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<tr>
<td>ENERGY</td>
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<tr>
<td>A</td>
<td>Processing, characterization, modelling and applications of nano energetic materials</td>
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<td>B</td>
<td>Advanced materials and systems for electrochemical energy storage</td>
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<td>C</td>
<td>Organic photovoltaics: material synthesis and characterization, device engineering, device physics and upscaling</td>
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<td>D</td>
<td>Next generation of earth-abundant materials for solar energy</td>
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<td>E</td>
<td>Advanced inorganic materials and structures for photovoltaics</td>
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<td>Photocatalytic materials for energy and environment</td>
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<td>G</td>
<td>Materials for improving energy storage battery technologies</td>
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<td>H</td>
<td>Inorganic thermoelectrics - linking material properties and systems engineering for XXI century applications</td>
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<td>BIOMATERIALS</td>
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<td>I</td>
<td>Organic bioelectronics</td>
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<td>J</td>
<td>Electronic textiles</td>
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<td>K</td>
<td>Bioinspired and biointegrated materials as new frontiers nanomaterials VII</td>
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<td>SEMICONDUCTORS</td>
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<td>L</td>
<td>New materials for organic electronics: from synthesis to processing, characterization and device physics</td>
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<td>M</td>
<td>Novel transport phenomena in organic electronic devices: heat, spin and thermoelectricity</td>
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<td>N</td>
<td>Semiconductor nanostructures towards electronic and opto-electronic device applications – VI</td>
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<td>O</td>
<td>Wide bandgap semiconductor for LEDs, solar and related energy technology</td>
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<td>P</td>
<td>Silicon &amp; Silicon nanostructures: from recent fundamental research to novel applications</td>
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<td>NANOMATERIALS</td>
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<td>Q</td>
<td>Nano-engineering coatings and thin films</td>
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<td>R</td>
<td>Nanoparticles in dielectric matrix: from synthesis to device applications for photonics, electronics, and bio sensing</td>
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<td>ALTECH 2017 - Analytical techniques for precise characterization of nano materials</td>
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<td>T</td>
<td>Synthesis, processing and characterization of nanoscale multi functional oxide films VI</td>
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<td>U</td>
<td>Computer modeling of thermal transport at the nanoscale</td>
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<td>V</td>
<td>Design and hierarchical assemblies of nanomaterials (nanoparticles, carbon materials, molecules) towards energy, sensing, electronic, catalysis</td>
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<td>FUNCTIONAL MATERIALS</td>
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<td>W</td>
<td>Small scale mechanical behaviour of interfaces: bridging experimental and computational modelling methods</td>
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<td>X</td>
<td>New frontiers in laser interaction: from hard coatings to smart materials</td>
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<td>Paper electronics: from materials to applications</td>
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<td>Metamaterials: from waves to matter</td>
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<td>WORKSHOPS</td>
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<tr>
<td>EpE / E-MRS INDUSTRIAL WORKSHOP - Materials for Decarbonized Circular Economy</td>
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<td>EpE / E-MRS ROUND TABLE - Materials for Decarbonized Circular Economy</td>
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<td>BET-EU WORKSHOP - Future prospects of materials in Europe</td>
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<td>PRINTING OFFICE</td>
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<td>PLENARY SESSION</td>
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<td>CEREMONY: Graduate Student Awards</td>
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<td>EXHIBITION</td>
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<td>EXHIBITOR WORKSHOP</td>
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<td>COFFEE BREAKS</td>
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<td>LUNCH</td>
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<td>SOCIAL EVENT</td>
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<td>REGISTRATION DESK</td>
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Exhibition

Around 80 international exhibitors will display a full spectrum of equipment, instrumentation, products, software, publications and services. To be held on May 23 - 25, 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.

The following exhibitors are confirmed for the E-MRS 2017 Spring Meeting in Strasbourg (21/03/2017)

- ABCR.................................................................................................................booth 26
- ACS Publications..............................................................................................booth 51
- AJA International..............................................................................................booth 25
- ANNEALSYS.................................................................................................booth 45
- ASAHI SPECTRA............................................................................................booth 47
- BIHURCRYSTAL............................................................................................booth 55
- BITTMANN APPLIED TECHNOLOGIES................................................................booth 57
- BRUKER-HYSINTON.......................................................................................booth 71
- CAMBRIDGE UNIVERSITY PRESS......................................................................booth 76
- COMELEC.........................................................................................................booth 09
- COMVAT............................................................................................................booth 21
- COST..................................................................................................................booth 68
- CRYSTALMAKER............................................................................................booth 64
- CTECH - COATING TECHNOLOGIES.................................................................booth 79
- DE GRIJYTER....................................................................................................booth 39
- DEMCON / KRYOZ..........................................................................................booth 60
- DR. EBERL MBE KOMPONENTEN....................................................................booth 48
- DROPSSENS.......................................................................................................booth 74
- EDINBURGH INSTRUMENTS................................................................................booth 04
- EDP SCIENCES..................................................................................................booth 78
- ELETTORAVA......................................................................................................booth 09
- EUROMETROPOLE............................................................................................booth 80
- EUROPE IN MOTION.......................................................................................booth 81
- EVERBEING........................................................................................................booth 56
- FOCUS................................................................................................................booth 11
- GOODFELLOW....................................................................................................booth 42
- HAMAMATSU.....................................................................................................booth 01
- HHV Ltd.............................................................................................................booth 06
- HITACHI HIGH TECHNOLOGIES Europe...........................................................booth 18
- HITACHI HIGH-TECHNOLOGIES Europe............................................................booth 27
- HNW HAUNER....................................................................................................booth 70
- HORIBA..............................................................................................................booth 14-15-16
- IMAGE METROLOGY .......................................................................................booth 54
- INRIM Istituto Nazionale di Ricerca.................................................................booth 3
- ION-TOF GmbH.................................................................................................booth 24
- KEMSTREAM.....................................................................................................booth 45
- KEYSIGHT..........................................................................................................booth 31-32
- KP TECHNOLOGY..............................................................................................booth 63
- KURT J. LESKER.................................................................................................booth 37-38
- LINSEIS..............................................................................................................booth 33
- LRC......................................................................................................................booth 72
- MATECK.............................................................................................................booth 35
- MERCK «SIGMA-ALDRICH MATERIALS SCIENCE»........................................booth 61
- MICROT,.............................................................................................................booth 09
- MICROSWORLD................................................................................................booth 93
- NEASPEC...........................................................................................................booth 41
- NEYCO................................................................................................................booth 67
- NT-MDT-SPECTRUM INSTRUMENTS.............................................................booth 77
- OPTICNANO........................................................................................................booth 75
- PLASMA TECHNOLOGY....................................................................................booth 36
- PLASMATERIALS...............................................................................................booth 34
- POLYGON PHYSICS..........................................................................................booth 59
- PTB Physikalisch-Technische Bundesanstalt....................................................booth 03
- ROYAL SOCIETY OF CHEMISTRY.................................................................booth 23
- SAIREM..............................................................................................................booth 19
- SCIENCA OMICRON.........................................................................................booth 12
- SCIENTEC..........................................................................................................booth 40
- SCM....................................................................................................................booth 22
- SOLMATES.........................................................................................................booth 13
- SPECS................................................................................................................booth 52
- SPRINGER NATURE............................................................................................booth 28-29-30
- STREM CHEMICALS........................................................................................booth 66
- SURFACE nanometrology................................................................................booth 43
- SURFACE systems + technology....................................................................booth 44
- SWISSLITHO AG...............................................................................................booth 58
- TAYLOR & FRANCIS..........................................................................................booth 65
- TECUUM AG......................................................................................................booth 05
- TFSC-INSTRUMENT..........................................................................................booth 10
- THE ROYAL SOCIETY PUBLISHING..............................................................booth 62
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- Twente Solid State Technology B.V. (TSST).....................................................booth 02
- UC COMPONENTS.............................................................................................booth 50
- UHV-DESIGN.....................................................................................................booth 20
- VACGEN............................................................................................................booth 69
- VAKSIS...............................................................................................................booth 73
- WILEY................................................................................................................booth 49
- WITEC...............................................................................................................booth 17
- ZURICH INSTRUMENTS....................................................................................booth 46
Exhibitor workshops
Entrance Erasme – Ground floor

Exhibitor workshops will be held each day from Tuesday morning to Thursday afternoon.

All participants are invited to attend. The ENTRANCE IS FREE.

The exhibitor workshops provide opportunities to get acquainted with the latest developments in equipment, media, and services available on the market. For meeting attendees, the exhibitor workshops will be an excellent opportunity to gain practical first-hand knowledge from experts in the field of materials.

Workshops are located within the technical exhibition.

<table>
<thead>
<tr>
<th></th>
<th>TUESDAY MAY 23</th>
<th>WEDNESDAY MAY 24</th>
<th>THURSDAY MAY 25</th>
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<td>10:00</td>
<td>SCM</td>
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<td>«Materials &amp; Chemistry with the ADF Modeling Suite»</td>
<td>«CVD solutions for multi-metallic oxides and 2D materials»</td>
<td>«Ambient Pressure Photoemission and Scanning Kelvin Probe measurements of the energy band diagram of materials including Hydrogen Terminated Diamond, Perovskite Solar Cells and Nanowires»</td>
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<td>LINSEIS</td>
<td>SURFACE SYSTEMS TECHNOLOGY</td>
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<td>«new characterization methods for thin layered materials»</td>
<td>«Laser heating of substrates in material science – from nanometrologie up to deposition technologies»</td>
<td>«In Operando Studies of Material Surfaces: Photoelectron Spectroscopy and Scanning Probe Microscopy under Near Ambient Pressure Conditions»</td>
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<td>IMAGE METROLOGY</td>
<td>ION-TOF</td>
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<td>«Particle Analysis in SEM &amp; SPM images»</td>
<td>«33 years of TOF-SIMS development - From static surface characterisation to three-dimensional organic and inorganic micro area analysis»</td>
<td>«Beyond Google – accelerate your research using SpringerMaterials’ curated and trusted content»</td>
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<td>DE GRUYTER</td>
<td>SURFACE NANOMETROLOGY</td>
<td>NATURE Research</td>
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<td>«The goldilocks effect - publishing with de Gruyter»</td>
<td>«Heating and cooling in SEM - complete heat treatment cycles at high resolution imaging and EBSD»</td>
<td>«Nano – plenty of room at the bottom but how to find the data droplet in the content ocean»</td>
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<td>17:00</td>
<td>MICROTEST</td>
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<td>«Thin Films: choosing the right technology for your application»</td>
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<td>BIHURCRYSTAL</td>
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<td>«ALI: Deposition in UHV from solution»</td>
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E-MRS is pleased to provide complimentary wireless access to internet for all conference attendees:

1. Select the conference network: EMRS 2017
2. Open your browser
3. Fill in all fields marked with an asterisk (first connection only)
4. You are connected
Welcome address
Luísa Torsi, EMRS President

“The future strategy in the materials area in Europe”
Hélène Chraye, Head of Unit “Advanced Materials and Nanotechnologies”, European Commission

MATCH: BUILDING THE EUROPEAN MATERIALS COMMON HOUSE
(To be confirmed)

HERACLES, HERITAGE RESILIENCE AGAINST CLIMATE EVENTS ON SITE
Giuseppina Padeletti, Project Coordinator

NANOZALL: NANOTECHNOLOGY MUTUAL LEARNING ACTION PLAN FOR TRANSPARENT AND RESPONSIBLE UNDERSTANDING OF SCIENCE AND TECHNOLOGY
Augusto Medina, Project Coordinator (to be confirmed)

Coffee break

1D-NEON: 1D NANOFIBRE ELECTRO-OPTIC NETWORKS
Kim Jong, Project Coordinator (to be confirmed)

BET-EU: MATERIALS SYNERGY INTEGRATION FOR A BETTER EUROPE
Rodrigo Martins, Project Coordinator

“The prospect of science in Europe”
Martin Hynes, European Science Foundation President

State of the Nanomedicine Science
Delphine Felder, research scientist, Institute of Physics and Chemistry of Materials

Highlight of the Materials Summit
Paul Siffert, EMRS General Secretary

Discussion and conclusions
Materials for Decarbonized Circular Economy

The goal of this EpE / E-MRS workshop is to gather high level industrialists and scientists in order to identify topics and issues for which more pro-active synergy between these two sectors could significantly enhance the environmental burden of our consumerist society.

“Entreprise pour l’Environnement” (EpE), founded in 1992, is an association of around fifty French and international large companies from all sectors of the economy, who want to make environmental considerations more a part of both their long-term planning and their day-to-day management.

<table>
<thead>
<tr>
<th>Session 1: Production, storage and use of CO2 and Hydrogen</th>
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<tbody>
<tr>
<td><strong>S1.0</strong>: 8.30 - 8.45: Introduction by C. Tutenuit (EpE), E. Fogarassy (E-MRS) and G. Dennler (E-MRS)</td>
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<tr>
<td><strong>S1.1</strong>: 8.45 - 9.10: Air Liquide (tbc)</td>
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<tr>
<td><strong>S1.2</strong>: 9.10 – 9.35: Prof. Marc Robert (University Paris Diderot, LEM, France)</td>
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<td>“Low cost CO2 reduction”</td>
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<td><strong>S1.3</strong>: 9.35 – 10.00: Cryo Pur (tbc)</td>
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<td><strong>S1.4</strong>: 10.00 – 10.25: Prof. Wolfram Jaegermann (Technical University, Darmstadt, Germany)</td>
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<td>“H2 production by green routes”</td>
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<td>Coffee Break: 10.25 – 10.50</td>
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<th>Session 2: Recycling, reuse and eco-conception</th>
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<tr>
<td><strong>S2.1</strong>: 10.50 – 11.15: Renault (tbc)</td>
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<td>“New automotive materials, safe, efficient and recyclable”</td>
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<tr>
<td><strong>S2.2</strong>: 11.15 – 11.40: Claire Dadou-Willmann (Association Alliance Chimie Recyclage, France)</td>
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<tr>
<td>“Recycling and industrial chemistry”</td>
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<td><strong>S2.3</strong>: 11.40 – 12.05: Veolia or Solvay (tbc)</td>
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<td>“Are there still rare metals for energy transition?”</td>
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<td><strong>S2.4</strong>: 12.05 – 12.30: Prof. Oliver Gutfleisch (Fraunhofer IWKS, Hanau, Germany)</td>
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<td>“Rare Earth Re-Use and Recycling”</td>
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<td>Lunch Break: 12.30 – 14.00</td>
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<th>Session 3: Round table</th>
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<tr>
<td><strong>S3.1</strong>: 14.00 – 14.45: Keynote lecture: Prof. Philippe Chalmin (Paris Dauphine University, France)</td>
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<tr>
<td>“Raw Materials and Environmental Challenges”</td>
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<tr>
<td><strong>S3.2</strong>: 14.45 – 15.45: Round table moderated by C. Tutenuit (EpE)</td>
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<tr>
<td><strong>S3.3</strong>: 15.45 – 16.00: Conclusion and closing by C. Tutenuit (EpE), E. Fogarassy (E-MRS) and G. Dennler (E-MRS)</td>
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npj 2D Materials and Applications

Publishing the latest scientific advances across all aspects of 2D materials

npj 2D Materials and Applications is a new open access, online-only journal, that aims to become a top-tier interdisciplinary platform for scientists to share research on 2D materials and their applications. The journal is published in a partnership between Nature Research and Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa (FCT NOVA) with the support of the European Materials Research Society (E-MRS).

Join us in room ETOILE A between 13.30 – 15.00 on Wednesday 24th May for drinks and snacks to celebrate the launch of npj 2D Materials and Applications.

EDITOR-IN-CHIEF
Professor Andras Kis, PhD
École Polytechnique Fédérale de Lausanne, Switzerland
SYMPOSIUM A

Processing, characterization, modelling and applications of nano energetic materials

Symposium Organizers:

Carole ROSSI, LAAS-CNRS, Toulouse, France

David ADAMS, Sandia National Laboratory, Alburquerque, USA

Karsten WOLL, Institute for Applied Materials, Eggenstein-Leopoldshafen, Germany

Nie FUDE, Institute of Chemical Materials, Sichuan, China
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Authors</th>
<th>Location</th>
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<tbody>
<tr>
<td>09:00</td>
<td>Influence of morphology and microstructure on the reactivity of aluminum nanopowders</td>
<td>M.-V. Coulet (1), P.-H. Esposito (1), V. Madigou (2), C. Lenoux (2), R. Denoyel (1)</td>
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<tr>
<td></td>
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<td>(1) Université d’Aix Marseille, CNRS, MADIREL, Marseille, France.</td>
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<td></td>
<td>(2) Université de Toulon, CNRS, IM2NP, La Garde, France.</td>
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<tr>
<td>09:30</td>
<td>Nano-energetic materials fabricated by atomic/molecular layer deposition</td>
<td>Hao Feng, Lijun Qin, Ning Yan Xi’an Modern Chemistry Research Institute, China</td>
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<td>Lawrence Livermore National Laboratory, Livermore, USA.</td>
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<td>10:10</td>
<td>Coffee break</td>
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<td>10:40</td>
<td>New reactive material : advanced engineering methods vs properties : to be confirmed</td>
<td>Edward L. Dreizin</td>
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<td>New Jersey Institute of Technology, Newark, USA.</td>
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<td>11:10</td>
<td>Mechanochemically Prepared Nanocomposite Reactive Materials</td>
<td>A. Yu. Dolgoborodov (1),(2),(3), A. A. Shevchenko (1),(3), V. G. Kritlenko (1), M. A. Brazhnikov</td>
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<td>(1) ICP RAS, Moscow, Russia. (2) JIHT RAS, Moscow, Russia. (3) NRNU MEPHI, Moscow, Russia</td>
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<td>United States Airforce Research Laboratory, USA</td>
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<td>11:50</td>
<td>Reaction propagation of Metastable Intermolecular Composites at Microscale</td>
<td>Zhiqiang Qiao, Jun Wang, Bing Huang, Peng Wu, Guangcheng Yang</td>
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<td>Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China</td>
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<td>13:30</td>
<td>Revealing the reaction dynamics and phase evolution in self-propagating reactive nanolaminates using Movie Mode DTEM</td>
<td>Thomas LaGrange</td>
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<td>École Polytechnique Fédérale de Lausanne (EPFL), Interdisciplinary Centre for Electron Microscopy (CIME), Lausanne, Switzerland</td>
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<tr>
<td>14:00</td>
<td>Study on exothermic reactions and laser ignition of Al/NI multilayer films</td>
<td>Ma Tao, Li Yi, Qin Wenzhi</td>
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<td></td>
<td></td>
<td>Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China</td>
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<tr>
<td>14:20</td>
<td>Pulse duration dependence on direct laser ignition of Al/Pt reactive multilayers</td>
<td>Michael J. Aberle, Cole D. Yarrington, and David P. Adams</td>
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<td>Sandia National Laboratories, Albuquerque, USA</td>
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<td>14:40</td>
<td>Sub-critical hotspots to quench reactions in Ni-Al nanolayers</td>
<td>I. E. Gunduz, M. Beason, S. Son</td>
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<td>School of Mechanical Engineering, Purdue University, USA.</td>
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<td>15:00</td>
<td>Gas suppression via Cu interlayers in magnetron sputtered Al/Cu2O multilayers</td>
<td>Alex H. Kinsey, Kyle Slusarski, Timothy P. Wehns</td>
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<td>Johns Hopkins University, Baltimore, USA.</td>
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<td>15:20</td>
<td>Effects of stacking sequence and ternary additions on self-propagating reactions in ternary Ru/Al-based multilayers</td>
<td>Christoph Karsten Woll, Christoph Möcklich</td>
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<td>Department of Materials Science and Engineering, Saarland University, Saarbrücken, Germany.</td>
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<td>Institute for Applied Materials, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany.</td>
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<td>15:40</td>
<td>Coffee break</td>
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<td>16:10</td>
<td>Calorimetry with Millisecond Time Resolution</td>
<td>Christoph Schick</td>
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<td>University of Rostock, Institute of Physics &amp; Faculty of Interdisciplinary Research,</td>
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<td>Competence Center CALOR, Rostock, Germany</td>
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<td>16:40</td>
<td>Nano-engineering of reactive interfaces to monitor Al/CuO nanolamine properties</td>
<td>Lorena Marin, Alain Estève, Yuzhi Gao, Yves Chabal, Carole Rossi</td>
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<td>Université de Toulouse, CNRS, LAAS, Toulouse, France.</td>
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<td>17:00</td>
<td>Detailed Assessment of Al/Ni Reaction Kinetics using High-Rate Nanocalorimetry</td>
<td>Michael D. Grapes, David A. LaVan, Timothy P. Weihu</td>
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<td>Johns Hopkins University, Baltimore, USA. National Institute of Standards and Technology,</td>
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<td>Gaithersburg, USA</td>
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<td>17:45</td>
<td>Catalytic Activity of 4-Nitrophenol by Heterostructured Gold Nanoparticles-Titanium Dioxide Nanofibers Nanocatalysts</td>
<td>Halit Cavusoglu (1),(2), Burak Zafer Buyukbekar (1), Husseyin Sakalak (1), Sebastian Kochakowski (3),(4)</td>
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<td>(1) Advanced Technology Research and Application Center, Selcuk University, Konya, Turkey. (2)</td>
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<td>Department of Physics, Selcuk University, Konya, Turkey. (3) University of Duisburg-Essen,</td>
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<td>Technical Chemistry I and Center of Nanointegration Duisburg-Essen (CENIDE), Essen, Germany. (4)</td>
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<td>NanoEnergieTechnikZentrum, Duisburg, Germany.</td>
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<td>18:00</td>
<td>New reactive material : advanced engineering methods vs properties : to be confirmed</td>
<td>Edward L. Dreizin</td>
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<td>New Jersey Institute of Technology, Newark, USA.</td>
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<td>18:30</td>
<td>New reactive material : advanced engineering methods vs properties : to be confirmed</td>
<td>Edward L. Dreizin</td>
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<td>New Jersey Institute of Technology, Newark, USA.</td>
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<td>19:00</td>
<td>New reactive material : advanced engineering methods vs properties : to be confirmed</td>
<td>Edward L. Dreizin</td>
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<td>New Jersey Institute of Technology, Newark, USA.</td>
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Tuesday 23 May 2017

Probing the reaction towards the understanding : to be confirmed

09:00 Relating Atomic Properties of Oxidizers to Ignition Behavior
Xizheng Wang, Michael R. Zachariah
University of Maryland, College Park, USA

09:30 Helium Droplet Mediated Cluster Assembly as a Tool to Probe the Limits of Energy Storage in Metastable Nanomaterials
C. J. Ridge (1), K. R. Overdeep (2), R. J. Buszek (3), J. A. Boatz (3), C. M. Lindsay (2) (1) University of Dayton Research Institute, Energetic Materials Branch, Egin Air Force Base, USA. (2) AFRl, Energetic Materials Branch, Ordinance Division, Egin Air Force Base, USA. (3) AFRl, Aerospace Systems Directorate, Edwards Air Force Base, USA

09:50 Analyzing Thermite Reactions by the Direct Observation of Reacting Particles
Michael O. Grapes (1), Robert V. Reeves (1), John M. Dansmore (1), Kamel Fezzaa (2), Tony W. Van Buuren (1), Trevor M. Willey (1), Kyle T. Sullivan (1) (1) Lawrence Livermore National Laboratory, Livermore, USA. (2) Argonne National Laboratory, Argonne, USA

10:10 Coffee break

Iodine based reactive materials : to be confirmed

10:40 Nanostructured Metal Fuels for Defeating Bio-Agents
Timothy P. Wehls
Johns Hopkins University, Baltimore, USA

11:00 Chemical Dynamics of nano-Aluminum and Iodine Based Oxidizers
B. K. Little (1), C. J. Ridge (1), K. R. Overdeep (2), D. T. Skiewski (2), C. M. Lindsay (2) (1) University of Dayton Research Institute, Energetic Materials Branch, Egin Air Force Base, USA. (2) AFRl/AFWNs, Energetic Materials Branch, Ordinance Division, Egin Air Force Base, USA

11:30 Acid Based Synthesis of Aluminum Based Explosive Crystals: Aluminum Iodate Hexahydrate [Al(HIO6)2][IO3]3(HIO3)2
Dylan K. Smith, Michelle L. Pantoya
Department of Mechanical Engineering, Texas Tech University. Lubbock, USA

11:50 Design and Fabrication of Nano-CL-20 Inks for Directed Assembly of 3D Structures
Fude Nie, Jun Wang, Baochu Zheng
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

12:15 3D hierarchical HMX crystalline cluster prepared by supramolecular assembly-disassembly process
Yu Liu (1),(2), Jinjiang Xu (1), Shichun Li (1), Jinshan Li (1), Zeshan Wang (2) (1) Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China. (2) School of Chemical Engineering, Nanjing University of Science & Technology, Nanjing, China

12:35 Shape, Size and Arrangement of Nano-scale Defects in RDX and HMX Single Crystals by Quasi-3D SAXS
Haidin Zhang, Yu Li, Jinjiang Xu, Jie Sun, Xiaolin Wang
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

13:00 Lunch

Modelling of the ignition and reactions mechanisms : David Adams

14:30 Modeling Laser Ignition of Al/Pt Nanolaminates
Cole D. Yarrington, Michael J. Abern, David P. Adams
Sandia National Laboratories, Albuquerque, USA

15:10 Fluorination of an Alumina Surface: Modeling Aluminum ? Fluorine Reaction Mechanisms
Richa Padhye, Michelle L. Pantoya
Texas Tech University, Lubbock, USA

15:30 Coffee break

MD simulations : Mehdi Dijafari-Rouhani

16:00 Anisotropic frictional heat dissipation in cyclotrimethylene trinitramine (RDX)
Pankaj Rajak, Rajiv K. Kalia, Alchirio Nakano and Priya Vashistha
Collaboratory for Advanced Computing and Simulations, Department of Chemical Engineering & Materials Science, Department of Physics & Astronomy, and Department of Computer Science, University of Southern California, Los Angeles, USA

16:15 Charge Injection at Metal Contact with an Atomic-Layer-Deposited Oxide Interlayer in Organic Field-Effect Transistors
Ran Zhao, Yuanhong Gao, and Xinwei Wang
School of Advanced Materials, Shenzhen Graduate School, Peking University, Shenzhen 518055, China

16:20 Modelling the Structural Change of Energetic Crystals at Nano-scale: A Case of RDX under Shock
Wen Qian, Jian Liu, Chaoyang Zhang
Research Center of Energetic Materials Genome Science, Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

POSTER SESSION : Carole Rossi

17:00 Effect of Nano-sized Oxide Particles on Thermal Decomposition of Spherical Energetic Composites
Hong-Min Shim, Jae-Kyeong Kim, Kee-Kahb Koo, Hyoun-Soo Kim
Sogang University, Agency for Defense Development

17:00 On-chip ignition of Al/CuO reactive multilayers: influence of the heating surface area and substrate nature
Andrés Nicolle, Lorena Marin, Andrés Belisario, Carole Rossi
Université de Toulouse, CNRS, LAAS, Toulouse, France

17:00 Synthesis of tungsten alloys for fusion
S. Dine (1), E. Bernard (2), B. Rousseau (2), G. Pieters (2) (1) ENSCP, Université Paris 13, Villetaneuse, France. (2) CEA Saclay, Gif-sur-Yvette, France. (3) CEA, IRAMIS, Gif-sur-Yvette Cedex, France. (4) CEA, IRIFM, Saint-Paul-lez-Durance, France

17:00 Modeling of Ignition and Combustion of Al/Fe203/HTPB Nanothermite Composites
H. Y. Chan, M. Suceska, M. L. Tan, C. C. Chong
Energetics Research Institute, Nanyang Technological University, Singapore. Brodarski institut & Marine Research & Special Technologies, Zagreb, Croatia. Energetics Research Institute, Nanyang Technological University, Singapore. Energetics Research Institute, Nanyang Technological University, Singapore

17:00 Thermo-kinetic Studies of Aluminum/ Nickel Oxide Nanothermites
M. L. Tan, S. Phirharah, N. Sasidharan, H. H. Hing
Energetics Research Institute, Nanyang Technological University, Singapore

17:00 Si Wire Supported MnO2/Al/Fluorocarbon 3D Core/Shell Nanoenergetic Arrays with Long-Term Storage Stability
Ying ZHU (1), Xiang ZHOU (2), Kaili ZHANG (1) (1) Department of Mechanical and Biomedical Engineering, University of Hong Kong, Hong Kong. (2) National Special Superfine Powder Engineering Research, Nanjing University of Science and Technology, Nanjing, China

17:00 Performance of the Short-duration Pulse Shock Initiation of Nano-TATB
Xiang-li Guo, Kai-yuan Tan, Yong Han, Lu-lu Zhao, Jun Wang
China. (2) School of Chemical Engineering, Nanjing University of Science & Technology, Nanjing, China

17:00 Propagating Exothermic Reactions in Al/Pt Multilayers of Varied Composition
Ran Zhao, Yuanhong Gao, and Xinwei Wang
School of Advanced Materials, Shenzhen Graduate School, Peking University, Shenzhen 518055, China

17:00 Synthesis and characterization of nano-scale lanthanum nitrate crystals
Hong-Min Shim, Jae-Kyeong Kim, Kee-Kahb Koo, Hyoun-Soo Kim
Sogang University, Agency for Defense Development
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<th>Time</th>
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<th>Authors</th>
<th>Institution</th>
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<tr>
<td>17:00</td>
<td>Preparation of Modified AFM Tip and Its Application in the Nanoscale Surface Composition Analysis of Energetic Materials</td>
<td>Jinjiang Xu, Jie Sun, Kemei Cheng, Yu Liu, Haobin Zhang</td>
<td>Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China</td>
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<td>Effects of Energy Release of PTFE Based Reactive Materials Rod under Hyper-Velocity Impacting to Arrayed Plates</td>
<td>Lu Zhonghua, Huang Hengjian, Nie Shaoyun, Chai Chuangdu</td>
<td>Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China</td>
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<td>Strategy to safe and smart pyrotechnical integrating nanothermites</td>
<td>Jean Laurent Pouchairet (1),(2), Andres Belisario (2), Andrea Nicotet (2), Carole Rossi(2), Dominique Medus (1)</td>
<td>(1) LACROIX, Mazères, France. (2) Université de Toulouse, CNRS, LAAS, Toulouse, France</td>
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<td>Modelling the flame propagation of Al/CuO multilayered thermites</td>
<td>Guillaume Lahiner, Andrea Nicotet, Lorena Marin, Mehdi Djafar Rouhani, Alain Estève, Carole Rossi</td>
<td>Université de Toulouse, CNRS, LAAS, Toulouse, France</td>
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<td>Synthesis and characterization of aligned ZnO/CuO core/shell nanorod arrays on glass substrate</td>
<td>Wang Liang, Tang Duo, Zhou Qing, Li Yong, Jiang Xiaohua</td>
<td>Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China</td>
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<td>Proficient Synthesis highly crystallized iridium dioxide, Nanorods disposed onto Ti,</td>
<td>Sung sii Kim, Myung Hwa Kim, Hye Rim Oh</td>
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<td>Shock wave initiation of reaction in Al+CuO mechanoactivated mixture</td>
<td>B. D'yankovski (1), Dolgoborodov A. Yu. (1),(2), Ananov S. Yu. (1),(3)</td>
<td>(1) ICP RAS, Moscow, Russia. (2) JIHT RAS, Moscow, Russia. (3) NRNU MEPhI, Moscow, Russia</td>
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<td>High energy ball milling, an alternative technique to produce aluminum nanoflakes integrated in rocket propellants.</td>
<td>P.-H. Esposito (1), V. Madigou (2), C. Leroux (2), J. Hitkema (3), G. Cassis (3), D. Blonde (4), E. Bloch (1), R. Denoyel (1), M.-V. Coulet (1)</td>
<td>(1) Université d'Aix Marseille, CNRS, MADIREL, Marseille, France. (2) Université de Toulon, CNRS, CNRS, M2NP, La Garde, France. (3) ONERA, DAE/A, Mauzac, France. (4) ONERA, DEFA/MAE, Palaiseau, France</td>
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<td>Development of High-speed Reactive Processing System for carbon fiber-reinforced polyamide-6 composites</td>
<td>Sang-Woo Kim, Dong Gi Seong, Moon-Kwang Um, Teshoeun Park, Jin-Woo Yi</td>
<td>Composites Research Division, Korea Institute of Materials Science (KIMS), Changwon, South Korea</td>
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<td>DNA nanotechnologies for investigating Al/CuO nanoenergetic biocomposite: synthesis and thermal properties</td>
<td>Théo Calais, Vincent Bajot, Charline Blatché, Mehdi Djafari-Rouhani, Y. Chabal, Alain Esteve, Carole Rossi</td>
<td>Université de Toulouse, CNRS, LAAS, Toulouse, France</td>
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<td>Stack/Flyer Motion Driven Self-retraction Triboelectric Nanogenerator based on Nanostructured PTFE sheet</td>
<td>Jihoon Chung, Haksung Moon, Dongseob Kim, Yong Tae Park, and Sangmin Lee</td>
<td>Chung-Ang University, Korea Institute of Industrial Technology, Myongji University, South Korea</td>
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<td>Nonlinear Laser Lithography for Graphene-Based Devices</td>
<td>Evgeniya Kovalska, Ihor Pavlov, Coskun Kocabas, Faith Onner Ilday</td>
<td>Bilkent University, Ankara, Turkey</td>
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<td>Development of Density Functional Correction Method for Diverse Types of Systems</td>
<td>Minho Kim, Won June Kim, Sébastien Lebluge, Hyungjun Kim</td>
<td>Graduate School of EEWs, Korea. Advanced Institute of Science and Technology (KAIST), Korea. Université de Lorraine, CNRS, Laboratoire de Cristallographie, Résonance Magnétique et Modélisations</td>
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<td>Effect of Nano-sized Oxide particles on Thermal Decomposition of Spherical Energetic Composites</td>
<td>Hong-Min Shim, Jae-Kyeong Kim, Koo-Kaib Koo, Hyun-Soo Kim</td>
<td>Sogang University, Seoul, Korea. Agency for Defense Development, Daejeon, Korea</td>
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Wednesday 24 May 2017

3D hiereachical assembly of reactive compounds : to be confirmed

09:00 2D MoO3 Processing by Top Down and Bottom Up Techniques and Enhanced Combustion of 2D MoO3/Al Energetic Composites
Naadaa Zakiiyan, Haisheng Zheng, Connor Wolenski, Angi Wang, Brandon Smith, Rajagopalan Thiruvengadathan, Keshab Gangopadhyay, Matthew Maschmann, Shubhra Gangopadhyay
University of Missouri, Columbia, USA

09:20 3D Hierarchically Ordered Porous Carbon Based Nanocomposites for Self-Catalytical Decomposition of Ammonium Perchlorate
Jin Chen, Peng Wu, Bing Huang, Guangcheng Yang, Hui Huang
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China

09:40 NANOPARTICLE COMPOSITES BY MECHANOCHEMISTRY
Bilge Baytekin, Özge Bayrak, Tutku Bedük
Chemistry Department, Bilkent University, Ankara, TURKEY. UNAM, Bilkent University, Ankara, TURKEY

10:00 Coffee break

3D printing : David Adams

10:30 Controlling Material Reactivity using Architecture
Lawrence Livermore National Laboratory, Livermore, USA. Harvard University, Cambridge, USA

11:00 Ink Formulation and Direct Ink Writing of Thermites
Lawrence Livermore National Laboratory, Livermore, USA

11:20 Tailoring Reaction and Mechanical Properties of Reactive Composite Structures Made By Additive Manufacturing
Robert V. Reeves, Christopher E. Shuck, Michael D. Grapes
Lawrence Livermore National Laboratory, Livermore, USA.
University of Notre Dame, USA

12:00 Lunch

16:15 Plenary Session
SYMPOSIUM B

Advanced materials and systems for electrochemical energy storage

Symposium Organizers:

Alexandru VLAD, Université Catholique de Louvain, Belgium

Stefano PASSERINI, Karlsruhe Institute of Technology, Ulm, Germany

Yan YAO, University of Houston, USA

Yang-Kook SUN, Hanyang University, Seoul, Korea
10:00 Protic ionic liquids as electrolytes for lithium batteries
Andrea Balducci
Friedrich-Schiller-University Jena Institute for Technical Chemistry and Environmental Chemistry Center for Energy and Environmental Chemistry Jena (CEEC Jena) Philosophenweg 7a, 07743 Jena, Germany

10:30 BIREDOX IONIC LIQUIDS: NEW OPPORTUNITY FOR HIGH ENERGY SUPERCAPACITORS
Éléonore Mourad, 1 Stefan A. Freunberger, 2 Frédéric Favier, 1 Olivier Fontaine 1, 3 1 Institut Charles Gerhardt Montpellier, UMR 5253, CC 1701, Université Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, France 2 Institute for Chemistry and Technology of Materials, Graz University of Technology, Streitweg 9, 8010 Graz, Austria 3 Reussé sur le Stockage Electrochimique de l’Energie (RSE2), FR CNRS

10:45 New electrode/electrolyte combination for aqueous Li-ion batteries
Chunsheng Wang
Department of Chemical & Biomolecular Engineering University of Maryland, College Park, USA

10:15 Coffee Break

11:00 Large enhancement of ionic conductivity in composite polymer electrolyte with well-aligned ceramic nanowires
Wei Liu, Yiu-Cui Stanford University

11:15 Diffusion pathways and local chemical structures of new lithium thiophosphates

11:30 Simulating the electro-thermal response of lithium-ion cell under various conditions
Ping Ping, Youmann Chang, Qingsong Wang and Jennifer Wen
Department of Applied Physics, Chalmers University of Technology, S41296 Göteborg, Sweden

11:45 Renewing concepts in Polymer Electrolytes
Zhi-Bin Zhou(1), D. Mecerreyes(2), L. Meabe(2), S. Grugeon(3), S. Laruelle(4) & Michel Armand(1-4)
(1) CIC Energigune, Parque Tecnológico de Álava, Alberto Einstein 48, 01510 Miñano, Álava, Spain (2) School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, 1037 Luoyu Road, Wuhan 430074, China. (3) POLYMAT, University of the Basque Country UPV/EHU, Jose Mari Korta Centre, Ávila. Tolosa 72, 20018 Donostia-San Sebastián, Spain (4) Laboratoire de Réactivité et Chimie des Solides CNRS UMR 7314 Université de Picardie Jules Verne, 33 rue Saint Leu, 80039 Amiens, France

12:15 Lunch

13:45 A route to sustainable and high energy Li-Sulfur batteries
Marco Agostini, Du-Hyun Lim and Alexandar Matic
Department of Applied Physics, Chalmers University of Technology, S41296 Göteborg, Sweden

14:00 Operando X-ray Absorption and Emission spectroscopies and operando X-ray Diffraction to understand Li2S particle size influence
Alice Robba, Renaud Bouchet, Céline Barchas, Jean-François Colin, Erik Elkaim, Kristina Kvasshnina, Gavin Vaughan, Matjaz Kavcic, Fannie Alioum
Université Grenoble Alpes, LEPMI, F-38000 Grenoble, France & CEA, LITEN, 17 rue des Martyrs, 38054 Grenoble, France, Université Grenoble Alpes, LEPMI, F-38000 Grenoble, France & CNRS, LEPMI, F-38000 Grenoble, France, CEA, LITEN, 17 rue des Martyrs, 38054 Grenoble, France, CEA, LITEN, 17 rue des Martyrs, 38054 Grenoble, France, Synchrotron SOLEIL, Saint Aubin 91190, France, Laboratory ESRF, 71 avenue des Martyrs CS 40220 FR, 38043 GRENOBLE Cedex 9, Laboratory ESRF, 71 avenue des Martyrs CS 40220 FR, 38043 GRENOBLE Cedex 9, Laboratory Institute Jozef Stefan Jamova 35 SI, 1000 LJUBLJANA, Université Grenoble Alpes, LEPMI, F-38000 Grenoble, France & CNRS, LEPMI, F-38000 Grenoble, France

14:30 Advanced Lithium-Sulfur Battery Configurations
Lorenzo Carbonba 1, Steve G. Greenbaum 2 and Josef Hassoun 3,* 1 Chemistry Department, Sapientia University of Rome, Piazzale Aido Moro, 5, 00185, Rome, Italy 2 Department of Physics & Astronomy, Hunter College of the City University of New York, New York, New York 10065, United States 3 Department of Chemical and Pharmaceutical Sciences, University of Ferrara, Via Fossato di Mortara, 41241, Ferrara, Italy

15:00 Multiscale Multimode Diagnostics of Electrode Materials for High-Energy Li-Ion Batteries by Advanced Focused Ion and E-Beam Tech
Vladimir P. Olezhko 1, Andrew A. Herzing 1, Saya Takeuchi 2,4 Kevin A. Tweed 3,5,6 William R. McGehee 3,5,6, 3,5 Olek Kitylo 2, David Gundlach 2, Evgenhi Starelou 3,5,6, Nikolaj Zhitenev 3, Chris L. Soles 1 Jabez McClelland 3 1 Department of Applied Physics, Chalmers University of Technology, ICMAB-CSIC, 08034 Barcelona, Spain 2 Solid State Science, UIUC, 1101 W. Green Street, Urbana, IL 61801, USA 3 Department of Materials Science and Engineering, University of Maryland, College Park, MD 20742, USA 4 Science Systems and Applications Inc., Lanham, MD 20706, USA 5 Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA 6 Science Measurement and Computing Department, Pacific Northwest National Laboratory, Richland, WA 99352, USA

15:15 Coffee Break

15:45 The Effect of Additive on Zinc Electrodeposition Mechanism in Zinc-ion Batteries
Amir Bani Hashemi, Ghoncheh Kasiri, Fabio La Mantia
Energiespeicher- und Energiewandlersysteme, Fachbereich Produktionstechnik, Universität Bremen, Bremen, Germany

16:00 Suppression of zinc dendrite formation in secondary flexible printed zinc-air battery using carbopol gel
Praramet Sangwanspet, Woranunt Lao-atman, Soorathep Khesowhom
Computational Process Engineering, Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok 10330, Thailand

16:15 XPS Comparative Analysis of the Chevrel Phase Mo6S8 and the Analogous Mo5S7 During Mg Insertion
Julien RICHARD, Jean-François COLIN, Anass BENAYAD, Sébastien MARTINET
Université Grenoble Alpes CE AJ/ LITEN 17 avenue des Martyrs Grenoble, France

16:30 Perspective of magnesium batteries
Jan Bílent, Klemen Pirnat, Tanja Ban??, Anna Randon Vitanova, Robert Dominik
National institute of chemistry, Hajdrihova 19, 1000 Ljubljana, Slovenia, Honda R&D Europe (Deutschland) GmbH, Carl-Legien-Strasse 30, 63073 Offenbach, Germany

17:00 METAL ANODES: ELECTRODEPOSITION AND RELIABILITY OF HALF CELL TESTS
Marco Agostini, Du-Hyun Lim and Aleksandar Matic
Department of Applied Physics, Chalmers University of Technology, S41296 Göteborg, Sweden

17:15 Lithium metal anode cycling, an effective approach to probe the interface evolution
Rolland J.(a), Lachambre J. (b), Deschamps M. (c), Mairie E. (b), Bouchet R. (a) (a) Laboratoire d’électrochimie et physicochimie des matériaux et des interfaces, (b) Laboratoire Mateis, INSA-Lyon, (c) Blue Solutions France, Quimper

17:30 Efficient Electrode Design Renders Dendrite-free Li Metal Anode
Xin-Bing Cheng, Hong-Jie Peng, Rui Zhang, Jia-Qi Huang, Fei Wei, Qiang Zhang
Batteries by Advanced Focused Ion and E-Beam Tech

Plant月底2017
17:00 MXene-on-Paper Co-Planar Microsupercapacitors  
Narendra Kumar1, Bilal Ahmed1, Yury Gogotsi2, and H. N. Alshareef1  
1 Materials Science and Engineering, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-8611, Saudi Arabia  
2 Department of Materials Science and Engineering, and A.J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA 19104 USA  

17:15 Charge storage mechanisms of manganese oxide nanosheets and N-doped graphene aerogel for supercapacitors  
Ramamurthy Ramasrikul, Aiweena Krittayavathanon and Montree Sswangbruk,*  
Department of Chemical and Biomolecular Engineering, School of Energy Science and Engineering, Vidyasirimedhi Institute of Science and Technology, Rayong 21210, Thailand  
*Corresponding author. Tel: (+66) 33014251, Fax: (+66) 33014445, E-mail: montree.s@vistec.ac.th  

17:30 Flexible and wearable energy storage fibers and textiles  
Ye Zhang, Huisheng Peng  
Department of Macromolecular Science and Laboratory of Advanced Materials, Fudan University  

POSTER SESSION 1 : A. Vlad  

18:00 Potentiostatically electrodeposited nanostructured manganese dioxide films for electrochemical capacitors  
R.P. Sahay  
Department of Physics, Motilal Nehru National Institute of Technology Allahabad, Allahabad-211 004, India  

18:00 Annealing environment reliant in depth analysis of structural, morphological and electrochemical performance of Ni-foam  
Vijaykumar. V. Jadhay,? Rohan M. Kore,? Balkrishna J. Lokhande,? Rajaram S. Mane,? *, and Kwan W. Kim?  
1 School of Materials Science and Engineering, Pusan National University, San 30 Jangjeon-dong, Geumjeong-gu, Busan 611-735, Republic of Korea  
2 Center for Nanomaterials & Energy Devices, School of Physical Sciences, S.R.T.M. University, Nanded,431606, India  

18:00 Effects of electrolyte additives on LiN0.8Co0.1Mn0.1O2 as a Ni-rich cathode material of lithium-ion batteries  
Jinin Chh1,‡, Young-Gi Lee1,‡, Yong Min Lee2,‡, Kwang Man Kim1,‡  
1) Electronics and Telecommunications Research Institute, 2) Hanbat National University  

18:00 Facile synthesis of nickel phosphide (Ni2P) for electrochemical capacitors  
Yunjie Ruan, Jianjun Jiang  
School of Optical and Electronic Information, Huzhong University of Science and Technology, 1037 Loyu Road, Wuhan, China  

18:00 Enhanced Li+ Conduction in Perovskite Li3xLa2/3-x□1/3-2xTiO3 Solid-electrolyte  
Ting Sun, Jiang-Iuan Pan, Weitao Chen, Jinyi Zhong, Jihua Zhang, Xinghua Duan  
School of Materials Science and Engineering, Beijing University of Chemical Technology, Beijing 100029, People’s Republic of China  

18:00 Poly(2,5-dihydroxyaniline): a redox polymer with electrically conductive molecular backbone for battery electrodes  
L. Stieux, B. Emeroul, J.-F. Gohy and A. Vlad  
Institute of Condensed Matter and Nanosciences, Université de Lorraine, Nancy, France  

18:00 Carbon-coated silica nanocomposites with hollow structure as anodes for lithium-ion batteries  
Xuetian Liu, Yuqi Chen, Jiaode Wang, Hongbo Liu  
Institute of Condensed Matter and Nanoscience, Université Catholique de Louvain, Place Louis Pasteur 1, B-1348, Louvain-la-Neuve, Belgium, College of Materials Science and Engineering, Hunan University, Changsha 410082, PR China, Institute of Condensed Matter and Nanoscience, Université Catholique de Louvain, Place Louis Pasteur 1, B-1348, Louvain-la-Neuve, Belgium, College of Materials Science and Engineering, Hunan University, Changsha 410082, PR China  

18:00 Reduced Graphene-Wrapped MnO2 Nanowires Self-Inserted with Co3O4 Nanocages: Remarkable Enhanced Performances for LIB  
Qi Zhu, Yunhui Li, Ying Gao, Xiao Wang, Shuyan Song  
Université catholique de Louvain (Belgium), Changhun University of Science and Technology (P. R. China) Changhun University of Science and Technology (P. R. China) Changhun Institute of Applied Chemistry, Chinese Academy of Science (P. R. China) Changhun Institute of Applied Chemistry, Chinese Academy of Science (P. R. China)  

18:00 Low-temperature solid state synthesis of Li4Ti5O12 with improved electrochemical performance for Li-ion batteries  
Markéta Zukalová, Mamoru Senna, Martin Fabián, Ladislav Kavan, Jaroslav Brian*, Erika Turianicová, Patrick Bottke, Martin Wilkening, Vladimir Šepelák  
J. Heyrovský Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Praha, Czech Republic. Faculty of Science and Technology, Keo University, Yokohama, Japan, Institute of Geotechnics, Slovak Academy of Sciences, Kosice, Slovak Republic, J. Heyrovský Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Praha, Czech Republic, Institute of Geotechnics, Slovak Academy of Sciences, Kosice, Slovak Republic, Institute of Chemistry and Technology of Materials, Christian Doppler Laboratory for Lithium Batteries, Graz University of Technology, Graz, Austria, Institute for Chemistry and Technology of Materials, Christian Doppler Laboratory for Lithium Batteries, Graz University of Technology, Graz, Austria, Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany  

18:00 Tuning the Double Layer of Graphene Oxide through Phosphorus Doping for Enhanced Supercapacitance  
Wexin Song,1,3 Johannes Lischner,1,2,3 Victoria Garcia Rocha,1,2,3 Heng Qin,1,3 Jiuhai Qi,1,3 Joseph H.L. Hadden,1,3 Fang Xie,1,3 D. Jason Riley1,3*  
1 Department of Materials, Imperial College London, London SW7 2AZ, UK.  
2 Thomas Young Centre at Imperial College London, London SW7 2AZ, UK.  
3 London Centre for Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany  

18:00 Porous graphite-SiOx composite negative electrodes via sulfur sublimation for high energy density lithium ion batteries  
Jeongheon Kim1,‡, Donghyek Shin1, and Ungyu Paik1*  
1 Department of Energy Engineering, Hanyang University, Seoul 139-791, Korea E-mail: upak@hanyang.ac.kr  

B-6
18:00 Fire-retardant organic electrolytes based on the ionic liquids with a pyrrolinium cation for lithium ion batteries
Yoon-Jae Lee, Sung-Young Hong, Junsuk Park, Yong-Seok Lee, Kyoung Doo Lee
Received 18 December 2019

18:00 Fabrication of ultrathin Ni-Co layered double hydroxide nanosheet arrays for hybrid supercapacitors
Teng Wang, Hongxia Wang.* John Bell
School of Chemistry, Physics and Mechanical Engineering, Science and Engineering Faculty, Queensland University of Technology, Brisbane, QLD 4001, Australia. E-mail: hw.wang@qut.edu.au

18:00 High performance Na-ion hybrid capacitor based on layered sodium titanium oxide 2D nanostructures
Binson Babu 1 M. M. Shajumon
Indian Institute of Science Education and Research Thiruvananthapuram, Kerala, India

18:00 Modified Nafion membranes using urchushi for a blocking material for aqueous vanadium redox flow battery application
Joon Young, Eun Hae Cho, Jongok Won* Sejong University, Seoul, Korea

18:00 Exploring Nitrogen Doped Single Wall Carbon Nanohorns as conductive host for aqueous redox flow batteries
Jo Yung Kim, Dong Ok Shin, Young Gi Lee, Young Gi Lee, Sang Ouk Kim
Multidisciplinary Sensor Research Group, Electronics and Telecommunication Research Institute (ETRI), Daejeon, 305-700, South Korea

18:00 Fabrication of paper-based microsupercapacitors by supersonic cluster beam deposition
Lucia Bettini, Andrea Belfiaccia, Paolo Piseri, Paolo Milani
CILMiNaD and Dipartimento di Fisica, Università degli Studi di Milano, via Celoria 16, 20133 Milano, Italy

18:00 Silicon nano-trees as high surface capacity anodes for lithium-ion batteries
Lucie Leveau (a), Barbara Laik (b), Jean-Pierre Pereira-Ramos (b), Aurélien Gohier (c), Pierre Tran-Van (c), Costel Sorin Cojocaru (b)
(a) Laboratoire de Physique des Interfaces et des Couches Minces, École Polytechnique, Route de Saclay, 91128 Palaiseau Cedex, France, (b) Institut de Chimie et des Matériaux Paris-Est, ICMPE/GESMAT, UMR 7182 CNRS-UPEC, 2 à 8 Henry Dunant, 94320 Thiais, France, (c) Renault SAS, DREAM/DIETSEE, 1, Avenue du Golf, 78288 Guyancourt, France

18:00 Stable Cathodic Material for Zinc-Ion Batteries Based on Prussian Blue Derivatives
Ghochnezh Karimi (1), Amir Bani Hashemi (1), Jens Glennenberg (2), Robert Kun (2), Fabio La Mantia (1)
(1) Università Bremen, Energiespeicher- und Energiewandlersysteme, Bibliothekstr. 1, 26359 Bremen, (2) Innovative Sensor and Functional Materials Research Group, Fraunhofer IFAM, Wienerstraße 12, 28359 Bremen, Germany

18:00 Polypyrin Alcohol-Sulfonylacid- Sulfonated Carbon Nanotube (PVA-SSC-SCNT) composite membranes for PEMFC
Vani R.1*, Ramprabhu S. 2, Prathap Haridoss 3
1. Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras, Chennai, India, 2 Alternate Energy & Nanotechnology Laboratory, Department of Physics, Indian Institute of Technology Madras, Chennai, India

18:00 Analysis of effective cathode systems for a rechargeable aluminum ion battery
M. M. Cooridd (a,b), U. Wunderlich (a), J. Friedrich (b) (a) Fraunhofer IWM, 09599 Freiberg, Germany (b) Fraunhofer ISEB, 91058 Erlangen, Germany

18:00 Shadowing Effect of Coating Mn3O4-polypyrrole Composite with Graphene to Bring Improvement in Supercapacitor Performance
Prajeshi Haldar, Anresh Chandra
Department of Physics, Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, India

18:00 Synthesis and Characterization of S-C composite cathodes for Mg-S batteries
Josephh Härcker, Norbert Wagner, K. Andreas Friedrich
1. Institute of Technical Thermodynamics, Pfaffenwaldring 38-40, 70569 Stuttgart, Germany, (a) Institute of Technical Thermodynamics, Pfaffenwaldring 38-40, 70569 Stuttgart, Germany, (b) Fraunhofer Institute for Energy Conversion, Darmstadt, Germany

18:00 On ship integration of high-performance Microsupercapacitors based on Silicon membranes coated by transition metal oxides and h
A. Valero.G Gaboriau, P. Gentile, S. Sadiki
1. University of Genova, via Balbi 5, 16126 Genova, Italy 2 Istituto Italiano di Tecnologia, Piazza della Scala 10, 28100 Novara, Italy

18:00 Polyvinyl Alcohol-Sulfosuccinic Acid- Sulfonated Carbon Nanotube (PVA-SSC-SCNT) composite membranes for PEMFC
Vani R.1*, Ramprabhu S. 2, Prathap Haridoss 3
1. Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras, Chennai, India, 2 Alternate Energy & Nanotechnology Laboratory, Department of Physics, Indian Institute of Technology Madras, Chennai, India

18:00 Analysis of effective cathode systems for a rechargeable aluminum ion battery
M. M. Cooridd (a,b), U. Wunderlich (a), J. Friedrich (b) (a) Fraunhofer IWM, 09599 Freiberg, Germany (b) Fraunhofer ISEB, 91058 Erlangen, Germany

18:00 Theoretical investigation of the synthesis of the PVA-SSC-SCNT composite membranes
Josephh Härcker, Norbert Wagner, K. Andreas Friedrich
1. Institute of Technical Thermodynamics, Pfaffenwaldring 38-40, 70569 Stuttgart, Germany, (a) Institute of Technical Thermodynamics, Pfaffenwaldring 38-40, 70569 Stuttgart, Germany, (b) Fraunhofer Institute for Energy Conversion, Darmstadt, Germany

18:00 Efficient phase synthesis of substrate-free graphene compared to the liquid-phase method
Adrian Münezer 1, Linson Xiao 1, Christof Schulz 1,2, and Hartmut Wiggers 1,2
1 Institute for Combustion and Gas Dynamics – Reactive Fluids (IVG), University of Duisburg-Essen, 45507 Duisburg, Germany, 2 Center for Nanoscience, Duisburg-Essen (CENIDE), University of Duisburg-Essen, 45078 Duisburg, Germany

B-8
18:00 Composites of Gas-Phase Synthesized Graphene and Gas-Phase Synthesized Silicon Nanoparticles for Lithium-Ion Battery Anodes
Adrian Münzer 1, Yee Hwa Selhlieer 1, Christof Schulz 1,2, and Hartmut Wiggers 1,2
1 Institute for Combustion and Gas Dynamics – Reactive Fluids (IVG), University of Duisburg-Essen, 47057 Duisburg, Germany, 2 Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, 47057 Duisburg, Germany

18:00 A General Method for the Transition of Metal Sulfides as Lithium Ion Battery Anodes
X. Insam, Markus Niederberger
ETH Zürich

18:00 AB-INITO AND DFT STUDY OF THE ISOMERISATION KINETICS OF SUBSTITUTED ICOSADECA-ENE
F. MECHACHITI1, A. DJEBAILI1*, Y. BOULZAKER1, Y. AHMANE2, I. HEM2, R. KRIBAS3
1 Laboratory of chemistry and environmental chemistry L.C.C.E - University of Batna-Algeria
2 Faculty of Sciences- Department of Chemistry - University of Biskra-Algeria
3 Faculty of Engineering-Department of Physics - University of Batna-Algeria
18:00 Computer simulation of the influence of conventional and unconventional geometries in the performance of lithium-ion batteries
D. Mirand1, A. M. Almeida1, C. P. Costa1,2, S. Lanceros-Méndez1,4,5
1 Centro de Física, Universidade do Minho, 4710-057 Braga, Portugal
2 Centro/Departamento de Química, Universidade do Minho, 4710-057 Braga, Portugal
4 Departamento de Material, Parque Científico e Tecnológico de Bixaka, 48160 Dézio, Spain
5IKERBASQUE, Basque Foundation for Science, 48013 Bilbao, Spain

18:00 Synthesis and electrochemical properties of Transition Metal Phosphides as anode material for Lithium ion batteries
Gunjae Park, Jongwook Bae, and Sang-Min Lee
Korea Electrotechnology Research Institute

18:00 Si thin film on graphene coated Ni foam as anode for Li-ion batteries
Aliya Mukanova1, Aarjlynne Pursepow2, Anara Molkenova2, 3,
1stumayab Bakenov1, 2
1. School of Engineering, Nazarbayev University, Astana 01000, Kazakhstan, 2. Materials Laboratory Astana, Nazarbayev University, Astana, 01000, Kazakhstan, 3. L.N.Gumilyov Eurasian National University, Astana 01000, Kazakhstan

18:00 A method for controlled oxide and carbon yolk-shell coating for silicon in Li-ion batteries
Marie Orensund Skare (1,2), Trygve Mengstad (1), Jan Petter Mæhlen (1), Hanne Flåten (1)
1 (1) Institute for Energy Technology, Instituttveien 18, 2007 Kjeller, Norway
2 (2) Department of Materials Science and Engineering, Norwegian University of Science and Technology (NTNU), 7419 Trondheim, Norway

18:00 Electrochemical property of carbon black coated Li3-xNaxV2O4 (P)3
Bongsoo Jin, Hyunsoo Kim
Korea Electrotechnology Research Institute

18:00 Morphologically tailored CuO nanospheres fabricated by Ostwald ripening as high capacity Li-ion battery anodes
Shilpa, S.Rai, A.Sharma
Indian Institute of Technology Kanpur, India

18:00 Fabrication of graphite carbon nanorods from ZIF-8 for the supercapacitor
Yang Xueqing
Department of Physics and materials science, City University of Hong Kong, Hong Kong SAR, P. R. China

18:00 Si-based aerogel materials for lithium-ion battery anodes
G. Sandhu1, S. Xu1, A. Vladi2, and S. Melinte1,2
(1) Institute of Information and Communication Technologies, Electronics and Applied Mathematics, Université catholique de Louvain, 1440 Louvain-la-Neuve, Belgium. (2) Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, 1448 Louvain-la-Neuve, Belgium.

18:00 Progress on research regarding electrolyte additive for alkaline Zn-air battery
Dr. Camilla Evangelisti, Dr. Ludvig Jørgens
Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg

18:00 Kraft Lignin as Electrode Material for Sustainable Electrochemical Energy Storage
Saowaluk Chaleawlert-umpon, Thomas Berthold, Xuewan Wang, Markus Aniniotti, Clemens Liedel
Max Planck Institute of Colloids and Interfaces, Department Colloid Chemistry, Am Mühlenberg 1, 14476 Potsdam, Germany

18:00 Polymer-ionic liquid hybrid electrolytes based on a PVA/PA/blend and pyrrolidinium ionic liquid for Lithium ion batteries
Savitha Thayumanasan ortharam, Vijay Shankar Rangasamy, Jean-Pierre Locquet
Department of Physics and Astronomy, Katholieke Universiteit Leuven, Celestijnenlaan 200B, B-3001, Leuven, Belgium

18:00 Electroactive polymer/carbon nanotubes hybrid materials for energy storage synthesized via a “grafting to” approach
Bruno Ernould†, Olivier Bertrand†, Alexandre Vladić and Jean-François Gohy†
1 Institute of Condensed Matter and Nanosciences (IMCN), Bio- and Soft Matter (BSMA), Université catholique de Louvain, Place L. Pasteur 1, B-1348, Louvain-la-Neuve, Belgium.
2 Institute of Condensed Matter and Nanosciences (IMCN), Division of Molecules, Solids and Reactivity (MOST), Université catholique de Louvain, Place L. Pasteur 1/6, B-1348 Louvain-la-Neuve, Belgium.

18:00 Lithium battery research in Romania: infrastructure and first year of results
Mihaela Buga, Mihai BALAN, Stanica ENACHE, Constantin BUBULINCA, Alin CHITU,
Mihai VARLAM
National R&D Institute for Cryogenic and Isotopic Technologies ICIS Rm. Valcea

18:00 Fabrication of LaCO3–SSZ composite cathode by electrochemically assisted deposition for solid oxide fuel cells
Seung Bok Lee, Saeed Rehman, Jong-Won Lee, Tak-Hyoung Lim, Seok-Joo Park, Jong-Eun Hong, Rak-Hyun Song
Korea Institute of Energy Research

18:00 Prussian Blue derived Ge02/C shell with catalyst (Fe2O3) core for High energy density Lithium-Ion Battery anode
Zhi Xiang Huang1,2, Hui Ying Yang2
1, Airbus Group Innovations Singapore, 2. Singapore University of Technology and Design

18:00 Fe2O3 yolk-shell incorporated porous CNFs electrodes for ultra-high charge-discharge supercapacitors
Hemer H. Ereddy [a,b], Cristina Piló [a],[c], Peng-Yi Tang [a],[c], Jordi Arbíol [c,d], Joan Ramon Morante [a, b]
[b] Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC, and The Barcelona Institute of Science and Technology (BIST), Campus UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain.
[c] ICREA, Passeig Lluís Companys, 23, 08010 Barcelona, Catalonia, Corresponding author email - ameshel@irec.cat
[d] IREC, Jardins de les dones de Negre 1, 08930 Sant Adrià del Besós, Barcelona, Spain.

18:00 Acetonitrile-based electrolytes for LiFePO4/Li4Ti5O12 lithium-ion battery
Y.R. Dougassa, D. Lepage, D. Rocherlot
Université de Montréal, Département de Chimie,(Canada)

18:00 Structural Characterization and Impedance Spectroscopy Analysis of a Novel Solid Solution : 6H-BaTiO3 Double Perovskite-Type.
Faycal Bourguiba, Jemal Dahhri
Laboratoire de la Matiere Condensee et des Nanosciences, Departement de Physique, Faculte des Sciences de Monastir, Monastir, Tunisia

18:00 Fracture-Resistant Sn micropillars as Anode for Lithium Ion Batteries
Chung Su Hong and Nadeem Qaiser
1. School of Engineering, Nazarbayev University, Astana 01000, Kazakhstan, 2. Indian Institute of Technology Kanpur, India
3. Korea Institute of Energy Research

18:00 Various doped (P, S and N) Nanoporous Carbons derived from Lignocellosic Biomass for Energy and sustainability
Sul Ki Park and Ho Seok Park
Department of Organic and Nano Engineering, Hanyang University, Seoul 04763, South Korea

18:00 Structural characterization and impedance spectroscopy analysis of a novel solid solution : 6H-BaTiO3 double perovskite-type.
Faycal Bourguiba, Jemal Dahhari
Laboratoire de la Matiere Condensee et des Nanosciences, Departement de Physique, Faculte des Sciences de Monastir, Monastir, Tunisia

18:00 Electrodeposited chrome-doped α-Fe2O3 thin film intended to be used in solar water splitting
F. Bouihay, B. Mari and B. Bessalis
Keywords: thin film, hematite, chrome, XRD analysis, FESEM analysis, Optical properties, photoelectrochemical properties.

18:00 Various doped (P, S and N) Nanoporous Carbons derived from Lignocellulosic Biomass for Energy and sustainability
Sul Ki Park, Hong Seok Park
SUNGYUNKWAN University

18:00 Simple fabrication of high energy and high power performance flexible hybrid supercapacitor using an intense pulsed white light
Jonguk Hwang, Chanyong Park, Yeon-Taek Hwang, Hak-Sung Kim and Heejoon Ahn
Department of Organic and Chemical Engineering, Hanyang University, Seoul 04763, South Korea

18:00 Polymer-ionic liquid hybrid electrolytes based on a PVA/PAA blend and pyrrolidinium ionic liquid for Lithium ion batteries
Savitth Thayumanasundaram*, Vijay Shankar Rangasamy, Jean-Pierre Locquet
Department of Physics and Astronomy, Katholieke Universiteit Leuven, Celestijnenlaan 200B, B-3001, Leuven, Belgium

18:00 Fracture-Resistant Sn micropillars as Anode for Lithium Ion Batteries
Chung Suzh Hong, Nadeem Qaiser, Seung Min J. Han*
1. School of Engineering, Nazarbayev University, Astana 01000, Kazakhstan, 2. Indian Institute of Technology Kanpur, India
3. Korea Institute of Energy Research

18:00 Deep eutectic solvent assisted one step synthesis of metal/metal oxide-carbon composite for energy storage applications
Gaurav M. Thorat, Harshav S. Jadhav, Jeong Gil Seo
Department of Energy Science and Technology, Energy and Environment Fusion Technology Center, Myongji University, Nam-dong, Cilleoin-gu, Yongin-si, Gyeonggi-do 449-728, Republic of Korea

18:00 MoS2-Coated Three-Dimensional CuO Branched Nanowires for Efficient Photoelectrochemical Water Splitting
Juyoung Ham, Kwan Woo Lim, and Jong-Lam Lee
Department of Materials Science and Engineering, Pohang University of Science and Engineering Pohang, Gyeongbuk, 790-784, Korea

18:00 One-Pot Synthesis of Electro-Active Polymer Gels via Cu(0)-Mediated Radical Polymerization and Click Chemistry
F. Boujouj, O. Bertrand, A. Vlad and J.-F. Gohy
Université catholique de Louvain, Institute of Condensed Matter and Nanosciences, Bio & Soft Matter. Place L. Pasteur 1, 1348 Louvain-la-Neuve, Belgium

08:30 Tunable polyimides: The future of organic Li/Na ion batteries
Dijo Damien, Harsh Banda, Kalavanan Nagarajan, Mahesh Harinaran and Manikoth M. Shajumon
Indian Institute of Science Education and Research Thiruvananthapuram, CET Campus, Sreekaryam, Thiruvananthapuram, Kerala, 695016, India

08:45 Vat Dyes as Low-Cost Organic Electrode Materials for Li/Na-Ion Batteries
Ji Eon Kwon, Soo Young Park
Center for Supramolecular Optoelectronic Materials, Department of Materials Science and Engineering, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 08826 Korea

09:00 Design and electrochemical properties of organic host materials for rechargeable batteries
P. Poizot, E. Deurf, E. Quarez, P. Jimenez, D. Guyomard, F. Dolhem
P. Poizot, Institut des Matériaux Jean Rouxel (IMN), UMR CNRS 6502, Université de Nantes, Nantes, France & Institut Universitaire de France (IUF), Paris, France
E. Deurf, E. Quarez, D. Guyomard, Institut des Matériaux Jean Rouxel (IMN), UMR CNRS 6502, Université de Nantes, Nantes, France
P. Jimenez, Institut des Matériaux Jean Rouxel (IMN), UMR CNRS 6502, Université de Nantes, Nantes, France & Laboratoire de Glycochimie, des Antimicrobiens et des Agroressources (LG2A), UMR CNRS 7387, Université de Picardie Jules Verne, Amiens, France
F. Dolhem, Laboratoire de Glycochimie, des Antimicrobiens et des Agroressources (LG2A), UMR CNRS 7387, Université de Picardie Jules Verne, Amiens, France & Réseau sur le Stockage Electrochimique de l’Energie (RS2E), FR CNRS 3459, France

09:30 P AND N TYPE ORGANIC COMPOUNDS FOR SODIUM AND MAGNESIUM AQUEOUS ION-BATTERIES
Sofia Perticarini, Yann Pellegin, Errol Blart, Dominique Guyomard, Michel Armand, Fabrice Odobel, Philippe Poizot and Joel Gaubicher
Sofia Perticarini, Dominique Guyomard, Philippe Poizot, Joel Gaubicher: Institut des Matériaux Jean Rouxel (IMN), Université de Nantes, CNRS, 2 rue de la Houssinière, 44322 Nantes Cedex 3, France
Yann Pellegin, Errol Blart, Fabrice Odobel: CEMHTI, CNRS, 2 Avenue du Président Angot, 64053 Pau, France
Chimie et Interdisciplinarité, Synthèse, Analyse, Modélisation, Université de Nantes, 2, rue de la Houssinière, 44322 Nantes Cedex 3, France
Michel Armand: CIC Chimie et Interdisciplinarité, Synthèse, Analyse, Modélisation, Université de Nantes, 2, rue de la Houssinière, 44322 Nantes Cedex 3, France

09:45 Guar gum and its derivatives as binders for lithium-ion battery electrodes
Diogo Vieira Carvalho, Nicholas Loeffler, Guk-Tae Kim, Arianna Moretti, Stefano Passerini
Helmholtz Institute Ulm (HIU), Helmholtzstrasse 11, 89085 Ulm, Germany
Karlsruhe Institute of Technology (KIT), P.O. Box 3640, 76021 Karlsruhe, Germany

10:00 Coffee Break
11:30 Design of ion-exchange membranes for all-vanadium redox flow batteries (VRBs)
Olga Nibel, Thomas J. Schmidt, Lorenz Gubler
Electrochemistry Laboratory, Paul Scherrer Institut, 5232 Villigen, Switzerland.
Electrochemistry Laboratory, Paul Scherrer Institut, 5232 Villigen, Switzerland
+ Laboratory of Physical Chemistry, ETH Zürich, 8093 Zurich, Switzerland
Electrochemistry Laboratory, Paul Scherrer Institut, 5232 Villigen, Switzerland

11:45 Redox supercapacitors based on sulfonated PEEK and iodide species in the electrolyte
Francesco Lufrano, Alessandra Carbonbe, Irene Gatto, Antonino Brighenti, Pietro Staill, CNR-ITA, Istituto di Tecnologie Avanzate per l’Energia ?Nicola Giordano? Via Salita S. Lucia sopra Contesse 5, 98126, Messina, Italy

12:00 Lunch

13:45 Novel Hybrid Flexible Supercapacitor Devices based on N-Doped Carbon Nanotubes and CoFe2O4 Nanoparticles
Clara Pereira,1,* Rui S. Costa,1,2 Laury Lopes,1 Cristina Freire,1 Belén Bachiller-Baeza,3 Inmaculada Rodríguez-Ramos,3 Antonio Guerrero-Ruiz,3 Pedro B. Tavares,4 André M. Pereira2
1 REQUIMTE/LAQV, Departamento de Química e Bioquímica, Faculdade de Ciências, Universidade do Porto, 4169-007 Porto, Portugal; 2 IFIMUP and IN; 3 Institute of Nanoscience and Nanotechnology, Departamento de Física e Astronomia, Faculdade de Ciências, Universidade do Porto, 4169-007 Porto, Portugal; 3 Instituto de Catalásis y Petroquímica, CSIC, C/Marie Curie 2, Cantoblanco, 28049 Madrid, Spain; 4 Departamento de Química y CQ-VR, Universidad de Trás-os-Montes e Alto Douro, 5001-801 Vila Real, Portugal. * Clara.pereira@fc.up.pt

14:15 An Air-Stable Densely Packed Phosphorene–Graphene Composite Toward Sodium Storage
Yury Gogotsi
Department of Materials Science and Engineering, and A. J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA 19104, USA

14:30 ENERGY STORAGE APPLICATIONS OF TWO-DIMENSIONAL CARBIDES (MXenes)
Yury Gogotsi
Department of Materials Science and Engineering, and A. J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA 19104, USA

15:00 Simple and versatile fabrication of 3D micro-supercapacitors using pneumatic printing combined with intense pulsed white light
Ohho Song, Hak-Sung Kim and Heejoon Ahn
Department of Organic and Nano Engineering, Hanyang University, Seoul 04763, South Korea.
Department of Mechanical Engineering, Hanyang University, Seoul 04763, South Korea.

15:15 Free-standing 2D Ti3C2Tx-V2O5 Films for Energy Storage Devices
Aniu Qian, Chan-Hwa Chung
School of Chemical Engineering, Sungkyunkwan University, Suwon 16419, Republic of Korea.

16:15 Plenary Session

Thursday 25 May 2017

08:30 2D Porous NiCoMnO4-Graphene Nanocomposites for High Performance Hybrid Energy Storage Device
Jaimé Sanchez(a), Afshin Pendashth(e), Jesús Palma(a), Marc Andersson(a), Rebecca Marcilla(a)
1 a Electrochemical Processes Unit, IMDEA Energy Institute, Avda. Ramon de la Sagra 3, Parque Tecnológico de Móstoles, 28905 Móstoles, Spain. b Department of Civil and Environmental Engineering, University of Wisconsin, Madison, USA. * E-mail: afshin.pendashth@imdea.org, rebecca.marcilla@imdea.org

08:45 All GRAPHENE BASED LITHIUM ION CAPACITOR
Jon Ajuria, Maria Arnaiz, Cristina Botos, Daniel Carriazo, Roman Mysyk, Teodoro Rojo, Alexandr V. Talyzin, Eider Goikolea
1 Jon Ajuria, Maria Arnaiz, Cristina Botos, Daniel Carriazo, Roman Mysyk, Teodoro Rojo, Eider Goikolea CIC Energigune, Albert Einstein 48, Alava Technology Park, 01510 Mílano, Vitoria-Gasteiz, Spain. 2 Teodoro Rojo, Inorganic Chemistry Department, University of the Basque Country UPV/EHU, P.O. Box 644, 48080, Bilbao, Spain. 3 Alexandr V. Talyzin: Department of Physics, Uméa University, S-90187, Umeå, Sweden.

09:00 Pseudocapacitive Energy Storage in Oxide Materials
Bruce Dunn
Materials Science & Engineering Department, UCLA

09:30 Nano-engineered electrodes for ultra-high charge-discharge supercapacitors (>8 V/a)
Hemesh Avireddy (a,b), Cristina Felix (a), Peng-Yi Tang (c,d); Jordi Arbiol (c,d), Joan Ramon Morante (a, b)
[a] IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930. Sant Adrià de Besós, Spain. [b] Facultad de Físicas, University of Barcelona, Barcelona, Spain. [c] Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC, and The Barcelona Institute of Science and Technology (BIST), Campus UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain. [d] ICREA, Passatx Lluis Companys 23, 08010 Barcelona, Catalonia, Spain. Corresponding author email – ahemesh@irec.cat Address – IREC, Jardins de les dones de Negre 1, 08930 Sant Adrià del Besos, Barcelona, Spain.

09:45 Coffee Break

10:15 Ion conducting coordination polymer crystals for energy devices working at intermediate temperature
Saloti Horike
Kyoto University

10:45 Ionic Properties of the Li(BH4)0.75I0.25 – 0.75Li2S·0.25P2S5 Mixed System for Near Room-Temperature All-Solid Li-Ion Batteries
A. El-Khatibachi (a), Y. Hu (b), K. Yoshida (c), M.F. Sarby (a), H. Fjellvåg (b), S. Orimo (c,d), B. Hauback (a)
(a) Institute for Energy Technology, P.O. Box 40, NO-0207 Kjeller, Norway. (b) Centre for Materials Science and Nanotechnology, University of Oslo, Blindern, Norway. (c) Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan. (d) WPI-Advanced Institute for Materials Research, Tohoku University, Sendai 980-8577, Japan.

11:00 Intermediate Temperature Proton Conductivity in Nanocrystalline Ceramics
Gary Ong, Evan Runnerstrom, Delia J. Milliron
University of California, Berkeley, University of Texas, Austin

11:15 Complex hydrides for near-room temperature all-solid-state Na-ion batteries
Matteo Brighi[1], Pedro López-Aranguren[2], Fabrizio Murgia[1] and Radovan Čermý[1]

11:30 The Impact of interfaces on oxide ion diffusion in doped ceria
Aote K. Lucid, Graeme W. Watson
School of Chemistry and CRANN, Trinity College Dublin, College Green, Dublin 2, Ireland

11:45 Electrolyte Systems 4: Hybrid : R. Bouchet, A. Vlad

12:15 Novel Hybrid Flexible Supercapacitor Devices based on N-Doped Carbon Nanotubes and CoFe2O4 Nanoparticles
Clara Pereira,1,* Rui S. Costa,1,2 Laury Lopes,1 Cristina Freire,1 Belén Bachiller-Baeza,3 Inmaculada Rodríguez-Ramos,3 Antonio Guerrero-Ruiz,3 Pedro B. Tavares,4 André M. Pereira2
1 REQUIMTE/LAQV, Departamento de Química e Bioquímica, Faculdade de Ciências, Universidade do Porto, 4169-007 Porto, Portugal; 2 IFIMUP and IN; 3 Institute of Nanoscience and Nanotechnology, Departamento de Física e Astronomia, Faculdade de Ciências, Universidade do Porto, 4169-007 Porto, Portugal; 3 Instituto de Catalásis y Petroquímica, CSIC, C/Marie Curie 2, Cantoblanco, 28049 Madrid, Spain; 4 Departamento de Química y CQ-VR, Universidad de Trás-os-Montes e Alto Douro, 5001-801 Vila Real, Portugal. * Clara.pereira@fc.up.pt

12:23 An Air-Stable Densely Packed Phosphorene–Graphene Composite Toward Advanced Lithium Storage Properties
Yu Zhang, Huanwen Wang, Zhongzhen Luo, Hui Teng Tan, Bing Li, Shengnan Sun, Zhong Li, Yun Zong, Zhichuan J. Xu, Yanhu Yang, Khiam Aik Khor, and Qingyu Yan
School of Materials Science and Engineering, Nanyang Technological University 50 Nanyang Avenue, Singapore 639798, Singapore

12:24 ENERGY STORAGE APPLICATIONS OF TWO-DIMENSIONAL CARBIDES (MXenes)
Yury Gogotsi
Department of Materials Science and Engineering, and A. J. Drexel Nanomaterials Institute, Drexel University, Philadelphia, PA 19104, USA

12:25 Simple and versatile fabrication of 3D micro-supercapacitors using pneumatic printing combined with intense pulsed white light
Ohho Song, Hak-Sung Kim and Heejoon Ahn
Department of Organic and Nano Engineering, Hanyang University, Seoul 04763, South Korea.
Department of Mechanical Engineering, Hanyang University, Seoul 04763, South Korea.

12:26 Free-standing 2D Ti3C2Tx-V2O5 Films for Energy Storage Devices
Aniu Qian, Chan-Hwa Chung
School of Chemical Engineering, Sungkyunkwan University, Suwon 16419, Republic of Korea.

12:28 Coffee Break

12:30 Plenary Session
11:45 Novel complex hydrides as stable, room temperature solid-state electrolytes
Andrzej Remholz (1), Yangyan Yan (1), Ruben-Simon Kühnel (1), Léo Duchêne (1), Elsa Roedem (1), Daniel Rentsch (1), Zbigniew Łodziana (2), Hans Hagemann (3), Corin Battaglia (1)
(1) Empa, Swiss Federal Laboratories for Materials Science and Technology, CH-8600 Dübendorf, Switzerland. (2) Institute of Nuclear Physics, Polish Academy of Sciences, PL-31-342 Kraków, Poland. (3) Département de Chimie-Physique, Université de Genève, CH-1211 Genève 4, Switzerland
12:00 Lunch


14:15 Synergy of AFM and SIMS for advanced characterization of Li-ion battery
Structural changes and microstrain in Li$_x$Ni$_{0.8}$Co$_{0.15}$Al$_{0.05}$O$_2$ (0 ≤ x ≤ 2)
Jonathan Op de Beek (a), Umberto Celanci (a), Nouha Labyedh (a), Alfonso S. Marquez (a), Valentina Spampinato (a), Alexis Franquet (a), Philippe Vereecken (a, d)
a) IMEC, Kapeldreef 75, 3001 Leuven, Belgium. b) Departement of Applied Physics, Eindhoven University of Technology, Eindhoven 5612 AZ, The Netherlands. c) KU Leuven, Department of Physics and Astronomy, Celestijnenlaan 200D, B-3001 Leuven, Belgium. d) Departement of Biochemical and Microbial Systems, Celestijnenlaan 200D, B-3001 Leuven, Belgium


14:30 IMPROVEMENT OF LI-S BATTERIES
Mathieu Morcrette1, Rezan Demir-Cakan1, Alice Cassel1, Benoît Fleutot1, Virginie Viallet1
1 Laboratoire de Réactivité et Chimie des Solides, Université de Picardie Jules Verne, CNRS UMR 7314, 33 rue Saint Leu 80039 Amiens, France. b) b) Réseau sur le Stockage B 15, CNRS UMR 7314, 33 rue Saint Leu 80039 Amiens, France. c) Énergie chimique et technologie (RS2E), FR CNRS 3459, France. d) Gebele Institute of Technology, Department of Chemical Engineering, 41490 Geze/Turkey


15:00 Improvement of Nickel-Rich Lithium Transition-Metal Oxide by Surface Modifications
Yuu-Hwan Son, Jun-Ho Park, Yong-Bog Yang, Kwang-Sik Park, Suk-Gi Hong, Jae H. Shim, Byong Jin Choo, Jin-Hwan Park
Energy Lab, Samsung Advanced Institute of Technology, 130 Samsung-ro, Yeongdong-gu, Suwon-si, Gyeonggi-do, Republic of Korea, Automotive & AES Business Development Team, Samsung SDI, 130 Samsung-ro, Yeongdong-gu, Suwon-si, Gyeonggi-do, Republic of Korea


15:15 Increasing the energy of prototype Li-ion batteries through utilization of Ni-rich NMC cathodes and Sn alloy based anodes
Mario Marino1, Yoon Dong-hwan 1, Giulio Gabrielli 1, Petra Stegmaier 2, Paul C. Spark 3, Daniël Netis 3, Gregory Schmidt 4, Jerome Chauveau 4, Peter Axmann 1, Margaret Wolffenbuttel-Mehrens 1, 1 ZSW, 2 3M, 3 Umicore, 4 AKERMA


16:00 Antisite Disorder and Bond Valence Compensation in Li2FePO4F cathode for Li-ion Batteries
Olesya M. Karakulina1, Nellie R. Khasanova2, Oleg A. Drozhzhin2, Alexander A. Thanopoulou3, Aike Hademann1, Eugene V. Antipov2, Artem M. Akabukov3, 1 EMAT, University of Antwerp, Groenenborgerlaan 171, B-2020 Antwerp, Belgium. 2 Department of Chemistry, Lomonosov Moscow State University, 119919 Moscow, Russian Federation. 3 Skolkovo Institute of Science and Technology, Nobel str. 3, 143026 Moscow, Russia. 4 Experimental Physics VI, Center for Electronic Correlations and Magnetism, University of Augsburg, 86139 Augsburg, Germany. 5 National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, 12618 Tallinn, Estonia


16:15 First-Principles Calculations on Structure and Interfacial Reactivity of Amorphous LiPON
Sabrina Siculo, Karsten Albe
Technische Universität Darmstadt


16:30 The formation of LiF film in LP57 electrolyte on metal single crystals
Ivan E. Castelli, Thomas Östgaard, Konstantinos Antonopoulos, Filippo Maglia, Jan Rossmann
Department of Chemistry, University of Copenhagen, Department of Chemistry, University of Copenhagen, BMW Group, BMW Group, Department of Chemistry, University of Copenhagen


16:45 Studying reaction interface of half discharged LiFePO4/FePO4 nanoparticles by TEM automated crystal orientation mapping
X. Mu1, A. Kobler1, D. Wang1, 1, V.S.K. Chakravadhanu1,2, S. Schlabauch3,4, D.V. Szabo3,4, P. Norty5, C. Kübel1,2,3
1 Institute of Nanotechnology, Karlsruhe Institute of Technology, 76344 Eggenstein-Leopoldshafen, Germany. 2 Helmholtz-Institute Ulm for Electrochemical Energy Storage (HIU), Karlsruhe Institute of Technology (KIT), 89081 Ulm, Germany. 3 Karlsruhe Nano Micro Facility (KNMf), Karlsruhe Institute of Technology (KIT), 76144 Eggenstein-Leopoldshafen, Germany. 4 Institute for Applied Materials, Karlsruhe Institute of Technology, 76344 Eggenstein-Leopoldshafen, Germany. 5 Danmarks Tekniske Universitet (DTU), 4000 Roskilde, Denmark


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18:00 Low-cost, high-performance flexible supercapacitors based on Mn oxide paper electrode in novel quasi-ionic liquid electrolyte
Ming-Jay Deng, Kai-Wen Chen, I-Ju Wang, Kueh-Tzu Lu, Yen-Fa Liao, Hirofumi Ishi, Jin-Ming Chen
National Synchrotron Radiation Research Center, Hsinchu 30076, Taiwan

18:00 Battery Materials: Electrode Design and Optimization
D. S. Tschitschekova (1), A. Ponrouch (1), C. Frontera (1), F. Bardé (2), M. E. Arroyo-de Dompablo (3), R. Palacin (1)
(1) Institute de Ciencias de Materiales de Barcelona (ICMAB-CSIC) Campus UAB, E-08193 Bellaterra, Catalonia, Spain, (2) Toyota Motor Europe, Research & Development, 3 Advanced Technology 1, Technical Centre, Hoge We 33 B, B-1930 Zaventem, Belgium, (3) Malta Consolider Team, Departamento de Química Inorgánica, Universidad Complutense de Madrid, 28040 Madrid, Spain

18:00 Printed electronics integrated with flexible supercapacitors: new methodologies for low-cost energy storage
Yang Wang, Yi-Zhou Zhang, Garette Jenkins, Wen-Yong Lai, Huan Pang, Wei Huang, Johan E. ten Elshof
Inorganic Materials Science Group, MESA+ Institute for Nanotechnology, University of Twente, 7500 AE Enschede, The Netherlands

18:00 Mechanochemical synthesis of conducting polymer aerogels for electrochemical capacitors
Luhua Cheng 1,2, Xiaosong Du 2, Yading Jiang 2 and Alexandru Vlad 1.1
1 - Institute of Condensed Matter and Nanosciences, Molecules, Solids and Reactivity, Université catholique de Louvain, Place Louis Pasteur 1, 1348 Louvain-la-Neuve, Belgium. 2 - State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu 610054, P. R. China.

18:00 Optical fingerprints of solid-liquid interfaces: a joint ATR-IR and first principles investigation
Lei Yang, Fang Niu, Stefanie Tecklenburg, Marc Pander, Samintani Nayak, Andreas Erbe, Stefan Wippermann, Francois Gygi, Giulia Galli
Max-Planck-Institut für Eisenforschung GmbH

18:00 Optimization of nanoporous water oxidation electrodes based on a novel atomic layer deposition of iridium
Sofia Schlicht (a), Sandra Haschke (a), Vladimir Mikhailovski (b), Alina Manshina (b), Julien Bachmann (a)
(a) Department of Chemistry and Pharmacy, Friedrich-Alexander University Erlangen-Nürnberg, Egerlandstrasse 1, D-91058 Erlangen
(b) Saint-Petersburg State University, Interdisciplinary Resource Center for Nanotechnology, Uljanovskaya 1, 18504 St. Petersburg, Russia

18:00 Synthesis of the bi-quaternary ammonium levelers with different alkyl chains and their structure-property relationships on Cu and Cu+<o:yoongjlee<o>: Jung Hwan Oh, Myung Hyun Lee, Youngrae Seo, Myung Jun Kim, Hoe Chul Kim, Je Jeong Kim, Young Gyu Kim*
School of Chemical and Biological Engineering, College of Engineering, Seoul National University, Seoul, 08826, Korea, E-mail: ygkim@snu.ac.kr

18:00 Identity of a nanoporous iron oxide electrode surface with water oxidation activity improved thousand-fold
Sandra Haschke (1), Dimitri Pankin (2), Yuri Petrov (3), Alina Manshina (4), Julien Bachmann (1)
(1) Department of Chemistry and Pharmacy, Friedrich-Alexander University Erlangen-Nürnberg, Germany, (2) Center for Optical and Laser Materials Research, Saint-Petersburg State University, Russia, (3) Interdisciplinary Resource Center for Nanotechnology, Saint-Petersburg State University, Russia, (4) Institute of Chemistry, Saint-Petersburg State University, Russia

18:00 Investigation of perovskite-based anodes for solid oxide electrolysis cell
Albice L. Gavvin, Graeme W. Watson
School of Chemistry and CRANN, Trinity College Dublin, Dublin 2, Ireland

18:00 Self-charging lithium-ion battery using thin-film silicon solar cell
T. Mertenzhanova 1, S. N. Agbo 1, O. Asltakov 1, S. Yu 2, H. Tempel 2, H. Kungl 2, R. A. Etchell 2, U. Rau 1
1) IEK 5-Photovoltaics, Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany
2) IEK 9-Fundamental Electrochemistry, Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany

18:00 Ferroelectric nanocrystal mediated micro pseudo-electrochemical cells with ultrasound enhancement for polymerization
Lili Zhao, Fulei Wang, Zhiyuang Yang, Xiaoming Wang, Daidong Guo, Baoqin Ma, Hong Liu*, Yuanhua Sang
State Key Laboratory of Crystal Materials, Shandong University, Jinan, Shandong 250100, China

18:00 Advanced Asymmetric Supercapacitor Device with Polypyrrole Wrapped Co2O3 as positive and GNPs as negative electrode
Anish Maitra and B. B. Khatua
Indian Institute of Technology Kharagpur, Kharagpur-721302, West Bengal, India.

18:00 Hollow Nanostructures of Metal Oxides? Possible Candidates For Next Generation Supercapacitors
Vikas Sharma, Anveesh Chandra
School of Nanoscience and Technology, Department of Physics, Indian Institute of Technology, Kharagpur, West Bengal India

18:00 Modelling of the Electrochemical Impedance of Oxygen Ion Conductors
Dries Van Laethem, Carlos Fernandez, Luis Antonio Marques, Johan Deconinck, Stefan Wippermann, Francois Gygi
Imperial College London, Department of Chemistry

18:00 High-capacity, long-life Si/TiSi2/C nanocomposites as anodes for Li-ion batteries
Fermin Cuevas, Taher Aziz, Michel Latroche
CNRS/UPEC, ICMP, UMR7182, Thiais, France

18:00 Environmentally friendly strategies for the preparation of lithium-ion battery separators based on poly(vinylidene fluoride)
C. M. Coste(1,2), H. M. Rodrigues(1), A. Gómez(1,2), A. M. Vazquez(1,2), S. Lameres-Méndez(1,2)
1Centro de Física, Universidade do Minho, 4710-057 Braga, Portugal
2Centro/Departamento de Química, Universidade do Minho, 4710-057 Braga, Portugal
3IPC 1 Institute for Polymers and Composites, Universidade do Minho, Campus de Azurém, 4800-658 Guimarães, Portugal
4BCM materials, Parque Científico y Tecnológico de Bizkaia, 48160-Derio, Spain

18:00 Nanoelectrode carbon cathodes for Lithium Sulphur batteries
Jordi Jacas Biendicho1*, Cristina Flox1, Avreddy Hemesh1 and Joan Ramon Morante1
1) Catalunya Institute for Research, Jardins de les Dones de Negre, 1, 08990 Sant Andreu del Besos (Spain)
2) Departement d'Electronica, Universitat de Barcelona, C. de Martí i Franques, 1-2, 08028 Barcelona (Spain)

18:00 Combining the advantages of both liquid and solid electrolytes with magnetorheology
Jie Ding, Gangrou Peng, Weihua Li
Land Division, Defence Science and Technology Group, 506 Lorimer Street, Fishermans Bend, VIC 3207, Australia
Schools of Mechanical, Material and Mechatronic Engineering, University of Wollongong, Wollongong, NSW 2522, Australia

18:00 Comparisons of multifunctional Metal Phosphides Catalysts for Fuel Cell or Storage
Buddha Deba Borah and Abha Misra
Department of Instrumentation and Applied Physics, Indian Institute of Science, Bangalore, Karnataka, India 560012

18:00 Carbon dots as liquid and gel-type electrolytes for high-performance electrochemical devices
Hong Chu Lim(a), Kwang-Myeong Kim(a), Jaegyu Jang(a), Eunji Park(b), Ik-Soo Shin(b), Jong-In Hong(a)
(a) Department of Chemistry, Seoul National University, Seoul 151-747, Republic of Korea
(b) Department of Chemistry, Soongsil University, Seoul 156-743, Republic of Korea
18:00 The electrochemistry of some redox active coordination compounds: from fundamentals towards high voltage cells
Bruno Emruoldt, Jean-François Gohyt and Alexandru Vladz
† Institute of Condensed Matter and Nanosciences (IMCN), Bio- and Soft Matter Research Unit, Université catholique de Louvain, Place P. Pierre Ladeveze 1, B-1348 Louvain-la-Neuve, Belgium. ‡ Institute of Condensed Matter and Nanosciences (IMCN), Division of Molecules, Solids and Reactivity (MOST), Université catholique de Louvain, Place P. Pierre Ladeveze 1/6, B-1348 Louvain-la-Neuve, Belgium.

