



European Materials Research Society

# 2023 Spring Meeting

40<sup>th</sup> Anniversary

May 29 | June 2

Congress & Exhibition Centre  
Strasbourg, France



SCAN ME

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# 2023 Spring Meeting

40<sup>th</sup> Anniversary

**May 29 | June 2**  
Congress & Exhibition Centre  
Strasbourg, France





# Conference Partners



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CONFERENCE  
CHAIRS



# CONFERENCE CHAIRS



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**INFLPR**

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# PLENARY SESSIONS



# PLENARY SESSION 1

## TUESDAY MAY 30 / 08:45 – 9:45



**08:45** - Welcome Address

**08:55** - Introduction

**09:00 - 09:45**

**E-MRS 5 Year Materials Impact Prize recipient**

**Multifunctional Hybrid Interfaces for Energy and Medical Applications**

**Maurizio Prato**

Dept. of Chemical and Pharmaceutical Sciences  
University of Trieste, Italy  
CIC BiomaGUNE,  
San Sebastián, Spain

Nature adopts a formidable complexity of highly specialized components and structures to perform vital functions for us, our bodies, our well-being and our world. The biological construction of these components and their assembly is extremely complex and is susceptible to fatal errors, irreversible injury, aging to lethal degradation. To find alternatives to the fragility of biological structures, science has developed artificial systems able to implement and improve the natural systems. During this talk, we will describe our progress in two crucial fields: (1) the reconnection of nerves in spinal cord injuries, where carbon nanotubes can act as active substrates for nerve growth, and (2) the photo-electrocatalytic splitting of water for the production of «green hydrogen».



# PLENARY SESSION 2

## WEDNESDAY MAY 31 / 08:45 – 9:45



08:45 - Welcome Address

08:55 - Introduction

09:00 – 09:45

**E-MRS 5 Year Materials Impact Prize recipient**  
**Graphene Nanoribbons versus Graphene**

**Klaus Müllen**

Max Planck Institute for Polymer Research, Mainz

Graphene Nanoribbons (GNRs) and their smaller homologues, the nanographenes (NGs), emerge as a unique class of molecularly defined carbon nanostructures. Their electronic band structures can be widely tuned yielding quasi-1D semiconductors and even topological insulators. Their characteristics offer new technological opportunities, for example, adding the spin degree of freedom to graphene-based circuitry or pushing the power density for energy storage in supercapacitors. Thereby, comparing materials performances of graphene and graphene nanoribbons is most revealing.

Ground-breaking properties such as exotic quantum states can only be realized based upon structural precision, in particular, of the edges. Next to the molecular design and the synthetic challenge, controlled formation of single layers is mandatory for fabricating heterostructures or field effect transistors with clean single electron behavior.

Science 2019, 366, 1107; Nature Nanotechnology 2020, 15, 22; Nature 2018, 557, 69; 560, 209; 561, 507; Nature Rev. Chem. 2017, 2, 01000; Nature Synthesis 2022, 1, 289; Progr. Polym. Science 2022, 123, art. No 101489; Nature Chemistry 2021, 13, 581; Progr. Polym. Sci. 2022, 123, art. no 101489; J. Amer. Chem. Soc. 2022, 144, 11499; Chemistry-Eur. J., 2023, e202203735; Nature Materials, 2023, 22, 180.



# AWARDS CEREMONY

WEDNESDAY MAY 31 / 18:30 – 19:30



**18:30** - Welcome Address

**18:35 – 19:00**

**MRS Mid-Career Researcher Award**

**Thin Film Implants for Bioelectronic Medicine**

**George Malliaras**

Department of Engineering, University  
of Cambridge, UK

Bioelectronic medicine provides a new means of addressing disease via the electrical stimulation of tissues: Deep brain stimulation, for example, has shown exceptional promise in the treatment of neurological and neuropsychiatric disorders, while stimulation of peripheral nerves is being explored to treat autoimmune disorders. The implanted electrodes used in these devices are assembled by hand, using top down techniques that herald from (mechanical) watchmaking! Using the (bottom up) micro-fabrication techniques of microelectronics promises to revolutionise implantable devices, enabling exceptionally precise stimulation and minimally invasive thin film form factors. I will overview the state-of-the-art in the use of thin film implants and discuss the challenges that lie ahead on the road to deploying this technology to patients at scale.

