



European Materials Research Society

2026 Spring Meeting

May 25 - 29
Strasbourg Convention Centre

[View symposium details](#)

SYMPOSIUM G

Future photovoltaics based on earth abundant materials II

Oral sessions : **LUXEMBOURG - GROUND FLOOR**

Poster sessions : **ETOILE - FIRST FLOOR**

Symposium Organizers:

Konstantinos ROGDAKIS, Electrical and Computer Engineering Department,
Hellenic Mediterranean University (HMU), Greece

Maria Chiara SPADARO, Physics and Astronomy department, University - CNR-IMM, University of Catania /
Catalan Institute of Nanoscience and Nanotechnology, Spain

Melanie MICALI, NWO-I Institute AMOLF, The Netherlands

Simon Escobar STEINVALL (Main organizer), Centre for Analysis and Synthesis and NanoLund,
Lund University, Sweden

Symposium Sponsor:



www.european-mrs.com

Tuesday May 26

G05 Materials I

Chairperson(s): ALARCON-LLADO Esther

ESCOBAR STEINVALL Simon

[View session abstracts](#)

- 08:30 3299 Enabling Zinc Phosphide as a low cost absorber for photovoltaics
FONTCUBERTA I MORRAL Anna (Invited)
- 09:00 562 Supramolecular Control for Lead-Free Halide Perovskite Materials in Photovoltaics and Beyond
MILIC Jovana (Invited)
- 09:30 239 Silicon clathrates, a novel semiconductor for photovoltaic applications?
FIX Thomas
- 09:45 2084 Chalcogenide Perovskites Prepared at Moderate Temperatures
SYKORA Milan

Tuesday May 26

G06 Photonics

Chairperson(s): FONTCUBERTA I MORRAL Anna

MICALI Melanie

[View session abstracts](#)

- 10:30 797 Effects of optical density of states in planar and structured photovoltaics films
POLMAN Albert (Invited)
- 11:00 718 Mixed-halide Cu₂AgBiI₆ with improved solar cell performance and retained structural integrity and device stability under indoor operation
RAGA Sonia R. (Invited)
- 11:30 394 Photonics enabling the ecodesign of solar cells
ALARCON-LLADO Esther (Invited)

Tuesday May 26

G07 Materials II (Perovskites)

Chairperson(s): POLMAN Albert

ROGDAKIS Konstantinos

[View session abstracts](#)

- 13:45 3148 Heteroepitaxial Growth and Characterization of BaZrS₃ Thin Films for Optoelectronic Applications
JAMSHAIID Sumbal
- 14:00 1344 Fabrication of all-inorganic halide perovskites CsPbX₃: from synthesis and deposition methods to phase stability studies
PELLEGRINO Anna Lucia
- 14:15 2434 Assessment of the resistances of ETL/HTL - perovskite interfaces as a function of illumination and time
TAPADINHAS Raphaël

- 14:30 2325 Synthetic aspects of Chalcogenide Perovskites
BYSTRICKÝ Roman
- 14:45 1185 Stability and Field Performance Analysis of Perovskite Photovoltaics for Sustainable Agrivoltaics
KYMAKIS Emmanuel (Invited)
- 15:15 3157 Photophysical Mechanisms Governing Transparency-Efficiency Trade Offs in Perovskite Photovoltaics
THOMSON Stuart
- 15:30 315 Panchromatic Heterojunction Solar Cells Based on All-Inorganic Antimony Perovskites
CHU Chih Wei
- 15:45 1139 Air-Sprayed Sb Perovskite-Inspired Absorbers for Benchmark Indoor Photovoltaics
LAMBERTI Francesco

Tuesday May 26

G08 INFRACHIP Session

Chairperson(s): KYMAKIS Emmanuel

SPADARO M. chiara

[View session abstracts](#)

- 16:30 629 INFRACHIP Access programme- An overview
SANDEEP NAGARAJA Veda (Invited)
- 17:00 1040 INFRACHIP Training Activities Overview
KOUTSOUROUBI Eirini (Invited)
- 17:30 637 Supporting innovation through communication, training, and SME engagement: the INFRACHIP approach
PRAUD Naussicaa (Invited)
- 18:00 2711 Proton irradiation impact on 4H-SiC power devices: Characterization, simulation, and performance optimization
SCALISI Melissa
- 18:15 2181 Thin-Film Growth and Electrical Characterizations of Na-In-Ge Type II Clathrate Films
OHASHI Fumitaka

