/p-1.11
CIOBANU Gabriela, L/p-1.32
CIOCARLAN Radu-George, H/p-1.12
CIOU Jing-Hao, U/o-6.7
CISMARU Alina, M/p-7.22
CISSE Fatou, Q/o-7.2
CLARKE Simon J, S/inv-4.1
CLIMENTE Juan Ignacio, W/o-11.5
COHEN Bruce, L/o-7.1
COHEN-KARNI Tzahi, D/inv-11.1
COLINGE Jean-Pierre, D/inv-8.1
COLOMBI Giorgio, S/p-5.3
CONESA José C., H/o-2.5
CONSTANTIN Lidia Ruxandra, N/p-II.64
CONSTANTINESCU Catalin-Daniel, V/o-9.4; V/o-9.7; V/p-10.21; V/p-10.50
COOPER Susan, Y/o-1.6
CORBY Sacha, A/o-2.3
CORDONNIER Axel, L/p-2.31
CORNELIUS Steffen, R/inv-2.3
CORTES Maria Ana, H/o-10.3
CORZO Daniel, F/o-4.2
COSSAIRT Brandi, W/inv-2.1
COSTA Rui, C/o-13.2
COSTAS Andreea, V/p-10.34; W/o-5.6
COULON Pierre-Eugene, P/p-2.14
COVEI Maria, H/p-2.21
COWELL Jordan, E/o-4.3
COYA Carmen, B/p-5.46; B/p-5.58
CRACIUN Valentin, J/p-1.22; N/p-II.12; O/inv-6.1; O/p-11.4; O/p-11.10; O/p-11.24; V/p-3.9; V/p-10.20
CRESPY Daniel, L/o-3.1
CRISTEA Dana, N/o-9.3
CRISTESCU Rodica, L/p-1.34
CRISTINA Pachiu, N/p-III.21
CROS Stéphane, B/p-5.54
CUBERO Álvaro, V/o-11.1
CUCCI Lorena Maria, L/o-13.2
CUI Yajing, K/p-7.10
CUNNINGHAM Stephen, W/o-4.7
CURULLI Antonella, BB/o-4.3

D

DABAKI Youssef, C/p-7.85
DABALA Manuele, R/p-3.18
DABOUSSI Ameni, M/p-7.42; T/p-1.18; W/p-2.35; AA/p-.25
DACHEUX Nicolas, J/o-3.10; J/o-4.8
DAENEKE Torben, O/o-16.6; T/o-10.6
D'AGOSTINO Simone, T/p-2.6
DAHN Jeff, C/inv-10.3
DAI Letian, W/o-5.4
DAI Liyan, Q/o-1.8
DAI Wubin, W/p-2.44
DALE Phillip, E/inv-7.1
DALLY Pia, B/o-8.4
DAM Bernard, S/o-1.3
DAMAYANTI Mia Kristina, C/p-15.28; C/p-15.33
D'AMORA Marta, L/p-1.13; L/p-2.36
DANESI Stefano, V/o-2.3; V/p-3.4; V/p-3.41
DANTELLE Geraldine, Y/o-1.7
DAR M. Ibrahim, B/o-4.4
DAS Amit Kumar, C/p-15.64
DAS Amlan, V/p-3.52
DAS Biswanath, H/p-1.35
DAS Chayanika, N/p-I.27
DAS Himadri Tanaya, C/p-15.58
DASCALESCU Ioana- Maria, N/p-III.8
DASGUPTA Malini, N/p-II.58
DASHITSYRENOVA Dolgor, K/p-7.5
DASKALOVA Albena, V/p-10.36
DAULETBEKOVA Alma, N/p-II.10; P/p-2.16
DAVIES Gemma-Louise, L/o-12.1
DAVYDOK Anton, N/p-I.62
DAYEN Jean-Francois, U/o-7.6; P/inv-3.2
DE ALMEIDA ZITO Cecilia, R/p-3.36; Y/p-2.1
DE ANGELIS Filippo, G/inv-10.1
DE Anurima, P/p-8.10
DE BONIS Angela, V/o-6.2
DE BUYSSER Klaartje, R/p-3.25
DE LIMA Bruno, V/p-10.57
DE MELLO DONEGA Celso, T/o-10.4
DE NALDA Rebeca, V/o-5.7
DE ROO Jonathan, Q/p-4.19; W/o-10.2; Y/o-1.2
DE SOUZA Bernardo, AA/p-.49
DE WOLF Stefaan, D/inv-1.1
DE ZEA BERMUDEZ Verónica, R/inv-4.2
DEBDUTTA RAY Haripriya, W/o-4.3
DEC Bartlomiej, AA/p-.14
DECATALDO Francesco, K/o-8.1; K/p-7.8; L/p-2.33
DEFAY Emmanuel, O/inv-10.1; Q/inv-2.1
DEGITZ Carl, N/p-III.51
DEGUELDRE Claude, J/o-1.12
DEHGHAN-BANIANI Dorsa, L/p-1.43
DEKKERS Matthijn, O/o-17.2
DEL GIUDICE Fabio, W/o-5.2
DELANEY Colm, L/o-14.1
DELERUE Christophe, P/inv-4.1
DELIMITIS Andreas, Z/o-1.8; Z/p-4.18
DELMDAHL Ralph, V/p-3.38
DELPECH Fabien, W/o-7.2
DELPECH Sylvie, J/inv-4.1
DELPORT Geraud, G/o-8.3
DEMADIS Konstantinos, BB/o-4.2
DEMCHENKO Lesya, N/p-II.49; R/p-3.21
DEMERIDOU Ioanna, T/p-1.35
DEMOURGUES Alain, S/inv-9.1
DENG Chen, M/p-7.91
DENG Li, N/p-III.64
DENNEULIN Thibaud, Z/o-2.2
DESCHAUME Olivier, L/p-1.36
DESHMUKH Sujit, M/o-2.7
DESSEIGNE Margaux, H/p-2.35
DESTA Derese, N/p-I.39
DESTOUCHES Nathalie, P/inv-4.6
DESWAZIERE Antoine, H/o-2.2
DETTLAFF Anna, M/o-9.5
DEUSCHLE Julia, N/p-III.14
DEVEREUX Stephen , L/o-12.2
DEWALD Georg, C/p-7.79
DEWAN Moumita, C/p-15.53
DEY Swayandipta, W/o-11.4
DEY Urmimala, AA/p-.57
DHAKAL Krishna Prasad, T/p-1.51
DHARMASENA Randunu Devage Ishara Gihan, F/o-3.3; F/o-3.5
DHIMAN Arjun, C/o-5.6
DHOUNDIYAL Hemlata, C/p-7.70
DI FONZO Fabio, A/o-9.5; J/o-1.15
DI MARTINO Daniela, BB/o-7.4
DI MAURO Alessandro, H/inv-11.1; H/p-2.41
DI NAPOLI Benedetta, L/o-9.4; L/p-1.20
DI Zhu, C/p-7.6
DIANATDAR LANGEROUDI Afshin, W/p-1.13
DIAS Miguel, O/o-16.1
DILOVA Tina, V/p-3.53
DIMAGGIO Elisabetta, I/o-8.9
DIMKOU Ioanna, W/o-3.5
DINCA Valentina, V/p-3.40; V/p-10.31
DINESCU Maria, V/p-3.5
DIOUF Maïmouna, B/p-5.63; N/p-I.3
DIXON Sebastian, O/o-1.3
DJEBAILI Abdelbaki, P/p-8.8; AA/p-.10; AA/p-32; AA/p-41
DJEFFAL Faycal, B/p-5.23; D/p-1.5; E/p-20.9; H/p-2.37; N/p-III.40
DJOUMI Siham, D/p-1.10
DODOO-ARHIN David, H/p-1.37; U/p-5.4
DOERNER Lars, O/p-3.9
DOHNALOVA Katerina, D/o-13.2
DOLCET SADURNI Marc, F/p-6.24
DOLHEM Franck, C/o-4.2
DOLPHIJN Guillaume, C/p-7.78
DOMARADZKI Jaroslaw, R/o-4.4
DOMEN Kazunari, A/inv-1.1
DOMINGUEZ-BAJO Ana, L/o-5.2
DOMINKO Robert, C/inv-12.3
DONAEV Sardor, F/p-6.8; P/p-2.28
DONAHUE Mary, K/o-8.2
DONG Chaoqun, F/o-3.4
DONG Chung-Li Dong, A/inv-5.1
DONG Peilong, J/o-4.11
DONG Ruoting, G/p- 15.8
DONG Ziqiang, J/o-2.15
DONGSEOB Kim, P/p-8.9
DOS SANTOS TAVARES DA SILVA Gelson Tiago, H/o-3.3
DOU Xiaoqiu, L/p-1.28
DOVYDAITIS Vilius, N/o-5.10
DOZZI Maria Vittoria, R/inv-5.3
DRAPAK Stepan, T/p-1.22
DREON Julie, D/o-2.4
DRIDI Sarra, Y/p-2.4
DRYMIOTIS Fivos, I/o-6.4
DUAN Yan, Y/p-2.11
DUBCEK Pavo, O/p-3.20
DUBOIS Simon, AA/o-3.2
DUCHENE Léo, C/o-6.1; C/p-15.7
DUDLEY Michael, X/inv-VIa.1
DUFOUR Bruno, C/o-1.3
DUGAS Romain, C/p-15.93
DUIJNSTEE Elisabeth, G/o-10.3
DUMITRACHE Florian, V/p-3.48; V/p-10.23
DUMITRESCU Nicoleta, V/p-10.25
DURAND Olivier, D/o-4.6; D/p-1.7
DURBIN Steven, E/o-6.2
DURSUN Ibrahim, G/o-2.2
DUTA Liviu Marian, V/o-5.2
DUTU Elena, V/p-10.30
DZHUMAEV Pavel, J/o-2.8

E

EBENHOCH Carola, W/o-12.5
EDRI Eitan, V/p-3.24
EENSALU Jako Siim, E/o-7.4
EGGERS Helge, B/p-5.41
EGOROV Vladimir, Y/p-2.9
EH Alice Lee-Sie, R/o-1.5
EHLEN Niels, T/o-1.3
EINARSRUD Mari-Ann, Y/inv-1.4
EINHORN Maud, I/p-2.15
EIVANI Ali Reza, P/o-1.6
EKREN Dursun, I/o-5.4
EL HAKIM Sara, H/p-2.64
EL HAT Abderrahim, H/p-2.66
EL KURDI Moustafa, W/o-3.3
EL YAKHLIFI Salima, L/o-10.4
ELDHO Edison, C/p-15.40
ELLEFSEN Oda Marie, X/p-IV.13
EL-MAROUAZI Hamza, H/o-13.4
EL-MELLOUHI Fadwa, AA/inv-7.1
ELNAGGAR Mohamed, B/p-5.51
ELOUALID Soufiane, F/o-7.2
EMELIANOVA Olga, J/o-2.12
ENEA Nicoleta, V/p-10.40
ENGBERG Sara, E/p-21.23
EOM Kwangsup, C/p-7.71
EPICIER Thierry, Z/o-6.10
EPIFANI Mauro, H/o-12.3
ERGASHOV Yoqub, P/p-2.8
ERIKSSON Therese, C/p-7.23
ERNST Owen, N/o-8.2
ERTEKIN Elif, AA/inv-14.5
ESCOBAR STEINVALL Simon, E/o-2.2
ESHRAGHI Nicolas, C/p-7.18
ESPOSITO Daniel, A/inv-7.2
ESQUIVEL Juan Pablo, F/inv-5.1
ESTANDIA RODRIGUEZ Saúl, Q/o-3.3
ESTEVE Jaume, F/p-6.1
ESTRADA AYUB Jesus Angel, E/o-10.8
ETIENNE Mathieu, L/o-5.3; L/p-2.32
EVANS Ivana, AA/o-14.4
EVANS Matthew, C/o-18.7
EVEN Jacky, G/o-1.2
EXANTUS Chellda, F/o-5.3
EYRE Lissa, G/p- 15.2
EZOE Yuhei, W/o-13.5

inv = invited / o = oral / p = poster

F

FABBRI Filippo, T/o-5.5; T/p-1.11; T/p-1.12
FABER Carina, A/p-3.6
FABRE Bruno, H/o-9.5
FAGGIO Giuliana, W/p-1.3
FAKHARUDDIN Azhar, G/o-8.5
FALKE Meiken, Z/p-4.28
FALKE Yannic, T/p-1.54
FALQUI Andrea, Z/o-6.6
FAN James, B/p-5.48
FANG Te-Hua, AA/p-.60
FANTACCI Simona, H/o-5.2
FANTONI Alessandro, P/o-7.2
FARIA Joaquim Luís, H/inv-8.6
FARIAS Daniel, T/o-7.3
FATMA Bushara, U/p-5.6
FAZOUAN Nejma, E/p-20.14; O/p-3.34
FEATHERSTONE Thomas, O/o-1.5
FEI Junjie, M/p-7.41
FELDMANN Sascha, G/o-2.5
FELSER Claudia, I/inv-4.1
FENG Shihao, M/p-7.70
FENG Yuan Ping, AA/o-2.3
FENNING David, E/inv-4.2
FERJAOUI Zied, L/p-1.45
FERLAUTO Laura, L/p-2.6
FERNANDES Daniel, H/p-1.26
FERNANDEZ Paloma, H/o-11.6
FERNANDEZ SANCHEZ Paloma, V/inv-8.5
FERNANDO Nimshi, L/o-13.1
FERRARO Mario, W/o-4.6
FERREIRA MUCHE Dereck Nills, A/o-4.3
FERRER Isabel J., E/p-20.3; H/p-1.38
FINA Ignasi, O/o-8.2; Q/o-7.6; Q/p-4.16
FIORENZA Patrick, X/inv-II.2; X/p-V.11
FIORENZA Roberto, H/o-8.2
FIORETTI Angela, D/o-2.5
FISICARO Giuseppe, X/o-VIIa.3
FIX Thomas, E/o-2.6; O/o-6.5
FLEACA Claudiu, H/p-1.24; L/p-1.24; V/p-3.50
FLECK Nicole, E/o-7.2
FLINOIS Thomas, L/o-13.4
FLOREA Larisa, L/o-3.4
FLORES Eduardo, I/p-1.1; I/p-2.3
FLORICA Camelia - Florina, W/p-2.32
FOLKERSMA Steven, W/o-12.6
FONOLL RUBIO Robert, E/o-6.6
FONTCUBERTA I MORRAL Anna, W/inv-5.1
FORERO-SABOYA Juan, C/p-15.94
FORNARI Marco, I/inv-4.6
FOROOZAN Tara, C/p-7.37
FORTUNATO Elvira, O/inv-1.1
FRANCHINA VERGEL Nathali Alexandra, W/o-4.2
FRANCIS Leonard, N/o-6.7; Z/o-6.7
FRANCISCO Adrian, B/o-1.3
FRANCO Isabel, BB/o-1.1
FRANK Anna, O/o-17.1
FREDJ Donia, N/p-I.13
FREITAG Marina, B/o-11.6
FREITAG Stefanie, C/o-7.4
FREUNBERGER Stefan, C/inv-17.3
FRIEDERICH Pascal, AA/p-.53
FRIEDFELD Max, W/o-2.4
FRIEIRO Juan Luis, D/o-9.6
FRITSCH Daniel, AA/o-15.6
FROHLICH Karol, H/o-9.6
FROLOVA Lyubov, B/p-5.47; B/p-5.64
FROUDAKIS George E., AA/inv-6.1
FUGER Christoph, N/o-5.4
FUJIMOTO Kenjiro, AA/p-.43
FUKS David, I/o-5.12
FUKUNAGA Kaori, BB/o-5.3
FUNAHASHI Ryoji, I/inv-6.1
FUNATSU Asami, T/o-10.5
FURGEAUD Clarisse, N/p-II.23
FURUBAYASHI Yutaka, O/o-1.7
FUST Sergej, W/o-14.6
FUTSCHER Moritz, B/o-1.6