**19:00**

**E-MRS YOUNG RESEARCHER  
AWARDS CEREMONY  
FOLLOWED BY SOCIAL EVENT**

# PLENARY SESSION 3

## THURSDAY JUNE 1 / 08:45 – 9:45



**08:45** - Welcome Address

**08:50** - E-MRS 40th Anniversary Ceremony

**09:00 – 09:30**

**E-MRS EU-40 Materials Prize**

**Chemical Principles for Quantum Materials  
Discovery**

**Prof. Fabian O. von Rohr**

University of Geneva, Department of Quantum  
Matter Physics, Switzerland

The discovery of materials with tailored properties has, time and again, proven to be a crucial stimulus for technological advancement and, by implication, of societal progress. Quantum materials discovery, in particular, is widely considered to have a key role in the development of such next-generation technologies that will meet the urgent technological demands of our society. Our research aims at establishing a general experimental platform for realizing new quantum materials. In this presentation, I will discuss some of our recent results regarding the discovery and characterization of new quantum materials. This work is at the intersection of condensed-matter physics and materials synthesis, and as I will discuss here, a special emphasis on the combination of physical and chemical concepts is extremely important for developing these new quantum materials.



09:30 – 9:45

Expanding plasma technologies for sustainable world

**Masaharu Shiratani**

Kyushu University, Fukuoka, Japan

Low temperature plasma realizes high temperature chemical reactions at low temperatures, because of its high electron temperature of 3 eV and low gas temperature. High energy electrons dissociate molecules into highly reactive radicals and ions impinging onto surface promote surface reactions even at low temperatures. Such advantages have been employed to semiconductor fabrications, surface protective and functional coatings, gas conversions, and so on. In recent years, low temperature plasma also opens emerging applications in medical, biological, and agricultural field. I will briefly discuss several directions of expanding plasma technologies for realizing sustainable world. They include key ideas for 1) tuning film properties, 2) plasma catalysis, 3) plasma agriculture.