Wednesday May 27

G09 Sustainability and Circularity

Chairperson(s): ESCOBAR STEINVALL Simon

ROGDAKIS Konstantinos

[View session abstracts](#)

- 08:30 3310 Novel perspectives on the safety and sustainability of emerging PV
BLANCO Carlos Felipe (Invited)
- 09:00 2330 Recovery of Silver from Waste Photovoltaic Pastes for the Synthesis of Silver Nanowires
UNALAN Husnu Emrah
- 09:15 2271 Metallic nanowire based transparent electrodes for efficient solar cells
MAURYA Shagun

09:30 3010 Sputtered Molybdenum Oxide as a Scalable Route to Dopant-Free Passivating and Selective Contacts for Silicon Solar Cells
MIRITELLO Maria

09:45 3233 Low cost production of functional buffer layer for SHJ solar cells via laser ablation of reused materials
FLORIO Federica

Wednesday May 27

G10 ReTronics Session

Chairperson(s): **BLANCO Carlos felipe**

MICALI Melanie

[View session abstracts](#)

10:30 192 Responsible Electronics Community: An EIC Pathfinder challenge portfolio of project towards sustainable electronics development
ROGDAKIS Konstantinos (Invited)

11:00 2317 Leveraging collaboration for a sound sustainability assessment of advanced materials: learnings from the ReTronics portfolio
CARNIELLO Sara (Invited)

11:30 2358 Future Photovoltaics Based on Earth Abundant Materials: Towards Sustainable and Cost-Effective Solar Energy Solutions
PALOMINO Carmen (Invited)

Wednesday May 27

GPO3 Poster session 3

[View session abstracts](#)

13:45 01_112 Biomass-Derived Conjugated Polymer Additive for Enhanced Stability and Performance in Hybrid Perovskite Solar Cells
LIN Zilu

13:45 02_1346 Impact of Vacuum and Low Temperature on Photovoltaic Characteristics of Hybrid Perovskite Solar Cells
NAYAK Akash

13:45 03_1607 Impact of grain boundaries on functional properties of Si solar cell absorbers
WADE Elisa

13:45 04_1935 Recovering Optoelectronic Properties of Degraded CsPbI₂ Br Thin Films for Photovoltaics
MUKASHEVA Dana

13:45 05_2054 Fabrication and Characterization of Lead-Free Perovskite CsGeBr₃ Thin Films for Blue-Light Optical Wireless Power Transmission
WATANABE Atsuto

13:45 06_2161 Post-Synthesis Encapsulation of Na and Li into Type-II Ge Clathrate Thin Films for Carrier Control in Earth-Abundant Semiconductors
KUME Tetsuji

13:45 07_2189 Preparation of BaZr₅3 thin films at temperatures below 600°C
TIWARI Sameer Kumar

13:45 08_2228 Large area selenium solar cells
HEMMINGSEN Tobias Høystrup

13:45 09_2230 Chemical Bath Deposition of ZnMgO Thin Films for Indoor Photovoltaic Applications
KUMAR Liisa

13:45 10_2236 UV-Induced Negative Photoconductivity in Core Substituted Naphthalene Dithiol as an Organic Dielectric for OFET Application
SAHA Subharthi

13:45 11_2351 Tailoring the performance of ZnO-based dielectric-metal-dielectric transparent electrodes for solar cells
AZIZ Umer

13:45 12_2502 Deposition of ZnSnN₂ thin films via High-Power Impulse Magnetron Sputtering: investigating the role of sample bias
ANNONI Filippo

13:45 13_2641 Homogeneous Sb₂(S,Se)₃ solid-solution ingots for controlled congruent sublimation by Close-Spaced Sublimation
UNTILA Dumitru