G

GABOR Ur□Ka, O/o-10.3
GAI Zhigang, M/p-7.38
GAILLARD Nicolas, A/inv-5.6
GALAR Pavel, D/o-12.2
GALDAMEZ Andres, N/p-III.44
GALKOWSKI Krzysztof, B/p-5.52
GALL Daniel, N/inv-5.1
GALSTYAN Vardan, P/o-7.7
GAN Tian, M/p-7.33
GANGULY Chaitanyamoy, J/o-4.14
GANSUKH Mungunshagai, E/o-1.6
GAO Feng, B/inv-2.1; W/inv-3.1
GAO Jiawu, J/o-1.5
GAO Pengcheng, M/o-11.5
GARCIA Hermenegildo, H/inv-3.1
GARCIA-BORDEJE Enrique, M/p-7.89
GARCIA-EMBID Sonia, L/o-14.3
GARCIA-LECHUGA Mario, V/o-9.2
GARG Priyanka, H/p-1.5
GAROI Petronela, O/p-3.24
GARRIGUE Mathieu, J/o-3.9
GARTNER Mariuca, N/p-II.24
GARVEY Shane, D/o-5.3
GASPAROTTO Alberto, H/o-11.2; H/p-2.9
GATHER Malte, W/inv-6.1
GAUDIN Jerome, V/p-10.24
GAUDIN Michaël, O/o-6.2
GAWLINSKA Katarzyna, G/p- 15.4
GAY Maxime, T/o-3.4
GAZQUEZ Jaume, Q/o-6.6
GEDDA Murali, G/o-13.3
GEIREGAT Pieter, W/o-11.3
GEORGIEVA Margarita, D/o-7.5
GERBER Evgeny, J/o-3.3
GERVILLA Victor, N/o-1.9
GHALI Mariem, H/p-1.56
GHAMGOSAR Pedram, E/p-20.19
GHANBARI Hajar, V/p-10.27; P/o-9.6
GHARAVI Mohammad Amin, N/o-5.2
GHARBI Mariem, O/o-8.3; Q/o-1.4
GHARIBZADEH Saba, B/o-7.5; G/o-7.5
GHEVANDA Inechia, C/p-15.13
GHIRINGHELLI Luca, AA/inv-6.5
GHISANI Fairouz, E/p-21.6
GHOSH Ramesh, D/p-1.13
GIANNAKOU Pavlos, C/p-15.23
GIANNAZZO Filippo, T/o-11.4; T/p-1.21; X/o-II.4; X/o-X-VIb.2; X/p-/V.7
GIANNINI Vincenzo, P/inv-4.5
GIAPPA Rafaela-Maria, AA/o-11.5
GIORDANI Silvia, L/o-10.1
GIORDANO Valentina, I/inv-4.7
GIORGIO Giuffredi, H/p-1.44
GITY Farzan, X/o-IVa.1
GLECHNER Thomas, N/o-7.3
GODDARD Dave, J/inv-1.1
GODDARD Pooja, C/o-15.6; C/p-15.69; T/p-1.29; AA/o-14.3
GODET Marie, BB/o-7.1
GODIGNON Philippe, X/inv-IVb.1
GODLEWSKI Michal M, L/p-1.18
GODOVSKY Dmitri, I/o-6.5
GOERBIG Mark Oliver, T/o-12.2
GOERING Petra, D/o-15.3
GOETZ Katelyn, B/o-4.3
GÖKCE Bilal, V/o-6.4
GOLOVANOVA Viktoria, AA/p-.18
GOMES Francisca, L/p-1.25
GOMEZ Leyre, G/p- 15.26
GOMEZ-MARTIN Aurora, C/o-13.1
GONCALVES M. Cristina, R/p-3.45
GONCHAR Kirill, D/o-2.7; W/p-1.43; I/o-7.5
GONG Xuefei, C/p-7.16
GONGALSKY Maxim, L/p-2.35; L/p-2.37
GONZALEZ José Eduardo, I/p-2.20
GONZALEZ-POSADA FLORES Fernando, P/o-7.5
GONZALEZ-ZALBA Fernando, D/inv-9.1
GONZALO Jose, V/o-4.6
GORAI Prashun, I/o-1.5; I/p-2.8; AA/o-10.6
GORKOVAIA Ekaterina, Q/p-4.8
GOTT James, W/o-14.5
GOUMANS Fedor, AA/o-6.7
GOYAL Anuj, B/o-1.4; AA/o-10.3
GRAILLOT VUILLECOT Robin, N/o-8.5
GRAMMATIKAKIS Ioannis, BB/o-4.1
GRANOZIO Fabio, O/inv-4.1
GRAY Rebecca, J/o-2.20
GRAY Victor, W/o-1.3
GRAZIANI Gabriela, L/o-6.4
GREENBERG Ehud, V/o-5.3
GREGG Marty, Q/inv-6.1
GREGORKIEWICZ Tom, P/inv-3.1
GRENDAL Ola, Y/o-2.6
GRIES Thomas, N/o-9.7
GRIGORESCU Cristiana E. A., N/o-5.11
GRIGORESCU Cristiana Eugenia Ana, M/p-7.34
GRIGORIEVA Irina, T/o-3.6
GRIMAUD Alexis, C/o-14.2
GRIN Yuri, I/inv-1.1
GROCHOWSKA Katarzyna, H/p-2.22; L/p-2.30; V/p-3.2
GRØNBJERG VEJ-HANSEN Ulrik, AA/o-4.3
GROSS Andrew James, L/o-4.2
GROSS Axel, AA/inv-9.1
GROSSBERG Maarja, E/o-9.6
GRYSZEL Maciej, A/o-7.8; H/p-2.56
GU Huiquan, J/o-1.4
GUAN Cao, C/p-15.17
GUANQI Tang, G/p- 15.30
GUBANOV Viktor, T/p-1.14
GUCCIARDI Pietro Giuseppe, P/inv-7.1
GUDOVSKIKH Alexander, D/o-4.5; W/o-9.6
GUEDJ Cyril, AA/o-11.6
GUEGAN Damien, C/p-15.26
GUERBOUKHA Mohamed-Amine, W/p-1.40
GUIDI Vincenzo, U/inv-3.1
GUIGOZ Vincent, H/o-2.3
GUILMEAU Emmanuel, I/inv-2.1
GUIZARD Stephane, V/o-8.3
GÜLLÜ Hasan Hüseyin, V/p-10.11
GUO Fangyu, Z/p-4.2
GUO Fengxiang , M/p-7.79
GUPTA Abhishek , W/o-3.7
GUPTA Arunava, O/inv-14.1
GUPTA Deepak, C/p-7.31
GUPTA Ritu, H/p-1.32
GUPTA Saatviki, E/p-21.21; H/p-1.33
GUPTA Surbhi, O/o-17.5
GÜRAKAR Sibel, N/p-I.42
GURIEVA Galina, E/o-8.5
GÜTAY Levant, E/inv-8.1
GUTIERREZ MORENO Jose Julio, L/p-2.44
GUTIERREZ-LEZAMA Ignacio, T/o-12.4
GUY Kevin, S/o-6.3
GYUMIN Jang, E/o-4.4

H

HA Jaeun, I/p-1.10
HAAS Benedikt, T/p-2.32; Z/o-3.5
HAASE Katherina, W/o-12.3
HACHICHA Rahma, C/p-15.50
HADERMANN Joke, S/inv-6.1
HAFFAD Slimane, H/p-2.28
HÄGGLUND Carl, R/inv-6.2
HAIGH Sarah, Z/inv-5.1
HAISHAN Shen, I/o-6.3
HAJJI Mohammed, B/p-5.66
HAMDAN Ahmad, P/o-1.11
HAMOUDA Wassim, Q/o-5.7
HAMUI Leon, D/p-1.36
HAN Byungchan, R/o-10.7
HAN Dong, O/o-15.3; I/o-2.7
HAN Il Ki, P/p-2.20
HAN Jae Hyun, H/p-1.45
HAN Joong-Hee, C/p-15.77
HAN Junwei, M/o-6.4
HAN Seung Ho, R/o-4.3; R/p-3.5
HAN Seungwoo, I/p-1.19
HAN SOL Lee, T/o-9.5
HAN Xiuxiu, M/o-7.101
HANEN Ben Jbara, N/p-III.67
HANUI Choi, U/p-5.7
HANY Roland, W/o-8.6
HANZE Martin, K/o-2.7
HAQUE Md, I/o-4.9
HARADA Jaye, S/o-8.2
HARADA Tomoki, E/o-2.4
HARADA Yoshihisa, Y/inv-2.2
HÄRK Eneli, C/o-13.6
HÄRTEL Marlene, O/p-3.36
HARTMANN Korina, F/o-5.5
HASEGAWA George, M/o-6.6
HASSAN Shehab, R/p-3.44
HASSINE Safa, H/p-1.53
HATTON Peter, E/o-9.5
HATTON Ross, B/p-5.14; N/o-8.6
HAULE Kristjan, AA/inv-8.1
HAVRYLIUK Oleksandr, D/p-1.1
HAYASHI Katsuro, S/inv-2.1
HAYASHI Koichi, X/o-VIa.3
HAYDOURA Mohamad, Q/o-1.1
HAYE Emile, C/o-2.1; N/o-7.2
HAYNE Manus, W/inv-12.1
HE Guansong, M/p-7.87
HE Xin, T/p-1.43
HE Zhanbing, Z/p-4.16
HEBERT Sylvie, I/inv-5.2
HEJAZI Seyyedmohammadhossein, H/o-11.5
HELENE Porthault, F/o-5.6
HEMAM Rachna, R/p-3.6
HENDRICKS Terry, I/o-6.8
HENS Zeger, G/o-3.4; W/o-10.7
HEO Deokjae, F/p-6.6
HEO Sung Gue, H/p-1.46
HEQUET Valerie, H/o-4.4
HERCKENS Roald, G/p- 15.24
HERLAND Anna , K/o-3.5
HERNANDEZ GUTIERREZ Guiomar, C/o-6.2
HERNANDEZ Olivier, S/o-1.2
HERNANDEZ VASQUEZ Cesar, F/p-6.2
HERNANDEZ-PEREZ Maria De Los Angeles, N/p-III.33
HESKE Clemens, A/inv-5.4
HEUN Stefan, T/p-1.50
HIDALGO Julia, J/o-3.14
HIGGINS Eliott, E/o-2.5
HIKOV Todor, N/p-II.47
HILLEBRECHT Harald, G/inv-4.1
HILLIER James, V/o-9.6
HIMCINSCHI Cameliu, O/inv-9.6
HIRSELANDT Katrin, B/p-5.10
HIRUNSIT Pussana, O/p-3.46
HIRWA Hippolyte, W/o-13.2
HMADEH Mohamad, H/p-1.34
HO Ghim Wei, A/inv-2.2
HOANG Phuong, L/p-2.28
HOEX Bram, D/inv-3.1
HOFER Christoph, Z/o-5.2
HOGAN Benjamin, T/p-1.13; U/o-1.10; U/p-5.5
HOLBAN Alina-Maria, L/p-1.10; N/p-III.36
HOLEC David, N/o-1.2
HOLLEVOET Simon, C/o-5.1
HOLMES Natalie , B/o-11.5
HOMKAR Suvidyakumar, O/o-14.6
HONEIT Florian, W/p-1.42
HONG Hye-Jin, M/p-7.45
HONG Hyunmin, O/p-3.25
HOPPER Tom, G/o-2.6
HORAKOVA Katerina, N/p-II.57
HORNE Joseph, H/p-1.1
HORVATH Endre, G/inv-9.1
HORYNOVA Eva, O/p-3.32
HOSONO Hideo, S/inv-1.1
HOSSAIN Md Ashraf, O/p-11.34
HOSSEINI Seyedmilad, C/p-15.18
HOT Julie, H/o-7.4
HOU Lili, W/p-2.46
HOU Qing, AA/o-7.7
HOUSKA Jiri, N/inv-1.1
HOYE Robert, O/inv-2.1
HSI-CHIN Wu, L/p-1.41
HSIEH Gen-Wen, P/o-9.5
HSU Klaus Yung-Jane, U/o-3.9
HSU Yao-Jane, G/p- 15.19
HSU Yu-Hsuan, L/o-12.5
HU Benlin, T/p-2.11
HU Bin, N/p-II.66
HU Chengguo, M/p-7.50
HU David, H/o-14.4
HU Huiping, I/p-1.14
HU Jin, N/p-I.65
HU Peipei, J/p-1.16
HU Yan-Jun, M/p-7.75
HU Zhelu, B/p-5.62
HU Zhiguang, M/p-7.21
HUANG Chi Cheng, W/o-10.4
HUANG Chia-Ching, D/o-14.4
HUANG Han, V/p-10.52
HUANG Jian, W/p-2.34
HUANG Jingtao, H/o-5.5
HUANG Mao Dong, B/p-5.8
HUANG Ruomeng, I/o-1.12
HUANG Shih-Hsuan, B/p-5.16
HUANG Wei-Hua, M/inv-9.1
HUANG Wen-Chang, N/p-III.5; O/p-3.45
HUANG Yicun, AA/o-11.8
HUET Karim, V/o-11.9
HUGHES Robert, U/o-6.5; Z/p-4.31
HUMAYOUN Usama Bin, M/p-7.88
HUNG Peisung, N/p-I.33
HUSSAIN Kashif, B/p-5.24
HWANG Soo Min, C/p-7.20
HWANG Yun Jeong, A/o-9.7
HYATT Neil, J/o-3.5; J/p-1.27
HYE MIN Oh, T/p-1.49
HYE YEON Jang, T/p-2.15
HYERIN Jeong, I/p-1.6
HYUN Seungmin, C/p-7.32
HYVL Matej, D/o-3.2

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IANNACI Alessandro, L/p-2.39; M/o-10.5
IBRAHIM Osama, O/p-3.39
IBRAHIM Sara, N/p-II.60
IBRAHIM Sherif, O/o-7.5
IDA Shintaro, S/o-4.3
IDRIS Sora, R/p-3.53
IDRISS Hicham, A/inv-7.5
IGLESIAS Iñigo, T/o-4.2
IIDA Tsutomu, I/o-7.4
IKEDA Susumu, N/p-I.11
ILIE Alina Georgiana, V/p-3.47
ILJINAS Aleksandras, O/p-11.42
IM Minho, O/p-11.36
IMAI Motoharu, I/p-2.2
IMANI Roghayeh, G/o-2.3; H/p-2.42
IMPELLIZZERI Anthony, M/p-7.24
INAL Sahika, K/inv-4.1
INANI Heena, Z/p-4.17

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INGLE Swapnil, M/p-7.49
INGRID Rodriguez, A/inv-10.7
IOANNOU Ioanna, I/p-2.9
IOANNOU Panagiotis, M/p-7.47; O/o-12.3
ION Valentin, V/p-10.47
IRIMICIUC Stefan-Andrei, V/o-7.4
ISAAC Nishchay Angel, R/o-11.5
ISHII Fumiyuki, I/o-4.4
ISMAILOVA Esma, K/o-2.4; K/o-8.2
ISSAM Ziane, E/p-21.27
ITZHAK Anat, B/p-5.29
IVAN Shtepliuk, N/o-4.4
IVANYUTA Oleksandr, K/p-7.13; L/p-2.17; M/p-7.7
IVERSEN Bo Brummerstedt, I/inv-1.2