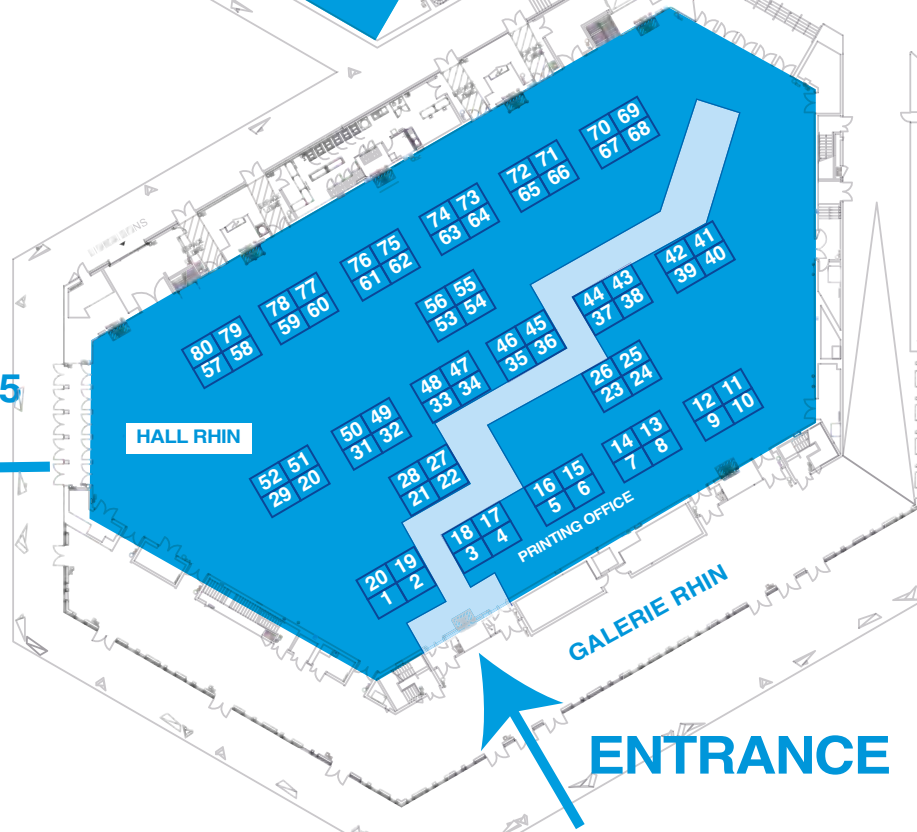


The background of the slide features a series of thin, light blue lines that create a wavy, concentric pattern, resembling ripples in water or a topographical map. The lines are more densely packed in some areas and more spread out in others, creating a sense of depth and movement. The overall color palette is a gradient of blues, from a darker blue at the top to a lighter, more vibrant blue at the bottom.