13:45 14_2735 Interface defects of Zinc Phosphide
WARZAWA Luna

13:45 15_2846 First-Principles Investigation of the Electronic, Mechanical, Optical, and Thermoelectric Characteristics of Stable Double Perovskites for Cs₂K(Ga/In)₁₆ for Photovoltaic and Renewable Energy
ALKHALDI Noura

13:45 16_2897 Studying and Optimization of TCO/Metal/TCO Multi-Layers for Large Area c-Si Solar Cells
KHAN Khushi Muhammad

13:45 17_2898 Optimization of Electrical and Optical Losses in Thin c Si Bifacial PERC Solar Cells to Module Level Through Modeling
KHAN Khushi Muhammad

13:45 18_2988 The effect of cation substitution on structural properties of Cu₂XSn₅4
KHEMIRI Naoufel

13:45 19_305 Ti-Driven Oxysulfide Perovskites Unlocking a New Class of Earth-Abundant Photovoltaic Absorbers
ALTHUBYANI Hussain

13:45 20_3128 Product-Level Critical Raw Material Assessment: Application to Light-Emitting Diodes
VIDAL Rosario

13:45 21_3214 P-type Transparent Conductive Oxides based on Thin-monoxide
PIRITORE Benedetto

13:45 22_3384 Thin-film synthesis of Zintl phosphides as earth-abundant, defect-tolerant PV materials
BRENDSTRUP MØLLER Clara

13:45 23_3409 Interfacial engineering of hole- and electron-selective layers for next-generation Zn₃P₂ solar cells
CASTILLO-SEOANE Javier

13:45 24_483 Comparative photovoltaic and thermal stability analysis of lead-free MASnI₃ and FASnI₃ perovskite solar cells using deep learning and SCAPS-1D
DJEFFAL Faycal

13:45 25_587 Wood-based Substrates for Organic Solar Cells
LANG Anna

13:45 26_660 Earth-Abundant ALD Oxide Interfaces for Stabilizing Wide-Bandgap Perovskite Photovoltaics
CHOI Deokjae

Thursday May 28
G12 Materials III
 Chairperson(s): BOTTI Silvana
 SPADARO M. chiara

[View session abstracts](#)

08:30	86	Automated Atomic Scale STEM Data Analysis and Modelling for Energy Materials ARBIOL Jordi (Invited)
09:00	3207	Metal phosphide nanostructures for light-harvesting applications THELANDER Kimberly (Invited)
09:30	1125	ZnSnN ₂ and ZnTiN ₂ nitrides for Next-Generation photovoltaics: synthesis and defect engineering using HiPIMS TOSI CELLI Rachele
09:45	1158	New record efficiency for Zn ₃ P ₂ /InP heterojunction solar cell enabled by selective area epitaxy LEMERLE Raphael

Thursday May 28
G13 Materials IV (Chalcogenides)
 Chairperson(s): ESCOBAR STEINVALL Simon
 THELANDER Kimberly

[View session abstracts](#)

10:30	2345	Exploring 15,000 earth-abundant PV materials by accelerated experiments CROVETTO Andrea (Invited)
11:00	1692	Quaternary chalcogenide semiconductors with bandgap energies >2eV SCHORR Susan
11:15	1767	The impact of ink formulation on surface composition and PV performance of solution processed Cu ₂ ZnSn(S,Se) ₄ FERMIN David
11:30	1779	Large-area thin-film synthesis of photoactive Cu ₃ P ₅ S ₄ thiophosphate semiconductor with 0-14 pH stability range MITTMANN Lena Angelika
11:45	2745	Modification of FeS ₂ n- and p-type microcrystals defect structure with S-vapour pressure treatments for photovoltaic applications HEEMSKERK Marc

Thursday May 28
G14 Theory and Simulation
 Chairperson(s): ARBIOL Jordi

[View session abstracts](#)