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JAANISO Raivo, U/o-3.3
JACKSON Nathan, F/inv-1.1
JACOB Stephane, I/o-8.5
JACOBSSON Daniel, Z/o-6.2
JADHAV Vijaykumar, C/p-15.15
JAE YEON Park, Y/p-2.7
JAE-HONG Lim, R/o-8.4
JAEHYUNG Lee, W/p-2.8
JAEKOOK Kim, R/o-10.3
JAFARI Atefeh, Y/p-2.8
JAFAROV Maarif, D/p-1.23; H/p-1.4
JAFFRE Alexandre, D/p-1.39
JAHAN Kousar, H/o-8.3
JAHANBAKHSHI Farzaneh, G/o-14.5
JAIN Nakul, B/p-5.39
JAIN Noopur, R/p-3.7; R/p-3.47; R/p-3.51; Y/p-2.10; Z/o-6.11
JÄKER Philipp, A/o-5.2
JALOUSTRE Lucas, W/p-1.17
JAMNIG Andreas, N/o-6.6; N/p-III.39
JAMROZ Agnieszka, T/o-4.4
JAN Macutkevic, P/o-5.4
JANANI B, W/p-1.9
JANDT Klaus, L/inv-1.1
JANG Bongkyun, K/p-7.9
JANG Hansaem, O/p-3.40
JANG Hyun-Seok, I/p-2.4
JANG Inyoung, N/p-III.6
JANSEN Marvin Marco, W/p-1.5
JÄRVEKÜLG Martin, L/p-1.16
JASINSKI Piotr, R/inv-2.6
JAVDOSNAK Daniel, N/o-7.4
JAVED Sofia, H/p-1.28
JE Minyeong, H/p-2.47
JEDRECY Nathalie, O/o-8.4
JENA Sambedan, C/p-15.43
JENEI István-Zoltán, Z/o-1.9
JEON Jun Woo, M/p-7.103
JEON Min Seok, U/p-5.2
JEON Sohyun, U/p-2.8
JEONG Dong In, U/o-4.9
JEONG Hyeon Su, U/p-5.11
JEONG Hyung Mo, C/p-15.66
JEONG Jaeyoung, L/p-1.19
JEONG Ji-Eun, N/p-II.39
JEONG Sangmin, N/p-I.32; N/p-I.61; N/p-III.49; O/p-3.41
JEONG Seong Guk, O/o-15.4
JEONG Yeonsu, T/p-1.9
JESSE Stephen, Q/inv-0.0
JEVASUWAN Wipakorn, W/p-1.39
JHA Plawan Kumar, C/p-15.83
JI Liudi, M/p-7.35
JI Tienchi, C/p-7.28
JI Xiaobo, M/inv-10.2
JIA Shuang, I/inv-4.2
JIANG Ying, K/o-1.3
JIAO Long , M/p-7.58
JIAQI Wei, M/p-7.73
JIE Wang, N/p-I.60
JIHWAN An, N/p-I.5
JIMENEZ Fernando, T/o-9.4
JIN Hye-Jin, T/p-2.43
JIN JOO Ryu, N/p-I.16
JIN Song, A/inv-4.1; G/inv-3.6
JING Xiaoyan, J/p-1.4
JINGHUA Guo, A/inv-10.1
JINGYUAN Liu, U/p-5.14
JINSEOK Choi, U/p-2.30
JIUN-XIANG Chen, M/p-7.25
JI-WON Choi, P/p-2.2
JO Jaeyeon, Z/p-4.14
JO Yejin, U/p-2.24
JO Young-Moo, W/p-2.30
JOAQUIN Joaquin, H/p-2.12; H/p-2.20
JOHANSSON Erik M., G/o-9.4
JOHANSSON Patrik, C/inv-5.4
JOHN Neena, U/o-1.8
JOHN Philipp, O/p-11.3
JOHNSON Hannah, U/o-4.2
JOKUBAVICIUS Valdas, X/p-/V.9
JONES Leanne, T/p-1.38
JONSSON Magnus, R/inv-1.7
JOOKEN Stijn, L/o-11.3
JOSE A. A. Garrido, K/inv-5.4
JOSEPH Reetu Elza, AA/o-8.6
JOSEPHINE Josephine, W/o-2.3
JOSEY Jeremiah Emanuel, J/p-1.2
JOYA Khurram, A/o-9.11
JU Peihai, J/o-1.3
JUCHAN Lee, T/o-3.5
JUELSHOLT Mikkel, Y/o-4.3
JUKNA Vytautas, V/o-1.8
JUN Byung-Hyuk, O/p-3.48
JUN Hoyoung, T/p-1.40
JUN Wang, J/p-1.10
JUND Philippe, I/o-5.13
JUNG Felix, Z/p-4.4
JUNG Hye Ri, G/o-12.4
JUNG Hyun Kyu, C/p-7.68; O/p-11.15; O/p-11.16
JUNG Jaehan, W/p-1.37
JUNG Sung Hyeon, H/p-2.71
JUNG Sungjune, K/o-6.5
JUNG Sun-Min, U/p-2.32
JUNG Won Taek, M/p-7.15
JUNG Woo-Bin, U/p-2.22
JUNG Yeon Sik, R/o-9.4
JUNG Young-Kwang, G/o-10.5
JUNG-HOON Yu, E/p-21.24
JUNKAEW Anchalee, AA/p-.2
JUNXING Hao, M/p-7.61
JURAS Banys, G/p- 15.18
JUSTEAU Camille, F/inv-1.4
JYOTSNA DUTTA Majumdar, V/p-3.39

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KAABI Abbes, U/p-5.13
KACEM Hend, P/o-1.4; P/p-2.13
KAGEYAMA Hiroshi, S/o-2.2
KAHLE Leonid, AA/o-9.2
KAHRAMAN Abdullah , A/o-8.4
KAISER Bernhard, H/o-6.2
KAISER Simon, AA/p-.8
KAJZER Wojciech, L/p-1.21
KAKANAKOVA Anelia, X/o-II.3
KALETA Anna , Z/o-6.3
KALFAGIANNIS Nikolaos, Q/o-3.4
KALINICHENKO Alexander, N/p-II.5
KALITA Parswajit, J/o-3.8
KÄLLBOM Arja, BB/o-3.5; BB/p-1.1
KALMYKOV Stepan, J/p-1.3
KALSOOM Umme, M/o-2.6; R/p-3.13
KALTENBRUNNER Martin, K/o-1.2
KALYAN Imon, P/p-2.15
KAMINSKA Paulina, I/p-2.1; AA/p-.50
KAMOUN Najoua, H/p-2.10; H/p-2.18; AA/p-.35
KAN Lei, P/p-8.13
KANDYLA Maria, N/p-I.44; V/o-9.3; W/p-2.1
KANG Eunheui, H/o-12.5
KANG Feiyu, M/inv-6.1
KANG Han Sol, N/p-III.69
KANG Hari, M/p-7.27; M/p-7.28
KANG Hong Seok, AA/o-5.3
KANG Jae-Hyun, L/p-2.8
KANG Jae-Wook, B/p-5.68
KANG Jeung Ku, R/inv-10.1
KANG Keehoon, G/o-13.2; I/o-8.8
KANG Suhee, A/o-9.8
KANGUR Triin, R/p-3.37
KANSIZ Mustafa, L/p-2.2
KAPNOPOULOS Christos, V/o-11.3
KAPPERTZ Oliver, N/inv-8.1
KARABANOV Sergey, AA/p-.20; AA/p-21; AA/p-22; AA/p-46
KARAN Sumanta Kumar, F/o-1.3
KARUNADASA Hemamala, G/inv-1.1
KASALI Suraju, E/p-21.29
KASSAVETIS Spyros, L/p-1.23; N/p-III.47
KATAGIRI Kiyofumi, S/o-6.2
KATERINOPOULOU Dimitra, F/o-4.6; N/p-I.57
KATUMO Ngei, R/p-3.50
KATZ Howard, K/inv-3.1
KAUK-KUUSIK Marit, E/p-20.5; E/p-20.10
KAUPMEES Reelika, T/p-2.26
KAURIC Guilhem, J/p-1.23
KAUSHIK Vishakha, T/p-1.30
KAWAHARAMURA Toshiyuki, O/p-3.35
KAZAKEVICIUS Edvardas, C/p-7.33
KE Chun-Ren, B/o-2.5
KEDIONIS Algimantas, C/p-7.21
KECKES Jozef, N/o-7.5
KELIRES Pantelis, N/o-1.4
KELLY Jamie, H/o-12.2
KENNEDY Rory, J/o-3.1
KERGOURLAY Florian, BB/o-5.1
KERRAMI Zineb, N/o-9.9

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KESHTOV Mukhamed, B/p-5.30
KEUTGEN Jens, Z/p-4.27
KHADIJA Bibi, K/o-6.7
KHAKBAZ Hadis, P/o-10.5
KHALILIAZAR Shirin, K/o-2.8
KHAMMARI Amir, Z/o-6.5
KHAN Javed, B/p-5.40
KHAN M., W/o-13.3
KHAN Muhammad Ejaz, B/p-5.44
KHANG Dahl-Young, D/o-4.7
KHARIN Alexander, V/p-3.18
KHAYRUDINOV Vladislav, W/o-5.5
KHAYYAM NEKOUEI Sayyed Rasoul, R/p-3.48
KHELIFI Samira, E/o-8.6
KHEMIRI Naoufel, E/p-20.15; H/p-2.49; V/p-10.5; Z/p-4.29
KHIARA Nargisse, J/p-1.8
KHISHCHENKO Konstantin, J/o-3.11; V/o-2.7; AA/p-.29
KHODAKOV Andrei, H/o-3.4
KHOKHLOVA Mariya, O/p-3.11
KHOMCHANKA Uladzimir, Q/p-7.20
KHOMENKOVA Larysa, N/p-II.8; O/p-3.42
KHUSHALANI Deepa, C/o-3.3; G/o-1.5
KILIÇ Alp, N/p-III.19
KIM Jae-Keun, T/p-1.27
KIM Banseok, F/p-6.3
KIM Byung Gon, C/p-7.84
KIM Byung Hoon, M/p-7.97
KIM Cham, C/p-7.24
KIM Chang Soo, E/p-21.16; N/p-II.67
KIM Chanho, U/p-5.1
KIM Daeho, N/p-II.26
KIM Dongseob, F/p-6.16
KIM Dongseok, M/p-7.2
KIM Dongsu, H/p-1.6
KIM Duckjong, U/p-5.23
KIM Eun Jeong, C/o-12.4
KIM Eun Jung, M/p-7.20
KIM Eunjong, R/o-7.5
KIM Ga-Young, N/p-I.52
KIM Guan-Woo, B/p-5.33
KIM Hangeul, O/p-3.18
KIM Heesuk, U/p-2.6
KIM Hee-Wung, W/p-2.13
KIM Hyeok, B/p-5.27
KIM Hyojun, O/o-1.6
KIM Hyojung, T/o-11.3
KIM Hyun Bin, G/o-9.3; O/p-3.2
KIM Hyungtak, X/p-/V.12
KIM Hyunho, I/p-1.5
KIM Hyunji, I/p-1.7
KIM Hyun-Kyung, C/p-7.61
KIM Hyunmyung, J/o-2.7
KIM Jae Hyun, C/p-7.56
KIM Jeong Hwan, N/p-II.62
KIM Jinsoo, U/p-2.31
KIM Jinyeong, L/p-2.40
KIM Jisoo, O/p-11.22
KIM Joo Yeon, V/p-3.55
KIM Jooheon, F/p-6.26; I/p-2.19
KIM Juae, H/p-1.65
KIM Jung Kyu, H/p-2.14
KIM Juran, E/o-7.7
KIM Juye, H/p-2.3
KIM Keon-Han, H/p-2.55
KIM Keun Su, T/inv-8.1
KIM Kinam, J/p-1.28
KIM Kyeong-Ho, C/o-18.2
KIM Min-Seok, I/p-2.12
KIM Myung Hwa, U/o-4.10
KIM Na-Hyang, O/p-3.15
KIM Sang Ouk, M/inv-11.2; R/inv-9.2
KIM Seong Keun, T/p-2.27
KIM Soo Min, T/p-2.21
KIM Suk Jun, N/p-II.9
KIM Sun Gil, G/o-13.1
KIM Sung Ryong, N/p-III.30; R/p-3.30
KIM Sunghyun, E/o-8.8
KIM Yejin, G/p- 15.25
KIM Yeon Soo, G/p- 15.36
KIM Yeongae, D/o-15.5
KIM Yeong-Cheol, AA/p-.30; AA/p-39
KIM Yeongho, U/p-5.3
KIM Yongtae, D/p-1.46; D/p-1.47
KIM Young Been, H/p-2.69
KIM Youngjin, R/o-12.2
KIM Youngkwang, R/p-3.32
KIM Yuna, N/p-I.6
KIN Li-Chung, F/p-6.19
KINKA Martynas, P/p-8.11
KINYANJUI Michael, C/o-10.6; U/p-2.18; Z/o-5.3
KIRYUKHANTSEV-KORNEEV Philipp, N/o-2.5; N/p-III.58
KLEIN Andreas, O/inv-13.2
KLEMENT Philip, T/o-7.5
KLIMOV Victor, A/inv-2.6
KLIMOVICH Irina, B/p-5.26
KLOBERG Marc, T/p-2.34
KNAPP Caroline, N/p-II.38
KNOCHE David, Q/o-3.2
KNOOPS Harm, N/inv-3.1
KO Jongwon, A/p-3.5
KOBLMUELLER Gregor, W/inv-14.1
KOCHKODAN Viktor, N/p-I.2; N/p-III.1
KODAN Nisha, H/p-1.43
KOEL Bruce, A/inv-7.1
KOENIG Dirk, D/inv-9.2; D/o-6.2; W/o-5.3
KOERBEL Sabine, Q/o-6.5
KOEV Krassimir, N/p-II.40
KOLEVA Mihaela, V/p-10.42
KOLOSOV Vladimir, N/o-6.5; Z/p-4.12
KOLOTOVA Ln, V/p-3.34
KOMATSU Naoki, M/inv-2.1; L/o-12.3; T/p-1.1; T/p-2.2; T/p-2.31
KONDATI NATARAJAN Suresh, N/o-1.10
KONEDANA Sarah, W/p-2.47
KÖNIG Jan, I/inv-5.9
KONSTANTATOS Gerasimos, B/inv-3.1; W/inv-1.1
KOO Chong Min, N/p-I.53
KOO Junmo, N/p-I.9
KORCHEV-KHINA Olga, E/p-21.5
KORMATH MADAM RAGHUPATHY Ramya, AA/o-10.5
KOROLEVA Olga, V/p-10.18
KOSCO Jan, A/o-7.9
KOSHEVARNIKOV Aleksei, U/o-1.9
KOSTOPOULOU Athanasia, G/o-5.2
KOTOVA Maria, B/o-11.2
KOUSSI Erieta-Katerina, N/p-I.12; V/p-3.22
KOUTSELAS Ioannis, G/o-3.3
KOUTSOUROUBI Eirini, H/p-2.6
KOVALENKO Maksym, G/o-6.2
KOVTUN Alessandro, T/p-1.15
KOZLOV Anatoly, O/p-11.17
KOZLOWSKA Mariana, H/o-14.3; AA/o-10.2
KRAEVAYA Olga, C/p-7.55
KRAHNE Roman, W/p-1.20
KRASNIKOVA Irina, C/p-15.70
KRAUSE Bärbel, N/inv-6.1
KRÄUTER Marianne, N/p-II.51
KRET Slawomir, Z/p-4.11
KRETKOVA Tereza, N/o-6.2
KRIVOSHEEVA Anna, T/p-1.41
KROENCKE Hanno, O/o-1.4
KSIBI Amani, J/o-1.7
KU Hsin-Ning, L/p-2.5
KUBART Tomas, N/o-5.6
KUCZYNSKA-ZEMLA Donata, V/o-11.6; V/p-3.1; V/p-3.32
KUDRYASHOV Dmitry, D/p-1.3
KUHL Florian, R/o-7.4
KUILA Saikat Kumar, T/p-2.33
KUK Seoungwoo, J/o-4.2
KULKARNI Suresh, W/p-1.8
KUMAR Mohit, M/o-4.2
KUMAR Nirmal, N/p-II.52
KUMAR Raj, L/p-1.7; L/p-1.8; L/p-1.22; L/p-2.14
KUMAR Sunil, C/p-15.54
KUMAR Vikas, B/o-4.5
KUMARI Navnita, T/o-7.4
KUN Péter, T/p-1.34
KÜNZEL Matthias, C/o-11.1
KUO Chia-Tung, C/p-7.22
KUO Chiung Wen, L/p-2.22
KUO Tai Chen, D/o-9.5
KURELCHUK Ulyana, AA/p-.6
KURMANBAYEVA Indira, C/p-7.38
KURUMI Satoshi, V/p-3.27
KUSOVA Katerina, D/o-14.3
KUZOVKOV Vladimir, J/p-1.30; P/p-2.24
KVARNSTRÖM Carita, P/inv-7.1
KVASHNINA Kristina, J/o-3.2
KWANG-HO Lee, L/p-2.18
KWON Chaebeen, U/p-5.8
KWON Hyeok-Chan, E/o-4.6
KWON Oh Hyeong, L/p-1.44
KWON Oh Seok, P/p-2.29
KWON Seok Hun, M/p-7.5
KWON Sera, O/p-3.8
KWON Soongeun, F/p-6.27
KWON Ye Lim, M/p-7.23
KWON Yongchai, L/p-2.48
KWON Youngkook, H/p-2.44
KYEONG Minkyu, B/o-2.7
KYNDIAH Adrica, K/o-6.3
KYOTA Uda, W/p-1.31