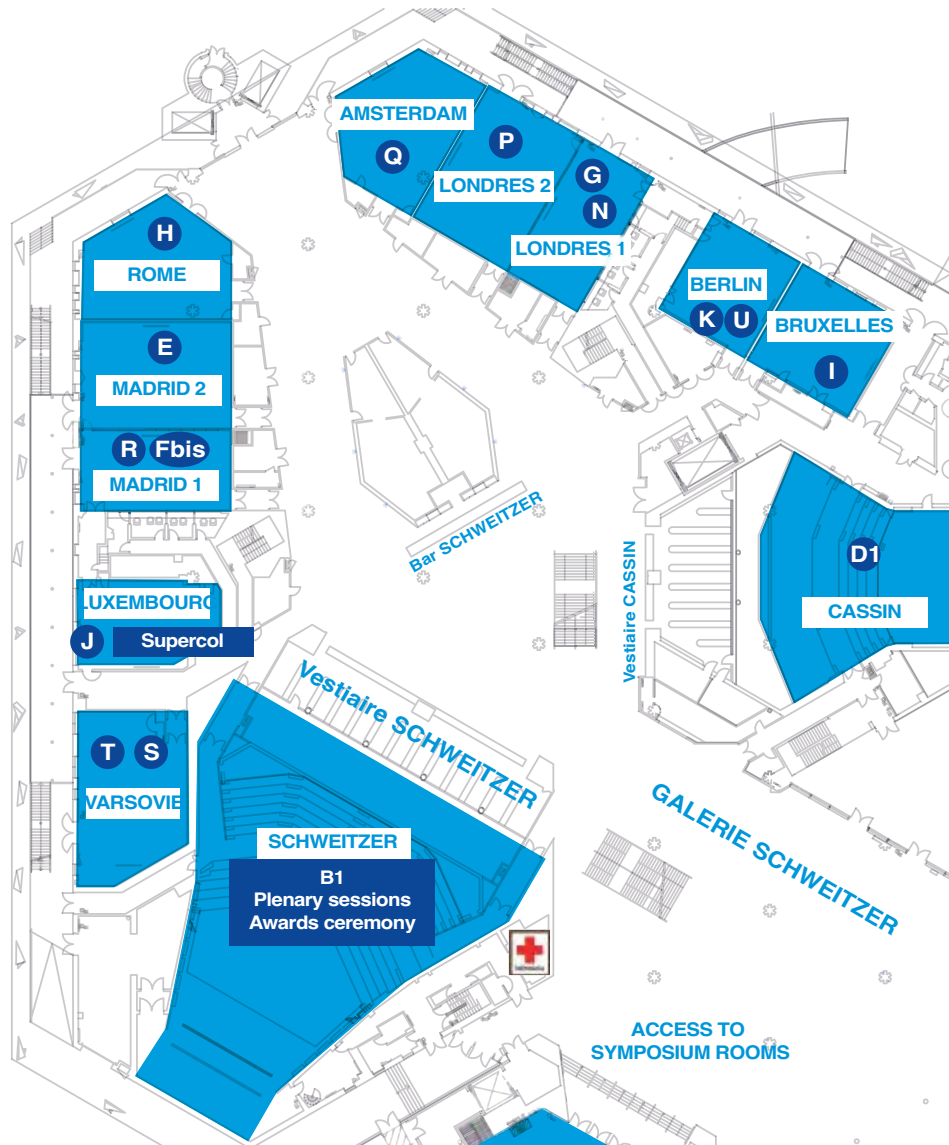
# Conference Floorplan



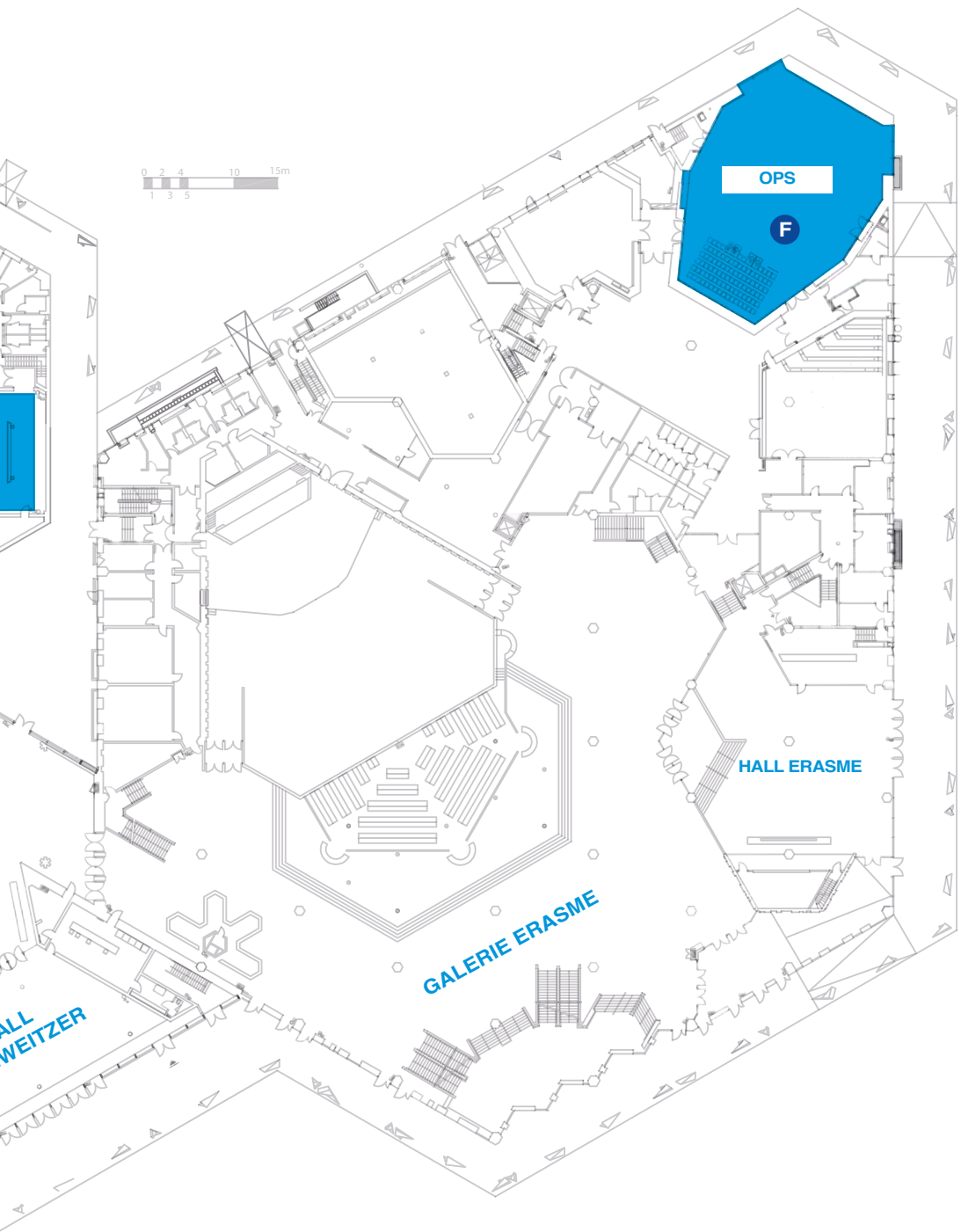