13:45	1295	Data-driven acceleration of materials discovery and optimization for energy applications BOTTI Silvana (Invited)
14:15	1901	Computational Screening and Discovery of Ternary Halide Double Salts VOLONAKIS George
14:30	2726	Harnessing Linear and Nonlinear Optical Responses in Ferroelectric LaMoN ₃ for enhanced Photovoltaic Efficiency ADHIKARI Surajit
14:45	949	Atomistic Insights into Surface and Interfacial Phenomena in Thin Film Solar Cells DZADE Nelson (Invited)
15:15	437	Decoding optoelectronic behaviour in X ₃ Bi ₃ antiperovskite derivatives through many-body perturbation theory CHAKRAVORTY Ayan
15:30	458	Insights into intrinsic defects and doping potential of Zn ₃ P ₂ from ab initio calculations KAWASHIMA Nico
15:45	873	Elucidating the Role of Stacking Faults in Zinc Phosphide by Scanning Transmission Electron Microscopy and First-Principles Calculations SALUTARI Francesco

Thursday May 28
G15 Characterisation
 Chairperson(s): DZADE Nelson
 MICALI Melanie

[View session abstracts](#)

16:30	1480	Polarons as a Compass for Emerging Energy-Harvesting Semiconductors DIMITRIEVSKA Mirjana (Invited)
17:00	2153	Spectroscopic Fingerprints of Selenium Thin Films for Optoelectronic and Energy Conversion Applications NIELSEN Rasmus
17:15	3134	Near-field effects on cathodoluminescence outcoupling in perovskite thin films SCHOT Robin
17:30	1116	Advanced Strain Characterization of Zn ₃ P ₂ Thin Films via 4D-STEM FREITAS Helena
17:45	2444	Hyperspectral Imaging for Thin-Film Metrology of Zinc Magnesium Oxide and Copper Oxide: Quantitative Mapping of Thickness and Optical Properties COLAS Victor
18:00	2776	Radiative and Nonradiative Carrier Lifetimes in Metal-Doped SnS Thin Films SCHWARZ Reinhard
18:15	2510	Optoelectronic characterization of a-Si _{1-x} C _x :H alloys: from silicon to carbon-rich absorbers ESTARLICH Pau

Friday May 29
G16 TCOs and Interfaces
 Chairperson(s): ESCOBAR STEINVALL Simon
 MICALI Melanie

[View session abstracts](#)

08:30	3211	Zinc-doped Fluorine Tin Oxide as Transparent Conductive Oxide with Enhanced Performances PIRITORE Benedetto
08:45	757	Defect-Selective Low-Temperature NiOx via Hydrogen-Assisted Sonochemical Processing for Inverted Perovskite Solar Cells Application Numan Arshid
09:00	1245	Stability of P-Type Conductivity in SnOx Thin Films PEARSON Patrick
09:15	1645	Tuning self-assembled monolayers of Me-4PACz with bisphosphonic acid groups to improve temperature and cycling stability of perovskite photovoltaics SUN Haonan
09:30	1368	Strategic Engineering of the Underlying Interface via Dion-Jacobson 2D Perovskite for Stable and Efficient CsPbI ₃ Inorganic Perovskite Solar Cells Kang Sohyun
09:45	3186	Nitrogen assisted tuning of WF in Tin Oxide thin films for SHJ solar cells LO MASTRO Andrea

Friday May 29
G17 Materials V
 Chairperson(s): MIRITELLO Maria
 SPADARO M. chiara

[View session abstracts](#)

10:30	1843	Effect of TiO ₂ /SnS Interface Modification on the Performance of Solution-Processed SnS Hybrid Solar Cells EL KANOUNY Abdessamad
10:45	2889	Effect of Precursor Chemistry and Thermal Treatment on Sb ₂ S ₃ Solar Cells Fabricated by Vacuum Spray Pyrolysis MERAH Rayene
11:00	2459	Surface passivation of p-type FeS ₂ microcrystals for photovoltaic applications MELDORF Mia-Maria
11:15	2466	High-Voltage a-Si _{1-x} C _x :H Monolithic Tandem Solar Cells for Efficient Indoor Energy Harvesting ALVAREZ SUAREZ Gustavo Hernando
11:30	3333	Engineering the Optoelectronic Properties of Wide-Bandgap Cu ₂ ZnSnS ₄ via Ag Substitution, Na-Li Co-doping, and Thermal Annealing TAMIN Messaoud
11:45	3038	Improving Cu ₂ AgBiI ₆ Photovoltaics through Chloride-Based Halide Engineering VAHEDIGHAREHCHOPOGH Naji