18:00 Environmental friendly one-pot synthesis of carbon/Si-based materials for Li- and Na-ion batteries
Cristina Nita 1,2, Julien Fullenwaerth 3, Julien Parmentier 1, Laure Moncorduit 3, Cathie Vex-Güttler 1,4, Camelia Matei Ghimebu 1,4
1 Institut de Recherche sur les Matériaux de Laboratoire (ISML), UMR 7191 CNRS, Université Lille 1, 59045 Lille Cedex, France.
2 Institut des Sciences de la Matière et de l’Environnement, UMR 8184, Université de Lille, CNRS, F-59000 Lille, France.
3 Laboratoire de Chimie Organique et Macromoléculaire, Université de Liège, 4000 Liège, Belgium.
4 ISTerre, Université Lille 1, CNRS, 59655 Villeneuve d’Ascq, France.

18:00 Carbon-molybdenum Disulfide (carbon/MoS2) Composite as Anode Material for Lithium Ion Batteries
Joong-Hee Han, Jürgen Kahr, Raad Hamid, Hyungil Jang, Do-Young Ahn, Sung-Hwan Lee, Ataka Trifonova
Electric Drive Technologies, Mobility, AIT Austrian Institute of Technology, Vienna, Austria. 1,2 H. H. Han, 1, J. Kahr, R. Hamid, T. Verheijen (1), M. K. Van Bael (1), A. Hardy (1)
(1) U Hasselt, Institute for Materials Research (IMO-IMOMEC), Inorganic and Physical Chemistry, Agraiaan, 3590 Diepenbeek, Belgium, (2) U Hasselt, Institute for Materials Research (IMO-IMOMEC), Materials Physics, Weesperpark 1, 3590 Diepenbeek, Belgium.

18:00 Simultaneous Mass Change and Electrochemical Analysis of Electrodeposited MnO2
Hayden Cameron (1), Jessica Allen (2), Scott Donne (1)
(1) University of Newcastle, Australia, Department of Chemistry, (2) University of Newcastle, Australia, Department of Chemical Engineering.

18:00 Complex wet-environments in electronic-structure calculations
Philippe Gori, Moscow 119991, Russian Federation
1 Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, Skolkovo Innovation Center, 3 Nobel str., Moscow, 143026, Russian Federation, 2 Institute of Chemistry, Saratov State University named after N.G. Chernyshevsky, 83 Astrakhanskaya Str., Saratov 410012, Russian Federation, 3 Chemistry Department, Lomonosov Moscow State University, 1 Leninskie gori, Moscow 119991, Russian Federation

18:00 Voltammetry of NiOx Nanoparticles
Elena V. Apraksin, S. N. Eliseeva, E. G. Tolkapolyova, V. V. Kondratiev, V. N. Klyushnikov
Institute of Chemistry, Saratov State University, 83 Astrakhanskaya Str., Saratov 410012, Russian Federation.

18:00 Exfoliation of WS2 by a new Lithium Intercalation Method and its Energy Storage Applications
Nazli Irem Tokmak1, Burcak Avci1, Mustafa Urgen1
(1) ISTerre, Université Lille 1, CNRS, 59655 Villeneuve d’Ascq, France.

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Cristina Nita 1,2, Julien Fullenwaerth 3, Julien Parmentier 1, Laure Moncorduit 3, Cathie Vex-Güttler 1,4, Camelia Matei Ghimebu 1,4
1 Institut de Recherche sur les Matériaux de Laboratoire (ISML), UMR 7191 CNRS, Université Lille 1, 59045 Lille Cedex, France.
2 Institut des Sciences de la Matière et de l’Environnement, UMR 8184, Université de Liège, 4000 Liège, Belgium.
3 Laboratoire de Chimie Organique et Macromoléculaire, Université de Liège, 4000 Liège, Belgium.
4 ISTerre, Université Lille 1, CNRS, 59655 Villeneuve d’Ascq, France.

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1 Institut de Recherche sur les Matériaux de Laboratoire (ISML), UMR 7191 CNRS, Université Lille 1, 59045 Lille Cedex, France.
2 Institut des Sciences de la Matière et de l’Environnement, UMR 8184, Université de Liège, 4000 Liège, Belgium.
3 Laboratoire de Chimie Organique et Macromoléculaire, Université de Liège, 4000 Liège, Belgium.
4 ISTerre, Université Lille 1, CNRS, 59655 Villeneuve d’Ascq, France.

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(1) University of Newcastle, Australia, Department of Chemistry, (2) University of Newcastle, Australia, Department of Chemical Engineering.

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Philippe Gori, Moscow 119991, Russian Federation
1 Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, Skolkovo Innovation Center, 3 Nobel str., Moscow, 143026, Russian Federation, 2 Institute of Chemistry, Saratov State University named after N.G. Chernyshevsky, 83 Astrakhanskaya Str., Saratov 410012, Russian Federation, 3 Chemistry Department, Lomonosov Moscow State University, 1 Leninskie gori, Moscow 119991, Russian Federation

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Elena V. Apraksin, S. N. Eliseeva, E. G. Tolkapolyova, V. V. Kondratiev, V. N. Klyushnikov
Institute of Chemistry, Saratov State University, 83 Astrakhanskaya Str., Saratov 410012, Russian Federation.

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(1) ISTerre, Université Lille 1, CNRS, 59655 Villeneuve d’Ascq, France.

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1 Institut de Recherche sur les Matériaux de Laboratoire (ISML), UMR 7191 CNRS, Université Lille 1, 59045 Lille Cedex, France.
2 Institut des Sciences de la Matière et de l’Environnement, UMR 8184, Université de Liège, 4000 Liège, Belgium.
3 Laboratoire de Chimie Organique et Macromoléculaire, Université de Liège, 4000 Liège, Belgium.
4 ISTerre, Université Lille 1, CNRS, 59655 Villeneuve d’Ascq, France.
08:30 Halogenid conduction in polymer electrolytes for chloride and fluoride ion batteries  
Franziska Klein  
Helmholtz Institute Ulm  
B 18.1

08:45 Atomic structure of metal-ion battery cathodes with advanced transmission electron microscopy  
Artem Abakumov  
Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, Nobetuya str. 3, 143026 Moscow, Russia  
B 18.2

09:00 Oxygen Redox in Battery Chemistries  
Kun Luo, Niccolo Guerrini, Matthew M Roberts and Peter G Bruce  
Departments of Materials and Chemistry, University of Oxford, Parks Road, Oxford OX1 3PH, UK  
B 18.3

09:15 Anion charge storage through oxygen intercalation in perovskite pseudocapacitor electrodes  
Keith J. Stevenson (1),* Caleb Alexander (2), Tyler Mefford (3), Keith P. Johnston (2)  
(1) Skolkovo Institute of Science and Technology, Skolkovo Innovation Center, Nobel str. 3, Moscow, 143026, Russian Federation. (2) Department of Chemical Engineering,The University of Texas at Austin, 1 University Station, Austin, Texas 78712 (3) Department of Chemistry, The University of Texas at Austin, 1 University Station, Austin, Texas 78712  
B 18.4

09:30 Anionic redox processes for electrochemical devices: from theory to application  
Alexis Grimaud  
1. Chimie du Solide et de l’Energie, FRE 3677, Collège de France, 75231 Paris Cedex 05, France. 2. Réseau sur le Stockage Electrochimique de l’Energie (RS2E), FR CNRS 3459, 80039 Amiens Cedex, France  
B 18.5

10:00 Coffee Break  
B 18.6

11:45 Li+ and A3+ site occupancies impact on ionic conductivity in Li(7−3x)AlxLa3Zr2O12 garnets  
Adriana Castillo 1, Thibault Charpentier 1, Said Yagoubi 1, Eddy Foy 1, Mélanie Moskura 1, Olivier Rapaud 2, Nicolas Pradeilles 2, Pierre-Marie Geoffroy 2, Hicham Khodja 1  
1 NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay, 91919 GIF sur Yvette Cedex, France. 2 SPCT, UM CNRS 7315, 12 rue Altantis, 87068 Limoges Cedex, France.  
B 20.1

12:00 Solid Electrolytes based on Li2La3Zr2O12 Garnets: Crystal Chemistry, Ion Transport and Implementation into Li Metal Batteries  
Anna Llordés (1,2), Ludenne Buannic (1), Frederic Aguessa (1), Jakub Zagorski (1), Brahim Grevech (1), Juan Miguel Lopez del Amo (1), William Manalastas (1), Nebil A. Katcho (1), Javier Carrasco (1), John A. Kiner (1,3).  
(1) CIC Energigune, Solid Electrolyte Group. Parque Tecnológico de Alava, Albert Einstein 48, 01510, Mirano, Spain. (2) IKERBASQUE, The Basque Foundation for Science, Bilbao, Spain. (3) Imperial College London, Department of Materials, Exhibition Road, SW7 2AZ, London, UK  
B 20.2

12:15 Systematic Search for Lithium Ion Conducting Compounds by Screening of Compositions Combined with Atomistic Simulation  
Daniel Mutter, Daniel Urban, Christian Elsässer  
Freiburger Materials Research Center (FMR), University of Freiburg, Stefan-Meier-Strasse 21, 79104 Freiburg, Germany, Fraunhofer IWM, Woehlerstrasse 11, 79108 Freiburg, Germany  
B 20.3

12:30 Synthesis and Implementation of Ceramic Li2La3Zr2O12 Electrolyte for All-Solid-State Batteries  
Ognjen Hajndl,Vasily TARNOPOLSKIY,Philippe AZAIS,Mohamed CHAKIR  
Technocentre Renault 1 Avenue du Golf 78280 Guyancourt FRANCE and CEALITEN 17 rue des Martyrs 38054 GRENOBLE FRANCE,CEALITEN 17 rue des Martyrs 38054 GRENOBLE FRANCE,Technocentre Renault 1 Avenue du Golf 78280 Guyancourt FRANCE  
B 20.4

12:45 Lunch  
B 20.5

Friday 26 May 2017  
Anionic Redox Processes : D. Bresser

11:00 Sb/Sb2O3 based nanocomposite anodes for sodium-ion batteries  
K. P. Lakshmi, D. Ramasubramonian 1 and M. M. Shaiumon  
School of Physics, Indian Institute of Science Education and Research, Thiruvananthapuram, Thiruvananthapuram, Kerala, 695016, India.  
Present Address: University of Illinois at Chicago, Chicago, Illinois 60607, United States  
B 19.3

11:15 Development of High Capacity Cathode Materials for Sodium-Ion Batteries  
Jang-Yeon Hwang, and Yang-Kook Sun  
Department of Energy Engineering, Hanyang University, Seoul 133-791, South Korea  
B 19.4

11:30 The interface between NaCoO2 and solid electrolytes: reaction layer formation and interface resistance  
Conrad Guhl (A), Philipp Kehne (B), Philipp Kommistnink (B), Qianli Ma (C), Frank Tietz (C), René Hausbrand (A)  
(A) TU-Darmstadt, surface science devision B= TU-Darmstadt, advanced thinfilm technology C= FZ Jülich, Institute of Energy and Climate Research  
B 19.5
SYMPOSIUM C

Organic photovoltaics: material synthesis and characterization, device engineering, device physics and upscaling

Symposium Organizers:

Feng GAO, Linköping University, Sweden

L. Jan Anton KOSTER, University of Groningen, The Netherlands

Natalie STINGELIN, Imperial College London, U.K.

Thuc-Quyen NGUYEN, University of California, Santa Barbara, USA
Tuesday 23 May 2017

New Materials : Alberto SALLEO

08:15 Development of Electron Acceptors for Organic Solar Cells
Iain McCulloch
King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), and, Physical Science and Engineering Division (PSE). Thuwal, 23955-6900, Saudi Arabia

08:45 Materials Synthesis and Device Engineering for All-Polymer Solar Cells
Emang Wang
Chalmers University of Technology

09:00 Fullerene-free Polymer Solar Cells with Efficiencies over 12%
Sunsun Li, Huifeng Yao, and Jianhui Hou
Beijing National Laboratory for Molecular Sciences, State Key Laboratory of Polymer Physics and Chemistry, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, China

09:30 The transport physics of small molecular acceptor - donor bulk heterojunction composites and solar cells
Nicola Gasparini, Derya Baran, Iain McCulloch and Christoph Brabec

10:00 Coffee Break

Ternary Blends : Iain MCCULLOCH

10:30 Controlling over the open-circuit voltage of bulk heterojunction cells using ternary blends and doping
Alberto Salleo, Sonya Mollinger, Koen Vandewal, Zhengrong Shang
Department of Materials Science and Engineering Stanford University, Department of Applied Physics Stanford University, IAPP Dresden, Department of Materials Science and Engineering Stanford University

11:00 Composition-dependent disorder and open circuit voltage in ternary organic solar cells
Nikolaos Feleidis, Martijn Kemerink
Complex Materials and Devices, Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-581 83 Linköping, Sweden.

11:15 Controlling the Nano-scale Morphology of Organic Bulk Heterojunctions for Highly Efficient Ternary Solar Cells
Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London SW7 2AZ, UK

11:30 Glass Forming Fullerene Mixtures for Polymer Solar Cells
Christian Müller
Chalmers University of Technology

12:00 Lunch

Photophysics and Device Physics (I) : Barry RAND

14:00 On the Competition Between Free Charge Recombination and Extraction in Low Mobility Photovoltaic Materials
Dieter Neher, Martin Stolterfoht, Jack Love, Steffen Roland, Jona Kurpiers
Department of Materials Science and Engineering, Monash University, Wellington Road, Clayton, 3800, Australia, Australian Synchrotron, 800 Blackburn Road, Clayton, VIC, 3800, Australia, Applied Functional Polymers, Macromolecular Chemistry I., University of Bayreuth, 95440, Bayreuth, Germany, Australian Synchrotron, 800 Blackburn Road, Clayton, VIC 3168, Australia

14:45 Origin of Dark Current in Small Molecule Organic Photodiodes
Himanshu Shekhar, Dan Liraz, Lior Tzabari, Nir Tessler
Technion - Israel Institute of Technology, Department of Electrical Engineering, Israel

15:00 Charged separation dynamics in organic photovoltaic materials with low band offsets
Artem A. Bakulin
Imperial College London

15:30 Coffee Break
Small molecular organic solar cells : From lab to applications

Karl Leo
Dresden Integrated Center for Applied Physics and Photonic Materials (IAPP), TU Dresden 01062 Dresden

09:00 Why Is Open-Circuit Voltage So High in Organic Solar Cells Based on Small Molecules?
C 6.2
Oleg V. Koziol [1], Yuriy N. Luponosov [2], Alexander N. Solodukhin [2], Bruno Flament [3], Yoann Olivier [2], Roberto Lazzaroni [2], Jérôme Comil [2], Sergey A. Ponomarenko [2,4], Maxim S. Fishchonikov [1]

09:15 Molecular strategies towards high-efficiency photovoltaic cells
ZHAN, Chuanliang
Beijing National Laboratory for Molecular Sciences, CAS Key Laboratory of Photochemistry, Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100190, P.R. China

09:30 BHJ Solar Cells with Solution-Processable Molecular Donors & Acceptors: Morphologies & Carrier Transport
Pierre M. Beaupjuge
Physical Sciences and Engineering Division, KAUST Solar Center (KSC), King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia

10:00 Coffee Break

10:30 Quantitative Structure-Function Relations in PSCs from Soft X-ray Scattering
Harald ADE
Dept. of Physics, North Carolina State University, Raleigh, NC 27695, USA

10:45 Interplay of electronic and dynamical processes in organohalide perovskite solar cells
Andrew M. Telford, Beth M. Rice, Jason A. Rohr, Alexandre De Castro Maciel, Harrison Vaynberg, Sheng-Ying Yue, Ming Hu
Aachen Institute for Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany, Institute of Mineral Engineering, Division of Materials Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany

11:00 The collective vibrational modes driving ultralow thermal conductivity of perovskite solar cells
Lei Wang (1,3,4), Sandra Jenatsch (1,4), Beat Ruhstaller (2), Christian Hinderling (3), Roland Flury (1), Frank Nüesch (1,4)
(1) Empa, Swiss Federal Institute for Materials Science and Technology, Laboratory for Functional Polymers, Überlandstrasse 129, CH-8600 Dübendorf, Switzerland, (2) Zurich University of Applied Sciences, Institute of Computational Physics, Technikumstrasse 5, CH-8401 Winterthur, Switzerland, (3) Zurich University of Applied Sciences, Institute of Chemistry and Biotechnology, Einsiedlerstrasse 31, CH-8820 Wädenswil, Switzerland, (4) Institut des Matériaux, Ecole Polytechnique Fédérale de Lausanne, EPFL, Station 12, CH-1015 Lausanne, Switzerland

11:15 Initial stage degradation in organic photovoltaics: fullerene dimerization or generation of free radicals?
L. N. Inasandin, (a) A. I. Shames, (b) I. V. Martynov, (b) B. Li, (c) A. V. Mumyatov, (a) D. K. Susarova, (a) E. A. Katz, (c,d) and P.A. Troshin*(e),(a)
(a) The Institute for Problems of Chemical Physics of the Russian Academy of Sciences, Semenov Prospect 1, Chernogolovka, 141432, Russia E-mail: troshin2003@inbox.ru, (b) Department of Physics, Ben-Gurion University of the Negev, P. O. Box 653, Be'er Sheva 84105, Israel, (c) Department of Solar Energy and Environmental Physics, J. Babinet Institutes for Desert Research, Ben-Gurion University of the Negev, Sede Boquer Campus, 84900 Midershet Ben-Gurion, Israel, (d) Ilse Katz Institute of Nano-Science and Technology, Ben-Gurion University of the Negev, Be'er Sheva 84105, Israel, (e) Skolkovo Institute of Science and Technology, Nobel St. 3, Moscow, 143026, Russia.

11:30 Figures of Merit Guiding Research on Organic Solar Cells
Thomas Kirchartz
IEK-5-Photovoltaik, Forschungszentrum Jülich, 52425 Jülich, Germany, Faculty of Engineering and CENIDE, University of Duisburg-Essen, Carl-Benz-Str. 199, 47057 Duisburg, Germany

12:00 Lunch

Wednesday 24 May 2017
08:30  Molecular semiconductors for LEDs and solar cells: designing around the Coulomb interaction
Richard Friend
University of Cambridge

09:00  Unravelling the crystal structure of PTB7 polymer using oriented crystallization induced by high temperature rubbing
L. Biniek, A.1, A. Hamidi-Saix, J.1, J. Dappe, L. Groth, S. Grigorian, M.2, Brinkmann1
(1) Université de Strasbourg, CNRS, ICS UPR 22, F-67000 Strasbourg, France. (2) Solid State Physics, University of Siegen, Walter Flex Strasse-3, D-57068 Siegen, Germany. (3) SPEC, CEA, CNRS, Université Paris-Saclay, CEA Saclay, 91191 Gif sur Yvette Cedex, France.

09:15  Thermoelectric properties of highly conductive printed organic thin films
Maria Caiorni1, Davide Beretta1, Matteo Massetti1,2, Alex Barker1, Isis Maqueira-Abreu1, Alberto Calfonà1, Gianlorenzo Bussetti1,2, Matteo Massetti1,2, Annamaria Petrozza1, Guglielmo Lanzani1,2
Italy

09:30  Monomolecular and Bimolecular Recombination of Electron– Hole Pairs at the Interface of a Bilayer Organic Solar Cell
Anna Köhler
University of Bayreuth

10:00  Coffee Break

Joint session with Symposium M (I) : Natalie BANERJI

10:30  Charge transport and spin mixing in organic photovoltaic devices
Jianpu Wang1,2, Girish Lakhwani2,3, Feng Gao2,4, Alexei Chepelianskii2,5, and Neil C. Greenham2
1) Key Laboratory of Flexible Electronics (KLOFE) & Institute of Advanced Materials (IAM), Jiangsu National Synergetic Innovation Center for Advanced Materials (SICAM), Nanjing Tech University (NanjingTech), Nanjing 211816, P.R. China. 2) Cavendish Laboratory, J.J. Thomson Avenue, Cambridge CB3 0HE, United Kingdom 3) School of Chemistry, University of Sydney, NSW 2006, Australia 4) Biomolecular and Organic Electronics, IFM, Linköping University, Linköping 58183, Sweden 5) CNRS-UMR CACS, Université Paris-Sud, CNRS, UMR 8502, F-91405, Orsay, France.

11:00  Effect of electron-phonon interaction on electronic structure and optical absorption of halide perovskites
Jia Yue Yang, Ming Hu
Institute of Mineral Engineering, Division of Material Science and Engineering, Faculty of Geoengineering and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany.

11:15  Modulating the ferromagnet/molecule spin hybridization using an artificial magnetoelectric
Dr. M. Studniarek, D. S. Chenfi-Hertel, E. Urbain, Dr. U. Halisediem, B. Taudul, Dr. F. Schleicher, L. Joly, Dr. F. Schreuer, Guy Schmehler, Dr. V. Da Costa, J. Arabaki, Prof. W. Weber, Dr. E. Beaurepaire, Dr. S. Boukar, Dr. M. Bowen Institut de Physique et Chimie des Matériaux de Strasbourg UMR 7504 CNRS, Université de Strasbourg, 25 Rue du Loess, BP 43, 67034 Strasbourg Cedex 2, France. E-mail: bowen@unistra.fr

11:30  First-principles modeling of organic thermoelectric materials
Zhigang Shuai, Dong Wang, Wen Shi, Yajing Sun
MOE Key Laboratory of Organic Opto-Electronics and Molecular Engineering, Department of Chemistry, Tsinghua University, 100084 Beijing, China

11:45  The impact of electrodes on recombination in organic solar cells
Azaedeh Rahimi Chatri, Vincent M. Le Corre, L. Jan Anton Koster
Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 4, 9747 AG, Groningen, The Netherlands

12:00  Lunch

13:00  Selectivity of Electrodes in Organic Solar Cells probed by Temperature and Intensity Dependence of the Open-Circuit Voltage
Ui WURFEL1,2, Mathias LIST1, Patrick REISER1, Annika SPIES1
1) Fraunhofer Institute for Solar Energy Systems ISE Heidenhofstr. 2, 79110 Freiburg, Germany. 2) Freiburg Materials Research Center FMF, Albert-Ludwigs-Universität Freiburg, Germany.

15:00  Toward High-efficient Bulk Heterojunction Solar Cells using new Hybrid Materials as Interfacial Layer
Donia Frejd1, (1) Sadok Ben Dkhil2, (2) Christine Videlot-Ackermann2, (2) Olivier Margeat2, (2) Jörg Ackermann2 (2) Tahar Mhiri1 (1) Mohamed Boujelbene1 (1) Laboratoire Physico-Chimie de l’Etat Solide, LR11 ES51, Faculté des Sciences de Stfax, Université de Stfax, BP 3071 Stfax, Tunisie, (2) Aix-Marseille University, Centre Interdisciplinaire de Nanosciences de Marseille CNiMa, UMR CNRS 7325, Marseille

15:30  Coffee Break

Joint session with Symposium M (II) : Alek DEDIU

16:00  Molecular and microstructural factors influencing the open-circuit voltage of organic photovoltaics
Koen Vandewal
Dresden Integrated Center for Applied Physics and Photonic Materials (IAPP), Technische Universität Dresden, Nöthnitzer Str. 61, 01187 Dresden, Germany

16:30  Understanding Mott-Schottky Measurements under Illumination in Organic Bulk Heterojunction Solar Cells
Irene Zonno, Alberto Martinez-Otero, Jan-Christoph Hebig, Thomas Kirchhart IEK5-Photovoltaik, Forschungszentrum Jülich, 52425 Jülich, Germany, Faculty of Engineering and CENIDE, University of Duisburg-Essen, Carl-Benz-Str. 199, 47057 Duisburg, Germany

16:45  Luminescence Spectroscopy and Thin-Film Interference Effects in Organic Solar Cells
Kymakis
Mathias List, Yvonne Jeneke Reinhardt, Uli Würfel
Fraunhofer Institute for Solar Energy Research, Heidenhofstr. 2, 79110 Freiburg, Germany. Freiburg Materials Research Center FMF, Stefan-Meier-Str. 21, 79104 Freiburg, Germany.

17:00  Charge Generation in OPV Blends Investigated by Ultrafast Spectroscopy
Natalie Banerji
Department of Chemistry, University of Fribourg, Chemin du Musée 9, CH-1700 Fribourg, Switzerland.

17:30  Break
Study of charge carriers' transport in organic solar cells by illumination area shifting

Mihnea Girtan

LPHIA, UBL - Angers University, 2 Bd. Lavoisier, 49045, France, mihnea.girtan@univ-angers.fr

Characterization of highly conjugated meso-thiophenylthiophenopyrroles for organic photovoltaic materials

Young-Chang Park, Sangdeok Shin

Department of Chemistry, Sungkyunkwan University, Suwon, Korea

Synthesis of Highly Conductive PEDOT:PSS Colloidal Gels and Application to Hybrid Solar Cells

Naoya Katsuyma, Hideomi Okuzaki

Graduate Faculty of Interdisciplinary, University of Yamanashi

Mapping the density of states of pentacene using field effect studies

Sanjyot Jena, Debudita Ray

Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology Madras, Chennai 600 036, India

Large-area imaging of film thickness and composition in OPV blends by Raman scattering

Xavier Rodriguez-Martinez, Michelle S. Vezie, Jenny Nelson, Alejandro R. Gorli, Mariano Campoy-Quiles

Institut de Ciencia de Materiales de Barcelona (ICMAB-CSIC), Esfera UAB, Bellaterra, 08193, Spain. Department of Physics and Centre for Plastic Electronics, Imperial College London, Prince Consort Road, London, SW7 2BW, U.K., Department of Physics and Centre for Plastic Electronics, Imperial College London, Prince Consort Road, London, SW7 2BW, U.K., Departamento de Ciencia de Materiales de Barcelona (ICMAB-CSIC), Esfera UAB, Bellaterra, 08193, Spain, Instituto Catalana de Recerca i Estudis Avancats (ICREA), Passie Lluís Companys 23, Barcelona, 08010, Spain, Institut de Ciencia de Materiales de Barcelona (ICMAB-CSIC), Esfera UAB, Bellaterra, 08193, Spain

Efficient and Versatile Interconnection Layer by Solvent Treatment of PEDOT:PSS for Air-Processed Organic Tandem Solar Cells

Marta Tassaro, Margherita Bolognesi, Tobias Cramer, Zhihua Chen, A. Facchetti

University of Bologna, Viale Berti Pichat 6/2, 40136 Bologna, Italy, Università degli Studi di Milano, Via Golgi 19, 20133 Milano, Italy, Polycrystal Corporation, 8045 Lamon Avenue, Skokie, IL 60077, USA, Consiglio Nazionale delle Ricerche-CNRS, CNR-IPAM, University of Bologna, Viale Risorgimento 2, 40136 Bologna, Italy, T. Cramer, B. Fraboni: Department of Physics and Astronomy, University of Bologna, Viale Berti Pichat 6/2, 40127 Bologna, Italy, Z. G. Chen, A. Facchetti: Polycrystal Corporation, 8045 Lamon Avenue, Skokie, IL 60077, USA, M. Seri: Consiglio Nazionale delle Ricerche (CNR) - Istituto per lo Studio dei Materiali Nanostрукurali (ISMN), Via P. Gobetti 101, 40129 Bologna, Italy, M. Tassaro: Interdepartmental Centre for Industrial Research (ICREA), Via del Balbianello 85/E, 00198 Rome, Italy

Efficient Organic Photovoltaics with Improved Charge Extraction Using Zinc Oxide as Buffer Layer

Minu Mohan, Viktoriia Popil'ska, Sanash M. R. Reddy, S. Ramkumar, Sumanash Agarwal, Chinnakonda S. Gopinath, Pradeep R Nair, and Manoj G Namboothri

Department of Chemistry, Sunchon National University, Sunchon, Korea

Design of novel triphenylamine-based donor-acceptor oligomers for stable organic photovoltaics

S. A. Ponomarenko, Y. N. Luponosov, A. N. Solovchuk, O. V. Kozlov, D. Y. Paranschuk, M. S. Pischemikhin, J. B. Brainic

Einkolop Institute of Synthetic Polymer Materials of Russian Academy of Sciences (ISPMM), Moscow, Russia, Moscow State University, Chemistry Department, Moscow, Russia, Faculty of International Laser Center, Lomonosov Moscow State University, Moscow, Russia, NIKITINE Institute for Advanced Materials, University of Groningen, The Netherlands, Institute of Materials for Electronics and Technology (I-METTE), Friedrich-Alexander-University Erlangen-Nuremberg, Germany

Influence of fluorine atoms and alkyl side-chains on the orientation of highly efficient photovoltaic fluorinated polymers

O. D. S. Rajendran[1], S. Fak[1], P. Chavez[2], V. Nguyen[2], O. Boyron[3], B. Heinrich[4], S. Méry[4], T. Heser[1], N. Leclerc[2], P. Light[1]

[1] Université de Strasbourg, CNRS, ENGEES, INSA, 2,049 UMR 7357, F-67000 Strasbourg, France,
[2] Université de Strasbourg, CNRS, IPCES UMR 7155, F-67000 Strasbourg, France,
[3] Université de Lyon, CNRS, C2P2 UMR 5265, F-69616 Villeurbanne, France,
[4] Université de Strasbourg, CNRS, IPCMS, UMR 7504, F-67000 Strasbourg, France

In situ spectroscopic ellipsometry for examining thin film growth in organic solar cells

Sameer Vajjala Kesava, Moritz Riede

Department of Physics, University of Oxford

Spectral ellipsometry - An insight in the optical properties of pristine/doped organic photovoltaic materials

Andreas Schaffer, Charles V. Craciun, Anna K. K. Frischknecht

Scanning Probe Microscopy Laboratory, ETH Zurich, Switzerland

Influence of fluorine atoms and alkyl side-chains on the orientation of highly efficient photovoltaic fluorinated polymers

C. D. S. Rajendran[1], S. Fak[1], P. Chavez[2], V. Nguyen[2], O. Boyron[3], B. Heinrich[4], S. Méry[4], T. Heser[1], N. Leclerc[2], P. Light[1]

[1] Université de Strasbourg, CNRS, ENGEES, INSA, 2,049 UMR 7357, F-67000 Strasbourg, France,
[2] Université de Strasbourg, CNRS, IPCES UMR 7155, F-67000 Strasbourg, France,
[3] Université de Lyon, CNRS, C2P2 UMR 5265, F-69616 Villeurbanne, France,
[4] Université de Strasbourg, CNRS, IPCMS, UMR 7504, F-67000 Strasbourg, France

In situ spectroscopic ellipsometry for examining thin film growth in organic solar cells

Sameer Vajjala Kesava, Moritz Riede

Department of Physics, University of Oxford

Photovoltaic characterization of PBDTTTD synthesized via direct arylation polymerization: comparison to PBDTTDP prepared via Stille

Jackee Gasiowski[1], Christoph Cobet[1], Joseph Humlicek[3,4], Kurt Hingerl[1,2]

[1] Center for Surface and Nanoanalytics, Johannes Kepler University in Linz, Altenbergerstrasse 69, 4040 Linz, Austria
[2] Université de Strasbourg, CNRS, ENSIGE, INSA, 2004 UMR 7357, F-67000 Strasbourg, France
[3] Université de Strasbourg, CNRS, IPCES UMR 7155, F-67000 Strasbourg, France
[4] Université de Lyon, CNRS, C2P2 UMR 5265, F-69616 Villeurbanne, France

Photovoltaic characterization of PBDTTDP synthesized via direct arylation polymerization: comparison to PBDTTDP prepared via Stille

Jackee Gasiowski[1], Christoph Cobet[1], Joseph Humlicek[3,4], Kurt Hingerl[1,2]

[1] Center for Surface and Nanoanalytics, Johannes Kepler University in Linz, Altenbergerstrasse 69, 4040 Linz, Austria
[2] Université de Strasbourg, CNRS, ENSIGE, INSA, 2004 UMR 7357, F-67000 Strasbourg, France
[3] Université de Lyon, CNRS, C2P2 UMR 5265, F-69616 Villeurbanne, France
[4] Université de Strasbourg, CNRS, IPCES UMR 7155, F-67000 Strasbourg, France
18:00 Efficient Solar Cells Incorporating DNA and Metal Oxide-DNA Composite Electron Extraction Layers
Janardan Dagar 1, Guido Scavia3, Manuela Scarcelli3, Silvia Destrì3, Maurizio De Crescenzo2, and Thomas M. Brown1
1 CHOSE [Centre for Hybrid and Organic Solar Energy], Department of Electronic Engineering, University of Rome Tor Vergata, Via della Ricerca Scientifica 1, 00133 Rome, Italy. 2 Department of Physics, University of Rome Tor Vergata, Via della Ricerca Scientifica 1, 00133 Rome, Italy. 3 CNR – ISMAC (Istituto per lo Studio delle Macromolecole ) via Corti 12, 20133 Milan Italy

C 13.18

18:00 Improvement of organic solar cells through Au nanoparticles implanted into PEDOT:PSS layer
D. D. Brouz-Badila1,2, D. J. Coutinho3, D. R. B. Amorim1, M. C. Salvadori2, and R. M. Faria1
1) São Carlos Institute of Physics, University of São Paulo (2) Institute of Physics, University of São Paulo (3) Federal Technological University of Paraná

C 13.19

18:00 Accelerated lifetime test on Organic Solar Cells using ISOS-D-2 protocol (high temperature storage)
Julio César Madureira Silva, Augusto Cesar da Silva Bezerra, Claudinei Rezende Calado
Instituto Federal do Espírito Santo - IFES, Centro Federal de Educação Tecnológica de Minas Gerais - CEFET MG, Centro Federal de Educação Tecnológica de Minas Gerais - CEFET MG

C 13.20

18:00 Oxide catalysts for electrocatalytic reduction of oxalic acid toward efficient power storage
M. Y. Yamaine, Rhota Watanabe, Shinichi Hata, Shitakano, Masaaki Sadakyo International Institute for Carbon–Neutral Energy Research (WPI-2CNER), Kyushu University

C 13.21

18:00 Surface Plasmonic effects of gold nanoparticles on organic solar cell performance: synthesis and characterization
Nada Benhadidou 1,2, Iram Anefah 1,2, Safae Azaou 1, M. Abd-eldell 1, Zouheir Sekkat 1,2
1- Faculty of Science and Technology, University of Tunis El Manar, Tunisia. 2- Laboratoire de Chimie Moléculaire et Matériaux Nanostructurés, Université de Bourdeaux, Talence, France

C 13.22

18:00 Ultra-fast excited-state isomerization of a small-molecule oligothiophene for organic solar cells
A. Guaraccia 1,2, A. Santagata 1,2, D. Catone 1,2, P. O’Keefe 1,2, G. Mattioli 1,2, M. D’Auria 1,2, P. Loukakos 1,2
1- CNR-ISM, FLASH-IT Unit of Tito Scalo, C/da S. Loja, 85050 Tito Scalo (PZ), Italy. 2- CNR-ISM, FLASH-IT Unit of TerraJusto Fondo, 100 - 00133 Roma, Italy. (c) CNR-ISM, FLASH-IT Unit of Monterotondo - via Salafia Km 29.300 - C.P. 10 00015 - Monterotondo Stazione (RM), ITALY (d) Dipartimento di Scienza, Università di Roma "Tor Vergata", Via della Ricerca Scientifica 1, 00018 - Monterotondo Stazione (RM), Italy

C 13.23

18:00 Al dopant concentrations effects in AZO buffer layer on the efficiency of P3HT:PCBM based inverted solar cell
W. Qandar 1,2, Z. Laghourf 1,2, S. Azaou 1, M. Abd-eldell 1, M. Regragui 2, Z. Sekkat 1,2
1- Optics & Photonics Centre, MAScIR-Rabat, Morocco. 2- Department of Chemistry, Faculty of Science, University Mohammed V, Rabat, Morocco

C 13.24

18:00 Effect of Interchain Ordering on Electronic States and Photovoltaic Performance in Dispersed Polymer Blend based Organic Solar Cells
Naresh CHANDRASEKARAN, Elliot GANN, Naik JAIN, Aditya SADHANALA, Anil KUMAR, Richard H.FRIEND, Chris MCNEILL, Dinesh KABRA.

C 13.25

18:00 Adhesion optimization within organic photovoltaic devices and its influence along encapsulation and ageing
Sacha Juliard a,b,c, Emilie Planeau a,b,c, Muriel Matheron b,d, Solenn Berson b,d, Lionel Flandin a,b,c, Cédric Corti 1,2, Yves Deschamps a,b,c, E-mail: renee.kroon@unisa.edu.au, mats.andersson@chalmers.se

C 13.26

18:00 Performance enhancement of organic solar cell by incorporating ZnO nanoparticles
I. Al Meftah1,2, S. Azaou1, M. Abd-Bell1, Z. Sekkat 1,2,1 Optics & Photonics Center, Moroccan Foundation for Advanced Science, Innovation and Research, Rabat, Morocco. 2 Laboratory of Materials, Nanotechnology and Environment, Department of Chemistry, Faculty of Sciences, University Mohamed V, Rabat, Morocco. 3 Laboratory of Material Physics, Faculty of Sciences, University Mohamed V, Rabat, Morocco,

C 13.27

18:00 Unique Photophysical Properties of Some Organic Dyes Deposited on the Gilded Substrate
V.M. Yashchuk1, A.P. Naumenko1, N.A. Davidenko1, Yu.V. Kudrya1, K.P. Grynko1, Yu.L. Stomelkis1
1 Taras Shevchenko National University of Kyiv, 64/13, Volodymyrska Street, Kyiv, 01601, Ukraine. 2. Lashkaryov Institute of Semiconductor Physics NASU, 41, Nauky avn., Kyiv, 03026, Ukraine. 3. Institute of Organic Chemistry NASU, 5, Murmanska Street, Kyiv, 02660, Ukraine

C 13.28

18:00 A Microscopic View on the Properties of Organic Electrons by Means of Advanced Spectroscopic Imaging Ellipsometry
Peter H. Thiesen, Christian Röling, Matthias Duwe
Accutron GmbH, Steiermärkstr. 30, D-37079, Göttingen

C 13.29

18:00 Organic luminentescent transformer for silicon solar cells
Volodymyr Azovskiy, Valeriy Yashchuk, Vitaliy Kosach, Volodymyr Lytvynchenko, Vitaly Kostylev, Pavlo Stakhura
Volodymyr Azovskiy - PhD student at Taras Shevchenko National University of Kyiv, Volodymyr Lytvynchenko - V.E. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine / Vitaly Kostylev - V.E. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine / Pavlo Stakhura - Lviv Polytechnic National University

C 13.30

18:00 Organic luminescent transformer for silicon solar cells

C 13.31

18:00 Inverted All-polymer Solar Cells Based on a Quinoxaline-thiophene/Naphtalene-Imide Polymer Blend Improved by Annealing
Yuxin Xia, Chiara Musumeci, Jiaowei Pei, Ma Na, Feng Gao, Zheng Tang, Sai Bai, Yiheng Jin, Chenhui Zhu, Renee Kroon, Cheng Wang, Mats R. Andersson, Lintao Hou, Ole Inganäs* and Ergang Wang*

C 13.32

18:00 Performance enhancement of organic solar cell incorporating Zn nanoparticles
I. Al Meftah1,2, S. Azaou1, M. Abd-eldell 1, 2 Laboratory of Materials, Nanotechnology and Environment, Department of Chemistry, Faculty of Sciences, University Mohamed V, Rabat, Morocco. 3 Laboratory of Material Physics, Faculty of Sciences, University Mohamed V, Rabat, Morocco,

C 13.33

18:00 On the photovoltaic response of new biologic/polymorphic thin films based structures
B. Bit1, Sorina Ilitine1, A. Radu1, Doina Gazdar1, Diana Coman1, L. Ion1, S. Antohie1,2
1University of Bucharest, Faculty of Physics, Bucharest, Romania, 2Academy of Romanian Scientists, Bucharest, Romania

C 13.34

18:00 Interfacial degradation in organic solar cells

C 13.35

18:00 Inverted-polymer Solar Cells Based on a Quinoxaline-thiophene/Naphthalene-imide Polymer Blend Improved by Annealing
Yuxin Xia, Chiara Musumeci, Jiaowei Pei, Ma Na, Feng Gao, Zheng Tang, Sai Bai, Yiheng Jin, Chenhui Zhu, Renee Kroon, Cheng Wang, Mats R. Andersson, Lintao Hou, Ole Inganäs* and Ergang Wang*

C 13.36

18:00 New APPROACH FOR THE STABILIZATION OF OPTOELECTRONIC DEVICES USING SOL-GEEL PROCESS
T. Tjoel, J. P. Daula (a), G. Wanz (b), & J. E. J. Moreau (a)
(a) Architectures Moléculaires et Matériaux Nanostructurés, Institut Charles Gerhardt, UMR 5253, Ecole Nationale Supérieure de Chimie de Montpellier, 8 rue de l’Ecole Normale, 34095 Montpellier Cedex 05, France. (b) Laboratoire d’Intégration du Matériau Avancé, Université Paul Sabatier, 140 rue de la Douzaine, 31077 Toulouse Cedex 4, France

C 13.37
18:00 **Novel method for extraction of built-in potential from dark current density-voltage characteristics of organic solar cells**
Prashanth Kumar M, Saranya R, Soumya Dutta
Department of Electrical Engineering, Indian Institute of Technology Madras, Chennai 600036, India

18:00 **Rational Engineering of BODIPY-bridged-Trisindole derivatives for Solar Cell Applications**
I. Bulut [1], Q. Huault [1], A. Mirloup [1], P. Chavez [1], S. Fall [2], A. Hébraud [1], S. Méry [3], B. Heinrich [3], T. Heiser [2], P. Lévêque [2], N. Leclerc [1]

18:00 **Dumbbell-shaped donor molecules based on zinc phthalocyanine platforms for BHJ solar cell**
S. Marzouk(1,3), B. Heinrich(1), N. Leclerc(2), J. Khiari(3), S. Méry(1)
(1) Institut de Physique et de Chimie des Matériaux de Strasbourg (IPCMS), CNRS, Université de Strasbourg, 23 rue du Loess, 67034 Strasbourg, France (2) Institut de Chimie et Procédés pour l’Energie, l’Environnement et la Santé (ICPEES), CNRS, Université de Strasbourg, ECPM, 25 rue Becquerel, 67087 Strasbourg, France (3) Laboratoire de Chimie organique et Analytique, Institut Supérieur de l’Education et de la Formation Continue (ISEFC), 2000 Bardo, Université de Tunis El Manar, Tunisie

18:00 **Microscopic pathways to photo-carrier generation in pentacene field effect transistors**
Haripriya.V.K, Sanjoy Jena, Debdutta Ray
Department of Electrical Engineering, Indian Institute of Technology Madras, Chennai 600036, INDIA

18:00 **Project TranspEnergy: towards organic solar modules with pre-designed colour and transparency**
Marco Stellini
Eurecat

18:00 **Light-induced degradation of polymer-fullerene based organic solar cells**
Yuming Wang, Feng Gao, Jianpu Wang
Key Laboratory of Flexible Electronics (KLOFE) and Institute of Advanced Materials (IAM), National Synergistic Innovation Centre for Advanced Materials (SICAM), Nanjing Tech University, 30 South Puzhu Road, Nanjing 211816, China, Biomolecular and Organic Electronics, IFM, Linköping University, Linköping 58183, Sweden

18:00 **Novel 5,6-bis(octyloxy)-2,1,3 benzooxadiazole based donor–acceptor random copolymer for efficient organic photovoltaic devices**
Seza Goker, Gonul Hizalan, Yasemin Arslan Udom, Levent Toppare
Department of Polymer Science and Technology, Middle East Technical University, 06800 Ankara, Turkey
Department of Chemistry, Middle East Technical University, 06800 Ankara, Turkey Graduate School of Natural and Applied Sciences, Gazi University Department of Biotechnology, Middle East Technical University, 06800 Ankara, Turkey The Center for Solar Energy Research and Application (GUNAM), Middle East Technical University, 06800 Ankara, Turkey
SYMPOSIUM D

Next generation of earth-abundant materials for solar energy

Symposium Organizers:

Adele TAMBOLI, National Renewable Energy Lab, Golden, USA

David SCANLON, University College London, U.K.

Geoffroy HAUTIER, Université Catholique de Louvain, Belgium

Patrice MISKA, University of Lorraine, Vandoeuvre-les-Nancy, France
09:30 Emerging materials for solar energy: matlockite, kesterite, perovskite and beyond...  
Aron Walsh  
Department of Materials, Imperial College London, UK

10:00 Polaron in CH3NH3.PBI3: formation, transport and recombination  
Jarvist Moore Frost [1], Lucy Whalley [1], Jonathan Skelton [2], Pooya Azarhoozha [3], Scott McKechnie [3], Mark van Schilfgaarde [3], Aron Walsh [1]  

10:15 Theoretical Investigation of the PbS-Bi2S3 series for optoelectronic applications  
Christopher N. Savory [1], David O. Scalon [1,2]  

10:30 Non-toxic and earth-abundant V-VI-VII semiconductors for solar cells  
Alex M. Ganose [1,2], Keith T. Butler [3], Scott McKechnie [4], Pooya Azarhoozha [4], Jarvist Moore Frost [5], Mark van Schilfgaarde [5], Aron Walsh [5,6], and David O. Scalon [1,2]  

10:45 Coffee Break

11:15 Tails in kesterite  
Suzanne Siébertritt  
University of Luxembourg. Laboratory for photovoltaics - 41, rue du Brill, L-4422 Belvaux

11:45 Why Cu2ZnSnS4 solar cells are still limited by interface recombination even with a buffer layer with optimal band alignment  
Andrea Croveto [1], Mattias Païsgaard [1,2], Tue Gunst [1], Troels Markussen [2], Kurt Stokbro [2], Mads Brandbyge [1], Ole Hansen [1]  

12:00 The effect of Ag alloying on the material properties of the kesterite ACZTSe solar cells  
Wei-Chih Huang, Shih-Yuan Wei, Chung-Hao Cai, Chih-Huang Lai  
Department of Materials Science and Engineering, National Tsing Hua University

12:15 First principles investigation of the structural, dynamical, dielectric properties of kesterite, stannite and PMCA phases of CZTS  
Sriram Poyyapakkam Ramkumar, Yannick Gillet, Anna Miglio, Michiel J. van Setten, Xavier Gonze, and Gian-Marco Rignanese  
IMCN-NAPS, Université catholique de Louvain, Chemin des Étoiles 8, bte L7.03.01, Louvain-la-Neuve 1348, Belgium

12:30 Lunch

14:00 Thermochromic vanadium dioxide thin film as a smart absorbent layer for solar collectors  
A. Didelot [1], 2, F. Capon [1], J.F. Pierson [1], P. Miska [1], S. Bruyère [1], D. Mercad [2], N. Portha [2]  
[1] Institut Jean Lamour, Université de Lorraine, CNRS, Nancy, France. [2] Centre for Sustainable Chemical Technologies and Department of Chemistry, University of Bath, Exhibition Road, London SW7 2AZ, UK. [3] Global E3 Institute and Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, South Korea

14:30 Nanoscale KPFM Chacaterization of CZTSe Thin Films and its Related Binary Secondary phases  
Manj Vishwakarma, Deepak Varandani, and Bodh R. Mehta*  
Thin Film Lab, Department of Physics, IIT Delhi, New Delhi, Delhi, India-110016

14:45 Investigation of growth and electrical properties of Copper Bismuth Sulfide thin films as a novel photovoltaic material  
Yunong Liu, Zhilao Yang#, Longfei Li, Yanbo Yang, Yuan He, Xiaolu Xiong, Dongyun Chen, Junfeng Han*  
School of Physics, Beijing Institute of Technology, Beijing, 100081, China

15:00 Electronic properties of large grain MAPbI3 perovskite films fabricated via methylammonium gas healing  
Carola Ebnerhoib, Tobias Seewald, Eugen Zimmermann, Kevin Wong, Philipp Ehrenreich, Lukas Schmidt-Mende  
University of Konstanz, Department of Physics 78457 Konstanz, Germany

15:15 Coffee Break

15:45 Chromium oxide based p-type transparent conducting oxides  
Leo Farrell, Emma Norton, Daragh Mullarkey, David Caffrey, Elsseta Arca, Karsten Fleischer, and Igor V. Shvets*  
School of Physics and CRANN, Trinity College Dublin, University of Dublin, Ireland

16:15 Structural design principles for low hole effective mass s-based p-type Transparent Conducting Oxides  
Viet-Anh Ha, Francesco Ricci, Gian-Marco Rignanese, Geoffrey Haulier  
Institute of Condensed Matter and Nanoscience (IMCN), Universite catholique de Louvain, Chemin des Étoiles 8, bte L7.03.01, Louvain-la-Neuve 1348, Belgium

16:30 Defect Engineering through Thermal Treatment in Non-Stoichiometric CuCrO2 Delafossite Thin Films Grown by Chemical Vapor Deposit  
Petru LUNCA POPA, Renaud LETURCQ, Jonathan Criépeliere and Damien LEONOBLE  
Luxembourg Institute of Science and Technology (LIST) Materials Research and Technology (MRT) Department 41 rue du Brill, L-4422 Belvaux, LUXEMBOURG

16:45 Developing a p-type semiconductor oxide: defect engineering in LaCrO3  
Allibhe L. Gasvin, Graeme W. Watson  
School of Chemistry and CRANN, Trinity College Dublin, The University of Dublin, College Green, Dublin 2, Ireland
Tuesday 23 May 2017

Nitriles and phosphides for photovoltaics : Lee Burton

09:30 Growth and Characterization of Orthorhombic and Wurtzite ZnSnN2
Steven M. Durbin
Electrical and Computer Engineering, Western Michigan University, Kalamazoo, MI 49004 USA

10:15 Development of ZnSiP2 as a Top-cell Material for Integration with Silicon Photovoltaics
Aaron D. Martinez, Elisa M. Miller, Andrew G. Norman, Paul Stradins, Eric S. Toberer, and Adele C. Tamboli
Colorado School of Mines, Golden CO, 80401, USA, National Renewable Energy Laboratory, Golden CO, 80401, USA

10:45 Coffee Break

Chalcogenides for photovoltaics (1) : Vladan Stevanovic

11:15 DFT Analysis of 2-Dimensional Impurities in Sulfide Photovoltaics
Lee A. Burton, Yu Kumagai, Aron Walsh, Fumiyasu Oba
Institute of Condensed Matter and Nanosciences, University Catholique de Louvain, Chemin des Elodes B 16 L1 34 1348 Louvain-la-Neuve, Belgium. Materials Research Center for Element Strategy, Tokyo Institute of Technology, Yokohama 226-8503, Japan. Department of Materials, Imperial College London, Royal School of Mines, Exhibition Road, London SW7 2AZ, Laboratory for Materials and Structures, Tokyo Institute of Technology, 4259 R3-7 Nagatsuta, Midori-ku, Yokohama 226-8503, Japan.

11:45 The effect of dopants on grain growth and PL in CZTS nanoparticle thin films for solar cell applications
Sara Engberg, Andrea Crovetto, Ole Hansen, Jorgen Schou
DTU Fotonik, DTU Nanotech, DTU Nanotech, DTU Fotonik

12:00 Chemical bath deposition of ZnMgO films as buffer layers for thin film photovoltaics
Nina Winkler [1,2], Stefan Edinger [1], Wolfgang Kautek [2], Theodoros Dimopoulos [1]

12:15 New hybrid and all-inorganic metal halides for emerging perovskite-inspired solar cells
Sergey A. Adonin (1), Lyubov A. Frolova (2), Maxim Sokolov (1), Keith J. Stevenson (3), and Pavel A. Toshin (3)(2)
(1) Nikolaev Institute of Inorganic Chemistry Siberian Branch of Russian Academy of Sciences, 3 Acad. Lavrentiev Ave., Novosibirsk, 630090, Russia. (2) Institute for Problems of Chemical Physics of RAS, Semenov Ave. 1, Chernogolovka, Moscow region, 142432, Russia. (3) Skolkovo Institute of Science and Technology, Skolkovo Innovation Center, Nobel st. 3, Moscow, 143026, Russian Federation * toshin2003@inbox.ru

12:30 Lunch

Chalcogenides for photovoltaics (2) : Geoffrey Haulter

14:00 11.5% CZTSSe devices spray coated from a water-ethanol ink: Current limitations and ways forward
Gilles Dennler
IMRA Europe, BP.213, 06904 Sophia Antipolis, France

14:30 Doping of Cu2ZnSnS3, Se4Alloys with Si and Ge: First-Principles Analysis
Sergiy Zamulko1, Rongzhen Chen1,2, Claas Persson1,3, 1. Centre for Materials Science and Nanotechnology, University of Oslo, P. O. Box 1048 Blindern, NO–0316 Oslo, Norway. 2. Department of Physics, University of Oslo, P.Box 1048 Blindern, NO–0316 Oslo, Norway. 3. Department of Materials Science and Engineering, Royal Institute of Technology, Stockholm, SE–100 44, Sweden

14:45 Antimony selenide solar cells deposited by close space sublimation
L. J. Phillips and J D Major
Stephenson Institute for Renewable Energy/Physics Department University of Liverpool Liverpool UK

15:00 Formation mechanism of copper antimony sulfide nanoparticles in the hot injection synthesis
Fábio Baum, Taliane Pretto, Marcos José Leite Santos
Postgraduate Program in Materials Science, UFRGS, Brazil, Instituto of Chemistry, UFRGS, Brazil, Postgraduate Program in Materials Science, UFRGS, Brazil and Institute of Chemistry, UFRGS, Brazil

15:15 Coffee Break

Emerging materials in photovoltaics (3) : Steven Durbin

15:45 Searching for defect-tolerant semiconductors
Vladan Stevanovic
Colorado School of Mines and National Renewable Energy Laboratory, Golden, CO, USA

16:15 Sn2Se3 thin films and PV devices
P J Yates, J D Major, K Durose
Department of Physics / Stephenson Institute of Renewable Energy, University of Liverpool

16:30 Can Pb-Free Halide Double Perovskites Support High-Efficiency Solar Cells?
Christopher N. Savory(1), Aron Walsh(2,3), David O. Scarnon(1,4)
(1) University College London, Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, UK. (2) Department of Materials, Imperial College London, Royal School of Mines, Exhibition Road, London SW7 2AZ, UK. (3) Global E3 Institute and Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, Korea. (4) Diamond Light Source Ltd., Diamond Light House, Harwell Science and Innovation Campus, Didcot, Oxfordshire OX11 0DE, UK

16:45 Modelling New Absorbers Materials for More Efficient Solar Energy Use
P. Wahnon(a,b), P. Palacios(a, c), G. Garcia(a,b), A. Montero-Alejo(d), E. Menéndez-Porquigüen(d), J C Congesa(a)
(a) Instituto de Energía Solar, Universidad Politécnica de Madrid, 28040 Madrid, Spain (b) Dpt. TFB, Universidad Politécnica de Madrid, ETSI Telecommunicación,28024 Madrid, Spain (c) Dpt. FAIAN, Universidad Politécnica de Madrid, ETSI Aeronàutica y del Espacio, 28040 Madrid, Spain (d) Dpt.de Fisica,Universidad de Chile, 780-0003 Nuñoa, Santiago, Chile (e) Instituto de Catálisis y Petrolequimica, CSIC, Marie Curie 2, Cantoblanco, 28049 Madrid, Spain

Poster session : N/A

17:00 Photonic Sintering of ZnO Nanosheet Photoanode using Flash White Light combined with Deep-UV irradiation for Dye-Sensitized Solar Cells
Supriya A. Patil, Hak-Sung Kim,*
Department of Mechanical Engineering, Hanyang University, Haengdong-dong, Seongdong-gu, Seoul 133-791, South Korea. Institute of Nano Science and Technology, Hanyang University, Seoul, 133-79, Korea .

17:00 Highly flexible ITO anode on CPI substrate for high-performance flexible perovskite solar cells
Jeong-Ill Park and Han-Ki Kim
Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, 1 Seochon-dong, Yongin-si, Gyeonggi-do 446-701, Republic of Korea

17:00 Morphology-directed selective production of ethylene or ethane from Cu mesopore electrode
Ki Dong Yang, Ki Tae Nam
Department of Materials Science and Engineering, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul, 08826, Korea

17:00 Effect of Si doping on electrical and optical properties of Cu2ZnSnS4 thin films grown via sputtering
Hua-lei Guo, Changhao Ma, Yan Li, Zhihui Chen, Ningyi Yuan, Janning Ding
Hua-lei Guo(Changzhou University, Changzhou, Jiangsu, China), Changhao Ma(Changzhou University, Changzhou, Jiangsu, China), Yan Li, Zhihui Chen(Changzhou University, Changzhou, Jiangsu, China), Ningyi Yuan(Changzhou University, Changzhou, Jiangsu, China), Janning Ding(Changzhou University, Changzhou, Jiangsu, China)

D 4

D 5
17:00 Order-disorder related Energy-gap variation in CZTS: Influence of material stoichiometry
M. Valentini, C. Malerba, F. Menchini, A. Polimeni, A. Mittiga
SANPENZA – University of Rome, Department of Physics, P.le Aldo Moro 5, 00156 Roma, ITALY
ENA, Casaccia Research Center, via Angullarese 301, 00123, Roma, ITALY

17:00 CuSbS2 thin films by chemical solution methods and post-deposition annealing
Obed Yamín Ramirez-Esquivel, Dalia Alejandra Mazón-Montijo, Francisco Serrando Aguirre-Tostado
Centro de Investigación de Materiales Avanzados, S.C., Unidad Monterrey, Apodaca, N.L. 66626, Mexico.

17:00 Exploring the Optical Properties of Earth-Abundant Chalcogenide Absorbers
Rongchen Chen (1,2), Clas Persson (1,2,3)
1 Department of Materials Science and Engineering, KTH Royal Institute of Technology, SE-100 44 and Stockholm, Sweden, 2 Centre for Materials Science and Nanotechnology, University of Oslo, P.O. Box 1048 Blindern, N-0316 and Oslo, Norway, 3 Department of Physics, University of Oslo, P.O. Box 1048 Blindern, No-0316 and Oslo, Norway

17:00 Enhancement of Perovskite Solar Cell Efficiency by Optical Engineering
Mehmet Koc, Wiria Soltanpoor, Selçuk Yerci
GÜNAM, Middle East Technical University, Ankara, TURKEY
Micro and Nanotechnology, Middle East Technical University, Ankara, TURKEY
Electrical Engineering, Ankara Yıldırım Beyazıt University, Ankara, TURKEY

17:00 Fabrication of Lead Halide Perovskite Films with Large Grains by Vapor Deposition: Effects of Deposition Pressure and Post-Anna Mae
Wiria Soltanpoor1,3, Mehmet Cem Şahiner2,3, Selçuk Yerci2
1 Department of Micro and Nanotechnology, Middle East Technical University, Ankara, Turkey, 2 Department of Electrical and Electronics Engineering, Middle East Technical University, Ankara, Turkey, 3 The Center for Solar Energy Research and Applications, Middle East Technical University, Ankara, Turkey

17:00 An Amine-Thiol Mixture For Solution Processed CZTSSe
Lewis D. Wright, Panagiota Arnou, Soňa Uličná, Carl S. Cooper, Andrei V. Malikov, and Jake W. Bowers
Loughborough University, Loughborough, Leicestershire, LE1 3TU, UK

09:30 Progress in Halide Perovskite Solar Cells: Developing a scalable and stable photovoltaic technology
Joseph Berry
NREL, USA

10:00 Indirect to direct bandgap transition in methylammonium lead halide perovskite
Tianyi Wang,Benjamin Dauber,Martijn M. Frost,Sander A. Mann,Erik C. Gunnarsson,Aron Walsh,Bruno Ehler
Center for Nanophotonics, FOM Institute AMOLF, Science Park 104, 1098 XG Amsterdam, The Netherlands, Department of Materials, Imperial College London, London SW7 2AZ, UK

10:15 Design principles for inorganic halide perovskites: a high-throughput lattice dynamics approach
Ruo Xi Yang1,2, Jonathan M. Skelton1, Estelina Lora da Silva1 and Aron Walsh2
1 University of Bath, Bath, BA2 7AY, UK, 2 Imperial College London, London, SW7 2AZ, UK

10:45 Coffee Break

11:15 Atomically thin, van der Waals photovoltaics
Deep Jariwala, Joeson Wong, Giulia Tagliabue, Artur R. Davoyyan, Kevin Tat, Michelle C. Sherratt and Harry A. Atwater
Applied Physics and Materials Science, California Institute of Technology, Pasadena, CA, 91125, USA

11:45 Candidate photoferroic absorber materials for solar cells from naturally occurring minerals: enargite, stephanite and bournonite
Suzanne K. Wallace, Katrine L. Svane, David B. Mitzi, Volker Blum, Aron Walsh
Department of Chemistry, University of Bath, Claverton Down, Bath, BA2 7AY, UK, Department of Materials, Imperial College London, Exhibition Road, London SW7 2AZ, Department of Chemistry, Duke University, Durham, North Carolina 27708, USA, Department of Materials, Duke University, Durham, North Carolina 27708, USA, Global E3 Institute and Department of Materials Science and Engineering, Yonsei University, Seoul 120-749, Korea

12:00 Thin-film metal hydrides as solar energy materials
Trygve Mongstad, Erik Marstein, Smagul Karazhanov
IFE (Institute for Energy Technology), Kjeller, Norway

12:15 Beyond MAPI: The Search for Stable Hybrid Halide Perovskites
Alex M. Ganose (1,2), Christopher N. Savory (1), and David O. Scanlon (1,2)
(1) University College London, Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 25 Gordon Street, London WC1H 0AJ, UK, (2) Diamond Light Source Ltd., Harwell Science and Innovation Campus, Didcot OX11 0DE, UK

12:30 Lunch

Emerging materials in photovoltaics (4) : David Scanlon

14:00 Core levels, band alignment and valence band states in CuSbS2 and Cu2Sb3: Implications of analogies with CIGS
Department of Physics and Stephenson Institute for Renewable Energy, University of Liverpool, Liverpool, UK, National Renewable Energy Labs, Colorado, USA

14:30 Evaluation of ZnSnN2 layers electrical properties for PV applications
W. Favre1, F. Aljimian2, N. Feldberg2, A. Cuzar1, A. Valla1, J.-F. Pierson2, P Miozzi2
1 CEA/LETI/NDTS, INES, 50 avenue du Lacs Léman, 73377 Le Bourget-du-Lac, France, 2 Institut Jean Lamour, CNRS, Université de Lorraine, 54510 Vandoeuvre les Nancy, France
14:45  Simple and Single-Step Synthesis of Metal Oxides for Photovoltaics
Dilli babu Padmanaban, Darragh Carolan, Tamilselvan Velusamy, Conor Rocks, Gunisha Jain, Paul Maguire and Davide Mariotti.
 Nanotechnology and Integrated Bioengineering Centre, Engineering Research Institute, Ulster University - Jordanstown, Shore Road, Newtownabbey, Northern Ireland BT37 0QB, United Kingdom.

15:00  Recombination losses in solution processed Cu2SnS3 solar cells
Devendra Tiwari, Tristan Koehler, Rainer Klenk, David J. Fermin
Devendra Tiwari, David J. Fermin, School of Chemistry University of Bristol, Cantocks Close, Bristol BS8 1TS, UK
Tristan Koehler, Rainer Klenk, Helmholtz-Zentrum Berlin for Materialien und Energie, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany

15:15  Coffee Break

10:00  Effect of Sulphurization on Compositional Variations in Cu-poor and Sn-rich CZTS Thin Films: TEM Investigation
Manoj Vishwakarma 1, Olesia M. Karakulina 2, Artem M. Karakulina 2, Artem M. Abakumov 2,3, Joke Hadermann 2, B.R. Mehta 1*
1 Thin Film Laboratory, Department of Physics, IIT Delhi, New Delhi-110016, India 2 EMAT, University of Antwerp, Groenenborgerlaan 171, B-2020 Belgium 3 Skolkov Center for Electrochemical Energy Storage, Skolkovo Institute of Science and Technology, Nobel str. 3, 143026 Moscow, Russia.

10:15  Engineering of a SixNy diffusion barrier to reduce the formation of MoS2 in Cu2ZnSnS4 thin film solar cells
Zhengfei Wei1, Chung Man Fung2, Toby Woolard1, Owen J. Guy2 and Trystan M. Watson1
1 SPECIFIC, College of Engineering, Swansea University, Bay Campus, Swansea, SA1 8EN, 2Centre of NanoHealth (CNH), College of Engineering, Swansea University, Singleton Campus, Swansea, SA2 8PP

10:30  Light-Induced Degradation of Perovskite Solar Cells: the Role of Spiro-MeOTAD Dopants
João P. Bastos, Ulrich W. Paetzold, Supriya Surana, David Cheyns, Weiming Qiu, Robert Gehlhaar and Jef Poortmans

10:45  Coffee Break

11:15  Kesterites: progresses, problems and perspectives
Edgardo Saucedo
Catalonia Institute for Energy Research (IREC), Jardins de les Dones de Negre 1 2pl, 08930 Sant Adrià del Besòs, Barcelona, Spain.

11:45  Modification of electrical properties of SnSe thin-films via stoichiometry control for photovoltaic & thermoelectric applications
Gluk Jeong, Jekyung Kim, Byungha Shin*
Dept. of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, 291 Daehak-ro, Yuseong-gu, Daejeon 34141, Republic of Korea.

12:00  One step growth of thin film SnS with large grains using MOVD
A. J. Clayton*1, S. J. C. Irvine1, P. Siderfin1 and C. M. E. Charton
1 Centre for Solar Energy Research, College of Engineering, Swansea University, UK, 2 SPECIFIC, College of Engineering, Swansea University, UK

12:15  Absorber thin films of chemically deposited SnS in solar cell structures with CdS and oxides of Zn
Instituto de Energías Renovables, Universidad Nacional Autónoma de México, Temixco, Morelos 62580, México

12:30  Lunch
17:00 Insight into the perovskite photoluminescence enhancement: Photoluminescence and electrical properties study
Zdenka Hájková,1 Martin Ledinsky,1 Jakub Holovský,1 Tereza Schönfeldová,1 Bjern Nielsen,2 Jérémie Werner,2 Christophe Ballif,2 Stefaan De Wolf,3 and Antonín Fejfar1
1 Laboratory of Nanostructures and Nanomaterials, Institute of Physics, Academy of Sciences of the Czech Republic, v. v. i., Cukrovarnická 10, 162 00 Prague, Czech Republic, 2 Photovoltaics and Thin-Film Electronics Laboratory, Institute of Microengineering (IMT), École Polytechnique Fédérale de Lausanne (EPFL), Neuchâtel, 2000, Switzerland, 3 King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), Thuwal, 23955-6900, Saudi Arabia

17:00 Lowest Open Circuit Voltage Deficit with Band Gap Front-Graded Cu2ZnSn(S,Se)4 Thin Films
Dae-Kue Hwang*, Byoung-Soo Ko, Dong-Hwan Jeon, Jin-Kyu Kang, and Dae-Hwan Sim
DaeGu Gyeongbuk Institute of Science and Technology, DaeGu 42988, Korea

Friday 26 May 2017
Water splitting and photocatalysis : Deep Jariwala

09:30 Atomic layer deposition of molybdenum sulfide for use as catalysts for electrochemical/photocatalytic water splitting
Lifeng Liu,* Dehua Xiong
International Iberian Nanotechnology Laboratory

09:45 Rationalising hydrogen evolution activities of linear organic photocatalysts by monitoring photogenerated transients
Michael Sachs,1 Reiner Sebastian Sprick,2 Stochichio Dimirov,1 Andrew Pearce,3 Martin A. Zwingenburger,4 Jenny Nelson,3 Andrew I. Cooper2 and James R. Durrant1
1 Department of Chemistry, Imperial College London, UK, 2 Department of Chemistry, University of Liverpool, UK, 3 Department of Physics, Imperial College London, UK, 4 Department of Chemistry, University College London, UK

10:00 Amorphous cobalt phyllosilicate with layered crystalline motifs as water oxidation catalyst
Ju Seong Kim,§ Inchul Park,§ Eun-Suk Jeong, Kyungsuk Jin, Won Mo Seong, Gabin Yoon, Hyunah Kim, Byunghoon Kim, Ki Tae Nam,* and Kisuk Kang
Department of Materials Science and Engineering, Research Institute of Advanced Materials (RIAM), Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 151-742, Republic of Korea.

10:15 Effect of Ag Co-catalyst on TiO2-Cu2O Nanocomposites Structure and Visible Photocatalytic Activities
Dávidné Nagy (1), Maria-Chiara Ferrari (1), Imre Miklós Szilágyi (2,3), Xiaofeng Fan (1)
(1) Institute for Materials and Processes, School of Engineering, The University of Edinburgh (2) Department of Inorganic and Analytical Chemistry, Budapest University of Technology and Economics (3) Technical Analytical Chemistry Research Group of the Hungarian Academy of Sciences

10:30 CdxZn1-xO/Si tandem structure for efficient photoelectrochemical water splitting
Chun Yuen Ho, Cheoping Lu, Władek Walukiewicz, and Kin Man Yu
Department of Physics and Materials Science, City University of Hong Kong, 83 Tat Chee Ave., Kowloon, Hong Kong. Materials Sciences Division, Lawrence Berkeley National Laboratory, 1 Cyclotron Rd., Berkeley, CA 94720,

10:45 Coffee Break

11:00 Strongly enhanced photovoltaic performance and defect physics of air-stable bismuth oxyiodide (BiOI)
Robert L. Z. Hove (1), Lana C. Lee (2), Rachel C. Kurchin (3), Tahmida N. Huq (2), Kelvin H. L. Zhang (2), Melanya Sponseller (3), Lea Nienhaus (3), Andrew I. Cooper (2), and Judith L. MacManus-Driscoll (2)
(1) Department of Physics, University of Cambridge, (2) Department of Materials Science and Technology, University of Cambridge, (3) Massachusetts Institute of Technology, (4) Colorado School of Mines, (5) National Renewable Energy Laboratory.

11:15 Trap state dynamics in organometal halide perovskites with controlled grain size and crystallinity
Tobias Seewald(1)*, Carola Ebenroth(1), Philipp Ehrenreich(1), Eugen Zimmermann(1), Rebecca Milot(2), Laura Herz(2), Lukas Schmidt-Mende(1)
(1) Physics Department, Universität Konstanz, 78457 Konstanz, Germany, 2) Department of Materials Science and Technology, University of Oxford, Parks Road, Oxford OX1 3PU, UK

11:45 Electroabsorption of perovskite solar cells
Davide Moia1, Xiaye Li2, YingHong Hu3, Jachen Gu1, Pablo Docampo3, Jenny Nelson1, Piers RF Barnes1
1) Imperial College London, Prince consort road, London, SW7 2AZ, UK, 2) Imperial College London, Exhibition road, London, SW7 2AZ, UK, 3) Department of Chemistry, Ludwig-Maximilians-Universität , München, Germany, 81377, Germany

12:00 Bismuth-based colloidal nanocrystals: earth-abundant, non-toxic materials for solution-processed solar cells
Maria Berneche, and Gerasimos Konstantatos
Maria Berneche: Cardiff School of Engineering, Cardiff University, Cardiff CF24 3AA, Wales, United Kingdom, ICF-OIstitut de Ciències Fotòniques, The Barcelona Institute of Science and Technology, 08860 Castelldefels (Barcelona), Spain, Gerassimos Konstantatos: ICF-Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology, 08860 Castelldefels (Barcelona), Spain. ICREA-Institució Catalana de Recerca i Estudis Avançats, Passeig Lluis Companys 23, 08010 Barcelona, Spain
Photo-induced trap formation in lead-halide perovskites
Dipartimento di Fisica, Politecnico di Milano, Piazza Leonardo da Vinci, 32, 20133
Milano, Italy, Center for Nanoscience and Technology @Polimi, Istituto Italiano di
Tecnologia, via Giovanni Pascoli 70/3, 20133 Milano, Italy
SYMPOSIUM E

Advanced inorganic materials and structures for photovoltaics

Symposium Organizers:

Abdelilah SLAOUI, ICUBE / CNRS / UdS, MaCEPV group, Strasbourg, France

Gavin CONIBEER, University of New South Wales, Sydney, Australia

Ivan GORDON, IMEC, Leuven, Belgium

Janez KRC, University of Ljubljana, Slovenia

Shigeru NIKI, National Institute of Advanced Industrial Science and Technology, Fukushima, Japan
Monday 22 May 2017

Opening: Janez Krc, Ivan Gordon, Abdellah Slauoi, Shigeru Niki, Gavin Conibeer

10:00 Symposium introduction
Janez Krc (1), Ivan Gordon (2), Abdellah Slauoi (3), Shigeru Niki (4), Gavin Conibeer
(5)
(1) University of Ljubljana, Slovenia, (2) IMEC, Belgium, (3) CNRS-ICUBE, France, (4) AIST, Japan, (5) UNSW, Australia

Perovskites: Matt Beard

10:15 (invited) Multiferroic perovskites as alternative candidates for energy conversion
Rud Nechaev
École de Technologie Supérieure, Department of Electrical Engineering, 1100 Notre-Dame Ouest, Montréal, Québec, H3C 1K3, Canada

10:45 A photo ratchet route to high-efficiency hybrid halide perovskite intermediate band solar cells
Jarvis Moore Frost(1), Pooya Azarhooosh(2), Scott McKechnie(2), Mark van Schilfgaarde(2), Aron Walsh(1)
(1) Imperial College London, UK, (2) King's College London, UK

11:00 Quantum confinement on a single object level: band structure modification in perovskite nanocrystals
Leyre Gomez, Chris de Weerd, Junhao Lin, Yasufumi Fujwara, Kazutomo Suemaga, Tom Gregorkiewicz
Institute of Physics, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands, Institute of Physics, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands, National Institute of Advanced Industrial Science and Technology (AIST), AIST Central 5, Tsukuba 305-8565, Japan, Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University, 2-1 Yamadaoka, Osaka 565-0871, Japan, National Institute of Advanced Industrial Science and Technology (AIST), AIST Central 5, Tsukuba 305-8565, Japan, Institute of Physics, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, The Netherlands

11:15 (invited) Hybrid perovskites: understanding stability and lead free alternatives.
Dr Saif Haque
Department of Chemistry, Imperial College London, SW7 2AZ, UK.

11:45 Low-temperature Optical and Structural Properties of 2D perovskites
E. P. Booker, T. H. Thomas, M. B. Price, S. E. Dutton, F. Deschler, N.C. Greenham
Cavendish Laboratory, University of Cambridge

12:00 Sub 10 nm bromide mapping on cross-sections of complex hybrid perovskite photovoltaic films using HSES technique
Vikas Kuma(1), Whitney L. Schmidt(1), Giorgio Schileo(1), Ian M. Reaney(1)
(1)Department of Materials Science and Engineering, University of Sheffield, Mappin Street, Sheffield, S1 3JD.

12:15 Lunch break

Chalcogenides I : Santosh Shrestha

14:00 (invited) Indium zinc oxide and hydrogen-doped indium oxide windows combined with Zn(O,S) and CdS buffers for Cu(In,Ga)(Se,S)2 solar cells
Wolfram Witte(1), Romain Carron(2), Dimitrios Haraikos(1), Fan Fu(2), Richard Mennier(1), and Stephan Buecheler(2)
(1) Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Industriestraße 6, 70565 Stuttgart, Germany, (2) University of Technology (AIST), AIST Central 5, Tsukuba 305-8565, Japan

14:30 Current collectors for flexible CIGS solar cells: Cu nanowires and printed grids
Anelia Wäckerlin(1), Xinjing Ye(1), Huihui Guo(2), René Schneider(2), Yoram de Hazan(4), Thomas Feurer(1), Romain Carron(1), Shin Nishiwaki(1), Lukas Greuter(1), Yaroslav E. Romanyuk(1), Ayodyna N. Tiwari(1)
(1) Laboratory for Thin Films and Photovoltaics, Empa-Swiss Federal Laboratories for Materials Science and Technology, Überlandstr. 129, 8600 Dübendorf, Switzerland, 2) Wood Materials Science, Institute for Building Materials, ETH Zürich, Stefano-Franscini-Platz 3, 8093 Zürich, Switzerland, 3) Laboratory for Functional Polymeric Materials, Empa, Swiss Federal Institute for Materials Science and Technology, Überlandstr. 129, 8600 Dübendorf, Switzerland, 4) ZHAW School of Engineering, Technikumstrasse 9, 8400 Winterthur, Switzerland

14:45 Distribution of alkali elements in Cu(In,Ga)(Se,S)2 solar cells on a nanometer scale
Arantxa Villata-Clemente(1), Celia Castro(1), Mohit Raghuvanshi(1), Sébastien Duguay(1), Emmanuel Cadel(1), Philippe Pareige(1), Philip Jackson(2), Dimitrios Haraikos(2), and Wolfram Witte(2)
(1) Groupe de Physique des Matériaux, INSA de Rouen - UMR 6634 CNRS – Normandie Université, Avenue de l'université BP 12, 76801 Saint Etienne du Rouvray, France, (2) Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Industriestraße 6, 70565 Stuttgart, Germany

15:00 Surface modification of Na and K incorporated Cu(In,Ga)Se2 absorbers investigated by synchrotron based spectroscopies
I. Majumdar(1,2,3), B. Umśuri(1,2), B. Chacal(1,2,3), V. Parvani(1), D. Greiner(1), M. Ch. Lux-Steiner(2), R. Schilhalm(1), L. Lauermann(1)
1) PVoCIB @ Helmholtz-Zentrum Berlin für Materialien und Energie, Schwaizschildstr. 3, D-12489 Berlin, Germany, 2) Free University Berlin, Fachbereich Physik, Animateel 14, 14195 Berlin, Germany, 3) Indian Institute of Technology Bombay, Powai, Mumbai, Maharashtra 400076, India, * Corresponding author: Phone: 49 30 8062 15688, iszta.majumdar@helmholtz-berlin.de

15:15 Flexible Cu(In,Ga)Se2 based solar cells using Molybdenum foils
Michael Stanley, Marie Judabut, Frédérique Donsanti, Negar Naghavi
EDF – R&D, Institut R&D sur l’Energie Photovoltaïque (IRDEP) - Michael Stanley, Marie Judabut, Frédérique Donsanti Institut Photovoltaïque d’Ile de France (IPVF) - Negar Naghavi

15:30 Fabrication of CuInSe2 Micro Absorbers for Concentrator Solar Cells
Berit Heidmann, Franziska Ringleb, Katharina Eyles, Owen Ernst, Jörn Bonse, Stefan Andree, Jörg Krüger, Torsten Boeck, Mathcha Ch. Lux-Steiner, Martina Schmid Universität Duisburg Essen, Forthausweg 2, 47057 Duisburg, Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, 14109 Berlin, Leibniz-Institut für Kristallzüchtung, Max-Born-Str. 2, 12489 Berlin, Bundesanstalt für Materialforschung und –prüfung (BAM), Unter den Eichen 87, 12205 Berlin, Free University Berlin, Animateel 14, 14195 Berlin

15:45 First-principles studies of CuInSe8, CuGa5Se8, CuIn5S8, and CuGa5S8
Mishael Stanley, Marie Judabut, Frédérique Donsanti, Negar Naghavi
Institut d’Etudes et de Recherches du Département d’Énergie solaire-
Photovoltaïque, EDF – R&D, Institut R&D sur l’Energie Photovoltaïque (IRDEP) - Negar Naghavi

16:00 Coﬀee break

Advanced materials and nanostructures I : Thomas Fix

16:30 (invited) Enhanced Multiple Exciton Generation in PbS/CdS Janus-like Heterostructure Nanocrystals
Daniel M. Kroupa, Gregory F. Pach, Boris D. Chemomordik, Matthew C. Beard
National Renewable Energy Laboratory

17:00 High eﬃcient infrared cutting in Ce3+-Yb3+ codoped silicon oxynitride for solar cell applications
(1) Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, CIMP, 14000 Caen, France, (2) Université de Lorraine, Institut Jean Lamour, UMR7198, Nancy F-54011, France, (3) LPCNO, Université de Toulouse, CNRS, INSA, UPS, 31 avenue de Rangueil, 31077 Toulouse, France, (4) School of Electrical Engineering and Computer Science, Ohio University, Stocker Center, Athens, OH 45701, USA, (5) Department of Physics and Astronomy, Ohio University, Athens, OH 45701, USA

17:15 Biomimetic surfaces increase performance of prototype solar cells
Raphael Schmager (1), Ihteaaz Muhaimeen Hossain (1), Rüben Hönig (3), Kaining Ding (4), Benjamin Fritz (2), Uli Lemmer (1,2), Bryce S. Richards (1,2), Guillaume Gomard (1,2), Ulrich W. Paetzel (1,2)
(1) Institute of Microstructure Technology, Karlsruhe Institute of Technology (KIT), Engesserstrasse 13, 76131 Karlsruhe, Germany, (2) Light Technology Institute, Karlsruhe Institute of Technology (KIT), Engesserstrasse 13, 76131 Karlsruhe, Germany, (3) Zentrum für Sonnenenergie- und Wasserstoff-Forschung (ZSW) Baden-Württemberg (ZSW), Industriestraße 6, 70565 Stuttgart, Germany, (4) IEK-5 Photovoltaik, Forschungszentrum Jülich GmbH, 52428 Jülich, Germany
BiAgOCh layered compounds (M = Cu, Ag, Ch = S, Se): a new photovoltaic absorber?

J. Gamarra[1][2], G. Wallez[1][5], D. Gauzme[1], S. Haller[1][2], T. Le Bahers[3], T. Le Mercier[2], P. Barboux[1], J.B. Labegorre[4], E. Guilmot[4], A. Maguin[4]

1 Chimie ParisTech, PSL Research University, CNRS, Institut de Recherche de Chimie Paris (IRCP), F-75005 Paris, France, 2 Solvay, Research and Innovation Center Paris, 52 rue de La Halle Cq, 93308 Aubervilliers Cedex, France, 3 Université de Lyon, Université Claude Bernard Lyon1, ENS Lyon, Centre National de Recherche Scientifique, 46 Allée d’Italie, 69007 Lyon Cedex 07, France, 4 Laboratoire CRISMAT, UMR 6508 CNRS/ENSICAEN/UCBN, 6 bd du Maréchal Juin F-14050 CAEN Cedex 4 – France, 5 Sorbonne University, UPMC Université, Paris 06, 75005 Paris, France

Influence of electrical transport properties on performance of Si nanowire array solar cells assessed by optoelectrical modeling


GePfs (Group of electrical engineering – Paris), UMR CNRS 8507, ENS Lyon, Centre National de Recherche Scientifique, 69007 Lyon Cedex 07, France, 2 CEE-CNRS, Site Céolotron, 3A rue de la Fertéolithe, 45071 Orléans, France, 3 LCSI, Faculty of Sciences, Mohammed V University, Rabat, Morocco 4 Université d’Orléans, Château de la Source, 45100 Orléans, France, 5 CINAP, Equipe MaCPEV, 23 rue du Loess, 67037 Strasbourg, France, 6 CNESTEN, Bât. B.P. 1382, Morocco.

E IV.4

Silicon and beyond I: Stefan Wippermann

Tuesday 23 May 2017

9:00 (invited) Exotic Forms of Silicon For PV Applications


Colorado School of Mines, National Renewable Energy Laboratory, Carnegie Institute of Washington

9:30 Production of solar cells with ultra-shallow substrates obtained by a stress-induced spalling technique featuring an innovative absorber?

T. Pingault[1], N. Zayyoun[1,2], P. S. Pokam-Kuisseu[1], E. Nielsen[1,2], J.P. Blondeau[1,3], P. Bellanger[4], S. Roeske[4], A. Slauo[4], A. Ulysse[3], H. Labrim[5], B. Belhorma[6], 1 CEMTHI-CNRS, Site Céolotron, 3A rue de la Fertéolithe, 45071 Orléans, France, 2 LCSI, Faculty of Sciences, Mohammed V University, Rabat, Morocco 3 Université d’Orléans, Château de la Source, 45100 Orléans, France, 4 Cube – CRISMAT, Equipe MaCPEV, 23 rue du Loess, 67037 Strasbourg, France, 5 INSEF, Forskningssenteren 1, 0314 Oslo, Norway, 6 CNESTEN, Bât. B.P. 1382, Morocco.

9:45 Impact of the initial growth interface on the grain structure in HPMC-Si ingot

B. Belhorma[6], A. Slaoui[5]

E V.3

Silicon and beyond II: Carolyn A. Koh

10:30 (invited) Epitaxial Kerfless Silicon Wafers for Photovoltaic Application

R. Hao, T.S. Ravi, V. Siva

Crystal Solar Inc., 3050 Coronado Drive, Santa Clara, CA 95054, USA

11:00 From the kerfless wafering of ultra-thin silicon substrates by means of hydrogen implantation to the production of solar cells

Sylva Pokam 1, Timothée Pingault 1, Eiríkr Nilsenoz 1,4, Gabrielle Regula 2, Frédéric Mazen 3, Audrey Saulidubois 4, Pierre Bellanger 5, Stéphane Roques 5, Abdelilah Slaou 5

1 CEMHTI-CNRS, 3A rue de la Fertéolithe, 45071 Orléans, France, 2 IM2NP-Université d’AIX-Marseille, Avenue Escadrille Normandie Niemen, 13397 Marseille, France, 3 CEA-LETI, MINATEC Campus, 17 rue des Martyrs, 38054 GRENOBLE, France, 4 Université d’Orléans, rue de Chartres – Collegium ST, 45067 Orléans, France, 5 ICUBE-CNRS-Université de Strasbourg, 23 rue du Loess, 67037 Strasbourg, France

11:15 (invited) Passivating contacts in crystalline silicon solar cells

Mathieu Bocard, Zachary Holman, Christophe Batiff EFPL, Neuchâtel, Switzerland, ASU, Tempe (AZ), USA

11:45 Novel passivated contact based on microcrystalline silicon carbide and silicon tunnel oxide for crystalline silicon solar cells

Malte Köhler, Manuel Pomaska, Florian Lenz, Benjamin Klingebiel, Jan Flohre, Florian C. Meier, Kaining Ding, Friedhelm Finger, Reinhard Carius, Uwe Rau

IEK-5 Photovoltaik, Forschungszentrum Jülich GmbH, 52425 Jülich, Germany

12:00 (invited) Novel silicon phases and nanostructures for solar energy conversion

S. Wippermann, Y. He, M. Vörös, G. Galli, Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany, Sandia National Laboratories, Livermore, California, USA, Institute for Molecular Engineering, University of Chicago, Illinois, USA, Institute for Molecular Engineering, University of Chicago, Illinois, USA

12:30 Lunch break

Chalcogenides II: Wolfram Witte

14:00 (invited) Over 16% efficiency of Se-free CuIn(S,Ga)S2 solar cell

Homare Hiroi (1,2,3), Yasuaki Iwata(1), Hiroki Sugimoto(1), Akira Yamada(3)

2-Technology Development Division, Atsugi Research Center, Solar Frontier K.K., 3-Department of Physical Electronics, Tokyo Institute of Technology
Ab initio Assessment of Bi1-xRExCuO (RE=La, Gd, Y, Lu) Solid Solution for Water Splitting
Sheikha Lardhi, Antton Curutchet, Moussab Harb, Tangui Le Bahers
King Abdullah University of Science and Technology (KAUST) - KAUST Catalysis Center - Saud - Arri-Ab, Uni Lyon- ENS de Lyon - CNRS-Université Claude Bernard Lyon-Laboratoire de Chimie UMR - France

Optimization of Open Area for the Local Back Contact Metallization Structure of c-Si Solar Cell
Min Ji Lee, Jeong Eun Park, Young Min Lee, Sang Muk Kang, Donggun Lim*
Department of IT Convergence, Korea National University of Transportation

Effect of dry plasma etching on minority charge carrier lifetime during silicon nanowires formation
I.A. Morozov1, A.S. Gudovskikh1, K.V. Entsey K.V.2, V Savaskov3
1. St. Petersburg Academic University. Saint-Petersburg, Russia. 2. Research and development for thin-film technologies in energetic. Saint-Petersburg, Russia. 3. Leibniz Institute of Photonic Technology. Jena. Germany

Alkali assisted improvement of Voc in Kesterite solar cells
Siddhartha Garud1,2, Sylvester Sahayara3,2, Bart Vermaang,2,3,4, Samaneh Ranjbarz1,2,5, Guy Brammertz1,2,6, Marc Meuris1,2,4, Jef Poortmans1,2,4,6
1Delft University of Technology The Netherlands, 2IMec-partner in Solliance Belgium, 3KU Leuven Belgium, 4imec division IMOMEC - partner in Solliance Belgium, 5IN - Departamento de Franca Universidade de Aveiro Portugal, 6Institute for Material Research (IMOMEC) Hasselt University Belgium

Thin film radial junction silicon solar cells on silicon nanowire arrays
M. Müller, J. Cervenka, J. Kocka, A. Fejfar
Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovnická 10/112, 162 00 Prague, Czech Republic

Simulation of chalcopyrite-based dual-junction tandem solar cells using SCAPS-1D

Remanent photopolarization effect in the photovoltaic BiFeO3
V. Jurchuta(1), F. Chevrier(1,2), R. Gumeniuk(2), D. Colson(3), A. Forget(3) and B. Kundyts(1)
(1) Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), UMR 7504 CNRS-UdS 23 rue du Loess, 67034 Strasbourg France, (2) Institut für experimentelle Physik, TU Bergakademie Freiberg, Leipziger Str. 23, 09596 Freiberg, Germany, (3) Service de Physique de l’Etat Condense, DSM/IRAMIS/SPEC, CEA Saclay URA CNRS 2464, 91911 Gif-sur-Vetted Cedex, France

Dye-sensitized solar cells using polypyrrole composites: electrochemical investigation and TRMC measurements
Delphine Schaming1, Antoine Bonenfot2, Alexandre Héralis1, Jean-Christophe Lacru1, Laurent Ruhlmann2, Christophe Colbeau-Justin3, (1) Laboratoire de Physique et Chimie des Matériaux de Strasbourg (IPCMS), UMR 7504 CNRS-UdS, 23 rue du Loess, 67034 Strasbourg, France, (2) Laboratoire de Chimie et Matériaux, UMR 7627 CNRS, 21 rue Jean-Antoine de Baïf, 75013 Paris, France, (3) Institut de Chimie, University of Strasbourg, 11 rue de la Bretonnerie, 67000 Strasbourg, France.