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LA MAGNA Antonino, X/o-VIIb.3
LA PLACA Maria Grazia, B/o-9.3
LA VIA Francesco, X/o-Ib.2
LABIDI Sana , H/p-1.48
LACHHEB Myriam, Q/o-6.4
LACROIX Lise-Marie, P/o-5.2; P/p-8.5
LAGUDUVA KUPPUSAMY Preethi, H/p-1.57
LAHA Sourav, T/p-1.46
LAI Guosong, M/p-7.57
LAI Samson, C/p-7.50
LAI XUAN Bach, M/p-7.3; O/p-3.4
LAKHDAR CHAOUCHE Soraya , N/o-8.4
LAKRAYCHI Alae, C/p-7.53
LAKSHMINARAYANA Polavarapu, G/o-5.3
LAMBERTI Francesco, E/o-4.5
LAMI Vincent, B/o-10.3
LAMMER Judith, Z/o-1.7
LAMPERTI Alessio, T/p-2.14
LAMSAF Hafsae, N/o-5.12
LAN Qianqian, Z/o-2.5
LANCOK Jan, V/p-10.4
LANGE Felix, W/o-14.4
LANGENBERG Eric, Q/o-6.2
LANTEAN Simone, P/o-10.3
LANY Stephan, E/inv-6.1; AA/o-2.6
LARSEN Jes, E/o-6.4
LARSSON Karin, M/inv-8.1
LASSAAD Barhoumi, L/p-2.19
LASSALLE Benedikt, Y/o-3.6
LATOUCHE Camille, AA/p-.52
LAUSECKER Clément, F/o-1.7
LAVISSE Luc, V/o-8.4; V/p-10.12; V/p-10.13
LAZZARI Massimo, BB/o-1.3
LE FEBVRIER Arnaud, I/p-1.3
LE PAVEN Claire, S/o-9.2
LE SAUX Guillaume, L/o-8.4
LEBEDEVA Natalia P., C/inv-3.4
LEBEDKINA Elizaveta, W/p-1.18
LEBEGUE Estelle, L/o-14.4
LEBLANC Antonin, G/o-4.2
LEBLANC Martin, J/o-1.17
LECLERCQ Bastien, S/o-8.3
LEDUC Jennifer, A/inv-10.2; R/o-5.5
LEE Bo Ram, G/p- 15.38
LEE Byoung Hun, R/o-9.5
LEE Chanwoo, T/o-5.7
LEE Cheng Yu, W/o-8.5
LEE Chia-Chen, B/o-9.8
LEE Chul-Ho, I/o-1.4
LEE Chung-Hyo, S/p-5.9
LEE Da-Young, K/p-7.11
LEE Eon Ju, N/p-I.28
LEE Eunji, W/p-1.10
LEE Eunjung, L/p-1.46
LEE Gi-Hyeok, C/p-7.44
LEE Gun Hwan, N/p-I.35
LEE Gyo Sub, N/p-I.14
LEE Hu-Jun, U/p-5.21
LEE Hyebin, T/p-1.7
LEE Hyungsoo, E/p-20.21
LEE Hyun-Jin, W/p-2.12
LEE Jae Sung, A/inv-1.2
LEE Jeon-Kook, W/o-12.7
LEE Ji Eun, I/p-2.14
LEE Jinho, B/o-11.4
LEE Jiyeon, L/p-2.10
LEE Jongwon, C/p-15.32
LEE Joo In, W/p-2.6
LEE Ju Young, W/p-2.40
LEE Juho, AA/p-.45
LEE Jung Hun, C/p-7.72
LEE Junsu, I/o-1.3
LEE Junwoo, B/p-5.7
LEE Kang Eun, P/p-8.2
LEE Kyuhong, J/p-1.18
LEE Min-Sang, W/p-1.45
LEE Myeongkyu, N/p-I.18
LEE Phillip, U/p-5.17
LEE Sang Kyu, B/p-5.6
LEE Sang Wook, T/p-1.10
LEE Sang Yeol, R/p-3.27
LEE Sang-Soo, M/p-7.9
LEE Seung Geol, AA/o-3.6; AA/o-3.10
LEE Seung Won, W/p-2.38
LEE Seung Yong, E/p-21.26
LEE Seung-Mo, M/p-7.66
LEE Sohee, M/p-7.1
LEE Soo Wohn, R/o-12.5
LEE Suhyeon, I/p-2.10
LEE Sujeong , M/p-7.95
LEE Won-June, N/p-I.1
LEE Yoonjae, C/p-7.81
LEE Yoonkyung, W/p-1.6
LEE Young Kuk, E/p-21.11
LEE Youngmi, B/p-5.69
LEE Yun Seog, E/o-12.2
LEEMANS Jari, W/p-1.26
LEFEVRE Christophe, O/o-14.4
LEFEVRE Gauthier, N/o-3.4; AA/o-11.3
LEI Yifeng, L/o-7.2
LELONEK Monika, L/p-2.4; P/p-2.6
LEMOINE Patrick, L/p-2.24; O/p-11.41
LEONARDI Francesca, K/o-4.5
LEPINOY Morgan, I/p-2.7
LEROY Sébastien, H/p-1.10; P/p-2.3
LESAGE Arnon, D/o-14.5; G/o-11.6
LESZCZYNSKA Barbara , D/o-2.3
LETHIEN Christophe, F/inv-2.1
LETTIERI Stefania, L/p-2.42
LI Bo, N/p-III.63
LI Caoling, M/p-7.40
LI Chaoyang, H/o-9.7
LI Chenhui, N/o-1.3
LI Chia-Hsin, G/o-4.3
LI Chunya, M/p-7.74; M/p-7.85; M/p-7.86
LI DESTRI Giovanni, L/o-3.2
LI Dongsheng, D/p-1.19
LI Fangzhou, W/p-2.33
LI Jing, M/p-7.39
LI Jingkun, M/o-4.6
LI Jingrui, B/o-9.7
LI Ning, B/o-11.3
LI Oi Lun, Helena, R/o-10.2
LI Pei, M/o-3.3
LI Qiang, I/o-4.3
LI Quan, M/inv-2.2
LI Shao-Sian, B/p-5.2; B/p-5.3
LI Shisheng, T/p-2.39
LI Tsungyu, C/p-15.55
LI Wenjie, E/o-3.5
LI Xiaotong, G/o-1.4
LI Xiaoyan, O/o-9.5
LI Xinye, Q/p-4.6
LI Xu, C/p-15.35
LI Zhaojun, T/o-6.4
LI Zhengyang, H/p-1.8
LI Zongzhen, O/o-16.5
LIANG Qiuhua, T/p-1.52
LIANG Wang, V/p-10.49
LILLINGTON Joseph, J/o-4.3
LIM Hong Chul, C/o-6.3
LIM June Yeong, T/o-9.2
LIM Keun Yong, B/p-5.71
LIM Kisub, AA/p-.38
LIN Bi-Hsuan, V/p-10.58
LIN Chen, Q/p-4.7
LIN Yu-Chang, E/p-21.12
LIN Ziyuan, T/o-9.6
LINDAHL CHRISTIANSEN Troels, Y/o-2.5
LINNELL Stephanie, C/o-12.6
LINNROS Jan, D/inv-15.1
LINWEI Yu, D/o-11.3; T/o-2.4
LIONEL Santinacci, H/inv-9.1
LITTI Lucio, P/o-7.3
LITTRELL Kenneth, J/o-2.4
LIU Jiawei, R/p-3.20
LIU Junkai , J/o-2.3
LIU Li, O/o-2.6; O/o-16.4; R/p-3.19
LIU Mengxia, B/o-3.4; G/p- 15.33
LIU Patrick, E/p-21.4
LIU Qi, J/p-1.13
LIU Ruiheng, I/inv-6.2
LIU Ta-Chung, N/p-I.69
LIU Tao, U/o-7.5
LIU Tong, J/inv-2.1
LIU Xia, F/o-2.2
LIU Xuelian, C/p-7.60; C/p-15.57
LIU Yiwei, Q/p-4.14
LIU Yong, D/o-1.3
LIU Yuting , AA/o-3.5
LIU Zhiquan, N/p-I.54
LIU Zilu, I/o-8.4
LIUSI Yang, N/p-III.32
LIVACHE Clément, W/o-11.6
LLOBET Antoni, A/inv-6.3
LLUSAR Jordi, W/p-1.46
LO FARO Mariajose', D/o-10.2; W/o-6.4
LO PICCOLO Giuseppe Mattia, R/o-6.6
LOAIZA Laura C, C/o-18.6
LOCKETT Matthew, L/inv-11.1
LÖFLER Lukas, N/o-1.6
LOI Maria Antonietta, B/inv-4.1
LOPES Tomás, N/p-I.15
LORENZ Philipp, I/p-1.17
LOSI Gabriele, T/p-1.6
LOUISET Antonin, O/p-11.6; Q/o-7.3
LOURO Paula, W/p-2.23
LOUZGUINE Dmitri, Z/p-4.24
LOZADA-HIDALGO Marcelo, H/inv-7.1
LU Chenbao, M/o-4.4
LU Ming-Pei, L/p-2.29
LU Xiao-Gang, AA/p-.13
LU Xinxin, H/p-1.68
LU Yang, T/p-2.42
LUDWIG Alfred, AA/inv-7.4
LUKACS Dávid, A/p-3.2
LUND JAKOBSEN Christian, C/p-7.29
LUO Wen, C/o-5.5; F/o-2.4
LUO Yifei, K/o-2.3
LUYSBERG Martina, Z/p-4.21
LYSIK Aleksandra, R/p-3.41