Metal oxide TiO2 as emitter in heterojunction solar cells
R. Chierchia, P. Mangiapane, L. Martini, L. Serenelli, F. Menchini, E. Salza, E. Zielony1, E. Przezdziecka2, E. Placzek-Popko1, K. Paradowska1, K. Gwozdz1
E-11E-10

ALD Grown TiO2 Thin Films for Plasmonics and Photovoltaic Applications
Eli Aygun, Hisham Nasser, Ozan Akdemir, Hsin Tuan, Alan Bek, Afzal Gunal, Tuan, Alpan Bek, Ezgi Aygun (1,2,4), Hisham Nasser (*1,4), Ozan Akdemir (*1,3,4), Raji Tuan (1,2,3,4), Alan Bek (1,2,3,4)
(1) The Center for Solar Energy Research and Applications (GUNAM), Middle East Technical University, Ankara, 06800, Turkey 2 Department of Micro and Nanotechnology, Middle East Technical University, Ankara, 06800, Turkey 3 Department of Electrical and Electronics Engineering, Middle East Technical University, Ankara, 06800, Turkey

Study of the induced effects of ionizing radiations on the physical properties of ZnSe/CdTe heterojunction
L. Ion, Sorina Rtimi1, A. Radu1, Nicoleta Vasile1, O. Toma1, Lumininta Dan1, M.M. Gugiu2, S. Antohe1,3
1University of Bucharest, Faculty of Physics, Bucharest, Romania, 2Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), Bucharest, Romania, 3Academy of Romanian Scientists, Bucharest, Romania

Ultra fast charge carrier dynamics in hematite thin films
Carlos Cepeda1, João F Costa, Paula Dias1, João Avevedo1
1 CCGC, Department of Engineering, University of Coimbra, 3004-535 Coimbra, Portugal, 2 LEPAE - Faculdade de Engenharia, Universidade do Porto, Rua Dr. Roberto Frias, 4000-465 Porto, Portugal

EFFECTS OF SODIUM ADDITION ON NON-VACUUM BASED CuInSe2 THIN FILM SOLAR CELLS
Sharzad Rehan1,2, Jiyun Moon2,3 Young-Joo Eo1,2, Ara Cho1,2, Jihye Gwak1,2, S. Seung Kyu Ahn2,3, Sein Ahn1,2,3
1 Renewable energy Engineering, University of Science & Technology (UST), Daejeon, Korea 2 Pottolavtic Laboratory, Korea Institute of Energy Research (KIER), Daejeon, Korea 3 Chungnam National University, Daejeon, Korea

Flexible synthesis of anatase TiO2 nanocrystals for dye-sensitized solar cells applied at sunlight and room light conditions
Yu-Ling Guo, Chao-Kun Hung and Yu-Chun Wu
Department of Resource Engineering, National Chen Kung University, Tainan, R.O.C.

Efficiency Enhancement of ZnO/Si-based solar cell by using optimized metallic nanoparticles
N. Resadeh, S. Zehir, A. Oztekin, S. Kalayci, and T. Karakurt
2 LEPABE - Faculdade de Engenharia, Universidade do Porto, Rua Dr. Roberto Frias, 4000-465 Porto, Portugal

Mechanism of ZnO Nanoparticles Formation on ZnO Crystal by Nd:YAG Laser Radiation
Arturs Mechiņš1*2, Pavel Onufrijev1,2, Liga Grase1,2, Ize Biks2, Hidenori Mimura12
1LEA, Department of Electronics, University of Batna 1, Batna 05000, Algeria. E-mail: faycal.djelal@univ-batna.dz, faycal.djelal@hotmail.com, Tel/Fax: 0021333805494

A new mixed-valence hybrid perovskite material with intermediate band for photovoltaic cell application
Lamped Debichi, Hyungyu Kim
Graduate School of Energy, Environment, Water, and Sustainability (EEWS), Korea Advanced Institute of Science and Technology (KAIST), Yuseong-gu, Daejeon 305-701, Korea

Tunable Band Gap CH3NH3PbI3-XBrX Films Fabricated by Thermal Co-Deposition
Wirita Soltanpoor1,3*, Onur Yılmaz1,3, Mehmet Cem Sahinier2,3, Setluc Yerci1,3, T. The Center for Solar Energy Research and Applications (GUNAM), Middle East Technical University, Ankara, 06800, Turkey 2 Department of Micro and Nanotechnology, Middle East Technical University, Ankara, 06800, Turkey 3 Department of Electrical and Electronics Engineering, Middle East Technical University, Ankara, 06800, Turkey

Electrical and optical properties of PA-MBE p-ZnO:As/n-GaN heterojunctions for photovoltaic applications
E. Zielony1, E. Przezdziecka2, E. Placzek-Popko1, K. Paradowska1, K. Gwozdz1, Marcin Stachowicz2, Wojciech Lisowski3, A. Kozanecki2
1 Department of Quantum Technologies, Faculty of Fundamental Problems of Technology, Wrocław University of Technology, Wybrowe Wyspiankiego 27, 50-370 Wrocław, Poland, 2 Institute of Physics, Polish Academy of Sciences, al. Lotnikow 32/46, 02-668 Warsaw, Poland 3 Institute of Physical Chemistry, Polish Academy of Sciences, M. Kasprzaka 44/52, 01-224 Warsaw, Poland
16:30 Carrier transport mechanisms in ZnO based heterostructures grown by atomic layer deposition method
1Department of Quantum Technologies, Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology, 27, PL50 375 Wroclaw, Poland, 2Institute of Physics, Polish Academy of Sciences, Aleja Lotnikow 32/46, PL-02668 Warsaw, Poland, 3Department of Mathematics and Natural Sciences College of Sciences, Cardinal Stefan Wyszyński University, Dewajtis 5, 01-815 Warsaw, Poland

16:30 Surface states at the interface of n-ZnO nanorods/p-Si solar cells
K. Gwozdz1, E. Placzek-Novak1, E. Zielony1, R. Pietruszka2, B. S. Wilkowskii, K. Kopalko2, M. Godlewski2,3
Department of Quantum Technologies, Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology, 27, PL50 375 Wroclaw, Poland, 2Institute of Physics, Polish Academy of Sciences, Aleja Lotnikow 32/46, PL-02668 Warsaw, Poland, 3Department of Mathematics and Natural Sciences College of Sciences, Cardinal Stefan Wyszyński University, Dewajtis 5, 01-815 Warsaw, Poland

16:30 Seamless merging of perovskite nanocrystals
Chris de Weerd1, Leyre Gomez1, Junhao Lin2, Kazutomo Suenaga2, Yasufumi Fujiwara3, Tom Gregorkiewicz1
1 University of Amsterdam, 2 National Institute of Advanced Industrial Science and Technology, Japan, 3 Osaka University

18:30 End of poster session
E PI.54

16:30 Tailored disorder for light trapping
Aimi Abass, Stefan Nanz, Peter Pichler, Alexander Spratke, Ralf Wehrspohn, Carsten Röckstuhl
Institute of Nanotechnology, Karlsruhe Institute of Technology, 76021 Karlsruhe, Germany, Institute of Theoretical Solid State Physics, Karlsruhe Institute of Technology, 76131 Karlsruhe, Germany, Institute of Physics, Martin Luther University Halle-Wittenberg, 06120 Halle (Saale), Germany, Institute of Physics, Martin Luther University Halle-Wittenberg, 06120 Halle (Saale), Germany, and School of Photovoltaics and Renewable Energy Engineering, University of New South Wales, NSW 2052, Sydney, Australia.

09:00 (invited) Metalorganic chemical vapour deposition and performance of CdS/CdTe junctions
Onno Vartholomeos1,2,3, David Eisenhauer1,2,3, Aimi Abass1,2,3, Stefan Nanz1,2,3, Peter Pichler1,2,3, Alexander Spratke1,2,3, Ralf Wehrspohn1,2,3, Carsten Röckstuhl1,2,3
1 Institute of Nanotechnology, Karlsruhe Institute of Technology, 76021 Karlsruhe, Germany, 2 Institute of Theoretical Solid State Physics, Karlsruhe Institute of Technology, 76131 Karlsruhe, Germany, 3 Osaka University

10:30 Tailoring nano-textures for optimized light in-coupling in liquid phase crystallized silicon thin-film solar cells
Gert Köppel, David Eisenhauer, Klaus Jäger, Bernd Rech, and Christiane Becker
Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Kekuléstraße 5, 12489 Berlin, Germany

11:15 Investigation of the photovoltaic effect in BiFeO3 thin films
Pei Loon Khoo, Kazuma Fukasawa, Naoki Yamashiro, Masahiko Izaki, Saori Kiyama, and Naoki Yamashiro
Graduate School of Engineering, Toyohashi University of Technology, 1-1 Hibarigaoka, Tempaku-cho, Toyohashi-shi, Aichi, Japan.

11:30 Absorber structural characteristics and heterojunction properties of thin film p-Cu2O/n-ZnMgO solar cells
Jalinder Kaur1,2, Ole Benthge2, Emmerich Bertolani2, Theodoros Dimopoulos1,2
1 AIT Austrian Institute of Technology, Center for Energy, Photovoltaic Systems, Vienna, Austria, 2 Vienna University of Technology, Institute for Solid State Electronics, Vienna, Austria

Wednesday 24 May 2017

E PI.55

E PI.56

E PL.55

E VIII.1

E VIII.2

E VIII.3
11:45 Excitons in InGaAs/GaAsP multi quantum well and super lattice solar cell structures investigated by a photothermal spectroscopy
Tetsuo Ika1, Kouki Matsuochi1, Tsubasa Nakamura1, Takeda Hideaki1, Hidetoshi Suzuki1, Kaisidit Toprasertpong1, Masakazu Sugiyama2, Yoshikai Nakano3 and Atsuhiko Fukuyama1
1Faculty of Engineering, University of Miyazaki, Miyazaki 889-2192, Japan 2School of Engineering, The University of Tokyo, Tokyo 113-0032, Japan 3Research center for Advanced Science and Technology, The University of Tokyo, Tokyo 113-0032, Japan

12:00 Effect of barrier thickness on formation of miniband in InGaAs/GaAsP superlattice structure for solar cells application
Tsubasa Nakamura1, Kouki Matsuochi1, Takeda Hideaki1, Hidetoshi Suzuki1, Tetsuo Ika1, Kaisidit Toprasertpong1, Masakazu Sugiyama2, Yoshikai Nakano3, and Atsuhiko Fukuyama1
1Faculty of Engineering, University of Miyazaki, 1-1, Gakuen Kibanadai-Nishi, Miyazaki 889-2192, Japan, 2School of Engineering, The University of Tokyo, Bunkyo-ku, Tokyo 113-0032, Japan

12:15 TiO2 nanoparticles: electronic photo-generation properties probed by EPR from suspension to thin films

12:30 Lunch break

13:00 PREPARATION AND CHARACTERIZATION OF NANOSTRUCTURED NiO SOLAR CELLS USING SPRAY PYROLYSIS TECHNIQUE: A REVIEW
UKOBA, KINGSLEY O, ELOKA-EBOKA, ANDREW and INAMBAO, FREDDIE
University of KwaZulu-Natal, Durban, South Africa

13:15 TiO2 nanoparticles: electronic photo-generation properties probed by EPR from suspension to thin films

13:30 Lunch break

Poster session II: Abdellah Staloui

14:00 The first principal study of electronic and optical properties of the superlattices (BaHfO3)/ (BiFeO3) (BaHfO3)
R. Chaire, AZAHAF, Halima, ZAARI Hamid and E.ZAHRAOUY Abdellah. BENYOUSSEF LAMINE(1,2,3) (BIFEO3) (BaHfO3)
1 Faculty of Sciences, University of Mohammed V-Rabat, Morocco, 2 Institute of Natural Sciences and Technology, University of La Rochelle, France, 3 Laboratory of Applied Physics, University of Marburg, Germany

14:00 Preparation and characterization of nanostructured nio solar cell using spray pyrolysis technique: A review
UKOBA, KINGSLEY O, ELOKA-EBOKA, ANDREW and INAMBAO, FREDDIE
University of KwaZulu-Natal, Durban, South Africa

14:00 Surface Plasmon effect of noble metal nanoparticles on photovoltaic properties of Silicon solar cells
Malek Atyaoui , Marwen Khalifa , Wissem Dimassi and Hatem Ezzaouis
Laboratoire de Photovoltaïque, Centre des recherches et des technologies de l’énergie, technopole de Borj-Cédria, PB 95, Hammam Lif 2050, Tunisia

14:00 Improved performance of bulk-heterojunction solar cells via ZnO modification with novel additives
Chung-Kai Wu1, Kundan Sivashnamugan1, Tzung-Fang Guo2, Yao-Wen Zheng3, Chung-Hao Cai1, Wei-Chih Huang1, Chia-Hao Hsu2, Chih-Huang Lai2
1Department of Chemical Engineering, National Cheng Kung University, Tainan 70101, Taiwan 2Institute of Electro-Optical Science and Engineering, National Cheng Kung University, Tainan 70101, Tainan 3National Synchrotron Radiation Research Center, Hsinchu Science Park, Hsinchu, Taiwan

14:00 Wide bandgap photovoltaic chalcogenides: crystal and thin film materials
A. Thomere(1,2,3), C. Guillot-Deuxon(1,3), N. Barreau(1,3), R. Bodeux(2,3), M. Caldes(1,3) and A. Lafond(1,3)
(1) Instituto de Materiales Jean Rouxel (IM2), Université de Nantes, CNRS, 2 rue de la Housse, BP 27002, 44322 Nantes Cedex 03, France (2) EDI R&D E 6 Quai Wall 78400 Chatou Cedex, France (3) Institut Photovoltaïque d’Île-de-France (IPVF), 8, rue de la Renaissance 92160 Antony, France

14:00 Fabrication of tin sulfide solar cells by metal organic chemical vapor deposition using Sn(Indamap)2
Ja-Won Choi, Gun Hwan Kim, Young Kuk Lee
Korea Research Institute of Chemical Technology

14:00 Elaboration and deposition of silver nanoparticles on porous Silicon layer to enhance the optical and electrical properties
Marouan Khalifa, Malek Atyaoui, Hatem Ezzaouia
Semiconductor and Advanced Technology Nanostructured Laboratory, Research and Technology Centre on Energy, Borj-Cédria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia

14:00 Improvement of different materials used as Upconverters When Incorporated in Bifacial Silicon Solar Cells Using the Program P1C1-D
Alexia Coislane Pan, Leandro Santos Grosso Cardoso, Fernando Soares dos Reis
Fernando Solar Energy Technology Nucleus (NT-Solar), Pontificial Catholic University of Rio Grande do Sul Av. Ipiranga, 6681, Porto Alegre, Cep: 90619-900, RS, Brazil

14:00 Over 13% efficiency of flexible bandgap-graded Cu(In,Ga)Se2 solar cells by sputtering from a quaternary target without post-growth treatment
Yao-Wen Zheng, Chung-Hao Cai, Wei-Chih Huang, Chia-Hao Hsu, Chih-Huang Lai
Department of material science and engineering, National Tsing Hua University, Hsinchu, Taiwan, 30013.

14:00 A study of optical and electrical properties of Copper Bismuth Selenide Sulphide photovoltaic thin films
Yunong Liu, Longfei Li, Zhilaor Yang, Yanbo Yang, Yuan He, Xiaoli Xiong, Dongyun Chen, Junfeng Han
School of Physics, Beijing Institute of Technology, Beijing, 100081, China

14:00 High-performance intermediate band solar cells based on ZnTe:Cr fabricated by pulsed laser deposition method
Kyoung Su Lee, Gyu Jin Oh, Dongil Chu, Sang Woo Pak, Eun Kyu Kim
Department of Physics, Hanyang University, Seoul 04763, Korea

14:00 Theoretical band alignment for an hybridized material CuAlSe2/CuGaS2:Cr/ZnSe heterostructure
P. Palacios(a,b), J.E. Castellanos Águla (a), J. Arriaga (c), C. C. Conesa (d), P. Wahnon (ae)
(a)Instituto de Energía Solar, Universidad Politécnica de Madrid, 28040 Madrid, Spain, (b)Dpt. FAIANN, Universidad Politécnica de Madrid, ETSI Aeronáutica y del Espacio, 28040 Madrid, Spain,(c) Instituto de Física, Berenémita Universidad Autónoma de Puebla, Av. San Claudio y 18 Sur C.U. 72570 Puebla, Mexico, (d) Instituto de Catálisis y Petroquímica, CSIC, Marie Curie 2, Cantoblanco, 28049 Madrid, Spain, (e) Dpt. TF5, Universidad Politécnica de Madrid, ETSI Telecomunicación, 28040 Madrid, Spain

14:00 Kesterite Cu2ZnSnS4: Solid state synthesis in scalable amounts via low-cost and green mechanochemical process
1Peter Baláz, 1Maté Baláz, 2Michal Hegeduš, 1Anna Zorkovská, 3Marcela Achimovičová, 1Matej Teščinsky
1Institute of Geotechnics, Slovak Academy of Sciences, Košice, Slovakia 2Institute of Chemistry, P. J. Šafárik University, Košice, Slovakia 3Institute of Mining and Waste Processing, Waste Disposal and Geomechanics, Technical University Clausthal, Clausthal-Zellerfeld, Germany

14:00 Cu2O as a potential intermediate transparent conducting oxide layer for perovskite-CIGSe tandem solar cells
Yaij Wang, Alexander Steigert, Guanchao Yin, Iver Lauermann, Martha Ch. Lux-Steiner, Rutger Schlatmann, Reiner Klenk
Yaij Wang, Alexander Steigert, Guanchao Yin, Iver Lauermann, Martha Ch. Lux-Steiner, Rutger Schlatmann, Reiner Klenk
Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, D-14109 Berlin, Germany Yaij Wang, Martha Ch. Lux-Steiner Freie Universität Berlin, Fachbereich Physik, Amiralle 14, 14195 Berlin, Germany

14:00 Light trapping for crystalline silicon photovoltaic cells coupled with solar-pumped lasers
Yasuhiko Takeda, Tadashi Isho, Noboru Yamada, Kazuo Hasegawa, Shintaro Mizuno, Tadashi Ishioka, Hideo Iizuka, Kazuo Higuchi, Hiroshi Ito, Akihisa Ichiki, and Tomoyoshi Motohiro
Toyota Central Research and Development Laboratories, Inc., Green Mobility Research Center and Propulsion Systems, Institute of Process Engineering, Chinese Academy of Sciences, Beijing, People’s Republic of China

14:00 Optimized SnO2/TiO2/CZTS tandem structure for photovoltaic conversion
Anca Duta, Alexandru Enescu, Maria Covel, Dana Perniu
R&D Centre: Renewable Energy Systems and Recycling, Transilvania University of Brașov, Romania
14:00 Characterization of Cu(In,Ga)Se₂ thin films grown on soda-lime glass substrates by pulsed laser deposition. Ch. Nicolau1, A. Zacharia2, G. Itskos2, J. Giapintzakis1. 1) Department of Mechanical and Manufacturing Engineering, University of Cyprus, 2) Experimental Condensed Matter Physics Lab, Department of Physics, University of Cyprus, 2) Cyprus Institute, PO Box 20537, 1573 Nicosia, Cyprus.

14:00 MD Simulation of the Sub-Surface Ti Layers Structural Transformation Induced by the Presence of Graphene. Weiping Gong1, Zhachou Guo1, S. Sidorenko2, S. Zamulko2, O. Voloshko2, I. Gorky Polytechnic Institute, Ukraine.

14:00 Characterization of Zn(S, O) Buffer Layers Prepared by Highly Deposited Rate Chemical Bath Deposition Process. Wei-Tse Hsu, Sheng-Wen Chan, Chia-Ming Chang, Lung-Teng Cheng, Yu-Yun Wang, Houzhuou Li, Hsiang-Hsien Wu, Wei-Sheng Lin, Jen-Chuan Huang, Chien-Rong Huang, Edward Tam, Tung-Po Hsieh, Song-Yeu Tsai, Hsinchu, Taiwan: Wei-Tse Hsu, Sheng-Wen Chan, Chia-Ming Chang, Lung-Teng Cheng, Yu-Yun Wang, Houzhuou Li, Hsiang-Hsien Wu, Wei-Sheng Lin, Jen-Chuan Huang, Chien-Rong Huang, Tung-Po Hsieh, Song-Yeu Tsai, Hsinchu, Taiwan.

14:00 Equivalent circuit topology of tandem solar cell with tunnel junction. Sud, Université Paris-Saclay, C2N - Orsay, 91405 Orsay cedex, France, 2) Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Sud, 2) University Mohammed V, Faculty of Sciences, Physics Department, LPM, Rabat, Morocco. 1 University Mohammed V, Faculty of Sciences, Physics Department, LPM, Rabat, Morocco, 2 University Mohammed V, Faculty of Sciences, Physics Department, LPM, Rabat, Morocco.

14:00 Characterizations of Zn(S, O) Buffer Layers Prepared by Highly Deposited Rate Chemical Bath Deposition Process. Wei-Tse Hsu, Sheng-Wen Chan, Chia-Ming Chang, Lung-Teng Cheng, Yu-Yun Wang, Houzhuou Li, Hsiang-Hsien Wu, Wei-Sheng Lin, Jen-Chuan Huang, Chien-Rong Huang, Edward Tam, Tung-Po Hsieh, Song-Yeu Tsai, Hsinchu, Taiwan: Wei-Tse Hsu, Sheng-Wen Chan, Chia-Ming Chang, Lung-Teng Cheng, Yu-Yun Wang, Houzhuou Li, Hsiang-Hsien Wu, Wei-Sheng Lin, Jen-Chuan Huang, Chien-Rong Huang, Tung-Po Hsieh, Song-Yeu Tsai, Hsinchu, Taiwan.

14:00 Equivalent circuit topology of tandem solar cell with tunnel junction. Sud, Université Paris-Saclay, C2N - Orsay, 91405 Orsay cedex, France, 2) Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Sud, 2) University Mohammed V, Faculty of Sciences, Physics Department, LPM, Rabat, Morocco. 1 University Mohammed V, Faculty of Sciences, Physics Department, LPM, Rabat, Morocco, 2 University Mohammed V, Faculty of Sciences, Physics Department, LPM, Rabat, Morocco.
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>09:00</td>
<td>VI.1</td>
<td>(invited) Quantum engineered III-V dilute nitride solar cells for tandem applications</td>
<td>Alex Freundlich, University of Houston</td>
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<td>09:00</td>
<td>VI.2</td>
<td>Atomic structure of Si/GaAs interfaces fabricated by surface-activated bonding at room temperature</td>
<td>Yukata Chida, Hito Motoyoshi, Seiji Takeda, Liang Jianbo, Naotoe Shigekawa</td>
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<td>10:30</td>
<td>VI.4</td>
<td>Silicon and beyond III : Masafumi Yamaguchi</td>
<td>Hitoshi Sai, Takuya Matsui, Koji Matsubara</td>
</tr>
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<td>11:00</td>
<td>VI.5</td>
<td>Comparison of FTPS performed on thin films and devices</td>
<td>N. Puseniasio, C. Longeaud, Li Zeyu, Pere Roca i Cabarrocas</td>
</tr>
<tr>
<td>11:15</td>
<td>VI.6</td>
<td>Morphologic dependent characteristics of amorphous silicon thin films for surface passivation</td>
<td>Sebastian Gerke, Mariyone Sousa, Marina Krumova, Stefanie Ebert, Reinhart Job</td>
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<td>11:30</td>
<td>VII.1</td>
<td>(invited) Advanced Local Characterization of Silicon Solar Cells</td>
<td>Olwin Breitenstein, Felix Frühau, Jan Bauer</td>
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<td>12:00</td>
<td>VII.2</td>
<td>Lifetime-improving treatments after process-induced degradation of Gallium Phosphide on Silicon heterojunction solar cells</td>
<td>Médric Descazes, Maxime Damon, Mickael Martin, Jeremie Moeyaert, Delphine Muñoz, Thierry Baron</td>
</tr>
<tr>
<td>12:15</td>
<td>VII.3</td>
<td>Sputtered Tungsten Oxide for Hole Contacts of Silicon Heterojunction Solar Cells</td>
<td>Mathias Mews, Antoine Lemaire, Lars Korte, Bernd Rech</td>
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<td>12:30</td>
<td>VII.4</td>
<td>Lunch break</td>
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<tr>
<td>14:00</td>
<td>VIII.1</td>
<td>(invited) Optical concepts for CIGS solar cells</td>
<td>Martina Schmid, Helmholtz-Zentrum Berlin &amp; University of Duisburg-Essen</td>
</tr>
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<td>14:30</td>
<td>VIII.2</td>
<td>3D optical modelling of heterojunction silicon solar cells including nano and micro textures</td>
<td>Ziga Loker, Janez Krc, Benjamin Lipovšek, Marko Topič</td>
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<tr>
<td>14:45</td>
<td>VIII.3</td>
<td>Capturing light with wave-optical traps on thin and ultra-thin solar cells</td>
<td>Manuel J. Menéndez, Olalla S. Sobrado, Sirazul Haque, Andreia Araújo, Antonio Vicente, Andriy Lyubchyk, Tiago Mateus, Hugo Águas, Elvira Fortunato and Rodrigo Martins</td>
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<tr>
<td>15:00</td>
<td>VIII.4</td>
<td>Nanostructured high dielectric semiconductor ultrathin films with enhanced broadband absorption in the visible and NIR regime</td>
<td>Juan Luis Garcia-Pomar, Pau Molet, Cristiano Maticardi, Miquel Garriga, Maria Isabel Alonso, Agustín Miñó</td>
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<td>15:15</td>
<td>VIII.5</td>
<td>AZO/Ag/AZO thin films as anti-reflecting flexible transparent electrode</td>
<td>Giacomo Torrisi, Antonio Terrasi</td>
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<td>15:30</td>
<td>VIII.6</td>
<td>Broadband-sensitive upconversion of Er3+, Ni2+-co-doped perovskites for solar energy harvesting</td>
<td>Yasuhiko Takeda, Hom Nath Lui, and Shintaro Mizuno</td>
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<td>15:45</td>
<td>IX.1</td>
<td>Eu(Ill) coordination complexes as downshifters for CIGS solar cells</td>
<td>Anatolie Gavriluta, Thomas Fix, Aline Nonat, Carlotta Crevant, Abdellah Slaoui, Jean-François Guillemeoles, Loïc J. Charbonnière</td>
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<td>16:00</td>
<td>IX.2</td>
<td>Light management II : Ailim Abass</td>
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<td>16:30</td>
<td>IX.3</td>
<td>Multi-junction devices I : Hitoshi Sai</td>
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<tr>
<td>16:45</td>
<td>IX.4</td>
<td>Nanostructured high dielectric semiconductor ultrathin films with enhanced broadband absorption in the visible and NIR regime</td>
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<tr>
<td>17:15</td>
<td>IX.6</td>
<td>EPR of novel materials and structures in CIGS solar cells</td>
<td>Anatolie Gavriluta, Thomas Fix, Alain Nonat, Carlotta Crevant, Abdellah Slaoui, Jean-François Guillemeoles, Loïc J. Charbonnière</td>
</tr>
<tr>
<td>17:30</td>
<td>IX.7</td>
<td>Optical concepts for CIGS solar cells</td>
<td>Martina Schmid, Helmholtz-Zentrum Berlin &amp; University of Duisburg-Essen</td>
</tr>
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</table>
09:00 Nd & Yb co-doped SnOx functional thin films by reactive magnetron sputtering as a UV photons converter layers for solar cells
K. Bouras1, D. Aurea2, G. Schmerber3, H. Rinne4, G. Fertlantier1, A. Dinia3 and A. Slaoui1
1 ICube, CNRS-Université de Strasbourg, UMR 7357, 23 rue du Loess, BP 20 CR, 67037 Strasbourg Cedex 2, France
2 ILV, Université de Versailles-St-Quentin en Yvelines, UMR 8180, 45 avenue des Etats Uni, 78000 Versailles, France
3 IPCMS, CNRS-Université de Strasbourg UMR 7504, 23 rue du Loess, BP 43, 67034 Strasbourg Cedex 2, France
4 IJL, Université de Lorraine-CNRS, UMR 7198, Boulevard des Aiguillettes, 54506 Vandœuvre-lès-Nancy, France

09:15 A metamaterial sunlight down-converter for improved photovoltaics
Antonio Capretti, Amnon Lezax and Tom Gregorkiewicz
University of Amsterdam

09:30 Upconversion rare-earth-doped nanoparticles for hybrid perovskite solar cells
Mathilde Schoenauer Sebag, Karl M De Oliveira, Jingbin Zhang, Artem Bakulin, Michel Motlier, Patrick Greedin, Lionel Aigouy, Zhuoying Chen
1 – LPEM, CNRS-UMR 8213, ESPCI Paris 2 – Institut de Recherche de Chimie de Paris, UMR 8247 CNRS, Chimie ParisTech 3 - Faculty of Natural Sciences, Department of Chemistry, Imperial College London

09:45 Solar cells with solution-processed absorber layers made of colloidal CuInS2 nanocrystals
Holger Borchert, Dorothea Scheunemann, Harald Reinhold, Rany Miranti, Sebastian Wilken, Jürgen Parisi
University of Oldenburg, Department of Physics, Energy and Semiconductor Research Laboratory, Carl-von-Ossietzky Str. 9-11, 26129 Oldenburg, Germany

10:00 Coffee break

Multi-junction devices II : Alex Freundlich

10:30 (invited) Large-area scalable perovskite-based multi-junction solar modules
Tom Aemouts, Manoj Jaysankar, Weiming Gu, Tamara Merckx, Robert Gehlhaar, Maarten Debucauys, Ulrich W. Paetzold, Erik Ahlswede, Jef Poortmans
imec, imec, imec, imec, imec, imec, KIT, ZSW, imec and KULeuven

11:00 Efficiency Limit of Perovskite/Si Tandem Solar Cells
Moritz H. Futschers, Bruno Ehrler
AMOLF, Center for Nanophotonics, Science Park 104, 1098 XG Amsterdam, The Netherlands

11:15 Efficient and Stable Partially Transparent Planar Perovskite Solar Cells Prepared by Partial Ion Exchange for Tandem Applications
Fan Fu, Stefano Pisoni, Thomas Feurer, Anelia Wacklerin, Shiro Nishiwaki, Ayodhya N. Tiwari, Stephan Buecheler
Empa – Swiss Federal Laboratories for Material Science and Technology

11:30 INVESTIGATION OF METHYL AMONIUM LEAD IODIDE PEROVSKITE BASED TANDEM SOLAR CELLS
S M Iftiquar and Junskin Yi
College of Information and Communication Engineering, Sungkyunkwan University, Suwon, 440-746, Korea

11:45 Functionalized Top-Kesterite Back Contacts For Bottom-Silicon Tandem Solar Cells
M. Espindola-Rodriguez1, P. Bellanger4, A. G. Ulyashin3, Y. Sánchez1, D. Sylia1, H. Xin1, M. Neuschltzer1, V. Izquierdo-Roca1, A. Pérez-Rodríguez 1,2, E. Saucedo1, S. Roques1, M. Piacciot1 and A. Slaoui1
1. Catalonia Institute for Energy Research, IREC. Jardins de les Dones de Negre 1, 08950 Sant Adrià de Besós (Barcelona), Spain. 2. IN2UB, Departament d’Electrònica, Universitat de Barcelona, C. Martí i Franqués 1, 08028 Barcelona, Spain. 3 SINTEF Materials and Chemistry, Forskningsveien 1, P.O. Box 124 Blindern, NO-0314 Oslo Norway. 4. Laboratoire ICUBE (University of Strasbourg-CNRS), 23 rue du Loess, F-67037 Strasbourg cedex 2, France.

12:00 Operation of the three terminal heterojunction bipolar transistor solar cell
A. Martí, E. Antolin, P.G. Linares, E. López, J. Villa and I. Ramiro
Instituto de Energía Solar - Universidad Politécnica de Madrid

Closing : Janez Krc, Ivan Gordon, Abdellah Slaoui, Shigeru Niki, Gavin Conibeer

12:15 Symposium closing
Janez Krc (1), Ivan Gordon (2), Abdellah Slaoui (3), Shigeru Niki (4), Gavin Conibeer (5)
(1) University of Ljubljana, Slovenia, (2) IMEC, Belgium, (3) CNRS-ICUBE, France, (4) AIST, Japan, UNSW, Australia

12:30 Lunch
SYMPOSIUM F

Photocatalytic materials for energy and environment

Symposium Organizers:

Anne MORRISSEY, Dublin City University, Ireland

Giuliana IMPELLIZZERI, CNR – IMM, Catania, Italy

J. Anthony BYRNE, Ulster University, U.K.

Vincent ARTERO, Université Grenoble Alpes-CEA-CNRS, France

Selected papers to be published in a special issue of Catalysis Today
09:15 Enhanced photocatalytic performance of novel electrospun BN/TiO2 composite nanofibers
Maryline Nasr, Roland Habchi, Michel Piel and Michal Bechelany

10:15 Multifunctional ZnO-PES fibre mats for water membrane technology.
Maria Elena FragaItal, Giulia Ognibene, Gianluca Cicala
Maria Elena Fraga, Dipartimento di Scienze Chimiche and INSTM UdR Catania, Università di Catania, Viale A. Doria 6-95100 Catania (Italy), Giulia Ognibene, Dipartimento di Ingegneria Civile e Architettura (DICAR), Università di Catania, Viale A. Doria 6-95100 Catania (Italy), Gianluca Cicala, Dipartimento di Ingegneria Civile e Architettura (DICAR) and INSTM, Università di Catania, Viale A. Doria 6-95100 Catania (Italy).

10:45 Paper and polyester TiO2 platforms for UV sensing and photocatalysis (Invited)
Suresh C. Pillai1,2
1Centre for Precision Engineering, Materials and Manufacturing Research (PEM), Institute of Technology Sligo, Ireland, 2Nanotechnology and bio-engineering Research Group, Department of Environmental Science, Institute of Technology Sligo, Ireland

11:15 Bi2O3/Nexar® polymer nanocomposite membrane for visible photocatalytic degradation and bacterial inactivation
D. Vidyasagar, S.G. Ghugal, A. Kulkarni, N. Revathi, R. Sasikala and S.S. Umare
D. Vidyasagar, S.G. Ghugal, A. Kulkarni, N. Revathi, R. Sasikala and S.S. Umare, Department of Chemistry, Visvesvaraya National Institute of Technology, Nagpur 440010, India. A. Kulkarni, CSR-National Environmental Research Institute, Nagpur 440010, India. N. Revathi, Department of Materials and Environmental Technologies, Tallinn University of Technology, 19086, Tallinn, Estonia. R. Sasikala, Chemistry Division, Bhabha Atomic Research Centre Trombay, Mumbai 400085, India.

12:15 PHOTOCATALYTIC DEGRADATION OF CATIONIC AND ANIONIC DYES IN WATER USING HYDROGEN- TERMINATED SILICON NANOWIRES AS CATALYST N. Brahljeni, T.Hadjersi, S. Amiroouche, H. Menai, O. Elkichai
- Centre de Recherche en Technologie des Semi-conducteurs pour l’Energie (CRTCSE), 2 Bdt. Frantz Fanon, B.P. 140 Alger-7 Merveilles, Algiers, Algeria (hadjersi@yahoo.com). - Université Mouloud MAMMERI de TiZOUZOU, faculté des Sciences, Algiers, A

12:30 Lunch

09:00 Welcome
Arca Duta, Alexandru Eneasca, Dana Perini, Maria Covei, Luminita Isac
R&D Centre: Renewable Energy Systems and Recycling, Transylvania University of Brasov, Romania

14:00 New insights into solar and visible light active photocatalysis (Invited)
Suresh C. Pillai1,2
1Centre for Precision Engineering, Materials and Manufacturing Research (PEM), Institute of Technology Sligo, Ireland, 2Nanotechnology and bio-engineering Research Group, Department of Environmental Science, Institute of Technology Sligo, Ireland

14:30 Anomalous Enhancement in Photocatalytic Rate by Stabilizing a Metastable Phase in a BiO3-Based Photocatalyst
Bastola Narayan1, Sangeeta Adhikari2, Girihar Madras2 and Rajeev Ranjan1
1Department of Chemical Engineering, Indian Institute of Science Bangalore-560092, India. 2Department of Chemical Engineering, Indian Institute of Science Bangalore-560012, India

14:45 Heterostructured photocatalytic material and the influence of its architecture
Sharmagappuri PERIYANAN, Catherine HENRIST, Froudi CLOOTS, Wolfram JAEGERMANN, Andreas KLEIN
Greenmat Laboratory, Department of Chemistry, University of Liege, Belgium. Surface science division, Department of Materials Science, Technical University of Darmstadt, Germany.

15:00 Photocatalytic ZnO-cellulose composite paper manufactured on a paper machine
Mats Sandberg (1), Karl Håkansson (2), Hjalmar Granberg (2)
(1) RISE Acero (2) RISE Bioeconomy

15:15 Graphitic Carbon Nitride/Fe-MOF photocatalyst for visible light induced dye degradation and bacterial inactivation
D. Vidyasagar, S.G. Ghugal, A. Kulkarni, N. Revathi, R. Sasikala and S.S. Umare
D. Vidyasagar, S.G. Ghugal, A. Kulkarni, N. Revathi, R. Sasikala and S.S. Umare, Department of Chemistry, Visvesvaraya National Institute of Technology, Nagpur 440010, India. A. Kulkarni, CSR-National Environmental Research Institute, Nagpur 440010, India. N. Revathi, Department of Materials and Environmental Technologies, Tallinn University of Technology, 19086, Tallinn, Estonia. R. Sasikala, Chemistry Division, Bhabha Atomic Research Centre Trombay, Mumbai 400085, India.

15:30 NARROWING BANDGAP ENERGY OF DEFECTIVE BLACK TITANIA AND ITS APPLICATION ON PHOTOCATALYTIC OXIDATION OF GLYCEROL
Trin ’Jedsukontorn’, Tomonaga Ueno, Nagahiro Sato, Mali Hunsorn
Faculty of Applied Science, Department of Chemical Technology, Faculty of Science, Chulalongkorn University, Bangkok 10330, Thailand (e-mail: trinatabo_3ed@hotmail.com). 1Graduate School of Engineering & Green Mobility Collaborative Research Center, Nagoya University, Aichi, Japan. 2Graduate School of Engineering & Green Mobility Collaborative Research Center, Nagoya University, Aichi, Japan. Fuels Research Center, Department of Chemical Engineering, Faculty of Science, Chulalongkorn University, Bangkok 10330, Thailand

15:45 Enhancement in Rate of Photocatalysis Upon Catalyst Recycling
Kalpesh Sorathiya, Biswajit Mishra and Deepa Khushalani
Materials Chemistry Research Center, Tata Institute of Fundamental Research, Homi Bhabha Rd, Colaba, Mumbai, India 400005

16:00 Removal of azo dye by ZnO-CuO semiconductors
Warathorn Chuumchoohatt, Anusara Irirasana, and Suwat Nanan
Materials Chemistry Research Center, Department of Chemical Sciences, Tata Institute of Fundamental Research, Homi Bhabha Rd, Colaba, Mumbai, India 400005

16:30 Level shifting of Copper-Modified Graphene Oxide
Jyoti Shukla T. Mohanty
Jawaharlal Nehru University New Delhi
Electrochemical deposition effect of modified ceria particles on the removal of lead (II) ions from water

Characterization of photocatalyst deactivation on wood wool cement composite under indoor and outdoor conditions

Physicochemical and photocatalytic properties of ZnO/TiO2 nanomaterials: Effect of the preparation method and the ZnO/(ZnO+TiO2) molar ratio

Effect of the photocatalytic activity of KNb3O8 nanosheets

Synthesis and visible photocatalytic properties of photoactive systems: BaO, ZnO, BaZnO and CaBaZnO

Sol-gel synthesized Cu5% doped ZnO: physico-chemical properties and photocatalytic activity

Enhanced Visible-Light Photocatalytic Performance of Electrospun rGO/TiO2 Composite Nanofibers
8:30 
Juzo Chen, Hua Zhang
School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798, Singapore

09:00 
Influence of laser treatments on TiO2 based Nanoparticles for photocatalytic water splitting
Roberto Fiorenza, Simona Filice, Giuseppe Compagnini, Salvatore Scirià, Silvia Scasele
Roberto Fiorenza, Simona Filice, Giuseppe Compagnini, Salvatore Scirià, Dipartimento di Scienze Chimiche, Università degli studi di Catania, Catania, Italy
Simona Filice, Silvia Scasele, CNR-IMM, Catania, Italy

09:15 
Bottom-up Synthesis and Characterisation of Single-Crystalline Iron-Oxide Nanowires
A. Chnani, T. Dilugosch, A. Schimer, A. Pasquarelli, J. Biskupek, S. Strehle
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany
Ulm University, Institute of Electronic Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

09:30 
Simulation of Oxygen Evolution at Hematite Surfaces: the Impact of Structure and Local Chemistry
X. Zhang, M.C.M van de Sanden, A. Bieberle-Hüttner
X. Zhang, M.C.M van de Sanden, A. Bieberle-Hüttner: 1 Electrochemical Materials and Interfaces, Dutch Institute for Fundamental Energy Research, Eindhoven, the Netherlands
M.C.M van de Sanden: 2 Plasma and Materials Processing, Department of Applied Physics, Eindhoven University of Technology (TU/e), Eindhoven, the Netherlands

09:45 
Hematite reduction and doping pathways studied by synchrotron radiation-based techniques for solar water splitting optimization
M. Ruiu (1), D. Stancu (2), R. Belkhou (1), S. Stanescu (1), E. Fonda (1), F. Maccheroni (3), A. Barbier (2) and H. Magnan (2)
(1) Synchrotron SOLEIL, L’Orme des Merisiers, Saint-Aubin - BP 48, F-91192 Gif-sur-Yvette cedex, France.
(2) Service de Physique de l’Etat Condensé, CEA, CNRS, Université Paris Saclay, CEA Saclay, 91191 Gif-sur-Yvette Cedex, France.
(3) Laboratoire de Chimie et Biologie des Métaux, Université Grenoble Alpes, CNRS UMR 5249, CEA, Grenoble, France.

10:00 
Thin film WO3 photoanodes for enhanced visible-light water splitting
Aldona Jabłonska, Krzysztof Bierkowski, Renata Solarska, Marcin Pisarek and Jan Augustynski
University of Warsaw, Centre of New Technologies, Banacha 2c, 02-097 Warsaw, Poland

10:15 
Exploring the WO3/BiVO4 heterojunction for solar water splitting applications
Dr. Andreas Kafiizas, Ms. Shababa Selim, Ms. Sacha Corby, Dr. Laia Francas-Forcada
Imperial College London

10:30 
Coffee Break

Molecular approaches to water splitting : Vincent Artero

10:45 
Water Splitting Catalysts and Photoelectrochemical Cells (Invited)
Licheng Sun
Department of Chemistry, School of Chemical Science and Engineering, KTH Royal Institute of Technology, 10644 Stockholm, Sweden, State Key Lab of Fine Chemicals, Institute of Artificial Photosynthesis, KTH-DUT Joint Education and Research Center on Molecular Devices, Dalian University of Technology (DUT), 116024 Dalian, China

11:00 
Combination between a sulphide semiconductor and an electroactive enzyme: a path for visible light-induced water photo-splitting
M. Pita(1), C. Tapia(1), S. Shleev(2), J. C. Conesa(1), A. L. De Lacey(1)
(1) Instituto de Catalisis y Petroquimica, CSIC, Madrid, Spain
(2) Biomedical Sciences, Faculty of Health and Society, Malmo University, Malmo, Sweden

11:15 
Heptacoordinate Co(II) complex: a new architecture for photocatalytic hydrogen production
F. Lucarini, A. Ruggi
Department of Chemistry, University of Fribourg, Switzerland

11:30 
Evaluation of annual hydrogen production through integrated silicon based photoelectrochemical water splitting devices
Katharina Welter 1, Vladimir Siminov 1, Jan-Philipp Becker 1, Wolfram Jaegermann 2, and Friedhelm Finger 1
1 Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain
2 Department of Chemical Physics, Department of Physics, Chalmers University of Technology, SE-412 96 Gothenburg, Sweden

11:45 
Molecular catalysts anchored to silicon photocathodes for hydrogen production Soundarrajan Chandrasekaran 1, Laurent Cagnon 2, François Baleras 3, Pascal Maillée 3 and Vincent Artero 1*
1 Laboratoire de Chimie et Biologie des Métaux, Université Grenoble Alpes, CNRS UMR 5249, CEA, Grenoble, France
2 Institut NEEL, CNRS, 25 rue des Martyrs BP 166, 38042 Grenoble cedex 9, France
3 LETI, CEA, 17 Rue des Martyrs, F-88054 Grenoble Cedex 9, France
* Corresponding author email: vincent.artero@cea.fr

12:00 
Molecular modelling of conjugated polymer photocatalysts for hydrogen evolution
Pearce, Drew [1], Guilbert, Anne A’Y [1], Sachs, Michael [2], Sprick, Sebastian [3], Durrant, James R [2], Cooper, Andrew [3] and Nelson, Jenny [4]
[1] Department of Physics, Imperial College London, London SW7 2AZ, UK
[2] Department of Chemistry, Imperial College London, London SW7 2AZ, UK
[3] Department of Chemistry, University of Liverpool, Liverpool L69 7ZD, UK

12:30 
Lunch

Photochemical water splitting : Licheng Sun

13:45 
Hydrogen-treated TiO2 hierarchical nanostructured films for photoelectrochemical water splitting
Luca Mascarelli (a), Simona Ferruli (ab), Piero Mazzolini (ab), Carlo S. Casari (ab), Valeria Russo (a), Roberto Matarrrese (c), Isabella Nova (c), Giancarlo Terraneo (b,d), Andrea Li Bassi (b,c)
(a) Micro- and Nanostuctured Materials Laboratory, Department of Energy, Politecnico di Milano, via Ponzio 34/3, 20133, Milano, Italy
(b) Center for Nanoscience and Technology – IT4I Polimi, via Giovanni Pascoli 703, 20133, Milano, Italy
(c) Laboratory of Catalysis and Catalytic Processes, Department of Energy, Politecnico di Milano, via La Masa 34, 20156, Milano, Italy
(d) Laboratory of Nanostructured Fluorinated Materials (NFMlab), Department of Chemistry, Materials, and Chemical Engineering “Giulio Natta”, Politecnico di Milano, via L. Mancinelli 7, 20131 Milano, Italy

14:00 
Band Edge Engineering in Metal Oxide Semiconductors for Efficient Solar Water Splitting in Photocatalytic Cell (Invited)
Aadesh P. Singh, Björn Wickman and Anders Hellman
Division of Chemical Physics, Department of Physics, Chalmers University of Technology, SE-412 96 Gothenburg, Sweden

14:30 
A novel overlapping junction of ZnO Nanowires for photoelectrochemical water splitting
Bao-Shun Wang, Ren-Ying Li, Zhi-Yun Zhang, Xiao-Ling Wu, Guo-An Cheng, Rui-Ting Zheng
College of Nuclear Science and Technology@Beijing Normal University@Beijing, China, 100875

14:45 
Evaluation of annual hydrogen production through integrated silicon based photoelectrochemical water splitting devices
Katharina Welter 1, Vladimir Siminov 1, Jan-Philipp Becker 1, Wolfram Jaegermann 2, and Friedhelm Finger 1
1 Instituto de Catálisis y Petroleoquímica, CSIC, Madrid, Spain
2 Department of Chemical Physics, Department of Physics, Chalmers University of Technology, SE-412 96 Gothenburg, Sweden

15:15 
NOx, NO, and COx cocalets loaded LaTaO2N2 photoanode for visible light water splitting
Wenping Si (1), Daniele Pergolesi (1), Fatima Haydous (1), Aline Fluri (1), Alexander Wokaun (1), Thomas Lippert (2), Laurent Cagnon 2, and Pascal Maillé 3
(1) Thin Films and Interfaces, Research with Neutrons and Muons Department, Paul Scherrer Institut, 5232 Villigen PSI, Switzerland, (2) Laboratory of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zurich, 8093 Zurich, Switzerland

15:30 
Coffee Break

Materials for Water Splitting : J. Anthony Byrne
16:00 gC3N4-TiO2 based nanocomposites for enhanced photocatalytic H2 production from water under solar and visible light (Invited)
Cémént MARCHAL, Valérie CAPS, Thomas COTTINEAU, Valérie KELLER ICPEES - Institute of Chemistry and Processes for Energy, Environment and Health 25, rue Bécquerel 67087 Strasbourg cedex FRANCE

16:30 Facile synthesis of CdS/TiO2/MS (M=Ni, Co, Cu) ternary hybrids for efficient photocatalytic H2 production without noble metals
A. Daya Mani*, P. Barpanda
Dr. A. Daya Mani- Faraday Materials Laboratory, Materials Research Centre, Indian Institute of Science Bangalore, Karnataka, India-560012., Dr. P. Barpanda- Faraday Materials Laboratory, Materials Research Centre, Indian Institute of Science Bangalore, Karnataka, India-560012.

16:45 Ta2O5 Nanotubes Attached with CuO Nanoparticles as Photocatalysts for Water Splitting
An-Ting Yang and Lih-Juann Chen
Department of Material Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan

17:00 Ternary transition metal trisulfides as photoanodes for assisted hydrogen generation
Grupo MIRE, Dpto. Física de Materiales, Universidad Autónoma de Madrid, C/ Francisco Tomás y Valiente 7, 28049 - Madrid, España. Email: edu.flores@estudiante.uam.es

17:15 Ternary Oxide Films prepared by Atomic Layer Deposition for Photoelectrochemistry
Alexander G. Hufnagel, Kristina Peters, Alexander Müller, Christina Scheu, Sebastian Häringr, Dina Fattakhova-Rohlfing, Thomas Bein
AGH, KP, SH, DF, TB: University of Munich (LMU), Butenandtstraße 11, 81377 Häringer, Dina Fattakhova-Rohlfing, Thomas Bein
Alexander G. Hufnagel, Kristina Peters, Alexander Müller, Christina Scheu, Sebastian Häringr, Dina Fattakhova-Rohlfing, Thomas Bein

Photocatalytic Materials (Solar Fuels) : Michael Nolan

09:00 Effect of Ag Co-catalyst on TiO2-Cu2O Nanocomposites Structure and Visible Photocatalytic Activities
Dávidné Nagy (1), Maria-Chiara Ferrari (1), Imre Miklós Szilágyi (2,3), Xiayong Fan (1)
(1) Institute for Materials and Processes, School of Engineering, The University of Edinburgh (2) Department of Inorganic and Analytical Chemistry, Budapest University of Technology and Economics (3) Technical Analytical Chemistry Research Group of the Hungarian Academy of Sciences

09:15 Interactions of Water with Anatase TiO2 (001) and Amorphous Fluorinated Anatase Interfaces via First-Principles Simulations
Kyle G. Reeves, Jiewei Ma, Damien Dambournet, Christel Laberty-Robert, Rodolphe Vuilleumier, Mathieu Salanne
Sorbonne Universités, UPMC Univ Paris 06, CNRS, UMR 8234, PHENIX, Paris, France

09:30 Amorphous Molybdenum Sulphide: Surface Water Dependent Properties, Humidity Sensing and Electrolyte Free Water Splitting
Torben Daeneke, Norpin Gahr, Kourosh Kalantar-Zadeh
RMIT University School of Engineering 124 LaTrobe Street 3001 Melbourne Australia

09:45 Characterization of BiVO4 and WO3 powders by modulated and cw surface photovoltage
Stefan Fengler1, Thomas Dittrich2, Mauricio Schieda3, Henning Gutzmann1, Thomas Emmeler3, Maria Villa-Vidal1, Thomas Klassens1,3
1 Helmut-Schmidt-Universität, Universität der Bundeswehr Hamburg, Institut für Werkstofftechnik, Holstenhofweg 85, D-22043 Hamburg, Germany 2 Helmholtz Zentrum Berlin für Materialien und Energie GmbH, Institut für Silizium-Photovoltaik, D-12489 Berlin, Germany 3 Helmholtz-Zentrum Geesthacht, Zentrum für Material- und Küstenforschung, Institut für Werkstoffforschung, Max-Planck-Str. 1, D-21502 Geesthacht, Germany

10:00 Density of States in thin film Hematite - How crystallinity influences the electronic properties
Christian Lohaus (1), Céline Steinert (1), Joachim Brötz (2), Andreas Klein (1), Wolfram Jaegermann (1)
(1) TU Darmstadt, Materials Science Department, Structural Research (2) TU Darmstadt, Materials Science Department, Structural Research

08:30 Simulation-lead Design of new photocatalyst materials (Invited)
Michael Nolan
Tyndall National Institute, University College Cork
12:00 Amine functionalized graphene-based photocatalyst for CO2 reduction
Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology (KAIST), 373-1, Guseong-dong, Busan, 18438, South Korea
Daehak-ro, Yuseong-gu, Daejeon 34141, Republic of Korea. 1. Germaine and A. M. A. Saggar
South Australian Research & Development Center, Dharhan 31311, Saudi Arabia

12:15 On the Role of the Metal in Highly Active Titania Photocatalysts for Ethanol Reforming in Gas-Phase
M. Gonzalez-Castaño, S. Murcia, C. Flox, T. Andreu, J.R. Morante
IREC, Catalonia Institute of Energy research

12:30 Lunch

Poster Session II Water Splitting and fuel production : Vincent Artegiani

13:30 Synthesized Polyoxometalates Derives for Visible-light-driven Hydrogen Production in Noble-metal-free Homogeneous System
Yasemin Topal1,2 Telkuk University, Advanced Technology Research and Application Center, Istanbul, Turkey
2Seluk University, Department of Chemistry Konya, Turkey
E-mail:yasemin_topal_88@hotmail.com,1,2
1Seluk University, Advanced Technology Research and Application Center Konya, Turkey
2Seluk University, Department of Chemistry Konya, Turkey
E-mail:yasemin_topal_88@hotmail.com,1,2

13:30 Large scale synthesis of flowerlike metal oxides by simple chemical solution route with high photocatalytic performance
M. Kourniou 1,2, G. Kirikididi1,2,3, V. Binas1,2,3
1. Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 120 N. Plastira str., Vassilika Vouton, 70013 Heraklion, Crete, Greece. 2. Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 70013 Heraklion, Crete, Greece 3. CRETE, Foundation for Research and Technology Hellas, 120 N. Plastira str., Vassilika Vouton, 70013 Heraklion, Crete, Greece 2. Crete University, Department of Physics, 710 03 Heraklion, Crete, Greece 3. Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece 4. Former officer of the European Commission, Joint Research Centre, Institute for Health and Consumer Protection, 21027, Via Germania 29, Ispra VA, Italy

13:30 Nanojunction-mediated visible light photocatalytic enhancement in heterostructured ternary g-C3N4-CdS-BiOCl nanocomposites
Sankeerthana Bellamkonda, G. Ranga Rao
Indian Institute of Technology Madras, Chennai 600036, India

13:30 Vapor-Solid Reaction Growth of Rutile and Anatase TiO2 Material
Tzu-Yuan Lee1, Hsin-Tien Chiu1*
1 Department of Applied Chemistry, Nation Chiao Tung University, Hsinchu, Taiwan, 30010 R. O. C.

13:30 MoS2 nanoflakes modified TiO2 nanoparticles for enhanced photocatalytic and photoelectrochemical performance
Manan Mehta1,4, Aadesh P. Singh2, Sandeep Kumar3, Satheesh Krishnanurthy4 and Sudhhasawta Basu1
1 Department of Chemical Engineering, Indian Institute of Technology, Hauz Khas, New Delhi-110016, India. 2 Department of Physics, Indian Institute of Technology, Hauz Khas, New Delhi-110016, India. 3 Department of Chemistry, Indian Institute of Technology, Hauz Khas, New Delhi-110016, India. 4 Materials Engineering, The Open University, Milton Keynes, MK7 6AA, United Kingdom.

13:30 High-throughput reusable graphene nanofibers for enhanced photocatalytic activity
Soumitra Satapathi
Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, 247667, India

13:30 Sustainable hydrogen and chemical production via photo-electrochemical reforming of biomass-derived alcohols
Liping Zhang, Bin Liu
Energy Research Institute@NTU, Interdisciplinary Graduate School, Nanyang Technological University, Singapore

13:30 Electrochemical Reduction of Carbon Dioxide (CO2) by Using Reduced Graphene Oxide/Copper Nanoparticle Electrode
Liang-Wei Chao and Li-Juann Chen*
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan (R.O.C.)

13:30 Development of GaON/ZnO/FTO NRAs for effective photoelectrochemical water splitting
Ahsanulhaq Qureshi, Ibrahim Khan
Center of Excellence in Nanotechnology (CENT) and Chemistry department King Fahd University of Petroleum and Minerals, Dharhan, 31261, Saudi Arabia.

13:30 Doping-Dependent Adsorption and Photon-Stimulated Desorption of CO on GaN(0001)
Sebastian L. Kollmannsberger, Constantin A. Valenta, Andrea Winne, Saskia Weisser, Rui N. Pereira, Martin Tschurn, Martin Stutzmann, Ueli Heiz
Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Experimental Semiconductor Physics, Walter Schottky Institute and Physics Department, TU Munich, Chair of Experimental Semiconductor Physics, Walter Schottky Institute and Physics Department, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich, Chair of Experimental Semiconductor Physics, Walter Schottky Institute and Physics Department, TU Munich, Chair of Physical Chemistry, Department of Chemistry & Catalysis Research Center, TU Munich

13:30 X-ray absorption spectroscopy study of nanosized cupric oxide
A. Kuzmin (1), J. Jonane (1), A. Anspoks (1), A. Kalinko (2,3), R. Chernikov (3)
(1) Institute of Solid State Physics, University of Latvia, Kenigara str. 8, LV-1063 Riga, Latvia, (2) Universität Paderborn, Naturwissenschaftliche Fakultät, Department Chemie, Warburger Straße 100, D-33098 Paderborn, Germany, (3) DESY Photon Science, Notkestrasse 85, D-22607 Hamburg, Germany

13:30 Spray-flame synthesis of barium titanate nanoparticles for photocatalytic applications
Alexander Tarasov 1, Yan Xiong 2, Frank Markov 2, Christof Schulz 1, Hartmut Wiggers 1
1 IWS 7 Reactive Fluids and CENIDE, University of Duisburg-Essen, Germany, 2 Max-Planck-Institut für Kohlenforschung, Mülheim

13:30 Approaches for the upsaling of solar water splitting photocathodes
Jan-Philipp Becker, Katharina Weller, Bugra Turan, Vladimir Smirnov, Felix Urbain, Johannes Wolff, Stefan Haas, Friedhelm Finger
IEK-5 Photovoltaik, Forschungszentrum Jülich GmbH, 52425, Jülich, Germany

13:30 Peroxovite oxinite visible light photocatalysts as self-cleaning coatings.
Anita Iliba, Geoffrey Hyett.
University of Southamptom

13:30 Enhanced Solar Photocatalytic Hydrogen Generation with HgS Nanoparticles on ZnO Nanowires
Yu-Sheng Huang and Lih-Juan Chen
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan (R.O.C.)

13:30 Electron/energy transfer interplay in Quantum Dot-lllB) dyads: the role of the connecting unit.
Albert Ruggi
Université de Fribourg, Chemin du Musée 9 Fribourg (Switzerland)

13:30 Fabrication and characterization of copper/cuprous oxide nanowire arrays
Yan Syun Huang, Chien Neng Liao
National Tsing Hua University (Taiwan)

13:30 Formation and evolution of their performance with time of Pd/TiO2 and Pt/TiO2 Schottky diodes
Christian Zimmermann (1), Julie Bonikerud (1), Frank Herktz (1)[2], Edouard Monakov (1), Bengt Gunnar Svensson (1), Lasse Vines (1)
(1) University of Oslo, Department of Physics, Centre for Materials Science and Nanotechnology, PO Box 1048 Blindern, N-0316 Oslo, Norway (2) Department of Physics, Free University Berlin, Arnimallee 14, 14195 Berlin, Germany

13:30 Hematite photoanodes obtained by Aqueous Chemical Growth
D. Stanescu1, S. Stanescu2, A. Besson2, C. Mocuia2, A. Forget1, D. Colson1, H. Magnani
1 Service de Physique de l’Etat Condensé, CEA, CNRS, Université Paris Saclay, CEA Saclay, 91191 Gif-sur-Yvette Cedex, France, 2 Synchrotron SOLEIL, L’Orme des Merisiers, BP-48 Saint-Aubin, F-91922 Gif-sur-Yvette Cedex, France
Ultra-thin Ti-based films for the stabilization and functionalization of photocathodes
Andrea Sartori, Michele Orlandi, Alberto Mazi, Nicola Bazzanella, Serena Berardi, Stefano Caramori, Carlo A. Bignozzi, Antonio Miottelli
Andrea Sartori, Michele Orlandi, Alberto Mazi, Nicola Bazzanella, Antonio Miottelli, Dipartimento di Fisica, Università degli Studi di Trento, T-38123, Povo (Trento), Italy. Serena Berardi, Stefano Caramori, Carlo A. Bignozzi. Dipartimento di Scienze Chimiche e Farmaceutiche, Università degli Studi di Ferrara, Via Fossato di Mortara 17-19, 44100, Ferrara, Italy.

Unfolding photo-anodic water splitting mechanism on iron oxide surfaces via H2O2 reactions
Yotam Y. Avital, Hen Dotan, Bahava Gupta, Iris Visoly-Fisher, Avner Rothschild, Arik Yochelis
Department of solar energy and environmental physics, Swiss institute for dryland environmental and energy research, Blaustein institutes for desert research (BIDR), Ben-Gurion university of the Negev, Sede Boqer campus, midreshet Ben-Gurion, Israel, Department of Materials Science and Engineering, Technion—Israel Institute of Technology, Haifa 32000, Israel. Department of solar energy and environmental physics, Swiss institute for dryland environmental and energy research, Blaustein institutes for desert research (BIDR), Ben-Gurion university of the Negev, Sede Boqer campus, midreshet Ben-Gurion, Israel, Department of solar energy and environmental physics, Swiss institute for dryland environmental and energy research, Blaustein institutes for desert research (BIDR), Ben-Gurion university of the Negev, Sede Boqer campus, midreshet Ben-Gurion, Israel. Department of Materials Science and Engineering, Technion—Israel Institute of Technology, Haifa 32000, Israel. Department of solar energy and environmental physics, Swiss institute for dryland environmental and energy research, Blaustein institutes for desert research (BIDR), Ben-Gurion university of the Negev, Sede Boqer campus, midreshet Ben-Gurion, Israel. Department of Materials Science and Engineering, Technion—Israel Institute of Technology, Haifa 32000, Israel. Department of solar energy and environmental physics, Swiss institute for dryland environmental and energy research, Blaustein institutes for desert research (BIDR), Ben-Gurion university of the Negev, Sede Boqer campus, midreshet Ben-Gurion, Israel.

A facile pulsed-electrodeposition of catalytic nickel oxide films for highly efficient Si-based water splitting photoanode
SHP Lee, Mi Guong Lee, Seokhoon Choi, Ho Won Jang
Department of Materials Science and Engineering, Seoul National University, Seoul, 08826, Korea

Photocatalytic activity of rutile and anatase TiO2 electrodes modified with plasmonic (nano)particles
Olga A. Krysiak, Piotr J. Barczuk, Krzysztof Bie?owski, Jan Augustys?ki
Olga A. Krysiak, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw, Poland and College of Inter- Faculty Individual Studies in Mathematics and Natural Sciences, University of Warsaw, Banacha 2c 02-097, Warsaw, Poland Piotr J. Barczuk, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw Krzysztof Bie?owski, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw Jan Augustys?ki, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw

Photocatalytic activity of rutile and anatase TiO2 electrodes modified with plasmonic (nano)particles
Olga A. Krysiak, Piotr J. Barczuk, Krzysztof Bie?owski, Jan Augustys?ki
Olga A. Krysiak, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw, Poland and College of Inter-Faculty Individual Studies in Mathematics and Natural Sciences, University of Warsaw, Banacha 2c, 02-097, Warsaw, Poland Piotr J. Barczuk, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw Krzysztof Bie?owski, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw Jan Augustys?ki, Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw

Carbon nanotubes modified metal oxide nanocomposites for enhanced photocatalytic performance and photoelectrochemical activity
S. Pokrant (1), S. Dilger (2), S. Landsmann (2), M. Trottmann (3)
(1) Ulster University, UK, (2) Autonomous University of Coahuila, Mexico, (3) University of Minnesota, USA

Designing mesopores in oxynitride single crystals for enhanced photocatalytic and photoelectrochemical activity
S. Pokrant (1), S. Dilger (2), S. Landsmann (2), M. Trottmann (3)
(1) School of Engineering, University of Applied Sciences, Goethestrasse 40, 66117 Saarbrücken, Germany, (2) Laboratory Materials for Energy Conversion, Empa, Überlandstrasse 129, 8600 Dübendorf, Switzerland, (3) Laboratory of Advanced Analytical Technologies, Empa, Überlandstrasse 129, 8600 Dübendorf, Switzerland

Development by Low-Frequency PECVD process of Nitrogen-doped TiO2 Thin Films for Water Photo-oxidation by Solar Energy
Loraine YOUSSEF, Stéphanie ROULÉDAS, Joëlle BASSIL, Mirval ZAKHOUR, Michel NAHKIH, Vincent ROUESSEAC, André AYRAL
Loraine YOUSSEF, European Membrane Institute, University of Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, FRANCE and Laboratory of Physical Chemistry of Materials /Platform of Research in Nanosciences, Université Montpellier, B.P.90665 Fanar-Jeideed el Met, LEBANON. Stéphanie ROULÉDAS, European Membrane Institute, University of Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, FRANCE, Joëlle BASSIL, Lebanese University, B.P.90665 Fanar-Jeideed el Met, LEBANON, Mirval ZAKHOUR, Laboratory of Physical Chemistry of Materials /Platform of Research in Nanosciences, Lebanese University, B.P.90665 Fanar-Jeideed el Met, LEBANON. André AYRAL, European Membrane Institute, University of Montpellier, Place Eugène Bataillon, 34095 Montpellier Cedex 5, FRANCE.

Multimaterial titania-based photocatalytically active thin films on model surfaces and textiles prepared by LBL self-assembly
Marvin Motay, David Martel, Olivier Felix, Charline Soraru, Valérie Kéler, Lydie Ploux, Lavinia Balan, Gero Decher, Nicolas Keller
Institut de Chimie et Procédés pour l’Energie, l’Environnement et la Santé (ICPEES), CNRS, Strasbourg University, 25 rue Becquerel, Strasbourg, France, Institut Charles Sadron (ICS), CNRS, Strasbourg University, 23 rue du Lôes 67034 Strasbourg, France, Institut des Sciences des Matériaux de Mulhouse (IS2M), CNRS, Hauts-ALsace University, 15 rue Jean Starzyk 68057 Mulhouse, France

Carbon nanotubes modified metal oxide nanocomposites for enhanced Photoelectrochemical water splitting and Photo catalysis
Deepthi Chaudhary, Neeraj Khare, V. D. Vankar
Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110016, India

CO2 photocatalysis products and reaction kinetics observed with modified photocatalysts
Jeremy W.J. Hamilton*, 1 Maria Ana L.R.M. Cortes, 1 Preetam K. Sharma, 1 Alan Brown, 1 J. Anthony Byrne, 1 M. Nolan, 2 K.A. Gray, 3 J. Notestein, 3 E. Weitz 3
1 Ulster University, Ballymena, Northern Ireland, 2 Tyndall National Institute, Cork, Ireland, 3 Northwestern University, Evanston, IL, USA

Investigating the catalytic oxygen activation over Pt-TiO2/SiO2 binary oxide catalysts under dark and light conditions
Wibawia Hendra Saputera, Jason Scott*, Emma Lovell, Donia Friedmann, Rose Amal*
Particles and Catalysis Research Group, School of Chemical Engineering, University of New South Wales, Australia

Multicomponent Metal-Metal Oxide Mesocrystals: Synthesis, Formation Mechanism and Photocatalytic Applications
Darinka Primc
Department of Materials, Imperial College London, South Kensington Campus, London SW7 2AZ, London, Laboratory for Multifunctional Materials, Department of Materials, ETH Zurich, 8093 Zurich, Switzerland
## 08:30 Photo-electrochemical studies (M.N) of co-alloyed TiO2-NTs with improved visible light absorption. (Invited)

Thomas Coutinno, Thomas Favel, Valérie Keller  
CNRS / Université de Strasbourg. Institut de Chimie et Procédés pour l’Energie, l’Environnement et la Santé

### 09:00 Effects of SnO2 buffer layer thickness on materials and photoelectrocatalytic properties of BiVO4-based photoanode

Segi Byun, Bumsoo Kim, Seokwoo Jeon, Byungha Shin  
Korea Advanced Institute of Science and Technology (KAIST)

### 09:15 Elucidating the dynamics of photogenerated holes and charge separation in WO3/BiVO4 heterojunction photoanodes

Carles Rafols i Belles, Andreas Kafizas, Ehsan Ahmad  
Department of Chemistry, Imperial College London, Kensington, London SW7 2AZ

### 09:30 TiO2-carbon dots hybrid materials for electrophotocatalysis applications

Delphine Schaming, Baptiste Notebeart, Saoud Ammar  
ITODYS, University Paris Diderot, Sorbonne Paris Cité, UMR 7086 CNRS, 13 rue Jean-Antoine de Baïf, 75013 Paris, France

### 09:45 Sonochemically Assisted In situ Electrochemical Synthesis of Ag/a-Fe2O3/TiO2 Nanotube-Arrays for Solar Mediated PEC Water Split

Ibrahim Khan, Ahsaulhaq Qurashi  
Department of Chemistry, King Fahd University of Petroleum & Minerals (KFUPM), KSA. Center of Research Excellence in Nanotechnology, King Fahd University of Petroleum & Minerals (KFUPM), KSA

### 10:00 Incident angular and intensity illumination dependence of integrated photoelectrochemical water splitting devices

Katharina Welter 1, Vladimír Strmíkov 1, Jan-Philipp Becker 1, Wolfram Jaegermann 2, Friedhelm Finger 1  
1 IEK-9 Photovoltaik, Forschungszentrum Jülich GmbH, D-52425, Jülich, Germany. 2 Institute of Materials Science, TU Darmstadt, D-64287 Darmstadt, Germany

### 10:15 Coffee Break

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### 10:45 Optical penetration in a flow photocatalytic reactor

Hoai Nga Le, Supreeth Venkatraman, Frank Babick, Klaus Kühn, Michael Stintz, Gianaurerio Cuniberti  
Institute for Materials Science and Max Bergmann Center of Biomaterials, Technische Universität Dresden (TUD), Germany. Institute of Urban and Industrial Water Management, TUD, Germany. Institute of Process Engineering and Environmental Technology, TUD, Germany. Institute of Materials Science and Max Bergmann Center of Biomaterials, TUD, Germany. Institute of Process Engineering and Environmental Technology, TUD, Germany. Institute for Materials Science and Max Bergmann Center of Biomaterials, TUD, Germany

### 11:00 Application and modelling of a new fixed-bed photocatalytic membrane reactor (FPMR)

PHAN Duy Dung, Frank Babick, Michael Stintz  
Institute of process engineering and environmental technology, Technische Universität Dresden, 01062 Dresden, Germany

### 11:15 The impact of copper on the anatase to rutile transition in titanium dioxide and the photocatalytic properties

Gia Byrne (1&2), Lorraine Moran (3), Michael Nolan (4), Daphne Hermosilla (5), Steven Hinder (6), Suresh Pillai (1&2)  
1 Nanotechnology and Bio-engineering Research Group, Department of Environmental Science, Institute of Technology Sligo, Sligo, Ireland. 2 Center for Precision Engineering, Materials and Manufacturing Research (PEM), Institute of Technology Sligo, Sligo, Ireland. 3 Department of Life Sciences, Institute of Technology Sligo, Sligo, Ireland. 4 Tyndall National Institute, University College Cork, Lee Mallings, Dyke Parade, Cork, Ireland. 5 Department of Agricultural and Forest Engineering, University of Valladolid, Campus Duques de Soria, 42009 Soria, Spain. 6 The Surface Analysis Laboratory, Faculty of Engineering and Physical Sciences, University of Surrey, Guildford, Surrey, GU2 7XH, United Kingdom

### 11:30 Photoelectrodes for Water Splitting : Bunsho Ohtani

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### 11:45 Transient phenomena in photocatalysis, as studied by ultrafast FTIR measurements (Invited)

Yaron Paz  
Department of Chemical Engineering, Technion, Haifa 32000, Israel

### 11:55 The effect of graphene size on the photocatalytic activity of TiO2 based composite films

Y. Song, F. Massuyeau, P. Le Rendu, L. Yang, Y. Dan, T. P. Nguyen  
Y. Song a,b, F. Massuyeau a, P. Le Rendu a, L. Yang b, Y. Dan b, T. P. Nguyen a*  
a Institut des Matériaux, Jean Rouxel, 2 rue de la Housinière, BP30293, 44322 Nantes, France  
b State Key Laboratory of Polymer Materials Engineering of China, Polymer Research Institute of Sichuan University, Chengdu 610065, PR China

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### 12:00 Order of magnitude increase in photocatalysis for hierarchically porous anatase thin films

Nathanya J Platt, Karl M Kaye, Gregory J Limburn, Samuel D Cosham, Alexander N Kulak, Robert G Palgrave, Geoffrey Hyett*  
University of Southampton, Southampton, UK. UCL, London, UK. University of Leeds, Leeds, UK
SYMPOSIUM G

Materials for improving energy storage battery technologies

Symposium Organizers:

Belabbes MERZOUGUI, Hamad Ben Khalifa University, Doha, Qatar

Joan Ramon MORANTE, IREC Catalonia Institute for Energy Research, Spain

Mike L. PERRY, United Technologies Research Center, Silver Lane, USA

Minhua SHAO, The Hong Kong University of Science and Technology, Kowloon, Hong Kong

Published in Electrochimic Acta (Elsevier)
09:00 All-solid-state sodium ion batteries with NaSICON and β''-alumina solid electrolytes
P. Kehne, C. Guhl, Q. Ma, Frank Tietz, P. Komissinskyy, R. Hausbrandt
Department of Materials Sciences, TU-Darmstadt, Advanced thin film technology, Department of Materials Sciences, TU-Darmstadt, Surface science, Materials Development, Forschungszentrum Jülich, 52425 Jülich, Germany, Helmholtz-Institut Münster, Forschungszentrum Jülich GmbH, D-52425 Jülich, Germany, Department of Materials Sciences, TU-Darmstadt, Advanced thin film technology, Department of Materials Sciences, TU-Darmstadt, Surface science.

09:30 Structural and Electronic Properties of NaVOPO4 polymorphs as Cathode Materials for Na-Ion Batteries
Pablo A. Aparicio (1), Safiul Islam (2), Nors de Leeuw (1,3)
(1) School of Chemistry, Cardiff University, Main Building, Park Place, Cardiff CF10 3AT, United Kingdom, (2) Department of Chemistry, University of Bath, Claverton Down, Bath BA2 7AY, United Kingdom, (3) Department of Chemistry, University College London, 20 Gordon Street, London, United Kingdom.

09:45 Synthesis and electrochemistry of sodium iron fluorophosphate synthesized by combustion method for rechargeable sodium batteries
Lailt Sharma, Sylvain Franger, Prabear Baparda
Lailt Sharma, Faraday Materials Laboratory, Materials Research Center, Indian Institute of Science, Bangalore, India, Sylvain Franger, Institut de Chimie Moléculaire et des Matériaux d’Orsay Université Paris Sud / Université Paris-Saclay, Orsay, France, Prabear Baparda, Faraday Materials Laboratory, Materials Research Center, Indian Institute of Science, Bangalore, India.

10:00 The Effects of RuO2 Catalyst on Na-O2 Battery Electrochemistry
Mohammad Fahtti Tovini, Eda Yilmaz
Institute of Materials Science and Nanotechnology, National Nanotechnology Research Center (UNAM), Bilkent University, Ankara, Turkey 06800

10:15 Carbon coated Ultrafine Fe2O3 Nanoparticles Embedded in Ordered Mesoporous Carbons (CMK-8) Framework for Sodium-Ion Batteries
Purna Chandra Rath, Hsien Ming Kao
National Central University

10:30 coffee break

11:00 Hierarchical Architectures of Various Metal Oxides Decorated Ultrathin 2D Nanosheets for High-Performance Li- and Na-Ion Storage
Dezhi Kong, Ye Wang, Hui Ying Yang
Pillar of Engineering Product Development, Singapore University of Technology and Design, 8 Somapah Road, Singapore 487372, Singapore

11:30 Na7V4(P2O7)4PO4 as an Amphoteric Active Phase in Sodium Ion Batteries
Soo Young Lim, Jang Wook Choi
Graduate School of Energy, Environment, Water, and Sustainability (EEWS), Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

11:45 Various WS2/carbonaceous Hierarchical Architectures for High-performance Rechargeable Lithium-ion and Sodium-ion Batteries
Ye Wang, Dezhi Kong, Hui Ying Yang
Pillar of Engineering Product Development, Singapore University of Technology and Design

12:00 Facile, energy-savvy synthesis of Ti-based anodes for Li and Na ion batteries—Study of electrochemical and diffusion mechanism
A. Daya Mani*, P. Barpanda
Dr. A. Daya Mani- Faraday Materials Laboratory, Materials Research Centre, Indian Institute of Science Bangalore, Karnataka, India-560012. Dr. P. Barpanda- Faraday Materials Laboratory, Materials Research Centre, Indian Institute of Science Bangalore, Karnataka, India-560012.

12:15 Lunch

13:00 Silicon Framework Allotropes for Li-ion and Na-ion Batteries: New Insights for a Reversible Capacity
Asma Marzouk (a), Fernando A. Soto (b), Juan Carlos Burgos (b), Perla B. Balbuena (b), Fadwa El-Mellouhi (b)
(a) Qatar Environment and Energy Research Institute (QEERI), Hamad Bin Khalifa University, PO BOX 34110, Doha, Qatar, (b) Department of Chemical Engineering, Texas A&M University, College Station, Texas 77843, United States

13:15 Degradation of polyethylene separator with PVdF-HFP coating after ageing in a Li-ion battery: impact on performances
X. Fleury, S. Genes, P. X. Thivel
CEA/LITEN, F-38054 Grenoble, France and Univ. Grenoble Alpes, LEPMI, F-38000 Grenoble, France, CEA/LITEN, F-38054 Grenoble, France, Univ. Grenoble Alpes, LEPMI, F-38000 Grenoble, France

13:30 Garnet-type ionic conductors for all-solid-state lithium ion batteries
Jian-Fang Wu, Lu Wei, Xin Guo
Laboratory of Solid State Ionics, School of Materials Science and Engineering, Huazhong University of Science and Technology, Wuhuan 430074, P. R. China

14:30 Silicon Framework Alloptopes for Li-ion and Na-ion Batteries: New Insights for a Reversible Capacity
Asma Marzouk (a), Fernando A. Soto (b), Juan Carlos Burgos (b), Perla B. Balbuena (b), Fadwa El-Mellouhi (b)
(a) Qatar Environment and Energy Research Institute (QEERI), Hamad Bin Khalifa University, PO BOX 34110, Doha, Qatar, (b) Department of Chemical Engineering, Texas A&M University, College Station, Texas 77843, United States

16:30 Controlling Li2O2 morphologies via NiFeOx nanofibers for high-performance Li-Ion batteries
Jiaqiang HUANG, Baoling HUANG, Jang-Kyo KIM
Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong

17:30 Effect of oxygen vacancy in electrochemical performance of CoMn2O4 cathode
Zoya Sadighi, Jiaqiang Huang, Lei Qin, Shanshan Yao, Jiang Cui, Jang-Kyo Kim
Faraday Materials Laboratory, Materials Research Center, Indian Institute of Science Bangalore, Karnataka, India-560012. Dr. A. Daya Mani- Faraday Materials Laboratory, Materials Research Centre, Indian Institute of Science Bangalore, Karnataka, India-560012.
One-dimensional reduced graphene oxide/V2O5 nanobelts as a cathode material for lithium-ion batteries

Won G. Hong1, Sang Moon Lee1, Jin Ba Lee1, Byung Hoon Kim2 and Hae Jin Kim1* 1Division of Electron Microscopy Research, Korea Basic Science Institute, Daejeon 305-333, Republic of Korea, 2Department of Physics, Incheon National University, Incheon 406-772, Republic of Korea

Electrode Materials for Lithium and Post-lithium Ion Batteries

Charaf Cherkiouk1, Max Stöber1, Tina Nestler1, Tilmann Leisegang1, Matthias Schelter1, Jens Zesot2, Sławomir Puzniak3, Dirk C. Meyer1 1Institute for Experimental Physics, TU Bergakademie Freiberg, Leipziger Straße 23, 09596 Freiberg, Germany, 2Kurt-Schwabe Institute for Measuring and Sensor Technology Meinsberg, Fabrikstraße 69, 04720 Ziegra-Knobelsdorf, Germany, 3Institute of Beam Physics and Materials Research, Helmholtz-Zentrum Dresden Rossendorf, Bautzner Landstraße 400, 01314 Dresden, Germany

Morphology controlled Ti doping of hematite as high performance negative electrodes in Lithium ion batteries

Nan Shen1, Miriam Keppeler1, Barbara Stiaszny2, Holger Hain2, Filippo Maglia2, Madhavi Srinivasan1 1BMW-NTU Future Mobility Research Lab, Nanyang Technological University, School of Materials Science and Engineering and Energy Research Institute at Nanyang (ERI@N), Research Techno Plaza, X-Frontier Blk, 50 Nanyang Drive, Singapore 637553, Singapore, 2BMNW Group, Petuelring 130, 80788 München, Germany.

Wednesday 24 May 2017

Semisolid and Flow Batteries:
J.R. Morante and Belabbes A. Merzougui

09:00 Improved slurries formulations for high-performance semi-solid flow batteries
Cristina Flox 1, Jordi Jacas 1, M. González-Castano 1, J. R.Morante 1,2 1. Catalonian Institute for Energy Research, IREC, Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besos, Barcelona, Spain, 2. Departament de Física, Universitat de Barcelona, Martí i Franquès 1, 08028 Barcelona, Spain

09:30 Flow Batteries from Materials to Systems, Challenges and Opportunities
Rachid Zaffou and Belabbes Merzougui
Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Doha, Qatar

10:00 An improved suspension recipe for Semi Solid Flow Batteries
Jordi Jacas Biendicho1*, Cristina Flox1 and Joan Ramon Morante1,2 1Catalonian Institute for Energy Research, Jardins de les Dones de Negre, 1, 08930 Sant Adrià de Besos (Spain), 2Departament de Física, Universitat de Barcelona, C. de Martí i Franquès 1, 08028 Barcelona (Spain)

10:15 Study of Slurry Electrode for Flow Cell Energy Storage Systems
Ahmed Solić, Belabbes Merzougui, Rachid Zaffou 1College of Science and Engineering, Qatar Environment and Energy Research Institute, Hamad Bin Khalifa University, Doha, Qatar

10:30 coffee break

Flow Redox Batteries and Air Metal Batteries:
J.R. Morante and Belabbes A. Merzougui

10:45 Post thermal modification of rutile-TiO2 seed on graphite core structure for high-performance vanadium redox flow batteries
Javier Vazquez-Galvan. [a] Cristina Flox [a] and Joan Ramon Morante [a,b] [a] Department of Advanced Materials for Energy Catalonia Institute for Energy Research. [b] Departament de Física, Universitat de Barcelona, Spain. Jardins de les Dones de Negre, 1, 08930 Sant Adrià de Besos, Barcelona. fjvazquez@irec.cat

11:00 Vanadium Redox Flow Battery parameters optimization
Seyedabolfazl Mouavvihosseini (*a,b), Miriam Gómez-Castano (b), Cristina Flox (b), Mir Ghasem Hosseini (a), Joan Ramón Morante (b), a departament of Physical Chemistry, Electrochemistry Research Laboratory, University of Tabriz, Tabriz, Iran. b IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930. Sant Adrià de Besos, Spain

11:15 Carbon nitride species for VRFBs: synthesis method relevance
M. González-Castano, S. Murcia, C. Flox, J.R. Morante IREC, Catalonia Institute for Energy Research. Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besos, Spain

11:30 Sulfidation of Ni/Mn Layered Double Hydroxides as Oxygen Evolution Reaction Catalyst for Rechargeable Zn–Air Batteries
Afrinath Sumboja (a), Jingwei Chen (b), Yun Zong (*a), Poo See Lee (*b), and Zhao Lin (a) (a) Institute of Materials Research and Engineering (IMRE), A*STAR (Agency for Science, Technology and Research), 2 Fusionopolis Way, Innovis, #08-03, 138634, Singapore, (b) School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Blk N4 1, 639798, Singapore. *email: zl-liu@imre.a-star.edu.sg, y-zong@imre.a-star.edu.sg

12:00 Mussel-Inspired Facile Synthesis of CoFe2O4/CoFe/C-PDA Porous Nanofibers as Efficient Oxygen Electro catalyst for ZnABs
Jia Ming Ang, Bing Li, Shibo Xi, Yonghua Du, Chenyang Zhao, Junhua Kong 1BMW-NTU Future Mobility Research Lab, Nanyang Technological University, School of Materials Science and Engineering, Nanyang (ERI@N), Research Techno Plaza, X-Frontier Blk, 50 Nanyang Drive, Singapore 637553, Singapore, 2BMNW Group, Petuelring 130, 80788 München, Germany.
SYMPOSIUM H

Inorganic thermoelectrics - linking material properties and systems engineering for XXI century applications

Symposium Organizers:

Bertrand LENOIR, CNRS - Université Lorraine, Nancy, France

Jan D. KÖNIG, Fraunhofer IPM, Freiburg, Germany

Marisol MARTIN-GONZALEZ, Instituto de Microelectronica de Madrid, Spain

Min GAO, Cardiff University, U.K.
Tuesday 23 May 2017

Theory I: Ziani Xanthippe

08:30 Electronic transport simulations in nanocomposites – exploring the features that optimize the thermoelectric power factor
  Samuel Foster, Mischa Theisberg, Hans Kosina, and Neophyto Neophytou
  School of Engineering, University of Warwick, institute for Microelectronics, Vienna University of Technology

09:00 Giant Enhancement of Thermoelectric Figure-of-merit in Si-based Materials by Nanostucturing
  yanguang Zhou, Ming Hu
  Aachen Institute for Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany

10:00 Coffee break

10:30 Resonant states: an alternative pathway to boost thermoelectric properties in
  Hierarchical material design for thermoelectric materials: a multiscale computational and experimental paradigm
  Stefano Leonzi (1), Luis Crocco (2), Duncan Hardie (1)
  (1) School of Chemistry, Cardiff University, Cardiff, CF10 3AT, UK
  (2) Instituto de Física, Universidade Federal de Mato Grossso, 78060-900, Cuiabá, MT, Brazil

10:45 Improvement of Thermoelectric Performance of spark plasma sintered Sn doped Cu3SbSe4: a promising thermoelectric material
  Biyao Wu, Ming Hu
  Institute of Mineral Engineering, RWTH Aachen University, Institute of Mineral Engineering, RWTH Aachen University

11:00 On the maximization of the thermoelectric cooling of graded Peltier by analytical heat equation resolution.
  Etienne Theibaut, Christophe Goupil, François Pesty, Yves D’Angelo, Guillaume Guegan, Philippe Lecoeur
  Centre de Nanosciences et de Nanotechnologies (C2N), Orsay, France, Laboratoire Interdisciplinaire des Energies de Demain (LIED), Paris, France, Centre de Nanosciences et de Nanotechnologies (C2N), Orsay, France, Laboratoire de Mathématiques J.A. Dieudonné, Nice, France, STMicroelectronics, Tours, France, Centre de Nanosciences et de Nanotechnologies (C2N), Orsay, France

11:15 Role of Rattlers in Engineering Thermoelectric Silicon Tetrahedral Cage Framework
  Jia Yue Yang, Ming Hu
  Institute of Materials Engineering, Division of Material Science and Engineering, Faculty of Geosources and Materials Engineering, RWTH Aachen University, 52056 Aachen, Germany

11:30 First-Principles Study of the Transport Properties in Bulk and Monolayer MX3 (M = Ti, Zr, Hf and X = S, Se) Compounds.
  Yasin Saeed, Ali Kachmar, Marcello A. Carignano
  Qatar Environment and Energy Research Institute (QUERI), Hamad Bin Khalifa University (HBKU), Qatar Foundation, P.O. Box 5825, Doha, Qatar

11:45 Enhanced thermoelectric efficiency of SnO2 at room temperature under biaxial strain
  Zineb Kerrami, Anass Sibari, Omar Mounkachi, Abdellah Benyoussef, Mohammed Benissa
  Zineb Kerrami (Faculty of Sciences University Mohammed V Rabat, Morocco), Anass Sibari (Faculty of Sciences University Mohammed V Rabat, Morocco), Omar Mounkachi (Institute of Nanomaterials and Nanotechnology MASOrR Rabat, Morocco), Abdellah Benyoussef (Institute of Nanomaterials and Nanotechnology MASOrR Rabat, Morocco, Hassan II Academy of Science and Technology Rabat, Morocco), Mohammed Benissa (Faculty of Sciences University Mohammed V Rabat, Morocco)

12:00 Lunch

Advances in Chalcogenides : Benjamin Balke

13:00 Detailed reinvestigation of the thermal properties of single-crystalline SnSe
  Dorra Ibrahim, Jean-Baptiste Vaney, Selma Sassi, Christophe Candoll, Viktoria Ogrodnichuk, Petr Levinsky, Philippe Masschelein, Anne Dauscher, Bertrand Lenoir
  Institut Jean Lamour, UMR 7198 CNRS – Université de Lorraine, Parc de Saurupt, Cité 50840, P-54011 NANCY Cedex, France

14:00 InSbSe3 as a thermoelectric material:
  approach es in enabling Hight power conversion efficiency in polycrystalline system
  Pankaj Kumar Rawat

14:15 Selective chemical vapour deposition of the thermoelectric chalcogenides Bi2Te3 and Sb2Te3
  R. Huang and C.H. de Groot
  Electronics & Computer Science and Chemistry, University of Southampton, SO17 1BJ Southampton, United Kingdom

14:30 Effect of nano inclusions on simultaneous improvement in electron transport and phonon scattering properties Bi2Te3 nanocomposite
  Khushboo Agarwal, Mujeeb Ahmad, Deepak Varadari and B. R. Mehta
  Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi New Delhi, 110016, India

14:45 Screening of thermoelectric half-Heuslers using the figure-of-merit from first principles
  Ole Martin Løvvik, Kristian Berland
  SINTEF Materials and Chemistry, Center for Materials and Nanotechnology, University of Oslo, Center for Materials and Nanotechnology, University of Oslo

15:00 Enhanced thermoelectric properties in pulsed laser deposition-prepared Bi0.5Sb1.5Te3 thin films on solid and flexible substrate
  E. Symeuou, Ch.Nicolaou, G. Giapintzakis
  Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Ave., PO Bx 20537, 1678 Nicosia, Cyprus

15:15 New approach in the growth of thin films of Selenides (P and N Type) with high figures of merit
  J.A. Perez-Tobatorda, F. Bronnes and M S Martin-Gonzalez
  Instituto de Microelectrónica de Madrid, CSIC, 28760 Tres Cantos, Madrid, Spain

15:30 Ion-track etched templates for the high density growth of nanowire arrays of bismuth telluride alloys
  Kallipoleos Av., PO Box 20537, 1678 Nicosia, Cyprus

15:45 Improvement of Thermoelectric Performance of spark plasma sintered Sn doped Cu3SbS4: a promising thermoelectric material
  Kriti Tyagi, Nagendra Singh Chauhan, Bhasker Gahtori, Bathula Sivaiah, Ajay Dhar and K. Greenivas
  Department of Physics, Delhi University, Delhi CSIR - National Physical Laboratory, New Delhi

16:00 Coffee break
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<td>08:30</td>
<td>Materials research, theoretical guidance and requirements for device development: New and traditional approaches with consistent requirements</td>
<td>H 5.1</td>
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<td>09:00</td>
<td>Synthesis of one-dimensional thermolectric Te-based nanostructures</td>
<td>H 5.2</td>
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<td>09:15</td>
<td>Figure of merit of Bi2Te3 thermolectric nanowires</td>
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<td>Synthesis of one-dimensional thermoelectric Te-based nanostructures</td>
<td>H 5.4</td>
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<td>09:45</td>
<td>High thermoelectric performance of p-type solution processed SnTe</td>
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<td>10:00</td>
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<td>10:30</td>
<td>Novel Approaches: Bertrand Lenoir</td>
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<td>High thermoelectric performance of p-type solution processed SnTe</td>
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<td>Synergetic Combination Ion Beam Sputtering with Post-annealing Process:</td>
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<td>11:15</td>
<td>Forest of Silicon Nanowires of Modulated Diameter for Thermoelectrics</td>
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<td>11:30</td>
<td>Engineering amorphous Silicon for thermolectric performance improvement</td>
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<td>Effect of ultrashort laser surface nanostructuring on the evolution of thermolectric properties</td>
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<td>12:00</td>
<td>Lunch</td>
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<td>13:30</td>
<td>Recent progress of thermolectric devices or modules in Japan</td>
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<td>Quest for n-type Zintl Thermoelectrics</td>
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<td>Enhancing the Thermoelectric Performance of Boronite by Parent Element Doping</td>
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<td>Mg ion implantation of ScN thin film for reduced thermal conductivity and improved Seebeck coefficient</td>
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<td>14:45</td>
<td>A New Nanosizing Approach: Bismuth based nanocomposite thermoelectrics</td>
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<td>15:00</td>
<td>Insights into the thermolectric properties of the Cu2Ge(S1-xSex)3 solid solutions</td>
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<td>Coffee break</td>
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<td>16:15</td>
<td>Plenary Session</td>
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New approaches and Half-Heusler: Michihiro Ohta

08:30 Tailoring Electronic and Phononic Properties of Nanomaterials: Towards Improved Thermoelectricity
Olga Caballero-Caleru, Roberto D’Agosta
Spain

09:00 Material design of thermoelectrically highly efficient Heusler compounds for the XXI century: Upscaling and economic point of view
Benjamin Balke, Daniel Zuckermann
Institute for Materials Science, University of Stuttgart, Stuttgart, Germany, Isabellennhütte Heusler GmbH & Co. KG, Dillenburg, Germany

09:15 Enhanced Thermoelectric Performance of Half-Heusler Compounds via Nanostructuring
Wenjie Xie, Tianhua Zou, Xiaoxia, Max Widenmeyer, Anke Weidenkaff
Institute for Materials Science, University of Stuttgart, Heisenbergstr. 3, DE-70569, Stuttgart, Germany

09:30 Acoustic phonons lifetime and thermal conductivity in complex thermoelectric crystal structure
S. Païhé(1), V. Gioriando(1), S. Turner(1), P-F Lory(4), M. De Boissieu(3)
1. Institute of Light and Matter. UMR5586, CNRS, University Lyon - Villeurbanne, France. 3. Univ. Grenoble Alpes, SIMAP, Grenoble, France. 4. Instituto Laue-Langevin, Grenoble, France.

09:45 Solution-Based Synthesis and Processing of Doped Cu-based Nanocrystals, Nanomaterials and Thermoelectric Generators
Yu Liu1, Gregorio García 2,3, Silvia Ortega1, Doris Cadavid 1, Pablo Palacios 2,4, Silvia Ortega1, Doris Cadavid 1, Pablo Palacios 2,4, N. Singh(3), J. König(2), S. Pailhès(1), V. Giordano(1), S. Turner(1), P-F Lory(4), M. De Boissieu(3), L. Vera2, R. Sanz*, M. Martín-González
Instituto de Microelectrónica de Madrid (CSIC), Tres Cantos, Spain. 2. Instituto de Energia Solar, ETSI Telecomunicación, Universidad Politécnica de Madrid, 28040, Madrid, Spain.*email: lera@etsit.upm.es 3. Departamento de Tecnología Fotónica y Bioingeniería, ETSI Telecomunicación, Ciudad Universitaria, s/n, 28040 Madrid, Spain. 4. Departamento de Física Aplicada a las Ingenierías Aeronáutica y Naval, ETSI Aeronáutica y del Espacio, Pz. Cardinal Cisneros, 3, 28040 Madrid, Spain. 5. ICREA, Pg. Lluís Companys 23, 08010 Barcelona, Spain

10:00 Coffee break

Theory and measurements: Nicolas Stein

10:30 Phenomenological Thermoelectric Property Diagram (PTPD) for accelerated discovery of new thermoelectric materials
Gao Min
School of Engineering, Cardiff University The Parade, Cardiff, UK, CF24 3AA

10:45 Means to an end: low dimensionality and disorder for low thermal conductivity
Robin Lefèvre, Franck Gascoin, David Berthebaud, Olivier Pérez, Denis Pelloquin, Oleg Lebedev, Sylvie Hébert.
Laboratoire CRISMAT UMR6508 6 Blvd du Maréchal Juin 14050 Caen Cedex 4, France

11:00 Towards an enhancement on the efficiency of thin film thermoelectric generators (TFTG) by using poor thermal conductors substrat
Grupo MIRE, Dpto. de Física de Matériales, Universidad Autónoma de Madrid, C/Tomás y Valiente 7, 28049, Madrid, España *Departamento de Física Aplicada, Universidad Autónoma de Madrid, C/Tomás y Valiente 7, 28049, Madrid, España

11:15 Chemical and Transport Properties of p-Type Polycrystalline SiGe for the High Temperature Seebeck Coefficient NIST SRM®
Joshua Martin, Winnie Wong-Ng, Dezhig Wang, Zhilefeng Ren
Joshua Martin, Material Measurement Laboratory. National Institute of Standards and Technology. 100 Bureau Drive MS8520, Gaithersburg, MD 20899, Winnie Wong-Ng, Material Measurement Laboratory, National Institute of Standards and Technology, 100 Bureau Drive MS8520, Gaithersburg, MD 20899, Dezhig Wang, Department of Physics and TsSUH, University of Houston, Science and Research Building 1, 3507 Cullen Blvd., Houston, Texas 77204, Zhilefeng Ren, Department of Physics and TsSUH, University of Houston, Science and Research Building 1, 3507 Cullen Blvd., Houston, Texas 77204

11:30 3w SThM: Thermal Conductivity of TiO2 Nanotubes Filled with Polycarbonate
Liliana Vera, Pedro Resende, Ruy Sanz, Marisol Martín-González
Instituto de Microelectrónica de Madrid (CSIC), Tres Cantos, Spain.

11:45 Hybrid inorganic-organic materials for a new generation of thermoelectric devices
Mario Culebras, José F. Serrano-Claumarchaim, Ana. M. Igual, Andrés Cantarero, Clara M. Gómez
Mario Culebras.Materials Science Institute, University of Valencia, Cal Jose Beltran, 2 46980 Paterna Valencia, Spain, José F. Serrano-Claumarchaim. Materials Science Institute, University of Valencia, Cal Jose Beltran, 2 46980 Paterna Valencia, Spain, Ana. M. Igual.Materials Science Institute, University of Valencia, Cal Jose Beltran, 2 46980 Paterna Valencia, Spain, Andrés Cantarero.Molecular Science Institute, University of Valencia, PO Box 22085, 46071 Valencia, Spain, Clara M. Gómez.Materials Science Institute, University of Valencia, Cal Jose Beltran, 2 46980 Paterna Valencia, Spain

12:00 lunch

21st century devices and applications: Jan König

13:45 The challenge of Infusing New Thermoelectric Materials into Next Generation Space Power Systems
Jean-Pierre Fleural
Jet Propulsion Laboratory, California Institute of Technology

14:15 Fabrication of thermoelectric far-infrared sensors based on SiGe membranes
P. O. Vaccaro (1,2), J. M. García (1,3), G. Lebedev (1,4), B. Gao (1,2)
1 (1) Instituto de Ciencia de Materiales de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193 Bellaterra, Spain (2) ICREA, Passeig Lluís Companys 23, 08010 Barcelona, Spain

14:30 Large Area Thermoelectric Generators Composed by Fabrics of Silicon-Germanium Nanotubes
Alex Morata, Gerard Gadea, Mercè Pasios, Cristina Flox, Albert Tarancón
ICREC, Catalonia Institute for Energy Research, Dept of Advanced Materials for Energy Applications, Jardins de les Dones de Negre 1, Planta 2, 08930, Sant Adrià del Besós, Barcelona, Spain.

14:45 Thermoelectric bolometers based on heavily doped ultra-thin silicon membranes
Aapo Varpula, Andrey V. Timofeev, Andreu Pujol, Kestutis Grigoras, Juha Hassel, Jouni Ahopelto, Markku Ylilammi, Mika Prunnila
VTI Technical Research Centre of Finland Ltd, Tietotie 3, 02150 Espoo, Finland

15:00 LOW-DIMENSIONAL AND NANOSTRUCTURED THERMOELECTRICS FOR LARGE-AREA SENSING APPLICATIONS
T. Juntunen, M. Ruoho, H. Jussila, Z. Sun, and I. Tilton
Department of Electronics and Nanoengineering, Aalto University, P.O. Box 13500, FI-00076 Aalto, Finland

15:15 Nanomaterial-solutions to shape-adaptable thermoelectric devices
Silvia Ortega 1, Albert Massaguer 2, Toni Pujol 2, Andreu Cabot 1,3, Doris Cadavid 1 1 Catalonia Institute for Energy Research – IREC, 08930 Sant Adrià de Besós, Barcelona, Spain. 2 Departamento d’Enginyeria Mècnica i de la Construcció Industrial, Universitat de Girona, 17003 Girona, Spain. 3 Catalan Institution for Research and Advanced Studies – ICREA, Pg. Lluís Companys 23, 08010 Barcelona, Spain

15:30 Thermoelectric nanogenerator networks: a viable source of power for connected sensors?
D. Tainoff, C. Tur, Y. Crozes, S. Dufresnes, D. Bourgault. O. Bourgeois.
Institut NEEL CNRS/UGA UPR2940, 25 rue des Martyrs BP 166, 38042 Grenoble, France.

15:45 Thermoelectric properties of the layered rhodates Kx[(RhO2)(2) and Na(x)RhO2(2)]
U. Schwingenschlögl, Y. Saeed, N. Singh
King Abdullah University of Science and Technology (KAUST), Physical Science and Engineering Division (PSE), Thuwal 21537, 1678 Nicosia, Cyprus, (c) Department of Materials Science and Technology, Advanced Studies – ICREA, Pg. Lluís Companys 23, 08010 Barcelona, Spain

16:00 Coffee break

Advances in Oxides: Anke Weidenkaff

16:15 Impact of the microstructure on the thermoelectric performance of La1-xSr0.5+x
Z. Viskadourakis (a), G.I. Athanasopolous (b), E. Kasotakis (c), J. Giapintzakis (b)
(a) Crete Center for Quantum Complexity and Nanotechnology, University of Crete, P.O. Box 2208, GR-70103 Heraklion, Greece, (b) Department of Mechanical and Manufacturing Engineering, University of Cyprus, 75 Kallipoleos Avenue, P.O. Box 20537, 1678 Nicosia, Cyprus. (c) Department of Materials Science and Technology, University of Crete, P.O. Box 2208, GR-70103 Heraklion, Greece
16:30  **La and Sm Co-Doped SrTiO3-δ Thermoelectric Ceramics**  
Adindu C. Iyasara, Whitney L. Schmidt, Rebecca Boston, Derek C Sinclair, Ian M. Reaney  
Functional Materials and Devices Group, Department of Materials Science and Engineering, University of Sheffield, Sheffield, S1 3JD, UK.

16:45  **An Alternative Composite Approach to Tailor the Thermoelectric Properties of SiAlON**  
Pinar Kaya, Giuliano Gregori, Petar Yordanov, Erhan Ayas, H. Ulrich Habermeier, Joachim Maier, Servet Turan  
Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, Department of Materials Science and Engineering, Anadolu University, Iki Eylul Campus, 26550 Eskisehir, Turkey, Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, Max Planck Institute for Solid State Research, Heisenbergstr. 1, 70569 Stuttgart, Germany, Department of Materials Science and Engineering, Anadolu University, Iki Eylul Campus, 26550 Eskisehir, Turkey

17:00  **Thermoelectric Properties of the Layered Samarium Chromium Oxyselenide Enhanced by Codoping**  
Xian Zhang  
Qian Xuesen Laboratory of Space Technology, China Academy of Space Technology, Beijing 1000094, China

17:15  **Self-doping in the triangular lattice of the CoO2 layer in misfit thermoelectric Bi2Sr2Co2Oy thin film**  
Arindom Chatterjee, Jose Manuel Caicedo Roque, Clivia M Sotomayor Torres, Jose Santiso, Lucia Iglesias, Francisco Rivadulla  
Arindom Chatterjee, Jose Manuel Caicedo Roque, Jose Santiso, Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, 08193 Barcelona, Spain  
Lucia Iglesias, Francisco Rivadulla, Materials Centro de Investigación en Química Biológica e Materiales Moleculares, Universidade de Santiago de Compostela, 15782-Santiago de Compostela, Spain  
Clivia M Sotomayor Torres, ICREA, Pg. Lluís Companys 23, 08010 Barcelona, Spain  
Catalan Institute of Nanoscience and Nanotechnology (ICN2) and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, 08193 Barcelona, Spain

17:30  **Growth of nanopatterened transferable and flexible Ca3Co4O9 thin films for wearable thermoelectrics**  
Biplab Paul, Jun Lu, Per Eklund  
Thin Film Physics Division, Department of Physics, Chemistry, and Biology (IFM), Linköping University, SE-581 83 Linköping, Sweden

17:45  **Oxide Thermoelectrics Nanostructured by Spinodal Decomposition**  
A. VERCHERE, S. MISHRA, S. LE FLOCH, G. FANTOZZI, S. DANIELE, S. PAILHES  
Université de Lyon, IRCELYon, CNRS, UMR 5256, F-69626 Villeurbanne, France  
Université de Lyon, ILM, CNRS, UMR 5306, F-69622 Villeurbanne, France  
INSALYON, MATEIS, CNRS, UMR 5510, F-69621 Villeurbanne, France
SYMPOSIUM I

Organic bioelectronics

Symposium Organizers:

Akio YASUDA, SONY Corporation, Stuttgart, Germany

George MALLIARAS, Ecole Nationale Supérieure des Mines, Gardanne, France

Sabine SZUNERITS, University Lille, Villeneuve d’Ascq, France

Wolfgang KNOLL, AIT Austrian Institute of Technology, Vienna, Austria
and CEST Competence Center for Electrochemical Surface Technology,
Wiener Neustadt, Austria

Be published in the journal BioInterphases (Royal Society of Chemistry).
14:00 Panbio-electronics
Daniel Simon
Linkoping University, Sweden

14:30 Bioelectronics meets Microfluidics: integrated in line sensors at the interface with biology
Vincenzo F. Curto, Magali Ferro, George Malliaras, Roisin M Owens
Ecole des Mines de Saint-Etienne Department of Bioelectronics (BEL) 880, route de Miryet 13351 Gardanne

14:45 Melanins in bioelectronics: a survey of the role of these natural pigments from bio-interfaces to (opto)electronic devices
Paola Marin, Valeria Criscuolo, Ludovico Migliaccio, Carmela Tania Prontera, Alessandro Pezzella, Orlando Crescenzi, Marco d’Ischia, Silvia Parisi, Mario Barra, Antonio Cassinese, Pasquaiino Maddalena, Maria Grazia Maglione, Paolo Tassini, Carla Minarini
Department of Chemical Sciences, University of Naples “Federico II”, Napoli, Italy
Department of Molecular Medicine and Medical Biotechnology, University of Naples “Federico II”, Napoli, Italy (SP), CNR-SPIN and Department of Physics, University of Naples Federico II, Napoli, Italy (MB, AC, PM), Laboratory of Nanomaterials and Devices, ENEA C. R. Portici, Portici, Italy (MGM, FT, CM)

15:00 Tailor-Made Organic Semiconductors for Bioelectronic Applications
Christian Nielsen
Materials Research Institute and School of Biological and Chemical Sciences, Queen Mary University of London, Mile End Road, London E1 4NS, United Kingdom

15:15 Orientation selectivity with organic photodetectors and an organic electrochemical transistor
Paschalis Gkoupidenis, Shahab Rezaei-Mazinani, Christopher M. Proctor, Esma Ismailova, and George G. Malliaras
Department of Bioelectronics, Ecole Nationale Supérieure des Mines, CMP-EMSE

15:30 Coffe Break

16:00 Materials for Printed Biodegradable Light-Emitting Devices
Anthony Morfa, Johannes Zimmermann, Nils Jürgensen, Serpil Tekoglu, Gerardo Hernandez-Sosa
Light Technology Institute, Karlsruhe Institute of Technology, Engesserstraße 13, 76131 Karlsruhe, Germany
InnovationLab, Speyererstraße 4, 69115 Heidelberg, Germany

16:30 Physical modelling of bio sensors based on Organic Electrochemical Transistors
Shrivakaya Anna, Horovitz Gilles, Bonnassieux Yvan
LPICM, CNRS, Ecole Polytechnique, Université Paris Saclay, 91128, Palaiseau, France

16:45 Radiation-sensitive OFET based on the generation of mobile protons and anions in polymeric gate dielectrics
KATSOGRIDAKIS C.1, KAPETANAKIS E. 2, DOUVAS A.M. 1, PSYCHARIS V. 1, DIMOTIKALI D 3, ARGITIS P. 1, NORMAND P. 1,
1. Demokritos National Centre for Scientific Research, Institute of Nanoscience and Nanotechnology, Athens, Greece, 2. School of Applied Sciences, Technological Educational Institute of Crete, 73133 Chania, Greece, 3. National Technical University of Athens, Department of Chemical Engineering, Athens, Greece,

17:00 Direct electron transfer to cyt c encapsulated within organically-modified silica: Platform to highly efficient biosensors
Sara López-Bernabeu, Francisco Huerta, Emilia Morallón, Johan Bobacka, Francisco Montilla
Sara López-Bernabeu, Emilia Morallón, Francisco Montilla Instituto Universitario de Materiales de Alicante Universidad de Alicante Francisco Huerta Opto, de Ingeniería Textil y Papelera Universidad Politécnica de Valencia Johan Bobacka Abo Akademi University Department of Chemical Engineering Turku, Finland

17:15 All-inkjet-printed flexible Organic Electrochemical Transistors for the detection of biological molecules in liquid media.
G. Mattana1, S. Delle1, L. Fillaud1, B. Piro1, V. Noël1
[1] Université Paris Diderot, Sorbonne Paris Cité, ITOODYS, UMR 7086 CNRS, 15 rue J-A de Baill, 75205 Paris Cedex 13, France
Tuesday morning: George Malliaras

09:00 Electrical and metabolic cell activity recording by means of an organic device
Annalis Bonfiglio
Dept of Electrical and Electronic Engineering, University of Cagliari

09:30 Extracellular signal recordings using conducting polymer based electrodes: Driving down the detection limits to nanovolt range
Pedro M. C. Inácio 1,2, Ana L.G. Mestre 1,2, Sanaz Asgari 1,2, Inês M. Araujo 3,4, Fabio Biscarini 5, Maria C. R. Medeiros 6,7 and Henrique L. Gomes 1,2
1 Instituto de Telecomunicações and Centro de Investigação em Telecomm., Universidade do Algarve, Department of Engº Electronica e Informática 3 Universidade do Algarve, Department of Biomedical Sciences and Medicine, 8005-139 Faro Portugal 4 Centre for Biomedical Research, CBMR, Universidade do Algarve, 8005-139 Faro Portugal 5 Life Science Department, University of Modena and Reggio Emilia; Via Campi 103, I-41125 Modena, Italy. 6 Instituto de Telecomunicações, Universidade de Coimbra, Portugal. 7 Universidade de Coimbra, Departamento de Engenharia Eléctronica e Computadores, 4, 3000-290 Coimbra, Portugal.

09:45 Crystallized Conducting Polymer-Based Electrochemical Transistors with Excellent Water Stability and Electrical Performance
M. Seitanidou, JF. Franco-Gonzalez, D. Simon, M. Berggren
Department of Bioelectronics, School of Engineering, École Polytechnique Fédérale de Lausanne, Switzerland

10:00 Organic electrochemical transistor as a tool for monitoring toxic agents on in vitro cell tissue
Maria Tessaarlo 1,2, Francesca Decataldo 2, Vito Vurro 2, Marianna Barbalinardo 3, Denis Gentili 3, Francesco Valle 3, Massimiliano Cavallini 3, Beatrice Fraboni 2
1 Interdepartmental Centre for Industrial Research – Advanced Mechanics and Materials (CIRI – MAM), University of Bologna, Bologna, Italy. 2 Department of Physics and Astronomy, University of Bologna, Bologna, Italy. 3 National Research Council (CNR), Institute for the Study of Nanostructured Materials (ISIBM) Bologna, Italy.

10:15 Organic Cell Stimulating and Sensing transistor architecture for the study of neural cells
Michele Muccini1, Stefano Toffanin1 and Valentina Benfenati2
1CNR-ISMN, Istituto per lo Studio dei Materiali Nanostrutturali, Consiglio Nazionale delle Ricerche (CNR-ISMN), Bologna, Italy. 2Istituto di Sistemi Fotonici e Laser, Consiglio Nazionale delle Ricerche Via P. Gobetti 101, 40129 Bologna, Italy.

10:30 Cofee Break

11:00 Nanopatterned conducting polymers for low impact contacts and cell guidance
Mohammed ElMahmoudy, Adel Hama, Vincenzo Curto, George G. Malliaras, and Sébastien Sanaur
Department of Bioelectronics, Ecole Nationale Supérieure des Mines de Saint-Etienne, 13541 Gardanne, France. 1 National Institute for Research and Development in Microtechnologies, Romania 2 Ikerbasque, Basque Foundation for Science, E-48011 Bilbao, Spain

11:15 EGOFET-based aptasensors for ultra-sensitive detection of biorecognition events
Cristina-Cassiana Andrei1, Anne Chantal Gouget-Laemmel1, Anne Morailon1, Rabah Bougherroub2, François Ozanam1 and Sabine Scureni2
1Physique de la Matière Condensée, École Polytechnique-CNRS , Université Paris Saclay, 91128 Palaiseau, France. 2 Univ. Lille, CNRS, Centrale Lille, ISEN, Univ. Lille Nord de France (UMR 8520 - IEMN, F-59000 Lille, France)

11:30 Modelling of conducting polymer/electrolyte interface for extracellular signal recordings
João Res, Pedro M. C. Inácio, Ana L.G. Mestre, Maria C. R. de Medeiros and, Henrique L. Gomes
Instituto de Telecomunicações - Pólo de Coimbra, Instituto de Telecomunicações - Pólo de Lisboa, Instituto de Telecomunicações - Pólo de Lisboa, Instituto de Telecomunicações - Pólo de Coimbra, Department of Electrical and Computer Engineering, University of Coimbra, Instituto de Telecomunicações - Pólo de Lisboa, University of Algarve

11:45 The utilization of divinylsulfone as an effective cross-linker for PEDOT:PSS using low temperatures
Daniele Mantione a,Isabel del Agua a,b, Ilke Uguz b, Mohammed ElMahmoudy a, b Ana Sanchez-Sanchez a, Haritz Sardona a, George G. Malliaras b, David Mecerreyes a, c a POLYMAT University of the Basque Country UPV/EHU, Jose Mari Korta Center, Avda. Tolosa 72, 20018 Donostia-san Sebastian, b Spain c Department of Bioelectronics, École Nationale Supérieure des Mines, CMP-EMSE, MOC, 13541 Gardanne, France

12:00 Lunch
Towards reliable electronic biosensors: Using a graphene-based liquid-gated field-effect transistor platform for label-free DNA
Johannes Bintinger(1,2,5), Teresa Berringer(1), Andrea Rozzi(1,3), Paolo Rudatis(4), Natalia Yelavik(5), Roberto Corradini(3), Dominik Eder(4), Hannes Mikula(5), Wolfgang Knoll(1,2)
1, Austrian Institute of Technology, Biosensor Technologies, Muthgasse 11, 1190 Vienna, Austria
2, Center for Electrochemical Surface Technologies, Viktor Kalapaz Str.22, 2700 Wr. Neustadt, Austria
3, University of Parma, Dipartimento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale- Università di Parma, Parco Area delle Scienze 17/A, 43100 Parma, Italy
4, Vienna University of Technology, Institute of Materials Chemistry, Getreidemarkt 9, 1060 Vienna, Austria
5, Vienna University of Technology, Institute of Synthetic Chemistry, Getreidemarkt 9, 1060 Vienna, Austria

High performance electrolyte-gated field-effect transistors processed by a solution shearing technique
Francesca Leonardi, Giaoaoming Zhang, Stefano Casalini, Inês Temfiño, Sergi Galindo, Marta Mac-Torrent
Instituto de Ciencia de Materiales de Barcelona (ICMAB-CSIC) and CIBER-BBN, Campus de la UAB, 08193, Bellaterra, Spain

Highly Sensitive Nano-Biosensor with DNA-Templated Conductive Nanowires
Hung-Ju Kim(1), Jeng Seob Choi(1,2), and Byungyou Hong(1)
1 Convergence Medical Device Research Center, Gumi Electronics and Information Technology Research Laboratory, Gumi 730-701, Republic of Korea
2 College of Information and Communication Engineering, Sungkyunkwan University, Suwon 440-746, Republic of Korea

Body energy harvesting and conversion for backup electronic power supplies
George Claudiu Zamescu, Stamatian loan
University of Bucharest, Faculty of Physics, 3NanoSAE Research Center

Smart sensor tags: a flexible RFID device integrated with a freshness evaluation sensor for food safety
S.-M. Iordache(*)1, S. Caramiziou(2), A.-M. Iordache(1), V. Garleanu(1), I. Stamatin(1)(1) Nano-SAE Research Center, Faculty of Physics, University of Bucharest, 405 Atomiștilor Str., Magurele, 077125, Romania
2 OPTOELECTRONICA 2001 S.A., 409 Atomiștilor Str., Magurele, 077125, Romania. * corresponding authors

A non-enzymatic electrochemical sensor based on porphyrins for histamine
S.-M. Iordache(1,2), A. M. Iordache(1,2), V. Garleanu(1,2), S. Caramiziou(2), E. Fagadar-Cosmin(3), I. Stamatin(1)
(1) Nano-SAE Research Center, Faculty of Physics, University of Bucharest, 405 Atomiștilor Str., Magurele, 077125, Romania
(2) OPTOELECTRONICA 2001 S.A., 409 Atomiștilor Str., Magurele, 077125, Romania. * corresponding authors

Ultra-sensitive bio-markers detection with an electrolyte gated organic transistor
Eleonora Macchia,1 Amber Tiarwi,1 Kyriaki Manoli,1 Brigitte Holzer,1 Cinzia Di Franco,2 Matteo Ghittorelli,3 Fabriano Torricelli,3 Giuseppe Felice Mangiardi,4 Gaetano Scamarcio,5 Gerardo Palazzol5 and Luisa Torisi*
1 Dipartimento di Chimica - Universita degli Studi di Bari "Aldo Moro" - Bari (I)
2 CNR - Istituto di Fotonica e Nanotecnologie, Sede di Bari (I)
3 Dipartimento Ingegneria dell'Informazione - Universita degli Studi di Brescia - Brescia (I)
4 Dipartimento di Farmacia - Scienze del Farmaco - Universita degli Studi di Bari "Aldo Moro" - Bari (I)
6 Dipartimento di Fisica "M. Merlin" - Universita degli Studi di Bari - "Aldo Moro" - Bari (I)
6CSCGi (Center for Colloid and Surface Science) - Bari (I)

Correlation between thin-film 3D growth modality and mobility in high performance n-type molecular water-gated OFETs
Federico Precirome, Emilia Bervenuti, M. Natali, Andrea Lorenzoni, Zhihua Chen, Franco Dinelli, Fabiola Lisico, Silvia Milita, Francesco Mercuri, Michele Mucconi, Antonio Facchetti, Stefano Toffanin
Federico Precirome, Emilia Bervenuti, M. Natali, Andrea Lorenzoni, Zhihua Chen, Franco Dinelli, Fabiola Lisico, Silvia Milita, Francesco Mercuri, Michele Mucconi, Antonio Facchetti, Stefano Toffanin

Novel light-responsive biocompatible hydrogels produced by initiated Chemical Vapor Deposition
Anna Maria Coclite
Institute of Solid State Physics, Graz University of Technology, Graz, Austria

The influence of side chain engineering on the performance of n-type polymers in organic electrochemical transistors (OECTs)
Alexander Giovaninetti(1), Anna-Maria Papp(2), Sahika Inal(2), Roisin Owens(2), George G. Malliaras(2), Jonathan Rivnay(3,4), Iain McCulloch(1,5)
(1) Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London SW7 2AZ, United Kingdom.
(2) Department of Bioelectronics, Ecole Nationale Supérieure des Mines, CMP-EMSE, MOC Gardanne, 13541, France.
(3) Palo Alto Research Center, Palo Alto, CA 94304, USA.
(4) Northwestern University, 2145 Sheridan Road, Evanston, IL 60208-3109.
(5) King Abdullah University of Science and Technology, SPERIC, Thuwal 23955-6900, Saudi Arabia.

Dinner with invited speakers
Tuesday afternoon: Sabine Szunerits

I P-8.3
I P-9.3
I P-10.3
I P-11.3
I P-13.4
I I-7
I I-6
I I-11.4
I I-12.4
I I-15.4
I I-16.4
I 11-24.7
I 11-27.4
I 11-28.4
I 11-30.4
I 11-31.4
I 11-32.4
I 19-30
I 19-30
I-35.4

Flexible Sensors with Stretchable PEDOT:PSS Electrodes
Hidenori Okuzaki, Takahi Kondo, Masaki Sato
Graduate Faculty of Interdisciplinary Research, University of Yamanashi

I-36.5

Ultra-Flexible yet Robust Nonlinear Framework for Zero-Gap Design on Biointerface
Junsoo Kim, Soo Yee Im, Jung Yoon Kwon, Jae Woo Lee, Jong Pil Im, Seung-Min Lee, Seung Eon Moon
ICT Materials Research Group, Electronics and Telecommunications Research Institute, Daejeon 34129, Republic of Korea

I-37.5

Printable Carbon Nanotubes & Graphene Conducting Elastomers for Wearable Biomechanical Sensor
Hin Chun Yau, Hannah Leese, Milo Shaffer, Department of Chemistry and Materials, Imperial College London, South Kensington Campus, London, SW7 2AZ, UK

I-38.5

On the transient response of organic electrochemical transistors
Gregorio Couto Faria, Duc Trong Duong, Alberto Salleo
Gregorio Couto Faria São Carlos Physics Institute, University of São Paulo, PO. Box: 369, 13560-970, São Carlos, SP, Brazil Duc Trong Duong, Alberto Salleo Department of Materials Science and Engineering, Stanford University, Stanford, California 94305, USA

I-39.5

New process for a fully stretchable Organic Electrochemical Transistor
Bastien MARCIOIRI, Roger DELATITRE, Marc RAMUZ
Department of Flexible Electronics, Ecole Nationale Supérieure des Mines, Centre Microélectronique de Provence CMP-EMSE, F-13541 Gardanne, France

I-40.5

Surface enhanced Raman scattering for direct ex-vivo diagnostic in comparative medicine
1. ROXY VETERINARY S.R.L. Magurele, Romania, 2. Faculty of Veterinary Medicine-University of Agronomic Sciences and Veterinary Medicine, Bucharest, Romania, 3. National Institute of Research and Development for Optoelectronics INOE 2000, Magurele, Romania, 4. APEL LASER S.R.L., Bucharest, Romania, 5. Aix-Marseille Université, Centrale Marseille, CNRS, Federation Sciences Chimiques Marseille (FR 1739) - PRATIM, Marseille, France

I-41.5

A 24 um-pitch Microelectrode Array with 6912-channel Readout at 12 kHz by Highly Scalable Implementation.
Jun Og1, Yuri Kat1, Yoshihisa Matoba1, Chiguha Yaman1, Kazunori Nagahata1, Yusaku Nakashima2, Takuya Kishimoto2, Shigeki Hashimoto2, Koichi Ma1, Yusuke Okie1, and Takayuki Ezaki1
1 Research Division, Sony Semiconductor Solutions Corporation, Kanagawa, Japan, 2 Bio-Medical Research and Development Division, R&D Platform, Sony Corporation, Tokyo, Japan, 3 Sony Semiconductor Solutions Corporation, Kanagawa, Japan

12:00 Fluidic Reservoir Ion Pump Probes for Controlling Epileptiform Activity
Christopher M. Proctor, Adam Williamson, Anna Maria Pappa, Vincenzo Curto, Ilke Uguz, Christophe Bernard, George Malliaras
Proctor, Pappa, Uguz, Malliaras Department of Bioelectronics, Ecole Nationale Supérieure des Mines - CMP-EMSE, MOC 13541 Gardanne, France E-mail: Malliaras@emse.fr Williamson, Bernard Aix Marseille Université INS 13005 Marseille, France, Inserm UMR_S 1106, 13005 Marseille, France
Thursday 25 May 2017

12:30  Lunch

16:15  Plenary Session
SYMPOSIUM J

Electronic textiles

Symposium Organizers:

Esma ISMAILOVA, Ecole Nationale Supérieure des Mines, Gardanne, France

Tobias CRAMER, University of Bologna, Italy

John DE MELLO, Imperial College London, U.K.

Daniel T. SIMON, Laboratory of Organic Electronics, Norrköping, Sweden
16:30 A Flexible Smart Tattoo for Epidermal Sensing
Keana De Guzman, Aoife Morrin
Keana De Guzman, School of Chemical Sciences, Dublin City University, Ireland, Aoife Morrin, School of Chemical Sciences, Dublin City University Ireland, INSIGHT Centre for Data Analytics, National Centre for Sensor Research.

16:30 Polarization switching and charging effects in electrospun PVDF fibres
Francesco Calavalle, Marco Zaccaria, Oliviero Bocchi, Tobias Cramer, Davide Fabiani, Beatrice Fraboni
Department of Physics and Astronomy, University of Bologna, Italy, Department of Electrical, Electronic and Information Engineering, University of Bologna, Italy, Centre for Advanced Applications in Mechanical Engineering and Materials Technology, University of Bologna, Italy,

14:00 How to Make Reliable, Washable and Wearable Monitoring Underwear
Xuyuan Tao 1, Vladan Koncar 1, Tzu-Hao Huang 2, Chien-Lung Shen 2,3, Ya-Chi Ko 2, Gwo-Tsun Jou 3
1 Ecole Nationale Supérieure des Arts et Industries Textiles, 2 allée Louise et Victor Champier, 59056 Roubaix Cedex 1, France 2 Department of Products, Taiwan Textile Research Institute, No.6, Chengli Rd., Tucheng Dist. New Taipei City, 23674, Taiwan (R. O. C.) 3 Department of Biomedical Engineering, National Yang-Ming University, No.156, Sec.2, Linong Street, Taipei, 112 Taiwan (R.O.C.)

14:30 Formation of Multi-purpose Stretchable and Transparent, Large-Area Heaters with Wireless Operations using Metal Nanofibers
Juk-Jang Byung Gwan Hyn, Sangyoun Ji, Eun-jin cho, Jung-Ung Park
School of Materials Science and Engineering, Ulsan National Institute of Science and Technology, Republic of Korea

14:45 Heatable Textiles With Silver Nanowires
Doga Doganay, Sahin Coskun, Sevim Polat, Hursu Ernrah Unalan
Department of Metalurgical and Materials Engineering, Middle East Technical University, Ankara 06800, Turkey

15:00 Machine Washable PEDOT:PSS Dyed Silk Yarns for Wearable Thermoelectrics
Jason D. Ryan, Desalegn A. Mengistie, Anja Lund, Roger Gabrielsson, Christian Müller
Jason D. Ryan, Desalegn A. Mengistie, Anja Lund, Christian Müller, Department of Chemistry and Chemical Engineering, Chalmers University of Technology, 412 96 Göteborg, Sweden, Roger Gabrielsson IFM, Linköping University, 58183 Linköping, Sweden

15:15 Smart textiles as materials for continuous health monitoring
Luciano F. Boesel
Empa Swiss Federal Laboratories for Materials Science and Technology, Lерchenfeldstrasse 5 9014 St. Gallen, Switzerland

15:30 Metatextiles: design, characterization and applications
A Department of Materials Science and Engineering, Drexel University, Philadelphia, United States  B Department of Mechanical Engineering and Mechanics, Drexel University, Philadelphia, United States  C Department of Electrical and Computer Engineering, Drexel University, Philadelphia, United States  D Department of Design, Drexel University, Philadelphia, United States

16:00 Coffee break

Poster Session: Annalisa Bonfiglio

16:30 Fabrication of all-organic humidity sensors using direct patterned conducting ink on textile substrates.
USEIN ISMAILOV, ESMA ISMAILOVA
Department of Bioelectronics, Ecole Nationale Supérieure des Mines de Saint Etienne.

16:30 High-Spatial-Resolution Touch and Pressure Sensing Fibers and Textiles by Thermal Drawing Technique
Tung Nguyen-Dang, Alexis Page, Yunpeng Qu, Wei Yan, Marco Volpi, Nadege Guedon, Prof. Fabien Sorin

16:30 Stretchable All Polymer-Based Organic Field-Effect Transistors Containing Semiconducting Polymer-Embedded Rubbery Layers
Mingyuan Pei, Joong Se Ko, and Hoichang Yang
Department of Applied Organic Materials Engineering, Inha University, Incheon 22212, Korea

16:30 Design concept of smart optical textiles
Amine HAJ TAIEB, Slah MSÂHIL
Institut Supérieur des Arts et Métiers de Sfax, Laboratoire Génie Textile, Institut Supérieur des Etudes Technologiques de Ksar Hella.
Tuesday 23 May 2017

Technology Transfer : Christine Killmayer

10:00 Electronics and Fabrics, the Development of Garment Based Wearables J 3.1
Rebecca Pailes-Friedman
IDSA

10:30 The 1D-NEON project: challenges and opportunities of e-fibres in smart textiles J 3.2
Luigi G. Ochiripini, and Jong Min Kim
University of Cambridge, Department of Engineering Electrical Engineering Division, 9
J J Thomson Avenue, Cambridge CB3 0FA United Kingdom

10:00 Coffee break

11:00 Textile piezoelectrics for energy harvesting – a case study J 4.1
Katrin Rundqvist (1), Erik Nilsson (2), Christian Müller (3), Anja Lund (1,3)
(1) The Swedish School of Textiles, University of Borås, Borås, Sweden, (2) Textiles and plastics, Swerea IVF, Mölnärd, Sweden, (3) Department of Chemistry and Chemical Engineering, Chalmers University of Technology, Göteborg, Sweden

11:15 A viscose fiber based organic solar cell J 4.2
B. Friedel(1), R. Schennach2
1. Energy Research Center, Vorarberg University of Applied Sciences, Dornbirn, Austria

11:30 Flexible Thermoelectric Zinc Oxide – Organic Superlattices on Cotton Textile J 4.3
Rébecca Pailes-Friedman
Ecole Polytechnique Fédérale de Lausanne  EPFL-LMTS  Maladière 71b  P.O. Box 526
15.00 Water stable flexible PEDOT:PSS/DVS-coated textiles for wearable electronics
Isabel del Agua, Daniele Martione, Ana Sanchez-Sanchez, Usein ISMAILOV, Esma ISMAILOVA, David Mecerreyes, George G. Malliaras
POLYMAT University of the Basque Country UPV/EHU, Jose Mari Korta Center, Avda. Tolosa 72, 20018 Donostia-San Sebastian, Spain Isabel del Agua, Usein ISMAILOV, Esma ISMAILOVA, George G. Malliaras. Department of Bioelectronics, Ecole Nationale Supérieure des Mines, CMP-EME, MOC, 13541 Gardanne, France David Mecerreyes, Ikerbasque, Basque Foundation for Science, E-48011 Bilbao, Spain

11:45 Toward Light-Responsive Textiles for Transdermal Delivery Systems Utilizing Flexible Electronics Department, Ecole Nationale Supérieure des Mines de Saint-Thierry Djenizian
and plastics, Swerea IVF, Mölnärd, Sweden, (3) Department of Management and Engineering (IEI), Solid Mechanics, Linköping University, 58183 Linköping, Sweden.

12:00 Materials For Functional Fibers 2 : Genevieve Dion

12:30 Lunch

13:00 Next generation Smart Textiles – morphing and acting devices J 6.1
Nils-Krister Persson1, Ali Maziz (2), Ingrid Öberg1, Isabella Christansson Jonas Stålhand, Edwin Jager
Nils-Krister Persson(1), Ali Maziz (2), Ingrid Öberg1, Isabella Christansson Jonas Stålhand (3), Edwin Jager(2) (1) Swedish School of Textiles (THS), Smart Textiles, University of Borås, 50190 Borås, Sweden. (2) Department of Physics, Chemistry and Biology (IFM), Biosensors and Bioelectronics Centre, Linköping University, 58183 Linköping, Sweden. (3)Department of Management and Engineering (IEI), Solid Mechanics, Linköping University, 58183 Linköping, Sweden.

13:15 Electrosynthetic Technique for Coaxial Semiconductive Organic Nanofibers for Flexible Electronic Devices J 6.2
Mr. William Serrano-Garcia, Dr. Sylvia Thomas
University of South Florida at Tampa, Florida, USA

Usein ISMAILOV, Esma ISMAILOVA
Department of Bioelectronics, Ecole Nationale Supérieure des Mines de Saint Etienne

14:00 Electrospun mats of liquid crystal core fibers for non-electronic volatile organic compound (VOC’s) and tensile sensing Anshul Sharma, Catherine G. Reyes, Jan P.F. Lagerwall

14:15 Materials Energy Harvesting and Storage : Janos Vörös

14:45 Textile Energy Harvesting and Storage : Janos Vörös J 4.4

15:00 Direct synthesis of conjugated polymers on textiles for an application in wearable electronic devices. J 5.1
Usein ISMAILOV, Esma ISMAILOVA
Department of Bioelectronics, Ecole Nationale Supérieure des Mines de Saint Etienne

15:45 Polymeric Ionic Liquids for Fabric-based Gas Sensors J 5.2
Maressa Eva1,2, Tudor Alexandru3, Glennon Thomas3, Vmata Martin1, Filip Premysl1, Bulir JinZ, Lancok Jan2, Vivek Jan1, Tomecek David1, Pokorny Petr2, Novotny Michal2, Florea Larisa3, Coyle Shirley3, Diamond Demot3
(1) University of Chemistry and Technology, Dep. Physics and Measurements, Prague 2 (2) Institute of Physics ASCR, Dep. of Analysis of Functional Materials, Prague 3 Insight Centre for Data Analytics, National Centre for Sensor Research, DCU, Dublin

16:00 Coffee break

17:00 Textile based electrical valves for microfluidics J 5.3
Byungwoo Choi, Jaehong Lee, Heekta Han, and Taeyoon Lee

17:30 Printing of Sensors on Industrial Textile Fibers J 5.4
Danick Briand, G. Mattana, A. Vasquez-Quintero, M. Camara
Ecole Polytechnique Fédérale de Lausanne EPFL-LMTS Maladière 71b P.O. Box 526 CH-2000 Neuchâtel Switzerland

17:45 Polymeric Ionic Liquids for Fabric-based Gas Sensors J 5.5
Maressa Eva1,2, Tudor Alexandru3, Glennon Thomas3, Vmata Martin1, Filip Premysl1, Bulir JinZ, Lancok Jan2, Vivek Jan1, Tomecek David1, Pokorny Petr2, Novotny Michal2, Florea Larisa3, Coyle Shirley3, Diamond Demot3
(1) University of Chemistry and Technology, Dep. Physics and Measurements, Prague 2 (2) Institute of Physics ASCR, Dep. of Analysis of Functional Materials, Prague 3 Insight Centre for Data Analytics, National Centre for Sensor Research, DCU, Dublin

18:00 Textile based electrical valves for microfluidics J 5.6
Maharaj Max Hamed
Department of Fibre and Polymer Technology, and Wallenberg Wood Science Centre, KTH Royal Institute of Technology, School of Chemical Science and Engineering Teknikringen 56, 10044 Stockholm, Sweden.
Wednesday 24 May 2017

Textile Sensors, Systems, Circuits 1 : Nils-Krister Persson

09:00 Stretchable Electronics as a Route to Smart Fabrics and Interactive Textiles  J 7.1
John A. Rogers
Northwestern University

09:30 Superelastic conductive fiber-based innovative electronic textiles for advanced wearable electronics  J 7.2
Jaehong Lee, Taeyoon Lee
Nanobio Device Laboratory, School of Electrical and Electronic Engineering, Yonsei University

09:45 Wearable, transparent smart contact lens sensors for wireless ocular diagnostics  J 7.3
Joohee Kim, Jang-Ung Park*
School of Materials Science and Engineering, Wearable Electronics Research Group, Center for Smart Sensor Systems, Ulsan National Institute of Science and Technology (UNIST), Ulsan, 44919, Republic of Korea

10:00 Coffee break

Textile Sensors, Systems, Circuits 2 : Yury Gogotsi

10:30 Electronic textiles for ambient and body monitoring  J 8.1
Annalisa Bonfiglio
Dept of Electrical and Electronic Engineering, University of Cagliari

11:00 Cutaneous recording and stimulation of muscles using organic electronic textiles  J 8.2
Maria Papaiordanidou 1, Seiichi Takamatsu 2, Shahab Rezaei-Mazinani 3, Thomas Lonjaret 3,4, Alain Martin 5, Esma Ismailova 3

11:15 A wearable electro-chemical sensor for the selective detection of redox-active biomolecules in sweat  J 8.3
Marta Tessarollo 1-3, Isacco Gualandi 2, Erika Scavetta 2, Dario Cavedale 3, Beatrice Fraboni 3
1 Interdepartmental Centre for Industrial Research – Advanced Mechanics and Materials (CIRI – MAM), University of Bologna, Bologna, Italy, 2 Department of Industrial Chemistry «Toso Montanari», University of Bologna, Bologna, Italy, 3 Department of Physics and Astronomy, University of Bologna, Bologna, Italy,

11:30 Integration Technologies for Electronics and Sensors in Textiles  J 8.4
Christine Kallmayer, Malte von Krshiwoblozki, Christian Dils, Thomas Löher
Fraunhofer IZM, Fraunhofer IZM, Fraunhofer IZM, Technical University of Berlin

12:00 Characterization of mechanical behavior of flexible electronics embedded onto textile for in-situ medical applications  J 8.5
Séverine DE MULATIER (a), David COULON (b), Roger DELATTRE (a), Marc RAMUZ (a)
a) Department of Flexible Electronics, Ecole Nationale Supérieure des Mines, Centre Microélectronique de Provence CMP-EMSE, F-13541 Gardanne, France. b) @-HEALTH, Europarc de Pichaury, 1330 Rue Jean René Guillibert Gauthier de la Lauzière, 13290 Aix-en-Provence, France.

12:15 Stretchable electronics for biomedical applications  J 8.6
Janos Vörös
Laboratory of Biosensors and Bioelectronics, Institute for Biomedical Engineering, ETH Zurich, Switzerland

12:45 Lunch
SYMPOSIUM K

Bioinspired and biointegrated materials as new frontiers nanomaterials VII

Symposium Organizers:

Bo ZHU, Shanghai University, Shanghai, China

Donata IANDOLO, Dep. of Bioelectronics, Microelectronique de Provence Gardanne, France

Eugenia BUZANEVA, TSN University of Kyiv, NASU, Ukraine

Giovanni MARLETTA, University of Catania, Italy

Peter SCHARFF, Technical University of Ilmenau, Germany

COLLABORATORS:

CLINAM (European Foundation for Clinical Nanomedicine)
http://www.clinam.org

N.S. SOCIETY FOR BIOMATERIALS (SFB)
RESEARCH CENTER for APPLIED SCIENCES ACADEMIA SINICA, TAIWAN
Project LiNaBioFluid EU HORIZON 2020 FET Open Program

www.laserbiofluid.eu
EU COST Action MP 1301 NEWGEN
EU COST Action CA 15107 MULTICOMP WQ 3

www.cost-newgen.org

Supporting publication “Materials Science and Engineering C: Materials for Biological Applications” (Elsevier)
http://www.journals.elsevier.com/materials-science-and-engineering-c
17:00 Bioinspired carbohydrate coatings: modulation of protein fouling and interfacial properties at carbon surfaces
Federico Zen, Vasiliis D. Karanikolas, James Behan, Joana Vasconcelos, Jenny Antinardous, Thomas Duff, Eoin M. Scanlan, Louise Bradley, Paula E. Colavita, Federico Zen, James Behan, Joana Vasconcelos, Thomas Duff, Eoin M. Scanlan, Paula E. Colavita, Federico Zen, James Behan, Joana Vasconcelos, Stephen Duff, Eoin M. Scanlan, Louise Bradley, School of Physics and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), University of Dublin Trinity College, College Green, Dublin, Ireland. Vasiliis D. Karanikolas, National Chiao Tung University, Hsinchu, Taiwan, and Computer Systems, Volodymyrska Str. 64/13, 01601 Kyiv, Ukraine. 1Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Reymonta 10, 02-788 Warsaw, Poland. 2Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy. 3Department of Chemistry, University of Fribourg, Chemin du Musée 9, 1700 Fribourg, Switzerland. 4Department of Chemistry, University of Basel, Gewerbestrasse 14, 4123 Basel, Switzerland.

17:00 Bioinspired material design by hierarchical self-assembly on prepatterned surfaces
K. Brassat, A. Keller, G. Grundmeier, W. Bremer, O. Strube, J. K. N. Lindner Department of Physics, Paderborn University, Paderborn, Germany, Department of Chemistry, Paderborn University, Paderborn, Germany, Center for Optoelectronics and Photonics, Paderborn COUPP, Paderborn, Germany, and Computer Systems, Volodymyrska Str. 64/13, 01601 Kyiv, Ukraine. 1Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Reymonta 10, 02-788 Warsaw, Poland. 2Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy. 3Department of Chemistry, University of Fribourg, Chemin du Musée 9, 1700 Fribourg, Switzerland. 4Department of Chemistry, University of Basel, Gewerbestrasse 14, 4123 Basel, Switzerland.

17:00 Plasmachemical modified biodegradable electrosynthetic nanofibers for tissue engineering
L. Zajickova, E. Kedronova, J. Medalova, P. Cernochova, A. Stoica, M. Michlcek, A. Marashev CEITEC Masaryk University, Brno, Czech Republic, CEITEC Masaryk University, Brno, Czech Republic, Faculty of Science, Masaryk University, Brno, Czech Republic, Faculty of Science, Masaryk University, Brno, Czech Republic, Faculty of Science, Masaryk University, Brno, Czech Republic, Brno City of Health, Masaryk University, Brno, Czech Republic, Brno University, National Research University ``Higher School of Economics'', Moscow, Russia

17:00 Interfacial Nanoshell Formation Using Ferric Ion and Tannic Acid for Cell Encapsulation
Beom Jin Kim1, Sol Han1, Kyung-Bok Lee2, Insung S. Choi1
1Center for Cell Encapsulation Research, Department of Chemistry, KAIST, Daejeon 34141, Korea. 2Division of Bioconvergence Analysis, Korea Basic Science Institute, Daejeon 34133, Korea.

17:00 The stimuli responsive sensor CNT#8217,s nanostructures organized by biomolecular complex
V.Blashchuk1, D.Karpenko3, O.Ivanova1, N.Tiernkacos2, U.Ritter2, P.Scharff2, E.Buzanov1
1Taras Shevchenko National University of Kyiv, Faculty of RadioPhysics Electronics and Computer Systems, Volodymyrska Str. 64/13, 01601 Kyiv, Ukraine. 2Institute for Chemistry and Biotechnology, 98684, Ilmenau, Germany, PF 100585, 3 NTU of Ukraine.

17:00 Bioinspired material design by hierarchical self-assembly on prepatterned surfaces
K. Brassat, A. Keller, G. Grundmeier, W. Bremer, O. Strube, J. K. N. Lindner Department of Physics, Paderborn University, Paderborn, Germany, Department of Chemistry, Paderborn University, Paderborn, Germany, Center for Optoelectronics and Photonics, Paderborn COUPP, Paderborn, Germany, and Computer Systems, Volodymyrska Str. 64/13, 01601 Kyiv, Ukraine. 1Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Reymonta 10, 02-788 Warsaw, Poland. 2Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy. 3Department of Biomedical and Life Sciences, Lancaster University, Faculty of Health and Medicine, Lancaster University, Lancaster, Lancashire LA1 4YB, United Kingdom. 4Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy. 5Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy. 6Department of Chemistry, University of Ottawa, Children’s Hospital of Eastern Ontario

17:00 Photophysical properties of peptide nanostructures induced by beta-sheets
Nadezda Lapshina1, Tamara Shostak1, Amir Handelman1, 2, Tal Ellenbogen1 and Gil Rosenman1
1School of Electrical Engineering, Iby and Aladar Fleischman Faculty of Engineering, Tel Aviv University, Tel Aviv, Israel. 2Faculty of Engineering, Holon Institute of Technology, Holon, Israel

17:00 Multifunctional bioincompatible superparamagnetic nanoparticles encapsulated in a polymer matrix for cancer cell destruction and m Nanasheb D. Thorat and Seyed A.M.Toffa Materials Science and Surface Science, Bernal Institute University of Limerick, Ireland

17:00 Dynamic response of enteric neurons on polymeric substrates
Dilara Jakupovic (M.A.Sc. candidate) University of Ottawa, Children’s Hospital of Eastern Ontario

17:00 Spectral changes of agarose-based ultrasonic tissue-mimicking gel under different temperatures
Heng Yin Chen, Nelis G. Chen Institute of Biomedical Engineering, Department of Electrical and Computer Engineering, National Chiao Tung University, Hsinchu, Taiwan

17:00 Toxicological Evaluation of TiO2 and ZnO Nanoparticles on Fibroblasts and Keratocytes
Archana Gautam, Luong T. H. Nguyen, Kee Woei Ng School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798 Tel: +6597828653 Email: archana003@e.ntu.edu.sg

17:00 Surface modification of metallic materials dedicated to the new generation of artificial heart valve
Roman Major1, Malgorzata Gioniori2, Marek Sanak3, Roman Kustc2, Juergen M. Lackner4 ,1Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Reymonta St. 25, Cracow, Pl., 2 Heart Prosthesis Laboratory, Wojcik 345A, 41-800 Zabrze, Poland 3Department of Medicine, Jagiellonian University Medical College, 8 Skawinska Street, 31-066 Cracow, PL, 4Joinnium Research Forschungs-GmbH, Materials – Functional Surfaces, Leoben, A.

18:30 Multifunctional conductive bionanocomposite hydrogels for wound healing
Federica Leone, Karen Wright, Luigi Mannia, Barbara Onida, John G. Hardy Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy. Department of Biomedical and Life Sciences, Lancaster University, Faculty of Health and Medicine, Lancaster University, Lancaster, Lancashire LA1 4YB, United Kingdom. 2Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy. 3Department of Applied Science and Technology, Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Torino, Italy. 4Department of Chemistry, University of Ottawa, Children’s Hospital of Eastern Ontario

18:30 DNA carrier design for specific DNA sequence detection with nanopipettes
Nur Sabrina Wahid, Amelia Loh, Tim Abrecht, Anthony Cass Department of Chemistry, Imperial College London, Exhibition Road, London SW7 2AZ, U.K

18:30 Tailored anodit patterns created by nanosphere lithography for bioapplications
K. Brassat, A. Keller, G. Grundmeier, W. Bremer, O. Strube, J. K. N. Lindner Nanomaterials, Nanoanalysis and Photonic materials, Department of Physics, Paderborn University, Paderborn, Germany, Center for Optoelectronics and Photonics Paderborn COUPP, Paderborn, Germany, Technical and Macromolecular Chemistry, Department of Chemistry, Paderborn University, Paderborn, Germany, Biomedical and Bioprotected Materials, Department of Chemistry, Paderborn University, Paderborn, Germany.

18:30 Tailoring mechano-sensitive liposomes for targeted vasodilation
Marzia Buscema1, Sofiya Makiv1, Hans Deyhle2, Thomas Pohl1, Andreas Zumbuehl2 and Bert Müller1 1Biomaterials Science Center, University of Basel, Gewerbestrasse 14, 4123 Allschwil, Switzerland. 2Department of Chemistry, University of Fribourg, Chemin du Musée 9, 1700 Fribourg, Switzerland

Young Investigator Forum. Poster Session : Organizers/Chairs-Federico Zen, PhD Student, Trinity College Dublin, Dublin, Ireland & Valentine Blashchuk Bach D Student, TSN University of Kyiv, Kyiv, Ukraine . Supervisor Professor Dr. Masaru Tanaka, Kyushu University & Yngvar Johnsson, Sweden.

K FL1

K FL8

K FL9

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II. Smart Stimuli Responsive Nanomaterials: from designed synthesized to biological & biomimetics.


09:00 Keynote Lecture. Professor Jean-Pierre Sauvage. From Chemical Topology to Molecular Machines: The transition metal approach Prof. Jean-Pierre Sauvage Institut de Science et d’Ingénierie Supramoléculaire de l’Université de Strasbourg. 8 allée Gaspard Monge, BP70028, 67083 STRASBOURG Cedex, France

09:40 Supramolecular Nanomedicine Alexa Michail Fenniri Northeastern University, 313 Snell Engineering Center, 360 Huntington Avenue, Boston, MA, USA.

10:00 Coffee Break. General Photo

10:30 Supramolecular approaches to 2-D materials: from complex structures to sophisticated functions Prof. Paolo Samori ISIS, Université de Strasbourg & CNRS, 8 allée Gaspard Monge, 67000 Strasbourg, France.

10:50 Carbonaceous Nanomaterials For fast removal of Cytokines from Blood Dr. Mykola Serevygh, Prof. Yuri Gogotsi Department of Material Science and Engineering, Drexel University, Philadelphia, PA 19104 A.J. Drexel Nanomaterials Institute

11:10 Nanodiamonds as a platform for neuronal cell attachment and growth into functional networks Prof. Richard B. Jackman London Centre for Nanotechnology, University College London (UCL), 17-19 Gordon Street, London, WC1H 0AK, U.K.

11:30 Interfacial Supramolecular Peptide Nanostructures Dr. Emanuela Gatto University of Rome Tor Vergata, via della Ricerca Scientifica, 00133 Rome, Italy

11:50 Visible Peptide Nanodots Professor Gil Rosenman The Henry and Dinaf Krongold Chair of Microelectronics, School of Electrical Engineering, Faculty of Engineering, Tel Aviv University gillr@eng.tau.ac.il

12:10 Fluorescent carbon quantum dots as chemical messenger for molecular communication through body fluids Nurzio Tuccito, Graziana Messina, Giovanni Li-Destri, Antonino Licciardello, Giovanni Marletta University of Rome Tor Vergata, Italy.


13:00 Lunch. General Photo.

14:00 Invited Lecture. Bio-inspiring design and modeling of the self-organized cytopehysial and biocyrtery systems from nano to mega scale Heorhii Vorobets Department of Computer Systems and Networks, Yurly Fedkovych Chernivtsi National University, 2, Kotsysubynsky str., Chernivtsi, 58000, Ukraine

14:20 Organic Photodiodes from Homochiral L-Proline Derived Squaraine Compounds with Chirally Circular Dichroism Manuela Schiek,(1) Matthias Schulz,(2)Mayor Mack,(1) Oliver Kollege,(1) Arne Lützen. (1) University of Oldenburg, (2) University of Bonn

14:35 Photonic of Supramolecular Peptide Nanostructures Dr. Emanuela Gatto,1 Marta De Zotti,2 Fernando Formaggio,2 and Mariano Venanzi.1 1 Department of Chemical Sciences and Technologies, University of Rome “Tor Vergata”, 00133 Rome, Italy. 2 Institute of Biomolecular Chemistry, CNR, Padova Unit, Department of Chemistry, University of Padova, 35131 Padova, Italy

14:45 Piezophotonic materials: development and applications towards biological membranes breaching Carlos Serpa,1,2 Alexandre D. Silva,1 Gonzalo F. F. Sa,2 Luis G. Amzal.1 1 a COC, Department of Chemistry, University of Coimbra, 300-535 Coimbra, Portugal 2 LaserLeap Technologies, IPN, Rua Pedro Nunes, 3030-199 Coimbra, Portugal


15:15 Molecular wires based on bionic peptiides Marta De Zotti, Alessandro Moreto, Emanuela Gatto, Grazia M.L. Messina, Giovanni Marletta Marta De Zotti, Alessandro Moreto, Department of Chemistry, University of Padova, via Marzolo 1, 35131 Padova (Italy), Emanuela Gatto: Department of Chemical Sciences and Technologies, University of Rome Tor Vergata, 00133 Roma (Italy). Grazia M.L. Messina, Giovanni Marletta: Laboratory for Molecular Surfaces and Nanotechnology, Dept. of Chemical Sciences, University of Catania, 95125 Catania, Italy.

15:30 Coffee Break. General Photo

15:50 Polymorphic, Textured Squaraine Thin Films as Potential Neuronal Interface F. Balzer, H. Kollmann, M. Silies, M. Schiek, Mads Clausen Institute, Institute of Southern Denmark, DK-6400 Sønderborg, Denmark, Ultrafast Nanopics, Institute of Physics, University of Oldenburg, D-26111 Oldenburg, Germany. Kekulé Institute for Organic Chemistry and Biochemistry, University of Bonn, Gerhard-Domagk-Str.1, D-53121 Bonn, Germany. Energy and Semiconductor Research Laboratory, University of Oldenburg, D-26111 Oldenburg, Germany.

16:05 Electronic Plants and Tapping into Photosynthesis via Organic Bioelectrodes Gabór Méhes, Mikhail Vagin, Eleni Stavrinidou, Eliot Gomez, Daniel Simon, Magnus Berggren Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, 801 74 Nørköping, Sweden

16:20 Highly sensitive hydrogen peroxide biosensing by enzyme-mimetic antioxidant luminescent nanoparicles Anna Pratsinis, Georgios A. Kelesidis, Frank Krumeeich, Jean-Christophe Leroux, Georgios A. Sotiriou Drug Formulation and Delivery, Institute of Pharmaceutical Sciences, Department of Chemistry and Applied Biosciences, ETH Zurich, 8093, Zurich, Switzerland, Particle Technology Laboratory, Institute of Process Engineering, Department of Mechanical and Process Engineering, ETH Zurich, 8092 Zurich, Switzerland, Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, 17177 Stockholm, Sweden

16:30 Invited Lecture. New Frontiers of Clathrate Hydrate Crystalline Systems and their cyberphysical and biocyber systems from nano to mega scale Georgios A. Sotiriou Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, 801 74 Nørköping, Sweden

17:00 A conductive biomaterial: regenerated silk fibroin conductive film modified by poly(hydroxyethyl)methacrylate and polyaniline through in situ chemical oxidative polymerization Ao Zhuang, Yongjun Bian, Jianwei Zhou, Huali Shao, Xuechao Hu, Bo Zhu*, Yaopeng Zhang Donghua University PhD candidate in Materials Science State Key Laboratory for Modification of Chemical Fibers and Finishing Materials College of Materials Science and Engineering Donghua University Shanghai 201620, China Tel.+8621-67792948 E-mail: zhuangao1992723@163.com
17:00 Smart Scaffolds for 3D models: Electroactive scaffolds for in vitro cells monitoring and stimulation

17:30 Fabrication and testing of topologically interlocked architectured ceramics with improved impact resistance
Mohammad Mirkhalaf, Amanul Sunesara, Behnam Ashrafi, Benoit Simard, and Francois Barthelat
M. Mirkhalaf, A. Sunesara, and B. Ashrafi are with the National Research Council of Canada, 5145 Deelles Avenue, Montreal, QC H3T 2B2 (phone: +1 (514) 283 9209, Fax: +1 (514) 283 9445, emails: mohammad.mirkhalaf@nrc-cnrc.gc.ca, Amanul.Sunesara@nrc-cnrc.gc.ca, Behnam.Ashrafi@nrc-cnrc.gc.ca). B. Simard is with National Research Council Canada, Room 1043-100 Sussex Drive Ottawa, ON K1A 0R6 (phone: 613-991-2648, email: Benoit.Simard@nrc-cnrc.gc.ca). F. Barthelat is with the Department of Mechanical Engineering, McGill University, 817 Sherbrooke West Street, Montreal, QC H3A 2K6, Canada (phone: 514-398-7365, email: francois.barthelat@mcgill.ca).

17:30 Fabrication of microcapsules containing clove oil and its application for antibacterial purpose
Yong-Bing Chong, Chee-Yoon Yue, Jinglei Yang
School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore, School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore, Department of Mechanical and Aerospace Engineering, Hong Kong University of Science and Technology, Hong Kong SAR, China.

17:30 Polyelectrolyte and enzyme functionalized layered bionanomaterials for antioxidant applications
Paul Rousteau, Marko Pavlic, Istvan Szilagyi
Department of Inorganic and Analytical Chemistry / Laboratory of Colloid and Surface Chemistry, University of Geneva, 30 quai Ernest Ansermet, CH-1205, Geneva, Switzerland.

17:30 Hollow PLOA particles for encapsulation and delivery of GLP-1 to overcome the limitations of solid particles
Sharad Kharel, Say Chye Joachim Loo
1. School of Materials Science and Engineering, Nanyang Technological University, Singapore - 1. School of Materials Science and Engineering, Nanyang Technological University, Singapore - 2. Singapore Centre on Environmental Life Sciences Engineering (SCELSE), Nanyang Technological University, Singapore

17:30 Investigating structure-function properties of biosystems by Advanced Scanning Probe Microscopy
Chiara Musumeci[a], Olga Inganäs[b]
[a] NUANCE Center, Northwestern University, 60208-3113 Evanston IL, USA, e-mail: chiara.musumeci@northwestern.edu. [b] Biomolecular and Organic Electronics, Department of Physics, Chemistry and Biology (IFM), Linköping University, 58181 Linköping, Sweden.

17:30 A DNA Assay on a string – Optimisation of sensing
Loh Yue Yan Amelie, Nur Sabrina Wahid, Dr Tim Albrecht, Professor Tony Cass
Department of Chemistry, Imperial College London (similar for all authors)

17:00 Adipose (fat tissue)-derived stem cell-nanodiamond interactions for the development of differing cell types
Despoina Paschou, Sungmyung Kang, Alice Taylor, Patrizia Ferretti and Richard B. Jackman
London Centre for Nanotechnology and Department of Electronic and Electrical Engineering, University College London, 17-19 Gordon Street, London, WC1H 0AH, UK. UCL Great Ormond Street Institute of Child Health, 30 Guilford Street, London WC1N 1EH, UK

17:00 Assembly of Sub-Compartmentalized Microreactors and Hepatocytes for Bionic Tissue Formation
Yan Zhang, Brigitte Städler
iNANO Interdisciplinary Nanoscience Centre, Aarhus University, Denmark e-mail: yan.zhang@inaano.au.dk

17:00 3D model for bone tissue engineering

17:00 Artificial Organic Photoreceptors for Photo-Electrical Stimulation of Neuronal Cells
Oliya S. Abdullahova,(1) Frank Balzer,(2) Karim Habashy,(1) Matthias Schulz,(3) Jürgen Parisi,(1) Arne Lützen,(3), Karin Dedek,(1) Manuela Schiek.(1)
(1) University of Oldenburg, (2) University of Southern Denmark, (3) University of Bonn

17:00 Fractionation of cellulose nanocrystals: from liquid crystal self-assembly to the formation of structural films
Camila Honorato-Rios, Jan Lagenwall
University of Luxembourg. Physics & Materials Science Research Unit, Experimental Soft Matter Physics Group

17:00 Bioorganic active cellular matrices: Preparation, mechanical characterization and cellular behaviour
O. Deschaume[1], Y. de Coene[1], J. Ye[2], C. Batic[1]
(1) Soft matter Physics and Biophysics unit, Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200 - box 2416, 3001 Leuven, Belgium, olivier.deschaume@kuleuven.be. (2) School of Biomedical Engineering, Shanghai Jiao Tong University, 1954 Huashan Road, Shanghai, 200030, China

17:00 Bioorganic platelet/fiber multilayered architectures: Organization in suspended and dried states
O. Deschaume[1], S. Abakumov[1-2], O. Korculanin[1-2], C. Batic[1] and M. P. Lettinga[1-2]
(1) Soft matter Physics and Biophysics unit, Department of Physics and Astronomy, KU Leuven, Celestijnenlaan 200 - box 2416, 3001 Leuven, Belgium, olivier.deschaume@kuleuven.be. (2) Forschungszentrum Jülich, Institute of Complex Systems (ICS-3), 52425 Jülich, Germany

17:00 Development of magnetically-modified electrospun chitosan-based nanocomposite fibrous mats and their bioapplications
Ioanna Savva 1, Theodora Krixia-Christoforou 1, Ivo Safark 2-3, Kristyna Popiskova 3, Eva Baldikova 2
1 University of Cyprus, Department of Mechanical and Manufacturing Engineering, 75 Kalopolio Avenue, P.O.Box 20537, 1678, Nicosia, CYPRUS; 2 Department of Nanobiotechnology, Biology Centre, ISB, CAS, Na Sadkach 7, 370 05 Ceske Budejovice, Czech Republic, 3 Regional Centre of Advanced Technologies and Materials, Palacky University, Slechtitelu 27, 783 71 Olomouc, Czech Republic. * Corresponding author’s e-mail address: ian.savva@gmail.com

17:30 Exploring the interaction of DNA nanostructures with lipid bilayers
M. Paez-Perez, O. Ces, S. Howorka
Department of Chemistry - Imperial College London, Department of Chemistry - Imperial College London, Department of Chemistry - University College London
POSTER SESSION

Wednesday 24 May 2017

III. Smart Interfacial Materials Fundamentals, Engineering & Control, Elucidate Cellular Response

08:45 Tutorial Lecture. Smart Interfacial Materials from Super-Whettability to Binary Cooperative Complementary Systems

Le. Jang
Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, China, School of Chemistry and Environment, Beihang University, Beijing 100191, China

09:25 Keynote Lecture. Aqueous-based spinning of artificial animal silk using a biomimetic apparatus

Yaoping Zhang, Qingfa Peng, Li Hu, Huili Shao, Kankan Qin, Xuehao Hu, Xiaoxia Xia
Donghua University, Donghua University, Donghua University, Donghua University, Shanghai Jiao Tong University, Donghua University, Shanghai Jiao Tong University

09:50 Keynote Lecture. The physiological polymerization and biomedical applications of functional hydrogel/alginate

Qiang Wang
Chemical Science and Engineering, Tongji University, Shanghai 200092, China

10:15 Coffee break

10:30 Keynote Presentation. Strategies to manipulate the surface properties of poly(3-ethylenedioxythiophene) thin films for detection applications

Si-hao Qian
Si-hao Qian, Qichao Pan, Yongjun Bian, Yaqiong Zhang, State Key Lab for Modification of Chemical Fibers and Polymer Materials & College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Yong He, Center for Aviation Composites, College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Bo Zhu, College of Materials Science and Engineering, Shanghai University, 99 Shangda Road, BaoShan, Shanghai, 200444, China

10:50 Keynote Presentation. Bioinspired and Biocompatible Conducting Polymers toward Implantable Bioelectronics

Zhi Geng, Qichao Pan, Zhengwei You, Bo Zhu
Zhi Geng, Qichao Pan, Zhengwei You, State Key Lab for Modification of Chemical Fibers and Polymer Materials & College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Bo Zhu, College of Materials Science and Engineering, Shanghai University, 99 Shangda Road, BaoShan, Shanghai, 200444, China. Email: bozhu@shu.edu.cn

11:10 Invited Presentation. Template-free Assembling of Bio-functionalized Poly(3,4-ethylenedioxythiophene) with Controllable Nanostructures and their Applications in Tumor Cell Capturing

Liang Gao, Zhi Geng, Zhiwei You, Bo Zhu
Liang Gao, Zhi Geng, Qichao Pan, Zhengwei You, State Key Lab for Modification of Chemical Fibers and Polymer Materials & College of Materials Science and Engineering, Donghua University, 2999 North Renmin Road, Songjiang, Shanghai, 201600, China, Bo Zhu, College of Materials Science and Engineering, Shanghai University, 99 Shangda Road, BaoShan, Shanghai, 200444, China. Email: bozhu@shu.edu.cn

11:25 Oral Presentation. Sacrificial hydrogen bonding enables tough and biodegradable bioelastomers with shape memory properties

Shuo Chen, Li-Jie Sun, Zenghe Liu, Ziyung Lv, Zhengwei You
State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China

11:35 Oral Presentation. A conductive biomaterial: regenerated silk fibroin conductive film modified by poly(hydroxyethyl-3,4-ethylenedioxythiophene)

Ao Zhan, Yaoping Zhang
State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China

11:45 Oral Presentation. Bioinspired synthesis of polydopamine@TATB core-shell microparticles with highly enhanced mechanical properties

Congmei Lin, Feiyao Gong, Guansong He, Liping Pan, Shijun Liu
College of Chemical Material, China Academy of Engineering Physics
Keynote Session: Organizers/Chairs Dr. Nikos G. Tsikerkos (TU Ilmenau, Germany), Dr. Oleksandr Ivanyuta (TSU University of Kyiv, Ukraine) and Professor Silvia Giordani (University of Turin, IIT, Genova, Italy, COST Action CA 15107 W3G Chief)

08:30 Charge transport in polycrystalline graphene
Anon W. Cummings, Stephani Roche
Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, 08193 Barcelona, Spain ICREA - Institució Catalana de Recerca i Estudis Avançats, 08010 Barcelona, Spain

09:05 Composition dependent properties of graphene (oxide)-alginate biopolymer nanocomposites
a.d Karolis Vlincskas, b Kaspar M.B. Jansen, a Fokko M. Mulder, a Ger J.M. Koper, a Bert Norder, c Jure Zopasa, a Stephen J. Picken
Department of Chemical Engineering, Delft University of Technology, Delft, The Netherlands, b Faculty of Industrial Design Engineering, Delft University of Technology, Delft, The Netherlands, c Department of Biotechnology, Delft University of Technology, Delft, The Netherlands. d current address: KTP Associate - Polymer Engineering at University of Bradford/BNL Bearings, United Kingdom

09:35 Functionalized Carbon Nano-Onions as Imaging Probes for Cancer Cells
Professor Silvia Giordani Associate Professor of Organic Chemistry, Founder of the Nano Carbon Materials Laboratory. Working Group Leader of the COST Action CA 15107 “Multi-Functional Nano-Carbon Composite Materials Network (MultiComp)”, 1 Department of Chemistry, Università di Torino, via Giuria 7, 10125, Turin, Italy silvia.giordani@unito.it, 2 Nano Carbon Materials, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy, silvia.giordani@iit.it.

10:00 In vivo toxicity and biodistribution of fluorescent labelled carbon nano-onions in a vertebrate model
Maria d’Amoraa, Sefania Lettierib, Adalberto Camisasca, Alberto Diaspro,c, Silvia Giordanid, e
a Nanoscopy, Nanophysics, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy, b Nano Carbon Materials, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy, c NIC@IIT, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy, d Chemistry Department, University of Torino, via Giuria 7, 10125, Torino, Italy, e current address: University of Erlangen, Germany

11:30 Self-assembled ordered silica nanostructures for delivery of theranostic colon cancer cargo
Nanasaheb D. Thorat1, Mohamed Radzi Noor2, Tewfik Soulimane2 and Syed A.M. Tofail1
1 Nanomaterials & Nanocomposites, University of Limerick, Limerick, Ireland 2 School of Applied Science and Engineering, Harvard University, Cambridge, MA, USA.

11:45 Nanomaterials for therapy of redox diseases
Gina MANDA, Silvia GIORDANI
Professor Babes National Institute of Pathology, Radiobiology Department, 99-101 Splaiul Independentei, 050096 Bucharest, Romania, gina.manda@gmail.com, Istituto Italiano di Tecnologia (IIT), Nano Carbon Materials, Nanophysics Department, Via Morego 30, 16163 Genova, Italy, silvia.giordani@iit.it

12:00 Functionalized Carbon Nano-Onions as Imaging Probes for Cancer Cells
Professor Silvia Giordani Associate Professor of Organic Chemistry, Founder of the Nano Carbon Materials Laboratory. Working Group Leader of the COST Action CA 15107 “Multi-Functional Nano-Carbon Composite Materials Network (MultiComp)”, 1 Department of Chemistry, Università di Torino, via Giuria 7, 10125, Turin, Italy silvia.giordani@unito.it, 2 Nano Carbon Materials, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy, silvia.giordani@iit.it

12:15 Far-Red Fluorescent Carbon Nano-Onions For Cellular Imaging
S. Lettieri (1), A. Camisasca (1), M. d’Amora (3), A. Diaspro (3), S. Giordani (1,2)
1 Nano Carbon Materials, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy, b Nano Carbon Materials, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy, c NIC@IIT, Istituto Italiano di Tecnologia, Via Morego 30, 16163 Genova, Italy, d Chemistry Department, University of Torino, via Giuria 7, 10125, Torino, Italy

12:30 Keynote Lecture. Professor Reshef Tenne. Inorganic nanotubes and fullerene-like structures: from fundamental to applications
Professor Reshef Tenne
Department of Materials and Interfaces, Weizmann Institute, Rehovot 76100, Israel

13:00 Keynote Presentation of Investigators for The COST Action CA 15107 MultiComp, The Working Group WG 3 "Multi-Functional Nano-Carbon Composite Materials Network (MultiComp)"
Professor Silvia Giordani (University of Turin, IIT, Genova, Italy, COST Action CA 15107 W3G Chief)
Friday 26 May 2017

K VI.12 12:15 Invited Presentation. Imaging Circulating Tumor Cells
Chiung-Wen Kuo, Di-Yen Chueh, and Peilin Chen
Research Center for Applied Sciences, Academia Sinica, Taiwan

K VI.12 12:30 Lunch

VI. Nanomaterials, Nanodevices & Bioimaging for Nanomedicine Collaborative Session.
Keynote Presenters from Taiwan, Japan & Switzerland:
Organizer/Chair: Dr. Peilin Chen (Academia Sinica, Taiwan)

08:30 Keynote Introduction. Nanodevices & Bioimaging for Nanomedicine. Dr. Peilin Chen
Peilin Chen
Research Center for Applied Sciences, Academia Sinica, Taiwan

08:45 Keynote Lecture. X-ray imaging of nanoparticles
Chi-Feng Huang*, Ting-Kuo Lee*, Peilin Chen**, Yu-Fang Hu***, Keng S. Liang* and Y. Hwu*
* Institute of Physics, Academia Sinica, Taipei 115, Taiwan  ** Research Center for Applied Sciences, Academia Sinica, Taipei 115, Taiwan  *** TTY Biopharm Co., Ltd, Taipei 115, Taiwan

09:15 Keynote Presentation. Iron containing functional nanomaterials for integrated diagnostics and therapeutics of cancer and infectious diseases
Dar-Bin Shieh, Wei-Ting Lee, Tsung-Ju Li, Li-Xing Yang, Shang-Rung Wu, Chen-Sheng Yeh, Pei-Jane Tsai
National Cheng Kung University, Tainan, Taiwan

09:45 Keynote Presentation. Interfacing nanocarriers with cellular membranes for biomedical applications and biomimetic drug delivery
Che-Ming Jack Hu
Institute of Biomedical Sciences, Academia Sinica, Taiwan

10:05 Invited Presentation. Organic electrochemical transistor-based swimming pools for circulating tumor cell isolation and detection
Yu-Sheng Hsiao1, Peilin Chen2
1Department of Materials Engineering, Ming Chi University of Technology, 2Research Center for Applied Sciences, Academia Sinica

10:20 Coffee break

10:30 Keynote Presentation. Genetic engineering of functional polypeptides for designing biologically-active materials
Koichi Kato
Department of Biomaterials, Institute of Biomedical & Health Sciences, Hiroshima University

10:50 Keynote Presentation. Modified naphthalene diimide as a suitable tetraplex DNA ligand: Application to cancer diagnosis and anti-cancer drug Shigeori Takenaka
Department of Applied Chemistry/Center for Bio-microsensing Technology, Kyushu Institute of Technology

11:10 Keynote Presentation. TiO2-assisted photocatalytic lithography: Applications in patterning neuronal cells and networks
Hidesaki Yamamoto1, Sho Konno2, Syo Fujishiro2, Kohei Furusawa2, Takashi Tani2, Michio Niwano3, Ayumi Hirano-Hirai3
1: Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Japan. 2: Graduate School of Fundamental Science and Engineering, Waseda University, Japan. 3: Research Institute of Electrical Communication, Tohoku University, Japan.

11:30 Invited Presentation. Critical Considerations for Enhanced Permeability and Retention (EPR)-targeted Mesoporous Silica Nanoparticles
Si-Han Wu
Graduate Institute of Nanomedicine and Medical Engineering, College of Biomedical Engineering, Taipei Medical University, Taipei 11031, Taiwan

11:45 Invited Presentation. Underestimated role of perinuclear stress fibers in mechanotransduction as revealed by nanopillar force measurements
Jau-Ye Shiu
Laboratory of Applied mechanobiology, Department of Health Sciences and Technology, ETH Zurich, 8093 Zurich, Switzerland

12:00 Invited Presentation. Mesoporous Silica Nanoparticles-Mediated Denatured Protein Delivery: Study Focusing on the Mechanism
Yi-Ping Chen
Graduate Institute of Nanomedicine and Medical Engineering, College of Biomedical Engineering, Taipei Medical University, Taipei 110, Taiwan

K VI.1
SYMPOSIUM L

New materials for organic electronics: from synthesis to processing, characterization and device physics

Symposium Organizers:

Christian MÜLLER, Chalmers University of Technology, Göteborg, Sweden

Elizabeth VON HAUFF, VU Amsterdam, The Netherlands

Mario CAIRONI, Istituto Italiano di Tecnologia, Milano, Italy

Michael SOMMER, University of Freiburg, Germany

Invited contributions only to be published in Advanced Electronic Materials (Wiley)
09:00 High y oriented and crys tal L ine semi-conducting and conducting poLymer films prepared by high-temperature rubbing. Martin Brinkmann (1), Amer Hamidi-Sakr (1), L aure Biniek (1), Patrick L évéque (2), Jean-L uis Bantignies (3), David Maurin (3), Nicola as L e L érc (4).
(1) Université de Strasbourg, CNRS, ICS UPR22 F76000 Strasbourg, France (2) Université de Strasbourg, CNRS, ENGIE, INSA, ICube UMR 7357, F-67000 Strasbourg, France (3) Université de Montpellier, L et, L aboratoire CarLaL e, couL emb, F34065 Montpellier, L et, France (4) Université de Strasbourg, CNRS, ICPEES, UMR 7515, F67000 Strasbourg, France.


10:00 Coffee break


11:30 Combinatorial processing of organic photovoltaic material, s for ul ultral low performance evaL uation. A.Sanchez-Diaz, X. Rodríguez-Martínez, E. Pascual.-San José, M. Campoy-Quil es. Nanostructured Material, s Department, L aboratorio de Ciencia de Material, s de BarceloL ona (ICMAB-CSIC), Campus de L a UAB, 08193 BeL L aterra, Spain

12:00 L unch
17:30 Furan-Containing Conjugated Pol ymer: High-Performance Organic Transistor with Chl orine-Free SoL ution Processing
Hae Rang Lee, Sang Myeon Lee, A-Reum Han, Junghoon Lee, ChangduK Yang, Joon Hak Oh
Department of Chemical Engineering, Pohang University of Science and Technolog y (POSTECH), 77 Cheongam-ro, Pohang, Gyeongbuk 37673, South Korea, Department of Energy Engineering, School of Energy and Chemical Engineering, Low Dimensional Carbon Materials Center, UL san National Institute of Science and Technolog y (UNIST), 50 UNIST-gil, UL ju-gun, UL san 44919, South Korea, Department of Chemical Engineering, Pohang University of Science and Technolog y (POSTECH), 77 Cheongam-ro, Pohang, Gyeongbuk 37673, South Korea, Department of Energy Engineering, School of Energy and Chemical Engineering, Low Dimensional Carbon Materials Center, UL san National Institute of Science and Technolog y (UNIST), 50 UNIST-gil, UL ju-gun, UL san 44919, South Korea, Department of Chemical Engineering, Pohang University of Science and Technolog y (POSTECH), 77 Cheongam-ro, Pohang, Gyeongbuk 37673, South Korea.

L 1.19

17:30 MoL ecuL ar dynamics simuL ations of graphoepitaxy of organic semiconductors, sexithiophene and pentacene
Susumu Ikeda
WPI-Advanced Institute for Material s Research (WPI-AIMR), Tohoku University, Japan.

L 1.27

17:30 Power conversion efficiency of organic Light-emitting transistors
V.A. Trukanov, E.V. Parygin, V.V. Bruevich, D.Yu. Paraschuk
International, L aser Center and Facul ty of Physics of L omonosov Moscow State University, Moscow, Russia.

L 1.28

17:30 Synthesis and Device Performance of Imide-based Host Material s for Thermal L Y Activated Del ayed FL uorescence Devices
Jun-Seok Yeo, Oh Young Kim, Seok-Ho Hwang
Department of Polymer Science & Engineering and Soft Chemical M aterials Center, Dankook University, Suwon, Korea.

L 1.29
Wednesday 24 May 2017

Transistors I: Wouter Maes, Paul. BL om, Carsten Deibel.

08:30 Development of high performance printed polymer transistors and integrated circuits
Yong-Young Noh
Department of Energy and Materials Engineering, Dongguk University

09:00 Development of SOLution-Processed BODIPY-Based Semicrystalline Microfibers and Microribbons for Organic Thin-FILm m Transistors
Hakan Usta, Mehmet Ozdemir, Choongik Kim, Donghee Choi, Antonio Facchetti
Hakan Usta, Mehmet Ozdemir: Department of Material Science and Nanotechnology Engineering, Abdullah Al Ahmad
Choongik Kim, Donghee Choi: Department of Chemical and Biomolecular Engineering, Sung Ang University.

09:15 Charge Transport in Semicrystalline Polymeric Semiconductors
Koew-Hyeon Kim1, Jia Li1, Iqbal Lai2, Chang-Ki Moon1, Hyo Jung Kim3, Yun Ch2, Jang-Joo Kim1
1. Department of Materials Science and Engineering, Seoul National University.
2. Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan.

09:30 High-performance gravure printed organic transistors
8045 Lamon Avenue, Skokie, IL 60077, United States

10:00 Coffee break

10:30 Understanding and Improving the Operation of POLymeric Field Effect Transistors
Hong Phan, Ming Wang, Michael Ford, Guil. L. ermo C. Bazan, Thuc-Quyen Nguyen
Department of Chemistry and Biochemistry, University of California Santa Barbara.

10:45 Quantifying the Vertical Phase Separation in C8-BTBT:PS OFETs and Its Influence on the EL Ectrical Performance
Ana Pérez-Rodriguez, Inés Temiño, Marta Mas-Torrent, Carmen Ocañ, Esther Barrena
Institut de Ciencia de Materiaus de Barcelona (ICMAB-CSIC), Spain

11:00 Pl anar-Processed POLymers Transistors
Yong Xu, Huabin Sun, Yong-Young Noh
Dongguk University, Department of Energy and Materials Engineering, 30 Pil dong-ro, 1-gil, Jung-gu, Seoul. 04620, Republic of Korea

11:15 QuantiFiying the Vertical PHase Separation in C8-BTBT:PS OFETs and ITS INFluENCE ON THE EL ECTRICAL PERFORMANCE
Ana Perez-Rodriguez, Ines Temiño, Marta Mas-Torrent, Carmen Ocal, Esther Barrena
Institut de Ciencia de Material s de Barcellona (ICMAB-CSIC), Spain

11:30 Smal L-MOL ecul e-p-Channel and n-Channel Thin-FILm m Transistors for High-Frequency FL exiTLe organic CompLementary Circuits
Hagen KL. auk
Max PL anck Institute for Solid State Research

12:00 L unch

13:45 Charge carrier trapping in organic semiconductors
Ji Hwan Kim, Chang-Hyun Kim, Myung-Han Yoon*
School of Materials Science and Engineering, Gwangju Institute of Science and Technology.

14:00 Direct XRay Photoconversion in FL exiTLe e, UL tra-L ow VOL tage Organic Thin FIL m Devices
L. Basiricó, A. Ciavatti, T. Cramer, P. Cosso, A. Bonifiglio, e. B. Fraboni
University of Bologna - Department of Physics and Astronomy, viale B. Pichat. 6/2, Bologna, Italy.

14:45 Crystalline Organic Light-Emitting Diodes with PoLeCTricity Oriented Nondoped Pt-Based Emitting Layer
Keowo-Hyeon Kim1, Jia Ling Lai2, Chang-Ki Moon1, Hyo Jung Kim3, Yun Ch2, Jang-Joo Kim1
1. Department of Materials Science and Engineering, Seoul National University.
2. Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan.

15:00 Enhancement of detection speed in organic (P3HT:PCBM:PMMA) photodiodes byanelator blur ending
Naohiro Strobel, R. Ake, E. Eckstein, U. L. Emmer, Gerardo Hernandez-Sosa
Naohiro Strobel, R. Ake, E. Eckstein, U. L. Emmer, Gerardo Hernandez-Sosa: Light
Technology Institute, Karl-Schweizer Institute of Technology, University of Science, and Technology, Korea.

15:15 Design of Lanthanide-based OLEDs with remarkable carrier confinement
Francesco Zinna, Maria Chiara Lucini, Francesco Gal Etti, Chiara Botta, Lorenzo Di Bari, Umberto Giovaneli, etc.
University of Torino, Italy.

15:30 High definition in-situ electro-optical characterization for Roll to Roll printed eLectronics
Francesco Pastorello, L. Organic Electronic Materials, Department of Energy Conversion and Storage, Technical University of Denmark, Frederiksberg, Denmark.

15:45 PL asmonics-based Organic Fiel d-d-Effect Transistor for Optical L y Programmable Memory
Ji Hwan Kim, Chang-Hyun Kim, Myung-Han Yoon*
School of Materials Science and Engineering, Gwangju Institute of Science and Technology.

16:00 Coffee break

16:15 PL enary Session
08:30 Pol arons in high mobility organic semiconductors: computational insights. L 1.1
   Daniel e Fazzi
   Max-PL anck-Institut for Kohl enforschung (MPI-KOFO)

09:00 Tight-binding approach to pol aron states in full erene adducts L 1.2
   Beth Rice, Jarvi l Frost and Jenny N el son
   Imperial College London

09:15 Characterization of gap states related to organic semiconductor p-doping L 1.3
   Julien Herbach, Amel le Ravaux, Dominique Vu il, Lu e Antoine Kahn
   Univer sity Grenoble, e AL pes, CEA-L ITEN, Grenob le, e, 38000, France
   IEMN, CNRS, Univ. L I Le, V L eneuve d Ascq, 59652, France
   Dept. of EL ectrical Engineering, Princeton University, Princeton, NJ, 08544, USA

09:30 Dopant-enhanced luminescence in thiophene-phene lyne co-o ligomer single crystal s L 1.4
   V. V. Buevich (1), V. G. Konstantinov (1), N. V. Gu l, Ilyuk (1), O. D. Parashchuk (1), O. V.
   Borschchev (2), N. M. Surin (2), S. A. Ponomarenko (2, 3), D. Yu. Parashchuk (1)
   (1) F acul ty of Physics & Interna tional L aser Center, L omonosov Moscow State
   University (2) Institute of Synthetic Pol ymeric Material s, Russian Academy of
   Sciences (3) Chemistry Department, L omonosov Moscow State University

09:45 Effects of Impurity Doping at ppm L evel in Photovoltaic taic Organic Semiconductors L 1.5
   Masahiro Hiramoto

10:00 Coffee break

10:30 Investigating doping and pol arons in high-mobil ity semiconducting pol ymers by in-situ Raman spectroscopy L 1.6
   Jana Zaumseil, C H leFrancis, Daniel e Fazzi
   Université Heidelberg, Institute for Physical Chemistry, D-69120 Heidel berg, Germany,
   Université Lille, Institute for Physical Chemistry, D-69120 Heidel berg, Germany
   & University of York, York Y01 0SD, United Kingdom, Max-PL anck-Institut für Kohlenforschung (MPI-KOFO), D-45470 Mülheim an der Ruhr, Germany

11:00 An all-ternative anionic pol ye lectrolyte for PSS for aqueous PEDOT inks L 1.7
   Hofmann, A. L., Ratskai gnoppoulou, D., Mumtaz, M., Pescastins, G., FL eury, G.,
   Pavl, opoulou, E., Brouch, C., Hadziioannou, G., CL ouet, E.
   (1) Univer sité de Bordeaux, L aboratoire de Chimie des Pol ymers Organiques (L CPo), UMR 5629, B B AL L e Geoflroy Saint HIl aire, F-33615 Pessac Cedex, France
   (2) Centre National de L a Recherche Scientifique (CNRS) L aboratoire de Chimie des Pol ymers Organiques (L CPo), UMR 5629, B B AL L e Geoflroy Saint HIl aire, F-33615 Pessac Cedex, France
   (3) L aboratoire National P olytechnique de Bordeaux (lNP Bordeaux), L aboratoire de Chimie des Pol ymers Organiques (L CPo), UMR 5629, B B AL L e Geoflroy Saint HIl aire, F-33615 Pessac Cedex, France

11:15 Charge-exciton interaction rate in organic field-effect transistor by means of transient photot olluminescence EL ectromodulated ated spec L 1.8
   Wouter A. Koopman, Marcel N atal 1, Giovanni P ondani, Michele e Mucci cci, Stefano Toffann
   Wouter A. Koopman, Marco N atal 1, Giovanni P ondani, Michele e Mucci cci, Stefano Toffan
   Universität Potsdam, Institute of Physics & Astronomy, KarL -L ebknert-Straße 24-25, 14476 Potsdam, Germany
   CRC-1104, Uni versität Potsdam, Germany, M aro Natal 1, CR C-1104, Uni versität Potsdam, Germany
   Wouter A. Koopman, Marco N atal 1, Giovanni P ondani, Michele e Mucci cci, Stefano Toffan

11:30 Pol ymer structure and its impact on the conductivity of n-doped pol ymers L 1.9
   Simone Fabiano

12:00 L unch
SYMPOSIUM M

Novel transport phenomena in organic electronic devices: heat, spin and thermoelectricity

Symposium Organizers:

**Emanuele Orgiu**, INRS - EMT Centre, Montréal, Canada

**Luis E. HUESO**, CIC nanoGUNE, San Sebastian, Spain

**Oliver FENWICK**, Queen Mary, University of London, U.K.

**Yoann OLIVIER**, Université de Mons, Belgium

Be invited to publish in a special issue of Advanced Functional Materials.
08:00 Interface as key unit in organic spintronic devices
Valentin Alek DEDIU
CNRS-ISMN, via Gobetti 101, 40129 Bologna, Italy

09:00 Efficient spin-flop excitation of a nickelocene molecule
Maider Oramza, Nicolas Bacheller, Marisa N. Faraggi, Benjamin Verhaic, Paula Auffager, Fabrice Scheurer, Philippe Ohresser, Loïc Joly, Michelangelo Romeo, Marie-Laure Boquet, Nicolas Lorente, Laurent Limot
Université de Strasbourg CNRS IPCMS, Université de Strasbourg CNRS IPCMS, Ecole Normale Superieure de Pari, Université de Strasbourg CNRS IPCMS, Instituto de Fisica de Pblicos and Rosario COCINEC, Università di Strasbourg CNRS IPCMS. Synchrotron SOLEIL. Université de Strasbourg CNRS IPCMS, Ecole Normale Superieure de Paris, Centro de Fisica de Materiales CFMMPC, Université de Strasbourg CNRS IPCMS.