M

MA Dongni, M/p-7.14
MA Hongfeng, V/o-2.4
MA Sunihl, G/o-5.4
MA Teng, B/p-5.60
MA Yanjiao, C/p-15.14
MA Yuan, C/p-7.11
MA Zheng, Z/p-4.7
MACCHIA Eleonora, K/o-4.2
MACCHIONI Alceo, A/inv-6.2
MACHALE John, D/o-8.3
MADDI Chiranjeevi, T/p-2.17
MADSEN Georg, I/inv-3.1
MAEDA Tsuyoshi, E/p-21.1
MAGDALUYO Eduardo Jr, M/p-7.18
MAGNUSON Martin, Y/o-4.6
MAGOMEDOV Artiom, B/o-6.2
MAHALINGAM Sunthar, U/p-2.29
MAHLOUJI Reyhaneh, T/o-4.5
MAHMOOD Awais, AA/p-.56
MAI Liqiang, M/inv-6.2
MAIA Margarida, I/o-2.6
MAIGNAN Antoine, I/o-5.3
MAILLARD Mathieu, H/o-10.2; U/o-6.4
MAINZ Roland, E/o-8.3
MAITRA Anirban, C/p-7.87
MAITY Ruma, L/p-2.38
MAJCHROWICZ Anna, O/p-11.29
MAJEWSKI Jacek A., I/o-3.5; L/p-2.26; M/o-4.3
MAJOR Jon, E/inv-10.1
MAJOR Roman, L/o-6.6
MAJOREL Clément, P/p-2.11; P/p-8.3
MALEK Atyaoui, B/p-5.70; H/p-2.68; O/p-3.49
MALERBA Claudia, E/o-12.4
MALIK Sharali, P/o-7.3
MANAUD Jérémie, J/o-1.9
MANCA Gabriele, T/o-8.3
MANDAL Ajoy, K/o-6.2
MANDAL Debabrata, C/p-7.30
MANDZIAK Anna, O/o-14.5
MANEROVA Jen, V/o-11.5
MANSOUR Afef, W/p-1.38
MANSOUR Meriem, H/p-1.60
MANSOUR Yehia, P/o-1.5
MANZANARES Carmen Lorena, M/o-9.7
MAOUCHE Djamel, AA/p-.58
MARAGKAKI Stella, V/o-1.5
MARCHETTI Francesca, H/o-13.5
MARCHIORI Cleber, C/o-4.5; H/p-2.27
MARCINAUSKAS Liutauras, N/p-I.66
MARCOS Alma Lorena, W/p-1.32
MARCU Aurelian, V/p-3.30
MAREUS Rubenson, N/p-III.31
MARIANI Federica, K/o-8.5; K/o-8.6; L/o-12.6
MARICHEVA Jelena, H/p-1.3
MARIOTTO Gino, T/p-2.19
MARKEEV Andrey, T/p-1.8
MARKINA Anastasia, AA/p-.33
MARKURT Toni, O/o-4.2; Z/o-6.9
MARSHALL Jessica , J/o-2.17
MART Clemens, Q/o-5.6
MARTELLA Christian, T/o-2.7; T/p-2.1
MARTIN Alexis, O/p-11.14
MARTINEZ Bertille, W/o-10.6
MARTINEZ Paloma, V/o-9.1
MARTINEZ PASTOR Juan P., G/o-8.2
MARTINEZ Thomas, H/p-2.5
MARTINEZ-HUITLE Carlos, M/inv-8.3
MARTINEZ-SARTI Laura, G/o-11.2
MARTINO Edoardo, T/o-5.3
MARTINS DE FREITAS Andre Luiz, A/o-2.4
MARTRA Gianmario, L/o-6.2
MARTYNOW Milosz, AA/p-.7
MASHHADI Soudabeh, T/o-4.6
MATEI Alina, O/p-3.27
MATEI Andreea, V/p-10.37
MATHE DE SOUZA Carole, BB/o-7.6
MATHIESEN Jette, Y/p-2.2
MATHIESON Angus, G/p- 15.7
MATHUR Sanjay, R/inv-5.4
MATSUMURA Ryo, V/o-5.6
MATTA Micaela, AA/o-3.8
MAUGHAN Philip, C/p-15.24
MAURIZIO Chiara, N/o-5.9; O/p-3.14
MAVRANTONAKIS Andreas, C/o-4.1
MAYER Matthew, A/o-9.2
MAZHUKIN Alexander, V/p-3.36
MAZHUKIN Vladimir, V/p-10.6
MAZZIO Katherine, U/o-1.3
MCGOWAN Steven, J/p-1.6
MCGRATH Fionnuala, N/p-II.53
MCKEE Tiina, N/p-I.46
MCMICHAEL Stuart, H/o-4.1
MCVEY Ben, W/o-6.3
MCVEY Benjamin, W/o-2.5
MEKINIS A., N/o-4.6
MEFFERT Matthias, Z/o-3.4
MEHBOOB Sheeraz, C/p-7.17
MEHRABANIAN Mehran, M/o-5.2
MEHRJOU Babak, L/o-9.6
MEI Sen, L/p-2.12; V/p-10.33
MELAMED Celeste, E/o-6.3
MELETIS Efstathios, N/inv-7.1
MELO JUNIOR Mauricio, A/o-7.7
MENCHINI Francesca, D/p-1.24
MENDES FELIPE Cristian, P/o-9.2
MENDES Manuel, B/o-2.6
MENEGHETTI Moreno, L/o-2.3
MENG Shize, C/p-15.61
MENTBAYEVA Almagul, C/p-15.56
MERCIER-BION Florence, BB/o-3.3
MESA-ZAMORA Camilo, A/o-4.4
MESSINA Grazia Maria Lucia, L/o-1.3
MEZIANI Samir, D/p-1.44
MI Hongxing, I/o-3.6
MICHAEL Monisha, X/p-/V.6
MICHAEL Sachs, H/o-7.6
MICHALLON Jerome, E/o-7.5
MICHEL Adrien, J/o-4.17
MICHEL Fabian, C/o-7.1
MICHELY Thomas, T/inv-3.1
MIGLIACCIO Ludovico, K/o-6.4
MIHAI Sonia, H/p-2.33
MIHAILESCU Natalia, V/p-10.59
MIKOLAJICK Thomas, D/inv-8.2
MIKOLASEK Miroslav, H/p-1.18
MILAZZO Ruggero, D/o-11.6; V/p-10.16
MILIC Jovana, B/o-7.4; G/o-7.4
MILLER Jessica , K/p-7.9
MILLO Oded, D/inv-13.1
MILOV Igor, V/o-1.6
MIN JUNG Kim, F/o-4.4
MING Xu, C/o-3.1
MINGUEZ BACHO Ignacio, B/p-5.15; E/o-10.2
MINO Lorenzo, H/p-1.25
MINSEOK Seo, N/p-III.23
MIO Antonio Massimiliano, T/o-10.2
MIRABELLI Gioele, T/p-2.28
MIRANDA Andre, C/p-15.31
MISHRA Trilochan, H/p-2.52
MISHYN Vladyslav, K/o-5.3
MITZI David, G/inv-14.1
MIYAZAKI Yuzuru, I/inv-7.1
MLADENOVIC Marko, G/o-6.3
MOATASSIM Hajar, G/p- 15.22
MOCK Josef, T/p-2.22
MOGHADAMZADEH Somayeh, B/o-4.6
MOGILDEA Marian, N/o-3.7
MOHAMED AMARA Gdaiem, W/p-2.3
MOHITE Aditya, B/inv-7.1; G/inv-7.1
MOLINA-LUNA Leopoldo, Z/o-6.8
MOLINA-MENDOZA Aday Jose, T/p-1.53
MOLLE Alessandro, D/inv-5.1; T/inv-1.1
MOMPER Rebecca, W/o-11.2
MONGUZZI Angelo, P/o-4.9
MONICA Scarisoreanu, V/p-3.12
MONTERO AMENEDO Jose, H/p-2.25; R/inv-2.4
MOON Chang-Youn, AA/p-.23
MORADI Omid, N/p-I.36
MORA-HERNANDEZ J.Manuel, H/p-2.19
MORALES VILCHES Anna Belen, D/o-2.2
MORAN MEZA Jose Antonio, D/p-1.31
MORANTE Joan Ramon, A/inv-1.6
MORA-SERO Iván, G/o-3.5
MORE-CHEVALIER Joris, N/o-8.3
MORENO Mª Ángeles, C/p-15.41
MORGADO Jorge, L/o-8.3
MORI Takao, I/o-4.5; S/o-8.4
MORI Toshiyuki, R/o-12.6
MORIKAWA Takeshi, A/p-3.10
MORO Giulia, BB/p-1.2
MOROZOV Ivan, D/p-1.6
MOSCHETTO Salvatore, T/o-6.8
MOSCHOGIANNAKI Marilena, H/p-1.21; H/p-2.24
MOSER Thierry, B/o-6.3
MOSKALIOVIENE Teresa, N/p-II.69
MOSS Benjamin, A/o-9.1
MOTA-SANTIAGO Pablo, P/o-1.9; P/p-2.5
MOTOLA Martin, H/p-1.63
MOUMEN Abderrahim, W/p-2.37

inv = invited / o = oral / p = poster

MOUN Monika, T/p-1.2
MROCZYNSKI Robert, D/p-1.11
MÜHLENBEIN Lutz, Q/o-1.2
MULA Raju, O/p-11.31
MÜLLER Matthias, D/o-3.3
MUÑOZ CASTRO Marina, N/p-III.38
MUÑOZ-ROJAS David, E/o-10.7; N/o-3.2; O/o-1.2; V/o-8.2
MUÑOZ-TORRERO CASTAÑO David, C/p-15.68
MUNZI Gabriella, P/o-9.8; P/p-8.4
MURALTER Fabian, N/p-I.59
MURAUSKAS Tomas, O/p-11.7
MURILLO Gonzalo, F/p-6.9
MYAKOTA Denis, T/p-2.30

N

N Vidya, C/o-18.5
NA Hyunjae, W/p-2.31
NA Moonkyonng, X/o-VIIa.5
NÄGELEIN Andreas, D/p-1.30; W/p-2.29
NAGHILOU Aida, P/o-1.3
NAKAMURA Tenshou, F/p-6.28
NAM Jae Hyeon, T/p-2.7
NAM Sang-Hun, E/p-20.24
NAM Yunchae, C/p-7.27
NAMHUN Kim, I/p-2.6
NAMUANGRUK Supawadee, AA/p-.16
NAN Song, N/p-III.22
NAPOLITANI Enrico, D/o-5.2; V/p-3.25
NARDUCCI Dario, I/o-7.7
NARKIEWICZ Narkiewicz, H/p-2.4
NASI DE BARROS Caio Henrique, L/p-1.9
NATASHINA Uliana, L/p-2.34
NAUMENKO Antonina, M/p-7.53; V/o-6.6; W/p-1.11
NAVARRO-SUAREZ Adriana, C/o-7.2
NAVIDFAR Amir, P/o-7.5; R/p-3.33; U/p-2.26
NAYAK Debasis, C/p-15.11
NAZARI Pariya, R/p-3.40
NDIAYE Amadou Latyr, N/p-III.17; U/o-6.6
NEDELCU Liviu, O/p-11.5; V/p-10.46
NEDELCU Oana Tatiana, O/p-3.10
NEDYALKOV Nikolay, V/p-10.10; V/p-10.22
NELSON Joseph, AA/o-13.2
NEOPHYTOU Neophytos, I/o-3.3
NERADOVSKIY Maxim, V/o-11.8
NERETINA Svetlana, H/o-14.1; Z/o-1.12
NETTI Paolo, L/inv-8.1
NEVES Filipe, I/p-2.13
NG Annie, B/o-1.5
NG Cavin, U/o-1.11
NG Siow Woon, N/p-I.31
NGO Eric, Z/p-4.8
NGUYEN Bich Phuong, G/p- 15.35
NGUYEN Ha Trang, D/p-1.20
NGUYEN Thi Hiep, A/o-8.5
NHAT-TAN Vuong, J/o-4.12
NICOLAOU Christiana, V/o-4.2
NICOLOSI Valeria, T/inv-6.1
NIEHLE Michael, Z/o-1.6
NIKIFOROV Alexandr, W/p-1.29
NIKLASSON Gunnar, R/o-7.2
NIKOLOV Anastas, V/p-3.43; V/p-10.19
NIKOV Rumen, V/p-3.37
NIMATOV Samad, B/p-5.31; D/p-1.18
NING Zhijun, B/inv-1.1; W/o-8.7
NISHIO Fumiko, L/p-1.39
NISSANKA Buddini, U/o-6.2
NISTOR Magdalena, O/inv-6.6
NOH Chanho, C/p-7.52
NOH Tae Won, Q/inv-3.1
NOHEDA Beatriz, Q/inv-5.5
NOLAN Michael, H/inv-2.1; N/o-1.5; O/o-17.3
NOLAS George, I/inv-1.8
NOMOTO Keita, D/o-7.6
NOSE Yoshitaro, E/inv-2.1
NOVAK Petr, O/o-16.2; O/p-3.44
NOVIKOV Artyom, B/p-5.61
NOVIKOV Dmitri, Y/p-2.3
NUNES Silvia, R/p-3.23
NUNOMURA Shota, D/p-1.16
NURPEISSOVA Arailym, C/p-7.42
NUSS Juergen, I/inv-1.9
NWANKWO Stephen, E/o-10.4

O

OBA Fumiyasu, AA/inv-12.1
OBSTARCZYK Agata, O/p-3.1
OCH Mauro, T/p-2.8
OCK Il Woo, C/p-15.79
OGANOV Artem R., AA/inv-1.1
OGATA Masao, I/inv-3.2
OGINO Hiraku, S/o-2.3
OH Harim, V/p-3.45; V/p-3.46
OH Hyung-Suk, A/o-5.3
OH Inhwan, M/o-10.6; M/p-7.43
OH Jimin, C/p-7.82
OH Moonhyun, M/p-7.94
OH Seyoung, W/p-2.48
OH Sora, B/p-5.45
OHNO Yutaka, D/o-7.7
OHORI Daisuke, I/o-7.6
OHTAKI Michitaka, I/inv-2.5
OHTANI Noboru, X/inv-X-Ia.1
OIKONOMOU Evdokia, L/o-13.3
OJA ACIK Ilona, R/inv-2.2
OLESHKO Vladimir, Z/o-1.11
OLESZAK Dariusz, C/p-15.20
OLIVA VIDAL Robert, T/o-5.2
OLIVEIRA Eliezer, AA/p-.5
OLIVEIRA Gabriel, H/p-1.62
OLSEN Thomas, AA/inv-3.1
ONOFRIO Nicolas, AA/o-6.3; T/p-1.47
ONUR SAHIN Ezgi, Y/o-3.5
ORAON Akash, AA/p-.1
ORLANDI Marcelo, R/inv-11.1
ORLANDO Stefano, V/p-10.8
ORLOVAS Sergejus, N/p-I.29; V/o-2.6; V/o-8.9; V/p-3.26
ORTEGA Laura, F/o-4.5
OSHEROV Aya, E/o-3.3
OSMINKINA Liubov, L/p-2.9; L/p-2.25
OSSI PAOLO Paolo, V/inv-8.1
ÖSTERBACKA Ronald, B/p-5.25
ÖSTERGREN Ida, P/o-10.2
OSTROVSKY Natali, N/p-II.19; N/p-II.46
OTSUKA Mioko, I/p-1.18
OTTAVIANO Luca, U/inv-6.1
OU Haiyan, X/inv-III.1
OUAFI Mouad, H/p-1.69
OUELLETTE Olivier, B/o-8.3
OUISSI Toufa, BB/o-7.5
OUSSAMA Zeggai, T/p-1.23
OUYANG Liangqi, K/o-2.6
OZGA Monika, E/o-1.4