09:15 Spin doping using transition metal phthalocyanine molecules
A. Atxaba [1], M. Ribeiro [1], S. Panul [1], L. Ureña [1], E. Agasta [1], X. Sun [1,2], R. Llopis [1,2], F. Casanova [1,3], L. E. Hueso [1,3], 1. CIC-nanoGUNE, Tohoku Hirobea 76, 20018 Donostia, Spain, 2. National Center for Nanoscience and Technology 100190 Beijing, P. R. China 3. IKERBASQUE, Basque Foundation for Science, 48011 Bilbao, Spain

09:30 Functionalizing spin-textured 2D electronic systems with tailored organic bonds
M. Cinchetti
IKERBASQUE, Basque Foundation for Science, 48011 Bilbao, Spain

10:00 Coffee Break

10:30 Electronic and ionic thermoelectric effects in conducting polymers
Xavier Crispin
Linköping University

11:00 Substrate temperature as a key element in tailoring the thermal conductivity in organic semiconductors
Joan Ráfols-Ribé, Pablo Ferrando-Villalba, Marta González-Silveira, Libertad Abad, Aitor Lopeandía, Javier Rodríguez-Veijo, joan RAFOLS-RIBE@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Pablo.Ferrando@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, marta.gonzalez@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Libertad Abad, Institut de Microelectronicàtica de Barcelona, Centro Nacional de Microelectrónica@IFIC, Cerdanyola del Vallés, 08193, Spain, aitor.lopeandia@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Javier Rodriguez@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Javier Rodriguez@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Javier.

11:15 Structure-to-property relationships for heat-transport in organic semiconductors
Natalia Bedoya, Egbert Zojer
Institute of Solid State Physics Graz University of Technology Graz, Austria

11:40 A heterogeneous model for thermoelectricity and electrical conductivity in poly(3,4-ethylenedioxythiophene):poly(styrene sulfonate) polystyrene sulfonate
Manting Qiu, Mark Baxendale
Queen Mary University of London, School of Physics and Astronomy, Mile End Road, London E1 4NS, United Kingdom

11:50 Coulomb Interaction Dominates the Seebeck Coefficient in Monolayer OFETs
M. Cinchetti
IKERBASQUE, Basque Foundation for Science, 48011 Bilbao, Spain

12:00 Lunch

14:00 Charge- and Spin Dynamics in Organic Spintronics
Jairo Sinova [1], Shayan Hemmatyan [1,2], Amaury Melo Souza [1], Sebastian Müller [1], Sergei A. Egorov [3,1], Denis Andrienko [4], Erik R. M. Niellin [1], 1. Johannes Gutenberg University, Mainz, Germany, 2. Texas A&M University, College Station, USA, 3. University of Virginia, Charlottesville, USA, Max-Planck-Institute for Polymer Research, Mainz, Germany

14:45 Spin injection into organic semiconductors driven by ferromagnetic resonance
Angela Wittmann [1], Shun Watanabe [2], Guillaume Scheucher [1], Iain McCulloch [3], Mario Amado [4], Jason Robinson [4], Henning Siringhaus [4]
1. Optoelectronics Group, Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom, 2. Department of Advanced Materials Science, University of Tokyo, Tokyo, Japan, 3. Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London, United Kingdom, 4. Department of Materials Science and Metallurgy, University of Cambridge, United Kingdom

15:00 Giant electrode dependence of tunneling electroresistance and data retention time in organic ferroelectric tunnel junctions
Sayani Majumdar [1], Birbin Chen [1,2], Qin Qi [1,2], Sebastian van Dijken [1]
1. Nanospin, Department of Applied Physics, Aalto University School of Science, FI-00076, Finland, 2. National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing 210093, China. Corresponding author e-mail: sayani.majumdar@aalto.fi

15:15 Under-barrier spin-phonon relaxation in molecular magnets
Alessandro Lunghi, Federec Tofta, Robert Sessoli and Stefano Sanvito
School of Physics and GRANN, Trinity College, Dublin, Ireland, Universidad de los Studi die Firenze, Dipartimento di Chimica “Ugo Schiff”, Sesto Fiorentino, Via della Lastruccia 3-13, 50019, Italy. Universidad de los Studi die Firenze, Dipartimento di Chimica “Ugo Schiff”, Sesto Fiorentino, Via della Lastruccia 3-13, 50019, Italy. School of Physics and GRANN, Trinity College, Dublin, Ireland

15:45 Coffee Break

Thermoelectricity in organic semiconductors (I) : Oliver Fenwick

10:30 Electronic and ionic thermoelectric effects in conducting polymers
Xavier Crispin
Linköping University

11:00 Substrate temperature as a key element in tailoring the thermal conductivity in organic semiconductors
Joan Ráfols-Ribé, Pablo Ferrando-Villalba, Marta González-Silveira, Libertad Abad, Aitor Lopeandía, Javier Rodríguez-Veijo, joan RAFOLS-RIBE@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Pablo.Ferrando@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, marta.gonzalez@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Libertad Abad, Institut de Microelectronicàtica de Barcelona, Centro Nacional de Microelectrónica@IFIC, Cerdanyola del Vallés, 08193, Spain, aitor.lopeandia@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Javier Rodriguez@uab.cat, Group of Nanomaterials and Microsystems, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, Javier.

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Natalia Bedoya, Egbert Zojer
Institute of Solid State Physics Graz University of Technology Graz, Austria

11:40 A heterogeneous model for thermoelectricity and electrical conductivity in poly(3,4-ethylenedioxythiophene):poly(styrene sulfonate) polystyrene sulfonate
Manting Qiu, Mark Baxendale
Queen Mary University of London, School of Physics and Astronomy, Mile End Road, London E1 4NS, United Kingdom

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IKERBASQUE, Basque Foundation for Science, 48011 Bilbao, Spain

12:00 Lunch

14:00 Charge- and Spin Dynamics in Organic Spintronics
Jairo Sinova [1], Shayan Hemmatyan [1,2], Amaury Melo Souza [1], Sebastian Müller [1], Sergei A. Egorov [3,1], Denis Andrienko [4], Erik R. M. Niellin [1], 1. Johannes Gutenberg University, Mainz, Germany, 2. Texas A&M University, College Station, USA, 3. University of Virginia, Charlottesville, USA, Max-Planck-Institute for Polymer Research, Mainz, Germany

14:45 Spin injection and gate-tunable spin-charge conversion in single-layer graphene and single-walled carbon nanotubes
M. Shiraiishi [1], S. Duehsnko[1], Y. Ando[1], E. Shimogusutsu[1], H. Ago[2], T. Takenobu[3]
1. Kyoto University, Japan, 2. Kyushu University, Japan, 3. Nagoya University, Japan.

14:55 Spin injection into organic semiconductors driven by ferromagnetic resonance
Angela Wittmann [1], Shun Watanabe [2], Guillaume Scheucher [1], Iain McCulloch [3], Mario Amado [4], Jason Robinson [4], Henning Siringhaus [4]
1. Optoelectronics Group, Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom, 2. Department of Advanced Materials Science, University of Tokyo, Tokyo, Japan, 3. Department of Chemistry and Centre for Plastic Electronics, Imperial College London, London, United Kingdom, 4. Department of Materials Science and Metallurgy, University of Cambridge, United Kingdom

15:00 Giant electrode dependence of tunneling electroresistance and data retention time in organic ferroelectric tunnel junctions
Sayani Majumdar [1], Birbin Chen [1,2], Qin Qi [1,2], Sebastian van Dijken [1]
1. Nanospin, Department of Applied Physics, Aalto University School of Science, FI-00076, Finland, 2. National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing 210093, China. Corresponding author e-mail: sayani.majumdar@aalto.fi

15:15 Under-barrier spin-phonon relaxation in molecular magnets
Alessandro Lunghi, Federec Tofta, Robert Sessoli and Stefano Sanvito
School of Physics and GRANN, Trinity College, Dublin, Ireland, Universidad de los Studi die Firenze, Dipartimento di Chimica “Ugo Schiff”, Sesto Fiorentino, Via della Lastruccia 3-13, 50019, Italy. Universidad de los Studi die Firenze, Dipartimento di Chimica “Ugo Schiff”, Sesto Fiorentino, Via della Lastruccia 3-13, 50019, Italy. School of Physics and GRANN, Trinity College, Dublin, Ireland

15:45 Coffee Break
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
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<tr>
<td>16:15</td>
<td>M IV-P.20</td>
<td>Confined growth effect on thermoelectric properties of organic semiconductors</td>
<td>Bologna, Italy, Alberto Roncaglia, Fulvio Mancarella, Luca Belsito, Federico Presicmon, Emilia Benvenuti, Stefano Toffanin, Denis Gentili, Massimiliano Cavallini, Silvia Milita</td>
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<tr>
<td>16:15</td>
<td>M IV-P.21</td>
<td>Voltage and Thermally Driven Roll-to-Roll Organic Printed Transistor Made in Ambient Air Conditions</td>
<td>Francesco Pastorelli, Organic Energy Materials, Department of Energy Conversion and Storage, Technical University of Denmark, Frederiksbergvej 399, 4000, Roskilde, Denmark</td>
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<tr>
<td>16:15</td>
<td>M IV-P.22</td>
<td>Electron tunneling in the &amp;#945,-T3 model</td>
<td>F. Bouhadia, L. Mandhour, A. Daboussi and S. Charfi-Kaddour, Laboratoire de Physique de la Matière Condensée, Faculté des Sciences de Tunis, Université de Tunis El Manar, Campus Universitaire Tunis, El Manar, 2092 Tunis, Tunisia</td>
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<td>16:15</td>
<td>M IV-P.23</td>
<td>Polyamine-based composites as thermoelectric materials</td>
<td>Alessia Flamengo, Stefano Baldorini, Simone Battiston, Laura Crociani, Alberto Ferrario, Stefania Flamieni, Cesare Pagura, Monica Fabrizio, Institute of Condensed Matter Chemistry and Technologies for Energy - National Research Council of Italy, Corso Stati Uniti, 4 - 35127 Padova- Italy</td>
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<tr>
<td>08:30</td>
<td>M V.1</td>
<td>Spin-currents and thermoelectric properties in high mobility organic semiconductors</td>
<td>Henning Sirringhaus, Cavendish Laboratory, University of Cambridge, Cambridge CB3 0HE</td>
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<td>09:00</td>
<td>M V.2</td>
<td>Effect of a ferromagnetic scanning tunneling microscope Co tip on a single Co-phthalocyanine molecule adsorbed on ferromagnetic</td>
<td>A. Jaafar, I. Rungger, S. Sanvito, M. Alouani, 1Université de Strasbourg, IPCMS, UMR 7504, 23 rue du Loess, 67034 Strasbourg, France, 2Laboratoire de Physique de Matériaux, Lebanese University, Hadath, Beirut Lebanon, 3School of Physics and CRANN, Trinity College, Dublin 2, Ireland</td>
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<td>09:30</td>
<td>M V.4</td>
<td>Dependence of Traps on Organic Magnetic Field Effects Studied by Impedance Spectroscopy</td>
<td>Song-Tao PHAM and Hirokazu TADA, Graduate School of Engineering Science, Osaka University, Toyonaka 560-8531, Japan</td>
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<td>09:45</td>
<td>M V.5</td>
<td>Spin dependent tunneling through asymmetric barriers in organic magnetic tunnel junctions</td>
<td>Yu Jeong Bae, Andrew Pratt, Nyun Jong Lee, Chong Seung Yoon, Tae Hoo Kim, 1Department of Physics, Ewha Womans University, Seoul 03760, Republic of Korea, 2Department of Physics, University of York, York YO10 5DD, U.K., 3National Institute for Materials Science, Tsukuba, Japan, 4Division of Materials Science &amp; Engineering, Hanyang University, Seoul133-791, Republic of Korea</td>
</tr>
<tr>
<td>10:00</td>
<td>M V.6</td>
<td>Coffee Break</td>
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</table>
14:00 Ionic Effects in Organic Thermoelectrics
Elayne Thomas, Shubhaditya Majumdar, Gabriel Sanoja, Michael Chabinyc, Rachel Segalman
UC Santa Barbara

14:30 Thermoelectric properties of single-component pure organic metals: optimization of carrier concentration and mobility
Yuka Kobayashi, Jean-Baptiste Vaney, Takao Mori, Yoshitaka Matsushita, Takeshi Terauchi
National Institute for Materials Science (NIMS)

14:45 Integrating the thermoelectric and sensing properties of PEDOT materials into self-powered devices
Prospero Taroni Junior [1,2], Natalie Stingelin-Stutzman [2], Martin Heeney [3], Mark Baxendale [4], Giovanni Santagiuliana [1], Han Zhang [1] and Emiliano Bilotti [1]

15:00 Quantum-interference-enhanced thermoelectricity in single-molecule junctions
Colin J. Lambert
Department of Physics, Lancaster University, Lancaster, LA1 4YB, United Kingdom

16:00 Polymer/Carbon nanotube composites for thermoelectrics
Mariano Campoy Quiles
Nanostructured Materials Department, Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193 Bellaterra, Spain

16:30 Anisotropy of charge conductivity and thermoelectric properties in oriented conducting polymer films
Amer Hamidi-Sakr, Laure Biniek, Jean-Louis Bantignies, David Maurin, Laurent Herrmann, Patrick Algayer, Nicolas Leclerc, Vishnu Vijayakumar, Nicolas Zimmermann, Patrick Lévêque, Martin Brinkmann
Université de Strasbourg, CNRS, Institut Charles Sadron (UPR22), F67000 Strasbourg, France, Université de Montpellier, Laboratoire Charles Coulomb, F34095 Montpellier, France, Université de Strasbourg, CNRS, ICPEES, UMR7515, F67000 Strasbourg, France, Université de Strasbourg, CNRS, ENGEES, INSA, ICUBE UMR 7357, F-67000 Strasbourg, France

16:45 Optimization of thin film morphology and crystallinity for organic field-effect transistors prepared by solution shearing
A. Tamayo, S. Galindo, F. Leonardi, F. Del Pozo, R. Pfattner, I. Temiño, M. Mas-Torrent
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC) and CIBER-BBN, Campus UAB, 08193 Bellaterra, Spain. E-mail:mmas@icmab.es

17:00 Poster Prizes and Closing Remarks
SYMPOSIUM N

Semiconductor nanostructures towards electronic and opto-electronic device applications – VI

Symposium Organizers:

Iwan MOREELS, Italian Institute of Technology, Genova, Italy

Jean-Charles RIBIERRE, Kyushu University, Fukuoka, Japan

Juan CLIMENTE, Universitat Jaume, Castello de la Plana, Spain

Pascal ANDRE, RIKEN, Saitama, Japan

Peter REECE, University of New South Wales, Sydney, Australia
12:00 Wafer-scale synthesis of 2D gallium sulphide (GaS) using a novel liquid metal/ metal oxide printing process
Torben Daeneke Kourosh Kalantar-Zadeh
RMIT University School of Engineering 124 LaTrobe Street 3001 Melbourne Australia

Oxide nanostructures and devices : Jean-Charles Ribierre

14:00 Metal Oxide Nanoparticles for Sensor Applications
E. Fortunato, L. Santos, A. Gonçalves, Á. Pimentel, A. Marques, R. Martins
INCM/INIA, Department of Materials Science, Faculty of Science and Technology, Universidade NOVA de Lisboa, Campus de Caparica, 2829-516 Caparica, Portugal

The analysis of device degradation under AC stress upon the drain of oxide semiconductor thin-film transistors
Hyen-Jun Lee1, Sung Haeng Cho2, Katsumi Abe3, Hee Yeon Noh1, Myoung-Jae Lee1
1 Intelligent Devices & Systems Research Group, Institute of Convergence, DGIST, Daegu 42968 Korea, 2 Realistic Display Research Group, ETRI, Daejeon 34129 Korea, 3 Silvaco Japan Inc., Ltd., Nakagyo-ku, Kyoto, 604-8152 Japan

14:45 ALD metal oxides for passivation of Si/SiO2 interface in BSI CMOS image sensors
Evan Oudow,Michael Gros-Jean,Kristell Courouble,Christopher Valleile,Francis Berlin.
Romain Durnu,Nineve Rochat
STMicronics,STMicronics,STMicronics,STMicronics,STMicronics,CEA LETI,STMicronics,CEA LETI

16:00 Fabrication of a high brightness UV-Blue Light-Emitting Diode based on high quality Gd doped ZnO-nanotube array grown on p-GaN
Norah Alwadi, Tahani Fetemban, Somak Mitra, Idris aja, Mufasila Mumthazhumhammed, Bilal Janjua, Boon Ooi, and Iman Roqan.
Physical Science and Engineering Division, King Abdullah University of Science and Technology (KAUST)

16:15 A novel ZnO / CuCrO2 core shell nanowire heterostructure for UV photodetectors
Joao Resende1, Thomas Cossuet1, Estelle Appert1, Laetitita Rapenne1, Carmen Jimenez1, Gilles Renou3, Ngoc Duc Nguyen2, David Muñoz-Rojas1, Vincent Consonni1, Jean-Luc Deschanvres1
1 Université Grenoble Alpes, Grenoble INP, CEA LETI, 38000 Grenoble, France, 2 Université de Liège, CESAM2-MAT.SPIN, B-4000 Liège, Belgium, 3 Université Grenoble Alpes, Grenoble INP, CNRS, SIMAP, 38042 Saint-Martin d’Hères, France

16:30 Study of the optical properties and structure of ZnSe/ZnO thin films grown by MOCD with varying thicknesses
S. Jabli, G. Amri, V. Sallet, A. Souissi, A. Metaffi, P.Gailler and M. Oueslati
1 Unité des nanomatériaux et phénomènes, Faculté des Sciences de Tunis, Campus Universitaire Fertah Hached, El Manar, 2002 Tunis, Tunisia 2 Groupe d’Etude de la Matière Condensée, CNRS-Université de Versailles St Quentin, Université Paris-Saclay, 45 avenue des Etats Unis, 78035 Versailles cedex.

16:45 Self-powered, High-performance, ultraviolet photodetector based on hydrogenated doped zinc oxide nanoflakes
Buddha Deka Borah and Abha Misra
Department of Instrumentation and Applied Physics, Indian Institute of Science, Bangalore, Karnataka, India 560012

17:00 Coffee break

Poster : Jean-Charles Ribierre

16:30 Effect of different sulfur environment on sulfurization of MoO3 into MoS2 nanoflakes
Prabhat Kumar*, Megha Singh, and G.B. Reddy
Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi-110016, India. *E-mail: prabhat89k@gmail.com

16:30 Fascinating vanadium oxide nanostructured thin films for sensing applications
Megha Singh, Prabhat Kumar and G. B. Reddy
Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi, New Delhi-110016, India.

16:30 Fabrication of high-aspect-ratio nanostructures using thin films deposition for structural color realization
Jeong Hwan Kim, Jik-Han Jeong, Jae-Sung Yoon, and Yeong-Eun Yoo
Department of Nano Manufacturing Technology, Korea Institute of Science and Materials (KIMM), Department of Nano-Mechatronics, University of Science and Technology(JUST)

16:30 Nanofabricated ZnO Films for Liquid Crystall Alignment
Chia-Chun Liu, Cheh-Lun Lee, Fung-Jie Guo, Shens-Huang Yang, Shie-Chang Jeng
National Chiao Tung University

16:30 Optical Characterizations of Colloidal QDs Patterns formed by LbL Assembly and Photolithography for Pixelated Full-Color Display
Joan-Suh Park1, Jihoon Kyuhm2, Shinyoung Jeong1 & 3, Kyung Wan Park4, and Il Ki Han1
1 Nanophotonics Research Center, Korea Institute of Science and Technology, Seoul 02792, Republic of Korea (e-mail: hkoel@kist.re.kr), 2 Division of Physics, Dongguk University, Seoul 04260, Republic of Korea, 3 School of Electrical Engineering, Korea University, Seoul 02841, Republic of Korea, 4 Department of Physics, University of Seoul, Seoul 02504, Republic of Korea

16:30 Luminescent hybrid materials based on nanoparticlesinmetal-organicphosphors in PbO-SiO2-B2O3 glass matrix
D. Mendeleev University of Chemical Technology of Russia

16:30 Mirror-like electroluminescent device with top-emission structure based on ZnS:CuO-Mn phosphor film
Jongho Ruy, 1Mohammad Maika Atandi, 2Byungyo Jeon, 3Taewoon Kang, 4Semo Son, 5SungHoon Lee, 1,∗Jongsu Kim
1 Department of Display Science & Engineering, Pukyong National University, Busan, 608-737, South Korea 2 Department of LED Conversions Engineering, Pukyong National University, Busan, 608-737, South Korea 3 Interdisciplinary Program of LED and Solid State Lighting Engineering, Pukyong National University, Busan, 608-737, South Korea 4 Department of Graphic Arts Information Engineering, Pukyong National University, Busan, 608-739, South Korea 5 Project Team, Hysoung Corporation, Gyeonggi-do, 431-080, South Korea

16:30 Organic Light Emitting Board for Interactive Display
Eui Hyuk Kim, Beomjin Jeong, Ihn Hwang, Cheolmin Park
Yonsei University

16:30 Synthesis of ZnO nanowires for surface plasmon polariton lasers
Yun-Jhen Liao, Chang-Wei Cheng, Shangqai Gao, Li-Huan Chen
1 Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan, Department of Physics, National Tsing Hua University, Hsinchu, Taiwan

16:30 Visible light communication and indoor positioning system based on white LEDs transmitters and SiC optical MUX/DEMUX receivers
M. A. Vieira, M. Vieira, P. Vieira, P. Louro
1 Electronics, Telecommunication and Computer Dept. ISEL, R. Condeixa da Beira, 4400-018, Porto, Portugal 2 Department of Computer Engineering, University of Minho, G. Sá, Portugal.

16:30 Highly luminescent Cd-free colloidal quantum dots with narrow emission linewidths
Parthiban Ramasamy, Jong-Soo Lee
1 Department of Energy Systems Engineering, DGIST. Daegu, Republic of Korea

16:30 Organic-Inorganic Hybrid Photodetector Based on PEDOT:PSS/ZnSe Nanowires on Flexible Polyimide Substrate
Tse-Ning Yang and Lih-Juann Chen
Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan (R.O.C)

Poster : Jean-Charles Ribierre

16:30 Influence of intermediate band on the solar cell based on ZnTeO
S. Khetli, H. Mazzari, A. Belghachi, N. Sahouane, A. Rouabha, M. Mostefaou - Unité de la Recherche en Energies Renouvelables En Milieu Saharien, URERMS Centre De Développement des énergies Renouvelables CDER 01000 Adrar, Algérie - Laboratoire de Microélectronique Appliquée, Département d'électronique, Université Dillali

N 6.5

N 6.6

N 6.7

N 7.2

N 3.7

N 7.4

N 7.5

N 7.7

N 7.8
Enhancement in optoelectronic properties via controllable growth of NaYF4:Er,Tm, Yb3+ NaYF4: Tm3+@ZnO nanoparticles

Characteristics of Contact Resistance between the Metal and Semiconductor by Adding Insulator Layer

Solution-processed zinc-tin oxide thin-film transistors with solution-processed gate dielectrics

Synthesis of Cesium lead bromide nano-crystal at lower temperature by using polymeric-passivated ZnO electron transport layer

Graphene-like layers grown on ferroelectric surfaces

Solar cells using N,N’-substituted thiourea-based lead sulfide quantum dots

The role of quantum-dots and metal nanoparticles at the oxide semiconductor to electrically and optically tunable properties of two dimensional heterostructures

Solution-processed zinc-tin oxide thin-film transistors with solution-processed polymer-passivated ZnO electron transport layer

Graphene-like layers grown on ferroelectric surfaces

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Characteristics of Contact Resistance between the Metal and Semiconductor by Adding Insulator Layer

Graphene-like layers grown on ferroelectric surfaces

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Characteristics of Contact Resistance between the Metal and Semiconductor by Adding Insulator Layer

Characteristics of Contact Resistance between the Metal and Semiconductor by Adding Insulator Layer
08:30 Design of 1D-like nanosources and waveguides
J.L. Duval,1,* A. Garreau,1 J. Biegon,2 N. Huby,2 B. Béché,2 F. Massuyesse,1 T.S. Cordier,3 Y. Molard,3 E. Faulques1
1 Institut des Matériaux Jean Rouxel, UMR 6502 CNRS Université de Nantes, France
2 Institut de Physique de Rennes, UMR 6251 CNRS Université de Rennes-1, France
3 Institut des Sciences Chimiques de Rennes, UMR CNRS Université de Rennes-1, France.

09:00 Optoelectronic properties of HgTe nanoplatelets
Peter M. Smowton, S. Shotts, R. Thomas, S.N. Elliott, S. Gillgrass, A.B. Krysa
School of Photovoltaic and Renewable Energy Engineering, University of New South Wales, Kensington, Sydney 2052, Australia,
5. Physics Department, Freie Universität Berlin, Berlin, Germany
11:45 Spin dynamics of coexisting core and shell trions in CdSe/CdS nanocrystals: evidence of surface-assisted spin-relaxation process
V. Pinchinat(1), G. Vancso(1), W. Seifert(1), V.I. Klimov(2), S. Brovelli(1)
(1) Dipartimento di Scienza dei Materiali, Università degli Studi di Milano-Bicocca, via Roberto Caccioppoli 89, 20126 Milano, Italy,
(2) Chemistry Division, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, United States.

14:30 A quantitative study of the material gain in colloidal core/shell Quantum Dots
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. Institute of Optics, Information and Photonics, Friedrich-Alexander-Universität Erlangen-Nürnberg, Staudtstr. 7/8, 91058 Erlangen, Germany,
4. School of Photovoltaic and Renewable Energy Engineering, University of New South Wales, Sydney, Australia,
5. Physics Department, Freie Universität Berlin, Arnimallee 14, 14195 Berlin, Germany.

15:00 Nanostructured emissive layer for light emitting diodes
Sofia Paulo, Wether Cambarau, Emilio Palomares, Eugenia Martínez-Ferrero
Sofia Paulo, Eugenia Martinez-Ferrero: Eurecat, Avda. Ernest Lluch 30, 08302 Matarr (Spain),
3. Institute of Nanoscience and Nanotechnology, National Center for Scientific Research Demokritos, 15310, Aghia Paraskevi, Athens, Greece
4. School of Materials Science, Sungkyunkwan University (SKKU), Suwon, 440-746, Republic of Korea,
5. Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University (SKKU), Suwon, 440-746, Republic of Korea.
15:15 Control of coupling and emission dynamics in InAs/InAlGaAs/InP hybrid quantum
well-quantum dot structures emitting at 1.55 µm
Wojciech Rudno-Rudzinski, Macin Syperak, Aleksander Marynski, Janusz
Andrezewski, Jan Misiewicz, Sven Bauer, Vitali I. Schikovski, Johann P. Reitmaier,
Department of Experimental Physics, Faculty of Fundamental Problems of Technology,
Wroclaw University of Science and Technology, St. Wyspiarskiego 27, 50-370 Wroclaw,
Poland.

15:30 Control of coupling and emission dynamics in InAs/InAlGaAs/InP hybrid quantum
well-quantum dot structures emitting at 1.55 µm
Wojciech Rudno-Rudzinski, Macin Syperak, Aleksander Marynski, Janusz
Andrezewski, Jan Misiewicz, Sven Bauer, Vitali I. Schikovski, Johann P. Reitmaier,
Department of Experimental Physics, Faculty of Fundamental Problems of Technology,
Wroclaw University of Science and Technology, St. Wyspiarskiego 27, 50-370 Wroclaw,
Poland.

15:45 Optically Pumped Lasing From Dilute Nitride GaAs/GaNAs Core/Shell NWs
N. Iwahara, K. Ohara, T. Tanaka, M. Yashino, K. Ohtaka, T. Ohnishi, S. Yoneyama,
Department of Experimental Physics, Faculty of Fundamental Problems of Technology,
Wroclaw University of Science and Technology, St. Wyspiarskiego 27, 50-370 Wroclaw,
Poland.

16:00 Coffee break

16:15 Narrowband amplified spontaneous emission and random lasing from wurzite
CdSe/CdS QD alloys
Francesco Di Stasio, Anatolii Polovitsyn, Ilaria Angeloni, Iwan Moreels, Roman Krahne

16:30 Optical Pulsing Lasing From Dilute Nitride GaAs/GaNAs Core/Shell NWs
S. Chen, M. Jansson, I. Stef, I. Huang, I. Fujimoto, I. Bulyanova,
Department of Physics, Chemistry, and Biology, Linkopings Universitet, 58183,
Linkoping, Sweden.

16:45 Broadband amplified spontaneous emission and random lasing from wurzite
CdSe/CdS QD alloy nanocrystals
Francesco Di Stasio, Anatolii Polovitsyn, Ilaria Angeloni, Iwan Moreels, Roman Krahne

16:00 Coffee break

16:15 Nanosecond Lasing From Dilute Nitride GaAs/GaNAs Core/Shell NWs
S. Chen, M. Jansson, I. Stef, I. Huang, I. Fujimoto, I. Bulyanova,
Department of Physics, Chemistry, and Biology, Linkopings Universitet, 58183,
Linkoping, Sweden.

16:30 Synthesis of manganese-doped zinc selenide (ZnSe:Sm) nanoparticles in aqueous
medium and their surface modification
Svitlana Sovinska, Adam Zitouni, S. Bentata, B. Bouadjemi, T. Lantri, Z. Aziz, S. Cherid, A. Sefir

16:45 Many-body Effect, Carrier Mobility, and Device Performance of Hexagonal
Arsene and Antimone
Yangyang Wang, Pu Huang, Meng Ye, Ruge Quhe, and Jing Lu

16:00 Coffee break

16:15 Preparation of ferromagnetic film of single crystal c-FE3N(111) on
SrTiO3(100) substrate
Yaping Qi, Xiabao Liu, Ju Gao

16:30 Revisiting the neutral C-vacancy in Diamond: Localization of electrons in DFT
Danny P. Vanpoucke, Ken Haenen

16:45 Tunable optical nonlinearity of nanocrystalline TiO2 thin films decorated with
noble metal nanoparticles
Avesh Kumar, 1 T. Mohanty, 2 R. P. Singh

17:00 Poster : Iwan Moreels

17:15 Poster : Iwan Moreels

17:30 Single-crystalline GaN nanomembranes
M. Benaissa, R.T. Efthandy, D. Hsawakrim, Tien Khee Ng, O. Ersen, Boon S. Ooi

17:00 Poster : Iwan Moreels

17:15 Poster : Iwan Moreels

17:30 Improved reliability performance of nanoscale junctionless DG MOSFET with
graded channel doping engineering
Tofiuk Benoteca, F. Bayal Djeffal, D. Jemal Arar and Zohir Dibi

17:45 Effects of nanowire fin structure on transconductance characteristics of AlGaN/
GaN FinFETs
Yang Tae Kim and Jong Hee Lee

17:00 Poster : Iwan Moreels

17:15 Poster : Iwan Moreels

17:30 InGaAs NWFs nanocomponents
Shula Chen, Mattias Jansson, Jan E. Stef, Yuqian Huang, Fumiho Itoh, Weimin M. Chen,
Department of Physics, Chemistry, and Biology, Linkoping University, 58183,
Linköping, Sweden.

17:45 Optical Pulsing Lasing From Dilute Nitride GaAs/GaNAs Core/Shell NWs
S. Chen, M. Jansson, I. Stef, I. Huang, I. Fujimoto, I. Bulyanova,
Department of Physics, Chemistry, and Biology, Linkoping University, 58183,
Linköping, Sweden.

18:00 Poster : Iwan Moreels
Inorganic nanostructures-Optoelectronics : Juan Ignacio Climente

08:45 Morphology, structure and enhanced PL of molecular beam epitaxial In0.2Ga0.8As layers on nanopillar patterned GaAs
Thomas Riedel 1,2, Vinay Kunzathully 1,2, Alexander Karlisch 1,2, Dirk Reuter 1,2, Nils Weber 1,2, Cedrik Meier 1,2, Roland Schierholz 3, Jörg K.N. Lindner 1,2
1. Paderborn University, Department of Physics, Warburger Straße 100, 33098 Paderborn, Germany. 2. Center for Optoelectronics and Photonics Paderborn (CeOPP), Warburger Straße 100, 33098 Paderborn, Germany. 3. Institute of Energy and Climate Research, Forschungszentrum Jülich GmbH, Wilhelm-Johnen Straße, 52425 Jülich, Germany

09:00 GaAs based Mid-Infrared Photonic Materials and Devices Monolithically grown onto Silicon
Department of Engineering, Lancaster University, Lancaster, LA1 4YW, UK, Department of Physics, Lancaster University, Lancaster, LA1 4YB, UK.

09:15 Modification of n-Si(100)/ZnO(:C) interface by carbon incorporation
Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine

09:30 Few layers and multilayers MoS2/WS2 heterojunctions: optical, electronic and interface properties
Intu Sharma and B. R. Mehta
Thin Film Laboratory, Department of Physics, Indian Institute of Technology Delhi, New Delhi, 110016, India

09:45 Temperature dependent negative differential resistance behavior at Pt/Nb: SrTiO3 interface
Yeong Soo Kim 1, Sung Moon HWANG 2, Vadim Sh.YALISHEV 3, Jihoon JEON1, Mi Jung LEE 1, Shavkat U. YULDASHEV 3, Taekjip CHOI 2, Bae Ho PARK*1
1Division of Quantum Phases & Devices, Department of Physics, Konkuk University, Jung LEE 1, Shavkat U. YULDASHEV 3, Taekjip CHOI 2, Bae Ho PARK*1, Yeong Soo Kim 1, Sung Moon HWANG 2, Vadim Sh.YALISHEV 3, Jihoon JEON1, Mi Jung LEE 1, Shavkat U. YULDASHEV 3, Taekjip CHOI 2, Bae Ho PARK*1

10:00 Coffee break
SYMPOSIUM O

Wide bandgap semiconductors for LEDs, solar and related energy technologies

Symposium Organizers:

Haiyan OU, Denmark Technical University, Lyngby, Denmark

Mikael SYVÄJÄRVI, Linköping University, Sweden

Ole Martin LØVVIK, University of Oslo, Norway

Satoshio KAMIYAMA, Meijo University, Nagoya, Japan

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Monday 22 May 2017

SIC: Didier Chaussende

09:00 Review of SiC materials technology
Peter J. WELLMANN
Crystal Growth Lab, Materials Department 6 (i-meet), University of Erlangen (FAU), Martensstr. 7, 91058, Erlangen, Germany

O 1.1

09:30 Integrated optical bias selector based on a tandem SiC optical filter
M. Veira, M. A. Veira, P. Louro, V. Silva, A Fantoni
Electronics Telecommunication and Computer Dept, ISEL, R. Conselheiro Emídio Navarro, 1959-007 Lisboa, Portugal, CTS-UNINOVA, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal, DEE-FCT-UNL, Quinta da Torre, Monte da Caparica, 2829-516, Caparica, Portugal.

O 1.2

09:45 Structure and infrared response of 4H SiC homoepitaxial wafers
Ondrej Caha (1,2), Maria Losurdo (3), Kurt Hingerl (4), Josef Humlicek (1,2)
(1) Central European Institute of Technology, Masaryk University, Kotlarska 2, CZ-61137 Brno, Czech Republic, (2) Faculty of Science, DCMF Masaryk University, Kotlarska 2, CZ-61137 Brno, Czech Republic, (3) Institute of Nanotechnology, CNR-NANOTEC, Dept. Chemistry, Via Orabona 4, 70126 Bari, Italy, (4) Center for Surface and Nanoscale Science, Johannes Kepler University in Linz, Altenbergerstrasse 69, 4040 Linz, Austria

O 1.3

10:00 Coffee break

10:30 Liquid Solution Phase Epitaxial Growth of Al-doped f-SiC for LEDs
Kai Tang, Xiang Ma, Casper van der Eijk, Haiyan Ou
SINTEF Materials and Chemistry, Trondheim, Norway, Department of Photonics Engineering, Technical University of Denmark, Denmark

O 2.1

10:45 Indium-free Transparent Ohmic Contacts to N-polar n-type GaN
M. A. Hopkins, D.W.E. Allopp are with Dept of Electrical and Electronic Engineering, University of Bath, Bath, BA2 7AY, UK, S. Thornley, J. Dutton are with Plasma Quest Ltd, Osborne Way, Hook, Hampshire, RG27 9UF, UK, G. Christmann, M. Benkhaira, C. Ballif, S. Nicolay are with CSEM, Rue Jaquet-Droz 1, 2002 Neuchatel, Switzerland, J. Niemela, M. Creatore are with Department of Applied Physics, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, the Netherlands, J. Ellis is with Plessey Semiconductors Ltd, Tamerton Road, ROBorough, Plymouth, PL8 7BQ, UK

O 2.2

11:00 Saturation in ceramic phosphors illuminated by a blue laser diode
A. Krasnoschokha, A. Thorseth, C. Dam-Hansen, D. D. Corell, P. M. Petersen, O. B. Jensen
DTU Fotonik, Department of Photonics Engineering, Technical University of Denmark, Frederiksborgvej 399, Roskilde, Denmark

O 2.3

11:15 Quenching of red Mn4+ luminescence in K2TiF6:Mn4+ w-LED phosphors.
Tim Senden, Ronlde van Dijk-Moes, Andries Meijerink
Condensed Matter and Interfaces, Delft Institute for Nanomaterials Science, Utrecht University, P.O. Box 80000, 3508 TA Utrecht, The Netherlands

O 2.4

11:30 Lunch

SIC: Peter Wellmann

14:00 Fabrication and Luminescence Properties in Rare Earth Doped a-SiC Thin Films
L. F. Flores Escalante1, K. Y. Tucto Salinas1, J. A. Guerra Torres1, 2, A. Töllfinger3, R. Weingärtner1
1Departamento de Ciencias. Seccion Fisica. Pontificia Universidad Catolica del Peru, Av. Universitaria 1801, Lima 32, Peru, 2Materials Science 6, Institute of Materials for Electronics and Energy Technology (I-MEET), Friedrich-Alexander-Universität Erlangen-Nürnberg, Martensstrasse 7, 91058 Erlangen, Germany, 3Chair Materials for Electronics, Institute of Materials Engineering and Institute of Micro and Nanotechnologies MacroNano, TU Ilmenau, Gustav-Kirchhoff-Str. 5, 98693 Ilmenau, Germany

O 3.3

14:45 Investigation of 3C-SiC/SiO2 interfacial point defects from ab initio g-tensor calculations and EPR measurements
Max-Planck-Institut fuer Eisenforschung, University of Paderborn, University of Paderborn, Solar Weaver GmbH, University of Paderborn, Pierre and Marie Curie University, University of Paderborn, Max-Planck-Institut fuer Eisenforschung

O 3.5

15:15 Characterization of defects and stress in 3C-SiC grown by Sublimation Epitaxy using 3C-SiC-on-Si templates
R. Schuh, M. Schöler, G. Litrico, 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, Crystal Growth Lab, Materials Department 6 (i-meet), FAU Erlangen-Nuremberg, Martensstr. 7, D-91058 Erlangen, Germany, CNR-IMM, sezione di Catania, Stradale Primosole 50, I-95121, Italy, CNR-IMM, sezione di Catania, Stradale Primosole 50, I-95121, Italy, E.T.C. Epitaxial Technology Center, Sedicesima Strada, I-95121 Catania, Italy, Crystal Growth Lab, Materials Department 6 (i-meet), FAU Erlangen-Nuremberg, Martensstr. 7, D-91058 Erlangen, Germany

O 3.2
08:30 Sol-Gel Derived Silicon Carbide - A Versatile Material for Energy Applications
Olivia Kettnert (a), Sanja Simic (b), Birgit Kunert (a), Robert Schennach (a), Roland Resel (a), Thomas Grissier (c), Bettina Friedel* (a,d). (a) Institute of Solid State Physics, Graz University of Technology, 8010 Graz, Austria, (b) Institute for Electron Microscopy, Graz University of Technology, 8010 Graz, Austria, (c) Chemistry of Polymeric Materials, Montanuniversitat Leoben, 8700 Leoben, Austria, (d) Energy Research Center, Vorarlberg University of Applied Sciences, 6850 Dornbirn, Austria

09:00 Dielectric and light-emission properties of C4+ doped Cahn204-C hybrid nanostructure
Barkha Tiwari and Shanker Ram
Materials Science Centre, Indian Institute of Technology, Kharagpur, India. Contact details: +91-9434611138, khit2016@gmail.com

09:15 Chemical bath-deposited ZnO films doped with group-13 metals
Stefan Edinger, Neha Bansal, Martin Bauch, Rachmat Adhi Wibowo, Raad Hamid, Gregor Trimmel, Theodoros Dimopoulos
AIT, Austrian Institute of Technology, Center for Energy, Photovoltaic Systems, Vienna, Austria, AIT Austrian Institute of Technology, Center for Low-Emission Transport, Vienna, Austria, Graz University of Technology, Institute for Chemistry and Technology of Materials, Graz, Austria

09:30 Engineering Valence Band Dispersion for High Mobility p-type Semiconductors
Benjamin A.D. Williamson (1), John Buckeridge(1), Robert G. Palgrave(3), David O. Scanlon(1,2)
(1) University College London, London WC1H 0AJ, UK, (2) Diamond Light Source Ltd, Didcot, Oxfordshire OX11 0DE, UK, (3) University College London, Christopher Ingold Building, Department of Chemistry, London WC1H 0AJ, UK

09:45 Coffee break

10:00 Engineering - Valence Band Dispersion for High Mobility p-type Semiconductors
Benjamin A.D. Williamson (1), John Buckeridge(1), Robert G. Palgrave(3), David O. Scanlon(1,2)
(1) University College London, London WC1H 0AJ, UK, (2) Diamond Light Source Ltd, Didcot, Oxfordshire OX11 0DE, UK, (3) University College London, Christopher Ingold Building, Department of Chemistry, London WC1H 0AJ, UK

10:15 High Mobility Amorphous In2O3-CdO Alloy Thin Films Synthesized by Room Temperature Sputtering
Chao Ping Liu, Cheuk Kai Kwok, Chun Yuen Ho, J. A. Zapien, Kin Man Yu
Department of Physics and Materials Science, City University of Hong Kong, 83 Tat Chee Ave., Kowloon, Hong Kong

10:30 Bandgap reduction and the effects of post-deposition annealing on ZnO1-xGaX thin films
V. G. Sivan, B. G. Svensson, A. Kuznetsov, L. Vines
University of Oslo, Physics Department/Center for Materials and Nanotechnology, P.O. Box 1048 Blindern, NO-0316 Oslo, Norway

10:45 Characterization and Modelling of the Optical Properties of Photochromic Oxygen-containing Yttrium Hydride thin films
J. Montero, F. A. Martines, S. Z. Karazhanov, E. S. Starame
Institute of Physics Technology, P.O. Box 40, NO-2027 Kjeller, Norway

11:00 Sublimation growth of a new promising semiconductor Al4SiC4
K. Chaturvedi, E. Turel, H. V. Nguyen
(Colloquium: Physics of Polymers, Plasmonics and Nanostructures, Department of Materials Science and Engineering, KAIST)

11:15 Rapid, Microwave-assisted Synthesis of Nanocrystalline ZnAl2O4: Structural and Optical Properties
Savmi G. Menon, Suresh D. Kulkarni, K. S. Choudhari, S. A. Shivashankar, and Santhosh C.
Savmi G. Menon, Suresh D. Kulkarni, K. S. Choudhari, and Santhosh C. - Department of Atomic and Molecular Physics, Manipal University, Manipal, Karnataka, India-576104 S. A. Shivashankar - Centre for Nano Science and Engineering, Indian Institute of Science, Bengaluru, Karnataka, India -560012

11:30 Lunch
16:00 Maximizing cubic phase of GaN growth in nano-scale inverted-pyramid-shaped holes of Si (100) substrate
Qingbin Ji1, Tao Wang1, Wei Zhang2, Xixiang Zhang3*, Xiniqiang Wang1, Yahong Xie2*, Xiaodong Hu1*
1 State Key Laboratory for Artificial Microstructure and Microscopic Physics, School of Physics, Peking University, Beijing 100871, China 2Department of Materials Science and Engineering, University of California, Los Angeles, California 90095, United States 3Division of Physical Science and Engineering and Core Laboratories, King Abdullah University of Science and Technology, Thuwal 23955-6900, Kingdom of Saudi Arabia

16:00 Hydrogen gas sensing based on MgZnO thin film prepared by RF-sputtering
Tien-Chai Lin1, Wen-Chang Huang2, Jyun-Yan Wu2
1 Department of Electrical Engineering, Kun Shan University, No. 195, Kun-Da Rd., Yung-Kang Dist., Tainan, 71003, Taiwan, ROC 2 Department of Electro-Optical Engineering, Kun Shan University, No. 195, Kun-Da Rd., Yung-Kang Dist., Tainan, 71003, Taiwan, ROC *Corresponding author: Wen-Chang Huang (wchuang@mail.ksu.edu.tw)

08:30 Study of photoluminescence mechanism of InGaN multi-quantum-well based LEDs grown on novel high quality semi-bulk InGaN buffer
Saiful Alam1,2,3, Suresh Sundaram 2, Xin Il2, Miryam E. Jamroz 3, Youssef El. Gmili 2, Ivan C. Robin 3, Jean-Paul Salvateini 2, Paul L. Voss 1, Abdallah Ougazzaden 1,2*
1 School of Electrical & Computer Engineering, Georgia Institute of Technology, 30332, Atlanta, GA, USA. 2 Georgia Tech Lorraine, UMI 2958, Georgia Tech-CNRS, 57070 Metz, France. 3 CEA-LETI, Minatex Campus, F-38054 Grenoble, France.

08:45 Electrode of metalic carbon nanotube for p-GaN and its application for LED
Toshiya Yokogawa, Syota Miyake
Yamaguchi University, Department of Material Science and Engineering

09:00 Molecular control over Cu/GaN Schottky barrier diode using Thiol Porphyrin
Manjari Garg, Tejas R. Naik, Subramaniyam Nagarajan, V. Ramgopal Rao, Rajendra Singh
Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi, India, Department of Electrical Engineering, Indian Institute of Technology Bombay, Mumbai-400 076, Maharashtra, India, Department of Micro and Nanosciences, Aalto University, P.O. Box 13500, FI-00076, Aalto, Finland

09:15 The optical and electronic properties of defects in GaN
John Buckeridge, Zijaun Xie, Yu Sui, C. Richard A. Catlow, Aron Walsh, David O. Scanlon, Alexey A. Sokol
University College London, Kathleen Lonsdale Materials Chemistry, Department of Chemistry, 20 Gordon Street, London WC1H 0AJ, United Kingdom, Department of Physics, Harbin Institute of Technology, 92 Xidazhi Street, Harbin 150001, P. R. China

09:30 Aluminium & Rare earth nitride alloys for piezoelectric energy harvesting, a theoretical perspective
Patrick Daoust, Patrick Desjardins, Remo Masut
Polytechnique Montréal, Génie Physique, Polytechnique Montréal, Génie Physique, Polytechnique Montréal, Génie Physique

09:45 Coffee break

Solar cells : Ole Martin Løvvik

10:15 Synthesis, modification and application in solar cells of one-dimensional ZnS nanocrystals
Adam Zaba, Svitlana Sovinska, Elzbieta Nowak, Jerzy Sanetra, Katarzyna Matras-Postolek
Cracow University of Technology, Warszawska St. 24, Cracow, 31-155 Poland

10:30 Numerical Analysis of CuGaS2/Cd1-x ZnxS Thin Film Solar Cell
Faisal Baig,Yousaf H. Khattak ,Bernabé María,Hanif Ullah
School of Design EngineerinG, Departament of Applied Physics,Universitat Politècnica de València, Spain , Department of Electrical Engineering,Federal Urdu University of Science, Arts and Technology,Islamabad, Pakistan

10:45 Influence of the oxygen flow ratio on the microstructure and optical properties of CuO thin films
1- Lamia Radjeti 2- Salim Laamri 3- Abdelkader Djelloul
1- LASPI2A Laboratoire des Structures, Propriétés et Interactions Inter Atomes, Khenchela University, Algeria and Université de Technologie de Troyes, France 2-Université de Technologie de Troyes Antenne de Nobert-Pole Technologique de Haute champagne Rue Lavoisier, 52800 Nogent BP 41, France 3- a LASPI2A Laboratoire des Structures, Propriétés et Interactions Inter Atomes, Khenchela University, Algeria

11:00 Fabrication and characterization of amorphous CuAlO2/InGaZnO4 heterojunction solar cells by pulse DC sputtering method
Sakuchika Sakai, and Kousaku Shimizu
Graduate School of Industrial Technology, Nihon University

11:15 ZnO-GaN alloys for energy materials
Gustavo Baldiissoera, Clas Persson
Department of Materials Science and Engineering, Royal Institute of Technology, SE-100 44 Stockholm, Sweden, Department of Materials Science and Engineering, Royal Institute of Technology, SE-100 44 Stockholm, Sweden, Department of Physics, University of Oslo, P.O. Box 1048 Blindern, NO-0316 Oslo, Norway.
SYMPOSIUM P

Silicon & Silicon nanostructures: from recent fundamental research to novel applications

Symposium Organizers:

Daniel HILLER, University of Freiburg, Germany

Dirk KÖNIG, University of New South Wales, Sydney, Australia

Walter WEBER, TU Dresden, Germany

Zachary HOLMAN, Arizona State University, Tempe, USA

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Monday 22 May 2017

08:50 Welcome & Opening Remarks

09:00 Exploring and understanding the performance limits of light-emitting Si nanostructures in oxide matrices
J. Valenta (a), M. Greben (a), S. Gutsch (b), J. Laube, D. Hiller (b), M. Zacharias (b), and S. Dyakov (c).
(a) Faculty of Mathematics & Physics, Charles University, Prague, Czechia. (b) Faculty of Engineering, IMTEK, Albert-Ludwigs-University Freiburg, Germany. (c) Center for Photonics and Quantum Materials, Skolkovo Institute of Science & Technology, Russia.

09:30 Luminescence of silicon nanocrystals: from indirect to direct bandgap
B. van Dam, C. Osorio, M.A. Hink, R. Muller, A.F. Koenderink, K. Dohnalova

11:00 The Influence of Surface Groups on the Optical Properties of Silicon Nanocrystals
Federico Pevere, Fatemeh Sangghaaleh, Benjamin Bruhn, Ilya Sychugov, Jan Linnros
Department of Materials and Nano Physics, KTH Royal Institute of Technology, Electrum 229, 16440 Kista, Sweden

11:30 Super-blinking promoting non-radiative Auger recombination in silicon nanocrystals
J. Valenta, D. Hiller

11:45 Lewis Acid Protection: A Synthetic Route Towards Switchable Silicon Nanocrystals
Alyzandra N. Thiessen (1), Tapanis K. Purkait (2), Jonathan G. C. Veinot (1,2), Alyxandra N. Thiessen (1), Tapas K. Purkait (2), Jonathan G. C. Veinot (1)
(1) School of Chemistry, UNSW, Sydney, NSW, Australia (2) Australian Centre for Microscopy and Microanalysis, University of New South Wales, Sydney, NSW, Australia

12:00 Surface Plasmon Enhanced Photoluminescence from Silicon Quantum Dots
Asuka Inoue, Hiroshi Sugimoto, Minoru Fuji
Department of Electrical and Electronic Engineering, Graduate School of Engineering, Kobe University

12:15 Electroluminescence emission of Si NC / SiO2 multilayers under pulsed electrical excitation
Laboratory for Nanotechnology, MTEK, Faculty of Engineering, University of Freiburg, Georges Köhler Allee 103, 79110, Freiburg, Germany. 2MIND-IN2UB, Departament d’Electrònica, Universitat de Barcelona, Martí i Franquès 1, E-08028, Barcelona, Spain.

12:30 Lunch

P 1.1
Si-Nanocrystals: Optical Properties I : Chairs: R. Tilley, D. König

P 1.2
Factors limiting the emission efficiency of silicon quantum dots in the visible range
B. van Dam, C. Osorio, M.A. Hink, R. Muller, A.F. Koenderink, K. Dohnalova

P 1.3
Super-blinking promoting non-radiative Auger recombination in silicon nanocrystals
Federico Pevere, Fatemeh Sangghaaleh, Benjamin Bruhn, Ilya Sychugov, Jan Linnros
Department of Materials and Nano Physics, KTH Royal Institute of Technology, Electrum 229, 16440 Kista, Sweden

P 1.4
Explore the limits of light-emitting Si nanostructures in oxide matrices
J. Valenta (a), M. Greben (a), S. Gutsch (b), J. Laube, D. Hiller (b), M. Zacharias (b), and S. Dyakov (c).
(a) Faculty of Mathematics & Physics, Charles University, Prague, Czechia. (b) Faculty of Engineering, IMTEK, Albert-Ludwigs-University Freiburg, Germany. (c) Center for Photonics and Quantum Materials, Skolkovo Institute of Science & Technology, Russia.

P 1.5
Luminescence of silicon nanocrystals: from indirect to direct bandgap
B. van Dam, C. Osorio, M.A. Hink, R. Muller, A.F. Koenderink, K. Dohnalova

P 1.6
The Influence of Surface Groups on the Optical Properties of Silicon Nanocrystals
Federico Pevere, Fatemeh Sangghaaleh, Benjamin Bruhn, Ilya Sychugov, Jan Linnros
Department of Materials and Nano Physics, KTH Royal Institute of Technology, Electrum 229, 16440 Kista, Sweden

P 1.7
Super-blinking promoting non-radiative Auger recombination in silicon nanocrystals
Federico Pevere, Fatemeh Sangghaaleh, Benjamin Bruhn, Ilya Sychugov, Jan Linnros
Department of Materials and Nano Physics, KTH Royal Institute of Technology, Electrum 229, 16440 Kista, Sweden

P 1.8
Surface Plasmon Enhanced Photoluminescence from Silicon Quantum Dots
Asuka Inoue, Hiroshi Sugimoto, Minoru Fuji
Department of Electrical and Electronic Engineering, Graduate School of Engineering, Kobe University

P 1.9
Electroluminescence emission of Si NC / SiO2 multilayers under pulsed electrical excitation
Laboratory for Nanotechnology, MTEK, Faculty of Engineering, University of Freiburg, Georges Köhler Allee 103, 79110, Freiburg, Germany. 2MIND-IN2UB, Departament d’Electrònica, Universitat de Barcelona, Martí i Franquès 1, E-08028, Barcelona, Spain.

P 2.1
Si-Nanocrystals: Optical Properties II : Chairs: J. Valenta, D. Hiller

P 2.2
Luminescence of silicon nanocrystals: from indirect to direct bandgap
Katerina Kusova
Institute of Physics of the ASCR, v.v.i.

P 2.3
The Influence of Surface Groups on the Optical Properties of Silicon Nanocrystals
Arzu Angi, Regina Selnikov, Al Meldrum, Jonathan G. C. Veinot, Isacc Balberg, and Oded Millo
1 Dipartimento di Ingegneria Industriale, Università degli Studi di Roma “Tor Vergata”, 00133 Roma, Italy (2) SwissCenter of Electronics and Microtechnology (CSEM), Neuchâtel, Switzerland 6 Dipartimento di Ingegneria Industriale, Università degli Studi di Roma “Tor Vergata”, 00133 Roma, Italy

P 2.4
Lewis Acid Protection: A Synthetic Route Towards Switchable Silicon Nanocrystals
Alyzandra N. Thiessen (1), Tapanis K. Purkait (2), Jonathan G. C. Veinot (1,2), Alyxandra N. Thiessen (1), Tapas K. Purkait (2), Jonathan G. C. Veinot (1)
(1) School of Chemistry, UNSW, Sydney, NSW, Australia (2) Australian Centre for Microscopy and Microanalysis, University of New South Wales, Sydney, NSW, Australia

P 2.5
Surface Plasmon Enhanced Photoluminescence from Silicon Quantum Dots
Asuka Inoue, Hiroshi Sugimoto, Minoru Fuji
Department of Electrical and Electronic Engineering, Graduate School of Engineering, Kobe University

P 2.6
Electroluminescence emission of Si NC / SiO2 multilayers under pulsed electrical excitation
Laboratory for Nanotechnology, MTEK, Faculty of Engineering, University of Freiburg, Georges Köhler Allee 103, 79110, Freiburg, Germany. 2MIND-IN2UB, Departament d’Electrònica, Universitat de Barcelona, Martí i Franquès 1, E-08028, Barcelona, Spain.

P 3.1
Low Dimensional Exotic Forms of Silicon
Guy Le Lay
Aix-Marseille University, PIIM, UMR 7345, Marseille, France, guy.lelay@univ-amu.fr

P 3.2
First-principles predictions of substrate effects on silicene
U. Schwingenschlogl
King Abdullah University of Science and Technology (KAUST), Physical Science and Engineering Division (PSE), Thuwal 23955-6900, Saudi Arabia

P 3.3
Predicting 2D silicon allotropes on layered chalcogenides
Emilio Scalise, Michel Houssa
Max Planck Institut fuer Eisenforschung GmbH, Dusseldorf (Germany)

P 3.4
New insights on Silicene nanosheets on graphite surface
P. Carducci, I. Berbecier2, A. Ronda, M. Abbarchi2, F. Fabbrici3, S. Piazz1, M. Scarcelli4, F. Jardali5, H. Vach6, R. Francini6 and M. De Crescenzi1
1 Dipartimento di Fisica, Università degli Studi di Roma “Tor Vergata”, 00133 Roma, Italy 2 CNRS, Aix-Marseille Université, IM2NP, UMR 7334, Campus de St. Jérôme, 13397 Marseille, France 3 IMEM CNR, Parco Area delle Scienze, 43124 Parma (Italy) 4 Hypagia Research Consortium, c/o Italian Space Agency, Via della Pigna, 00193 Rome 5 CNRS-LP1CM, Ecole Polytechnique, Université Paris-Saclay, 91128 Palaiseau, France 6 Dipartimento di Ingegneria Industriale, Università degli Studi di Roma “Tor Vergata”, Viale del Politecnico 1, 00133 Roma, Italy

P 3.5
Coffee Break

Si-Photovoltaics: Carrier Selective Contacts : Chairs: N. Usami, Z. Holman

16:00 Carrier-selective contacts for high-efficiency silicon solar cells
Stefan W. Glunz
Fraunhofer Institute for Solar Energy Systems, Freiburg, Germany

16:30 Catalytic-doping on Nanocrystalline Silicon Materials for the Use in Silicon Heterojunction Solar Cell
Yong Liu, Weiyuan Duan, Malte Köhler, Manuel Pomasko, Da Yun Kim, Kaining Ding
IIES-Photovoltaics, Forschungszentrum Jülich, Germany

16:45 Phase-separated SiOx layers with vertically oriented silicon inclusions for passivating contacts in silicon solar cells
Josua Stuckelberger (1), Philippe Wys (1), Iris Mack (1), Guem Nogay (2), Jean-Christophe Jeaingros (1), Jörg Horzel (2), Christophe Allébe (2), Matthieu Desprée (2), Franz-Josef Haug (1), Philipp Löper (1), Christophe Balif (1,2)
(1) Ecole Polytechnique Fédérale de Lausanne (EPFL), Institute of Microengineering (IIM), Photovoltaics and Thin-Film Electronics Laboratory(PV-Lab), Neuchâtel, Switzerland (2) SwissCenter of Electronics and Microtechnology (CSEM), Neuchâtel, Switzerland

17:00 Silicon Heterojunction Solar Cells with Silicon Nanoparticle Enabled Microcrystalline Silicon Thin Films
Joe V. Carpenter III, Materials Science and Engineering, Arizona State University, Tempe, AZ 85287, US

17:15 Break
17:30 BaSi2/Si heterostructure for photovoltaic applications  
Noritaka Usami, Kazuma Takahashi, Jefferson Adriam Wibowo, Yoshihiko Nakagawa, Yasuyoshi Kurokawa
Graduate School of Engineering, Nagoya University

18:00 Novel organic contacts for Si solar cells  
Chao Zhao, Rui-Qi PNG, Peter HO
National University of Singapore

18:15 Fundamental study of laser interactions with periodic arrays of nanoscale Si fin structures.  
Andrzej Gawlik, Janusz Bogdanowicz, Andreas Schulze, Jan Misiewicz, Wilfried Vandervorst
Imec, Kapeldreef 75, 3001 Leuven, Belgium

Si-Photovoltaics: Novel Materials : Chairs: S. Glunz, D. König

08:45 Dopants and Defects in Si Nanocrystal Networks: a delicate Balance  
Martin Stutzmann, and Many Others
Walter Schrötlitz Institut Technische Universität München Am Coulombwall 4 85748 Garching, and many Other Places

09:15 P Doping of Oxide Embedded Silicon Nanocrystals: The Role of P position  
Sebastian Gutsch1, Jan Laube1, Julian Lopez-Vidr1, Margit Zacharias1, Keita Nomoto2, Daniel Helf1, and Dirk König1
1 Laboratory for Nanotechnology, IMTEK, University of Freiburg, Germany. 2 The University of Sydney, Australia 3 University of New South Wales (UNSW), Sydney, Australia

09:30 Electrical characterisation of silicon nanowire devices with dense-pitches doped by monolayer doping  
Ray Duffy, Alessio Ricchio, Noel Kennedy, Dan O’Connell, Alan Hydes, Nikolay Petkov,
Justin D. Holmes, Paul K. Hurley, Brenda Long
Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland

09:45 Role of the cap layer on the competition between evaporation and diffusion of the source atoms in the Molecular Doping  
S. Caccamo, G. Fiscaroli1, A. La Magna and R.A. Puglisi
Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e Microsistemi (CNR-IMMI), Strada Ottava 5, Zona Industriale, 95121 Catania, Italy. * University of Basel
Department of Physics, Klingelbergstrasse 82 CH-4056 Basel, Switzerland

10:00 Coffee Break

Group-IV Nanowires I : Chairs: E. Tutuc, W. Weber

10:30 GROUP IV NANOWIRES AS MODEL SYSTEMS TO EXPLOR PHASE BEHAVIOUR, NUCLEATION AND INTERFACE DYNAMICS IN NANOSCALE SYSTEMS  
S. Hofmann
Department of Engineering, University of Cambridge, United Kingdom

11:00 Electrostatically Formed Nanowires: a Platform for Sensors, Transistors and Electronic Devices  
Yossi Rosenwaks, Alex Henning, Nandhini Swaminathan, Assaf Peled, Gideon Segev,
Klintemy Shimanoovich
Faculty of Engineering, Tel-Aviv University, Tel-Aviv 69978

11:30 Light emission from fractal array of silicon nanowires  
M. J. Lo Faro1, A.A, Leonard1-2-3, C. D’andrea1, P. Musumeci3, M A Iatì1, M. Galli4,
G. Franzoi2, F. Iacona2, P. Guacci4,1, C. Vasi1, F. Pilloni2-3-5, B. Fazio1, A. Iera1
1 CNR-IPC, Istituto per i Processi Chimico-Fisici, V.le F. Stagno D’Alcontres 37, 98158 Messina, Italy, 2 MAFIS CNR-IMMM, Istituto per la Microelettronica e Microsistemi, Via Santa Sofia 64, 95123 Catania, Italy, 3 Dipartimento di Fisica ed Astronomia, Università di Catania, Via Santa Sofia 64, 95123 Catania, Italy, 4 Dipartimento di Fisica, Università degli Studi di Pavia, via Bassi 6, 27100 Pavia, Italy 5 Scuola Superiore di Catania, Via Valdassoria 9, 95123 Catania, Italy

11:45 Correlative microscopy for detailed investigation of silicon nanowire nucleation and growth  
M. Hyväl, J. Cervenka, J. Stuchlik, H. Stuchliková, K. Kolka, A. Fejfar
Institute of Physics, Academy of Sciences of the Czech Republic, Cukrovarnická 10, 162 00 Prague 6, Czech Republic

12:00 Bottom-up Regrowth of Silicon Nanowires for Advanced 3D Nanoscale Probes  
A. Behroudj, A. Djaberi Dashtestani, M. Nilsen, S. Strehle
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

12:15 Local formation of InAs nanocrystals in Si by masked ion implantation and flash lamp annealing  
L. Rebohle, R. Wutzler, S. Prucnal, R. Hübner, R. Böttger, Y.M. Georgiev, E. Erbe, M. Helm, W. Skorupa
Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden Rossendorf, Bautzner Landstraße 400, 01328 Dresden, Germany

12:30 Lunch
Group-IV Nanowires II : Chairs: S. Hofmann, Z. Holman

14:00 Growth and Electronic Properties of Coherently Strained Group IV Core-Shell Nanowire Heterostructures
Emanuel Tutuc, Feng Wen, David C. Dillon, Kyoungwha Kim
Microelectronics Research Center, Department of Electrical Engineering, The University of Texas at Austin

14:30 Direct measurement of the Fermi Level Pinning in Silicon Nanowires
S. Strehle, S. Challinger, N. Hibst, I. Bakke
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, KP Technology, Burn Street, Wick Calthayns, KW1 5EH, United Kingdom
Kingdom, Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany, KP Technology, Burn Street, Wick Calthayns, KW1 5EH, United Kingdom

14:45 Resolving the 3D Boron distribution in vertical Si nanowires using atom probe tomography
Institut für Kern- und Strahlungssysteme, KU Leuven, Celestijnenlaan 200D, B-3001 Leuven, Belgium
Imec vzw, Kapeldreef 75, Heverlee – 3001, Belgium

15:00 Controlled catalyst-induced doping of silicon nanowires using post-transition metals
Jiri Cervena, Martin Silhavik, Martin Muller, Jiri Stuchlik, Ha Stuchlikova, Antonin Fejfar and Jan Kocka
Department of Thin Films and Nanostructures, Institute of Physics ASCR, v. v. i., Prague, Czech Republic

15:15 Silicon nanowire radial tandem junction applications in light harvesting and light sensing
Junzhuan Wang, Fan Yang, Xiaolin Sun, Linwei Yu, Jun Xu, Yi Shi, and Kunji Chen
National Laboratory of Solid State Microstructures/School of Electronics Science and Engineering/ Collaborative Innovation Center of Advanced Microstructures, Nanjing University, 210093, Nanjing, P. R. China

15:30 Crystal Phase Effects in Si Nanowires
Michele Amato, Thanayut Kaemmaraya, Alberto Zobelli, Maurizia Palummo, Riccardo Rugar
Centre de Nanosciences et de Nanotechnologies and Laboratoire de Physique des Solides, CNRS, Université Paris-Sud, Université Paris-Saclay, 91405 Orsay, France, Dipartimento di Fisica, Università di Roma Tor Vergata, Via della Ricerca Scientifica 1, 00133 Roma, Italy. INFN, Laboratori Nazionali di Frascati, Via E. Fermi 40, I-00044 Frascati, Italy, Instituto di Ciencia de Materiales de Barcelona (ICMAB-CSIC), Campus de Bellaterra, 08193 Bellaterra, Barcelona, Spain

15:45 Silicon Nanowires Dressed with REDOX Molecules for Memristive Devices
L.E. Calvet, D. Queroloz
Centre de Nanosciences et de Nanotechnologies, CNRS UMR 9001, Univ. Paris-Sud, Universite Paris-Saclay, C2N – Orsay, 91405 Orsay, France

16:00 Coffee Break

Poster Session : Chairs: D. Hiller, D. König

16:10 Morphological properties of nanopillar patterned Si obtained by nanosphere lithography and metal-assisted wet-chemical etching
Michael Kossmann 1,2, Thomas Riedl 1,2, Jörg K.N. Lindner 1,2
1. Paderborn University, Department of Physics, Warburger Straße 100, 33098 Paderborn, Germany. 2. Center for Optoelectronics and Photonics Paderborn (CeOPP), Warburger Straße 100, 33098 Paderborn, Germany

16:20 Customized Si nanostructures by metal assisted chemical etching
G. Sandu(1), S. Melinter(1), and A. Vladi(2)
(1) Institute of Information and Communication Technologies, Electronics and Applied Photonics, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium. (2) Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium.

16:30 Localized Bottom-up Synthesis of Pt-Silicide Catalysed Silicon Nanowires for Vertical Single-Nanowire Electrode Arrays
A. Djafari Dashستانi, N. Hibst, S. Strehle
Ulm University, Institute of Electronic Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

16:45 Understanding the Metal Catalyst in Metal-Assisted Chemical Etching
M. O. Williams, D. Hiller, A. Jervell, T. Bergfeldt, M. Zacharias
M. O. Williams, D. Hiller, A. Jervell, M. Zacharias from: Laboratory for Nanotechnology, IMTEK, Faculty of Engineering, University of Freiburg, Georges Köhler Allee 103, 79110, Freiburg, Germany. T. Bergfeldt from: Karlsruhe Institute of Technology, Institute of Applied Materials, Hermann von Helmholtz Platz 1, 76344 Eggenstein Leopoldshafen, Germany.

16:55 Periodic nanostructures formed on mesoporous silicon surface using ultra-short laser pulses
A. Tabi, A. Stolz, C. Boulmer-Leborgne, N. Semmar
GREMI-UMR 7344-CNRS-University of Orleans, 14 rue d’Issoudun, BP6744, 45071 Orleans Cedex 2, France

17:10 In-plane self-turning and Twin Dynamics Renders Large Stretchability to Mono-Like Zigzag Silicon Nanowire Springs
Zhaoguo Xue,1,2 Taige Dong,1 Zhimin Zhu,1 Yalong Zhao,1 Wanghua Chen,2 Linwei Yu,1,2 Junzhuan Wang,1 Jun Xu,1 Kunji Chen,1 and Pere Roca i Cabarrocas2
1. National Laboratory of Solid State Microstructures/School of Electronics Science and Engineering/Collaborative Innovation Center of Advanced Microstructures, Nanjing University, 210093, Nanjing, P. R. China, E-mail: yulinwei@nju.edu.cn ; 2. LPICM, CNRS, Ecole Polytechnique, Université Paris-Saclay, 91128 Palaiseau, France E-mail: linwei.yu@polytechnique.edu

17:25 Optical Properties of Silicon Nanowires
K.A. Gonchar1,2, A.A. Zubairova1, V.A. Georgobiani1, L.A. Golovani1, V.Ya. Gayvornosky4, V. Sivakov5, V.V. Timoshenko1,3
1Department of Physics, M.V. Lomonosov Moscow State University, Leninsky Gory 119991 Moscow, Russia, 2Theoretical Physics and Applied Mathematics Department, Ural Federal University, 19 Mira street 620262 Ekaterinburg, Russia, 3Bio-nanophotonics Laboratory, National Research Nuclear University “MEPhI” (Moscow Engineering Physics Institute), 31 Kashirskoe sh., 115409 Moscow, Russia, 4Institute of Physics of the National Academy of Sciences of Ukraine, 03680, Kiev, Ukraine, 5Leibniz-Institut für Eisenforschung GmbH, Albert-Einstein-Straße 9 D-07475 Jena, Germany

17:40 Nonmonotonic Diameter Dependence of Thermal Conductivity of Extremely Thin Si Nanowires: Competition between Hydrodynamic Phonon and Electronic Transport
Yangqiang Zhou, Ming Hu
Aachen Institute for Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany

17:55 Fabrication of ultra-thin silicon nanowire arrays using bimetal assisted chemical etching
Zhiyun Tan, Zhengguang Hu, Chunqang Guo, Xiaoling Wu, Guo-an Cheng, Ruiting Zheng
College of Nuclear Science and Technology, Beijing Normal University, 100875, China

18:10 Engineering in-plane silicon nanowires for nonperiodic island-structure and ultra-high stretchability>300%
Zhaoguo Xue,1,2 Taige Dong,1 Zhimin Zhu,1 Yalong Zhao,1 Linwei Yu,1,2 Junzhuan Wang,1 Jun Xu,1 Kunji Chen,1 and Pere Roca i Cabarrocas2
1. National Laboratory of Solid State Microstructures/School of Electronics Science and Engineering/Collaborative Innovation Center of Advanced Microstructures, Nanjing University, 210093, Nanjing, P. R. China, E-mail: yulinwei@nju.edu.cn ; 2. LPICM, CNRS, Ecole Polytechnique, Université Paris-Saclay, 91128 Palaiseau, France E-mail: linwei.yu@polytechnique.edu

18:30 POROUS SILICON NANOWIRES (PSiNWr) FILM ELABORATED AND MODIFIED BY ORGANIC SPECIES
Challa YADADDA
CRTSE Centre de Recherche en Technologie des Semi-conducteurs pour l’Énergétique Division Couches Minces Surfaces et Interfaces

18:45 A study on electrical properties of tellurium and bismuth nanowire for low operation voltage device
Chien-Chao Huang, Wan-Ling Chu, Bai-Ting Cheng, Yu-Zen Tasi, and Chien-Neng Liao
National Nano Device Laboratories, Hsinchu 300, Taiwan 1Dept of Materials Eng. and Science, University of Tsing-Hua, Hsinchu, Taiwan 2Dept of Electronic, University of Cheng-Shiu, Kaohsung, Taiwan
Hydrophilic luminescent silicon nanoparticles in steric colloidal solutions: their size, agglomeration and toxicity
K. Herynková, P. Šimáková, A. Fušíková, O. E. Cibulka, M. Hubalek Kalbáčová
Institute of Physics, Academy of Sciences of the Czech Republic, Čukrovárníčka 10, 162 53 Prague 6, Czech Republic. Institute of Inherited Metabolic Disorders, 1st Faculty of Medicine, Charles University, Prague, Czech Republic

Photoluminescence in Ge/Si quantum dot heterostructures
A.V. Dvurechenskii1,2, A.F. Zinoviev1, V.A. Zinoviev1, V. Smagina1, O. M. Borodavchenko3, V. D. Žnámek1, and A. V. Mudry3
1Rzhavan Institute of Semiconductor Physics, Siberian Branch of the Russian Academy of Sciences, Lavrent'eva 13, 630090 Novosibirsk, Russia, 2Novosibirsk State University, 630090 Novosibirsk, Russia, 3Scientific-Practical Material Research Centre of the National Academy of Science, P. Brovki 19, 220072 Minsk, Belarus

Role of surface charge distribution on band-structure and optical properties of silicon nanocrystals
Chia-Ching Huang1), Hui Nie(2), Jonathan Wilbrink(2), Jos M. Paulusse(2), Katerina Dohnalová(1)
(1) Institute of Physics, University of Amsterdam, Science Park 904, 1098XH, Amsterdam, the Netherlands, (2) MIRA Institute, University of Twente, P.O. Box 217, 7500 AE, Enschede, the Netherlands

Evolution of dynamic parameters extracted from impedance spectroscopy due to oxidation of nanostructured porous silicon
Walter Morales(2), Carlos Vargas(1,2), Taina Ramirez(1,2), Daniela Chaves(2), Arturo Ramirez-Porrás(1,2)
(1) Centro de investigación en Ciencia e Ingeniería de Materiales, Universidad de Costa Rica, San José, Costa Rica, 11501 (2) Escuela de Física, Universidad de Costa Rica, San Jose, Costa Rica, 11501

The role of defects in inducing colour tuning of strong photoluminescence in Bi2O3: Au nanocomposites
Institute of Physics ASCR, v. v. i., Cukrovarnická 10, 162 53 Prague 6, Czech Republic. Institute of Inherited Metabolic Disorders, 1st Faculty of Medicine, Charles University, Prague, Czech Republic

Deposition and forming of nanoparticles on the hydrogenated silicon thin films

Binary gold-silicon nanoparticles: fabrication, structural and optical properties, application
Yury V. Ryabchikov
1 Aix-Marseille University, 163, avenue de Luminy, Marseille, France 13288 2 P.N. Lebedev Physical Institute of Russian Academy of Sciences, 53 Leninskiy Prospekt, Moscow 199 991, Russia

Photonic crystal slabs with broadband and efficient directional light emission
L. Ondic (1), M. Varga (1), K. Hruska (1), J. Valenta (2), A. Kromka (1), I. Pealt (1)
(1) Institute of Physics, Academy of Sciences of the Czech Republic, v.i. Čukrovárnícká 10, 162 00, Prague 6, Czech Republic (2) Charles University, Faculty of Mathematics and Computer Science, Ke Karlovu 3, 131 16, Praha 2, Prague, Czech Republic

Ferromagnetism in Silicon Single Crystals with Positively Charged Vacancy Clusters
Yu Liu, Xiongfei Jiang, Yuan Yuan, Jiecai Han, Shenggang Zhou, Bo Song
Helmholtz-Zentrum Dresden-Rossendorf, Harbin Institute of Technology

Design of polarization independent optical triplexer with cascaded multimode-interference couplers and waveguide crossings
Hideki Yokoi, Kazuki Tsuchida, Daiki Matsumoto
Graduate School of Engineering and Science, Shibaura Institute of Technology

Integrated racetrack micro-resonator based on porous silicon ridge waveguides for sensing application
UMR FOTON, CNRS, Université de Rennes 1, ENSAT, Lannion, France

Investigation of mesoporous aSi:H with embedded aluminium nanoparticles
T. Keldstad(1), A. Thorsgård(2), E. Monakhov(1) and A. Galekas(1)
(1) Department of Physics/Centre for Materials Science and Nanotechnology, University of Oslo, P.O. Box 1048 Blindern, N-0316 Oslo, Norway. (2) SINTEF Materials and Chemistry, P.O. Box 124 Blindern, 0314 Oslo, Norway

Functional oxides on Silicon and Sapphire substrates for photonic applications
Guillaume Marcad, Sylvia Matzen, Carlos Almoro-Ramos, Xavier Le Roux, Mathias Berclans, Valérie Pillard, Pedro Damos, Thomas Marouani, Guillaume Agnus, Ludovic Largueau, Eric Cassan, Delphine Marris-Morin, Philippe Leceur, Laurent Vivier
C2N- Centre for Nanoscience and Nanotechnology, CNRS, University of Paris-Sud, University of Paris Saclay, Building 220, rue André Ampère 91405 Orsay cedex

Photoelectric response of Si-Au nanocomposites on crystalline silicon: The effect of metal content in the nanocomposite
O.S. Ken, D.A. Yavsin, M.M. Sobolev, S.A. Gurevich, O.M. Sreseli
Ioffe Institute, St. Petersburg, Politikhinkhigeskaya, 26

Activation of Silicon by Ion Implantation under Heating Sample at 200°C
T. Sameshima 1, K. Yasuta 1, M. Hasumi 1, T. Nagaoka 2, V. Iouchi 2
Tokyo University of Agriculture and Technology, 1 NISSIN ION EQUIPMENT CO., LTD.2

Getting and study of the electrical properties of nanoscale structures of MeSi2 in different depths Si
Y.S. Engashov, E.B. Umirzakov
Tashkent state technical university

Kinet formation of nano-sized thin films of Si - M (M = Li, Na, Ba)
A.S. Rysbaev, Zh.B. Khuzhazhanov, I.R. Bekpulatov, B.E. Kharyndinov
Tashkent state technical university

Assessment of the degree of ionization and electronegativity chemical bond in silicon films obtained by ion implantation method
A.S. Rysbaev, Zh.B. Khuzhazhanov, I.R. Bekpulatov
Tashkent state technical university

Influence of a chemical activity of implanted ions on a structure of a damaged Si layer of SIMOX
Kirill SHCHERBACHEV, Victor MORDKOVICH, Vladimir ZINENKO, Yuri AGAFONOF, Elena SKRYLEVA, Dmitri KISELEV
National University of Science and Technology «MISIS», Moscow, Russian Federation

A crystallisation model highlighting the gold nanoparticle effect in the metal induced crystallisation of amorphous silicon
Rachid Ouertani, Khawla Ghribi, Wissem Dimassi
Photovoltaic Laboratory, Research and Technology Center of Energy, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia.
<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>08:45</td>
<td>Simultaneous Etching and Surface functionalization of Silicon Nanocrystals</td>
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<td>09:15</td>
<td>Formation of Laminated Films of Silicon Quantum Dot Monolayers from the</td>
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<td>Colloidal Solution</td>
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<td>Luminescent Solar Concentrators with high Power- and Cost-Efficiency based</td>
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<td>Thermal effects in the resonant energy transfer between Si nanocrystals</td>
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<td>10:00</td>
<td>Coffee Break</td>
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<td>11:00</td>
<td>Non-equilibrium plasmas for nanoparticle synthesis: Silicon nanostructures</td>
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<td>Quantum transport in plasmas for nanoparticle synthesis: Silicon nanostructures</td>
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<td>Study of electron traps associated with oxygen superlattices in n-type</td>
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<td>Plasmonic response of Hyperbanded Silicon nanocrystals obtained by</td>
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<td>ultrahigh vacuum evaporation</td>
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<td>Deposition of silicon nanoparticles on a substrate through arc discharge</td>
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<td>Lunch</td>
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<td>Quantum modeling of multi-gate SOI devices</td>
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<td>14:30</td>
<td>Fast Diffusion Pathways Of Intersitial Phosphorus In Silicon</td>
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<td>Modulation Doping of Silicon using Aluminium-induced Acceptor States in</td>
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<td>15:00</td>
<td>Formation of Light Emitting Structures in Si by Molecular Ion Implantation</td>
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<td>and Thermal Annealing</td>
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<td>Plenary Session</td>
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<td>16:15</td>
<td>Plenary Session</td>
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<td>11:00</td>
<td>Efficient Charge Transfer in Silicon Quantum Dot/Amorphous Hybrids</td>
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<td>12:30</td>
<td>Lunch</td>
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09:00 Fluorescent-core whispering gallery mode sensors: Crossing the lasing threshold
A. Meldrum, S. Lane, W. Morrish, K. Gardner, P. West, A. Francois
University of Alberta, University of South Australia

09:30 Vernier effect hybrid optical sensors based on porous silicon and polymer waveguides
Paul Auzello, Nathalie Lorrain, Monique Thual, Mohammed Guendouz
UMR FOTON, CNRS, Université de Rennes 1, ENSSANT, Lannion, France

09:45 Tuning the properties of silicon nanocrystals for bioimaging applications.
Attilio Faramus, Auras Torendahl, Christopher Robidol, Jonathan G.C. Veinot
Department of Chemistry, University of Alberta, Edmonton, Alberta T6G2O2, Canada

10:00 Coffee Break

10:30 High-K materials and embedded nanocrystals for electronic and opto-electronic applications
David Lehninger, Florian Honelt, Jan Beyer, Frank Schneider, Johannes Heitmann
and Solid State Physics, Altenberger Strasse 69, 4040 Linz, Austria

11:00 lasing from epitaxial group-IV quantum dots by engineering of single defects
Lukas Spindlerberger, Thomas Fromherz, Friedrich Schäffler, Antonio Polimeni, Mark T. Lusk, Martyna Grydlik, Moritz Brehm
Johannes Kepler University, Institute of Semiconductor and Solid State Physics,
Altenberger Strasse 69, 4040 Linz, Austria, Johannes Kepler University, Institute of
Semiconductor and Solid State Physics, Altenberger Strasse 69, 4040 Linz, Austria,
Johannes Kepler University, Institute of Semiconductor and Solid State Physics,
Altenberger Strasse 69, 4040 Linz, Austria, CNISM and Department of Physics,
University of Roma, Piazza A. Moro 2, 00185 Roma, Italy, Department of
Physics, Colorado, School of Mines, Golden, Colorado 80401, United States, Johannes
Kepler University, Institute of Semiconductor and Solid State Physics,
Altenberger Strasse 69, 4040 Linz, Austria, Johannes Kepler University, Institute of
Semiconductor and Solid State Physics, Altenberger Strasse 69, 4040 Linz, Austria

11:15 Work function tuning of Si and Ge surfaces with different atoms: an ab-initio study
Stefano Ossicini, Ivan Mari, Matteo, Toriousche, Michele Amato
Dipartimento di Scienze e Metodi dell’Ingegneria, Università di Modena e Reggio
Emilia, Via Amendola 2 Pad. MorSELL, I-42122 Reggio Emilia, Italy and CNIR-
Istituto di Nanoscienze-S3, via Campi 213 A-41125 Modena, Italy. CNR-Instituto di
Nanoscienze-S3, via Campi 213 A-41125 Modena, Italy, Dipartimento di Scienze
e Metodi dell’Ingegneria, Università di Modena e Reggio Emilia, Via Amendola 2 Pad.
MorSELL, I-42122 Reggio Emilia, Italy, CNR-Istituto di Nanoscienze et de
Nanotechnologies, CNRS, Univ. Paris-Sud, Universite_e Paris-Saclay, 91405 Orsay, France

11:30 Strain-compensated formation of multi-stacked Ge quantum dots utilizing Si<sub>1-x</sub>Ge<sub>x</sub> sub-C/sub-x sub-C spacer
Yuki Itoh, Tomoyuki Kawashima, Katsuyoshi Washio
Graduate School of Engineering, Tohoku University, Division for International Advanced Research and Education, Tohoku University, Japan Society for the Promotion of Science Research Fellow ,

11:45 Responsive Bipolar Phototransistors with Body-Strapping in Standard SiGe BICMOS Process for Near-IR Applications
Klaus Y.-J. Hsu, Yu-Sen Chang
Institute of Electronics Engineering, National Tsing Hua University, Hsinchu, Taiwan

12:00 Epitaxial growth and study of magnetic properties of self-assembled GeMn quantum dots for spin injection into silicon
Son Tung PHAM (1), Lisa MICHEZ(1), Alain RANGUIS(1), Sylvain BERTAINA(2), Vinh LE THANH(1)
(1) Aix-Marseille University - CNRS CInA-MUM, 13288 Marseille, France E-mail: tung@cinam.univ-mrs.fr E-mail: michiez@cinam.univ-mrs.fr E-mail: ranguis@cinam.univ-mrs.fr E-mail: vinh.le-thanh@univ-amu.fr (2) Aix Marseille University - CNRS IM2NP-MUM, 13397 Marseille, France E-mail: sylvain.bertaina@im2np.fr

12:15 Electronic and optical phenomena in Ge/Si quantum dot photodetectors
A.V. Ovcharenko(1), A.I. Yakimov(1), V.K. Krienko(1), A.A. Shklyarenko(2)
1 Rzhanov Institute of Semiconductor Physics, Siberian Branch of the Russian Academy of Sciences, Lavrent'eva 13, 630090 Novosibirsk, Russia 2 Novosibirsk State University, 630090 Novosibirsk, Russia 3 Tomsk State University, 634050 Tomsk, Russia

12:30 Lunch

Si-Nanocrystals: Carrier Dynamics & Charge Transport : Chairs: J. Heitmann, Z. Holman

14:00 Carrier dynamics in Si quantum dots and nanowires studied with Time-resolved THz Spectroscopy
Matthew Bergren and Matthew C. Beard
National Renewable Energy Laboratory

14:30 Terahertz photoconductivity in silicon nanocrystals networks
Vladimir Pushkarev(1), Hynek Němeč(2), Sebastian Gutsch(2), Daniel Hiller(2), Jan Laube(2), Margit Zacharias(2), Tomáš Ostaličný(3), Petr Kuzel(1)
1 - Institute of Physics ASCR, Na Slovance 2, 16211 Prague 8, CZ, 2 - Laboratory for Nanotechnology, Department of Microsystems Engineering (IMTEK), University of Freiburg, Georges-Köhler-Allee 103, 79110 Freiburg, Germany 3 - Faculty of Mathematics and Physics, Charles University in Prague, Ke Karlovu 3, 12116 Prague 2, Czech Republic

14:45 Charge transport in silicon nanocrystal field-effect transistors
Willi Agner(1), Julius Röwe(1), Oliver BieNek(1), Hartmut Wiggers(3), Martin Stutzmann(1), Rui N. Pereira(1),3
1) Walter Schottky Institut, Technische Universität München, Am Coulombwall 4, 85748 Garching bei München, Germany 2) Institute for Nanostuctures, Nanomodelling and Nanofabrication and Department of Physics, University of Aveiro, 3810-193 Aveiro, Portugal 3) Institute for Combustion and Gasdynmacics – Reactive Fluids - and COMX Center for Nanointegration Duisburg-Essen, Universitats Duisburg-Essen, Carl-Benz-Straße 199, 47057 Duisburg, Germany

15:00 Transition from Auger to bimolecular recombination in silicon nanocrystals/SiO2 superlattices
Department of Chemical Physics and Optics, Faculty of Mathematics and Physics,
Charles University, Ke Karlovu 5, 12116 Praha 2, Czech Republic, Department of
Chemical Physics and Optics, Faculty of Mathematics and Physics, Charles University,
Ke Karlovu 5, 12116 Praha 2, Czech Republic, Department of Nanotechnology, IMTEK,
Faculty of Engineering, Albert-Ludwigs-Universität Freiburg, Georges-Köhler-Allee
103, 79110 Freiburg, Germany, Department of Nanotechnology, IMTEK, Faculty of Engineering, Albert-Ludwigs-Universität Freiburg, Georges-Köhler-Allee 103, 79110 Freiburg, Germany, Department of Nanotechnology, IMTEK, Faculty of Engineering, Albert-Ludwigs-Universität Freiburg, Georges-Köhler-Allee 103, 79110 Freiburg, Germany, Department of Chemical Physics and Optics, Faculty of Mathematics and Physics, Charles University, Ke Karlovu 5, 12116 Praha 2, Czech Republic

15:15 Coffee Break

Si-Nanoelectronics II : Chairs: M. Beard, W. Weber

15:45 „Doped“ silicon without dopants – alternative for the realization of semiconductor devices
Joachim Knoch
RWTH Aachen University, Institute of Semiconductor Electronics

16:15 Inducing n- and p-type Behaviour of Silicon Nano-Volumes by Embedding in Silicin Oxide and Nitride
D. König(ab), D. Hiller(b), N. Wilck(c), B. Berghoff(c), M. Müller(d), S. Thakur(e), G. Di Santo(e), L. Pettacina(e), J. Mayer(d), J. Knoch(c), M. Zacharias(b), S. Smith(a)
(a) Integrated Materials Design Centre, University of New South Wales, Australia
(b) Chair of Nanotechnology, Institute of Microtechnology (IMTEK), Albert-Ludwigs-Universität Freiburg, Georges-Köhler-Allee 103, 79110 Freiburg, Germany, Department of Nanotechnology, IMTEK, Faculty of Engineering, Albert-Ludwigs-Universität Freiburg, Georges-Köhler-Allee 103, 79110 Freiburg, Germany, Department of Nanotechnology, IMTEK, Faculty of Engineering, Albert-Ludwigs-Universität Freiburg, Georges-Köhler-Allee 103, 79110 Freiburg, Germany, Department of Chemical Physics and Optics, Faculty of Mathematics and Physics, Charles University, Ke Karlovu 5, 12116 Praha 2, Czech Republic

16:30 Low-k spacers for leading-edge FinFETs and FDSOI transistors
Fabian Koehler, Dina H. Trisno, Han Tao, Bianca Antonioni-Trepte, and Klaus Hempel
GLOBALFOUNDRIES, Witschdorfer Landstrasse 101, 01109 Dresden, Germany (Fabian Koehler, Bianca Antonioni-Trepte, Klaus Hempel), GLOBALFOUNDRIES, 400 Stone Road Extension, Malta, NY 12020, USA (Dina H. Trisno, Han Tao)
16:45 Deep level transient spectroscopic investigation of phosphorus-doped silicon by self-assembled molecular monolayers
Xuejiao Gao1, Bin Guan1, Abdelmadjid Mesli2, Kaixiang Chen1, Yaping Dan1
1University of Michigan – Shanghai Jiao Tong University Joint Institute, Shanghai Jiao Tong University, 2Institut Matériaux Microélectronique Nanosciences de Provence, UMR 6242 CNRS, Université Aix-Marseille,

17:00 Break

Si-Photonics & Sensors : Chairs: J. Knoch, D. Hiller

17:15 Methane trace-gas sensing enabled by silicon photonic integration
William M. J. Green(1), Chi Xiong(1), Marwan Khater(1), Yves Martin(1), Eric J. Zhang(1), Chu C. Teng(2), Jason S. Orcutt(1), Laurent Schares(1), Tymon Barwicz(1), Nathan Marchack(1), Steven J. Holmes(1), Swetha Kamlapurkar(1), Sebastian Engelmann(1), and Gerard Wysocki(2)
1 - IBM Thomas J. Watson Research Center, 1101 Kitchawan Rd, Yorktown Heights, NY 10598, USA 2 - Department of Electrical Engineering, Princeton University, Princeton NJ 08540

17:45 Ab-initio study of nonlinear optical susceptibilities in narrow silicon nanowires
Daryoush Shiri
Department of Physics, Chalmers University of Technology, SE-412 96, Göteborg, Sweden

18:00 Silicon Micropillars for pathogen Nucleic Acids isolation from biological sample
Salvatore Petralia (1), Emanuele Luigi Sciuto (2), Sabrina Conoci (1)
(1) STMicroelectronics, Stradale Primosole 50, 95121 Catania Italy, (2) Department of Physics and Astronomy, University of Catania, Via Santa Sofia 64, 95123 Catania, Italy

18:15 Closing Remarks
SYMPOSIUM Q

Nano-engineering coatings and thin films

Symposium Organizers:

José Filipe VAZ, University of Minho, Braga, Portugal

Martin FENKER, fem Forschungsinstitut Edelmetalle + Metallchemie, Schwäbisch Gmünd, Germany

Philippe STEYER, INSA de Lyon – Laboratoire MATEIS, Villeurbanne, France

Tomas POLCAR, University of Southampton, U.K.