P

PABST Linda, V/p-3.16; V/p-10.29
PADULA Daniele, AA/p-.48
PAGIS Céline, H/inv-8.1
PAILLASSARD Corentin, B/p-5.1
PAKDEL Amir, I/o-1.11
PALACIOS Pablo, AA/o-15.8; E/o-3.6
PALADINO Boris, J/p-1.1
PALAVICINI Alessio, W/o-9.3
PALAZON Francisco, G/p- 15.15
PALETI Sri Harish Kumar, B/o-10.5
PALGRAVE Robert, R/inv-6.3
PALINKAS András, U/o-1.4
PALLA-PAPAVLU Alexandra, U/o-7.4; U/p-5.12
PALOMARES GARCIA Carla Maria, O/o-6.3
PAN Long, F/p-6.17
PAN Xinqiang, P/p-2.27
PANA Iulian, N/p-I.22; N/p-II.32
PANAGIOTOPOULOS Apostolos, T/o-11.2
PANCIERA Federico, Z/inv-6.1
PANCOTTI Alexandre, Q/p-4.12
PANDEY Komal, D/o-7.2
PANDEY Parul, O/o-14.3; O/p-11.25
PANIGRAHI Debdatta, N/p-III.37
PANJAN Matjaz, N/inv-1.7
PAP József Sándor, A/inv-6.5
PAPANASTASIOU Theodora, B/o-3.5
PARDO Jose A., O/o-9.2
PAREEK Devendra, T/p-2.20
PARFENOV Alexey, K/p-7.6
PARIA Sarbaranjan, U/o-4.5
PARINOVA Elena, W/o-5.7; W/p-1.15
PARK Cheol, O/p-3.50
PARK Ji Hoon, T/p-2.18
PARK Chanho, F/p-6.20
PARK Chulho, T/o-3.7
PARK Gun, C/p-7.69
PARK Heeyeon, C/p-15.9
PARK Hyeong-Ho, N/p-III.15; U/p-2.22
PARK Hyoungwon, R/p-3.9
PARK Jaehyun, W/p-1.1
PARK Jaemin, E/o-7.6
PARK Jaeyong, H/p-1.47
PARK Ji-Sang, AA/o-8.3
PARK Jisun, L/p-1.4
PARK Jong Hyuk, P/p-8.14
PARK Keemin, C/p-15.78
PARK Kyoungwan, I/p-1.8
PARK Sang Gyu, J/o-1.6
PARK Seon Joo, L/p-2.27
PARK Seungchul, N/p-III.35
PARK Seyeon, R/p-3.29
PARK Sun Hwa , C/p-7.73
PARK Sung Heum, R/o-10.6
PARK Sun-Young, N/p-I.26
PARK Taehyun, U/p-5.16
PARK Teahoon, U/o-3.2
PARK Won Ho, F/p-6.12
PARK Young-Sam, W/o-8.1
PARK Yunjeong, U/p-2.19
PARKIN Ivan, R/inv-1.1
PAROLA Stephane, H/p-2.13
PARRAVICINI Jacopo, E/o-12.3
PARRISH Riley, J/o-3.12
PASCU Razvan, X/o-VIIa.4
PASCU Rovena-Veronica, F/p-6.25
PASSERINI Stefano, C/inv-1.1
PASZUK Agnieszka, H/p-2.53
PATEL Tvarit, E/o-10.5
PATRA Biplab Kumar, W/o-10.5
PATWARI Jayita, B/p-5.38; H/p-1.17
PAUL Rajrupa, E/p-21.28
PAULAUSKAS Tadas, E/o-5.5; Z/o-3.2
PAULUS Andreas, C/o-10.4
PAUPITZ BARBOSA DOS SANTOS Ricardo, AA/o-11.7; AA/p-17
PAVELESCU Emil Mihai, W/p-1.14
PAVIET-SALOMON Bertrand, D/o-1.2
PAZ Yaron, H/inv-5.1
PECKUS Domantas, H/p-2.16
PECZ Bela, T/o-8.4
PEDARNIG Johannes, V/o-7.6
PEKSU Elif, E/p-20.1; E/p-21.18; O/p-3.30
PENA-FRANCESCH Abdon, K/o-2.2; L/o-2.2
PENEZKO Aleksei, E/p-20.7
PEREIRA Lino, U/o-1.12
PEREIRA Luis, R/inv-1.3
PEREZ Arnaud, C/o-9.5
PEREZ Luis, AA/p-.12
PEREZ Maayan, H/p-2.40
PERFECTO Tarcísio, R/p-3.39
PERNIU Dana, H/p-1.58
PEROTTO Giovanni, K/o-4.3
PERROTTA Alberto, N/o-6.3
PETROV Petrov, N/p-II.17
PETROZZA Annamaria, B/inv-7.2; G/inv-7.2
PFATTNER Raphael, K/o-3.2
PHILIPPOT Gilles, Y/o-1.3
PI Liquan, C/p-15.34
PICCA Rosaria Anna, K/p-7.14; L/p-1.6; U/p-5.9; V/p-3.23
PICHON Laurent, W/p-2.9
PIETRUSZKA Rafal, D/o-2.6
PIKULIN Alexander, P/o-9.0
PILLAI Suresh C., R/inv-5.2
PILLIS Marina, H/p-1.51
PILUSO Nicolo, X/p-/V.5
PINCHETTI Valerio, V/o-7.3; W/p-1.27
PINNA Elisa, B/p-5.49
PINTER Gergo, F/p-6.7
PINTILIE Lucian, O/inv-10.2; Q/inv-2.2
PINTO Valentina, O/o-17.6
PIOTR Kucia, AA/o-8.4
PIOTTO Valentina, P/o-5.3
PIPITONE Candida, G/p- 15.27
PIRES Ana, F/inv-7.1
PISKUNOV Sergei, A/p-3.12; H/p-2.1
PLACKE Tobias, C/inv-13.4
PLAIN Jérôme, N/inv-9.1
PLATA RAMOS Jose Javier, AA/o-4.2
PLATERO-PRATS Ana Eva, Y/inv-4.2
PLOCHOCKA Paulina, G/p- 15.20; T/inv-4.1
PLOUX Lydie, H/o-4.3
PODHORSKA Lucia, L/o-2.5
POGES Shannon, O/o-17.8
POGOSOVA Mariam, C/p-15.62
POGREBNJAK Alexander, N/o-5.5; N/p-III.60
POLITANO Antonio, T/inv-9.1
POLITOV Boris, AA/p-.24
POLOP Celia, N/inv-4.1
POLYAKOVA Marina, AA/p-.47
POMILLA Francesca Rita, H/o-3.6; H/o-13.2
POPA Karin, J/o-1.19; J/o-4.6
POPE Thomas, AA/o-5.2
POPELAR Tomas, D/p-1.8
POPESCU Andrei, V/o-11.7
POPOFF Youri, Q/inv-7.1
POPOV Anatoli, AA/p-.34; J/p-1.5; J/p-1.9; J/p-1.17
PORTAIL Marc, X/o-Ib.5
POSTOLNYI Bogdan, N/o-7.6
POUMELLEC Bertrand, Q/p-4.9
PRABHAKAR Rajiv, A/o-10.4
PRASANNA Rohit, B/inv-9.1
PREHAL Christian, C/o-17.2
PRELLIER Wilfrid, O/inv-7.1
PRIMO Ana María, H/o-11.4
PRISTAVU Gheorghe, X/p-/V.2
PROCHAZKA Michal, N/o-3.5
PROKHOROV A.A, V/p-10.54
PROMDET Premrudee, H/p-1.29
PROPPE Andrew, G/o-2.4
PRUNA Raquel, N/p-I.43
PRÜßING Jan Kristen, D/o-7.3
PUGLISI Rosaria, P/o-9.4; P/p-2.22
PUROHIT Smruti, H/o-6.1
PUSAY Benjamin, D/p-1.29

Q

QIAN Quan, AA/o-7.5
QIN Danwen, J/o-4.7
QIN Leiqiang, C/p-7.49
QIU Lianchang, N/o-2.4
QIU Qinyi, I/o-5.11
QIU Weiming, G/o-11.4
QIU Zhen, A/o-8.6
QUARTI Claudio, G/inv-8.1
QUERALES Jose, I/o-3.7
QUESADA-CABRERA Raul, H/p-1.19
QUINSON Jonathan, Y/o-2.3
QUINTERO-BERMUDEZ Rafael, G/o-14.2

R

R. Rakesh, J/p-1.31
RADCHENKO Taras, AA/o-3.3
RAGHUWANSHI Mohit, E/p-20.11
RAHAMAN Aminur, Q/p-4.10
RAHMAN Habeebur, U/p-5.19
RAHMAN Mohammad, R/inv-6.4
RAJ ILAHAM Wahida, J/o-2.10
RAJABALI Mona, T/p-2.9; T/p-2.16; T/p-2.29
RAJACKAITE Erika, N/p-III.42
RAKOCEVIC Lucija, G/o-9.2
RAMACH Ulrich, K/p-7.7
RAMAKRISHNEGOWDA Niranjan, Q/p-4.2
RAMAN Aaswath P., R/inv-1.6
RAMASSE Quentin, T/inv-7.1; Z/inv-1.1
RAMIRO Iñigo, W/o-8.4
RAMOS Joao Pedro, J/o-3.20
RAMPRASAD Manav, AA/p-.54
RANDRIAMAHAZAKA Hyacinthe, M/inv-10.1
RANI Deepika, F/p-6.14
RAO Smita, N/p-II.34
RASOULI Hamid, T/p-2.3
RAVANDI Sadie, N/p-I.49
RAVAUX Florent, D/o-8.4
RAVNSBÆK Dorthe, C/o-11.5
RAZONADO Ivy Ann, U/p-2.28
RAZZAQ Arsalan, D/o-4.4
RE Elisa, J/p-1.14
REBOLLAR Esther, V/o-5.4
REGOUTZ Anna, X/o-IVb.4
REICHHELM Annett, W/o-10.3
REID Graham, L/p-1.11
REITHMAIER Johann Peter, W/inv-13.1
REIZABAL Ander, C/p-15.22
REMHOF Arndt, C/o-15.3
REN Jian, M/o-4.7
RENAULT Stéven, C/inv-4.3
RESENDE Pedro, L/o-7.4; L/p-2.11
REYES Odín, E/p-21.8
REZAEI-MAZINANI Shahab, K/o-8.3
REZEK Jiri, N/o-5.8
RHEE Sanghoon, L/p-1.38
RIBEIRO Caue, A/o-10.6; H/p-1.9
RICCA Chiara, AA/o-8.5
RIEDL Thomas, B/inv-8.1
RIEL Heike, W/inv-9.1
RIGHI Maria Clelia, T/o-2.2
RIGONI Federica, O/p-11.1
RIJCKAERT Hannes, O/o-17.7
RIJNDERS Guus, V/inv-4.1
RIMANTAS Gudaitis, T/p-2.24
RINDERLE Michael, AA/o-6.2; AA/p-44
RISSE Sebastian, C/o-17.5
RIVADULLA Francisco, O/inv-13.1
RIVEIRO RODRIGUEZ Antonio, V/p-3.11
RIZZA Giancarlo, P/o-4.7; P/p-2.21
ROBERTSON Peter, H/inv-12.1
RODICHKINA Sofia, D/p-1.45
RODILLA GONZALEZ Beatriz Loreto, L/o-5.5
RODRIGUES Cátia, F/o-3.2
RODRIGUEZ Ainara, V/o-9.8
ROELLINGER Bettina, M/p-7.107
ROGIER Clémence, N/p-III.54
ROJAS-GONZALEZ Edgar, R/p-3.52
ROLAND Aude, D/o-15.4
RON Racheli, N/o-9.8
RONCHI Alessandra, W/o-1.2
ROOS Michael, D/o-10.5

inv = invited / o = oral / p = poster

ROOSE Bart, G/o-10.4
ROPPOLO Ignazio, P/inv-10.1
ROQUES-CARMES Thibault, H/p-1.39
ROSA José, N/p-II.15
ROSAS HUERTA José Luis, AA/p-.15
RÖSCH Andres, I/o-3.4
ROß Marcel, B/p-5.55
ROSTOM Leila, BB/o-1.4
ROUALDES Stephanie, H/o-10.1
ROUGIER Aline, R/inv-4.1
ROY Rajarshi, T/p-2.41
ROY Sathi, L/p-2.47
RTIMI Sami, H/o-4.2
RUGGERI Edoardo, G/o-1.3
RUGGERO Anzalone, X/o-Ib.4
RUHSTORFER Daniel, W/o-9.2
RUITING Zheng, N/p-II.18; R/o-7.6; AA/p-.61
RUIZ-CARIDAD Alicia, O/o-6.4
RUIZ-CLAVIJO GARCIA-SERRANO Alejandra, I/o-4.12
RUPP Rico, C/p-7.86
RUSEN Laurentiu, L/o-6.3; V/p-10.51
RUSZ Jan, Z/o-2.3
RYL Jacek, M/o-2.4
RYU Hyojoon, D/p-1.43; T/p-1.45
RYU Jungho, R/o-10.5
RYU Sungmyung, R/p-3.12