Be published in the journal "Surface and Coatings Technology" (Elsevier).
CONTROL OF MICRO- AND NANOSTRUCTURE IN TRANSITION METAL NITRIDES

09:00

Fundamentals of thin film growth: diagnostics, analysis and modeling 1: Kostas Sarakinos + Ivan Petrov

09:10

Influence of plasma conditions on nano-composite and nano-layered coatings
Gerry van der Kolk, Ivailo Dolchikov

09:20

Deposition of Anatase-, Rutile-, and Mixed-Phases TiO2 Films by Mist-CVD and Photodector Applications
Han-Yin Liu, Ching-Sung Lee, Wei-Chou Hsu, Ruei-Chin Huang, Wei-Hsin Liu, Fu-Yuan Hou, and Guan-Cheng Tu

09:30

Dynamic evolution of island morphology in non-wetting systems
Bo Li1, Georgios Almyras1, Joseph E. Greener2,3, Kostas Sarakino1

09:40

Interdiffusion between float glass and aluminum-doped silica thin films
Daniel Pelati (1,2), Andrea Cattoni (1), Stéphane Collin(1), Jean-Christophe Harmand

10:00

Coffee break

10:10

Tailoring microstructure, phase formation, stress, and electrical properties of copper thin films by HPIMS
Ph. Cemin 1, G. Abadias 2, C. Forgeud 2, A. Michel 2, T. Marojuan 3, P. Lecoeur 3, T. Mirea 1, D. Lundi 1

10:20

Crystalisation dynamics of highly-textured large-grain Ge Al bilayers observed by in-situ optical microscopy
Daniele Pelati (1,2), Andrea Cattoni (1), Stéphane Collin (1), Jean-Christophe Harmand

10:30

Atomic scale investigations of thermally treated MoSiB/TiAlN nano-multilayers
E. Aschauer1, S. Sackö2, C.M. Köller1, T. Schachinger3, M. Arndt4, P. Poličk5, H. Riedl1,6, and P.H. Mayrhofer1,6

10:40

Crystallisation dynamics of highly-textured large-grain Ge Al bilayers observed by in-situ optical microscopy
Daniele Pelati, Andrea Cattoni, Stéphane Collin, Jean-Christophe Harmand

11:00

Ab initio study of the atomic level structure of TiO2-TiN interfaces for antibiofouling applications
J.J. Colin, A. Michel, C. Furgeaud, C. Mastali, G. Abadias

11:10

Influence of plasma conditions on nano-composite and nano-layered coatings
Gerry van der Kolk, Ivailo Dolchikov

11:20

Uniform Nanoparticle Thin Films with Independently Tunable Thickness and Antibiofouling Applications
Hsin Liu, Fu-Yuan Hou, and Guan-Cheng Tu

11:30

Tailoring microstructure, phase formation, stress, and electrical properties of copper thin films by HPIMS
Ph. Cemin 1, G. Abadias 2, C. Forgeud 2, A. Michel 2, T. Marojuan 3, P. Lecoeur 3, T. Mirea 1, D. Lundi 1

11:40

Silicide formation and linked stress evolution during sputtering of Pd films on Si
J.J. Colin, A. Michel, C. Mastali, G. Abadias

12:00

Lunch

12:15

Assessment of Surface Damage Characteristic of Single- and Few-Layer h-BN, MoS2, and Graphene
Khac Bien Cuong Tran, Koo-Hyun Chung

12:30

Uniform Nanoparticle Thin Films with Independently Tunable Thickness and Porosity Formed Via Hypersonic Impaction
Peter Firth, Zachary Holman

12:40

Porosity Formed Via Hypersonic Impaction
Khac Bien Cuong Tran, Koo-Hyun Chung

12:50

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Porosity Formed Via Hypersonic Impaction
Khac Bien Cuong Tran, Koo-Hyun Chung

14:30

Silicide formation and linked stress evolution during sputtering of Pd films on Si
J.J. Colin, A. Michel, C. Mastali, G. Abadias
17:30 Structural, Optical and Electrical properties of ZnO:Al thin films grown by Magnetron Sputtering and Spray pyrolysis methods.

Saad Rahmane, Benchika Cheara, Allag Abdelkrim, Attouche Hafida and Koudzi Nabilia
Laboratoire de Physique des couches minces et applications, Université de Biskra, BP 145, RP, 07000 Biskra, Algerie

17:30 Asymmetric flexible ZTO/AgITO and ITO/AgZTO electrodes grown by roll-to-roll sputtering for flexible OLEDs

Han-K Kim1 and Tae-Woong Kim2
1Kyung Hee University, Department of Advanced Materials Engineering for Information and Electronics, 1 Seocheon, Yongin, Gyeonggi-do 446-711, Republic of Korea
2Samsung Display, OLED R&D Center, Yongin, Gyeonggi-do 446-711, Republic of Korea

17:30 The copper oxide thin films and its transistor properties deposited by atomic layer deposition technique

Jung-Dae Kwon, Se-Hun Kwon, and Jin-Seong Park.
Korea Institute of Materials Science, Pusan National University, and Hanyang University.

17:30 Coating properties of chemical solution processed MoS2 thin films on various oxides

Joann Kim, Ken-ichi Haga, Eisuke Tokimitsu.
School of Materials Science, Japan Advanced Institute of Science and Technology.

17:30 Influence of formation Nanoscale Structures on the Emission Properties and Performance Characteristics of Ferro Alloys

S.B. Dornay, B.E. Umrazakov, D.A. Tashmakhamedova.
Tashkent state technical university

17:30 Atmospheric-pressure plasma processing for functional treatment and PECVD by using a novel dielectric barrier discharge reactor

Woo Seok Kang, Min Hur, Jae-Ok Lee, Young-Hoon Song.
Korea Institute of Machinery & Materials

17:30 Characterization of a corrosion resistant coating deposited on S355 steel substrate by PVD HIPIMS process

Quentin Hartie, Samuel Branchu, Pierre Antoine Dubos, Mireille Richard-Plouet, Pascal Casari, Pierre Yves Jouan
I.E.R. Jules Verne, Chemin du Chaffaut, 44340 Bouguenais, Institut de recherche en genie civil et mecanique, UMR6183, IUT de Saint-Nazaire, 58 rue Michel Ange, BP 420 - 44606 Saint Nazaire Cedex 4, Institut de recherche en genie civil et mecanique, UMR6183, IUT de Saint-Nazaire, 58 rue Michel Ange, BP 420 - 44606 Saint Nazaire Cedex 4

17:30 Crystal shape control of methyamine lead halide materials

Quyet Van Le, Ju Hyun Jeon, Soo Young Kim
Chung-Ang University, Chung-Ang University, Chung-Ang University

17:30 Blue-UVC upconversion of Y2Si2O7:Pr3+ phosphor film

Youngwook Jeong, 2Soonho Park, 2Jaehyoung Park, 3Taewook Kang, 4HeeLack Choi, 5Taehoon Kim, 2Jongsoo Kim
1Department of LED Convergence Engineering, Pukyong National University, Busan, 608-737, South Korea 2 Department of Display science & engineering, Pukyong National University, Busan, 608-737, South Korea 3 Interdisciplinary Program of LED and Solid State Lighting Engineering, Pukyong National University, Busan, 608-737, South Korea 4 Department of material science and engineering, Pukyong National University, Busan, 608-737, South Korea 5 87, Gunjeancheon-ro 21beon-gil, Siheung-si, Gyeonggi-do, Korea

17:30 Characterization of 2-Dimensional Black Phosphorous Thin Films deposited using Inkjet Printing Process for TPT Applications

Ho Young Jun, Eon Ju Lee, Si Ok Ryu
School of Chemical Engineering, Yeungnam University, 280 Daehak-ro, Gyeongsan 712-749, South Korea

17:30 A novel approach to silicon surface modification and functionalization based on cavitation processing

1 V.Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, 41 Nauky av, Kyiv 03028, Ukraine, 2 Instituto Politecnico Nacional - ESFM, Department of Physics, Av. IPN, Ed. 9 U.P.A.L.M., 07738, Mexico D.F.

17:30 Doping and Annealing Effects on Structural, Electrical and Optical Properties of N-doped Zinc-Oxide Thin Films

E. Peksu, H. Karaagac
Department of Physics, Istanbul Technical University

17:30 The effect of Cu content on structural and optical properties of sol-gel derived CuOxCo3-xO4 thin films

Hamed Behzad Farhad E Ghodsi Elf Peksu Hakan Karaagac
Department of Physics, Faculty of Science, The University of Gultan, Namijo Avenue, 41335/51914 Rashl, Iran Department of Physics Engineering, Istanbul Technical University, Maslak, 34469 Istanbul, Turkey

17:30 Effect of energy on the formation of flexible hard Al-Si-N films prepared by magnetron sputtering

Daniel Jastavdlik, Jindrich Musil, Radomir Cerveny, Stanislav Haviar, G. Remnev, V. Uglov
University of West Bohemia, Univerzitni 8, 306 14 Pizen, Czech Republic

17:30 Comparative Study On Patterned Electrode Organic Field Effect Transistors

Bilal Istanbullu, Mahmut Kus
Istanbul University, Selcuk University, Advaned Technology Research and Application Center, Konya/TURKEY Selcuk University, Department of Nanotechnology and Advanced Materials, Konya/TURKEY Mahmut Kus, Selcuk University, Advanced Technology Research and Application Center, Konya/TURKEY Selcuk University, Department of Chemical Engineering, Konya/TURKEY

17:30 Effect of SnS addition on the optical and dielectric properties of Sn-Sb-S nanorods elaborated by glancing angle deposition

Dhaler Abdelkader, Feihr Chaffar Akkari, Naoufel Khefami, Frédéric Antoni, Bruno Gallas
1 Laboratoire de Photovoltaïque et Matériaux Semi-conducteurs-ENIT-Université Tunis EIManar,BP37,Lebeldevile 1002 Tunis-Tunisia 2 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 3 Institut des NanoSciences de Paris-CNRS-Universite Pierre et Marie Curie, 140 rue de Lourmel, 75015 Paris, France

17:30 Composition dependent electron-phonon coupling and interface mixing of Pd1-xSn1-xSi due to swift heavy ion irradiation

Paramita Patra1, S.A. Khan2, D. Kabiraj2, Manju Balasa2, D.K. Avasthi3, S.K. Srivastava1
1 Department of Physics, Institute of Technology Kharagpur, Kharagpur 721302, India 2 Inter-University Accelerator Centre, Aruna Asaf Ali Marg, New Delhi 110 067, India 3 Aruttama University, Noida, Uttar Pradesh 201313, India Email : patro.paro@ipltc.in

17:30 Synthesis and characterization of thin films composite membranes with chemical resistance

V. Satulvi1, B. Mitu1, S.I. Voicu2, L. Kravets3, G. Dinescu1
1 National Institute for Lasers, Plasma and Radiation Physics, PO Box MG-36, 077125 Magurele Bucharest, Romania 2 Politechnical University of Bucharest, Faculty of Applied Chemistry and Material Science, G. Polizu Str., 1-7, 011061 Bucuresti, Romania 3 Joint Institute for Nuclear Research, Flerov Laboratory of Nuclear Reactions, Joliot-Curie Str. 6, 141980 Dubna, Russia

17:30 Low-Pressure Cold Spray WS2 coatings for dry film lubrication

Adriana BALAN (1), Alice O. MATEESCU (2), Catalin CEAUS (1), Gheorghe MATEESCU (2), Ioan STAMATIN (1), Sanda VOINEA (1), Cornel SAMOILĂ (3), Dan CRISTEA (3)
(1) University of Bucharest, Faculty of Physics, 3 Nano-SAE Research Centre, 405 Atomsitor Str., 077125 Magurele, Romania, 2) "Horia Hulubei" National Institute of Physics and Nuclear Engineering, 30 Reactorului Str., 077125 Magurele, Romania, (3) Transilvania University of Brasov, Materials Science Department, 29 Eforilor Blvd.,500036, Brasov, Romania

17:30 Microstructural Features and Deformation-induced Martensites in Stainless Steel by Cryogenic Ultrasonic Impact Treatment

M.A. Vasylyev1, B.N. Mordyuk1, S.I.Sidorenko2, S.M.Voloshko2, A.P.Burmak2
1 Kyryum Institute for Metal Physics of the NAS of Ukraine, Ukraine, 2 Metal Physics Department, Igor Sivoksy Kyiv Polytechnic Institute, Ukraine

17:30 Antireflective, self-cleaning and IR-shielding WO3-rGO coatings for PV glazing

Maria Cristina Bogatu, Dana Petrinu, Cristina Duta
R&D Centre: Renewable Energy Systems and Recycling, Transilvania University of Brasov, Romania
Effects of surface nanocrystallization on the anodic oxidation behavior of Aluminum
Aghar Heydari Astaraee, Reza Miresmaeli, Mahmoud Aliolkhazraei, Sara Bagherifard, Mario Guaragni
Department of Materials Engineering, Tarbiat Modares University, P.O. Box: 14115-143, Tehran, Iran, Department of Materials Engineering, Tarbiat Modares University, P.O. Box: 14115-143, Tehran, Iran, Department of Materials Engineering, Tarbiat Modares University, P.O. Box: 14115-143, Tehran, Iran, Department of Mechanical Engineering, Politecnico di Milano, 20156 Italy, Department of Mechanical Engineering, Politecnico di Milano, 20156 Italy, Italy

Metal-Insulator Transition Characteristic of Sol-Gel Derived V2O3 Thin Film
Doohun Kim
Korea Electrotechnology Research Institute

Enhanced crystallinity and electrical properties of metal oxide semiconductor by combustion reaction under deep uv radiation
Jun-Gyu Choi, Won-June Lee, Myung-Han Yoon*
School of Materials Science and Engineering, Gwangju Institute of Science and Technology, South Korea

Backside Carbon Gettering Approach to Grow High-quality Single-Crystal Monolayer Graphene for Optoelectronic Applications
Irfan Haider Abidi, Abhishek Tyagi, Zhengtang Luo
Department of Chemical and Biomolecular Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong

Tribological properties of oxides films grown by ALD method
R. Pietruszka1, B. S. Witkowski1, S. Zimowski2, T. Stapiński3, M. Godlewski4
1Institute of Physics, Polish Academy of Sciences, Aleja Lotnikow 32/46, PL-02086 Warsaw, Poland, 2AGH University of Science and Technology, Faculty of Mechanical Engineering and Robotics, Mickiewicza Av. 30, 30-059 Krakow, Poland, 3AGH University of Science and Technology, Faculty of Mechanical Engineering and Robotics, Mickiewicza Av. 30, 30-059 Krakow, Poland, 4Department of Mathematics and Natural Sciences College of Science, Cardinal Stefan Wyszynski University, Warsaw, Poland

Advantages and challenges of ZrCN and ZrCrSiCN coatings grown by PVD method
Ahmad Eslami, Cecilia Ada Maestri, Paolo Bettotti, Marina Scarpa, Riccardo Checchetto
Department of Physics, University of Trento, via Sommarive 14, I-38123 Povo, TN, Italy

Effect of Hydrogen in Local Structural Variation in VO2 Films
Seong Lee1,2, Hye-Young Kim1, Sewan Sung1, Ji-Woong Kim1, Ji Hye Lee1, Yoosok Kim3, Hyung-Joong Yun3, Joo-Han Lee3, Sang-Don Bu4, Sungkyun Park1,*
1Department of Physics, Pusan National University, Busan 46241, Korea, 2Energy & Environment Materials Team, Pohang Accelerator Laboratory, Pohang 37673, Korea, 3Advanced Nano Surface Research Group, Korea Basic Science Institute, Daejeon 34133, 4Department of Physics, Chonbuk National University, Jeonju 54896, Korea

Elastic constants and stress-strain in thin films: application in fiber-textured gold film by X-Ray diffraction
Edson M. Santos, D. Faurie
School of Materials Science and Engineering, Korea University, Seoul, 02841, Korea, 2Department of Materials Science and Technology (KAIST), Daejeon 34141, Korea

Evaluation of ZrCN and ZrCrSiCN coatings intended for tribological applications
R. Pietruszka1, B. S. Witkowski1, S. Zimowski2, T. Stapiński3, M. Godlewski4
1Institute of Physics, Polish Academy of Sciences, Aleja Lotnikow 32/46, PL-02086 Warsaw, Poland, 2AGH University of Science and Technology, Faculty of Mechanical Engineering and Robotics, Mickiewicza Av. 30, 30-059 Krakow, Poland, 3AGH University of Science and Technology, Faculty of Mechanical Engineering and Robotics, Mickiewicza Av. 30, 30-059 Krakow, Poland, 4Department of Mathematics and Natural Sciences College of Science, Cardinal Stefan Wyszynski University, Warsaw, Poland

Enabling Organic Thin Film Positioning on Hydrophobic/Hydrophilic Hybrid Guide Tapes Realized by Cold Spin-Coating
Jung Hye Lee1, Hak-Jong Choi2, Heon Lee2, Yeon Sik Jung1
1Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology 34141, (KAIST), Daejeon 34141, 2Department of Materials Science and Engineering, Korea University, Seoul, 02841, Korea

Electrodeposition of crack-free Ni-W coatings in the pulse current mode
Seong Hoon Lee1,2, Young Don Lee1,3, Hong Koo Cho1, Young Jung Kim1, Cheol Ki Park2, Taeil Yang1
1Department of Materials Science and Engineering, National Cheng Kung University, Tainan 70005, Taiwan, 2Department of Materials Science and Engineering, National Sun Yat-Sen University, Tainan 86962 Chasseneuil, France

Catalin Vitelaru, Iulian Pana, Adrian Kiss, Nicolae-Catalin ZOITA, Adrian Emil KISS, Mihaela DINU, Catalin VITELARU, Viorel ANTON, Florin DUMITRESCU
National Institute of Research and Development for Optoelectronics (INOE 2000)

Evaluation of ZnO/SnO2-ZnSnO alloys grown on sapphire substrates
Department of Chemistry, Banasthali Vidyapith, Pin 304022, Rajasthan, India

Aerogelate as Black Body Probe for High-Speed Infrared Thermography
Jan Schäfer (1)*, Markus Becker (1), Florian Sigeneger (1), Jorit Grupp (2), Daria Adelung (2), Matthias Mecklenburg (3), Yogendra K. Mishra (2), Rainer Adelung (2), Bodo Fiedler (3), Rüdiger Foist (1)
(1) Leibniz Institute for Plasma Science and Technology, Felix-Hausdorff-Str. 2, 17489 Greifswald, Germany, (2) Institute for Material Science, Christian-Albrechts-University of Kiel, Germany, (3) Institute for Polymer & Composites, Hamburg University of Technology, Germany

Physical investigations on transparent conducting oxides thin films based on SnO2-ZnSnO alloys grown on sapphire substrates
I.Saafi1, G. Schnerberz, A. Amlouk1, A. DinA2, M. Amlouk1
1 Unité de Physique des dispositifs à Semi-conducteurs UPDS, Faculté des Sciences de Tunis, Université de Tunis El Manar, Tunisie, 2 Université de Strasbourg, Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS), UMR 7504, 23 rue du Lacs, B.P. 43, 67034 Strasbourg Cedex 2, France

CuNi and Cu-MgO hetero-catalyst for position controlled n-layer graphene growth
Hak Ky Yu
Dept. of Materials Science and Engineering and Dept. of Energy Systems Research, APU University, Suwon, Korea
17:30 Liquid precursor delivery system for thin-film encapsulation layer using cyclic-cyclic vapor deposition technology
Burn Ho Choi, Moon Hee Kang, Eun Mi Kim, and Jong Ho Lee
Center for Nano-Photonics Convergence Technology, Korea Institute of Industrial Technology
Q PT.8

17:30 Bioanalytical platforms using PDMS based Superomniporous surface
Heetak Han, Jungmok Seo,Sera Shin, Hyunchul Kim, Tae-Yoon Lee
Nanobio Device Laboratory, School of Electrical and Electronic Engineering, Yonsei University
Q PT.9

17:30 Study of wear and corrosion behavior of cathodic plasma electrolytic deposition of zirconia–hydroxyapatite on Ti and 316L SST
Shabnam Karimi(a,b), Fatemeh Mahzoon(a), Kamal Janghorban(a), Siros Javadpour(a)
a) Shiraz University, Department of Materials Science and Engineering b) Austrian Institute of Technology, Department of Biosensors Technology
Q PT.10

17:30 Synthesis and characterization of Gd-DTPA complex-functionalized magnetic nanoparticles for biomedical applications
Doctoral Center Nanomicrostructures and Nanoelectronics, Centro de Investigación y de Estudios Avanzados del Instituto Politecnico Nacional, CINVESTAV-IPN, Av. IPN 2508, Zacatecas, 07360, Mexico ***Instituto Politecnico Nacional, Av. Luis Enrique Erro S/N, Zacatecas, 07366, Mexico
Q PT.11

17:30 Fluoropolymer surface modification by N2 plasma for enhanced UV replication of microfeatures
Brigita Abaveikiene(1,2), Dalas Juciu(1), Viktoria Grigelienait(1), Algirdas Lukauskas(1), Saulius Smetona(3), Sigitaas Tamulevicius(1)
(1) Institute of Materials Science, Kaunas University of Technology, Barasusku str. 50, LT-51423 Kaunas, Lithuania (2) Department of Physics, Kaunas University of Technology, Studentu str. 50, LT-51368 Kaunas, Lithuania (3) Qorvo, 7628 Thorndike Road Greensboro, NC 27409 United States
Q PT.12

17:30 Mechanical, electrochemical and biological investigations of Cr-based multilayers used for improving the bond strength of dental thin silicon oxide layers
M. Dinu (1), T. Hauffmann (2), A. Vladescu (1), A. Hubin (2), M. Braic (1)
(1) National Institute for Optoelectronics (INOEO 2000), 409 Atominstitor St., Magurele, Romania, (2) Vrije Universiteit Brussel, Department of Materials and Chemistry, Research Group Electrochemical and Surface Engineering, Pleinlaan 2, 1050 Brussels, Belgium
Q PT.13

17:30 Investigation of Effect of Laser on Surface of Atomically Thin MoS2
Koo-Hyung Chang, Kha Binh Cuong Tran
School of Mechanical Engineering, University of Ulsan, Ulsan 680-749, Republic of Korea
Q PT.14

17:30 Development of a new bio-compostable thin film for food packaging with in-line plasma treatment
Martina Tessarolo 1-2, Elissabeta Rotante 1, Nicole Ticci 1, Filippo Capelli 1, Beatrice Fraboni 2, Maurizio Fiorini 3, Vincenza Andrisano 4, Vittorio Colombo 5, Santina Romani 1-2, Elisabetta Rotante 1, Nicole Ticchi 1, Filippo Capelli 1
1 Interdepartmental Centre for Industrial Research – Advanced Mechanics and Materials (CIRI – MAM), 2 Department of Physics and Astronomy, University of Bologna, Bologna, Italy, 3 Department of Civil, Chemical, Environmental, and Materials Engineering University of Bologna, Bologna, Italy, 4 Department for Life Quality Studies University of Bologna, Bologna, Italy, 5 Department of Industrial Engineering University of Bologna, Bologna, Italy, 6 Department of Scienze e Tecnologie AgroAlimentari University of Bologna, Bologna, Italy.
Q PT.15

17:30 Graphene growth simulations on metal surfaces using an adhesion model based on 'Moire-patterns'
Maron Szndro, Peter Sule
Hungarian Academy of Sciences, Centre for Energy Research, Institute for Technical Physics and Materials Science, Konkoly-Thege Miklos u. 29-33, Budapest, Hungary
Q PT.16

17:30 Integrating Carbon Nanotube Forests into PolySilicon MEMS: Growth Kinetics, Mechanisms, and Adhesion
Stephen M. Unrueske (1), Erich J. Radau (1), Eric R. Meshot (3), Brian R. Stoner (4), Charles B. Parker (2) and Jeffrey T. Glass (2)
(1) Department of Mechanical Engineering and Materials Science, Duke University, Durham, NC 27708, USA; (2) Department of Electrical and Computer Engineering, Duke University, Durham, NC 27708, USA; (3) Physical and Life Sciences Directorate, Lawrence Livermore National Laboratory, Livermore, CA 94551, USA; (4) Research Triangle Institute (RTI) International, Durham, NC 27709, USA
Q PT.17

17:30 Optoelectronic glass gas sensor based on ITO/ZnO/Cu2O heterostructure
Kudyashov Dmitry, Monastyrko Analog, Gudovskykh Alexander
St. Petersburg National Research Academic University RAS
Q PT.18

17:30 Formation and study of Ta, Mo and Ag nanocluster films for highly efficient thermoelectric materials development
P.V. Borisyuk, Yu.Yu. Lebedinskii, O.S. Vasilyev, T.I. Kozlova, V.V. Fetisov
National Research Nuclear University MPEi (Moscow Engineering Physics Institute)
Q PT.19

17:30 Experimental studies of thorium ions implantation from pulse laser plasma into thin silicon oxide layers
P.V. Borisyuk, Yu.Yu. Lebedinskii, O.S. Vasilyev, T.Kaya E.V.
National Research Nuclear University MPEi (Moscow Engineering Physics Institute)
Q PT.20

17:30 Magnetic studies on superconductor-Ferromagnet hybrid structures
S. Suraj, K. Sethupathy, M S Ramachandra Rao
DEPARTMENT OF PHYSICS INDIAN INSTITUTE OF TECHNOLOGY MADRAS, INDIA
Q PT.21

17:30 On demand Drug-Eluting, Cancer Cell-Repellent Multifunctional Stent
Sori Lee1,2, Gyo yeon Hwan g3, Hae eon Hong1,2, Jie oon Lee3,4* and Ta-e il Kim1,2,* 1 School of Chemical Engineering, Sungkyunkwan University (SKKU), Suwon 440-746, Korea; 2 Center for Chemical Science Imaging Research, Sungkyunkwan University 440-746, Korea; 3 Chemical Kinetics Research Center, Future Convergence Research Division, Kyung Hee University of Science and Technology, Seoul 272-701, Korea; 4 Korea 4 Biological Chemistry, Korea University of Science and Technology, Daedong 34113, Korea Correspondence: jylee@kist.re.kr, taeilkim@skku.edu
Q PT.22

17:30 Comparative study of Mg, Al and TiN coatings on Cu by pack cementation process
D. Stathokostopoulos, D. Pallamilampaz, N. Pliasswe, S. Kassavetis, G. Vourias
Department of Physics, Aristotle University of Thessaloniki
Q PT.23

17:30 Highly-textured sputtered ScaAl1-x thin films for surface acoustic wave applications
Florian Bartoli, Philippe Pigeat, Thierry Aubert, Omar Elmaslia, Pascal Boulet, Jaafar Ghanaja
Bartoli Florian(1,2), Philippe Pigeat(2), Thierry Aubert(1,3), Omar Elmaslia(2), Pascal Boulet(2), Jaafar Ghanaja(2,3), 1 CentraleSupélec, Laboratoire LMOPS, Metz, France 2 National Institute for Optoelectronics, 409 Atominstitor St., Magurele, Romania 3 Laboratory SYMME, Université Savoie Mont Blanc, Annecy-le-Vieux, France
Q PT.24

17:30 The Formation of Biocompatible Hydroxyapatite Coatings Reinforced with Carbon Nanotubes
S.I. Sideronenko1, Ie.V. Ivashchenko1, G.G. Lobachova1, V.I. Panarin2, O.M. Hubina1, V.V. Yanchuk1
1 Metal Physics Department, Institute for Kyiv Polytechnic Institute, Ukraine, 2 G. V. Kurdyumov Institute for Metal Physics of the National Academy of Science of Ukraine.
Q PT.25

17:30 Extraction of sub-gap density of states in AOS thin-film transistor from optical response of C-V characteristics
Yen-Chang Chang 1, Shin-Huei Wang 1, Guan-Ting Hou 1, Jen-Ting Li 1, Jian-Shing Jeng 2, Jen-Sue Chen 1, 1 Department of materials science and engineering, National Cheng Kung University, Tainan 70101, Taiwan, 2 Department of Materials Science, National Tsing Hua University, Tainan 70005, Taiwan
Q PT.26

17:30 Glass-forming ability of ternary Zn-Cu-Ag TFMGs: an empirical study
A. Elaemle 1, G. Nikou Boula 2, C. Der Loughian 2, P. Styerer 2, J.F. Cynn1, 1 Institut Jean Lamour (UMR CNRS 7198), Université de Lorraine, Parc de Saurupt, 54011 Nancy, France 2Univ Lyon, INSA-Lyon, MATEIS UMR CNRS 5510, 21 Avenue Jean Capelle, 69662 Villeurbanne cedex, France
Q PT.27

17:30 Synthesis of sputtered SiC and Mg doped hydroxyapatite coatings for biomedical applications
Diana Maria Vranceanu1, Mihaela Dinu2, Funda Ak Azem3, Radwan Abdulgader4, Vivien Braic2, Iosi Birlik3, Adrian Kiss2, Cosmin Mihai Cotrut1, Robyn Booyens5, Mariana Diana Maria Vranceanu1, Mihaela Dinu2, Funda Ak Azem3, Radwan Abdulgader4, Vivien Braic2, Iosi Birlik3, Adrian Kiss2, Cosmin Mihai Cotrut1, Robyn Booyens5, Mariana
Q PT.28

17:30 Formation and study of Ta, Mo and Ag nanocluster films for highly efficient thermoelectric materials development
P.Y. Borisyuk, Yu.Yu. Lebedinskii, O.S. Vasilyev, T.I. Kozlova, V.V. Fetisov
National Research Nuclear University MPEi (Moscow Engineering Physics Institute)
Q PT.29
10:00 Coffee break

10:30 Towards Lifetime Predictive Dielectric Charging Model for Metal-Insulator-Metal Structures
Anne-Charlotte Amiaud, Aude Leullet, Julien Nage, Brigitte Loiseaux, Paolo Martins, Raphael Aubry, Stephane Hole
Thales Research & Technology, Palaiseau, France, LPEM – CNRS, Sorbonne Universités, UPMC Univ. Paris 6, PSL Research University, Paris, France

10:45 Nanostructured Al/Ni Film and Its Application in High current-carrying device
Lv Junjun, Wang Wanjun, Guo Fei, He Xiaodong
Institute of Chemical Materials, CAEP

11:00 Midinfrared surface enhanced absorption spectroscopy with 1-dimensional highly Si-doped InAsSb nano-antenna
M.J. Millia, F. Gonzalez-Posada, L. Cerutti, F. Barho, M. Bomers, E. Tournier and T. Taliercio
The Center of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 76100 Heraklion, Crete, Greece 1Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilika Vouton, 76100 Heraklion, Crete, Greece 2Institute of Materials Science and Technology, TU Wien, Austria 3Plansee Austria 4Institute of Materials Science and Technology, TU Wien, Getreidemarkt 9, 1060 Vienna, Austria

11:15 Enhancement of optoelectronic properties on indium tin oxide layers by co - sputtering of silver nanoparticles
E. G-Berasategui, N. Boboños, L. Mendizábal J. Barriga
IK4-TEKNIKER, Research Centre, of Iñaki Goenaga, 5, 20600 Elbar, Guipuzcoa, Spain

11:30 Functional multilayer Ag-ZrO2 cermet coatings sprayed deposited on galvanized steel sheet
R. Romero, F. Martín, J.R. Ramos-Barrado, D. Leinen
Lab of Materials y Surfaces, Applied Physics & Chemical Engineering Departments, University of Malaga, Faculty of Science, E-29071 Malaga, Spain

11:45 Properties of silicon carbide films deposited by reactive high power impulse magnetron sputtering
Tuomas Hänninen 1, Susann Schmit 1, Ivan G. Ivanov 2, Lars Hultman 1, Hans Högborg 1
1Photovoltaic Laboratory, Research and Technology Centre of Energy, Skander Ktifa , N.Yacoubi , H. Ezzaouia 2CNRS, IES, UMR 5214, F-34000, Montpellier, France 3Photovoltaic Laboratory, Research and Technology Centre of Energy, Skander Ktifa , N.Yacoubi , H. Ezzaouia

12:00 Photocathodes for the next generation of Free Electron Laser
Victor Cigala, Bruno Camino, Nicholas M Harrison, Tim Noakes
Bruno Camino, Nicholas M Harrison, Imperial College of London, Tim Noakes, STFC Daresbury Laboratory

12:15 Lunch
08:30 Tribological aspects related with PVD hard coating morphology
Peter Panjan
Jožef Stefan Institute, Jamova 39, 1000 Ljubljana, Slovenia

09:00 Corrosion behavior of nanocrystalline NiW coatings: Influence of the processing technique and the metallurgical state.
Matthieu Lagarde, Nusha Shakibi Nia, Juan Creus, Xavier Feaugas, Alain Billard, Catherine Savall
Matthieu Lagarde, Juan Creus, Xavier Feaugas, Catherine Savall: LaSIE, Université de la Rochelle, UMR 7356 CNRS, Av Michel Crépeau, 17042 La Rochelle, France, Nusha Shakibi Nia: Institut für Physikalische Chemie, Leopold-Franzens-Universität Innsbruck, Innrain 52c, 6020 Innsbruck, Austria, Alain Billard: IRTES-LERMPS, UTBM Montbéliard, 2 place Tharradin, 25200 Montbéliard, France.

09:15 The effect of pure Ti, Nb or Cr adhesion interlayers on the tribological behavior and impact wear resistance of DLC thin films
Imane Bouabibsa, Salim Lamri, Frédéric Sanchette
Institut Charles Delaunay, Laboratoire des Systèmes Mécaniques et d’Ingénierie Sustainante (ICD-LASMIS) UMR 6281, CNRS-UTT, Antenne de Nogent-sur-Oise, Pôle Technologique de Haute-Champagne, 52800 Nogent, France, IRTES-LERMPS, UTBM Montbéliard, 2 place Tharradin, 25200 Montbéliard, France

09:30 Improving the high temperature oxidation resistance of pure titanium by shot-peening treatments
A. Kanjer (1), V. Optasanu (1), M.C. Marco de Lucas (1), M. François (2), P. Berger (3), T. Montesin (1), L. Lavisse (1)
(1) Laboratoire Interdisciplinaire Carnot de Bourgogne (ICB), UMR 6303 CNRS-Université de Bourgogne Franche-Comté, 8 avenue Alain Savary, BP 47870, 21078 Dijon cedex, (2) LASMIS, Université Technologique de Troyes, 12 rue Marie Curie, 10000 Troyes, (3) INMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay 91911 Gif sur Yvette Cedex

09:45 INFLUENCE OF SUPERHYDROPHOBIC, NANOSTRUCTURED THIN FILMS ON FRICTIONAL DRAG
Federico Veronesi1, Mariano Raimondi1, Giulio Boveri1, Claudia Nicola2, Elena Ciappi2, Francesco La Gala2
1 CNR-ISTEC, Institute of Science and Technology for Ceramics, National Research Council, Faenza (RA), Italy, 2 CNR-INSEAN, Marine Technology Research Institute, National Research Council, Rome, Italy

10:30 Influence of viscoelasticity on the frictional performance of DLC-coated elastomers
D. Martinez Martínez, J. Th. M. de Hosson
Department of Applied Physics of the University of Groningen, Nijenborgh 4, 9747AG, Groningen, The Netherlands

10:45 Properties and thermal behavior of magnetron sputtered Zr–Cu and Zr–Hf–Cu metallic glasses
P. Zeman, M. Zítek, S. Zuzajkova, R. Cerský, S. Havlir, M. Kotrlíva
Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Univerzitní 8, 306 14 Plzen, Czech Republic

11:00 Corrosion protected 3D core-shell nanocolloids
Hyeon-Ho Jeong (1,2), Mariana Aiarcoén-Correia (1,3), Andrew G. Mark (1), Tung-Chun Lee (1,4), P. Ver Fischer(1,3)
(1) Max Plank Institute for Intelligent Systems, Heisenbergstrasse 3, 70569 Stuttgart, Germany, (2) Institute of Materials, Ecole Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland, (3) Institute for Physical Chemistry, University of Stuttgart, Pfaffenwaldring 55, 70569 Stuttgart, Germany, (4) Institute for Materials Discovery and Department of Chemistry, University College London, Christopher Ingold Building, 20 Gordon Street, London WC1H 0AJ, United Kingdom

11:15 Characterization of ultra-thin WS2 films deposited by magnetron sputtering.
Manuel Evaristo, Albano Cavaleiro
SEG-CEMMPRE Centre for Mechanical Engineering Materials and Processes, Department of Mechanical Engineering, University of Coimbra, Coimbra Portugal., SEG-CEMMPRE Centre for Mechanical Engineering Materials and Processes, Department of Mechanical Engineering, University of Coimbra, Coimbra Portugal.
GLAD co-sputtering of bi-component nanostructured TiAg and TiCu thin films for high TCR sensors
Paulo Pedrosa, Armando Ferreira, Nicolas Martin, Mohammad Arab Pour Yazdi, Alain Billard, Filipe Vaz
Paulo Pedrosa: Instituto FEMTO-ST, UMR 6174 CNRS, Université Bourgogne Franche-Comté, 15B Avenue des Montboucous, 25030 Besançon Cedex, France, Armando Ferreira: Centro de Física da Universidade do Minho, Campus de Guia, Braga, Portugal, Nicolas Martin: Instituto FEMTO-ST, UMR 6174 CNRS, Université Bourgogne Franche-Comté, 15B Avenue des Montboucous, 25030 Besançon Cedex, France, Mohammad Arab Pour Yazdi: Instituto FEMTO-ST, UMR 6174 CNRS, UTBM, Université Bourgogne Franche-Comté, F-90010 Belfort Cedex, France, Alain Billard: Instituto FEMTO-ST, UMR 6174 CNRS, UTBM, Université Bourgogne Franche-Comté, F-90010 Belfort Cedex, France, Filipe Vaz: Centro de Física da Universidade do Minho, Campus de Guia, Braga, Portugal.
11:00 α-Fe2O3 epitaxial thin films grown by Pulsed Laser Deposition on different substrates for gas sensor applications
Aída Serrano1, Juan Rubio-Zuazo1, Jesús López-Sánchez2, Eduardo Salas-Colera1, Iciar Arnay1, Germán R. Castro1
1 Spanish CRG-Spline, The European Synchrotron (ESRF), 38000 Grenoble, France and Instituto de Ciencia de Materiales de Madrid, ICMM-CSIC, 28049 Madrid, Spain, 2 Departamento de Física de Materiales, Universidad Complutense de Madrid, 28040 Madrid, Spain and Unidad Asociada IQFR (CSIC)-UCM, 28040 Madrid, Spain

11:15 Surface modification studies of carbon thin films for applications in carbon-based biodevices
Joana M. Vasconcelos, Federico Zen, James Behan, Khairul Hoque, Ronan J. Cullen, Paula E. Colavita
School of Chemistry and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College Dublin, College Green, Dublin 2, Ireland.

11:30 Embedded thin-film thermocouples for self-sensing composite materials
F.G. Cougnon, A. Lamberti, D. Depla
Department of Solid State Sciences, Ghent University, Krijgslaan 281(S1) 9000 Gent, Belgium, Department of Materials Science & Engineering, Ghent University, Technologiepark-Zwijnaarde 903 9052 Zwijnaarde, Belgium, Department of Solid State Sciences, Ghent University, Krijgslaan 281(S1) 9000 Gent, Belgium

11:45 Surface functionalization of MOCVD grown BiFeO3 piezoelectric/ferroelectric films with optically active molecules
C. Tudisco, A. L. Pellegrino, G. Malandrino, G. G. Condorelli
Dipartimento di Scienze Chimiche, Università di Catania and INSTM UdR di Catania, Italy

12:00 TiO2 and polyelectrolyte LbL thin film construction on model surfaces for photocatalysis: toward self-decontaminating textiles
Mavin Motay, David Martel, Olivier Felix, Valérie Keller, Gero Decher, Nicolas Keller
Institut de Chimie et Procédés pour l’Energie, l’Environnement et la Santé (ICPEES), CNRS, Strasbourg University, 25 rue Becquerel 67087 Strasbourg, France, Institut Charles Sadron (ICS), CNRS, Strasbourg University, 23 rue du Loess 67034 Strasbourg, France

12:15 Integration of hierarchical TiO2 nanostructures with Au plasmonic nanoparticles for photocatalysis applications
Matteo Ghidelli (a), Luca Mascaretti (a), Tarek Afifi Afifi (a), Beatrice R. Bricchi (a), Valeria Russo (a), Carlo S. Casari (a,b), Roberto Matarrese (c), Isabella Nova (c), Andrea Li Bassi (a,b)
(a) Micro- and Nanostructured Materials Laboratory, Department of Energy, Politecnico di Milano, via Ponzio 34/3, 20133, Milano, Italy. (b) Center for Nanoscience and Technology – IIT@Polimi, via Giovanni Pascoli 70/3, 20133, Milano, Italy. (c) Laboratory of Catalysis and Catalytic Processes, Department of Energy, Politecnico di Milano, via La Masa 34, 20156, Milano, Italy
SYMPOSIUM R

Nanoparticles in dielectric matrix: from synthesis to device applications for photonics, electronics, and bio sensing

Symposium Organizers:

Blas GARRIDO, University of Barcelona, Spain

Caroline BONAFOS, CEMES, Toulouse, France

Domenico PACIFICI, Brown University, Providence, USA

Simona BONINELLI, IMM-CNR, Catania, Italy

Be published in Physica Status Solidi, Wiley
Monday 22 May 2017

09:00 Symposium R Opening: S. Boninelli, C. Bonafos, D. Pacifici, B. Garrido

Process/Characterization 1 : S. Boninelli

09:15 Photochromic properties of Ag/ITO2 nanocomposite thin films: a combined real-time optical and GISAXS study
D. Babonneau, D. K. Diop, L. Simonot, N. Destouches
Babonneau, D. K. Diop 1, L. Simonot 1, N. Destouches 2 1 Instituto Pprime, Département Physique et Mécanique des Matériaux, UPR 3346 CNRS, Université de Poitiers, 86962 Futuroscope Chasseneuil Cedex, France 2 Laboratoire Hubert Curien, UMR 5516 CNRS, Université de Lyon, Université Jean Monnet, 42000 Saint-Étienne, France

09:45 Hybrid ALD-CVD process for the development of decorative plasmonic nanocomposite coatings
Naaful Bahjawane, Jeanette Persson
Luxembourg Institute of Science and Technology (LIST), Material Research and Technology (MRT) Department, 41, rue du Brill – L-4422 Belvaux, Luxembourg. AB Sandvik Coromant, R&D Technology Platforms, Surfaces & Coatings, Lerkningsvägen 19, SE-16280 Stockholm, Sweden

10:00 Anisotropic optical and electronic properties of oriented self-assembled thin films of 1-D metallic nanoparticles
Hebing Hu, Sribharani Sekar, Vincent Lemaire, Gero Decher, and Matthias Pauly
Université de Strasbourg, CNRS, Institut Charles Sadron, F-67000 Strasbourg, France

10:15 Coffee Break

10:30 Fabrication of Ion-Shaped Anisotropic Nanoparticles and their Orientation Imaging by Second-Harmonic Generation Microscopy
Giancarlo Rizza, Pierre-Eugène Coulon, Mathieu Kociak, Christian Ulysse, Abdallah Stilbab, Marii Kauranen
Laboratoire des Solides Irradiés, École Polytechnique, 91128, Palaiseau, France, Laboratoire de Physique des Solides, Université Paris-Sud, Orsay, 91405, France, Laboratoire de Photonique et Nanostructures, CNRS, Marceau, France, Department of Physics Tampere University of Technology, Tampere, Finland.

10:45 Flexible, durable and large scale plasmonic writing via sub-surface laser nanostructuring in stratified metal/dielectric media
N. Kafagiannou1, D.V. Bellas2, D. Toliopoulos2, A. Siozios2, P. Pataslas3, E. Lidorikis2, D.C. Kouligourou3
1School of Science and Technology, Nottingham Trent University, NG11 8NS, Nottingham, United Kingdom, 2Department of Materials Science and Engineering, University of Ioannina, GR-45110 Ioannina, Greece, 3Department of Physics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece

11:00 Nanoparticles obtained via solid state dewetting of silver thin films
P. Jacquet [1,2,3], B. Bourlelie [1], I. Gouzyk [1], R. Podor [4], J. Ravaux [4], M. Kildemo [5], R. Lazzari [1,2,3], J. Jupille [2,3], J. Tisseire [1]

11:15 Effect of Ge content on structural stability and phase transformation in Ge-SiO2 and GeO2 films
D. Lehniger1, L. Khomenkov2a, S. Ponomaryov2a, O. Gudymenkov2a, M. Boisieré1, C. Röder1, 4, M. Molytenko5, V. Yukynchuk2, F. Gourbitz, J. Heilmann1
1) Institute of Applied Physics, TU Bergakademie Freiberg, D-09596 Freiberg, Germany, 2) V. Lashkaryov Institute of Semiconductor Physics, 45 Pr. Nauky, Kyiv 03028, Ukraine, 3) CIMAP, Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, 6 Blvd. Marcelin-Berthelot, 14050 Caen, France, 4) Institute of Theoretical Physics, TU Bergakademie Freiberg, D-09596 Freiberg, Germany, 5) Institute of Materials Science, TU Bergakademie Freiberg, D-09596 Freiberg, Germany.

11:30 Titanium and titanium-silicon based oxides deposited by Plasma Enhanced Chemical Vapour Deposition: XPS characterisation
Mireille RICHARD-PLOUDET*, Stéphane ELISABETH*, Lenka ZAJICKOVA#, Pavel ONDRACKA#, David NECAST#, Michèle CARETTES, Ágnés GRANIER*, Antoine GOCULLETT*
1) Institut des Matériaux Jean Rouxel (IMN) Université de Nantes, CNRS, 2, rue de la Houssinière F44322 NANTES Cedex # Dept. Phys. Electronics, Faculty of Science & Plasma Technologies, Central European Institute for Technology Masaryk University Brno, Czech Republic; #Institut d’Electronique, de Microélectronique et de Nanotechnologie, Villeneuve d’Asq, France

11:45 Multi-Component Hierarchical Nanostructures through Block Copolymer Self-Assembly: Fabrication and Application
Vignesh Suresh
Agency for Science Technology and Research (A’Star), Institute of Materials Research and Engineering (IMRE), #08-03, 2 Fusionopolis Way, Innovis, Singapore 138634

12:00 Lunch

Plasmonics 1 : D. Pacifici

14:00 Independent Infrared and Visible Electrochromism in Plasmonic Nb-doped TiO2 Nanocrystals
Clayton J Dahlan, Delia J Milliron
The University of Texas at Austin, McKetta Department of Chemical Engineering

14:30 Emission efficiency enhancement of Er3+ ions in silica by near-field coupling with plasmonic and pre-plasmonic nanostructures
T. Cesca, B. Kalnic, N. Michieli, C. Maurizio, C. Scian, G. Mattei
University of Padova, Physics and Astronomy Department, NanoStructures Group (NSG)

14:45 Plasmonic behavior of nanocomposites of fluoride with metal nanoparticles fabricated by pulsed laser deposition and evaporation
J. Lanòd1, T. Zikmund1, J. Biuli1, M. Novotny1, E. Marešová1, E. Chernova1, J. Valentá2, A. Perec1
1)Department of Analyses of Functional Materials, Institute of Physics of AS CR, Na Slovan2, Prague, 18221, Czech Republic, 2Department of Chemical Physics and Optics, Faculty of Mathematics and Physics, Charles University, Ke Karlovu 3, Prague 2, Czech Republic, 3Univ Lyon, Université Claude Bernard Lyon 1, CNRS, Institut Lumière Matière, F-69622, Villeurbanne, France

15:00 Monodisperse Gold Nanorods: Seedless Synthesis and High Yield of Gold Conversion
Kang Liu, Yuanvu Bu, Yuanhu Zheng, Xuchuan Jiang, Aibing Yu, and Huanting Wang
Chemical Engineering, Monash University, Australia for Kang Liu, Yuanvu Bu, Xuchuan Jiang, Aibing Yu, and Huanting Wang. School of Chemistry, University of New South Wales, Australia for Yuanhu Zheng

15:15 Scalable physical coloration based on plasmonic nanostructures
Tianyi Shen, Jessica Cheng, Domenico Pacifici
School of Engineering, Brown University, Providence, RI, 02912 USA

15:30 Coffee Break

Photonics 1 : B. Garrido

16:00 Probing luminescent and absorbing states in silicon quantum dots
Jan Linros, Federico Pevere, Ilya Sychugov
The University of Texas at Austin, Medical Department/Assembly: Fabrication and Application

16:30 Thermally stimulated exciton emission in Si nanocrystals
Elisore M.O.D. de Jong, Hub Rutjes, A. Capretti, Tom Gregoriek
Van der Waals-Zeeman Instituut, University of Amsterdam, Amsterdam, The Netherlands
16:45 Relaxation dynamics of photoexcited carriers in very thin silicon nanowires produced by an inductively coupled plasma torch
S. Ponziotti, P. Castucci, M. A. Gati,3,4,5 V. Le Borgne,3 R. Dolbecq, S. Boninelli,5 M. De Crescenzi,2 M. A. El Khakani,3, and S. Pagliara1
1 L'AMP and Dipartimento di Matematica e Fisica, Università Cattolica, 25121 Brescia, Italy. 2 Dipartimento di Fisica, Università di Roma Tor Vergata, 00133 Roma, Italy. 3 CNRS Energie, Matériaux et Télécommunications, Varennes, QC, J3X-152, Canada. 4 Dipartimento di Fisica e Astronomia, Università di Catania, I-95125 Catania, Italy. 5 CNR-IMM, Via S. Sofia, 64 - 95123 Catania, Italy 6 Tekna Plasma Systems Inc., 2935 Industrial Blvd., Sherbrooke, QC, J1L-2T9, Canada

17:00 Energy migration, exchange and dissipation in ensembles of semiconductor nanocrystals
Tom Gregorkiewicz
Van der Waals - Zeeman Institute, University of Amsterdam

17:30 Rare-earth clustering in silicon rich silica: precipitation mechanism and optical properties.
E. Talbot1, G. Beainy1, P. Pareige1, F. Gourbilleau2, J. Weickerskirch-Aubatin3, M. Stoffel3, M. Vergnat3 and H. Rinnert1
1 Groupe de Physique des Matériaux, Université de Rouen et INSA de Rouen, UMR CNRS 6634, Avenue de l'Université BP 12, 76801 Saint Etienne du Rouvray, France. 2 CIMAP, UMR CNRS/CNRS/ENSICAEN/LCIN, ENSICAEN, 6 Bd. Maréchal Juin, 14050 Caen Cedex, France. 3 Université de Lorraine, UMR CNRS 7198, Institut Jean Lamour, BP 70239, 54506 Vandourou-les-Nancy, France.

17:45 Energy migration, exchange and dissipation in ensembles of semiconductor nanocrystals
Tom Gregorkiewicz
Van der Waals - Zeeman Institute, University of Amsterdam

18:15 Ce3+ doped Silicon Oxynitride thin films for emitting devices
F. Ehri1, C. Dufour1, F. Gourbilleau1, X. Portier1, J. Cardin1, B. Garrido2, Q. Blazquez2, W. M. Jadwisienzak3, A. L. Richard4, David C. Ingram4 and C. F. Ehré1, C. Dufour1, F. Gourbilleau2, J. Weickerskirch-Aubatin3, M. Stoffel3, M. Vergnat3 and H. Rinnert1
1 I-LAMP and Dipartimento di Matematica e Fisica, Università Cattolica, 25121 Brescia, Italy. 2 Dipartimento di Fisica, Università di Roma Tor Vergata, 00133 Roma, Italy. 3 CNRS Energie, Matériaux et Télécommunications, Varennes, QC, J3X-152, Canada. 4 Dipartimento di Fisica e Astronomia, Università di Catania, I-95125 Catania, Italy. 5 CNR-IMM, Via S. Sofia, 64 - 95123 Catania, Italy 6 Tekna Plasma Systems Inc., 2935 Industrial Blvd., Sherbrooke, QC, J1L-2T9, Canada.

18:45 Relaxation dynamics of photoexcited carriers in very thin silicon nanowires produced by an inductively coupled plasma torch
S. Ponziotti, P. Castucci, M. A. Gati,3,4,5 V. Le Borgne,3 R. Dolbecq, S. Boninelli,5 M. De Crescenzi,2 M. A. El Khakani,3, and S. Pagliara1
1 L'AMP and Dipartimento di Matematica e Fisica, Università Cattolica, 25121 Brescia, Italy. 2 Dipartimento di Fisica, Università di Roma Tor Vergata, 00133 Roma, Italy. 3 CNRS Energie, Matériaux et Télécommunications, Varennes, QC, J3X-152, Canada. 4 Dipartimento di Fisica e Astronomia, Università di Catania, I-95125 Catania, Italy. 5 CNR-IMM, Via S. Sofia, 64 - 95123 Catania, Italy 6 Tekna Plasma Systems Inc., 2935 Industrial Blvd., Sherbrooke, QC, J1L-2T9, Canada

Tuesday 23 May 2017

08:30 Energetics, carrier transport and carrier multiplication in pure and doped semiconductor nanocrystals
Stefano Ossicini
Dipartimento di Scienze e Metodi dell’Ingegneria, Universita di Modena e Reggio Emilia, via Amendola 2 Pad, Morresi, I-42100 Reggio Emilia, Italy and CNR-RFM-S3 “nanoStructures and bioSystems at Surfaces”, via Campi 211, I-41100 Modena, Italy.

09:00 Electronic structure of Si nanocrystals codoped with n- and p-type impurities
Christophe Detertue
IEMN-CNRS, Villeneuve d’Ascq, France

09:15 Phosphorus doped Si nanocrystals embedded in SiO2 thin films: from low doping to localized surface plasma resonances
S. Geiskopf1, M. Stoffel1, X. Devaux1, N. Cherkashin2, C. Bonafos2, A. Bouché1, D. Mangan1, M. Vergnat1, H. Rinnert1
1 Université de Lorraine, UMR CNRS 7198, Institut Jean Lamour, BP 70239, 54506 Vandourou-les-Nancy, France, (2) CEMES-CNRS Université de Toulouse, rue Jeanne Marvig, BP 84347, 31055 Toulouse, Cedex 4, France.

09:30 Investigation of carrier multiplication process in phosphor and boron co-doped silicon nanocrystals
N.X. Chung, R. Limpens, C. de Weerd, T. Gregorkiewicz
Van der Waals-Zeeman Institute, University of Amsterdam, Science Park 904, 1098 XH Amsterdam, the Netherlands

09:45 Investigating the self-doping process in mercury chalcogenides nanocrystals
Emmanuel Juilliert1*, Clément Livache1,2 Bertille Martinez1,2 Adrien Robin1,2 Hongyue Wang1,2 Sandrine Ithurria3,2 Hervé Aubin2
1 Sorbonne Universités, UPMC Univ Paris 06, CNRS-UMR 7588, Institut NANO-Sciences de Paris, 4 place Jussieu, 75005 Paris, France. 2 Laboratoire de Physique et d’Etude des Matériaux, ESPCI-ParisTech, PSL Research University, Sorbonne Université UPMC Univ Paris 06, CNRS, 10 rue Vauquelin 75005 Paris, France.

10:00 Coffee Break

10:30 Measuring Single-Particle Plasmonics on the Nanoscale with Single-Molecule Fluorescence Microscopy
Julie Biteen
University of Michigan

11:00 New insight on normal and inverse plasmonic photocurrent in Au and Ag nanoparticle arrays
E. Terver, T. Alnasser, A. Mlayah, B. Viallet, L. Ressier, J. Grisolia
Université de Toulouse, LPCNO, INSa-CNRS-UPS, 135 avenue de Rangueil, Toulouse 31077, France. b. CEMES-CNRS and Université de Toulouse, 29 rue Jeanne Marvig, BP 84347, F-31055 Toulouse Cedex 4, France.

11:15 Tuning of surface lattice resonances in self-assembled colloidal monolayers
Kristen Volk, Joseph P.S. Fitzgerald, Matthias Kang
Heinrich-Heine-University Düsseldorf, Physical Chemistry I, Universitätsstr. 1, 40204 Düsseldorf, Germany.

11:30 PTFE-Coated PdAu Alloy Nanoparticles as Hysteresis-Free Nanoplasmonic Hydrogen Sensors with sub-Second Response Time
Ferry A. A. Nugroho1, Ivan Darmadi1, Hermen Schreuders**, Bernard Dam**, Christoph Langhammer1
1 Department of Physics, Chalmers University of Technology SE-412 96, Göteborg, Sweden. **Materials for Energy Conversion and Storage (MECS), Department of Chemical Engineering, Delft University of Technology, 2600 GA Delft, The Netherlands.

11:45 Designing the surface plasmon response of origami organized nanoparticles
Tamoghna Das, Jack F. Douglas
National Institute of Standards and Technology and University of Maryland, National Institute of Standards and Technology, Gaithersburg, USA.

12:00 Lunch
13:00 Directed assembly of nanoparticles monitored by liquid crystal topological defects for advanced optical properties
Emmanuelle Lacaze, Laurent peliser, Syou Pheng Do, Ian nemitz, Joel Penderly, Brigita Rozic and Delphineoursault
INSP, Sorbonne Universites, CNRS-UPMC, Paris, France, Reserve Case Wester university, Cleveland, Ohio, USA. Jozef Stefan Institute, Ljubljana, Slovenia. The James Franck Institute, The University of Chicago, Chicago, USA.

14:00 Nanoparticle composites by mechanochemistry
Bilge Baytekin, Ozge Bayrak, Tufku Bedikin
Chemistry Department, Bilkent University, 06800, Ankara, TURKEY

14:15 On mapping of absolute interplanar distances and angles in crystalline nanocrystals embedded within an amorphous matrix using high resolution TEM images
N. Cherkashev1, C. Gata1, C. Bonafo1, V. V. Chalyshev2
1CEMES-CNRS and Université de Toulouse, 29 rue J. Marvig, 31055 Toulouse, France 2Ukraine Institute of Geology and Mineralogy, Kiev, Ukraine

14:30 Block copolymer based self-assembled hyperbolic metamaterial in the visible range
Xuan Wang, Alexandre BARON,Ashod KILDEMO, Virginie PONSINET
CNRS, University of Bordeaux, CRPP UPB841, 36600 Pessac, France, Physics Department, NTNU, Trondheim 7491, Norway

14:45 Synthesis and optical characterization of highly luminescent silica coated CdSe/CdS/ZnS quantum dots
Elke van Harten, Andries Mejerink
Condensed Matter and Interfaces, Deybe Institute for Nanomaterials Science, Utrecht University, The Netherlands.

15:00 Optical and Structural study of embedded Ge QDs in Si3N4 and SiO2 multilayer structures
R. R. Bahariqushchi, S. Gunodlgu, A. Aydinli
1Bilkent University, Physics Department, Ankara, 06800, Turkey 2Uladag University, Electrical and Electronics Engineering Department, Bursa 16059, Turkey

15:15 Mathematical description of nanocrystal size, shape and surface orientation as tool to interpret solid state spectroscopy data
Dirk König
Integrated Materials Design Centre (IMDC), University of New South Wales (UNSW), Sydney, Australia

15:30 Coffee Break

Poster Session : S. Boninelli, C. Bonafos

16:00 Photoluminescence of fullerene C60 thin film in plasm coupled Au nanoparticles monolayer/ C60 film / Al film nanostructure
Oleg Yestchenko, Viktor Kozachenko, Nataliya Berezovska, Yuriy Likhovych
Physics Department, Taras Shevchenko National University of Kyiv, 60 Volodymyrs’ka str., 01601 Kyiv, Ukraine

16:00 Innovative OxRAM nanomemories with indium oxide nanocrystals fabricated by ultra low energy ion implantation
G. BenAssayag(1), C. Bonafos(1), B. Pecassou(1), D. Droin(2), S. Ecoffey(2), K. Souilh(3), F. Torregrosa(4)
(1) CEMES-CNRS (Université de Toulouse), (2) UMI-LN2 (Université de Sherbrooke), (3)INL (INSA Lyon), (4)IBBS Company (Rousseliére)

16:00 Effects of Zr Doping to Electrical Properties of Sn in the SiO2 Matrix
Vorágürkun Acar a, Ayse Karatas b, M.Üçalit Yilmaz c, Omer Derei, a Olguz Doğan a a Department of Physics, A.Kelesoglu Faculty of Education, Necmettin Erbakan University, Konya, Turkey b Department of Nanoscience&Nanoengineering, Institute of Science, Necmettin Erbakan University, Konya, Turkey c Department of Metallurgical and Materials Science, S.A.E. Engineering Faculty, Necmettin Erbakan University, Seydehisir, Konya

16:00 Luminescence glass-ceramics based on nanoparticles of Ba(x)RE(RE=La,F=Er)2+ and Pb(x)RE(RE=La,F=Er)2+ solid solutions into fluoroborate
Petrov O.B., Severijanova T.S., Khomyakova A.V., Avestrov I.Ch., Dmitry Mendeleev University of Chemical Technology of Russia

16:00 Mechnochemical preparation of cellulose-metal nanoparticle composites
Ozge Bayrak, Tufku Bedikin, Bilge Baytekin
Chemistry Department, Bilkent University, 06800, Ankara, TURKEY UNAM, Bilkent University, 06800, Ankara, TURKEY

16:00 Influence of Tribocharges on Stiction in MEMS
H. Tarih Baytekin
UNAM, Institute of Materials Science and Nanotechnology, Bilkent University, Ankara, 06800, Turkey

16:00 Organic-Inorganic Hybrid Nanostructures in PolyVinyl Alcohol Matrix: From Synthesis to Optoelectronic Applications
Bessem BEN DOUDOU, Achraf CHEBIL, Chen DrDI
Nanomaterials, Microsystems for Health, Environment and Energy (NANOMISENE) RD Laboratory LR1CRMM01, Centre for Research on Microelectronics and Nanotechnology (CRMM) Technopark of Sousse, B.P. 334, 4054 Sahloul Sousse TUNISIA

16:00 Green electroluminescence of Al/Ti/Al SiO2 devices fabricated by electron beam evaporation
O. Blazquez1, J. Lopez-Vidrier,1,2 M. Busquets-Masó,1,3,1, L. Lopez-Conesa,1,3,1 Estrade1, F. Pérez1,2, S. Hernández1, J. Ibarra1,2 and B. Garrido1
1MINED-INSUB, Department of Engineering: Section of Electronics, Universitat de Barcelona, Martí i Franques 1, E-08028 Barcelona, Catalonia (Spain); 2IMTEK, Faculty of Engineering, Albert-Ludwigs-Universität, Freiburg, Georg-Keßler-Allee 103, D-79110 Freiburg (Germany); 3Department of Material Engineering, Academy of Sciences, CAS, Prague 8, Czech Republic

16:00 Effect of Pb2+ ions on photoluminescence of ZnS-coated AgN2 nanocrystals
I. Podgrabska1, A. Rachkov2, L. Borkovsk3
1National Technical University of Ukraine “IvM220,Igor Sikorsky Kyiv Polytechnic Institute”#621, 37 Prosp. Peremohy, 03056 Kyiv, Ukraine, Institute of Molecular Biology and Genetics of NASU, 150 Zabolotnogo Str., 03680 Kyiv, Ukraine2, V. Lashkaryov Institute of Semiconductor Physics, 41 Prosp. Nauky, 03028 Kyiv, Ukraine3

16:00 Ultra-Low-Energy Ion Beam Synthesis of Ag Nanocrystal: Effect of the Matrix on Nuclear Reactions and Growth
M. Carrada (1), B. Pecassou (1), A. Haj Salem (1), G. Ben Assayag (1) D. Drouin (2), S. Ecoffey (2)
(1) CEMES-CNRS/CNRS, Université de Toulouse, 29 rue J. Marvig 31055 Toulouse Cedex 4, France (2) CIMPAMP, NIMPH, CNRS/CEA/ENSIICAEN/CUBN, 14050 CAEN Cedex 4, France

16:00 Self-organization based fabrication of bimetallic Pd-Pt nanoparticles on transparent conductive oxides substrates
M. Censabella, F. Ruffino, M. Zimbone, M. G. Grimaldi
1MIND-IN2UB, Department of Engineering: Section of Electronics, National Technical University of Athens, Zografou Campus, Athens, Greece 2Nanomaterials, Mirosystems for Health, Environment and Energy (NANOMISENE) RD Laboratory LR1CRMM01, Centre for Research on Microelectronics and Nanotechnology (CRMM) Technopark of Sousse, B.P. 334, 4054 Sahloul Sousse TUNISIA

16:00 Electrical properties of doped Si1-xGex nanocrystals embedded in SiO2
A. Chelouche, G. Ferblanter, D. Muller, D. Mathiot
ICube, CNRS-Ubistra 23 rdeu los, 67037 Strasbourg Cedex 2, France

16:00 Nano-sized Rare Earth oxides doping in Ba1-xCa1+yZrO3 Lead-free piezoelectric ceramics and their electrical properties
Chen Zhi-hui1,2 Ding Jian-rong1,2,3 Yuan Ying-yi1,2,3 Zhu Yuan-yuan1,2,3 Yang Yai2,1 Li Wei-1,2,1)
1School of Materials Science and Engineering, Jiangsu Collaborative Innovation Center of Photovoltaic Science and Engineering, Changzhou University, Changzhou, 213164, Jiangsu, China 2 Jiangsu Province Cultivation base for State Key Laboratory of Photovoltaic Science and Technology, Changzhou University, Changzhou, 213164, Jiangsu, China 3 MicroNano Science and Technology Center, Jiangsu University, Zhenjiang, 212013, China

16:00 Rb-substituted green CsPbBr3 halide perovskite nanocrystals-mesoporous silica nanocomposite for highly efficient LEDs
Seong Hee Choi, Young Hyun Song, Bong Kyun Kang, Seok Bin Kwon, Chul Woo Lee, Dae Ho Yoon
1School of Advanced Materials Science and Engineering, Sungkyunkwan University (SKKU), SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University (SKKU)
2Nano Engineering Research Center, Sungkyunkwan University (SKKU), SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University (SKKU)

16:00 Au nanoparticle formation on the electron beam induced pore-membrane
(1) Seong Soo Choi, Myoung Jin Park, Chu Hee Han, Seh-Joong Oh, (2) Doo Jae Park, (3) Sung-Yong Kim (4) Soo Bong Choi (5) Nam Kyoo Park
(1) SungMoon University (2) Hallym University (3) Sungkyunkwan University (4) Incheon University (5) Seoul National University
08:30 Resistance switching in silicon-rich silica: electronic, structural and photonic perspectives
(1) Department of Electronic and Electrical Engineering, University College London, London WC1E 6BT, UK, (2) Department of Physics and Astronomy, University College London, London WC1E 6BT, UK, (3) Institute of Materials Research and Engineering, 2 Fusionopolis Way, 138654, Singapore

09:00 Tailoring resistive, capacitive and synaptic properties of forming free TiO2-x based RRAM by embedded Pt and Ta
P. Bousoulas 1, J. Karageorgiou 1, V. Aislanidou 1, K. Giannakopoulos 2, D. Tsoukalas 1
1Department of Applied Physics, National Technical University of Athens, Iroon Polytechniou 9 Zografou, 15780 Athens, Greece, 2 Institute of Nanoscience and Nanotechnology, NCSR “Demokritos”, Aghia Paraskevi, 15310 Athens, Greece

09:15 Structural and electrical characterization of SIAON memristors: the role of oxygen vacancies in the electroforming process
O. Blázquez 1, G. Martín 1, J. Camps 2, J.M. Ramírez 1, S. Hernández 1, S. Estrade 1, F. Peiró 1, R. Serna 2, A. Cornelí 1 and B. Garrido 1
1MINDD-INGUB, Departament d'Enginyeries, Secció d'Electrocnètica, Universitat de Barcelona, Martí i Franquès 1, E-08028, Barcelona, Spain, 2Laser Processing Group, Instituto de Optica, CSIC, C/Serrano 121, E-28006 Madrid, Spain.

09:30 Pt nanosheets embedded in Al2O3 matrix: from ALD-based fabrication to structural and electrical characterization
Daniel Thomas 1, Etienne Puyoo 1, Martine Le Berre 1, Liviu Militaru 1, Bruno Canat 1, Francis Calmon 1, B. Gaultier 1
1: INL, INSIA Lyon, UMR CNRS 5270, 69621 Villeurbanne Cedex 2: MATEIS, INSIA Lyon, UMR CNRS 5510, 69621 Villeurbanne Cedex

09:45 Adjustable Electromagnetic Shielding Efficiency by Compressible Light Weight Porous PDMS/Ps3/4 Decorated RGO - SWCNH composite Ranapid Bera and Bharu Bhusan Khatau
Materials Science Centre, Indian Institute of Technology, Kharagpur-721302, India

10:00 Coffee Break

10:30 Polyvinyl Chloride and ZnSnO3 Nanoparticles Based Nanocomposite: A High Output Power and Durable Piezoelectric Nanogenerator
Sarbaranjan Paria, Dr. Bharu Bhusan Khatau
Materials Science Centre, Indian Institute of Technology, Kharagpur-721302, India

10:45 Indium-Oxide Nanoparticles for RRAM Integration in Non-Volatile Memory Applications
Edgar Leon Pérez 1, Oumalima Abouazid 1, Khhaled Ayadi 1, Nicolas Baboux 1, Liviu Militaru 1, Jérémie Moeyaert 2, Thierry Baron 2, Abdelkader Souifi 1, Pierre-Vincent Edgar León Pérez 1, Oumaïma Abouzaid 1, Khaled Ayadi 1, Nicolas Baboux 1, Liviu Militaru 1, Jérémy Moeyaert 2, Thierry Baron 2, Abdelkader Souifi 1, Pierre-Vincent Montesi(1), K. Kazaruddin(1), M. Bosman(3), T. Gerard(1), A.L. Shluger(2)
(1) Department of Electronic and Electrical Engineering, University College London, London WC1E 6BT, UK, (2) Department of Physics and Astronomy, University College London, London WC1E 6BT, UK, (3) Institute of Materials Research and Engineering, 2 Fusionopolis Way, 138654, Singapore

11:00 Single electron transport in graphene/quantum-dots hybrid material: towards large area single electron devices.
L. D. N. Mouaou, F. Godel, G. Froehlicher, S. Bercaud, B. Dou din, Y. Henry, D. Halley, and J.F. Dayen
Institut de Physique et Chimie des Matériaux de Strasbourg (IPCMS). Université de Strasbourg. CNRS UMR 7504, 23 rue du Loess, BP 43, F-67034 Strasbourg Cedex 2, France.

11:15 Properties of metallic nanoparticles / a-Al2O3 nanocomposites deposited by a sputtering based gas aggregation source
V. Orozco Montes, F. Dumas-Bouchiat, C. Jaoul, P. Tristant
Univ. Limoges, CNRS, SPCTS, UMR 7315, F-87000 Limoges, France.

11:30 Size-induced enhanced magnetoelectric effect in chromium oxide nanoclusters in a MgO matrix
David Halley, Nabill Najari, Hicham Majad, Loïc Joly, Philippe Ohe rsser, Fabrice Scheurer, Corinne Ulhaq-Bouillet, Stéphane Bercaud, Bernard Doudin et Yves Henry
David Halley, Nabil Najari, Hicham Majad, Loïc Joly, Fabrice Scheurer, Corinne Ulhaq-Bouillet, Stéphane Bercaud, Bernard Doudin et Yves Henry
Institut de Physique et Chimie des Matériaux de l'Iroise, Université de Strasbourg, CNRS UMR 7504, 25 rue du Loess, BP 43, F-67034 Strasbourg Cedex 2, France.ophilippe Ohresser

11:45 Mn-Doped SnO2 Transparent Thin Film for Multi-State Resistive Switching
Zhenxi Xu, Adnan Younis, Dewei Chu, Sean U
Zhenxi Xu, School of Materials Science and Engineering, University of New South Wales, Sydney, 2052, NSW, Australia, Adnan Younis, School of Materials Science and Engineering, University of New South Wales, Sydney, 2052, NSW, Australia, Dewei Chu, School of Materials Science and Engineering, University of New South Wales, Sydney, 2052, NSW, Australia, Sean U, School of Materials Science and Engineering, University of New South Wales, Sydney, 2052, NSW, Australia

12:00 Lunch

13:30 Enhanced light absorption in Ge quantum dot multilayers
R. Paciotti 1, R. Baharguache 2, C. Summonted 1, A.M. Mlo 1, G. Nicodart 1, A. Aydinli 2, S. Mirabella 1, A. Terras 1
1. MATIS CNR-IMM and Diparti mento di Fisica e Astronomia, Università di Catania, via S. Sofia 64, 95123 Catania, Italy. 2. Department of Physics, Bilkent University, 06800 Ankara, Turkey
3. IMM-CNRS, via Gobetti 101-40219 Bologna, Italy. 4. IMM-CNRS, Via strada 5, 95121 Catania, ITALY

14:00 Ge nanocrystals in TiO2 with tunable photoabsorbing properties
Adrian Slav, Catalin Palade, Ana-Maria Lepadatu, Valentin Serban Teodorescu, Monica Enculescu, Sorina Lazanu, Toma Stoica, Magdalena Lidia Ciurea
National Institute of Materials Physics, Romania

14:15 Thermo-optical response of semiconductor CuCl nanocrystals embedded in a glass matrix for optical switching applications
E. Haro-Poniatowski 1,2, M. Jiménez de Castro 2,1 (Corresponding Author), A. Mariscal 2,1 (Corresponding Author), and R. Serna 2,1
1. Departamento de Física Universidad Autónoma Metropolitana, Apartado Postal 55-534, México 09340, DF, México. 2.2 Laser Processing Group, Instituto de Optica, CSIC, Serrano 121, 28006 Madrid, Spain.

14:30 Improving efficiency of perovskite nanorod-based LEDs by nanoscale synthesis control
Bevila K. Chandran, Sjord A. Veldhuis, Ajay Perumal, Xin Yu Chin, Sriman Mathews, Suboth Mhaisalkar, Xiaodong Chen
Energy Research Institute@NTU (ERI@N), Research TechnoPlaza, X-Frontier Block, Level 5, 50 Nanyang Drive, 637553 Singapore & Interdisciplinary Graduate School, National Institute of Materials Physics, Romania

14:45 Deposition of Al/LiF nanocomposite by means of high pressure magnetron sputtering and thermal evaporation co-deposition
Jiri Buil, Tomas Zikmund, Michal Novotny, Jan Lanck, Ladislav Fekete, Jaromir Kopecky
Institute of Physics of the Czech Academy of Sciences, Na Slovanke 2, 182 21 Prague 8, Czechia
15:00 Microwave absorber using lightweight industrial waste cenosphere
Pritom J Bora, Sai kiran, K.J. Vinoy and Praveen C Ramamurthy and Giridhar Madras
Interdisciplinary Centre for Energy Research (ICER), Department of Materials Engineering,Department of Electrical and Communication Engineering, Indian Institute of Science, Bangalore-560012, India.

15:15 Mechanical oscillations in lasing microspheres
NEST, CNRS l’Institut Nanosciences et Dipartimento di Fisica, Università di Pisa, Largo Pontecorvo 3, 56127 Pisa, Italy, 2 Depto. Fisica, Universidad de la Laguna, La Laguna, Spain, 3 MIND-IMMUB, Departament d’Electronica, Facultat de Fisica, Universitat de Barcelona, Martí i Franquès 1, 08028 Barcelona, Spain, 4 Catalan Institute for Research and Advances Studies ICREA, Barcelona, Spain. 5 Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, 08193 Barcelona, Spain

15:30 Two-Photon Luminescence and Second-Harmonic Generation in Organic Nonlinear Surface Comprised of Self-Assembled Frustum Shaped Organic Microlasers
Dasari VenkatKrishnarao, Yemineni S. L. V. Narayana, Mahamad A. Mohaiddon, Evgeniy A. Mamonov, Irina A. Kolmychek, Anton I. Maydykovskiy, Vladimir B. Novikov, Tatiana V. Murzina, and Rajadurai Chandrasekar*
Dasari VenkatKrishnarao, Research Scholar, Yemineni S. L. V. Narayana, Research Scholar, Mahamad A. Mohaiddon, Professor in Physics, Evgeniy A. Mamonov, Research Scholar, Irina A. Kolmychek, Research Scholar, Anton I. Maydykovskiy, Research Scholar, Vladimir B. Novikov, Research Scholar, Tatiana V. Murzina, Professor in Physics, Rajadurai Chandrasekar*, Professor in Materials Chemistry

15:45 Coffee Break

08:45 Nanostructured SPR bioshells
Julien Moreau1,2, Mitradeep Sarkar1, Aurore Olivéro1, Jean-François Bryche1, Michael Canva1,2
1Laboratoire Charles Fabry, Institut d& #8217;Optique Graduate School, CNRS, Université d& #8217;Evry, 2Paradise Saclay, 91227 Palaiseau, France 2Laboratoire Nanotechnologie Nanosystème (LNN),UM CNRS 3463, BIT, Université de Sherbrooke, Quebec, Canada

09:15 Molecular Plasmonics: strong coupling at the low molecular density limit
Liht Efremushkin, Maxim Sukhanov, Adi Salomon
Department of Chemistry, Institute of Nanotechnology and Advanced Materials (BINA), Bar-Ilan University, Ramat-Gan 5290002, Israel, Arizona State University, Tempe, AZ 85212, USA, Department of Chemistry, Institute of Nanotechnology and Advanced Materials (BINA), Bar-Ilan University, Ramat-Gan 5290002, Israel

09:30 Assembly of Iron Oxide Nanoparticles on Gold Substrates for Biosensing Applications
Maëlhas DOLCI1, Jean-François BRYCHE2, Spiros ZAFEIRATOS3, Fouzia BOULMEDA4, Xavier CATTOEN 5, Sylvie BEGNI-COLIN1, Gregory BARBILLON2, Benoit P. PICHON3, G. Benetti1, 2, E. Cavaliere2, N. Winckelmans3, S. Bals3, J. Verbeeck3, M. Chiodi4, G. Landini5, M. J. Van Bael1, L. Gavioli2*
1 Université de Strasbourg, CNRS, IPCMS, UMR 7504, 23 rue du Loess BP43, 67034 Strasbourg Cedex 2, France 2 Institut d’Optique Fondamentale, UMR 8622, rue Ampère, 91405 Orsay Cedex, France 3 Université de Strasbourg, CNRS, ICPEES, UMR 7515, 25 rue Bequerel 67087 Strasbourg Cedex 2, France 4 Université de Strasbourg, CNRS, ICB, UPR52, 75 rue Bequerel 67200 Strasbourg Cedex 2, France 5 Institut Néel, (UPR 2940), 25 Rue des Martyrs, 38042 Grenoble Cedex 9, France

09:45 Direct synthesis of Ag nanoparticles in a TiO2 matrix for antibacterial coatings by supersonic cluster beam deposition
G. Beneit1,2, E. Cavalieri2, N. Wincklemans3, S. Bals5, J. Verbeeck5, M. Chioud4, L. Pallecchi5, G. Landini5, M. J. Van Bael1, L. Gavioli2*
1 KU Leuven, Laboratory of Solid State Physics and Magnetism, Department of Physics and Astronomy Celestijnenlaan 2000, B-3001 Leuven, Belgium, 2 Interdisciplinary laboratories for advanced materials physics (i-LAMP) and Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Via dei Musei 41, 25121 Brescia, Italy, 3 EMAT-University of Antwerp, Groenenborgerlaan 171, B-2020 Antwerp, Belgium, 4 Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Joining and Interface Technology, Übelstrasse 129, 8600 Dübendorf, Switzerland, 5 Dipartimento di Biotechnologie Mediche, Università degli Studi di Siena, Policlinico Santa Maria alle Scotte, Siena, Italy

10:00 Coffee Break

10:30 Multifunctional nanoparticles for tracking and imaging with potential applications in radiotherapy
Magali Lavenas, Marina Simon, Hervé Seznec, Luis D. Carlos, Joao Rocha, Marie-Hélène Delville
CNRS, Université de Bordeaux, ICMCB, Pessac, France & Universidade de Aveiro, CICECO, Aveiro, Portugal . CNRS, Université de Bordeaux, CENBG, UMR 5797. Gradignan, France, CNRS, Université de Bordeaux, CENBG, UMR 5797, Gradignan, France, Universidade de Aveiro, CICECO, Aveiro, Portugal, Universidade de Aveiro, CICECO, Aveiro, Portugal, CNRS, Université de Bordeaux, ICMCB, Pessac, France

10:45 Biodistribution of the fluorescent, biodegradable ZnO nanoparticles in the living organism
P. Keibl1,2, J. Kaszewski1,2,3, E. Wolska3, B. S. Witkowski 3, M. A. Gralak 2, Z. Gajewski 1, M. Godlewski 3, M. M. Godlewski1,2,1
1 WULS, Veterinary Research Centre, Centre for Biomedical Research, Department of Large Animal Diseases with Clinic, FVM, Warsaw, Poland 2 WULS, Department of Physiological Sciences, FVM, Warsaw, Poland 3 Institute of Physics, PAS, Warsaw, Poland
11:00 Reusable nanocomposite layers with embedded silver nanoparticles for biosensing applications using the “sensory-inside” concept A. Scarangella, 1,2,3 A. Puiglisa, 1,3 C. Bonfoss 3, B. Picasovall, 3 R. Carles, 3 E. Navarro, 4 M.-C. Sancho, 4 M. Soumbo, 1,5 C. Roques, 5 M.-C. Monje, 5 and K. Nakamura 7. 1LAPLACE (Laboratoire Plasma et Conversion d’Energie), Université de Toulouse, CNRS, UPS, INPT, 118 route de Narbonne, F-31062 Toulouse cedex 9, France. 2GPEM, UFR d’Informatique, Université de Lille 1, 59652 Villeneuve d’Ascq, France. 3CEMES (Centre d’Elaboration de Matériaux et d’Etudes Structurales)-CNRS Université de Toulouse. 29 rue Jeanne Marvig, BP 94347, F-31055 Toulouse cedex 4, France. 4Instituto Pirenaico de CsIC, Avda. Montañana 1005, Zaragoza 50009, Spain. 5SLG (Laboratoire de Génie Chimique), Université de Toulouse, CNRS, UPS, INPT, 35 chemin des maréchaux, F-31062 Toulouse cedex 9, France.

11:15 On the potential use of nanostructured ITO electrodes as amperometric biosensors Raquel Pruna (a), Francisco Palacio (a), Juan Pablo Salvador (b,c), Mónica Martínez (d), Oriol Blázquez (a), Sergi Hernández (a), Blas Garrido (a), Maria Pilar Marco (b), Manel López (a) (a) Departamento d’Enginyeria: Electrònica, Universitat de Barcelona, C/ Martí i Franquès 1, E-08028 Barcelona, Spain, (b) Nanobiotechnology for Diagnostics group (GNTD), IDAC-CSIC, C/ Jordi Girona 18-28, E-08038 Barcelona, Spain. (c) Centre de Investigació Biomèdica en Red de Bioenginyeria, Biomaterials y Nanomedicina (CIBER-BB), C/ Monforte de Lemos 3-5, E-28029 Madrid, Spain, (d) Department d’Engineria de Materials i Quimica Fisica, Universitat de Barcelona, C/ Martí i Franquès 1, E-08028 Barcelona, Spain.

11:30 On the interaction of Red Fluorescent Protein?DsRed with silver based nanocomposites for biosensing applications A. Scarangella 1,2,3, M. Soumbo 1,4, A. Maiyah 3, C. Bonfoss 3, B. Puiglisa 3, R. Carles 3, C. Roques 4, A. Puiglisa 1,3 and K. Makasheva 1. 1LAPLACE (Laboratorio Plasma y Conversion de Energía), Universidad de Oviedo, Gijón 33205, Asturias, Spain. 2GREMI 14 rue d’Issoudun, BP6744 45067 Orléans Cedex 2, CEMHTI 1 Avenue de la Recherche Scientifique, 45100 Orléans, France. 3CEMES (Centre d’Elaboration de Matériaux et d’Etudes Structurales)-CNRS Université de Toulouse. 29 rue Jeanne Marvig, BP 94347, F-31055 Toulouse cedex 4, France. 4Instituto Pirenaico de CsIC, Avda. Montañana 1005, Zaragoza 50009, Spain.

11:45 Micro-sized humidity sensors with porous 3D networks of gold nanoparticles Marco A. Squalli, 1,2,3, A. Scarangella, 1,2,3, M. Soumbo 1,4, A. Maiyah 3, A. Puiglisa 1,3 and K. Makasheva 1. 1LAPLACE (Laboratorio Plasma y Conversion de Energía), Universidad de Oviedo, Gijón 33205, Asturias, Spain. 2GREMI 14 rue d’Issoudun, BP6744 45067 Orléans Cedex 2, CEMHTI 1 Avenue de la Recherche Scientifique, 45100 Orléans, France.

12:00 Lunch

13:30 Coffee Break

Poster Session : D. Pacifici, B. Garrido

16:00 High-yield Synthesis of Monodisperse Polyhedral Gold Nanoparticles for NADH Amperometric Sensor Stylianos Siontas, Onkar Game, Sophia Gluskin-Braun, Giorgio Savini Zangrandi, Department of Energy Conversion and Storage, Technical School of Engineering, Brown University, Providence RI, 02912.

16:15 Optoelectronic Simulations for Quantum Dot based Devices S. Ibera, J. D. Prades, A. Cirea, Instituto Català de Nanociència i Nanotecnologia (ICN2) and Instituto de Ciencia de Materiales de Barcelona (ICMAB), CSIC and BIST, Campus de la UAB, 08193 Bellaterra (Barcelona), Spain. MIND-IN2UB. Department of Engineering: Electronics, Universitat de Barcelona, C/ Martí i Franquès 1, E-08028 Barcelona, Spain, MIND-IN2UB. Department of Engineering: Electronics, Universitat de Barcelona, C/ Martí i Franquès 1, E-08028 Barcelona, Spain.

16:30 Theoretical Design of Piezoelectric Nanogenerator Based on Composite of PZT Nanofibers M. V. Shuba, D. K. Svirin, F. V. Kuznetsov, M. V. Ponomarcov, D. Pakhomov, J. D. Prades, A. Cirera, Laboratory of Drug Metabolism and Pharmacokinetics, Institute of Transfusion Medicine, School of Physical Science and Technology, National Institute of Water and Atmospheric Research. KU-KIST Graduate School of Converging Science and Technology, Seoul, Korea, Theoretical Design of Piezoelectric Nano Generator based on Composite of PZT Nanofibers and Polymers. J. D. Prades, A. Cirera, Laboratory of Drug Metabolism and Pharmacokinetics, Institute of Transfusion Medicine, School of Physical Science and Technology, National Institute of Water and Atmospheric Research, KU-KIST Graduate School of Converging Science and Technology, Seoul, Korea.

16:45 Optical behavior of gold-silica core-shell nanospheres embedded in an organic buffer matrix for plasmonic solar cells Kekeli N’Konou a, Véronique Mamy b, Mona Tegueur-Delapierre b, Philippe Torchio a (a) Aix-Marseille University, Institut Matériaux Microélectronique Nanosciences de Provence-IM2NP-CNRS-UMR 7334, Domaine Universitaire de Saint Jérôme, Service 231, 13197 Marseille Cedex 20, France. (b) University of Bordeaux, Institut de Chimie de la Matière Condensée de Bordeaux, ICMCB, CNRS-UPR 9048, 33600 Pessac, France.

17:00 The effect of size, composition and surrounding medium of metal nanoparticles on surface plasmon-enhanced silicon solar cells Lelia Manai1, Bechir Dridi Rezgui1, Rabia Badenaradcham Zaghouani1, Damien Barakat2, Philippe Torchio3, Olivier Palais4, and Brahim Bessais4. 1Photovoltaic Laboratory, Research and Technology Center of Energy (CRTEN), B. P. N° 2055 Hammam Lit, Tunisia. 2Institut Matériaux Microélectronique Nanosciences de Provence-IM2NP, Aix Marseille University, CNRS-UMR 7334, Domaine Universitaire de Saint Jérôme, Service 231, 13197 Marseille Cedex, France.

16:00 Gold inverse opals and their application in surface-enhanced Raman spectroscopy
N M Martynova, A V Grigorieva, E A Goodlin
Department of Materials Science, Lomonosov Moscow State University
R P.2.8

16:00 A good performance glucose biosensor constructed by nanomaterials
Xiaoxia Zhu, Zhuona Wu
Laboratory of Drug Metabolism and Pharmacokinetics, Institute of Transfusion Medicine, AMMS
R P.2.9

16:00 Ultrasensitive detection of flu virus oligonucleotides based on hybrid upconversion nanoprobe/nanoporous membrane system
Ming-Kiu Tsang1, Yuen-Ting Wong1, Yadi Fan2, Mo Yang3, Jianhua Hao1
1: Department of Applied Physics, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, P. R. China 2: Interdisciplinary Division of Biomedical Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, P. R. China
R P.10

16:00 Inorganic-organic 3D Inkjet Printable Dielectric Ink with Optimized Ink Printability
JaeYun PARK 1,2, Hyun Woo YOON 1, Yi Young KANG 1, Keun KYU PARK 1, Yun Ho KIM 1, Jong Chan WON 1,2
1: Center for Advanced Functional Polymers, Korea Research Institute of Chemical Technology(KRICT), Daejeon, Korea 2: University of Science and Technology(UST), Daejeon, Korea
R P.11

16:00 ZnS:Cu(Mn) Nanocomposites Based on Porous Anodic Alumina Oxide Films for Optoelectronics
Rishat Valeev, Andrey Chukavin, Artemi Belikovich, Alexander Trigub, Vladimir Vetoshkin, Dmitriy Petukhov, Alexander Alalykin, Ivan Ekin, Tatiana Kartapova
Physical-Technical Institute of Oral Branch of RAS, Izhevsk, Russia, National Research Center `Kurchatov Institute`, Moscow, Russia, Moscow State University, Faculty of Materials Science, Moscow, Russia
R P.12

16:00 Plasmonic tuning of Au bimetallic nanoparticles by laser-induced dewetting
Yoonseok Oh, Jeeyoung Lee, Minseok Lee, Harim Oh, Jaeyoung Kim, Myeongkyu Lee
Department of Materials Science and Engineering, Yonsei University, Seoul, 120-749, Republic of Korea
R P.14

16:00 Full Color Reflective Display with Colloidal Photonic Crystal in Non-aqueous Medium Operating at Low DC Voltage
Eunseon Park, Wonmok Lee
Department of Chemistry, Sejong University, Seoul, Korea
R P.14

16:00 Spectrometry study of the YAG:Ce-PMMMA hybrid materials for light conversion in optoelectronic applications
M.Turchescu1,2, A. Matei1, A. Avram1, M. Avram1, C.V. Marculescu1, R. Marinescu1, T. A. Burinaru1, M. Volmar1, D. Munteanu1,2
1: National Institute for Research and Development in Microtechnologies (NIT-Bucharest) 2:Transilvania University of Brasov, Department of Materials Science, 3:Transilvania University of Brasov, Electrical Engineering and Applied Physics Department
R P.15

16:00 Enhancement of electrical properties of silicon based silicon carbide composites using Ag In tunneling A2D3 layer passivation with Ag
Omar Ibrahim Elm1, J. Cardin3, Tao Xu2, F. Gourbileau4, O. Robbe1, C. Krezeminski4 and D. Stefanescu1
1: PHILAM, UMR8523, Universite de Lille 1, 59652 Villeneuve d’Ascq Cedex, France 2: Key Laboratory of Advanced Display and System Application, Shanghai University, 149 Yanping Road, Shanghai 200072, People’s Republic of China 3: ‘CMAP, CRNS/CEA/ENSICAEN/UCL, 6 boulevard Maréchal Juin, 14050 Caen Cedex 4: IFNIM, UMR8520, Universite de Lille 1, 59652 Villeneuve d’Ascq Cedex, France
R P.16

16:00 Spectroscopic ellipsometry studies of SiOx films irradiated with high energy electrons
T. Hristova-Vasileva1, P. Petrik2, D. Nesheva1, S. Kaschieva1, S. N. Dmitriev3
1: Institute of Solid State Physics, Bulgarian Academy of Sciences,72 Tzarigradsko Chaussee Blvd. 1784 Sofia, Bulgaria 2: -Co, 0161 Energy Research, Department of Physics and Nuclear Physics, Academy of Sciences, H112 Budapest, Konkoly Thege Miklos ut 29-33, Hungary 3: Joint Institute for Nuclear Research, Flerov Laboratory of Nuclear Reactions, Dubna, Moscow region 141980, Russia
R P.17

16:00 Atomic layer deposition of HfO2 on MoS2 with an Hf seed layer
Hojoon Kim1, Taejin Park2(2), Seongjae Park1(1), Minseok Lee1, Wonsik Ahn1, Seokju Jeong4, Seongjun Park4, Yunseok Kim1, and Hyungsub Kim1
1: School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 16419, Korea (2) Semiconductor R&D Center, Samsung Electronics, Hwaseong 18648, Republic of Korea (3) Department of Semiconductor and Display Engineering, Sungkyunkwan University, Suwon 16419, Korea (4) Nano-Electronics Lab., Devices System Research Center, Samsung Advanced Institute of Technology, Suwon 16678, Korea
R P.18

16:00 Bismuth-based nanoparticles in silicon compatible rare eaths compounds
A. Scarcangel1,2,3, S. Boninelli1, G. Amaird1, G. Franzoi1, R. Reitano3, F. Priolo1,3, 4, M. Mirtillo1
1: CNR IM-MATIS, Via S. Sofia 64, 95123 Catania, Italy 2: CNRS LAPLACE, Universite Paul Sabatier, 118 route de Narbonne, 31062, Toulouse Cedex 4, France 3: Dipartimento di Fisica e Astronomia, Università di Catania, Via S. Sofia 64, 95123 Catania, Italy 4: Scuola Superiore di Catania, Università di Catania, Via Valdisavoia 9, 95123 Catania, Italy
R P.19

16:00 Electron transport and piezoresistivity of cosputter-deposited platinum particles in ceramics
Silvan Schwebek, Günter Schultes
HTW Saar University of Technology, Saarbrücken, Germany
R P.2.20

16:00 ODMR studies of the paramagnetic centers involved in the emission of CdS-containing nanocomposites
1: V. Lashkaryov Institute of Semiconductor Physics of Nat. Acad. Sci. of Ukraine, Kyiv, Ukraine 2: Chernivtsi University, D-09126, Chernivtsi, Germany 3: Dept. Biophysics&Medical Informatics, Bukovinian State Medical University, Chernivtsi, Ukraine 4: Department of Chemistry and Biology, Linköping University, Linköping, Sweden 5: Pysarzhevsky Institute of Physical Chemistry of Nat. Acad. Sci. of Ukraine, Kyiv, Ukraine 6: Physical Chemistry, Technical University of Dresden, Dresden, Germany
R P.21

16:00 Sonochemically grown F/Sb-codoped SnO2 nanoparticle embedded silica composite films for infrared-shielding layer application
Russameeruk Neunornik, Wanichaya Mekprasart, Jaran Sritharathikhun, Witsanu Pecharapa
College of Nanotechnology, King Mongkut’s Institute of Technology Ladkrabang, Bangkok, 10520, Thailand
R P.22

16:00 Noise performance and operating temperature effects of high-efficiency germanium quantum dot photodetectors
Stylianos Stiontas, Alexander Zaslavsky, Domenico Pacilio
Stylianos Stiontas:School of Engineering, Brown University, Providence, RI, 02912, USA, Alexander Zaslavsky:School of Engineering, Brown University, Providence, RI, 02912, USA, Domenico Pacilio:School of Engineering, Brown University, Providence, RI, 02912, USA
R P.23

16:00 A SERS substrate based on silicon nanowires for rhodamine 6G detection
A.Oubi1, M. Sladacou2, M. Guendouz3, M. Raouafi 2, A. Moadhen1 and L. Hajj 3
R P.24

16:00 Laser-active polymer microoptics via high-resolution 3D-multiphoton photolithography
Kestutis Kurselis, Boris Chichkov, Laszlo Saaji
Laser Zentrum Hannover e.V. Hollerithallee 8, D-30419 Hannover, Germany
R P.25

16:00 Electroforming Free Non-Volatile Resistive Switching Memory Device Based on Single Domain CoFe2O4 Nanoparticles
Sandeep Mundral, Neeraj Khare
Department of Physics, Indian Institute of Technology Delhi, Hauz Khas, New Delhi 110016, India.
R P.26

16:00 Surface plasmon resonance in Au nanoparticles / dielectric spacer / Al film system: Tuning by variation of spacer thickness
Oleg Yeschenko,(1) Viktor Kozachenko,(1) Yuri Liakhov,(1) Anatoly Pinchuk (2) (1) Department of Physics, Taras Shevchenko National University of Kyiv, 64/13 Volodymyrs'ka Str., 04010 Kyiv, Ukraine, (2) Department of Physics and Nuclear Physics, Academy of Sciences, University of Colorado Colorado Springs, Colorado Springs, Colorado, 80918 USA
R P.27

16:00 Dielectric properties of polymer composites filled with conductive particles of various morphology
L. Vovchenko, O. Lozitsky, L. Matuz, V. Oliynyk, V. Zagorodni
Taras Shevchenko National University of Kyiv, Department of Physics
R P.28
16:00  **Structural and optical properties of laser-ablated germanium nanoparticles** R P2.29
G. Tselikov, A. Popov, Yu. Ryabchikov, A. Kabashin
Aix-Marseille University, 163, avenue de Luminy, Marseille, France 13288, P.N. Lebedev Physical Institute of Russian Academy of Sciences, 53 Leninskii Prospekt, Moscow 199 991, Russia, National Research Nuclear University MEPHI, 31 Kashirskoye shosse, Moscow, Russia, 115409

16:00  **Tunable photoluminescence controlled by interface defects between silicon nanocrystal and silicon rich silicon oxide matrix** R P2.30
Dongsheng Li, Guohua Liu, Min Xie, and Deren Yang
State Key Laboratory of Silicon Materials, School of Material Science and Engineering, Zhejiang University
SYMPOSIUM S

ALTECH 2017 - Analytical techniques for precise characterization of nano materials

Symposium Organizers:

Fernando Araujo de CASTRO, National Physical Laboratory, Teddington, U.K.

Burkhard BECKHOFF, Physikalisch Technische Bundesanstalt, Berlin, Germany

Cor CLAEYS, IMEC, Leuven, Belgium

Poul-Eric HANSEN, Danish Fundamental Metrology, Lyngby, Denmark
09:00 Welcome to ALTECH 2017
Fernando Castro
National Physical Laboratory

Metrology for Nanomaterials I: Luca Boarino

09:15 Nanoscale-metrology of organic and hybrid photovoltaics
Advanced Technology Institute, Department of Electrical and Electronic Engineering, University of Surrey, Guildford, Surrey, U.K. *National Physical Laboratory, Teddington, Middlessex, U.K.

09:45 Metrology challenges for thin chalcogenide layered systems: in-fab control of composition and depth-dependent properties
E. Nolot(1,2), A. Rouile (1,2), W. Pessoa(1,2), M.C. Lépy (3)
(1) Univ. Grenoble Alpes, 38000 Grenoble, France  (2) CEA, LETI, MINATEC Campus, 17 rue des Martyrs, 38054 Grenoble, France (3) CEA, LIST, Laboratoire National Henri Bequerel (LNE-LNHB), F-91191 Gil-sur-Yvette Cedex, France

10:00 Coffee Break

10:30 Terahertz time-domain spectroscopy: generation, detection and applications of
B. Schoenaers, V. V Afanas’ev, A. Stesmans
Section Semiconductor Physics, Department of Physics, University of Leuven, 3001 Leuven, Belgium

11:00 Electron paramagnetic resonance study of dopants in 2D layered materials: atomic and single-molecular layers
Andreas Nägelein, Peter Hess
Institute of Physical Chemistry, University of Heidelberg

11:30 nanoDielectric Spectroscopy as a tool for the characterization of polymer electrolytes
Daniele E. Martinez-Tong(a,b), Angel Angeli(a,c)
(a) Centro de Fisica de Materiales (CFM) (CSIC?UPV/EHU)?Materials Physics Center (UPV), Paseo Manuel de Lardizabal 4, 01008 San Sebastián, Spain  (b) Donostia International Physics Center, Paseo Manuel de Lardizabal 4, 01008 San Sebastián, Spain  (c) Departamento de Física de Materiales (UPV/EHU), Departamento 1072, 00800 San Sebastián, Spain

11:45 Electrical characterisation of freestanding GaAs Nanowires by a multi-tip STM
Andreas Nägelein, Matthias Steidl, Peter Kessmichmidt and Thomas Hannappel
TU Ilmenau, Institute for Physics, Photovoltaics, Ilmenau, Germany

12:00 Lunch

Multi-method nano-scale metrology : Fernando Castro and Miroslav Vacl

14:00 Data Fusion for Multi-sensor Surface Measurement
Jane Jiung
University of Huddersfield

14:30 Nanometrology of metallic nanoparticles thin films: a multimodal approach
Q. Bréchet1, S. Peil1, E. Cavaliere1, C. Giannett1, G. Ferrini1, N. Wincikielanska, S. Balaz1, J. Verbeeck3, M. Chiod1, C. Caddeo1, C. Melis1, M. J. Van Bael2, L. Gavil1, F. Banfi1
1 Institut Micronanotechnological laboratories for advanced materials physics (i-LAMP) and Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Via dei Musei 41, Brescia, Italy. 2 KU Leuven, Laboratory of Solid State Physics and Magnetism, Department of Physics and Astronomy Celestijnenlaan 200D, B-3001, Leuven, Belgium. 3EMAT di Matematica e Fisica, Università Cattolica del Sacro Cuore, Via dei Musei 41, Brescia, Italy. 3 Interdisciplinary laboratories for advanced materials physics (i-LAMP) and Dipartimento di Matematica e Fisica, Università degli Studi di Cagliari, Cittadella Universitaria, I-09042 Monserrato, Italy.

15:30 Coffee Break

14:45 3D Chemical Analysis of Inorganic and Organic Nanostructures using ToF-SIMS and In-situ SPM
Sven Kayser, Rudolf Moellers, Felix Kollmer, Dek Rading, Henrik Arlinghaus, Andreas Dueting, Ewald Nehus, Raphaëlle Dianoux, Adi Scheidemann
ION-TOF GmbH, NanoScan AG

15:00 New Techniques for High-Resolution Analytical Characterization of Nanostructures: Correlative Microscopy based on SIMS
Advanced Instrumentation for Ion Nano-Analytical (AINA), MRT Dpt, Luxembourg Institute of Science and Technology, 41, rue du Brill, L-4422 Belval, Luxembourg

15:15 STM-tip sample repulsive forces determined quantitatively by comparative STM and AFM measurements on suspended graphene
Andreas Pálárik1, György Molnár 1, Chanyong Hwang 2, László Péter Biró 3, Zoltán Osváth 1
1 Institute of Technical Physics and Materials Science (MFA), Centre for Energy Research, HAS, 1525 Budapest, P.O. Box 49, Hungary. 2 Center for Nano-metrology, Korea Research Institute of Standards and Science, Yuseong, Daejeon 305-340, South Korea

15:30 Coffee Break

Advanced materials characterisation by x-ray, atom probe and TEM techniques: Burkhard Beckhoff and Marie-Christine Lépy

16:00 Materials analyses for the development of thin-film solar cells
Daniel Aub-Ras
Heinrich-Heine-University Dusseldorf, Institute for Molecular Materials, Germany

16:30 Chemical nanoanalyses at grain boundaries by joint use of atom probe tomography and TEM combined with ab-initio calculations
Yutaka Ohno [1], Kazue Inoue [1], Kozi Fujitaka [1], Kenta Kurosaka [1], Momo Okuda [1], Ichiro Yonenaga [1], Naoki Ebisawa [2], Yasuo Shimizu [2], Koji Inoue [2], Yasuo Nagai [2], Hideo Yoshida [3], Seiji Takeda [3], Shingo Tanaka [4] and Masanori Koyama [4]
IMR, Tohoku Univ. [1], The Oarai Center, IMR, Tohoku Univ. [2], ISIR, Osaka Univ. [3], AIST [4].

16:45 In-depth characterisation of nanoscale solar cells systems using a combined reference-free grazing incidence X-ray fluorescence and X-ray absorption technique
P. Hönneke1, B. Dellefse2, J. Eilbracht1, Y. Kayser1, U. Mühle3, B. Pollakowski3 and B. Beckhoff1
1 Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany  2: Center for Nano-metrology, Heinrich-Heine-University Dusseldorf, 3: Fraunhofer IKTS, 17 rue des Martyrs, 38054 Grenoble, France

17:00 Capabilities of model free X-ray standing wave analysis of periodic multilayer structures
I. A. Makhotkin1, S.N. Yakunin2, C.P. Hendrikx1, A. Chandrasekaran1, A. Zameshin1, C. Zarkadas3, M. Gateshki3, R.W.E. van de Kruijs1, E. Reuvekamp3 and F. Bijkerk1
1 Institute of Technical Physics and Materials Science (MFA), Centre for Energy Research, HAS, 1525 Budapest, P.O. Box 49, Hungary. 2 Center for Nano-metrology, Korea Research Institute of Standards and Science, Yuseong, Daejeon 305-340, South Korea 3: Fraunhofer IKTS, 17 rue des Martyrs, 38054 Grenoble, France

17:15 Scanning-free GEXRF applied to the characterization of nanoscaled samples
Y. Kayser1, J. Salz2 and J. Szlachetko3
1 Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany  2: Institute of Chemistry-Ångström Laboratory, Uppsala University, 751 25 Uppsala, Sweden. 3: Institute of Physics, Jan Kochanowski University in Kielce, Świętokrzyska 15 St., 25-406 Kielce, Poland.

17:30 Nanofocused X-ray beam induced current in single nanowire devices
Vigale Dagyy1, Lefy Chayanun2, Magnus Borgrström1, Jesper Wallentin2*
1 Solid State Physics and NanoLund, Lund University, Sweden. 2 Synchrotron Radiation Research and NanoLund, Lund University, Sweden

17:45 Scan-free GEXRF measurements in the laboratory using a CCD
V. Szewdowski, J. Baumann, L. Bauer, S. Staedt, I. Mantouvalou, W. Malzer, B. Kanngießer
Technische Universität Berlin, Institute for Optics and Atomic Physics, Hardenbergstr. 36, 10623 Berlin, Germany
18:00 Imaging Mueller Matrix Ellipsometry for the Characterization of Microstructured Anisotropic Thin-Film Samples
Matthias Duwe, Sebastian Funk, Christian Röling, Peter H. Thiessen, Aday J. Molina-Mendoza, Andres Castellanos-Gomez  
Accurion GmbH, Stresemannstr. 30, 37079 Göttingen, Germany, University Autonoma de Madrid, Departamento de Fisica de la Materia Condensada, Campus Universitario de Cantoblanco, 28049 Madrid, Spain, IMDEA Nanoscience, C/ Faraday 9, Campus Universitario de Cantoblanco, 28049 Madrid, Spain

18:00 Nanoscale stress measurements through advanced Raman spectroscopy
Thomas Nayttinen, Janusz Bogdanowicz,1, Thomas Hantschel,1, Andreas Schulze,1, Padla Favia,1, Hugo Bender,2, Ingrid De Wolf,2, Wilfried Vandervorst,1,3  
imec vzw, Kapeldreef 75, B-3001 Leuven, Belgium 2 Dept. of Materials Engineering, KU Leuven, B-3001 Leuven, Belgium 3 Institut für Kern- en Stralingsfysica, KU Leuven, B-3001 Leuven, Belgium

18:00 Novel method of pitch uniformity measurements in diffraction gratings using Coherent Fourier Scatterometry
Petro Sonin and Omar El Gawhary  
VSL Dutch Metrology Institute, Thijsseweg 11, 2629 JA Delft, Netherlands
18:00 TXRF spectroscopy with waveguide-resonator specific design
VK. Egorov1, E.V. Egorov1, E.M. Lukianchenko2
1IMT RAS, Chemoglowska, Moscow District, Russia, 20000 Polus- S.Petersburg, Russia
S 10–P.3

18:00 Recent results of atomic fundamental parameter determinations
P. Hönicke, M. Kolbe, M. Müller, B. Pollakowski-Herrmann, R. Untermüller, B. Beckhoff
Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany
S 10–P.4

18:00 Degradation of PTB7 photovoltaic thin layers by radiation exposure investigated by photoelectron spectroscopy
E. Darlatt, B. Muhrs, R. Rösch, M. Kolbe, A. Gottwald, F. Roth, H. Hoppe, M. Richter
Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany
Physikalisch-Technische Bundesanstalt, Jena, Germany, Institute of Organic and Macromolecular Chemistry, Friedrich Schiller University Jena, Humboldtstr. 10, 07743 Jena, Germany, Institute of Organic and Macromolecular Chemistry, Friedrich Schiller University Jena, Humboldtstr. 10, 07743 Jena, Germany, Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany, Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany, Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany
S 10–P.5

18:00 Reference-free X-ray spectroscopy for 3D heterogeneous integration technology
Y. Kaysor1, P. Hönicke1, L. Houz2,3, H. Oppermann1,4, B. Pollakowski-Herrmann1,4, F. Reinhardt5, C. Streick1, I. de Wolf2,3 and B. Beckhoff1
1Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin, Germany
S 10–P.6

18:00 Crystal surface characterization
Konstantin Nikolaev1, Igor Makhotkin1, Sergey Yakunin 2, Robbert van der Kruis 1, Fred Bijkerk1
1 MESA+ Institute for Nanotechnology, University of Twente, Netherlands 2 NRC Kurchatov Institute, Moscow, Russia
S 10–P.13

18:00 AUGER ELECTRON SPECTROSCOPY (AES): A CHALLENGING WORKTOOL FOR THE SURFACE ANALYSIS OF NANOPARTIKKLES AND OTHER NOT INSULATING MA
T. Weingärtner, T. Bogreldt
Institute for Applied Materials, Karlsruhe Institute of Technology, Hermann-von Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany
S 10–P.14

18:00 Determination of the 3L fluorescence yield of Ga with low uncertainties for a reliable quantification in the soft X-ray range
R. Untermüller, C. Streick, B. Pollakowski-Herrmann, B. Beckhoff
Physikalisch-Technische Bundesanstalt, Abbestr. 2-12, 10587 Berlin, Germany
S 10–P.16

18:00 Development and reference-free characterization of 3D nanostructures as an enabler for new and reference-free X-ray spectroscopy depth profiling studies on the impact of antibiotics in bacteria films
C. Seim1, C. Streick1, A. Hornemann1, B. Kästner (1), S. Bahr (3), P. Dietrich(3), A. Thissen(3), J.-L. Vorg(2) and B. Beckhoff(1)
1 Physikalisch-Technische Bundesanstalt (PTB) I Abbestr. 2-12 I 10587 Berlin I Germany 2: National Physical Laboratory | Hampton Road | Teddington | TW11 0LW | UK 3: SPECS Surface Nano Analysis GmbH | Voltastrasse 5 I 31335 I Frankfurt | Germany
S 10–P.17

18:00 In situ sample environment for SAXS, WAXS and XAS investigation under harsh synthesis conditions
Eike Gericke (a, b), Robert Wendt (a, b), Armin Hoeßl (b), Dirk Wallachter (b), Dragomir Tabakovic (c), Simone Raoux (b), Klaus Rademann (a)
(a) Department of Chemistry, Humboldt-Universität zu Berlin, Berlin, Germany, (b) Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany, (c) Institute of Physical Chemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria
S 10–P.19

18:00 EMPER G-AIMDD: Contamination analysis on medical device by combined X-ray method and ambient spectrometric techniques
B. Pollakowski, A. Hornemann, A. M. Giovannozzi, F. Green, P. Gunnig, A. Rossi, Ch. Stein, R. Steven, B. Tyler, B. Beckhoff
Physikalisch-Technische Bundesanstalt, Berlin, Germany. National Physical Laboratory, Teddington, United Kingdom. Westfälische Wilhelms-Universität Münster, Münster, Germany, Smith & Nephew Research Centre, York, United Kingdom, NIMR, Turin, Italy
S 10–P.20

18:00 Development and reference-free characterization of 3D nanostructures as an enabling technology for analytical techniques
M. Diamantini, F. Ferrarese Lutti1, N. De Leo1, L. Boarino1, P. Hoenicke2, B. Beckhoff2, T. Bergfeldt*1, E. Collaert, Naoto Horiguchi, Matthew Wormington, Paul Ryan, Wilfried Vandervorst, Matty Coen, Inga Schütze, Andreas Schulze, Roger Loo, Liesbeth Witters, Hans Mertens, Andrzej Gawlik, Nadine Collaert, Naoto Horiguchi, Matthew Wormington, Paul Ryan, Wilfried Vandervorst, Matty Coen
1Institute for Applied Materials, Karlsruhe Institute of Technology, Hermann-von Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany
S 10–P.21

18:00 Strain and compositional analysis of (Si)Ge Fin Structures Using HRXRD
R. S. Seim, R. Steven, B. Tyler, B. Beckhoff
Physikalisch-Technische Bundesanstalt, Berlin, Germany. National Physical Laboratory, Teddington, United Kingdom. Westfälische Wilhelms-Universität Münster, Münster, Germany
S 10–P.22

18:00 SPR techniques: a novel setup to combine surface plasmon resonance and X-ray absorption spectroscopy measurements
A. Serrano1,2, O. Rodríguez de la Fuente3,4, V. Collado1,2, J. Rubio-Zuazo1,2, C. Montor5, G. R. Castro1,2 and M. A. García3,4
S 10–P.10

18:00 Graphics card based numerical tools for X-ray Standing Wave calculations
P. Klapetek1, T. Krapf2, R. Slesinger2, Philipp Hoenicke3, Petr Klapetek,  Radek Slesinger, Philipp Hoenicke
1Physikalisch-Technische Bundesanstalt, X-Ray Spectrometry, Abbestr. 2-12, 10587 Berlin, Germany
S 10–P.11

18:00 S10-P.13

18:00 SPR-XAS setup: a novel setup to combine surface plasmon resonance and X-ray absorption spectroscopy measurements
A. Serrano1,2, O. Rodríguez de la Fuente3,4, V. Collado1,2, J. Rubio-Zuazo1,2, C. Montor5, G. R. Castro1,2 and M. A. García3,4
S 10–P.11

18:00 CASTOR, a new tool for combined XRR-GIXRF analysis at SOLEIL
Andreas Schulze1, Annalisa Nocito1, Marie-Christine Leplé1, Walter-Wikener-Bastia-Pessoa2, Hélène Rotella2, Emmanuel Nolot2, Jean-Michel Andrie2, Karine Le Guen3, Philippe Jonnard3, Diane Eichert1
1Centre d'Etudes et de Recherches des Systèmes d'Ensemble, 2Centre d'Etudes et de Recherches des Systèmes d'Ensemble, 3Centre d'Etudes et de Recherches des Systèmes d'Ensemble
S 10–P.12

18:00 Strain and compositional analysis of (Si)Ge Fin Structures Using HRXRD
R. S. Seim, R. Steven, B. Tyler, B. Beckhoff
Physikalisch-Technische Bundesanstalt, Berlin, Germany. National Physical Laboratory, Teddington, United Kingdom. Westfälische Wilhelms-Universität Münster, Münster, Germany
S 10–P.22

18:00 Strain and compositional analysis of (Si)Ge Fin Structures Using HRXRD
R. S. Seim, R. Steven, B. Tyler, B. Beckhoff
Physikalisch-Technische Bundesanstalt, Berlin, Germany. National Physical Laboratory, Teddington, United Kingdom. Westfälische Wilhelms-Universität Münster, Münster, Germany
S 10–P.22

18:00 Strain and compositional analysis of (Si)Ge Fin Structures Using HRXRD
R. S. Seim, R. Steven, B. Tyler, B. Beckhoff
Physikalisch-Technische Bundesanstalt, Berlin, Germany. National Physical Laboratory, Teddington, United Kingdom. Westfälische Wilhelms-Universität Münster, Münster, Germany
S 10–P.22
18:00 In-situ Small-angle X-ray Scattering and UV-vis spectroscopy Investigations of the Nucleation and Growth of Iron Oxide Nanoparticles by Microwave-Assisted Solvothermal Synthesis
Robert Wendt [1], Eike Gericke [1], Dragomir Tatchev [2], Armin Hoell [3], Markus Wollgarten [3], Simone Raoux [3], Klaus Rademann [1]  

08:30 Optical properties of nanostructured anisotropic surfaces by spectroscopic Mueller Matrix Ellipsometry and appropriate modeling
Morten Kildemo  
Department of Physics, Norwegian University of Science and Technology, 7491 Trondheim, Norway

09:00 Through-focus scanning optical microscopy as a 3D shape metrology tool for nanometer to micrometer scale targets
Ravi Kiran Attota  
National Institute of Standards and Technology (NIST)  Engineering Physics Division Gaithersburg, MD 20899-8212, USA

09:15 Ellipsometric porosimetry on TiO2 layers with pores of definide size and number
Andreas Hertwig, Dana-Maria Rosu, Erik Ortel, Vasilie-Dan Hodoroba, Ralph Kraehnert  

09:30 NON-DESTRUCTIVE DETECTION OF BURIED LIQUID/SOLID CRYSTALLOGRAPHIC PHASES COEXISTANCE IN CORE/SHELL NANOPOERICLES
Maria M. Giangregorio1, Alexandra Suvorova2, April Brown3, Kurt Hingerl4, Josef Humilce5, Maria Losurdo1  
1. Institute of Nanotechnology, CNR-NANOTEC, Dept. Chemistry, University of Bari, Italy, 2. Centre for Microscopy, Characterisation and Analysis, The University of Western Australia, Crawley, Australia, 3. Department of Electrical and Computer Engineering, Duke University, Durham, North Carolina, United States, 4. Center for Surface- and Nanoscaleics, Johannes Kepler University Linz, Linz, Austria, 5. Masaryk University, CEITEC, Brno, Czech Republic

09:45 High resolution microsphere-assisted interference microscopy for 3D characterization of nanomaterials
Audrey LEONG-HOI, Stephane PERRIN, Sylvain LECLER, Pierre PFEIFFER, Paul MONTGOMERY  
Icube, University of Strasbourg - CNRS, 300 Boulevard Sébastien Brand, FR-67412 ILLIKIRCH

10:00 Coffee Break

Applications of novel x-ray, AFM and optical methods : Thomas Schröder and Andreas Hertwig

10:30 Probing the local and electronic structure of nanomaterials at the solid-liquid interface
Benedikt Lassalle  
SOLEIL, Synchrotron, L'Orme des Merisiers, 91191, Gif-sur-Yvette, France.

11:00 Combined ellipsometric and X-ray spectrometric investigation of fibrinogen protein layers on different substrates
B. Kalasi1,3, B. Polakowski2, A. Nutsch2, C. Sreekc2, J. Nador1, M. Fried1, B. Beckhoff2, P. Petrik1  
1 Institute of Technical Physics and Materials Science (MFA), Centre for Energy Research of the Hungarian Academy of Sciences, Konkoly Thege Str. 29-33, 1121 Budapest, Hungary 2 Physikalisch-Technische Bundesanstalt (PTB), Abbe Strasse 2-12, 10587 Berlin, Germany 3 Doctoral School of Physics, Faculty of Science, University of Pécs, 7624 Pécs, Ifjúság utja 6, Hungary

11:15 A compact and calibratable von Hamos X-Ray Spectrometer based on two full-cylinder HAPG mosaic crystals for high-resolution XES
Ina Hoffelder, Rolf Fliegauf, Matthias Müller, Malte Wansleben, Jan Weser, Burkhard Beckhoff  
Physikalisch-Technische Bundesanstalt (PTB), Abbestr. 2-12, 10587 Berlin
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| 11:30  | **EMPR 3D Stack - Update on Metrology for manufacturing 3D stacked integrated circuits**         | Djamel Allal  
Laboratoire National de Métrologie et d’Essais (LNEM), 29 avenue Roger Henniquin, 78197 Trappes Cedex, France |
| 11:45  | **EMPR - 3D MetChemIT: Quantification of the Layer Thickness of Thin Organic Layers by SIMS**     | Rasmus Havelund, Martin P. Seah, Ian S. Gilmore  
National Physical Laboratory, Hampton Road, Teddington, United Kingdom |
| 12:00  | Lunch                                                                                             |                                                                           |

**Highlights for European Metrology Projects (EMRP/EMPIR) I:**

<table>
<thead>
<tr>
<th>Time</th>
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| 11:30  | **EMPR ThinErgy: Light-matter interplay for applications in optical metrology at the nanoscale**  | Omar El Gawhary, Petro Sonin, Arthur van de Nes  
1 VSL, National Metrology Institute of the Netherlands, 2 Optics Group, Delf University of Technology, The Netherlands |
| 11:45  | **EMPR ThinErgy: Optical characterisation of ZnO and doped ZnO thin films**                       | Dana-Maria Rosu, Andreas Hertwig, Uwe Beck, Helene Rotella, Emmanuel Nolot  
1. BAM, Federal Institute for Materials Research and Testing, Unter den Eichen 87, 12200 Berlin, Germany  
2. CEA-LETI, 17 rue des Martyrs, 38054 Grenoble, France |
**Danish Fundamental Metrology, Kgs. Lyngby, DK-2800, Denmark**  
**Bundesanstalt für Materialforschung und -prüfung, Unter den Eichen 44 7 46, 12203 Berlin, Germany |
| 12:45  | **EMPR SolCell: Calibrated GHz electrical measurements at the nanoscale for semiconducting materials including multi-junction GaAs**  | Ferry Kienberger  
Keysight Technologies Austria GmbH, Keysight Labs Linz |

**Highlights for European Metrology Projects (EMRP/EMPIR) II:**

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<th>Time</th>
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<tr>
<td>11:30</td>
<td><strong>EMPR ThinErgy Workshop on Optical Metrology:</strong></td>
<td>Farshid Manoocheri</td>
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</table>
| 14:00  | **EMPR ThinErgy: Light-matter interplay for applications in optical metrology at the nanoscale**  | Omar El Gawhary, Petro Sonin, Arthur van de Nes  
1 VSL, National Metrology Institute of the Netherlands, 2 Optics Group, Delf University of Technology, The Netherlands |
| 14:15  | **EMPR ThinErgy: Optical characterisation of ZnO and doped ZnO thin films**                       | Dana-Maria Rosu, Andreas Hertwig, Uwe Beck, Helene Rotella, Emmanuel Nolot  
1. BAM, Federal Institute for Materials Research and Testing, Unter den Eichen 87, 12200 Berlin, Germany  
2. CEA-LETI, 17 rue des Martyrs, 38054 Grenoble, France |
**Danish Fundamental Metrology, Kgs. Lyngby, DK-2800, Denmark**  
**Bundesanstalt für Materialforschung und -prüfung, Unter den Eichen 44 7 46, 12203 Berlin, Germany |
| 14:45  | **EMPR SolCell: Calibrated GHz electrical measurements at the nanoscale for semiconducting materials including multi-junction GaAs**  | Ferry Kienberger  
Keysight Technologies Austria GmbH, Keysight Labs Linz |
| 15:00  | **EMPR SolCell-Scanning Microwave Microscopy applied to semiconducting GaAs structures**           | Arne Buchler(1), Johannes Hoffmann(1), Alexandre Delvallee(2), Enrico Brinco(3),  
Dimitri Haplik(4.5), Christophe (4.5), Kevin Lounard(1,6), Guilhem Almuneau(6),  
Francois Piquemal(2), Markus Zeiler(1, Ferry Kienberger(3)  
1) Federal Institute of Metrology, METAS, Lindenhof 50, 3003 Bern-Wabern, Switzerland  
2) LNE, 29 avenue Roger Henniquin, F-78197, Trappes, France  
3) Keysight Technologies Austria, Keysight Labs, Gluckerstrasse 40, 4020 Linz, Austria  
4) Univ. Grenoble Alpes, 38000 Grenoble, France  
5) CEA-LETI, MINATEC Campus, 38054 Grenoble, France  
6) LAAS-CNRS, Université de Toulouse, CNRS, UPS, Toulouse, France |
Physikalisch-Technische Bundesanstalt, AG 4.14 «Solar Cells»  
Bundesallee 100 38116 Braunschweig Germany |

**Other Sessions:**

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| 16:00  | **Accuracy and Traceability of complex properties determined by Spectroscopic Ellipsometry**       | Andreas Hertwig, Dana-M. Rosu, Uwe Beck  
Bundesanstalt für Materialforschung und -prüfung, Unter den Eichen 87, 12200 Berlin, Germany |
| 16:30  | **Tip-enhanced Photoluminescence and Raman studies on mono- and bi-layer 2D Materials**            | Marc Chaingneaux, Yoshiko Okuno, Andrei Kravev, Filippo Fabrizi  
1 HORBIA, Scientist, passage Jolin Yvon, Palaiseau, France  
2 SIST-NT Inc., Bel Marin Keys Blvd, Novato, USA  
3 IMEM-CNR Institute, Parco Area delle Scienze, Italy |
| 17:00  | **Nonmetric characterization by optical techniques is applied on small structures required by advanced packaging in semiconductor**  | Dario Allata, Frederic Perrot, Stephane Godry, Philippe Gaspard  
UnitySC 611 rue Aristide Berges ZA Pre Millet F-38330 Montbonnot Saint Martin France |

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| 17:30  | **Optical Characterization of Thin Films**                                                        | Farshid Manoocheri, Dana Maria Rosu, Andreas Hertwig, Emmanuel Nolot, Helene Rotella and Erkki Ikonen  
Farshid Manoocher, Erkki Ikonen, Metrology Research Institute, Aalto University, Espoo, Finland  
Dana Maria Rosu, Andreas Hertwig, Federal Institute for Materials Research and Testing (BAM), Berlin, Germany  
Emmanuel Nolot, Helene Rotella, Univ. Grenoble Alpes, 38000 Grenoble (CEA-LETI), France  
Erkki Ikonen, MIKES Metrology, VTT Technical Research Centre of Finland Ltd, Espoo, Finland |
| 18:00  | **Quantitative chirality assessment of a reference material of single-walled carbon nanotubes using UV-VIS-NIR absorption spectros**  | Ying Tian, Ilyia V. Astartchin, Lauri J. I. Kauppinen, Kimmo Mustonen, Albert G. Nasibulin  
1 Department of Physics, Dalian Maritime University, Dalian, Liaoning 116027, China  
2 NanoMaterials Group, Department of Applied Physics, Aalto University School of Science, Puumiehenkuja 2, 00076 AALTO, Finland  
3 Skolkovo Institute of Science and Technology 100 Novaya st., Skolkovo, Moscow, 143025, Russia |

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Bundesanstalt für Materialforschung und -prüfung, Unter den Eichen 87, 12200 Berlin, Germany |
| 16:00  | **Tip-enhanced Photoluminescence and Raman studies on mono- and bi-layer 2D Materials**            | Marc Chaingneaux, Yoshiko Okuno, Andrei Kravev, Filippo Fabrizi  
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3 IMEM-CNR Institute, Parco Area delle Scienze, Italy |
| 17:00  | **Nonmetric characterization by optical techniques is applied on small structures required by advanced packaging in semiconductor**  | Dario Allata, Frederic Perrot, Stephane Godry, Philippe Gaspard  
UnitySC 611 rue Aristide Berges ZA Pre Millet F-38330 Montbonnot Saint Martin France |
SYMPOSIUM T

Synthesis, processing and characterization of nanoscale multi functional oxide films VI

Symposium Organizers:

Magdalena NISTOR, National Institute for Lasers, Bucharest-Magurele, Romania

Nadhira BENSAADA LAIDANI, Fondazione Bruno Kessler, Trento, Italy

Anke WEIDENKAFF, University of Stuttgart, Germany

Nathalie JEDRECY, UPMC-Sorbonne Universités – INSP, Paris, France

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Growth and synthesis processes I : M.Nistor, N.Laidani, A. Weidenkaff, N. Jedrecy

09:00 Epitaxial growth of nanostructured functional oxides on silicon by solution chemistry
José M. Vila-Fungueirirõ1, A. Gómez2, R. Moalda3, G. Saint-Girons3, C. Magné4, J. Gáquez2, R. Bachet3, M. Glich2, F. Rivaudalia5, A. Carretero-Genevier1,3
1 Institut d’Electronic et des Systèmes (IES) UMR 5214, Bâtiment 5, 860 rue Saint Priest, 34090 Montpellier, France, 2 Institut de Ciencia de Materials de Barcelona (ICMAB), Consell Superior de Investigaciones Científicas (CSIC), Campus UAB 08193 Bellaterra, Catalonia, Spain, 3 Institut des Nanotechnologies de Lyon (INL) UMR 5270, 36 avenue Guy de Collongue, 69134 Ecully, France, 4 Department of Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain, 5 Centro de Investigación en Química Bólicos e Materiales Moleculares (CIBICUS) and Departamento de Química-Física, Universidad de Santiago de Compostela, 15782 Santiago de Compostela, Galicia, Spain

09:15 Dopant Size Effects on Interfacial Superconductivity in Lanthanum Cuprate Dioxide Nanocrystal Films
Clayton J Dahlman, Gabriel LeBlanc, Amy Bergerud, Delia J Milliron
The University of Texas at Austin MoKetta Department of Chemical Engineering

09:30 Electrochemically Induced Insulator-Metal-Insulator Transformations of Vanadium Dioxide Nanocrystalline Films
Clayton J Dahlman, Gabriel LeBlanc, Amy Bergerud, Delia J Milliron

09:45 Strain and composition effects in the Metal-Insulator transition of VO2 films epitaxially grown on (001) TiO2
Virginia Thery1, Alexandre Boulle1, Aurelian CRUNTEANU2, Jean-Christophe ORLANGE3, Annie BESSAOUDDOU1
1 IPRCTS, CNRS UMR 7315, Université de Limoges, Centre Européen de la Céramique, 12 rue Atlantis, 87068 Limoges Cedex, France, 2 XLIM, UMR 7252 CNRS, Université de Limoges, 123 avenue Albert Thomas, 87060 Limoges Cedex, France

10:00 Coffee break

Characterisation of thin films : N. Laidani

10:30 Positron annihilation spectroscopy techniques to characterize open volumes in oxide thin films
Roberto S. Brusa
University of Trento, Department of Physics and INFN-TIFPA Via Sommarive 14, 38123 Povo, Trento, Italy

11:00 Localization defect states in HfO2 and Al2O3 films prepared by atomic layer deposition
Karsten Henkel, Malgorzata Kot, and Dieter Schmeller
BTU Cottbus-Senftenberg, Applied Physics and Sensors, K.-Wachsmann-Allee 1, 03046 Cottbus, Germany

11:15 Electronic and polaronic physics of oxide interfaces explored by soft-X-ray ARPES
V.N. Strocov (1), A. Husanu (1), C. Cancellieri (2), L.L. Lev (1,3), A.S. Mishchenko (4)
(1) Swiss Light Source, Paul Scherrer Institute, Villigen-PSI, Switzerland, (2) EMPA, Duebendorf, Switzerland, (3) National Research Centre «Kurchatov Institute», Moscow, Russia, (4) RIKEN Center for Emergent Matter Science, Saitama, Japan

11:30 Field-dependent electronic properties of a multilayer interfacial obtained during In-operando angle resolved photoelectron spectrc
M. A. Husanu1, D. G. Popescu1, L. Tanase1, C. M. Teodorescu1, L. Hirbl1, C. Chirila1, L. Pintilie1, D. Sostina1 and V. N. Strocov2
1 National Institute of Material Physics, Magurele, 077125, Romania 2 Paul Scherrer Institut, 5235 Villigen, Switzerland

11:45 Size-dependent Luminescence in HfO2 Nanocrystals for Rare-Earth-free White Light Emitting Phosphors
Alessandro Lauria1, Irene Vila1, Anna Vedda1, Markus Niederberger1,2
1 Department of Materials Science, University of Milano-Bicocca, Via R. Cozzi 55, 20125 Milan, Italy, 2 Laboratory for Multifunctional Materials, Department of Materials, ETH Zürich, Vladimir-Pregel-Weg 5, 8093 Zürich, Switzerland

12:00 Lunch

Monday 22 May 2017
14:00 Lattice Engineering with Molecularly Thin 2D Oxide Nanosheets
Takayoshi Sasaki
International Center for Materials Nanarchitectonics, National Institute for Materials Science, 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan.

14:15 Engineering One-Dimensional Quantum Stripes from Layered Complex-Oxides
Ambrose Seo
Department of Physics and Astronomy, University of Kentucky

14:45 Growth and deposition of 2D metal oxides using room temperature liquid metals
Torben Daeneke Ali Zavabeti Kourosh Kalantar-Zadeh
RMIT University School of Engineering 124 LaTrobe Street 3001 Melbourne Australia

15:00 Low thermal conductivity of monolayer ZnO and the anomalous temperature dependence
Huimin Wang, Guangzhao Qin, Guojian Li, Qiang Wang, Ming Hu
Huimin Wang, Key Laboratory of Electromagnetic Processing of Materials (Ministry of Education), Northeastern University, 110819 Shenyang, China and Institute of Material Engineering, Division of Material Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany, Guangzhao Qin, Institute of Mineral Engineering, Division of Material Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany, Guojian Li, Key Laboratory of Electromagnetic Processing of Materials (Ministry of Education), Northeastern University, 110819 Shenyang, China, Qiang Wang, Key Laboratory of Electromagnetic Processing of Materials (Ministry of Education), Northeastern University, 110819 Shenyang, China, Ming Hu, Institute of Mineral Engineering, Division of Material Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52064 Aachen, Germany and Aachen Institute of Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany

15:15 Room temperature spin transport in LaAlO3/SrTiO3 2DEGs

15:30 Spin-dependent breathing in flexible hybrid materials.
Danny E.P. Vanpoucke
UHasselt, Institute for Materials Research (IMO-IMOMEC), Agoralaan, 3590 Diepenbeek, Belgium, IMOMEC, IMEC vzw, 3590 Diepenbeek, Belgium

15:45 Coffee break

16:15 Plenary Session

17:00 Interfaces and tunnel junctions : E.Benckiser

17:30 Tuning up or down the critical thickness in LaAIO3/SrTiO3 through in situ deposition of metal overlayers
D.C. Vaz1, E. Lesné1-2, H. Naganuma1-3, E. Jacquet1, J. Santamaría-4, A. Barthélémy1, M. Bibes1

17:45 Revisiting the field effect in a SrRuO3 electrode with BaTiO3 or PbTiO3 as ferroelectric gate
Amina Aidoud, Thomas Maroutian, Florence Linez, Sylvia Matzen, Guillaume Agnus, Koulider Driss Khodja, Pascal Aubert, Philippe Lecoeur

18:00 Peptide thin films on Si for pyroelectric applications
C. Chirila1, G.Le Rhun2 M.Botea1, L. Hib1, A. Boni1, A.luga1, I. Pintilie1, L. Pintilie1

18:15 Disentangling tunneling and non-tunneling contributions on electroresistance in BTO-based ferroelectric nanometric junctions
M. Gian1, I. Fina, F. Sánchez, J. Fontcuberta
Institut de Ciencia de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193, Bellaterra, Catalunya.

18:30 Visiting the field effect in a SrRuO3 electrode with BaTiO3 or PbTiO3 as ferroelectric gate
Amina Aidoud, Thomas Maroutian, Florence Linez, Sylvia Matzen, Guillaume Agnus, Koulider Driss Khodja, Pascal Aubert, Philippe Lecoeur
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67000 Strasbourg, France

19:00 Coffee break

19:30 Positive TMR induced by an oxygen vacancy gradient in MgO tunnel barriers
Kouider Driss Khodja, Pascal Aubert, Philippe Lecoeur

20:00 Tuning up or down the critical thickness in LaAIO3/SrTiO3 through in situ deposition of metal overlayers
D.C. Vaz1, E. Lesné1-2, H. Naganuma1-3, E. Jacquet1, J. Santamaría-4, A. Barthélémy1, M. Bibes1

20:30 Revisiting the field effect in a SrRuO3 electrode with BaTiO3 or PbTiO3 as ferroelectric gate
Amina Aidoud, Thomas Maroutian, Florence Linez, Sylvia Matzen, Guillaume Agnus, Koulider Driss Khodja, Pascal Aubert, Philippe Lecoeur
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67000 Strasbourg, France

21:00 Lunch
Ferroelectrics, multiferroics I : N.Jedrcy

14:00 Multiferroics thin films - structure-properties relations under strain
Pierre-Eynemic Janolin
Advanced Ferrocs Group, SPMS lab, CNRS-CentraleSupelec

14:30 Room-temperature ferroelectricity in strained SrTiO3 ultrathin films: Infrared and ab initio study
Wei-wei Peng 1, Robert Tétoil2, Gang Niú3, Emile Amzallag2, Bertrand Vilquin4, Jean-Blaise Blubacher1 and Pascale Roy5
1 Synchrotron SOLEIL, L’Orme des Merisiers, Saint-Aubin, BP 48, F-91129 Gif-sur-Yvette Cedex, France
2 CNRS-Université Paris-Sud, ICMP(S)2P2M UMR 8182, Bât 410, F-91405 Orsay Cedex, France
3 Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi’an Jiaotong University, X’ian 710049, China
4 Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon (INL), Université de Lyon, CNRS-UMR 5270, 36 Avenue Guy de Collongue, F-69134 Ecully, France

14:45 Electric Polarity-Dependent Modification of the FeBaTiO3 Interface
Marishka Bisang1, Sebastien Couet1, Vera Lazarenko, Hiwa Madarresi, Rudolf Rüffer, Jean-Pierre Locquet, Margriet J. Van Bael, André Vandamme, Kristiaan Temst
Instituut voor Kern-en Stralingsfysica, KU Leuven, Belgium
European Synchrotron Radiation Facility (ESRF), Grenoble, France, Laboratoire pour Vaste-Stoffysika et Magnetisme, KU Leuven, Belgium

15:00 Magnetic and magnetoelectric properties of thin composite system grown by PLD
Jong-Woo Kim1,Jungho Ryu2, Cheol-Wong Park3, Jong-Jin Choi, Byung-Dong Hahn
Functional Ceramics Department, Korea Institute of Materials Science, Gwangju, Korea

15:15 Electrically driven magnetic memory effect in Antiferromagnetic-Ferromagnetic mixed phase system
Fira 1, A. Quintana 2, F. Sanchez 1, J. Sort 3, X. Marti 4, J. Fontcuberta 5
1 Synchrotron SOLEIL, L’Orme des Merisiers, Saint-Aubin - BP 48, F-91192 Gif-sur-Yvette Cedex, France
2 CNRS, Université Paris-Sud, Laboratoire de Physique des Solides, 35 Av. des Martyrs, 91405 Orsay Cedex, France
3 ICREA, 08010 Barcelona, Spain, 4 Institute of Physics ASCR, v.v.i., Cukrovarnická 10, 162 53 Prague 6, Czech Republic

15:30 Coffee break

Ferroelectrics, multiferroics II : P.Jeanolin

16:00 Study of the conduction mechanism through a Pb(Zr,Ti)O3 thin film
Qiang Li1, Simon MARTIN2, Nicolas BABOUX2, Brice GAUTIER2, Bertrand VILQUIN1
1 Université de Lyon, Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR5270, 36 avenue Guy de Collongue, 69134 Ecully, France
2 CNRS, Université Paris-Sud, Laboratoire de Physique des Solides, 35 Av. des Martyrs, 91405 Orsay Cedex, France

16:15 Chemistry-mediated magneto-electric coupling in artificial multiferroics
M. Roul1, A. Staceus2, T. Aghavnik3, S. Staceus2, R. Belkhou1, F. Maccheroni2, M. Magnan2, J.-B. Moussy4 (b) and A. Barbero2 (a)
1 Synchrotron SOLEIL, L’Orme des Merisiers, Saint-Aubin - BP 48, F-91192 Gif-sur-Yvette Cedex, France.
2 (b) Service de Physique de l’Etat Condensé, CEA, CNRS, Université Paris Saclay, CEA Saclay, 91191 Gif-sur-Yvette Cedex, France.
3 (c) Diamond Light Source, Harwell Campus, Didcot, OX11 0OE Oxfordshire, United Kingdom

16:30 Amorphous-Microcrystalline Transition of Lead-Free NKN Films Monitored by XPS
P. Schwarz 1, M. Leal1,1*, R. Ayouchi1,1*, P. Sanguin2, U. Mardolcar3, L. Santos2, N. Franco3, E. Alves3, A. Barbi6, A. Barbier5 (b)
1 Departamento de Fisica de la Materia Condensada and Centro Mixto de Nanociencia, ICMMO (SP2M) UPM-CSIC. E-28040 Madrid, Spain.
2 CIC nanoGUNE, Avda. de la Universidad, 4, 20018 Donostia-San Sebastian (Spain)
3 ITN, Instituto Tecnológico e Nuclear, P-2686-953 Almada, Portugal;
4 LPM, Univ. de Liège, Belgium;
5 CNRS, Laboratoire de Physique des Solides, 35 Av. des Martyrs, 91405 Orsay Cedex, France

16:45 Effects of strain and substrate orientation on the structural and vibrational properties of (BiFeO3)/(LaFeO3) superlattices
J.Belha1, B.Carcan1, H. Bouyandif1, M. El Marassi1, F. Le Marrec1, A. Levrard-Charreyron1, J. Brückweg2, P. Roy3
1 Laboratoire de Physique des Matériaux et Interfaces, UMR 7504, CNRS, Université de Lyon, 69621 Villeurbanne Cedex, France
2 ESRF, 71 avenue Frédéric Joliot Curie, 38042 Grenoble, France
3 Ecole Centrale de Lyon, Institut des Nanotechnologies de Lyon, CNRS UMR 5270, 37 Avenue Guy de Collongue, F-69134 Ecully, France

17:00 Fabrication and characterization of nanoprinted organic-inorganic multiferroic nanocomposites
Pedro Sá, Bernard Nysten, Luc Piraux and Alain M. Jonas
Institute of Condensed Matter and Nanoscience, Bio & Soft Matter Division, Université catholique de Louvain, Louvain-La-Neuve, 1348 Belgium

Poster Session II : N.Jedrcy

17:15 The growth and electrical transport properties of the functional oxide thin film on GaAs semiconductor
Huang Wen
State Key Laboratory of Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu 610054D P. China

17:30 Diode performance of the Pt/AiO2/SrTiO3 Structure with two-dimensional electron gas and its time-dependent resistance evolution
Taehwan Moon, Jae Jun Jung, Yu Jin Kim, Min Hyuk Park, Han Joon Kim, Keom Do Kim, Young Hwan Lee, Seung Dam Hyun, Hyeon Woo Park, Sang Woon Lee, Cheol Seong Hwang
Seoul National University, Aju University

17:45 Facile fabrication of perovskite oxide thin films and nanostructures via an electrodeposition-based route for SOFC applications
Jong-Won Lee, Beom-Kyeong Lim, Seung-Bok Lee, Tak-Hyoung Lim, Seok-Joo Park, Jong-Eun Hong, Rak-Hyun Song
New and Renewable Energy Research Division, Korea Institute of Energy Research, 152 Gajeong-ro, Yuseong-gu, Daejeon 41429, Korea

17:55 Investigation of the Structure and Electrical Conductivity of Chrome Oxide Thin Films
Sergey Karabanov
Ryazan State Radio Engineering University

18:15 Electrochemical Synthesis of Nanoscale Tungsten Oxide
Sergey Karabanov, Dmitry Suvorov, Yulia Stryuchkova, Gennady Gololobov
Dmitry Tarabrin, Vladislav Loginov, Engeny Slikvin
Ryazan State Radio Engineering University

18:30 Effects of interface number on the temperature and frequency dependency of Pb(Zr0.52Ti0.48)O3/Ba(Mg1/3Ta2/3)O3 thin films
Zhi Wu, Jing Zhou, Wen Chen, Jie Shen
Linse Laboratory of Advanced Technology for Materials Synthesis and Processing, School of Materials Science and Engineering, Wuhan University of Technology, Wuhan 430070, P. R. China

18:45 Atomic Layer-Deposited (HZO41-x(SIO2)x Thin Films for Gate Stack Applications
Pyung Choi, Byungdeug Choi
College of Informatics and Communication Engineering, Sungkyunkwan University

18:55 Effect of annealing atmosphere on photovoltaic effect of BiFeO3
P.P Biswas, P. Murugavel
P.P Biswas, P. Murugavel - Department of Physics Indian Institute of Technology Madras

19:15 Potentials offered by the Resonant X-scattering to the crystallographic study of oxide thin films
Christophe Lefèvre, Eloié Martin, Stéphane Grenier, François Roulland, Nils Blanc, Nathalie Boudet, Vincent Favre-Nicolin, Geneviève Pourroy, Nathalie Vian
1 Centre National de la Recherche Scientifique (CNRS), CNRS UMR 7504, UMR 7124, Institut d’Electronique des Matériaux et des Nanotechnologies (IEMN), 38042, France
2 Centre National de la Recherche Scientifique (CNRS), CNRS UMR 7504, UMR 7124, Institut d’Electronique des Matériaux et des Nanotechnologies (IEMN), 38042, France
3 Université de Strasbourg, 7 Rue du Rhône, 67084 Strasbourg Cedex, France
4 Université de Strasbourg, 7 Rue du Rhône, 67084 Strasbourg Cedex, France
5 Université de Strasbourg, 7 Rue du Rhône, 67084 Strasbourg Cedex, France
6 Université de Strasbourg, 7 Rue du Rhône, 67084 Strasbourg Cedex, France

19:30 Tentative review of new HZIO4 thin films for GaAs semiconductors
Hsing-Ming Huang
State Key Laboratory of Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu 610054D P. China
17:15 Novel sol-gel synthesis to fabricate epsilon-Fe₂O₃ nanoparticles embedded in SiO₂ thin films. Magnetic and structural properties
J. López-Sánchez,1,2 A. Serrano,3,4 A. Muñoz-Noval,5 E. Salas-Coleira,3,4 M. Abuin,6,7 A. del Campo,7 M. Cabrera,1,8 M. Varela,1,8 J. de la Figuera,9 J. F. Marzo,9 J. Rubí,10,11 T. Rojas-Cuesta,3,12 A. G. R. Castro,3,12 G. Rodríguez de la Fuente,1,2 N. Carmen,2
1 Departamento de Física de Materiales, Universidad Complutense de Madrid (UCM), 28040 Madrid, Spain.
2 Unidad Asociada IQFR-CSIC, UCM, 28040 Madrid, Spain.
3 French CNRS, Spline, The European Synchrotron (ESRF), 38000 Grenoble, France.
4 Instituto de Ciencia de Materiales, Consejo Superior de Investigaciones Científicas (ICMM-CSIC), Madrid, Spain.
5 Department of Applied Chemistry, Hiroshima University, Hiroshima, 739-8527, Japan.
6 Deutsches Elektronen Synchrotron DESY, Notkestr. 85, 22607 Hamburg, Germany.
7 Instituto de Cerámica y Vidrio, Consejo Superior de Investigaciones Científicas (ICV-CSIC), Madrid, Spain.
8 Instituto Pluridisciplinar, Universidad Complutense de Madrid (UCM), 28040 Madrid, Spain.
9 Instituto de Química-Física “Rocasolano”, Consejo Superior de Investigaciones Científicas, (IQFR-CSIC), 28006 Madrid.

17:15 Complex oxide heterostructures based on thin films for SOFCs
Nicoliea Ciocarla1, George Epurescu2, Rovena Pascu2, Angela Vlad2, Petre Osiceanu3, Simona Somacescu3, Bogdana Mitu2
1 University of Craiova, Department of Chemistry, 13 A. I. Cuza Street, 200585, Craiova, Romania.
2 National Institute for Lasers, Plasma and Radiation Physics, 409 Atomiștoot Street, PO Box MG-36, 077125 Magurele, Bucharest, Romania.
3 ‘Ilie Murgulescu’ Institute of Physical Chemistry, Romanian Academy, Splaiul Independentei 102, 060021, Bucharest, Romania.

17:15 Interrogating ferromagnetic alloy/paramagnetic insulator interfaces for electron spin transport
M. I. Rusu1,2, C. R. Iordanscu a, L. O. Scoicaru a, M. Elisa a, S. Savasta a, L. Tortet b, A. Tonetto c, R. Notonier c, M. R. Koblischka, X. Zeng, T. Karwol, A. Koblischka-Veneva, T. Hauet1,2, A. Andrei1, N. D. Scarisoreanu1, V. Ion1, R. Birjega1, N. Dumitrescu1,2, M. Dinescu1,2
1 NILPRP, P.O. Box MG-16, RO-77125, Bucharest, Romania.
2 University of Craiova, Department of Chemistry, 13 A. I. Cuza Street, 200585, Craiova, Romania.
3 Energetic and Nuclear Research Institute, IPEN, São Paulo, SP, Brazil, ²Energetic and Nuclear Research Institute, IPEN, São Paulo, SP, Brazil.

17:15 Chemical syntheses of CuₓNi₁₋ₓO hierarchical nanostuctures as room temperature humidity sensors
Yayan Dey, Sunny Santra, Sami K. Ray, Prasanta K. Guha
Department of Electronics & Electrical Communication Engineering, Indian Institute of Technology, Kharagpur, Department of Physics, Indian Institute of Technology Kharagpur, Department of Electronic & Electrical Communication Engineering, Indian Institute of Technology Kharagpur.

17:15 Pyroelectric properties of lead-free (Na₀.5Bi₀.5)₁₋ₓ(BaTiO₃)ₓ thin films obtained by pulsed laser deposition
A. Andrei1, N. D. Scarisoreanu1, V. Ion1, R. Birjega1, M. Dinescu1,2
1 NILPRP, P.O. Box MG-16, RO-77125, Bucharest, Romania.
2 University of Craiova, Department of Chemistry, 13 A. I. Cuza Street, 200585, Craiova, Romania.

17:15 Tuning the magnetic properties of nanostructured hybrid materials through external stimuli or interfacial chemistry
Z. Chaker1, G. Oh1, M. Boero, C. Masobrio
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67034 Strasbourg, France.

17:15 Interface oxide dynamics during anodization of superimposed ultra-thin films
André I Ionut Mardare1, Christian M. Siket2, Cezarina Cela Mardare1, Siegfried Bauer1, Achim Walter Hassel1
1 Christian Doppler Laboratory for Combinatorial Oxide Chemistry at the Institute for Chemical Technology of Inorganic Materials, Johannes Kepler University Linz, 4040 Linz, Austria.
2 Soft Matter Physics, Johannes Kepler University Linz, 4040 Linz, Austria.

17:15 Design and development of hybrid energy harvesters scavenging solar and mechanical energy based on ZnO nanorods
Xuan Li, Joe Briscoe, Steve Dunn
Materials Research Institute, Queen Mary University of London, UK.

17:15 Fabrication and characterization of Bi₂Sr₂CaCu₂O₈ thin films and nanowire networks using the sol-gel technique and electrospinning
M.R. Koblishka, X. Zeng1, T. Karwol, A. Koblishka-Veneva1, T. Hauet1,2, A. Andrei1, N. D. Scarisoreanu1, V. Ion1, R. Birjega1, N. Dumitrescu1,2, M. Dinescu1,2
1 University of Craiova, Department of Chemistry, 13 A. I. Cuza Street, 200585, Craiova, Romania.
2 National Institute for Lasers, Plasma and Radiation Physics, 409 Atomiștoot Street, PO Box MG-36, 077125 Magurele, Bucharest, Romania.
3 ‘Ilie Murgulescu’ Institute of Physical Chemistry, Romanian Academy, Splaiul Independentei 102, 060021, Bucharest, Romania.
4 Instituto de Ciencia de Materiales, Consejo Superior de Investigaciones Científicas (ICMM-CSIC), Madrid, Spain.
5 Instituto Pluridisciplinar, Universidad Complutense de Madrid (UCM), 28040 Madrid, Spain.

17:15 Tuning light-induced polarization screening of ferroelectric materials by water
Pamnno Liu, Ignasi Fina, Florencio Sánchez, Josep Fontcuberta
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de la UAB, 08193 Bellaterra, Spain.
Friday 26 May 2017

**Transparent conducting oxides II : X.Portier**

**09:00**

**XPS analysis of conducting and insulating oxides**
Andreas Klein
Technische Universität Darmstadt, Jovanka-Bontschits-Straße 2, 64287 Darmstadt, Germany

**09:30**

**Towards nanostructured transparent conducting oxide electrodes with tunable pore architectures**
Kristina Peters, Morgan Stefik, Dina Fattakhova-Rohlfing
Kristina Peters, Dina Fattakhova-Rohlfing: Ludwig-Maximilians-Universität (LMU), Department of Chemistry and Center for NanoScience (CeNS), Butenandtstr. 5-13, 81377 Munich, Germany; Morgan Stefik: Department of Chemistry and Biochemistry, University of South Carolina, Columbia, SC 29208, USA

**09:45**

**In2O3:H with high mobility prepared by DC sputtering and annealing in air**
D. Erfurt 1, M. D. Heinemann 1, S. Körner 2, B. Szyszka 2, R. Klenk 1, R. Schlatmann 1
1 PVcomB - Helmholtz-Zentrum Berlin für Materialien und Energie, Schwarzschildstr. 3, 12489 Berlin, Germany; 2 Technical University of Berlin, Department Technology of Thin Film Device TFD, Einsteinufer 25, 10587 Berlin, Germany

**10:00**

**Coffee break**

**10:30**

**Stabilization of the Wurtzite structure in ultrathin ZnO films on Fe(110)**
(1) Max-Planck-Institut f. Mikrostrukturphysik, Weinberg 2, D-06120 Halle, Germany, (2) Institut f. Physik, Martin-Luther-Univers. Halle-Wittenberg, D-06099 Halle, Germany, (3) ESRF, Postale 220, F-38043 Grenoble Cedex, France, (4) TASC-INFM National Laboratory, I-34012 Basovizza, Italy, (5) Institut des Nano Sciences de Paris, UPMC-Sorbonne Universités, CNRS-UMR7588, 75005 Paris, France

**10:45**

**Low resistivity aluminum doped zinc oxide thin films deposited by RF magnetron sputtering without substrate heating**
Eugen Stamate, Kion Norrman and Poul Norby
Technical University of Denmark

**11:00**

**Interfacial engineering of ZnO nanorod-based piezoelectric nanogenerator for enhanced performance**
Joe Briscoe [1], Xuan Li [1], and Petr Novák [2]

**11:15**

**Visualizing the incipient Atomic Layer Deposition of ZnO ultra thin films on In0.53Ga0.47As for tailoring contact resistivity**
E. Skopin 1, M.I. Richard 2, L. Rapenne 1, A. Crisci 3, E. Blanquet 3, G. Ciatto 4, J.L. Deschanvres 1, D.D. Fong 5 and H. Renevier 1
1 Univ. Grenoble Alpes, CNRS, Grenoble INP, LMG, F-38000 Grenoble, France; 2 Aix-Marseille Université; CNRS, Université? de Toulon, IM2NP UMR 7334, 13397 Marseille Cedex 20, France; 3 Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMAP, F-38000 Grenoble, France; 4 Synchrotron SOLEIL - Beamline SIRIUS, L’Orme des Merisiers, Saint-Aubin, F-91192, Ifs sur Yvette, France; 5 Argonne National Laboratory, Bldg 241/ C222, 9700 S. Cass Ave., Argonne, IL 60439, USA

**11:30**

**Tuning the refractive index of transparent conducting oxides via oxide/oxide periodic nanolaminates**
David Caffrey, Emma Norton, Cormac O’Coileain, Christopher M. Smith, Igor V. Shvets and Karsten Fleischer
School of Physics and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College, The University of Dublin, Dublin 2, Ireland

**11:45**

**Thermal treatments and their consequences of ZnO:Yb films grown by magnetron sputtering**
C. Guillaume (1), C. Friay (1), M. Boisserie (1), F. Lemarié (1), J.L. Doualan (1), C. Grygiel (1), J. Perriere (2), L. Khomenkova (3), C. Labbé (1) and X. Portier (1)
(1) Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, CIMP, 14000 Caen, FRANCE, (2) INS, UMR CNRS, Université Paris IV, 4 Place Jussieu, 75252 PARIS cedex 05, FRANCE, (3) V. Lashkaryov Institute of Semiconductor Physics of National Academy of Sciences of Ukraine, 45 pr. Nauky, 03028 Kyiv, UKRAINE

**12:00**

**ZnO : A.Klein**

**10:00**

**Stabilization of the Wurtzite structure in ultrathin ZnO films on Fe(110)**
(1) Max-Planck-Institut f. Mikrostrukturphysik, Weinberg 2, D-06120 Halle, Germany, (2) Institut f. Physik, Martin-Luther-Univers. Halle-Wittenberg, D-06099 Halle, Germany, (3) ESRF, Postale 220, F-38043 Grenoble Cedex, France, (4) TASC-INFM National Laboratory, I-34012 Basovizza, Italy, (5) Institut des Nano Sciences de Paris, UPMC-Sorbonne Universités, CNRS-UMR7588, 75005 Paris, France

**10:30**

**Low resistivity aluminum doped zinc oxide thin films deposited by RF magnetron sputtering without substrate heating**
Eugen Stamate, Kion Norrman and Poul Norby
Technical University of Denmark

**11:00**

**Interfacial engineering of ZnO nanorod-based piezoelectric nanogenerator for enhanced performance**
Joe Briscoe [1], Xuan Li [1], and Petr Novák [2]

**11:15**

**Visualizing the incipient Atomic Layer Deposition of ZnO ultra thin films on In0.53Ga0.47As for tailoring contact resistivity**
E. Skopin 1, M.I. Richard 2, L. Rapenne 1, A. Crisci 3, E. Blanquet 3, G. Ciatto 4, J.L. Deschanvres 1, D.D. Fong 5 and H. Renevier 1
1 Univ. Grenoble Alpes, CNRS, Grenoble INP, LMG, F-38000 Grenoble, France; 2 Aix-Marseille Université; CNRS, Université? de Toulon, IM2NP UMR 7334, 13397 Marseille Cedex 20, France; 3 Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMAP, F-38000 Grenoble, France; 4 Synchrotron SOLEIL - Beamline SIRIUS, L’Orme des Merisiers, Saint-Aubin, F-91192, Ifs sur Yvette, France; 5 Argonne National Laboratory, Bldg 241/ C222, 9700 S. Cass Ave., Argonne, IL 60439, USA

**11:30**

**Tuning the refractive index of transparent conducting oxides via oxide/oxide periodic nanolaminates**
David Caffrey, Emma Norton, Cormac O’Coileain, Christopher M. Smith, Igor V. Shvets and Karsten Fleischer
School of Physics and Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College, The University of Dublin, Dublin 2, Ireland

**11:45**

**Thermal treatments and their consequences of ZnO:Yb films grown by magnetron sputtering**
C. Guillaume (1), C. Friay (1), M. Boisserie (1), F. Lemarié (1), J.L. Doualan (1), C. Grygiel (1), J. Perriere (2), L. Khomenkova (3), C. Labbé (1) and X. Portier (1)
(1) Normandie Univ, ENSICAEN, UNICAEN, CEA, CNRS, CIMP, 14000 Caen, FRANCE, (2) INS, UMR CNRS, Université Paris IV, 4 Place Jussieu, 75252 PARIS cedex 05, FRANCE, (3) V. Lashkaryov Institute of Semiconductor Physics of National Academy of Sciences of Ukraine, 45 pr. Nauky, 03028 Kyiv, UKRAINE
SYMPOSIUM U

Computer modeling of thermal transport at the nanoscale

Symposium Organizers:

**Fabrizio CLERI**, Institut d’Electronique, Microelectronique et Nanotechnologie, Villeneuve d’Ascq, France

**Luciano COLOMBO**, University of Cagliari, Monserrato, Italy

**Ming HU**, RWTH Aachen University, Aachen, Germany

**Riccardo RURALI**, ICMAB-CSIC, Barcelona, Spain
A perspective on the experimental investigation of thermal transport properties in thin films and nanowires
P. Ferrando-Villalba, J. Ráfolo-Ribé, A. Lopezandia, J. Rodríguez-Viejo
Nanomaterials and microsystems group, Physics department, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain

New methodology for the electronic thermal conductivity of metals via direct nonequilibrium ab initio molecular dynamics
Sheng Ying Yue, Ming Hu
Aachen Institute for Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University, 52062 Aachen, Germany

Thermal transport in van der Waals solids from first-principles calculations
Daniel O. Lindroth, Paul Ethr
Chalmers University of Technology, Department of Physics, Chalmers University of Technology, Department of Physics

Toward reliable modelling of thermal transport in organic semiconductors: effect of van der Waals interactions on their phonons
Natalia Bedoya, Egbert Zojer
Institute of Solid State Physics, Graz University of Technology, Graz, Austria

Ultrafast thermo-optical dynamics of metal nano-objects in a transparent environment
M. Gandolfi [1,2,3,4], F. Medeghini [4], A. Crut [4], T. Stoll [4], F. Rossella [5], S. Natalia, E. Zojer
[1] Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Brescia I-25121, Italy
[2] Interdisciplinary Laboratories for Advanced Materials Physics, Department of Materials Science and Engineering, RWTH Aachen University, 52062 Aachen, Germany
[3] Laboratory of Thermodynamics and Nanostructured Materials, University of the Balearic Islands, Palma de Mallorca, Spain
[4] FemtoNanoOptics group, (I-LAMP), Università Cattolica del Sacro Cuore, Brescia I-25121, Italy
[5] Laboratory of Thermodynamics and Nanostructured Materials, University of the Balearic Islands, Palma de Mallorca, Spain

Ballistic versus diffusive transport in the thermal conductivity of a two-phase nanocomposite material
X. Ziarni, K. Ternentzidis, D. Lacriox
Dept. of Aircraft Technology, Technological Educational Institution of Sterea Ellada, X. Zianni, K. Termentzidis, D. Lacroix

Heat transport through a solid–solid junction: the interface as an autonomous thermodynamic system
Riccardo Ruali-a, Luciano Colombo-ab, Xavier Cartoixa-c, Óliver Wilhelmsen-d, Thuat T. Trinh-d, Dick Bedeaux-d, Signe Kjelstrup-d
[a] Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (Ca), Italy
[b] Department of Engineering Electro-nica, Universitat Autònoma de Barcelona, 08193 Bellaterra, Barcelona, Spain
[c] Department of Chemistry, Norwegian University of Science and Technology, NO-7491 Trondheim, Norway
[d] Department of Aircraft Technology, Technological Educational Institution of Sterea Ellada, X. Zianni, K. Termentzidis, D. Lacroix

Polarization-dependent phonon scattering at ferroelectric domain walls
Miquel Royo, Carlos Escorihuela-Sayalero, Jorge Iñiguez, Riccardo Rurali
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus de Bellaterra, 08193 Bellaterra, Barcelona, Spain

Modification of the phonon spectrum of bulk Si through surface nanostructuring
A. Iskandar, A. Gwiazda, Y. Huang, M. Kaza
Department of Physics, American University of Beirut, P.O. Box 11-0236, Riad El-Soih, Beirut 1107-2020, Lebanon
17:20 Effect of Mechanical Strain on Thermal Conductivity of Disordered Graphene: Non-equilibrium Molecular Dynamics Study
Ali Rajabpour, Saied Bazarzafan
Mechanical Engineering Department, Imam Khomeini International University, Iran
U 3.5

17:20 Energy relaxation in pump-probe vibrational spectroscopy investigated by atomistic simulations
Riccardo Dettori, Michele Criciotti, Johannes Hunger, Claudio Melis, Luciano Colombo, Ricardo Donadio
Rice University, Texas, USA
U 3.6

17:20 Nanostructured porous silicon: a prototypical material for multiple phonon scattering events
Bruno Lorenzi, Riccardo Dettori, Marc T. Dunham, Claudio Melis, Rita Tonini, Luciano Colombo, Kenneth E. Goodson, Dario Narducci
Bruno Lorenzi - Dipartimento di Scienza dei Materiali, Università di Milano-Bicocca, via Cozzi 55, I-20125 Milano, Italy, Riccardo Dettori - Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (CA), Italy, Marc T. Dunham - Department of Mechanical Engineering, Stanford University, Stanford, California, 94305, USA, Claudio Melis - Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (CA), Italy, Rita Tonini - Dipartimento di FIM, Università di Modena e Reggio Emilia, via Campi 213, I-41100 Modena, Italy, Luciano Colombo - Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (CA), Italy, Kenneth E. Goodson - Department of Mechanical Engineering, Stanford University, Stanford, California, 94305, USA; Dario Narducci - Dipartimento di Scienza dei Materiali, Università di Milano-Bicocca, via Cozzi 55, I-20125 Milano, Italy
U 3.7

17:20 Thermal boundary resistance from transient nanocalorimetry: a multiscale modeling approach
Claudia Caddeo, Claudio Melis, Andrea Ronchi, Claudio Giannetti, Gabriele Ferrini, Francesco Barili
Università Cattolica del Sacro Cuore and I-LAMP Brescia, Università Cattolica del Sacro Cuore, I-LAMP Brescia, and IU Leuven, Università Cattolica del Sacro Cuore and I-LAMP Brescia, Università Cattolica del Sacro Cuore and IU Leuven, Università Cattolica del Sacro Cuore and I-LAMP Brescia, Università Cattolica del Sacro Cuore and I-LAMP Brescia, Università Cattolica del Sacro Cuore and I-LAMP Brescia
U 3.8

17:20 Searching for anomalous thermal transport in single PEDOT polymer chains by addressing scaling behaviour
Alessandro Cnjar, Claudio Melis and Luciano Colombo
Dipartimento di Fisica, Università degli Studi di Cagliari, Cittadella Universitaria s.p.8 km 0,7, 09042 Monserrato (CA), Italy - E-mail: claudio.melis@dsf.unica.it
U 3.9

17:20 Linking morphology to thermal conductivity in PEDOT
Claudio Genovese, Claudio Melis and Luciano Colombo
Dipartimento di Fisica, Università degli Studi di Cagliari, Cittadella Universitaria s.p.8 km 0,7, 09042 Monserrato (CA), Italy - E-mail: claudio.melis@dsf.unica.it
U 3.10

17:20 Neutron and thermal conductivity at Eumelian/Si interface
Alejandro Antidormi ¹, Claudio Melis ¹,Erric Canadell ², Luciano Colombo ²
¹ Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, I-09042 Monserrato (CA), Italy, ² Institut de Ciencia de Materials de Barcelona (ICMAB–CSIC), Campus de Bellaterra, 08195 Bellaterra, Barcelona, Spain
U 3.11

17:20 Assessment on Lattice Thermal Transport Properties of Functionalized MXene Structures
Sevi Sarikurt, Cem Sevik
Department of Physics, Faculty of Science, Dokuz Eylul University, İzmir 35390, Turkey, Department of Mechanical Engineering, Faculty of Engineering, Anadolu University, Eskeşir 26555, Turkey
U 3.12

17:20 Hyperuniform disordered structures for phonon control
Georgios Gkantzoumis, Timothy Amoah, Marian Florescu
Department of Physics, Advanced Technology Institute, University of Surrey, Guildford, Surrey GU2 7XH, UK
U 3.13

17:20 Optimization problems for nanosized semiconductor heterostructures
K.K. Abgaryan, D.L. Reviznikov
U 3.14

17:20 Thermal bridging of graphene nanosheets via covalent functionalization: calculation of interfacial conductance via MD and DFTB
D. Martínez, A. de Prieto, B. Mortazavi, A. Pecchia, L. Medrano, R. Gutiérrez, M. Bernal, A. Fira
Departamento de Física Aplicada y Tecnología, Politécnico de Torino, 15121 Alessandria, Italy, Institute of Structural Mechanics, Bauhaus-Universität Weimar, D-99442 Weißen, Germany, Consiglio Nazionale delle Ricerche, ISNM, 00137 Monterotondo, Italy, Institute for Materials Science, TU Dresden, 01062 Dresden, Germany
U 3.15

17:20 Alloy-like behaviour of the thermal conductivity and an estimation of the thermal boundary resistance in superlattices
Emigdio Chavez-Angel, Paulina Korn, Gerhard Jakob
Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, 08193 Barcelona, Spain, Institut fur Physik, Johannes Gutenberg Universitat Mainz, Staudingerweg 7, 55128 Mainz, Germany, Graduate School Materials Science in Mainz, Staudingerweg 9, 55128 Mainz, Germany, Institut für Physik, Johannes Gutenberg Universität Mainz, Staudingerweg 7, 55128 Mainz, Germany, Graduate School Materials Science in Mainz, Staudingerweg 9, 55128 Mainz, Germany
U 3.16

17:20 STUDY OF THE IMPACT OF THE REGULARIZATION PARAMETER IN THE PHONON MEAN FREE PATH RECONSTRUCTION
M. A. Sánchez-Martínez, F. Alzina, E. Chávez-Angel, B. Graczykowski, J. S. Reparaz, C. M. Sotomayor Torres
Catalan Institute of Nanoscience and Nanotechnology.
U 3.17

17:20 Understanding phonon interfacial transport at the atomic-scale from a modal perspective
Benoit Latour, Nina Shulumba, Austin Millmich
Division of Engineering and Applied Science, California Institute of Technology, Pasadena, USA
U 3.18

17:20 Thermal conductivity in intermetallic clathrates: A first-principles perspective on the phonon-glass concept
Daniel O Lindroth, Paul Erhart
Chalmers University of Technology, department of physics, Chalmers University of Technology, department of physics
U 3.19

17:20 Phonon scattering at solid/solid interfaces: ab initio lattice dynamics calculations and comparison
Ali Akhund, Samy Merabi
Institut Lumière Matière, UMR5306 Université Claude Bernard Lyon 1-CNRS, Université de Lyon 69622 Villeurbanne Cedex, France, Department of Physics, A-Baath University, Homs, Syria
U 3.20

17:20 Molecular Dynamics study of thermal properties of Si/Ge interfaces: an EMD vs. NEMD comparison
B Davier, Y Chatop, P Delfos, S Volf, J Saint-Martin
Centre de Nanosciences et Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France & Laboratoire d’Énergétique Moléculaire et Macroscopique, CNRS, CentraleSupélec, Université Paris-Saclay, Chatenay Malabry, France, Laboratoire d’Énergétique Moléculaire et Macroscopique, Combustion, CNRS, CentraleSupélec, Université Paris-Saclay, Chatenay Malabry, France, Centre de Nanosciences et Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France, Laboratoire d’Énergétique Moléculaire et Macroscopique, Combustion, CNRS, CentraleSupélec, Université Paris-Saclay, Chatenay Malabry, France, Centre de Nanosciences et Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France
U 3.21

17:20 Finite element modelling of hydrodynamic heat transport on nanoscale devices
Pol Torres, Miriam Steinheer, Alvar Torelló, Juan Camacho, Xavier Cotoixo, F. Xavier Alvarez, Javier Bafaluy
Physics Department, Universitat Autònoma de Barcelona.
U 3.22

17:20 Hotspots in carbon nanofibers: a random path for power efficient heating
O. Moreno 1, C. Fabregà 1, O. Casals 1, S. Illera 1, A. Varea 1, M. Schmidt 2, T. Staudinger 1, A. Schütze 2, A. Cirea 1, J.D. Prades 1
1 MIND/IN2UB, Departament d’Enginyeries Electrònica, Universitat de Barcelona, Spain, 2 Lab of Measurement Technology, department of physics, Universitat Autònoma de Barcelona.
U 3.23
Tuesday 23 May 2017
Session 4.1 : Luciano Colombo

09:00 Fundamentals of thermal rectification
Giuliano Benenti
Center for Nonlinear and Complex Systems, Dipartimento di Scienze e Alta Tecnologia, Università degli Studi dell'Insubria, via Valleggio 11, 22100 Como, Italy. Istituto Nazionale di Fisica Nucleare, Sezione di Milano, via Celoria 16, 20133 Milano, Italy

09:40 Ballistic thermophoresis on graphene
Emanuele Panizon, Roberto Guerra, Erio Tosatti
SISSA - Trieste, SISSA - Trieste, CNR-IOM, SISSA - Trieste, CNR-IOM, ICTP - Trieste

10:00 Thermal conductivity of 2D materials from first principles
S. Illera, L. Colombo, M. Pruneda, P. Ordejon
Institut Català de Nanociència i Nanotecnologia (ICN2) and Institut de Ciència de Materials de Barcelona (ICMAB), CSIC and BIST, Campus de la UAB, 08193 Bellaterra (Barcelona), Spain. Dipartimento di Fisica, Università di Cagliari, Cittadella Universitaria, 09042 Monserrato (Ca), Italy. Institut Català de Nanociència i Nanotecnologia (ICN2), CSIC and BIST, Campus de la UAB, 08193 Bellaterra (Barcelona), Spain

10:20 Coffee break

Session 4.2 : Fabrizio Cleri

11:00 Heat transients in molecular dynamics: from classical to first-principles
E. Lampin a), H. Zaoui a), P. L. Palla a), G. Ori b), A. Bouzid c), M. Boero b), C. Massobrio b) and F. Cleri a)
a) IEMN, Lille, France, b) IPCMS, Strasbourg, France, c) EPFL, Lausanne, Switzerland

11:20 Tuning the thermal conductivity of methylammonium lead halide by the molecular substructure
Claudia Caddeo, Claudio Melis, Maria Ilenia Saba, Alessio Filippetti, Alessandro Mattoni
CNR-IOM, Università di Cagliari, CNR-IOM, CNR-IOM, CNR-IOM

11:40 Adjustable Heat Rectification Mechanisms in Graphene Nanoribbons: A Molecular Dynamics Study
Daryoush Shiri and Andreas Isacsson
Department of Physics, Chalmers University of Technology, SE-412 96, Göteborg, Sweden

12:20 Lunch

Session 5.1 : Riccardo Rurali

14:00 Thermal energy transport and dissipation: from inorganic nanostructures to hydrogen bonded liquids
Davide Donadio
University of California Davis

14:40 Hydrodynamic generalization of Fourier heat transport from the Kinetic Collective Model
Pol Torres (1), Alvar Torello (1), Juan Camacho (1), Amirkoushyar Ziahari (2), Javier Bafaluy (1), Xavier Carlotxà (1), Ali Shakouri (2), F. Xavier Alvarez (1)
(1) Physics Department, Universitat Autonoma de Barcelona, 08193 Bellaterra, Barcelona Spain, (2) Birck Nanotechnology Center, Purdue University, West Lafayette, Indiana 47907, United States

15:00 Method to manage integration error within the Green-Kubo formalism
Laura de Sousa Oliveira, P. Alex Greaney
University of California, Riverside

15:20 Coffee break
16:00 Applications of the generalised Langevin equation to non-equilibrium heat transfer in realistic nanoscale systems
Herve Ness, Lorenzo Stella, Lev Kantorovich, Chris Lorenz
King’s College London, Department of Physics, Strand Campus, Strand, London WC2R 2LS, UK, Atomistic Simulation Centre, School of Mathematics and Physics, Queen’s University Belfast, University Road, Belfast BT7 1NN, Northern Ireland, UK, King’s College London, Department of Physics, Strand Campus, Strand, London WC2R 2LS, UK

16:20 First-principles thermal prototyping of multilayer substrates for GaN power devices with almaBTE
Bjorn Vermeersch, Jesús Carrete, Natalio Mingo
CEA-Grenoble, TU Wien, CEA-Grenoble

16:40 Thermal properties of graphene nanoflakes dispersed in DMF: a classical MD study including QM corrections
Francesca Costanzo1, Bernd Ensing1,2, Miguel Pruneda1 and Pablo Ordejón1
1Catalan Institute of Nanoscience and Nanotechnology - ICN2, CSIC and BIST, Campus de Bellaterra, Spain 2 University of Amsterdam, The Netherlands

17:00 Ab initio determination of phonon lifetimes up to the melting point
Max-Planck-Institut für Eisenforschung GmbH, Max-Planck-Str. 1, 40237 Düsseldorf, Germany and the Heinz Maier-Leibniz Zentrum (MLZ), Technische Universität München, Lichtenbergstr. 1, 85748 Garching, Germany
SYMPOSIUM V

Design and hierarchical assemblies of nanomaterials (nanoparticles, carbon materials, molecules) towards energy, sensing, electronic, catalysis and detection applications

Symposium Organizers:

Peter KOFINAS, University of Maryland, College Park, USA

Sergio MOYA, CIC biomaGUNE, San Sebastian, Spain

Sylvie BEGIN-COLIN, Institut of Physic and Chemistry of Materials of Strasbourg, France

Yuanzhe PIAO, Seoul National University, Korea
Monday 22 May 2017

Modeling approaches : Jean-François Dayen - Sylvie Bégin

09:00 Coarsening for modeling nanoparticle size: Theory and experiment
Paulo Cesar De Morais
Aarhus University, School of Chemistry and Chemical Engineering, Hefei, China

09:30 First-principles molecular dynamics as a tool to achieve an atomic-scale rationale for multifunctional hybrid materials
Z. Chaker, G. Ori, M. Boero, C. Massobrio
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67034 Strasbourg, France

09:45 Mesoscopic modeling of structural, mechanical and thermal transport properties of vertically aligned carbon nanotube materials
Bernard K. Wittmaack, Md Abu Horaira Banna, Alexey N. Voltov, Leonid V. Zhigilei
Department of Materials Science and Engineering, University of Virginia, 395 McCormick Road, Charlottesville, VA 22904-4745, USA, Department of Mechanical Engineering, University of Alabama, H. M. Comer Hall, 7th Avenue, Tuscaloosa, AL 35487, USA

10:00 Coffee break

Graphene based devices : Paolo Morais - Sergio Moya

10:30 Graphene/nanoclusters hybrid for quantum electronics
Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg , UMR 7504, F-67000 Strasbourg, France.

11:00 Integrated Arrays of Air-Dielectric Graphene Transistors as Transparent, Active-Matrix Pressure Sensors for Wide Pressure Ranges
Sahibullaev M.I., Joohong Kim, Jiuk-Jang1, and Jang-Ung Park1
1School of Materials Science and Engineering, Wearable Electronics Research Group, Smart Sensor Research Center, Ulsan National Institute of Science and Technology (UNIST), Ulsan Metropolitan City, 44519, Republic of Korea

11:15 Self-Standing and Flexible Electrodes via Electrodeposition of Metal Oxides/Hydrides onto Graphene Paper
Tugce Beyazay, Eylul Sarac Oztuna, Ugur Unal
Graduate School of Science & Engineering, Koc University, Istanbul, Turkey, Graduate School of Science & Engineering, Koc University, Istanbul, Turkey, Department of Chemistry, Koc University, Istanbul, Turkey

11:30 Graphene-Metal Oxide/Hydride Hierarchical Structures as Electrodes for Electrochemical Capacitors
Eylul Sarac Oztuna, Ugur Unal
Graduate School of Science & Engineering, Koc University, Istanbul, Turkey, Department of Chemistry, Koc University, Istanbul, Turkey

11:45 Nickel Cobalt Sulphide embedded in free standing Holey Graphene Hydrogel for Supercapacitors
Srinayuth Nirbet Tinuneh1, Bong Kyun Kang1, Da He Yoon1,2, Syed Kamran Sami1*
1 School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 440-740, Republic of Korea, 2 SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, Suwon 440-740, Republic of Korea

12:00 Lunch

Nanomaterials for catalysis : André-Jean Attias - Peter Kofinas

13:30 Iron carbides nanoparticles for magnetically induced CO2 hydrogenation
Bruno Chaudret
Laboratoire de Physique et Chimie de Nano-Obejets, UMR 5215 INSIA-CNRS-UPS Institut National des Sciences Appliquées 135 Avenue de Rangueil 31077 TOULOUSE CEDEX 4 - FRANCE

14:00 The importance of the surface chemistry of ZrO2 nanocrystals in ligand exchange and esterification nanocatalysis
Katrien De Keukeleere(1), Jonathan De Roo(1,2), Sofie Coucke(1,2), Els De Canck(1), Davy Sinnaeve(2), Yannick Coppeli(3), Pascal Van Der Voort(1), Fabien Delpech(4), José C. Martins(2), Zeger Hens(1), and Isabel Van Dienisse(1)
(1) Department of Inorganic and Physical Chemistry, Ghent University, Ghent, Belgium (2) Department of Organic and Macromolecular Chemistry, Ghent University, Ghent, Belgium (3) Laboratoire de Chimie de Coordination, Université de Toulouse, Toulouse, France (4) Laboratoire de Physique et Chimie des Nano-Obejets, Université de Toulouse, Toulouse, France

14:15 Rational Design of Metal Organic Framework Derived Hollow NiCo2O4 Arrays for Flexible Super capacitor and Electro catalysis
Cao Guan1, Chuanei Cheng2, and John Wang1
1Department of Materials Science and Engineering, National University of Singapore, 117574 Singapore 2Shanghai Key Laboratory of Special Artificial Microstructure Materials and Technology, School of Physics Science and Engineering, Tongji University, Shanghai 200092, P. R. China

14:30 Bimetallic Yolk@Shell Electro catalysts for Glucose Oxidation
T. Unmüssig*, A. Guet1, A. Fischer1,2,3,4
*Institute of Inorganic and Analytical Chemistry, University of Freiburg, Freiburg, Germany. **Friedbauer Materialforschungszentrum, University of Freiburg, Freiburg, Germany. ***Department of Chemistry, Technische Universität Berlin, Berlin, Germany. ****Université Bretagne Loire, Université du Maine, Institut des Molécules et Matériaux du Mans, Le Mans, France

14:45 New Lbl multicomponent coatings : impact on photocatalytic decontamination
P. Barrois, O. Félix, G. Decher, V. Keller
Institut de Chimie et des Procédés pour l’Environnement et la Santé, Strasbourg Institut Charles Sadron, Strasbourg, France

15:00 High-efficiency and ultrastable Co-Ni-P nanowire electrodes for over 3000-hour water splitting
Lifeng Liu,* Wei Li, Detu Xiaong
International Iorean Nanotechnology Laboratory

15:15 A nanostructured Zn(II) Schiff-base complex for chemoresistive sensing of volatile amines
Salvo Mirabella,† Ivan Pietro Oliveri,‡ Francesco Ruffino,‡ Giuseppe Maccarrone,‡ and Santo Di Bella,†
† MATIS IMM-CNRP and Dipartimento di Fisica e Astronomia, Università di Catania, Viale S. Sofia 84, 95123 Catania, Italy, ‡ Dipartimento di Scienze Chimiche, Università di Catania, via S. Sofia 8, 95125 Catania, Italy

15:30 Coffee break

Nanostructuration Towards devices : Lee Jinwoo - Yuanzhe Piao

16:00 Assembly of Iron Oxide Nanoparticles on Gold Substrates for Biosensing Application
Mathias DOLC1, Jean-François BRYCHEZ, Spiros ZAFEIRATOS3, Fouzia BOUMEDAI4, Xavier CARTOEN5, Gregory BARBILLON2, Benoit P. PICHON1
1 Université de Strasbourg, CNRS, ICPMS, UMR 7504, 23 rue du Loess BP434, 67034 Strasbourg Cedex 2, France 2 Institut d’Electronique Fondamentale (UMR 8622), rue Ampère, 91405 Orsay Cedex, France 3 Université de Strasbourg, CNRS, ICPEES, UMR 7515, 25 rue Bequerel 76078 Strasbourg Cedex 2, France 4 Université de Strasbourg, CNRS, ICS, UP122, 75 rue Bequerel 6200 Strasbourg Cedex 2, France 5 Institut Neyel, (UPR 2940), 25 rue des Martyrs, 38042 Grenoble Cedex 9, France

16:15 Hydrothermal preparation of MoS2/TiO2/Silicon nanowires as an effective substrate for LDH-MS detection of biomarkers in serum
Abderrahime Hamd1,2, 3, Ioana Silvia Hossiu1, Hatem Ezzaziaouzi2, Rabah Boukhennoub1 and Yannick Coffinier1
1 Univ. Lille, CNRS, Centrale Lille, INSP, Univ. Valenciennes, IEMN, UMR CNRS 8520, Avenue Poincard, BP 60099, 59652 Villeneuve d’Ascq, France. 2 Laboratoire Université-Centrale-conductors, Nano-structures and Advanced Technologies, Research and Technology Centre of Energy, Borj-Cedria Science and Technology Park, BP 95, 2050 Hammam-Lif, Tunisia 3 Faculty of Science of Bizerte, University of Carthage, 7021 Zarzouna, Tunisia
16:30 Nanostructuration and functionalization of cantilevers for the detection of explosives and chemical warfare agents traces
Laurent Schür, Geoffrey Gerer, Alessio Ghisolfi, Pierre Agostini, Manuel Hofer, Ivaylo Atanasov, Mathias Holz, Karine Bonnot, Thomas Cottineau, Valerie Keller, Denis Spitzer

16:45 Monolithic alumina aerogels for high temperature applications
Holz : Nano analytik Gmbh, Ehrenbergstr. 1, 98693 Ilmenau, Germany
France, Geoffrey Gerer, Alessio Ghisolfi, Thomas Cottineau, Valérie Keller

17:00 Nanostructured micro-raspberry supraparticles
Spitzer Atanasov, Mathias Holz : Nano analytik Gmbh, Ehrenbergstr. 1, 98693 Ilmenau, Germany
France, Geoffrey Gerer, Pierre Agostini, Karine Bonnot, Denis Spitzer

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11:00 Extreme Te nanowires encapsulated within ultra-narrow single-walled carbon nanotubes
Paulo V. C. Medeiros, Samuel Marks, Jamie M. Wynn, Andrij Vasylenko, Quentin Ramasse, David Quigley, Jeremy Sloan, Andrew J. Morris

11:15 Carbon nanotube dry adhesives with temperature-enhanced adhesion over a large temperature range
Ming Xu, Feng Du, Sabyasachi Ganguli, Ajit Roy, Liming Dai

11:30 Clickable Fullerene Scaffolds: Select your Application and Click
Jean-François Nierengarten

Tuesday 23 May 2017

08:30 Direct Access to Functional Ordered Mesoporous Materials for Energy Conversion& Storages: From Ordered to Hierarchical Structure
JinwooLee
Department of Chemical Engineering, Pohang University of Science and Technology

09:00 Synthesis of 3D structure MnCo2S4@Reduced graphene oxide for hybrid supercapacitor
Sung-Hoon Kwag, Bong-Kyun Kang, Da-Ho Yoon
School of Advanced Materials Science & Engineering, Sungkyunkwan University, Suwon 16419, Korea

09:15 Pseudobrookite-type self-organized spherical porous granules as potential energy storage
Yoshikazu Suzuki(1),* and Horions Abe(2)
(1) Faculty of Pure and Applied Sciences, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki, 305-8573, Japan, (2) Joining and Welding Research Institute, Osaka University, 11-1 Mihogaoka, Ibaragi, Osaka 567-0047, Japan

09:30 Investigation of an Air-Stable Solid Polymer Electrolyte of Lithium-Ion Batteries
Matthew Widstrom, Arthur von Wald Cresce, Metecan Erdi, Peter Kofinas
Department of Materials Science and Engineering, University of Maryland, US Army Research Lab, Fischell Department of Bioengineering, University of Maryland, Fischell Department of Bioengineering, University of Maryland

09:45 Synthesis and characterization of hybrid photosensitive Ti oxide nanoparticles for solar application
Solene BECHU*, Neai FAIRLEY*, Vincent FERNANDEZ*, Bernard HUMBERT*, Mireille RICHARD-POJUT*
* IMN-Université de Nantes, Nantes, France, # Casa Software Ltd, Bay House, 5 Grosvenor Terrace, Teignmouth, TQ14 8NE, United Kingdom

10:00 Coffee break

Carbon based devices : Andreas Ferry - Sergio Moya

10:30 Hierarchical carbon-based materials for catalysis and energy storage
Cuong Pham-Huu
Institute of Chemistry and Processes for Energy, Environment and Health (ICPEES, CNRS and University of Strasbourg, France

11:00 Extreme Te nanowires encapsulated within ultra-narrow single-walled carbon nanotubes
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Jean-François Nierengarten

Laboratoire de Chimie des Matériaux Moléculaires, Université de Strasbourg et CNRS (UMR 7596), 25 rue Becquerel, 67087 Strasbourg Cedex 2, France
11:45  Bio-inspired Quantum Dot assemblies for efficient energy harvesting and transfer on nanoscales  
Dr. Alaksandra Rakovich  
Condensed Matter Physics Section, Department of Physics, Imperial College London, UK

12:00  Lunch

13:30  PLASMONIC AND MAGNETIC NPS FOR BIOMEDICAL APPLICATIONS  
Nguyen TK Thanh  
Biophysics Group, Department of Physics and Astronomy and UCL Healthcare  
Biomagnetic and Nanomaterials Laboratory

14:00  Design of hybrid core-shell nanoparticles exhibiting plasmonic and magnetic properties for hyperthermia applications  
Thi Thuy NGUYEN, Jeanne VOLATRON, Florence GAZEAU, Fatyna MAMMERI, Souad AMMAR  
Thi Thuy Nguyen, Fanyia Mammeri, Souad Ammar: ITODYS, CNRS UMR-7086, 75005 Paris, France. Jeanne Volatron, Florence Gazeau: MSC, CNRS UMR-7057, Université Paris Diderot, Sorbonne Paris Cité, Paris, France

14:15  Design of iron precursors for synthesis engineering of anisotropic iron oxide nanoparticles  
Geoffrey Cotin, Céline Kiefer, Cristina Blanco Andujar, Damien Mertz, D. Felder-Flesch, Sylvie Bégin-Colin  
Institut de Physique et Chimie des Matériaux, UMR CNRS-UdS 7504 University of Strasbourg, 23 Rue du Loess, BP 43, 67034 Strasbourg, France

14:30  Cancer-Targeting Nanoparticles: New Chemical Approaches for Enhanced Scalability and Precision  
Ute Marie-Sainte  
Imperial College London

15:00  Solventless scalable synthesis of uniform nanoparticles  
Yuanzhe Piao  
Graduate School of Convergence Science and Technology, Seoul National University, Seoul, 151-742, Republic of Korea

15:15  Engineering and characterization of a new type of nanopcapsules: Hybridosomes®  
F. Scirtino, S. Chevance, P. Gaufrile  
Institut des Sciences Chimiques de Rennes, UMR CNRS 6226, Université de Rennes 1.