S

S Janakiraman, C/p-15.10
SAAD Mohamed, O/p-11.33
SAAD Mohamed M, N/o-4.3
SABALLOS Richard, S/o-3.2
SACHS Michael, A/o-7.4
SADOFEV Sergey, T/o-2.5
SADOWSKI Janusz, T/o-10.8
SADYKOV Vladislav, N/p-I.48
SAGLAM Özge, O/p-11.38
SAHABUDEEN Hafeesudeen, T/o-10.7
SAHINER Mehmet Alper, D/o-9.3
SAHOO Prangya P., A/p-3.8
SAI Gourang, C/p-7.48
SAI Manohar, U/o-6.3
SAIDA Shaik K., AA/p-.55
SAITO Erika, H/p-1.36
SALAMON Michael, X/p-V.3
SALAPARE Hernando III, R/o-12.4
SALAZAR Cuauhtemoc, T/o-12.5
SALAZAR Jenifer, D/p-1.25
SALEH Gabriele, AA/o-15.3; AA/p-9
SALERNO Benji, K/p-7.0
SALIMIAN Sedighe, T/o-8.6
SALLAZ Valentin, F/o-2.5
SALLERAS Marc, F/o-7.3
SAMANE Samane, R/p-3.49
SAMOKHIN Alexander, V/p-3.13
SAMPAIO RODRIGUES Marco, N/o-9.13
SANCHEZ Ana, Q/inv-1.5
SANCHEZ Florencio, Q/o-5.1
SANCHEZ MARTIN Sergio, V/p-3.6
SANCHEZ Yudania, E/o-6.5
SANCHEZ-LOPEZ Juan Carlos, N/inv-2.1
SANDFELD Stefan, X/o-VIIa.1
SANFO Karifa, H/p-2.48
SANGERMANO Marco, P/inv-9.7
SANINA Viktoriia, D/p-1.15
SANO Taizo, H/inv-13.1
SANTIC Branko, AA/p-.19
SANTONICOLA Mariagabriella, M/p-7.51; U/p-2.1
SANTORI Pietro, M/p-7.48
SANTORO Francesca, K/o-3.4
SANTOS Ieda, H/p-2.8
SANTOS-PENA Jesus, C/p-15.51
SANVITO Stefano, AA/inv-9.4
SAR Huseyin, T/p-1.26
SARAKINOS Kostas, R/inv-1.2
SARAU George, L/o-8.2; U/o-4.1
SARCINA Lucia, K/p-7.16
SARDINHA Andre, C/p-7.14
SARI Fitri Nur Indah, C/p-15.65
SARI Octavina Novita, C/p-15.48
SARIKOV Andrey, D/p-1.14; X/o-VIIb.4
SARKAR Abdus Salam, T/o-10.3
SARKAR Ranjini, AA/o-3.9; AA/o-15.1
SATHASIVAM Sanjayan, N/o-1.8
SATO Naoki, I/o-2.2
SAUCEDO Edgardo, E/o-8.7
SAVIN Hele, D/inv-4.1
SAVIOLI Julia, AA/o-14.2
SAVKINA Rada, N/p-II.14; O/p-11.8
SAVORY Christopher, C/o-9.1; E/o-3.2
SAVVA Achilleas, K/o-4.4
SAVVA Kyriaki, V/o-7.7
SAWANGPHRUK Montree, C/o-2.4; C/p-15.86
SAWANT Rajath, V/o-11.2
SAWHNEY Nipun, H/p-2.46
SCALISE Emilio, X/o-VIIb.2
SCANLON David, E/inv-4.1
SCARISOREANU Nicu, O/p-11.32
SCHAAF Peter, V/p-3.10
SCHAEFER Jan, N/p-II.37
SCHAEFER Joerg, T/inv-2.1
SCHÄFER Philip, D/o-7.4; N/o-6.4; P/o-9.9; T/p-1.44
SCHÄFFNER Philipp, F/o-1.2
SCHALLER Richard, G/inv-2.1; W/inv-10.1
SCHIELKE Andreas, L/p-1.29
SCHMEIßER Dieter, O/p-3.23
SCHMIEG Johannes, Z/p-4.10
SCHMITT Sebastian, W/o-9.5
SCHNITTER Claudia, N/p-III.45
SCHÖLER Michael, X/o-X-VIb.3
SCHORR Susan, E/o-8.2
SCHREIBER Waldemar, U/o-4.4
SCHROEDER Uwe, O/inv-9.1
SCHUH Philipp, X/o-Ib.3; X/p-V.8
SCHUSTER Maximilian, C/o-14.1
SCHVARTZMAN Mark, W/p-1.12
SCHWARZ Reinhard, C/p-7.35; E/p-20.20
SCIORTINO Alice, H/o-5.3; W/o-7.3
SCRAGG Jonathan, E/p-20.2
SEABRA Maria, N/p-III.2
SEBAI Marwa, E/p-20.8
SECOUARD Christophe, F/o-5.2
SEKINO Tohru, R/inv-12.1
SELEZNEVA Ekaterina, I/p-1.12
SELIM Shababa, A/o-8.3
SEMERIKOVA Anna, N/p-I.55
SEMMAR Nadjib, V/p-10.15
SEN Dipayan, H/p-2.38
SEN Sener, J/o-2.2
SENAUD Laurie-Lou, D/o-4.3
SEO Sung Eun, L/p-2.15
SEOK Haejun, B/p-5.13; N/p-III.20
SEONGWON Yoon, N/p-III.9
SERGEY Nikitenko, H/o-2.4
SERIKKAZYEVA Assel, C/p-7.39; C/p-7.57
SERIZAWA Ai, N/p-III.50
SERNA Rosalia, P/o-4.3; V/o-8.10; V/p-3.17
SERRE Christian, H/o-7.5; R/inv-8.5
SESSOLO Michele, B/p-5.18
SETHI Jamuna, R/p-3.34
SE-YUN Kim, E/p-20.27
SFEZ Ruthy, N/p-I.23
SGARBOSSA Francesco, D/o-11.5
SHADMAN YAZDI Shahrzad, L/o-3.3
SHAHBAZIAN-YASSAR Reza, C/o-15.1; L/o-6.1
SHAMSI Javad, G/p- 15.9
SHANG Tongxin, M/p-7.78
SHAOBO Tu, U/o-1.2
SHARIFI-ASL Soroosh, C/o-10.2
SHARMA Dipika, H/p-2.29
SHARMA Preetam Kumar, H/p-1.41; O/p-11.13
SHARMA Suchinder, I/o-5.8
SHARMA Vikas, C/p-15.67
SHARP Ian, A/inv-2.1
SHAUTSOVA Viktoryia, T/p-1.32; W/o-7.5
SHAVDINA Olga, O/p-3.19
SHAW-STEWART Jamie, C/o-3.5
SHEN Jian, M/o-5.3
SHEN Shaohua, A/inv-6.4
SHENG Yuewen, T/o-3.8
SHIEL Huw, E/o-7.3
SHIM Joon Hyung, N/p-II.65
SHIN Donghyeop, B/p-5.28
SHIN Donghyuk, N/p-I.47
SHIN Gunsub, F/p-6.10
SHIN Hosun, I/p-2.11
SHIN Jeong Woo, N/p-II.2
SHIN Seunghan, R/p-3.26
SHIN Sunyoung, N/p-II.41
SHIN Won Suk, B/p-5.43
SHINDE Nanasaheb, R/inv-9.1
SHISHKOVSKY Igor, P/o-10.4; V/o-9.5
SHKUNOV Maxim, K/o-3.6
SHOKUHFAR Tolou, L/o-11.2
SHOTARO Akahori, J/o-4.13
SHOUZHENG Su, J/p-1.29
SHU Rui, N/p-II.22
SHYAM KUMAR Chethala Neelakandhan, Z/o-5.5
SI Suman Kumar, U/p-5.15
SIDORENKO Sergey, N/p-II.4; N/p-II.56
SIEUW Louis, C/p-7.64; C/p-7.74
SIKORA Marcin, Y/o-1.5
SIL Aritra, S/o-9.3
SILVA Joana, P/o-5.1
SILVA Rui, N/p-II.54
SILVA Stephanie, L/o-9.2
SILVAN Begona, C/o-12.1
SILVI Luca, C/p-15.75
SIMNETT John David, J/p-1.21
SIMON Patrice, C/inv-2.3; M/inv-1.2
SIMON Quentin, O/p-11.40; Q/o-1.7
SINGARAJU Surya, W/o-12.4
SINGH Aditya, T/p-2.23
SINGH Anukriti, H/p-1.52
SINGH Chetan, E/o-2.7; E/o-3.4; O/p-3.17
SINGH Gurpreet, R/p-3.8
SINGH Preetam, W/p-1.41
SINGH Roja, G/p- 15.28
SINGHA Achintya, T/o-5.4
SINGHAL Sonal, C/p-7.34
SIOL Sebastian, AA/o-15.4; O/p-3.5
SIRIVISOOT Sirinrath, L/p-2.45
SIROTINSKAYA Svetlana, B/p-5.21
SITTINGER Volker, R/inv-2.1
SIUZDAK Katarzyna, H/p-2.23; U/p-5.22
SIVULA Kevin, A/inv-6.1
SKODVIN Daniel, C/o-2.2
SKORUPA Wolfgang, BB/o-3.1
SLAV Adrian, N/o-9.10
SLIMANI TLEMCANI Taoufik, F/p-6.4
SMILES Matthew, E/p-21.20
SMITH Chris, V/p-3.8
SMITH Rebecca, Q/o-1.3
SMULKO Janusz, R/p-3.46
SOBASZEK Michal, R/p-3.11
SOBOLEV Nikolay, W/p-2.2
SOBOLEV Nikolai A., U/o-3.6
SOKOLIKOVA Maria, T/o-2.3
SOLA Daniel, V/p-10.43; V/p-10.44
SOLARSKA Renata, A/inv-8.1
SOLATI Navid, M/p-7.69
SOLOMON Getachew, H/p-1.64
SOLOVIEVA Anastasia, N/p-I.4
SON Hae Jung, B/p-5.42
SON Soomin, H/p-1.49
SONG Aeran, O/o-2.7
SONG Jinju, C/p-7.59
SONG Jun-Hwa, D/p-1.2
SONG Y. H., G/p- 15.34
SOPEÑA Pol, V/o-8.6
SOPPE Wim, C/o-18.1
SØRENSEN Daniel, C/o-10.5
SORENSEN Kirk, J/inv-3.6
SORTINO Antonella Laura, V/p-3.19
SORZABAL BELLIDO Ioritz, L/p-1.31
SOSA CAMPOSECO Akari Narayama, C/p-7.54; T/p-1.28
SOTILLO Belen, C/p-15.42; O/o-10.6; Q/o-2.6
SOVINSKA Svitlana, H/p-1.54; H/p-2.50
SPADA Daniele, C/o-18.3
SPALATU Nicolae, E/p-21.17
SPALLA Manon, B/o-2.8
SPECHT Petra, Z/o-1.2
SPEGHINI Adolfo, P/o-7.4
SPERA Monia, X/o-IVa.2
SQUILLACI Marco, M/o-5.6
SREEKUMAR MENON Ashok, C/o-11.4
SRIMURUGANANTHAN Sriluxmi, R/p-3.35
SRIVASTAVA Priya, G/o-12.8
STANDO Dawid, N/p-III.56
STANESCU Stefan, H/o-9.2
STANKOVA Nadya, L/p-2.16; V/p-3.14
STARINSKIY Sergey, V/p-10.17
STARKHOLM Allan, G/o-4.5
STAROWICZ Zbigniew, E/p-21.15
STATHATOS Elias, B/o-8.5
STEFANI Christina, Q/o-6.3
STEFANOVSKY Sergey, J/o-4.4; J/o-4.9
STEHLING Nicola, AA/o-7.3; N/p-I.17; Z/o-5.4
STEIGERT Alexander, I/p-1.9
STEIN Frederic, V/p-3.33
STEINER Johannes, X/o-X-Ia.3
STEPHAN Sarah, V/p-10.2
STEPINA Santa, M/p-7.65
STEVENSON Keith, C/o-9.4
STILHANO VILAS BOAS Cristiane, O/p-11.43
STOCK François, V/o-1.2
STOFFEL Mathieu, P/o-4.4; W/p-1.2
STOLAS Alicja, P/o-9.3
STOLIAROFF Adrien, AA/o-2.4
STRANZ Andrej, I/o-7.8
STRATULAT Alisa, AA/o-7.2
STREHLE Steffen, D/o-10.4
STROESCU Hermine, F/o-1.6
STURM Sa□so, Z/o-6.13
STUTZ Elias, E/o-2.3
SU Sheng Yun, Z/p-4.1
SU Yu-An, B/p-5.22
SUBBOTIN Kirill, D/p-1.42
SUBHADARSHINI Suvani, C/p-7.25
SUBRAMANI Thiyagu, D/o-13.3
SUCHEA Mirela Petruta, H/p-1.7; U/p-2.16
SUGIMOTO Hiroshi, D/inv-6.1
SUGIYAMA Mutsumi, E/o-10.3
SUH Seok Jun, N/p-II.6
SUH Ji Hye, A/o-10.5
SUHAK Yuriy, F/o-1.5
SULIALI Nyasha, H/p-1.50
SULIANG Yang, J/o-3.16
SULIMOV Mikhail, E/p-20.18
SULZBACH Milena Cervo, O/o-9.4; Q/o-7.5
SUN Haoran, L/p-2.13
SUN He, A/p-3.9; C/p-7.76
SUN Jianwu, A/inv-8.2
SUN Lina, O/p-3.21
SUN Wenhao, AA/o-2.2
SUN Xun, C/p-7.36
SUN Yanxiao, Q/o-5.2
SUNG Minchang, U/p-2.25
SUNGHUN Choi, C/p-15.12
SUNKARA Mahendra, A/inv-5.5
SURAJ Thyagarajan Sumaraj, O/o-14.7
SURDO Salvatore, V/o-2.5
SURENDRAN Abhijith, U/o-4.3
SURRENTE Alessandro, G/p- 15.6
SUSARLA Sandhya, P/p-2.1
SUSZKO Tomasz, N/o-5.7
SUZUKI Tomiko, H/o-3.7; H/p-2.45
SVIRIDOV Andrey, L/o-14.2
SWALLOW Jack, O/p-11.37
SWIATKOWSKA-WARKOCKA Zaneta, V/o-6.7
SYCHUGOV Ilya, B/o-3.2; D/o-15.2; P/o-9.11
SYMEOU Elli, I/o-7.2
SYVÄJÄRVI Mikael, BB/o-6.1
SZABO Zoltán, W/o-3.6
SZEWCZENKO Janusz, L/p-1.2

T

TABBAL Malek, V/p-3.35
TACHIBANA Yasuhiro, A/inv-1.6; R/p-3.24
TADAKI Daisuke, K/p-7.4
TAE HYEON Kim, O/p-3.6
TAE-WON Kim, H/p-1.42
TAFFOREAU Paul, BB/o-5.2
TAÏBI Kamel, H/p-1.16
TAINOFF Dimitri, F/o-7.4
TAKAHIRO Ishizaki, M/p-7.72
TAKASHIMA Mai, H/inv-5.6
TAKEDA Yasuhiko, H/o-6.4
TAKEUCHI Tsunehiro, I/inv-8.2
TALANDE Smita, C/p-7.77
TALBOT Etienne, P/o-1.8
TAMER Marleine, L/p-2.23
TAN Jeiwan, A/o-9.9
TANG Chunjing, M/p-7.83
TANG Siying, H/p-2.54
TANG Yingying, G/o-11.3
TANG Yue-Kai, W/p-2.25
TANIGAKI Katsumi, I/o-1.7
TANIGUCHI Hiroki, Q/p-4.18
TANOH Arelo, T/o-6.3
TANVEER Waqas Hassan, O/p-11.45
TAPPERTZHOFEN Stefan, I/o-6.6; O/o-10.5; P/inv-1.7; Q/o-2.5
TARAFDAR Gourav, H/p-2.26
TARANCON Alberto, F/inv-4.1
TARASENKA Natalie, V/p-10.7
TAS Mehmet, U/o-3.4; W/p-2.7
TATSUYA Yasuoka, O/p-3.38
TAY Roland, T/p-2.36
TCHERNYCHOVA Elena, C/o-11.2
TEAYEOP Kim, P/p-8.7
TEDJAR Farouk, C/inv-3.2
TEGHIL Roberto, V/p-3.7
TEIXEIRA Joana, C/p-7.7
TELESIO Francesca, T/o-9.7; T/p-1.31
TEN ELSHOF Andre, O/inv-12.1
TENAILLEAU Christophe, G/o-12.2; G/p-15.11; O/o-2.2
TERASHIMA Chiaki, R/inv-5.1
TEREKHIN Pavel, V/o-7.5
TERENTYEV Dmitry, J/o-2.14
TERRASCHKE Huayna, Y/o-2.4
TESSIER Mickael, W/o-2.2
TETSUJI Kume, E/p-20.4
TEURTRIE Adrien, O/o-14.2
TEWARI Aarti, AA/p-.26
THAI Quang Minh, W/o-9.4; W/p-2.24
THEBAUD Simon, I/o-5.6
THERSLEFF Thomas, H/p-2.43; Z/p-4.26
THOMSEN Maria Storm, Y/p-2.5
THYGESEN Kristian, AA/inv-2.1
THYR Jakob, H/p-2.15
TIAN Guoxin, J/o-3.15

inv = invited / o = oral / p = poster

TIAN Weiqian, U/o-1.5
TIAN Yang, M/inv-9.2
TIEDE David, Y/inv-3.1
TIEMANN Michael, M/p-7.52; N/p-I.38; U/o-3.5
TIMMO Kristi, E/p-21.3
TIMOSHENKO Janis, AA/o-15.5
TIMUSK Martin, R/p-3.16
TITE Teddy, L/p-1.26; N/p-I.45; N/p-III.24
TJOKROWIDJAJA Claire, AA/o-15.7
TKACH Alexander, I/p-2.17
TO Duy-Quang, W/o-13.4
TOBALDI David, H/p-1.15
TOBERER Eric, AA/inv-2.5
TOCKHORN Philipp, B/o-9.6
TOFFANIN Stefano, K/o-2.5
TOLEDO Esti, L/p-1.12
TONG Wen-Yi, AA/p-.62
TONG Xili , M/p-7.6; M/p-7.59; M/p-7.60
TOPOLNIAK Ievgeniia, N/p-I.30
TORCHYNSKA Tetyana, N/p-III.16; O/p-3.16
TORRICELLI Fabrizio, K/o-6.8
TORRISI Giacomo, P/o-1.2; P/p-3.3
TORSI Luisa, L/o-5.6
TOSUKE Taichi, E/p-20.22
TOUDERT Johann, P/inv-4.2
TOUPANCE Thierry, B/o-9.4; H/o-6.3
TOUSSAINT Kathleen, D/p-1.35
TRABESINGER Sigita, C/p-15.59
TRAN Huy, R/p-3.43
TRAN Thu Ha, T/o-6.7
TRASOBARES Jorge, T/o-4.7
TREFILOV Alexandra Maria Isabel, M/p-7.54
TRESS Wolfgang, B/inv-9.2
TRICOLI Antonio, A/o-9.10; E/o-1.7; W/o-6.2
TRILLAUD Victor, J/o-1.8
TRIPPE-ALLARD Gaëlle, G/p- 15.23
TROIAN Andrea, W/o-14.2
TROMP M, Y/inv-3.4
TROSHIN Pavel, B/inv-2.2
TROTTI Paola, F/o-5.4
TSAI Shiao-Wen, L/p-1.14
TSAMPAS Michail, A/o-7.3
TSAREV Sergey, B/p-5.11
TSENG Sian-Hong, T/o-9.3
TSUBASA Nakamura, W/p-2.43
TSUJIMOTO Yoshihiro, S/p-5.5
TSUJIMURA Seiya, L/inv-4.1
TUCTO Karem, H/p-2.60
TUCUREANU Vasilica, P/p-2.23
TYMOCZKO Anna, V/o-6.3

U

UBRIG Nicolas, T/o-3.3
UDONO Haruhiko, E/p-21.19
UEBEL David, D/o-4.2
UEDA Shotaro, F/p-6.13
UGLOV Vladimir, N/p-II.1; N/p-II.42; N/p-II.43
UK Sim, H/p-2.11
UKOBA Kingsley, R/p-3.14
ULLOA GARZA Daniel, J/p-1.19
ULYASHIN Alexander, D/o-3.5; D/p-1.38
URBAIN Félix, A/o-9.6; H/o-1.3
URBAN Alexander, W/inv-11.1
URBAN Tobias, D/p-1.41
URIBE Eva, J/inv-1.11
URSKA Gabor, Q/o-2.3
URSO Mario, C/p-15.36; P/o-7.2
URSU Cristian, V/o-4.4
USSIA Martina, H/o-14.6
USTINOVA Marina, B/p-5.12
USUGA Maria, N/p-I.56
UVAROV Alexander, W/p-1.23

V

VAGNER Milita, N/p-II.16
VALENTA Jan, D/inv-14.1; H/p-1.67
VALKOV Stefan, N/p-II.7
VAN AERT Sandra, Z/inv-3.1
VAN AKEN Peter, O/o-5.2; Z/o-1.4; Z/o-3.9
VAN DER LAAN Marco, T/p-1.25
VAN DER ZANT Herre, T/inv-11.1
VAN GOMPEL Wouter, G/p- 15.14
VAN SON Nguyen, E/o-1.3
VAN ZELE Matthias, R/o-2.5
VANAZZI Matteo, J/p-1.20
VANDERVORST Wilfried, D/inv-7.1
VANDERZANDE Dirk, G/o-14.4
VANNI Matteo, T/o-6.2
VARAGNOLO Silvia, N/o-8.9
VARGHESE Oomman, A/inv-6.6
VARONIDES Argyrios, W/p-2.27
VASILYEV Oleg, P/p-2.17
VASQUEZ Geraldo Cristian, W/p-1.33; X/o-VIa.2
VECIANA Jaume, P/inv-9.1
VEINOT Jonathan, D/o-14.2
VENKATESAN Thirumalai Venky, V/inv-5.1
VENNEGUES Philippe, W/p-1.22
VENTOSA Edgar, C/p-15.81
VERGNAT Michel, P/o-4.8
VERGNAUD Céline, T/p-2.4; T/p-2.5
VERRELLI Roberta, C/p-7.12
VERTRUYEN Benedicte, C/o-12.2; M/p-7.80
VEZIROGLU Salih, H/p-2.34
VIAU Guillaume, Y/o-3.3
VICENTE MANZANO Maria Cristina, I/o-1.13; N/p-I.63
VIDAL Julien, AA/inv-11.1
VIDELOT-ACKERMANN Christine, K/p-7.15
VIEIRA Manuela, W/o-9.7; W/p-2.11
VIERTEL Tina, V/p-3.21
VILCOT Jean-Pierre, E/inv-9.1
VILLA Katherine, H/o-8.5
VILLAFUERTE Jose, F/p-6.5
VILLARREAL Renan, U/o-1.7
VILLEVIEILLE Claire, C/inv-7.3
VILQUIN Bertrand, O/p-11.11; O/p-11.12; Q/p-4.4; Q/p-4.5
VISAN Anita Ioana, L/o-6.5; L/p-1.1; L/p-1.47
VISHWAKARMA Manoj, E/p-21.14
VITALE Stefania, L/o-9.5
VITELARU Catalin, N/p-II.29; N/p-II.33; N/p-II.50
VIVEK Adithya, L/p-1.17
VO Truong-Giang, H/o-12.4
VOCANSON Francis, H/p-1.11
VOGEL Alfred, V/inv-6.5
VOLFOVA Lenka, O/o-2.5
VOLOBUJEVA Olga, E/p-21.10
VOLONAKIS George, G/inv-6.1
VOLPATO Giulia Alice, A/o-8.7; H/p-1.22
VON HELDEN Leonard, Q/o-3.5
VONRÜTI Nathalie, S/o-2.5
VOURLIAS George, I/p-1.15; N/p-II.20
VUKELIC Goran, AA/o-11.2
VULPE Silviu, O/p-11.20; O/p-11.21
VUONG Thi-Quynh-Phuong, T/p-2.35
VYGRANENKO Yuriy, E/p-21.13; O/p-3.31

W

WADSWORTH Andrew, B/o-10.4
WAGNER Tomas, W/p-2.49
WAHIDUZZAMAN Mohammad, R/o-8.6
WALSH Aron, S/inv-9.4
WANG Zhenyu, E/o-1.2
WANG Chenguang, N/o-9.4
WANG Dan, M/inv-3.6
WANG Guomin, L/o-4.3
WANG Hua, M/p-7.81
WANG Jiande, C/p-15.91
WANG Lianzhou, A/inv-10.8
WANG Lumin, J/o-2.9
WANG Mao, D/o-6.3; D/p-1.21
WANG Mingqing, G/p- 15.37
WANG Nan, M/p-7.68
WANG Robin Chih-Hsing, C/p-7.46
WANG Sheng, R/p-3.2
WANG Shengfu, M/o-5.4; M/p-7.16; M/p-7.17
WANG Sungrok, L/o-11.4
WANG Xiaoyi, K/p-7.11
WANG Xinwei, N/p-I.24
WANG Yang, C/p-15.71
WANG Ying-Chiao, B/o-2.3
WANG Yong, E/o-9.2; E/p-20.6
WANG Zhong Lin, F/inv-3.1
WARD Peter, X/o-IVb.5
WAROT-FONROSE Benedicte, O/inv-5.1
WASIAK Dawid, N/p-III.57
WATANABE Motonori, H/p-2.2
WEI Tian-Ran, I/o-8.3
WEI Xiankui, Z/p-4.6
WEIDENKAFF Anke, I/inv-5.1
WEIKANG Hua, N/p-III.62
WEISS Charlotte, D/o-12.3
WELDEKIDAN Ephrem Terefe, C/o-6.6
WELLS Rebekah, T/o-5.6
WEN Cheng-Yen, D/o-11.4
WEN Haiming, J/o-1.16; J/o-2.13
WENGER Bernard, E/inv-3.1
WENTINK Mark, T/o-8.2
WENZEL Wolfgang, AA/o-3.7
WESTBROOK Robert, B/o-9.5
WEU Andreas, B/p-5.35
WICKLEDER Mathias, R/inv-8.1
WIDENMEYER Marc, S/o-8.5
WIESINGER Rita, BB/o-3.4
WILLIAMS David, H/p-1.13
WINKLER Florian, Z/o-3.3
WINKLER Nina, E/o-10.6; O/o-2.4
WOJCIESZAK Damian, N/p-II.45
WOLFF Christian, B/inv-6.1
WOLFMAN Jerome, I/p-1.2; O/o-4.3
WON Dahye, M/o-4.5
WON Jong Ho, C/p-15.52; M/o-6.5
WONG Lok Wing, T/p-1.17
WONG Tobias, E/p-20.12
WONG Yat Lam, H/p-1.61
WONGKAEW Nongnoot, V/p-10.56
WOO Jeong-Hyun, O/p-3.13
WOO Jong-Un, O/o-7.4
WOO Sola, W/p-2.41
WOODS-ROBINSON Rachel, E/o-9.3
WU Can, M/p-7.26
WU Chung-Lin, T/p-1.24
WU Huaisheng, B/p-5.17
WU Jian, M/inv-11.3
WU Szu-Chen, M/o-3.5
WU Tong, S/o-2.4
WULFMEIER Hendrik, O/o-5.3

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XI Lu, F/o-4.3
XIA Fan, M/inv-11.1
XIA Rui, C/p-7.47
XIA Yipu, T/p-1.48
XIANG Hengyang, W/o-8.3
XIAO Chen, L/p-1.5
XIAO Xingxing, I/o-5.7
XIAO Yiqun, B/p-5.65
XIAOFENG Li, M/p-7.11
XIAOHUI Liu, M/p-7.62
XIE Yuemin, B/p-5.56
XU Chen, W/o-6.5
XU Haixuan, J/o-2.19
XU Hengbin, J/o-3.21; J/p-1.26
XU Qingmeng, BB/o-1.2
XU Xiuwen, B/p-5.19
XUE Can, H/o-13.3
XUE Han, A/p-3.3
XUEDONG Bai, M/p-7.4
XUFEN Xiao, N/p-II.31; U/p-2.14

Y

YABE Hiroki, C/p-7.8
YABU Hiroshi, L/o-7.3
YAEL Hanein, K/inv-1.1
YAKIMOVA Rositsa, X/o-IVa.3
YALCIN Anil, Z/p-4.30
YAMADA Atsuo, C/inv-14.3
YAMAUCHI Yuka, L/p-1.40
YAMILOVA Olga, B/p-5.50
YAN Minglong, N/p-III.29
YAN Ruijuan, I/p-1.16
YAN Yanfa, A/inv-4.2
YANBO Yang, E/p-20.29
YANG Anneng, K/p-7.17
YANG Byungchan, N/p-II.30
YANG Dongwon, W/p-2.4
YANG Hyun Joon, U/o-7.2
YANG Hyunha, E/o-4.7
YANG Jin Wook, H/o-3.2
YANG Jung Hoon, C/p-7.65
YANG Nailiang, M/o-8.4
YANG Nianjun, M/p-7.84
YANG Quan-Hong, M/inv-6.3
YANG Sheng, E/o-8.4
YANG Sheng-Hsiung, G/o-12.7; G/p-15.1
YANG Terry Chien-Jen, B/o-1.2
YANG Xudong, B/inv-8.2
YANG Yeo Kyung, C/p-7.43
YANG Yun, M/p-7.63
YANO Junko, Y/inv-4.1
YAO Huijun, U/p-2.17
YAO Wang, V/p-10.48
YASUKAWA Yukiko, N/o-9.5
YAZYEV Oleg, AA/inv-5.1
YE Yongkang, M/p-7.29; M/p-7.31
YEANDEL Stephen, C/p-15.30
YELTIK Aydan, W/p-1.30
YEO Sang Young, F/p-6.18
YEO Seungmin, C/p-15.21
YEOM Bongjun, U/p-5.18
YEONSONG Kim, M/p-7.108
YIAMSAWAS Doungporn, L/p-1.3
YIFEI Wang, A/p-3.1
YILMAZ Pelin, R/o-4.5
YING Xiong, M/o-8.5
YING Yiran, AA/p-.60
YONG Hyungseok, F/p-6.21
YOO Bowon, B/p-5.57
YOO Hyomin, U/p-2.23
YOO Jinhyuk, P/p-2.26
YOO Junghyeon, G/p- 15.17
YOO Sung Keun, W/p-2.22
YOO Woo Sik, BB/p-1.4
YOON Jae Sung, N/p-III.34
YOON Ji Won, H/o-9.3
YOON Jong-Gul, Q/o-1.9
YOON Jong-Hwan, O/p-11.30; T/p-2.13
YOON Myung-Han, K/o-3.3
YOON Sukeun, C/p-7.58
YOON Sung Cheol, B/p-5.32
YOON Sunyoung, N/p-II.28; N/p-III.18
YOON Tae-Ho, M/p-7.8
YOU Tae Soo, I/o-1.6
YOUNG Katherine, M/p-7.109
YOUNG MIN JHON , N/p-II.68
YOUSEFI AMIN Amir Abbas, N/p-I.40
YU Jaejun, H/o-11.3
YU Jiashing, L/o-8.5
YU Jing, N/p-II.25
YU Qingliang, H/o-4.5
YU Shu Hearn, H/p-2.63
YU Siyu, M/p-7.32
YU Tzu-Yi, L/p-1.33
YUAN Xiaojiao, H/o-7.3
YUAN Zhongcheng, G/o-12.6
YUN Di, J/o-3.7
YUN Haeju, W/p-2.16
YUN Jemoon, R/o-8.3
YUN Yeseul, Q/p-4.1
YURIYCHUK Ivan, V/p-3.49

Z

ZACHARAKI Christina, Q/o-5.4
ZACHARATOS Filimon, V/p-3.3; V/p-10.28
ZAFFALON Matteo Luca, W/o-2.7
ZAKUTAYEV Andriy, AA/inv-13.1; C/o-18.4; E/inv-1.1
ZAMCHIY Alexandr, D/p-1.17
ZANAZZI Enrico, W/o-1.4
ZARATE-REYES José Miguel, V/p-10.38
ZAWACKA Natalia, N/p-III.7; W/p-1.34
ZAYANI Wissem, C/p-15.92
ZEGLIO Erica, K/o-3.7
ZELENOVSKIY Pavel, K/p-7.10
ZEMAN Petr, N/o-2.2
ZEMLA Marcin, AA/o-7.6; AA/p-3; AA/p-40
ZENG Jian, T/p-1.16
ZENG Ting, M/p-7.98; M/p-7.100
ZESSIN Jakob, N/p-I.51
ZGHEIB Elia, N/o-4.5
ZHAN Teng, L/p-2.3
ZHAN Tianzhuo, I/o-4.10
ZHANG Ce, C/p-15.49
ZHANG Chenguang, C/o-13.5
ZHANG Chenhui, T/p-1.39
ZHANG Chi, M/o-10.4
ZHANG Hua, M/inv-1.3
ZHANG Hui, C/o-7.5
ZHANG Jin, A/inv-2.5
ZHANG Jincang, S/p-5.6
ZHANG Jingdong, M/p-7.92; M/p-7.93; M/p-7.96
ZHANG Jun, H/p-1.31
ZHANG Lihua, H/p-2.58; H/p-2.70
ZHANG Lijun, AA/inv-10.4
ZHANG Mei, M/p-7.56
ZHANG Meng, N/p-III.46
ZHANG Miao, T/p-2.37; T/p-2.38
ZHANG Tongyi, AA/o-6.6
ZHANG Wenjun, M/inv-1.4
ZHANG Xian, I/o-2.4
ZHANG Xianghui, P/o-7.4
ZHANG Xiaozhe, C/p-15.90
ZHANG Xin, S/p-5.1
ZHANG Xiuhua, M/p-7.10
ZHANG Yanan, M/o-11.4
ZHANG Yu, P/o-1.10
ZHANG Yuanyuan, M/p-7.46; M/p-7.99
ZHANG Zhi-Ling, M/p-7.105
ZHAO Dan, I/o-8.7
ZHAO Hongying, M/p-7.104
ZHAO Jianxiong, P/p-2.25
ZHAO Xiaoyu, M/p-7.30
ZHAO Yanhong, M/p-7.76
ZHAO Yu, C/p-15.46
ZHAO Yuwei, C/p-7.67
ZHAOFENG Zhai, M/o-5.5
ZHENG Tingting, M/o-9.4
ZHENG Yizhen, H/o-5.4
ZHENG Zijian, M/inv-3.1
ZHIGILEI Leonid, AA/p-.36; V/inv-1.4
ZHITOMIRSKY Igor, C/p-15.19
ZHIYONG Zheng , C/p-7.63
ZHOU Jingjian, D/p-1.4
ZHOU Pengshang, W/p-1.36

inv = **invited** / o = **oral** / p = **poster**

ZHOU Wei, **C/p-15.89**
ZHOU Xiaoyuan, **I/inv-8.1**
ZHOU Xun, **P/p-8.12**
ZHU Qi, **C/p-15.63**
ZHU Tiejun, **I/inv-5.10**
ZHU Wenkun, **C/p-15.47**
ZHU Yachao, **C/o-2.6**
ZHU Yadong, **N/p-III.61**
ZHU Yiru, **G/p- 15.13**
ZHUANG Xiaodong, **M/inv-3.2**
ZHUKOVA Maria, **E/o-9.4**
ZIELINSKI Marcin, **X/o-Ib.1**
ZIJUN Shi, **M/p-7.77**
ZIMBONE Massimo, **X/o-X-VIb.1; X/p-V.1**
ZIMMER Klaus, **V/o-5.5; V/p-3.28; V/p-3.29**
ZINDY Nicolas, **C/p-7.41**
ZINPHYO Kyaw, **T/p-2.12**
ZINTLER Alexander, **Z/p-4.23**
ZOITA Nicolae Catalin, **N/p-II.55; N/p-II.63**
ZOU Feng, **C/p-7.45**
ZOU Lingyu, **A/p-3.4**
ZOU Mingchu, **C/p-7.13**
ZOU Yajuan, **L/o-9.3; M/o-8.6**
ZOURIDI Leila, **O/p-11.28; R/p-3.22**
ZUBAIR Muhammad, **H/p-1.55; H/p-2.39**
ZUKALOVA Marketa, **C/o-10.1**
ZUNGER Alex, **G/inv-12.1; AA/inv-4.1**
ZUZEK ROZMAN Kristina, **R/o-11.3**
ZWANENBURG Floris, **D/inv-12.1**
ZWECK Josef, **Z/inv-2.1**