15:45  Direct Fabrication of Colloidal Amorphous Zero Valent Iron (nZVI) Nanoparticles by Liquid-Assisted Pulsed Laser Ablation  
O. Bomati-Miguel*, R. Lahoz, C. Rentenberger, W. Kautek*  
* University of Vienna, Department of Physical Chemistry, Vienna, Austria. † Departamento de Fisica Aplicada. Universidad Autonoma de Madrid. Madrid, Spain. ‡ Centro de Quimica y Materiales de Aragon (CEQMA-CSIC). Zaragoza, Spain.  † Universidad de Valladolid, Faculty of Physics, Valladolid, Spain

16:00  Coffee break

Poster session: Peter Kofinas - Yuanzhe Piao

16:30  Two-photon excitation-induced reactive oxygen species efficiently mediated through photocatalysis and optical imaging using aminocyanine and metal nanoparticles  
A. Hanour1,* A. Nafield1, L. Bardoti2, B. Prével2, F. Tournus2, D. Mailly3, J.-P. Bucher4  
1 Laboratory of Condensed Matter Physics and Nanomaterials for Renewable Energy, Faculty of Sciences, Ibn Zohr University, Agadir, Morocco. 2 Institut Lumière Matière, UMR 5306 Université Lyon 1-CNRS, Université de Lyon 69622 Villeurbanne, France. 3 Laboratoire de Photonique et de Nanostructures, CNRS-LP2N, Route de Nozay 91460 Marcoussis, France. 4 Institut de Physique et Chimie des Matériaux, UMR 7054, Université Louis Pasteur 23 rue du Loess, 67037 Strasbourg, France. *Corresponding author. E-mail address: a.hanour@uiz.ac.ma

16:30  Resonance energy transfer from dioxaborine cyanine dye to single wall carbon nanotubes and their carbon nanotubes: photoluminescence excitation-emission omission  
Mohammed Al Araj1,2,*, Petro Lutsyk1,3, Anatoly Verbitsky3, Yuri. Piryatinski3, Mykola Shandura4 and Alex Rozhír2  
1 Nanotechnology Research Group, Aston Institute of Photonic Technologies, School of Engineering & Applied Science, Aston University, Aston Triangle, B4 7ET Birmingham, UK. 2 Engineering Department, Al Musanna College of Technology, Musaladah, Musanna, P.O. Box 191, P.C. 314, Sultanate of Oman. 3 Institute of Physics, National Academy of Sciences of Ukraine, 46, prospekt Nauky, 03680 Kyiv, Ukraine. 4 Institute of Organic Chemistry, National Academy of Sciences of Ukraine, 5, Murmanska str., 02660 Kyiv, Ukraine.

16:30  Fe3O4 Nanocrystal Embedded in N, S-Carbon nanotube as an Efficient Catalyst for Oxygen Reduction Reaction  
Zeng Shanshan, Yangyang Li, Jian Lu  
City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong, China

16:30  Nanowelding-mediated shape-engineering of the building blocks for hierarchical multimetallic aerogels  
Bin Cai, Alexander Eychmüller  
Technische Universität Dresden, Dresden, Germany

16:30  Room temperature detection of ppbv level ammonia in chemically fluorinated graphene oxide  
Yeon Hoo Kim, Ji Soo Park, Seo Yun Park, Seonyong Lee, Woobae Sohn, Young-Seok Shim, Chong Rae Park, Donghwa Lee, Ho Won Jang*  
Department of Materials Science and Engineering, Seoul National University, Seoul 08826, Republic of Korea. School of Materials Science and Engineering, Chonnam National University, Gwangju 61186, Republic of Korea.

16:30  Synthesis of silica nanoparticles with controlled size via single-step process  
Jin Han, Sang Hyuk Im  
Kyung Hee University, Korea University

16:30  Polyoxometalate-based inorganic nanoribbons and nanohelices for enantioselective catalysis  
Marian Attoui(a,b), Sylvain Nlate(a), Thierry Buffeteau(b), Emilie Pouget(a), Reiko Odaka(c), David Talaga(b), Gwénaëlle Le Boudour(b)  
(a)Institute of Chemistry & Biology of Membranes & Nanoobjects (CBM), CNRS UMR5248. University of Bordeaux, Pessac, France, (b)Institute of Molecular Sciences (ISM), CNRS UMR 5250, University of Bordeaux, Talence, France. Email: marian.attoui@u-bordeaux.fr

16:30  Graphene-based materials for sustainable energy and environmental applications  
Zhiping Zeng, Rong Wang, Tan Thang Yang Timoth, Zhiping Zeng, Rong Wang, Singapore Membrane Technology Center, Nanyang Environment and Water Research Institute, Interdisciplinary Graduate School, Nanyang Technological University, Singapore 637141, Singapore, Tan Thang Yang Timoth, School of Chemical and Biological Engineering, Nanyang Technological University, Singapore 639798, Singapore

16:45  Assembly of Reduced Carbon Nanotubes into Aerogels and Composite Fibres  
Yeon Hoo Kim, Ji Soo Park, Seo Yun Park, Seonyong Lee, Woonbae Sohn, Young-Seok Shim, Chong Rae Park, Donghwa Lee, Ho Won Jang*  
Department of Materials Science and Engineering, Seoul National University, Seoul 08826, Republic of Korea. School of Materials Science and Engineering, Chonnam National University, Gwangju 61186, Republic of Korea.

17:00  Synthesis of silica nanoparticles with controlled size via single-step process  
Jin Han, Sang Hyuk Im  
Kyung Hee University, Korea University

16:30  Two-photon excitation-induced reactive oxygen species efficiently mediated through photocatalysis and optical imaging using aminoacyanine and metal nanoparticles  
O. Markaki1,3, L. Zouridi1,2, E. Gagoudakis1,3, E. Aperathitis1,3,4, V. Binas1,3,4  
1 Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilikia Vouton, 70013 Heraklion, Crete, Greece. 2 University of Crete, Department of Chemistry, 701 03 Heraklion, Crete, Greece. 3 University of Crete, Department of Physics, 701 03 Heraklion, Crete, Greece. 4 Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece

16:30  Nanotechnology Center, Nanyang Technological University, Singapore 639798, Singapore

16:30  Solution based thermochromic W doped VO2 particles for energy efficiency applications  
O. Markaki1,3, L. Zouridi1,2, E. Gagoudakis1,3, E. Aperathitis1,3,4, V. Binas1,3,4  
1 Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, 100 N. Plastira str., Vassilikia Vouton, 70013 Heraklion, Crete, Greece. 2 University of Crete, Department of Chemistry, 701 03 Heraklion, Crete, Greece. 3 University of Crete, Department of Physics, 701 03 Heraklion, Crete, Greece. 4 Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, 71003 Heraklion, Greece
16:30 Stretchable and transparent strain sensor integrated with color-changing flexible electrophoretic device
Heun Park, Dong Sik Kim, Soo Yeong Hong, Chulmin Kim, Jun Yeong Yun, Seung Yun Oh, Sang Woo Jin, Yu Ra Jeong, Gyu Tae Kim, and Jeong Soo Ha*
H. Park, D. S. Kim, S. Y. Hong, J. Y. Yun, Y. R. Jeong, Prof. J. S. Ha, Department of Chemical and Biological Engineering, Korea University, Seoul, 02453, Republic of Korea.
C. Kim, Prof. G. T. Kim Department of Electrical Engineering, Korea University, Seoul, 02841, Republic of Korea. 1 These authors contributed equally.
16:30 Crystal Engineering of Bimetallic Metal-Organic Frameworks based on MML-101
Thanaporn Tansaror, Sareeya Buereekaw, School of Energy Science and Engineering, Vidyasirimedhi Institute of Science and Technology, Rayong 21210, Thailand
16:30 Room temperature NO2 gas sensing by few-layer graphene Langmuir-Schaefer film decorated by NiFe2O4 nanoparticles
Dmytro Kostik, Maxym Demydenko, Jan Ivanc, Stefan Luby, Peter Sifalovic, Matej Jerjet, Eva Majkovska, Institute of Physics Slovak Academy of Sciences
16:30 Highly sensitive detection and removal of mercury ion using a multimodal nanosensor
Manisha Chatterjee
Lala Lapat Rai Memorial Medical College, Meerut, UP
16:30 Stretchable Array of Multi-Functional Sensors Consisting of PU Foam and MWCNT-PANI Nanocomposite on skin
Soo Yeong Hong, Ju Hyun Oh, Heun Park1, Junyeong Yun1, Sang Woo Jin2, Yu Ra Jeong1, Jeong Soo Ha1.2
1 Department of Chemical and Biological Engineering, Korea University, Seoul, South Korea.
2 KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, South Korea
16:30 MAGNETIC SUPRAPARTICLES FROM IRON OXIDE NANOPIRATE BUILDING-BLOCKS
K. Händel and the Particle Technology Group Würzburg
Fraunhofer Institute for Silicate Research ISC, Neunplatz 2, 97082 Würzburg and Department of Chemical Technology of Materials Synthesis, University of Würzburg, Röntgenring 11, 97070 Würzburg
16:30 Superior Chemical Sensing Ability of Black Phosphorus
Soo-Yeon Cho, Youhan Lee, Hyeon-Jung Koh, Jihan Kim, Hae-Tae Jung
Chemical and Biomolecular Engineering Department, Korea Advanced Institute of Science and Technology (KAIST)
16:30 Chemical and thermal modification of graphene oxide for sensing applications
Silvia Scalesi (a), Daniele D’Angelo (a), Salvatore Baldo (a), Simona Flice (a), (c), Corrado Bonigioni (a), Riccardo Rellano (b), Enza Fazio (d), Sabrina Conoci (e), Antonio Magno (a)
(a) CNR-IMM, Ottava Strada n. 5, I-95121 Catania (Italy), (b) Dipartimento di Fisica e Astronomia, via S. Sofia n.64, I-95123 Catania (Italy), (c) Dipartimento di Scienze Chimiche, Università degli Studi di Catania, viale Andrea Doria 6, I-95125 Catania (Italy), (d) Dipartimento di Scienze Matematiche e Informatiche, Università di Messina, Viale F. Stagno d’Alcontres 31, I-98168 Messina (Italy), (e) ISTMicroelectronics Stradale Primosole 50, I-95121 Catania (Italy)
16:30 Synthesis and characterization of Single-Walled Carbon Nanotubes@silica nanocomposites applied to electrochemical sensing.
Haing Kim, Jeong, Maria Porcelli, Francisco Moro-Oyarzabal, Emilia Morallón. Departamento Química Física e Instituto Universitário de Materiais, Universidade de Alicante, Ap. 99, E-03080, Alicante, Spain.
16:30 Dye-adsorption properties of WO3 nanorods synthesized by microarray assisted hydrothermal methods
Seung-Myung Yoo, Soo-Min Park and Chunghee Nam
Hannam University
16:30 Functional Responsive superparamagnetic core/shell Nanoparticles and their drug release properties
Zied Fejiajou, Raphael Schneider, Eric Gaffet, Abdelaziz Meflah and Halima Alem-Marchand
Institut Jean Lamour (UL), UMR CNRS 7198, Université de Lorraine, Department N2EV, Parc de Saurupt CS50840 54011 Nancy, France. Unité Nanomatériaux et Photonique, Département de physique, Faculté des sciences de l’Université d’Angers 49000 - Tours, Tunisia Laboratoire Réactions et Génie des Procédés (LRGP), UMR CNRS 7274, Université de Lorraine, 1 rue Grandville 54001 Nancy, France.
16:30 Rational design of hierarchical metasurface for ultrasensitive Surface Enhanced Raman Scattering
Chen Xu,a,b,† Yibo Zhou,a,b,† Shuangbao Lyu,a Huijun Yao,a Dan Mo,a Jie Liu,a Jinghai Duan,a K. Mandel and the Particle Technology Group Würzburg
a Materials Research Center, Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou 730000, China. Email: liu_j@impcas.ac.cn (JL), j.duan@impcas.ac.cn (JLD) b School of Physical Science and Technology, Lanzhou University, China. 1 These authors contributed equally.
16:30 Preparation of electropunt nanofibers based on the piezoelectric and triboelectric properties for energy harvesting application
Xue Pu, Robert K Y Li
City University of Hong Kong
16:30 Synthesis of CZTS nanoparticle by using novel molecular precursors
Joo-Hyun Park, Bo Keun Park, Taek-Mo Chung, Chang Gyoun Kim
Korea Research Institute of Chemical Technology, Daejeon, Korea
16:30 Active Nanodiamond Swimmers Fabricated by Glancing Angle Deposition (GLAD)
J T Kim[1], Uldi Choudhury[2], Peer Fischer[2]
16:30 Synthesis and Characterization of Perovskite Nanoparticles for Oxygen Evolution Catalyst
Baris Alkan (baris.alkan@uni-due.de), Hartmut Wiggers (hartmut.wiggers@uni-due.de), Martin Muether (muether@techm.rub.de), Wolfgang Schuhmann (wolfgang.schuhmann@rub.de), Christof Schulz (christof.schulz@uni-due.de), Baris Alkan (IVG and CENIDE, University of Duisburg-Essen), Hartmut Wiggers (IVG and CENIDE, University of Duisburg-Essen), Martin Muether (Laboratory of Industrial Chemistry, Ruhr-University Bochum), Wolfgang Schuhmann (Analytical Chemistry/Centre for Electrochemical Sciences (CES), Ruhr-University Bochum), Christof Schulz (IVG and CENIDE, University of Duisburg-Essen)
16:30 Nanostructured Polymeric Yolk-shell Capsules: A Versatile Tool for Hierarchical Nanocatalyst Design
G. Rydzek 1,2, N. Sanchez Ballester 2, K. Ariga 2
1 International Center for Young Scientists (ICYS), Tsukuba Japan, 2 National Institute for Materials Science (NIMS), International Center for Material Nanoarchitectonics (MANA), Tsukuba, Japan
16:30 Study of dynamic photo induced oxygen adsorption-desorption mechanisms of nanocounter-assembled ZnSe films
Ngahang Ng, Chungwo Ong, Xuming Zhang
The Hong Kong Polytechnic University
16:30 Development of layered double hydroxides for heavy metal removal
A. Kampos1, K. Simonidou1, D. Karfandis1, E. K. Polychroniadis1, E. Pavlidou1, M. Mitrakas2, G. Vourlias1
1Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, 2Analytical Chemistry Laboratory, Department of Chemical Engineering, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece
16:30 Preservation of enzyme activity in smart capsules via self-assembly of polyelectrolytes at water-water interfaces
Ji Tae Kim 1,2, N. Sanchez Ballester 2, K. Ariga 2
1 International Center for Young Scientists (ICYS), Tsukuba Japan, 2 National Institute for Materials Science (NIMS), International Center for Material Nanoarchitectonics (MANA), Tsukuba, Japan
16:30 Ni-loaded ceria-zirconia nanoparticles: synthesis in supercritical alcohols, characterization and catalysis of CH4 dry reforming
Joo-Hyun Park, Dong Sik Kim, Soo Yeong Hong, Chulmin Kim, Jun Yeong Yun, Seung Yun Oh, Sang Woo Jin, Yu Ra Jeong, Gyu Tae Kim, and Jeong Soo Ha*
H. Park, D. S. Kim, S. Y. Hong, J. Y. Yun, Y. R. Jeong, Prof. J. S. Ha, Department of Chemical and Biological Engineering, Korea University, Seoul, 02453, Republic of Korea.
C. Kim, Prof. G. T. Kim Department of Electrical Engineering, Korea University, Seoul, 02841, Republic of Korea. 1 These authors contributed equally.
16:30 Interface engineering of Fe/Pt bilayers
D. Karfardis1, N. Piatkaskia1, S. Keller2, K. Simeonidou1, U. Wiedwald3, M. Angelakeris1, G. P. Dimitrakopoulou1, E. K. Polychroniadis1, Th. Kehagias1, E. Th. Papaioanou2, G. Vouliaris1
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, 3Faculty of Physics and Center for Nanointegration (CENIDE), University of Duisburg-Essen, D-47057 Duisburg, Germany

16:30 Effect of an MgO spacer on the structural properties and magnetization dynamics of Fe/MgO/Pt trilayers
D. Karfardis1, K. Simeonidou1, L. Mihalacanou2, S. Keller2, U. Wiedwald3, Th. Kehagias1, E. K. Polychroniadis1, M. Angelakeris1, G. P. Dimitrakopoulou1, G. Vouliaris1
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, 3Faculty of Physics and Center for Nanointegration (CENIDE), University of Duisburg-Essen, D-47057 Duisburg, Germany

16:30 Low Temperature Synthesized Vanadium Carbide Nanosheets as Highly Active HER Catalyst
Xiang peng, Paul K. Chu
Department of Physics and Materials Science, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong, China

16:30 Room-Temperature Switching Behavior in CNT/Hexadecane Composites
Meng Peng,Quan Zhang,Yulong Wu,Zhiyuan Tan,Guoan Cheng,Xiaoling Wu,Ruiling Zheng
1Key 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 ; Meng Peng,Quan Zhang,Yulong Wu,Zhiyuan Tan,Guoan Cheng,Xiaoling Wu,Ruiling Zheng , 2Beijing Radiation Center, Beijing 100875, P. R. China; Guoan Cheng,Xiaoling Wu,Ruiling Zheng.

16:30 Synthesis of magnetic iron oxide nanoneedles containing multi-metallic nanoparticles and their application
Hyukyung Jeon,1 J. Sun Kim,1,2 Ye-Jin Jin,1,2 and Ha-Jin Lee,1,2
1. Western Seoul Center, Korea Basic Science Institute (KBSI), Seoul 03759, Korea. 2. Dept. of Chemistry and Nanoscience, Ewha Womans University, Seoul 03760, Korea

16:30 Synthesis of Photoluminescent Organic-Inorganic Urealis Nanoparticles for Imaging Applications
Iliara Meazzini, Steve Comby, François-Xavier Turquet, Judith E. Houston and Rachel C. Evans
ICube, MaCEPV, 23 rue du Loess, 67037 Strasbourg France. 2: Department of Physics, University Taras Shevchenko, Kyiv, Ukraine, 3: ICPEES, ECIPM, 25 rue Recqueur, 67017 Strasbourg Cedex 2, France

16:30 Controllable synthesis and characteristics of mesoporous Co3N nanocubes for efficient oxygen evolution reaction
BongKyun Kang, Sung Hoon Kwag, Dae Ho Yoon, Sangguk Yoon
Kangnam University, Konya, Turkey

16:30 Thin Films of Chilled Carbon on Metal Substrate: Synthesis and Raman Characterization
E.A. Buntrio1, A.F. Zatsepin1, M.B. Guzeva2, V.N. Rychkov1
1Department of Chemistry, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, 2Department of Physics and National Research Center OPTIMAS, Technical University of Kaiserslautern, 67663 Kaiserslautern, Germany

16:30 Spray-flame synthesis of nanoscale LaCoO3 perovskite catalyst
Steven Angel, Hartmut Wiggers, Christof Schulz
Evans School of Chemistry, Trinity College, The University of Dublin, Dublin 2, Ireland.

16:30 Sensing properties of ZnO nanowalls grown ?in situ? on conductometric platforms
E. Brun0, S. Mirabella, V. Strano, N. Donato*, S. G. Leonardi*, G. Neri*
1MATIS IMM-CNR and Dipartimento di Fisica e Astronomia, Universita di Catania, Via S. Sofia 64, 95123 Catania, Italy *Department of Engineering, University of Messina, Contrada Di Dio, 98166 Messina, Italy

16:30 Neutron Structure Analysis of Lithium-Cation Endohedral C60 Fullerene and Its Application to Energy Storage
Eunsang Kwon*[1], Takeshi Matsukawa*[2], Akinori Hoshikawa*[2], Toru Ishigaki*[2], Haruhiko Ogasawara*[3], Tomoo Kamigaki*[4], Kazuhiko Kawachi*[4], Yasuhiro Kasama*[4], Fumimori Misuaz*[1], Hiroshi Fukumura*[5]

16:30 Properties of silver bromide doped chalcogenide materials
Rayan Zaiter, Mohamad Kassem, Eugene Bychkov
ULCO, LPCA (EA 4493), F-59140 Dunkerque, France

16:30 Single Wall Carbon Nanotubes (SWCNTs)-polycarbazole(PCz) based pH sensor
Bogdan-Florian Monea, Eusebiu Iliarian Ioneite, Stefan Ionul Spiridon, Stanica Enache, Daniela Ion Ebrasu, Amalia Soare
National R&D Institute for Cryogenic and Isotopic Technologies ICRI Rm. Valcea, Romania

16:30 Electrocatalytic reduction of carbon dioxide with alpha MnO2-based electrode materials
Yu-Ting Yang, Chiung-Fen Chang
Department of Environmental Science and Engineering, Tunghai University

16:30 Magnetic properties of vertically-oriented Fe nanoparticles inserted into MWCNTs
F. Le Normand1, C. Speisser1, L. Matsuz2, D. Matsui2, I. Janowska3
1: -Cube, MtCEPV, 23 rue du Loess, 67037 Strasbourg France 2: Department of Physics, University Taras Shevchenko, Kyiv, Ukraine 3: ICPEES, ECIPM, 25 rue Recqueur, 67017 Strasbourg Cedex 2, France

16:30 Electrical Properties of Aluminum Alloys Transferred to the Gaphene Surface
Remzi Dağ a, Ahmet Burak Sängüney b, Adem Akdağ c, Macihat Yilmaz d, Ahmet Coskun b, Odzü Dogan e a Department of Nanoscience&Nanotechnology, Institute of Science, Necmettin Erbakan University, Konya, Turkey, b Department of Chemistry, A.Kelesoğlu Faculty of Education, Necmettin Erbakan University, Konya, Turkey, c Department of Nanoscience&Nanopropertying, Graduate School of Natural and Applied Sciences, Atatürk University, Erzurum, Turkey, d Department of Metallurgy and Materials Science, S.A.C. Engineering Faculty, Necmettin Erbakan University, Seydisehir, Konya, e Department of Physics, A.Kelesoğlu Faculty of Education, Necmettin Erbakan University, Konya, Turkey

16:30 Metal decorated MWCNT-based chemiresistors for selective detection of hydrocarbon compounds
Elena Didonardo (1), Marco Alvisi (2), Gennaro Cassano (2), Francesco Di Paoli (3), Michette Penza (2)
(1) Università del Salento, Lecce, Italy. (2) Italian National Agency for New Technologies, Energy and Environment (ENEA), Department of Sustainability - Lab Functional Materials and Technologies for Sustainable Applications - Brindisi, Italy. (3) ARPA, Bari, Puglia.

16:30 Sensing properties of ZnO nanowalls grown ?in situ? on conductometric platforms
E. Brun0, S. Mirabella, V. Strano, N. Donato*, S. G. Leonardi*, G. Neri*
1MATIS IMM-CNR and Dipartimento di Fisica e Astronomia, Universita di Catania, Via S. Sofia 64, 95123 Catania, Italy *Department of Engineering, University of Messina, Contrada Di Dio, 98166 Messina, Italy

16:30 Electrical detection of Hydrogen Sensors using Pt-gate AlGaN/GaN high electron mobility transistors
PhD Student, DJELT, FAYSALL Pr: A. AULD-ABBAS Pr, N.-E. CHABANE-SARI Abou Bakr Belkaïd University, / Research Unit Materials and Renewable Energy (URMER), B.P. 119, Tlemcen, Algeria

16:30 Carbon nanotube-supported electrocatalysis
Nikolai Czech, King K. Hii, Klaus Hellgardt, Miko Løhse
Department of Chemistry, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom, Department of Chemistry, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom, Department of Engineering, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom, Department of Chemistry, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom
First Fluorescent Surface-Confined Supramolecular Self-Assembly on Graphene
Sylvain Le Liepvre, Ping Du, David Kreher, Mathieu Fabre, Céline Fiorini, Ludovic Douillard, Fabrice Charra, and André-Jean Attias
Université Pierre et Marie Curie, IPCM, UMR 8232, 75005, Paris, France, CEA/SPEC, UMR 3680, CEA Saclay 91191 Gif-sur-Yvette, France

Electrostatic self-assembly of hierarchical nanoparticle trimers and their response to optical and electron beam stimuli
Julian A. Lloyd, Soon Hock Ng, Amelia C. Y. Liu, Ye Zhu, Wei Chao, Toon Coenen, Joanne Etheridge, Daniel E. Gómez, Udo Bach

Aligned Assembly of Nanowires on Flexible Membranes and Cantilevers by Contact Printing
M. Nilsen, A. Behroudj, S. Strehle
Ulm University, Institute of Electron Devices and Circuits, Albert-Einstein-Allee 45, 89081 Ulm, Germany

Quantum Dot Assembly via Critical Casimir Forces
E. Marino (1), T.E. Kodger (1,2), R. Crisp (3), D.M. Balazs (4), A. Houtepen (3), M.A. Loi (1)
(1) Van der Waals – Zeeman Institute, Universiteit van Amsterdam, Science Park 904 1098XH, Amsterdam, The Netherlands, (2) Agrotechnology and Food Sciences, Wageningen University and Research, Stepeneng 4, 6708 WE, Wageningen, The Netherlands, (3) Opto-electronic Materials, Delft University of Technology, Faculty of Applied Sciences Chemical Engineering, Van der Maassweg 9, 2629 HZ Delft, The Netherlands, (4) Faculty of Mathematics and Natural Sciences, Photophysics and OptoElectronics - Zernike Institute for Advanced Materials, Nijenborgh 4, 9747 AG Groningen, The Netherlands.

Supramolecular hybrid nanowire based on conjugated polymer assembly
Seon-Mi Jin1, Jinwoo Nam1, Inhye Kim1, Jung Ah Lim2, Eunji Lee1*
1Graduate School of Analytical Science and Technology, Chungnam National University, Daejeon 605-764, Republic of Korea, 2Center for Opto-Electronic Materials and Devices, Post-Silicon Semiconductor Institute, Korea Institute of Science and Technology (KIST), Seoul 136-791, Republic of Korea

Structural and magnetic evolution of mixed CE-seeded-grown multilayered Mn/Fe oxides
Sergio Lentijo Mozo, Efisio Zuddas, Alberto Casu, Andrea Falqui
Biological and Environmental Sciences and Engineering (BESE) Division, NABLA Lab, King Abdullah University of Science and Technology (KAUST), 23955-6900 Thuwal, Saudi Arabia
10:00 Coffee break

08:30 Tailoring plasmonic coupling in hierarchical assemblies
Andreas Fery, Tobias König, Christian Kuttner, Munish Chana, Anja Steiner, Roland Holzmann, Moritz Többe, Christoph Harske, Martin Mayer, Patrick Protzel
Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfad).
Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfad).
Institute of Building Materials, Advancing Electronics Dresden (cfad).
Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfad).
Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfad).
Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfad).
McGill University Toronto, CIC Biomagure San Sebastian.
Leibniz Institut für Polymerforschung Dresden and Center for Advancing Electronics Dresden (cfad).
^

09:00 Synthesis of tunable plasmonic nanostructures by fast laser processing: application to surface enhanced Raman scattering
Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece.
Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece.
Department of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece.
School of Science and Technology, Nottingham Trent University, Nottingham, NG11 8NS, United Kingdom.
Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece.
School of Chemistry and Chemical Technology, University of Strasbourg, UMR 7504, F-67000 Strasbourg, France.
Department of Physics, University of Strasbourg, UMR 7504, F-67000 Strasbourg, France.
^{

09:15 Hybrid nanocomposite Fe3-xO4/PBA/ZnO with synergistic photo optical and plasmonic properties
A. Santagata (1), A. Guarnacioni (1), A. De Bonis (2), R. Teghil (2), A. Dell'Aglio (3), A. De Giacomo (3,4)
(1) CNR-ISM, FLASH-T, Tito Scalo Unit, Zona Ind. – 85050 Tito Scalo (PZ) – ITALY (2) Dipartimento di Scienze, Universita della Basilicata, Via dell’Ateneo Lucano 10 – 85100 Potenza – ITALY (3) CNR-Nanotec, Bari, Via Amendola 122/D, 70126 Bari – ITALY (4) Universita di Bari, Dipartimento di Chimica, Via Orabona 4, 70125 Bari – Italy

09:30 Tailoring plasmonic coupling in hierarchical assemblies
Kwang-Sup Lee - Peter Kofinas
Design of nanomaterials : Bao-Lian Su - Peter Kofinas
^

09:45 Hierarchical materials and sensor elaboration :
Eric Kofinas - Peter Kofinas

10:00 Coffee break

10:30 Stimuli-responsive hybrid silica-based materials
Michel WONG CHI MAN
Laboratoire AM2N - Institut Charles Gerhardt Montpellier UMR5253 CNRS-ENSCM-UM 8 rue de l’Ecole normale, 34296 Montpellier CEDEX 5, France

10:45 Hybrid nanocomposite Fe3-xO4/PBA/ZnO with synergistic photo optical and plasmonic properties
A. Santagata (1), A. Guarnacioni (1), A. De Bonis (2), R. Teghil (2), A. Dell’Aglio (3), A. De Giacomo (3,4)
(1) CNR-ISM, FLASH-T, Tito Scalo Unit, Zona Ind. – 85050 Tito Scalo (PZ) – ITALY (2) Dipartimento di Scienze, Universita della Basilicata, Via dell’Ateneo Lucano 10 – 85100 Potenza – ITALY (3) CNR-Nanotec, Bari, Via Amendola 122/D, 70126 Bari – ITALY (4) Universita di Bari, Dipartimento di Chimica, Via Orabona 4, 70125 Bari – Italy

11:00 Encapsulation of magnetic iron oxide nanoparticles inside carbon nanotubes for biomedical applications
Van der Schueren B., Mertz D., Vollin O., Pham Huu C., Bègin-Colin S., Bègin D.
CNRS, Université de Strasbourg
Publishers' information: Sergio Moya - Sylvie Begin

16:30 Ultra thin Pd nanosheets coated with submonolayered Ru for enhanced catalytic activity in CO oxidation
Ye Liu, Zhicheng Zhang, and Hua Zhang
School of Materials Science and Engineering, Nanyang Technological University.

16:30 Structural and thermal properties of HDPE filled with graphene nanoparticles of different diameter size
1Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, 2Department of Mechanical and Manufacturing Engineering, University of Cyprus, 1678 Nicosia, Cyprus. 3Department of Chemistry, Laboratory of Polymer Chemistry and Technology, Aristotle University of Thessaloniki, 54124 Greece

16:30 Surface-driven Na-ion storage devices based on nanostructured pyrolyzers
Na Rae Kim, Hyeon Joon Yoon, Jun Ho Choe, Hong Joo An, Young Soo Yun*, Hyoung-Joon Jin**
Na Rae Kim, Hyeon Joon Yoon, Jun Ho Choe, Hong Joo An, Hyoung-Joon Jin - Department of Chemical Engineering, Inha University - Young Soo Yun - Department of Chemical Engineering, Kangwon National University

16:30 Kinetic Monte Carlo Simulation Study of Epitaxial Growth of Copper Surfaces
Chen Shuai, Zhang Yong-Wei
Institute of High Performance Computing, A*STAR, 138632 Singapore

16:30 Stability of Small, Colloidal Platinum Nanoparticles in Hydrogenation Reactions
Martin Tschurl, Patricia Wand, Ueli Heiz, Mirza Cokoja

16:30 CVD growth of graphene on Ni/SiO2/Si: effect of annealing conditions
F. Akhtar, G. Lupina, P. Zaussnili, S. Schulze, A. Wolf, T. Schroeder, 2 and M. Lukostus
1HIT, Im Technologiepark 25, 15236 Frankfurt (Oder), Germany, 2 BTU Cottbus-Senftenberg, Konrad-Zuse Straße 1, 03046 Cottbus, Germany

16:30 Development of ‘thread transistors’ based on carbon-nanotube-composite threads and aiming to construct ‘thread circuits’
Hayato Kitamura1, Hiroyuki Shimizu2, Katsuaki Ishii2, Takahide Oya1
1Yokohama National Univ., Japan, 2Textile Research Institute of Gunma, Japan

16:30 Uniformly-coated superparamagnetic nanoparticles for triggered enhanced drug release from alginate hydrogels
Alexandra Teleki, Florian L. Haufe, Ann M. Hirt, Athanasios Tilakas, Ioan Stamati
University of Bucharest, Faculty of Physics, 3Nano-SAE Research Center, 405 Atomistilor str., Bucharest-Magurele, 077125, Romania

16:30 Ultrahigh field emission current density of carbon nanotube array on tungsten
Quan Zhang, Xi-Juan Wang, Xiao-Ku Yan, Peng Meng, Guo-an Cheng, Rui-ting Zheng, Xiao-ling Wu
College of Nuclear Science and Technology, Beijing Normal University, Beijing 100875, China

16:30 Bur-like iron oxide nanocapsules for the inorganic and organic pollutant removal
Ye-Jin Jin,1,2 Hyokyoung Jeon,1 J. S. Kim,1,2 Ha-Jin Lee1,2
1. Western Seoul Center, Korea Basic Science Institute, Seoul 03759, Korea 2. Dept. of Chemistry and Nanoscience, Ewha Womans University, Seoul 03760, Korea

16:30 Rational Design of Nanocarbon-Nanoparticles Heterostructures for Catalytic Reduction of 4-nitrophenol to 4-aminophenol
Yi-Lun Yeh, Dean A. Martinez, Wei-Ting Li, Chih-Yi Fang* and Wei-Hung Chiang*
National Taiwan University of Science and Technology, Taiwan

16:30 High performance humidity sensor based on rGO/MoS2 hybrid composites
Myeonseok Jang, Wonmok Lee
Department of Chemistry, University of Sejong, 209 Neungdong-ro, Gwangjin-gu, Seoul, Republic of Korea (zip code: 143-747)

16:30 Halide perovskite heterojunctions: bond formation and carrier confinement at the PbS-CePbBr3 interface
Young-Kwan Jung, Keith T. Butler, Aron Walsh
Yonsei University, University of Bath, Imperial College London & Yonsei University

16:30 Green emitting magneto-luminescent iron-oxide/ZnS coated by copped lanthanum fluoride nanomaterials
Department of Physics, Federal University of Maranhão, Av. dos Portugueses, 1966 - Bacanga, São Luís - MA, 65080-805, Brazil. Department of Fundamental Chemistry, Institute of Chemistry, University of São Paulo, Av. Prof. Lineu Prestes, 748, 05088-000, São Paulo-SP, Brazil. Department of Immunology, Institute of Biomedical Sciences-UNICAMP, Av. Prof. Lineu Prestes, 13083-859, Campinas-SP, Brazil. Bariloche Atomic Center (CNEA), Baliboike Institute (U. N. Cuyo) and CONICET, 8400, San Carlos de Bariloche, Rio Negro, Argentina. Institute of Physics "Gleb Wataghin", State University of Campinas (UNICAMP), 13083-859, Campinas-SP, Brazil. Brazilinan Nanotechnology National Laboratory (LNNano-CNPEM), Rua Giuseppe Maximo Scifaro 10000, 13083-100, Campinas, São Paulo, Brazil. Department of Physics, Faisalabad, Pakistan. Nuclear and Energy Research Institute - IPEH, University of Sao Paulo - Av. Prof. Lineu Prestes, 2242 - SP, 05085-000 São Paulo-SP, Brazil.

16:30 High performance humidity sensor based on rGO/MoS2 hybrid composites
Myeonseok Jang, Wonmok Lee
Department of Chemistry, University of Sejong, 209 Neungdong-ro, Gwangjin-gu, Seoul, Republic of Korea (zip code: 143-747)
16:30 Design and synthesis of nanostructured organosilicon luminophores for efficient and fast elementary particles photodetectors
Enikolopov Institute of Synthetic Polymer Materials of Russian Academy of Sciences (ISPM RAS), Moscow, Russia, Moscow State University, Chemistry Department, Moscow, Russia, LuminoTech LLC, Moscow, Russia

16:30 Carbon nanowalls, new versatile graphene based interface for laser desorption/ionization of small compounds in mass spectrometry
Enikolopov Institute of Synthetic Polymer Materials of Russian Academy of Sciences (ISPM RAS), Moscow, Russia, Moscow State University, Chemistry Department, Moscow, Russia, LuminoTech LLC, Moscow, Russia

16:30 Synthesis of CeO2-Co3O4 Composite Nanotubes and Its Catalytic Stability towards CO Oxidation
Hyerim Oh1, Il Hee Kim2, Young Dok Kim2, and Myung Hwa Kim1*
1Department of Chemistry & Nano Science, Ewha Womans University, Seoul, 120-750, Korea 2Department of Chemistry, Sungkyunkwan University, Suwon, 440-748, Korea

16:30 Hybrid nano systems for direct X-ray detectors
University of Surrey, University of Surrey, University of Surrey & Royal Surrey County Hospital, University of Surrey, University of Surrey.

16:30 Spectroscopic manifestation of intravalley double electron-phonon resonance processes in single- and bilayer graphene systems
Yu. Slubrov1, V. Streichuk1, A. Nikolenko1, T. Orekhov2, V. Gubanov2, M. Bily2, A. Naumenko2, N. Fadiuk2, L. Ogordanlyk2, L. Bulavin2
1V. Lastkaryov Institute of Semiconductor Physics, National Academy of Science of Ukraine, 45 Nauky pr., 03028 Kyiv, Ukraine 2Teras Shevchenko National University of Kyiv, 64/13 Volodymyrsky Str., 01601 Kyiv, Ukraine

16:30 Synthesis of Iron oxide nanoparticles and their application for the development of bacterial bioreactor
Ayoub NADI1, 2, 3, Damien BOYER3, Christiane FORESTIER4, Hassan HANNACHE5, Omar CHERKAOUI1 and Said GMOUH*2.
1 Laboratoire REMTEX, ESTIH, route d’Eljadida, km 8, BP 7731 - Oulfa, Casablanca-ABADION - MAROC. 2 Laboratoire LIMAT, Université Hassan II Casablanca, BP: 9167 Casablanca-MAROC. 3 Université Clermont Auvergne, CNRS, SIGMA Clermont, Institut de Chimie de Clermont-Ferrand, F-63000 Clermont?Ferrand, France 4 Université Clermont-Auvergne, Laboratoire de Biologie Cellulaire et Moléculaire, 63001 Clermont-Ferrand-FRANCE. 5 Centre des matériaux avancés, Université Mohammed VI Polytechnique, Benguerir, Morocco *said.gmouh@gmail.com damien.boyer@sigma-clermont.fr

16:30 Modification of silicon columnar nanostructures with cavitand receptors for aromatic VOC sensing and explosive detection
C. Tudisco(1), T. Barboza(2), A. Motta(3), A. E. Giuffrida(1), R. Pinalli(2), E. Dalcanale(2). 1Dipartimento di Scienze Chimiche, Università di Catania and INSTM UdR di Catania, Italy. 2Dipartamento di Scienze Chimiche, della Vita e della Sostenibilità Ambientale and INSTM UdR di Parma University of Parma, Italy. 3Dipartimento di Scienze Chimiche, Università degli Studi di Roma “La Sapienza” and INSTM UdR Roma, Italy.

16:30 Thermo-Optical switching of CuCl nanocrystals embedded in a glass matrix
E. Haro-Poniatowski (1,2), M. Jiménez de Castro (2), I. Camarillo1, A. Mariscal (2), R. Serna (2)
1 Departamento de Física Universidad Autónoma Metropolitana, Apartado Postal 55-534, Mexico 09340, DF, Mexico. 2 Laser Processing Group, Instituto de Óptica, CSIC, Serrano 121, 28006 Madrid, Spain.

16:30 Evolution of the opening size of nanosphere lithography masks during thermal annealing
Thomas Riedl 1,2, Vinay Kunnathully 1,2, Jörg K.N. Lindner 1,2
1. Paderborn University, Department of Physics, Warburger Straße 100, 33098 Paderborn, Germany 2. Center for Optoelectronics and Photonics Paderborn (CeOPP), Warburger Straße 100, 33098 Paderborn, Germany
SYMPOSIUM W

Small scale mechanical behaviour of interfaces: bridging experimental and computational modelling methods

Symposium Organizers:

Erik BITZEK, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany

Hosni IDRISSI, Université Catholique de Louvain, Belgium

Marc FIVEL, SImaP-GPM2/CNRS, St Martin d’Hères, France

Roland BRUNNER, Materials Center Leoben Forschung, Leoben, Austria
Study of Addition of wt.% Ratio of Silica Sand Nanoparticles on Aluminium-Carbon Fibers Hybrid Composites
Muhammad M.T.Z. Butt, Tahir T Ahmad, Muhammad M. Kamran, M. U. Manzoor
Department of Metallurgy and Materials Engineering, CEET, Faculty of Engineering & Technology, University of the Punjab, Lahore, Pakistan

11:50 P03 nanofocus end-station for material research
Anton Davydok, Christina Krywka
Institute for Materials Research, Helmholtz-Zentrum Geesthacht, outstation at DESY, Notkestraße 85, 22607 Hamburg, Germany
SYMPOSIUM X

New frontiers in laser interaction:
from hard coatings to smart materials

Symposium Organizers:

James G. LUNNEY, Trinity College Dublin, Ireland

Nadjib SEMMAR, CNRS / University of Orléans, France

Stela CANULESCU, Technical University of Denmark, Roskilde, Denmark

Valentina DINCA, National Institute for Lasers, Plasma and Radiation Physics, Magurele, Romania

Be published in Applied Physics A.
08:30 Laser ablation for the synthesis of carbon-based thin films and graphene
Florence Garrelie, Florent Bourguard, Christophe Donnet
Univ Lyon, UJM-Saint-Etienne, CNRS, Institut d’Optique Graduate School, Laboratoire Hubert Curien UMR 5516, F-42023, SAINT-ETIENNE, France

09:00 Pulsed Photonic Fabrication of Nanostructured Metal Oxides Thin Films
Sijuin Luo, Briley B. Bourgeois, Brian C. Rigs, Shiva Adreidy, and Douglas B. Chrisey
Department of Physics and Engineering Physics, Tulane University, New Orleans, Louisiana 70118, USA

09:15 Diamond-Like Carbon layers obtained by Pulsed Laser Deposition in different thin film materials
J.M. Dekkers*, and A. Janssens
Solvates BV

09:30 PLD covering the innovation chain to accelerate the commercial uptake of novel thin film materials
P. Stock, F. Antoni, F. Le Normand
ICube, D-ESSP, 23 rue du Loess, 70037 Strasbourg France

09:45 Experimental investigations of transient plasma plumes generated by laser ablation in various temporal regimes
S.A. Iriniuc1,2, S. Gurzu2, P. Nica3, M. Agop3, C. Focsa1
1 Univ. Lille, CNRS, UMR 8523 - PLF - Physique des Lasers, Atomes et Molécules, F-59000 Lille, France 2 Faculty of Physics, Atmosphere Optics, Spectroscopy and Lasers Laboratory "Alexandru Ioan Cuza" University, 70050 Iasi, Romania 3 Department of Physics, “Gh. Asachi” Technical University, 70050 Iasi, Romania

10:00 Coffee break

10:30 Laser surface nitriding with various gas compositions for controlled surface life time control
Muhammad Obeidi, Emna McCarthy, Dermot Brabazon
Advanced Processing Technology Research Centre, Dublin City University, Dublin, Ireland

11:00 Experimental analysis of the passivation kinetics on Aluminium: Laser-induced defect agglomeration and saturation
Morris J.W. Weimerskirch, Tristan O. Nagy, Ulrich Pacher, Wolfgang Kautek
Faculty of Physics- University of Vienna, Department of Physical Chemistry - University of Vienna, Department of Physical Chemistry - University of Vienna, Department of Physical Chemistry - University of Vienna

11:15 Potential use of high quality surface machining LIBWE on PMMA
K. Yeung1, H-F. Chang1, W.C. Kao1, M. Ehrhardt2, K. Zimmer2, J. Y. Cheng1
1 Research Center for Applied Sciences, Academia Sinica, 128 Sec. 2, Academia Rd., Nankang, Taipei 11529, Taiwan, ROT 2 Leibniz-Institute of Surface Modification, Permoserstr. 15, 04318 Leipzig, Germany

11:30 Oxidation-Induced Surface Roughening of Aluminum Nanoparticles Formed in an Ablation Plume:role of surrounding gas composition
(1) Laboratoire Interdisciplinaire Carnot de Bourgogne, UMR 5630 CNRS-Université de Bourgogne Franche-Comté, 9 avenue Alain Savary, BP 47870, 21078 Dijon cedex, (2) NIMBE, CEA, CNRS, Université Paris-Saclay, CEA Saclay 91191 Gif sur-Yvette Cedex, (3) Institut de Radioprotection et de Sûreté Nucléaire (IRSN), PSL, RES, SCA, LPA, Gif sur-Yvette 91192, France, (4) Laboratoire Interdisciplinaire de Physique, UMR 5588 CNRS-Université Joseph Fourier, BP 87, 38402 Saint Martin d'Hères, France, (5) Institut Lumière Matière, UMR5306 Université Lyon 1-CNRS, 69662 Villeurbanne Cedex, France, (6) Institut de Physique de Rennes, UMR 6251 CNRS-Université de Rennes 1, 35042 Rennes Cedex

11:45 Diffusive aggregation of fractal TiO2 nanostructures by non-thermal laser ablation at ambient pressure
Emanuelle Cavaliere1, Gabriele Ferlinni1, Luca Celardol1, D. Arche11, Pasqualongio Pinguo2, Luca Daviddi1
1 Interdisciplinary Laboratories for Advanced Materials Physics (i-LAMP) & Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, via del Musei 41, I-25121 Brescia, Italy 2 Laboratorio NEST, Scuola Normale Superiore, Piazza San Silvestro 12, 56127 Pisa, Italy

12:00 Residual stress mapping and minimization in femtosecond laser glass welding
M. Gostaker G. Chabrot, A. Bhaouka, K-D. Dorkenoo, J-L. Rehrspinger, S. Lecler
IREPA LASER, Pôle API, Illkirch-Graffenstaden, France, Icube, University of Strasbourg UMR CNRS, Strasbourg, France, IPCMS, CNRS UMR 7504, Strasbourg, France , ECM Strasbourg-Europe, Espace Européen de l’entreprise, Schiltigheim, France

12:15 Lunch

Modelling of laser ablation : Stela Canucescu

Tuesday 23 May 2017

13:00 Two mechanisms of nanoparticle generation in pulsed laser ablation in liquids: The origin of the bimodal size distribution
Cheng-Yu Shih, Maxim V. Shugaev, Chengping Wu, Leonid V. Zhigilei
University of Virginia, Department of Materials Science and Engineering, 395 McCormick Road, Charlottesville, VA 22904-4745

14:00 Combining the plasmonic and hydrodynamic models of LIPSS formation
E. L. Gurevich, Š. Maragkaki, V. Levy, T. J.-Y. Derrien, N. M. Bulgakova
Ruhr-University Bochum, Germany HILASE Centre, Institute of Physics AS CR, Czech Republic

14:15 Theoretical investigation of periodic nanostructuring mechanism of Au due to UV laser pulse with and without spatial confinement
Dmitry S. Ivanov, Andreas Blumenstein, Martin E. Garcia, Baerbel Reithfeld, Jurgen Ihlemann, Peter Simon
Dmitry S. Ivanov - University of Kassel, Germany, Andreas Blumenstein - Laser Laboratorium Göttlingen e.V. Göttlingen, Germany, Martin E. Garcia - University of Kassel, Germany, Baerbel Reithfeld - technical University of Kaiserslautern, Germany, Jurgen Ihlemann - Laser Laboratorium Göttlingen e.V. Göttlingen, Germany, Peter Simon - Laser Laboratorium Göttlingen e.V. Göttlingen, Germany

14:30 Interatomic potentials for laser excited solids derived from ab-initio molecular dynamics simulations
Bernd Baeuherenhe, Ewoue S. Zijstria, Martin E. Garcia
Theoretical Physics, University of Kassel, Heinrich-Plett-Strasse 40, D-34132 Kassel, Center for Interdisciplinary Nanostructure Science and Technology (CINSat), Heinrich-Plett-Strasse 40, D-34132 Kassel, Germany

15:00 Substrate-mediated laser ablation for micro-sampling of biological tissues: Fundamental mechanisms and applications
Tony MAULOUET12, Benoî FATOU12, Maxence WISZTORSKI1, Cristian FOCSA2, Simon - Laser Laboratorium Göttingen e.V. Göttingen, Germany, Baerbel Rethfeld - technical University of Kaiserslautern, Germany, Peter Simon - Laser Laboratorium Göttlingen e.V. Göttlingen, Germany

15:15 Poster session X :
Poster session X : Gerard O'Connor, Florence Garrelie, Esther Rebollard

16:00 Laser modification of luminescent hybrid materials based on lead oxyfluoride glasses and metal organic phosphors
Dmitry Mendeleev University of Chemical Technology of Russia

16:10 Crystalline phase generation in the Bi-Ge-O system under laser treatment of glasses
Dmitry Mendeleev University of Chemical Technology of Russia

16:15 Laser-based analytical methods : Gerard O’Connor
16:00 On the performances of laser-induced breakdown spectroscopy for quantitative analysis of materials
E. Avente1, O. Fu1, G. Dorociam1, G. Socot1, V. Craciun1 and J. Hermann2
1Laser-Surface-Plasma Interactions Laboratory, LASERS Department, National Institute for Lasers, Plasma and Radiation Physics, RO-077125, Magurele, Ilfov, Romania, 2LPU, CNRS – Aix-Marseille University, 163 Av. de Luminy, 13288 Marseille, France.

X P_1.76

16:00 Phase relations and functional properties of BaTiO3 modified NaBiTiO3 solid solution thin films obtained by laser techniques
N. D. Scarsoreanu1, F. Craciun1, A. Andrei1, V. Ion1, R. Birega1 and M. Dinescu1
1NILPR, P.O. Box MG-16, RO-777125, Bucharest, Romania. 2CNR-Istituto del Sistemi Complessi, Via del Dosso del Cavaliere 100, I-00133, Rome, Italy.

X P_1.59

16:00 Laser ablation in liquid of complex oxide materials
N. D. Scarsoreanu1, A. Rotaru1, V. Ion1, V. Teodeescu2 and M. Dinescu1
1NILPR, P.O. Box MG-16, RO-777125, Bucharest, Romania. 2NIMP-National Institute of Materials Physics, 077125-Bucharest-Magurele, Romania.

X P_1.60

16:00 Synthesis and characterization of Cu2PO4OH, a near-infrared absorbing material
Elena Perez-Barrado1, Richard J. Darnet2, Andrew Spiller1 and Dieter Guti1
1Keeling & Walker Ltd, Whielden Rd, Stone-on-Trent ST4 4AJ, United Kingdom. 2School of Chemistry and Physical Sciences, Keele University, Staffordshire ST5 5BG, United Kingdom.

X P_1.61

16:00 Functionalized organic heterostructures deposited by MAPLE on flexible substrate
M. Socot1, N. Preda1, C. Breazu1, A. Stanculescu1, M. Girtian2, G. Socot3
1National Institute of Material Physics, 405A Atomistilor Street, 077125, Magurele, Romania. 2Laboratoire de Photonique d’Angers, Université d’Angers, 2, Bd. Lavoisier, 49045, Angers, France. 3National Institute for Lasers, Plasma and Radiation Physics, 405 Atomistilor Street, 77125, Magurele, Romania.

X P_1.63

16:00 Influence of the liquid ionic strength on precursors of titania self-assembled nanostructures generated by LAL
A. Guarnaccia1, A. Santagata1, S. Orlando1, A. De Bonis1, R. Teghi1 and A. Laurilla1, 2, 3, Medici1
1CNR-ISM, SDS - Unit of Tito Scalzo - Zona Industriale, 85050 Tito Scalzo (PZ), Italy, 2Istituto di Scienze dell'Universita degli Studi della Basilicata, Viale dell’Aleno, Locano, 85100 Potenza, Italy, 3CNR, IMA, Area della Ricerca di Potenza - Zona Industriale, 85050 Tito Scalzo (PZ), Italy.

X P_1.64

16:00 Towards the optical control in single molecule electrochemical sensors
Marco Riccardi, Artem Bakulin, Alexandar P. Ivon, Binoy Paulose Nadappurum and Joshua B. Edel
Department of Chemistry, Imperial College London, South Kensington, London, SW7 2AZ, United Kingdom.

X P_1.65

16:00 Organic heterostructures obtained by MAPLE on nanostructured ITO
C. Breazu1, G. Socot1, F. Craciun1, A. Stanculescu1 and D. Dragoman2, 4
1National Institute of Material Physics, 405 Atomistilor Street, 77125, Magurele, Romania. 2University of Bucharest, Faculty of Physics, 405 Atomistilor Street, 77125, Bucharest, Romania. 3National Institute for Lasers, Plasma and Radiation Physics, 405 Atomistilor Street, 77125, Magurele, Romania. 4Academy of Romanian Scientists, Splaiul Independentei 54, 050094 Bucharest, Romania.

X P_1.66

16:00 A non-differentiable approach for modeling laser ablation plasma dynamics
S. Sirimic1, 2, S. Gurlui2, P. Nică3, C. Focsa1, M. Agop3
1Univ. Lille, CNRS, UMR 8523 - PlaLAM - Physique des Lasers, Atomes et Molecules, F-59000 Lille, France. 2Faculty of Physics, Atmosphere Optics, Spectroscopy and Lasers Laboratory, 'Alexandru Ioan Cuza' University, 700050 Iasi, Romania. 3Department of Physics, “Gh. Asachi” Technical University, 700050 Iasi, Romania.

X P_1.67

16:00 Versatile two-dimensional transition metal dichalcogenides
Kevin Affannoukout, Stella Canulescu, Jørgen Schou
DTU Fotonik, Technical University of Denmark, DK-4000 Roskilde, Denmark.
X P_1.68

16:00 Thin coatings based on nanostructured eucalypt functionalized mangnetite nanoparticles entrapped in polyactic acid with biologi
Alexandru Mihai Grumezescu1, *, Valentina Grumezescu2, Alina Maria Holban1, 3, Anton Fica1, Gabriel Socot2, Roxana Trusca1, Carmen Mariana Chifriu1,3
1Department of Science and Engineering of Oxide Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1-7 Polizu Street, 01061 Bucharest, Romania. 2Lasers Department, National Institute for Lasers, Plasma & Radiation Physics, P.O. Box MG-36, Bucharest, Romania. 33Microbiology Immunology Department, Faculty of Biology, University of Bucharest, 1-3 Portocalilor Lane, Sector 5, 72726 Bucharest, Romania.

X P_1.69

16:00 Magnetite nanocoatings for the active release of lysosim at bone-implant interface
Alexandru Mihai Grumezescu1, Valentina Grumezescu2, *, Anton Fica1 and Alina Maria Holban1, 3
1National Institute for Lasers, Plasma & Radiation Physics, 405 Atomistilor Street, 077125, Bucharest, Romania. 2Research Institute of the University of Bucharest, Bd. M. Kogălniceanu 36-46, 050107, Bucharest, Romania.

X P_1.70

16:00 Electromagnetic Waves Generation in Femtosecond Laser Irradiation of Metals
A. Marcu, A. Groza, M. Gânciu, A. Achim, R. Ungureanu, G. Cojocaru, A. Mihai Grumezescu1, *, Valentina Grumezescu4, Lia Măru Dulu2, Carmen Curteilu1, Ari Cotară2, Ecaterina Sarbu2, Ecaterina Andronescu3, Verónica Lazar1, 2
1Microbiology Immunology Department, Faculty of Biology, University of Bucharest, 1-3 Portocalilor Lane, Sector 5, 72726 Bucharest, Romania. 2Research Institute of the University of Bucharest, Bd. M. Kogălniceanu 36-46, 050107, Bucharest, Romania. 3Department of Science and Engineering of Oxide Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest, 1-7 Polizu Street, 01061 Bucharest, Romania. 4Lasers Department, National Institute for Lasers, Plasma & Radiation Physics, P.O. Box MG-36, Magurele, Bucharest, Romania.

X P_1.71

16:00 Modification of W surfaces by exposure to hollow cathode plasmas
C. Stanca, F. Stokker-Cheregi, A. Andrei, M. Dinescu, G. Dinescu
National Institute for Lasers, Plasma and Radiation Physics, 077125 Magurele, Romania.

X P_1.75
### Joint session with Symposium T: Oxide thin films and nanostructures grown by pulsed laser deposition

**Wednesday 24 May 2017**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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<tbody>
<tr>
<td>09:00</td>
<td>Pulsed Laser Deposition of Amorphous Ultrasmall Nanoparticles as Metastable &amp;#8220;Building Blocks&amp;#8221; for Crystalline Films and Nanostructures</td>
<td>Oak Ridge, TN, USA</td>
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<tr>
<td>09:30</td>
<td>Epitaxial growth of rare earth doped cobalt ferrite thin films by pulsed laser deposition</td>
<td>Oak Ridge, TN, USA</td>
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<td>10:00</td>
<td>Coffee break</td>
<td>Oak Ridge, TN, USA</td>
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<tr>
<td>10:30</td>
<td>Textured nanocrystalline EuO thin films grown at RT by reduction from a Eu&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;3&lt;/sub&gt;-Eu&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;3&lt;/sub&gt; target</td>
<td>Knoxville, TN, USA</td>
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<tr>
<td>10:45</td>
<td>Epitaxial growth of rare earth doped cobalt ferrite thin films by pulsed laser deposition</td>
<td>Knoxville, TN, USA</td>
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<tr>
<td>10:00</td>
<td>Coffee break</td>
<td>Knoxville, TN, USA</td>
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<tr>
<td>10:30</td>
<td>KNN perovskite thin films grown by PLD for tunable microwave devices: influence of the deposition parameters</td>
<td>Knoxville, TN, USA</td>
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<tr>
<td>10:45</td>
<td>Critical current and pinning potential in nanostructured YBa2Cu3O7 superconducting films grown by PLD</td>
<td>Knoxville, TN, USA</td>
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<tr>
<td>11:15</td>
<td>Recent advances in large area Pulsed Laser Deposition, epitaxial growth of complex oxides on silicon</td>
<td>Knoxville, TN, USA</td>
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<tr>
<td>11:30</td>
<td>Deposition of epitaxial PMN-PT on silicon wafers for Piezoelectronic Transduction Memory Devices</td>
<td>Knoxville, TN, USA</td>
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<td>12:00</td>
<td>Lunch</td>
<td>Knoxville, TN, USA</td>
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### Laser deposition of materials: Eric Million

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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<tr>
<td>13:30</td>
<td>Dielectric Al&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;3&lt;/sub&gt;-Eu&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;3&lt;/sub&gt;-&amp;sub&lt;sub&gt;3&lt;/sub&gt;Ce&amp;sub&lt;sub&gt;2&lt;/sub&gt;Ce&amp;sub&lt;sub&gt;2&lt;/sub&gt;/sub&lt;sub&gt;sub&lt;sub&gt;3&lt;/sub&gt;Ce&amp;sub&lt;sub&gt;3&lt;/sub&gt;Ce&amp;sub&lt;sub&gt;2&lt;/sub&gt; Monolayers by Pulsed Laser Deposition</td>
<td>Oak Ridge, TN, USA</td>
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**Authors:**

David B. Geoghegan, Masoud Mahjouri-Samani, Mengkun Tian, Mina Yoon, Gerd Duscher, Alex A. Puretzky, Kai Wang, Christopher M. Rouleau, Kai Xiao, Minaoan Tien, Mina Yoon, Gyula Fernández. (1) Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN, USA 2) *Dept. of Materials Science and Engineering, University of Tennessee, Knoxville, TN, USA

- **Sizes and Scale:**
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  - 9.6

- **Contact:**
  - vlad@gmail.com, Tel.: +40 21 457 44 14, fax: +40 21 457 42 43
X-10.1 Laser patterning of thin films for applications in photovoltaics
Klaus Zimmer1, Lukas Bayer1, Martin Ehrenhardt1,2, Pierre Lorenz1, Alexander Braun3, Sven Peter4, Stephan Buecheler4, Ayodyaha N. Tewari4,
1 Leibniz-Institut für Überflächenmodifizierung e. V., Pernormstraße 15, 04318 Leipzig, Germany, 2 Advanced Launching Co-Innovation Center, Nanjing University of Science and Technology, #500 XiaolongWei, 210094 Nanjing, Jiangsu, People’s Republic of China, 3 BOT consulting GbR, Döllitzer Str. 18, 04277 Leipzig (former with Solarion AG), 4 Laboratory for Thin Films and Photovoltaics, Empa-Swiss Federal Laboratories for Materials Science and Technology, Ueberlandstrasse 129, 8063 Dübendorf, Switzerland

X-10.2 Excimer Laser Micromachining of Sapphire for Solar Cell Applications
S. C. Sklar*, Kazi Islam, Brian Riggs, Matthe Escarra and Douglas Chrisey**, *Contact Author **Presenting Author
Tulane University Department of Physics and Engineering Physics

X-10.3 Photoluminescence Enhancement of ZnO via Coupling with Surface Plasmons on All Thin Films
S. Dells, N. Kalfagiannis, S. Kassavets, C. Baziot, G. P. Dimitrakopoulos, D. C. Koutsoegeorgis, P. Patalas
Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, School of Science and Technology, Nottingham Trent University, Nottingham, United Kingdom, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, School of Science and Technology, Nottingham Trent University, Nottingham, United Kingdom, Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece

X-10.4 Optical Fibre Shaping by Chemical Etching for Photonic NanoJet Material Laser Processing
J. R. R. Chabrol, Stéphane Roques, Yoshitaka Takakura, Pierre Twardowski, Pierre Pfeiffer, Sylvain Ledier
IPPC, Icube UMR CNRS, ECAM Strasbourg-Europe, C3-lab, Icube UMR University of Strasbourg CNRS, TRIO, Icube UMR University of Strasbourg CNRS, IPP, Icube UMR University of Strasbourg CNRS, IPP, Icube UMR University of Strasbourg CNRS, IPP, Icube UMR University of Strasbourg CNRS, IPP, Icube UMR University of Strasbourg CNRS, IPP

X-10.5 Printed organic smart devices characterized by ultra-short laser pulses.
Francesco Pastorelli
Organic Energy Materials, Department of Energy Conversion and Storage, Technical University of Denmark, Frederiksborgvej 399, 4000, Roskilde, Denmark

X-11.1 Laser induced periodic surface structures : Klaus Zimmer

J. Cui1, A. Rodríguez-Rodríguez1, M. Hernández2, M.C. Garcia-Gutiérrez1, A. Nogales1, M. Castillejo2, T. A. Ezquerra1, E. Rebollar2
1 Instituto de Estructura de la Materia (IEM-CSIC), Serrano 121, 28006 Madrid, Spain, 2 Instituto de Química Física Rocasolano (IQFR-CSIC), Serrano 119, 28006 Madrid, Spain

X-11.2 Modification of surface properties of solids by femtosecond LIPSS writing: Comparative study on Silicon and Stainless Steel.
Olga Varlamova (1), Kevin Hoefner (1), Debasish Daker (2) and Jurgen Reif (1)
(1) Experimentalphysik, BTU Cottbus-Senftenberg, (2) Experimentelle Thermofluiddynamik (FWDF), Helmholtz-Zentrum Dresden-Rossendorf e.V.

X-11.3 Direct laser interference patterning of optohedral polymethylsiloxane (PDMOS) thin films
D. Sola (1), C. Lavieja (2), A. Orea (3), M.J. Clemente (4), P. Artal (1)
(1) Laboratorio de Óptica, Centro de Investigación en Óptica y Nanofísica, Universidad de Murcia, Campus Espinardo, 30.100 Murcia, Spain, (2) Instituto de Ciencia de Materiales Aragón, Universidad de Zaragoza-CSIC, Dpto. Ciencia y Tecnología de Materiales y Fluidos, 50.019 Zaragoza, Spain, (3) Instituto de Ciencia de Materiales Aragón, Universidad de Zaragoza-CSIC, Dpto. Física de la Materia Condensada, 50.009 Zaragoza, Spain, (4) Instituto de Ciencia de Materiales Aragón, Universidad de Zaragoza-CSIC, Dpto. Química Orgánica, 50.009 Zaragoza, Spain

X-11.4 Generation of nano-voids inside polylactide using femtosecond laser radiation
Tina Viertel, Markus Obrecht, Robby Ebert, Alexander Horn, Horst Exner
Hochschule Mittweida Technikumplatz 17 09648 Mittweida

X-11.5 Biological pathogen detection using laser-structured paper-based diagnostic sensors
I.N. Kats, P.J.W. He, S. Shewin, C.W. Keevi, R. W. Eason, C.L Sones
Optoelectronics Research Centre, University of Southampton, Optoelectronics Research Centre, University of Southampton, Environmental Healthcare Unit, Biological Sciences University of Southampton, Optoelectronics Research Centre, University of Southampton, Optoelectronics Research Centre, University of Southampton

X-11.6 3D Additive Manufactured 316L components microstructural features and changes induced by working life cycles
Antonio Santagata, Maria Lucia Pace, Ambra Guarnciaccio, Patrizia Dolce, Donato Mollica, Giovanni Pompeo Parisi
CNR-ISIM, MAFUT - Tito Scalo Unit, Zona Industriale, C.da S. Loja - 85050 Tito Scalo (PZ) - ITALY

X-12.1 2-photon stereolithography for rapid prototyping of chemical microsensors based on MIPs
Laura Piedra Chria Gomez, Arnaud Spangenberg, Jean-Pierre Malva, Olivier Soppera, Laura Piedra Chria Gomez, Arnaud Spangenberg, Jean-Pierre Malva, Olivier Soppera, Institut de Science des Matériaux de Mulhouse (IS2M), CNRS - UMR 7361, Université de Haute Alsace, 15 rue Jean Starcky, 68057 Mulhouse, France, Jean-Pierre Malva, Olivier Soppera, Laboratoire de Chimie, Université de Strasbourg, CNRS, 10 Cours de la Libération, 33405 Talence cedex, France

X-12.2 Direct micro peaks machining by photonic jet.
Robin Pierron, Pierre Pfeiffer, Sylvain Ledier, Icube, University of Strasbourg, CNRS UMR 7357, 300 bd Sébastien Brant, 67412 Illkirch, France, Icube, University of Strasbourg, CNRS UMR 7357, 300 bd Sébastien Brant, 67412 Illkirch, France, Icube, University of Strasbourg, CNRS UMR 7357, 300 bd Sébastien Brant, 67412 Illkirch, France

X-12.4 Studies on Microstructure and Corrosion Resistance of Laser Shock Peened Medium carbon (0.4%) C steel using Femtosecond Laser
Jytosna Dutta Majumdar1, Evgeny Gurevich2*, Renu Kumari1 and Andreas Ostendorf2
1Dept of Metal. & Maters. Eng, I. T. Kharagpur, West Bengal, B. 7 721302 2RuhrUniversität Bochum, Ls. Laseranwendungstechnik, Universitätsstr. 150, 44801 Bochum

X-12.5 SERS analyses of pesticides, insecticides and fungicides trough Au and Ag nanomaterials produced by laser techniques
P.A. Atanasov*1, N.N. Nedjalkov, V. Kuzov, N. Fukatza, W. Jevaswa2, T. Subramanii1
1Institute of Electronics, Bulgarian Academy of Sciences, Tzarigradsko chaussee 72, Sofia 1784, Bulgaria, 2International Center for Materials for NanoArchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1Namiki, Tsukuba 305-0044, Japan

X-14.5 Magnetic and biocompatible tests of novel iron nitride based nanoparticles synthesized by ammonia sensitized laser pyrolysis
1 NLPRP, Atomistlor 405, Magurele Bucharest, Romania; F. Dumitrache, C. Fleaca, I. Morjan, I. Sandu, A. Ilic, I.P. Morjan, 2 University of Bucharest, Department of Biochemistry and Molecular Biology, Splaiul Independenţei 91-95, Bucharest, Romania; M. Balas, A. Dinischiotu, M.S. Stan, 3 University of Bucharest, Faculty of Physics, Atomistlor 405, Magurele Bucharest, Romania; A. Ilic, C. Locovei, 4 Politehnica University of Bucharest, Faculty of Applied Chemistry and Materials Science, Department of Oxide Materials and Nanomaterials, Gh. Polizu 1-7, Bucharest, Romania; E. Vasile, 5 University of Timisoara – Research Center for Engineering of Systems with Complex Fluids, Mihai Viteazul 1, Timisoara, Romania; O. Marincu

X-16 Thursday 25 May 2017

X-17
15:00  **Microscopic Imaging and EBSD on Additive Manufactured Parts**

Dr. Lisa Weissmayer, Tim Schubert, Dr. Timo Bernthaler, Prof. Dr. Gerhard Schneider

(1) Dipl. Ing. Stefanie Freitag (2)

(1) Aalen University, Materials Research Institute  (2) Carl ZEISS Microscopy GmbH
2017 Spring Meeting
from May 22 to 26
Strasbourg Convention Centre - France

SYMPOSIUM Y

Paper electronics: from materials to applications

Symposium Organizers:

Antonio José Felix de CARVALHO, Universidade de São Paulo, Brazil

Ari ALASTALO, VTT Technical Research Centre of Finland, Finland

David GUERIN, Centre Technique du Papier, Grenoble, France

Rodrigo MARTINS, FCT – UNL, Caparica, Portugal
09:00 Paper-based platforms for printed electronics and diagnostics
Roger Bolliotstrom
OMYA International AG

09:30 Solution-processed green piezoelectric paper
Etienne Lemaire, Danick Briand
Ecole Polytechnique Fédérale de Lausanne EPFL-LMTS Maladière 71b P.O. Box 526 2000 Neuchâtel Switzerland

09:45 Thermomechanical and spectroscopic characteristics of micro/nanoceramics
(1)O. Paton Electric Welding Institute of NASU, Bozhenko str. 11, 03680 Kyiv, Ukraine, (2)Laboratory of Organic Electronics, Linköping University, Sweden, (3)Centre Technique du Papier, CS 90251, 38044 Grenoble Cedex 9, France # IMEP-LAHC, UMR CNRS 5130, Université de Savoie, 73736 Le Bourget du Lac Cedex, France

10:00 Coffee Break

Energy & Electrochemical Devices : Masaya Nogi

10:30 Multi-color electrochromic devices on paper
T. Venot, A. Danine and A. Rouquier
CNRS, University of Bordeaux, ICMCB, 87 avenue du Dr. Albert Schweitzer, 33608 Pessac, France.

11:30 A simple paper based microfluidic electrochemical biosensor for point of care cholesterol diagnostics
Gurpeet Kaur, Monika Tomar, Vinay Gupta
Department of Physics and Astrophysics, University of Delhi, Delhi, India, Physics Department, Miranda House, University of Delhi, Delhi, India, Department of Physics and Astrophysics, University of Delhi, Delhi, India

11:15 Paper-based electrochromic devices incorporating inkjet-printed PEDOT:PSS electrodes
Augustus W. Lang, Anna M. Österholm, Michel De Keersmaecker, D. Eric Shen, Robert J. Moon, John R. Reynolds
School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30332. Renewable Bioproducts Institute, Georgia Institute of Technology, Atlanta, GA 30322. School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30322. School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30332. School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30322. School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30322. School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30322. Renewable Bioproducts Institute, Georgia Institute of Technology, Atlanta, GA 30332. School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA 30322. Renewable Bioproducts Institute, Georgia Institute of Technology, Atlanta, GA 30332. Renewable Bioproducts Institute, Georgia Institute of Technology, Atlanta, GA 30332. Renewable Bioproducts Institute, Georgia Institute of Technology, Atlanta, GA 30332.

11:30 Polypyrrole - Graphene Nanocomposite Supercapacitors on Paper
Recep Yıksel, Husnui Emrah Unalan
Department of Micro and Nanotechnology, Middle East Technical University, Ankara 06800, Turkey, Department of Metalurgical and Materials Engineering, Middle East Technical University, Ankara 06800, Turkey

11:45 Nano fibrillated cellulose as transparent electrode in an organic solar cell studied by atomic force microscopy
R. Schenach1, F. Brumbauer1, M. Kräuter1, W. Bacheler2, K. Shanmugam2, C. Czibula3, C. Teichner4, B. Friedl4
1 Institute of Solid State Physics, Graz University of Technology, Graz, Austria, 2 Department of Chemical Engineering, Monash University, Victoria, Australia, 3 Institute of Physics, University of Leoben, Leoben, Austria, 4 Energy Research Center, Vorarlberg University of Applied Sciences, Dornbirn, Austria

12:00 Lunch

14:00 Nanocellulose applications and developments for electronic devices
Masaya Nogi
Osaka University

14:30 Biodegradable carbon-dioxide-based polymer for environment-friendly organic thin film transistors
Cut Rullyani1, Chao-Feng Sung2, Hong-Chue Lin1* and Chih-Wei Chu3,4*
1 Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan, 2 Department of Photonics and Display Institute, National Chiao Tung University, Hsinchu, Taiwan, 3 Research Center for Applied Science Academia Sinica, Taipei, Taiwan, 4 College of Engineering, Chang Gung University, Tao-Yuan, Taiwan.

14:45 Flexible Hybrid Circuit Fully Inkjet-Printed on Paper Substrate
J. Arrese, G. Vescio, E. Xuriguera, B. Medina-Rodriguez, A. Coronel, and A. Cirera
MIND–IN2UB, Department of Engineering: Electronics, Universitat de Barcelona

15:15 Reusable cellulose-based sticker gate dielectric in paper electrolyte-gated transistors
Inês Cunha, Raquel Barras, Paul Grey, Diana Gaspar, Elvira Fortunato, Rodrigo Martins and Luís Pereira
CENIMAT-CNIN, Departamento de Ciências dos Materiais, Faculdade de Ciências e Tecnologia, FCT, Universidade Nova de Lisboa and CEMOP-UNINOVA Campus da Capanica, 2829-516 Caparica (Portugal)

15:30 Coffee Break

Electronics : Aline Rougier

16:00 Dielectric losses of paper in the THz domain: literature review and needs for future work
Huber P.*, Martinez P.*, Guers C.*, F. Garet#, P.Borel**
*Centre Technique du Papier, CS 90251, 38044 Grenoble Cedex 9, France # IMEP-LAHC, UMR CNRS 5130, Université de Savoie, 73736 Le Bourget du Lac Cedex, France

16:30 Photoconductive Zinc Oxide-Composite Paper by Pilot Paper Machine Manufacturing
Daniel Tordera1, Mats Sandberg1,2, Hjalmar Granberg3, Arnurk Sawate2, Diana Ded3, Magnus Berggren1 and Magnus P. Jonsson1
1 Laboratory of Organic Electronics, Linköping University, SE-601 74 Norrköping, Sweden 2 Acreo Swedish ICT, Box 797, SE-601 17 Norrköping, Sweden 3 Invennta AB, Box 5604, SE-114 28 Stockholm, Sweden

16:45 Paper/ionic conductive polymer integrated platforms for the manufacturing of novel electro-responsive hybrid actuators
Tommaso Santaniello, Ilaria Denti, Chiòë Minea, Yunsung Yan, Paolo Milani Tommaso Santaniello, Ilaria Denti, Chiòë Minea, Yunsung Yan, Paolo Milani Interdisciplinary Centre for Nanostructured Materials and Interfaces (CiMaNa), Physics Department, University of Milan, Via Celoria 16, 20133, Milan, Italy

17:00 Understanding the composite system of NFC-PEDOT conducting paper
Dagnawel Belaine1,2, Sapiens Matli2, Andrea Grimoldi1, Xavier Crispin1, Magnus Berggren1, Issaq Enquist1
1 Laboratory of Organic Electronics, Linköping University, Department of Science and Technology, Linköping University, Norrköping, Sweden 2 Department of Engineering: Electronics, KTH—Royal Institute of Technology, Stockholm, Sweden

17:30 Nanosilver and nanocellulose interactions: stability and applications
Caio H. N. Barros, Bruno F. Morais, Daniela Stanisic, Mayra Manhão, Lúcia Tasic Laboratório de Química Biológica, Instituto de Química, Universidade Estadual de Campinas - UNICAMP, Campinas - SP, Brazil

17:30 Improvement of power generating ability of «thermoelectric power generating paper» using carbon-nanotube-composite paper
Kazuki Kawata, Takahide Oya
Graduate School of Engineering, Yokohama National University
17:30 Laser-induced forward transfer: a digital printing technique for paper electronics
P. Sopeña (1), X. Arrese (2), S. González-Torres (1), J.M. Fernández-Pradas (1), A. Cirera (2), P. Serra (1)
(1) Universitat de Barcelona, IN2UB, Applied Physics Department (2) Universitat de Barcelona, MIND-IN2UB, Engineering Department: Electronics Martí i Franquès 1, 08028-Barcelona, Spain

17:30 Development of “paper antenna” using carbon-nanotube-composite paper
Yuki Ikezoe, Takahide Oya
Yokohama National University

17:30 Study of paper dye-sensitized solar cell using carbon nanotube-composite papers and aiming to improve its conversion efficiency by applying grid electrodes
Yuya Ogata, Takahide Oya
Yokohama National University

17:30 Inkjet-printed paper battery
G. Sandu(1), A. Vlad(2), and S. Melinte(1)
(1) Institute of Information and Communication Technologies, Electronics and Applied Mathematics, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium, (2) Institute of Condensed Matter and Nanosciences, Université catholique de Louvain, 1348 Louvain-la-Neuve, Belgium.

17:30 Implantation of Anisotropic Microstructures for Improving Electrical Contacts between Compressed Flexible-Chips
Yawen Su

19:30 End of poster session
SYMPOSIUM Z

Metamaterials: from waves to matter

Symposium Organizers:

Andrea ALU, University of Texas, USA

Didier FELBACQ, University of Montpellier, France

Pavel BELOV, State University of Information Technologies, Mechanics and Optics, St Petersburg, Russia

Philippe BEN-ABDALLAH, Institut d’Optique, Palaiseau, France
13:00 Temperonic Crystals: coherence effects of temperature fields in Quantum Metamaterials
M. Gandolfi (1,2,3), G. Mazza (4,5), M. Capone (6), G. Ferrini(1,2), C. Giannetti (1,2), F. Banfi (1,2)

1 Department of Mathematics and Physics, University of Salerno, Italy
2 Dipartimento di Fisica e Astronomia, University of Bologna, Italy
3 Dipartimento di Fisica, University of Perugia, Italy
4 Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, Brescia, Italy
5 DISMA, Università degli Studi di Roma "La Sapienza", Italy
6 Dipartimento di Fisica, Università di Pisa, Italy

13:15 Mechanical Response of Ultrathin Nickel Kagome Structure to Compression
Parthaj Rajak, Rajiv K. Kala, Alihiro Nakano, and Priya Vashista
Collaboratory for Advanced Computing and Simulations, Department of Physics & Astronomy, Department of Computer Science, Department of Chemical Engineering & Materials Science, University of Southern California, Los Angeles, CA 90089-0424, USA

13:30 Metamaterial with Changing Shape between Conventional and Auxetic Structures Actuated by Heat
Haedong Park1, Hyungwo Kwon1, Yongsan An2, Woong-Ryeol Yu,2, Myung-Woo Moon1, and Kahyun Hur1
1Computational Science Center, Korea Institute of Science and Technology, 02792 Seoul, Korea, 2Department of Materials Science and Engineering and Research Institute of Advanced Materials (RIAM), Seoul National University, 08826 Seoul, Korea

13:45 Topological wave transport in acoustic and electromagnetic metamaterials
Romain Fleury
Laboratory of Wave Engineering, EPFL, Switzerland

14:15 Simulating physics with quantum metamaterials
Alexander Zagoskin
University of Loughborough

14:45 From planar to conformable optics with metasurfaces
Patrice Genevet
CHRE-A, France

15:15 Rigorous modal analysis of optical resonators
Wei Yan and Philippe Lalanne
Laboratoire Photonique Numérique et Nanosciences, Université Bordeaux, IOGS, CNRS, France

15:30 Numerical computation of modes in metamaterials with highly dispersive permittivities
G. Demesy, A. Niclot
Institut Fresnel (UMR 7249), Institut Fresnel (UMR 7249),

15:45 Field Patterns- a new sort of wave
Graeme W. Milton and Ornella Mattei
Department of Mathematics, The University of Utah

16:00 Coffee break

16:15 Plenary Session

Wednesday 24 May 2017

Thursday 25 May 2017

09:00 Recent experimental results on 3D microstructured metamaterials
Martin Wegener
Institute of Applied Physics and Institute of Nanotechnology Karlsruhe Institute of technology (KIT) 76128 Karlsruhe Germany

09:30 Thz absorbers with highly doped semiconductors based in plasmonic nano-resonators
F. Garcia-Sanchez-Picado, F. Omnes, R. Smails, L. Cerutti, E. Centeno, T. Talceric
G. P. L. C. and T.T are with the Univ. Montpellier - CNRS, IES UMR 5214 F-34000, Montpellier, France F.O. and E.C are with Institute Pascal ? UMR6602, Univ. Blaise Pascal - CNRS, BP 10448 ? 63000 Clermont-Ferrand, France

09:45 Metamaterials induced magnetic light and forbidden photochemistry
Isabelle Rodriguez1, Raúl Perez-Ruiz1, Roberto Fenollosa1, Alejandro Majiavacasa3, M. Consuelo Jiménez2, Guillermo Gonzalez-Rubio5, Judith Langer5, Andrés Cantarero4, Luis M. Liz-Marzán1, Miguel A. Miranda2 and Francisco Meseguer1
Instituto de Tecnologia Quimica (CSIC-UPV), Universidad Politècnica de Valencia, Av. Los Naranjos s/n, 46022 VALENCIA, Spain 2Department of Quimica, Universitat Politècnica de Valencia, Camino de Vera s/n, 46022 Valencia, Spain 3Department of Physics and Astronomy, University of New Mexico, Albuquerque, New Mexico 87131, USA 4Molecular Science Institute, University of California, PO Box 22085, 46071, Valencia, Spain 5Bionanoplasmonics Laboratory, CICbiomaGUNE, Paseo de Miramón 182, 20014 Donostia-San Sebastián, Spain

10:00 Barium Titanate Meta-Atoms for Nonlinear Photonics
Flavia Timpu*, Claude Renaud*, Morgan Trassin**, Manfred Fiebig**, Rachel Grange*
*Optical Nanomaterial Group, Institute for Quantum Electronics, Department of Physics, ETH Zürich, Auguste-Piccard-Hof 1, 8093 Zürich Switzerland **Multifunctional Ferroic Materials, Department of Materials, ETH Zürich, Vladimir-Peirig-Weg 4, 8093 Zürich, Switzerland

10:15 Self-assembled optical metamaterials
Xuan Wang, Alexandre Baron, Ashed Ardian, Philippe Barois, Virginie Ponsinet CNRS, University of Bordeaux, CRPP UPR8641, F-33000 Pessac, France

10:30 Coffee break

11:00 Anderson localization and Levy glasses
F. Ute1, L. Paltelli, K. Vynck, D.S. Wiersma
Uni. of Florence Italy, LPIIN Institut d’Optique d’Aquitaine France

11:30 Facile plasmonic metasurfaces: manipulating light phase-front, high-resolution gray-scale printing and vivid coloring
H. Eghldi, C. U. Hail, P. Richner, D. Poulikakos
Laboratory of Thermodynamics in Emerging Technologies, Institute of Energy Technology, Department of Mechanical and Process Engineering, ETH Zürich, CH-8092, Zürich, Switzerland

11:45 Integrating quantum-dots and Mie resonators into a 2D metamaterial for sunlight downconversion
Antonio Capretti, Arnon Lesage and Tom Gregorkiewicz
University of Amsterdam

12:00 Observation of fluorescence enhancement at a Bound State in the Continuum of a photonic crystal membrane
Silvia Romano (1), Gianluigi Zito (2), Stefano Managò (2), Erika Penzo (3), Simone Sassolini (3), Scott Dhuey (3), Stefano Cabrini (3), Anna Chiara De Luca (2), Vito Mocella (1)
(1) Institute for Microelectronics and Microsystems, National Research Council, CNR-IMM UdC Napoli, Italy (2) Institute of Protein Biochemistry, National Research Council, CNR-IPB, Napoli, Italy (3) Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, USA

12:15 Spin to Angular Momentum Conversion of Light at a Bound State in the Radiation Continuum of a Photonic Crystal Slab
Gianluigi Zito (1), Silvia Romano (2), Giuseppe Calafate (3,4), Simone Sassolini (3), Scott Dhuey (3), Stefano Cabrini (3), Anna Chiara De Luca (1), Vito Mocella (2)
(1) Consiglio Nazionale delle Ricerche, IBF, Via P. Castellino 111, 80131, Napoli, Italy (2) Consiglio Nazionale delle Ricerche, IMM, Via P. Castellino 111, 80131, Napoli, Italy (3) Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA (4) aBeam Technologies Inc., 22290 Foothill Blvd, St. 2 Hayward, CA, 94541, USA

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<td><strong>VI.1</strong> Topological phenomena in plasmonic metamaterials&lt;br&gt; A. Downing, G. Weick&lt;br&gt; Université de Strasbourg, CNRS, Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504, F-67000 Strasbourg, France</td>
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<td><strong>VI.2</strong> Negative spontaneous emission by a moving two-level atom&lt;br&gt; Sylvain Lannebèbre, Mário G. Silveirinha&lt;br&gt; Department of Electrical Engineering, University of Coimbra and Instituto de Telecomunicações, 3030-290 Coimbra, Portugal, Department of Electrical Engineering, University of Coimbra and Instituto de Telecomunicações, 3030-290 Coimbra, Portugal, University of Lisbon – Instituto Superior Técnico, Department of Electrical Engineering, 1049-001 Lisboa, Portugal</td>
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<td><strong>V.1</strong> Production of microsphere ribbons for natural lithography&lt;br&gt; Ion Sandu1, Ana-Maria Banici(Niculescu)1,2, Iuliana Urzica1, Gabriel Ciojcaru1, Iulia Anghel1, Marius Dumitru1, Maria Badiceanu3&lt;br&gt; 1National Institute for Lasers, Plasma and Radiation Physics, Lasers Dept, Bucharest-Magurele, 409, Atomistilor Street, 077125, Romania, 2University of Craiova, Faculty of Mathematics and Natural Sciences, RO-200585, Craiova, Romania, 3University of Bucharest, Faculty of Physics, Korea Advanced Institute of Science and Technology (KAIST)</td>
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<td><strong>V.4</strong> Unsteady Numerical simulation of turbulent forced convection in a rectangular pipe with waved porous baffles&lt;br&gt; Fakhri Fethallah, Rahmoun Khadidja&lt;br&gt; Department of Physics, Faculty of Science, Research Unit Materials and Renewable Energies U.R.M.E.R, University Abou Bekr Belkaid, BP 119, 13000 Tlemcen, Algeria</td>
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<td><strong>V.5</strong> Nanoporous Gold Nanoparticles with large Large Tunability of Plasmonic Resonances&lt;br&gt; Dong Wang and Peter Schaaf&lt;br&gt; Institute of Materials Engineering and Institute of Micro- and Nanotechnologies MacroNano®, Technische Universität Ilmenau, 98685 Ilmenau, Germany</td>
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**VI.6** Surface nano-texturing of bulk stainless steel for plasmonic coloration<br> Minseok Seo, Jeeyoung Lee, Yoonseok Oh, Harim Oh, Jae Yong Kim, Myeongkyu Lee<br> Yonsei university

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