**LUNCH**  
Acces to Hall 5



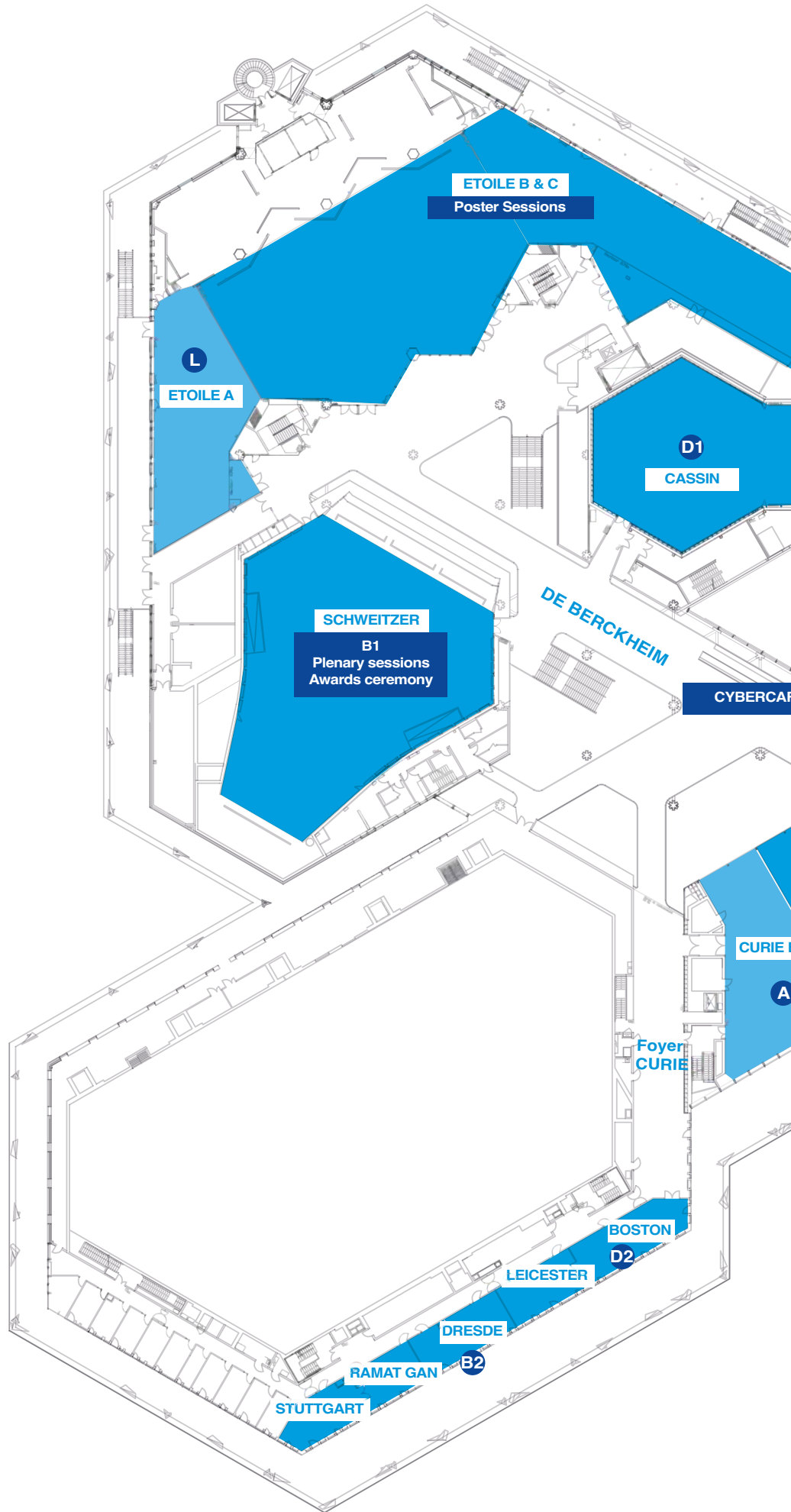
**ENTRANCE**







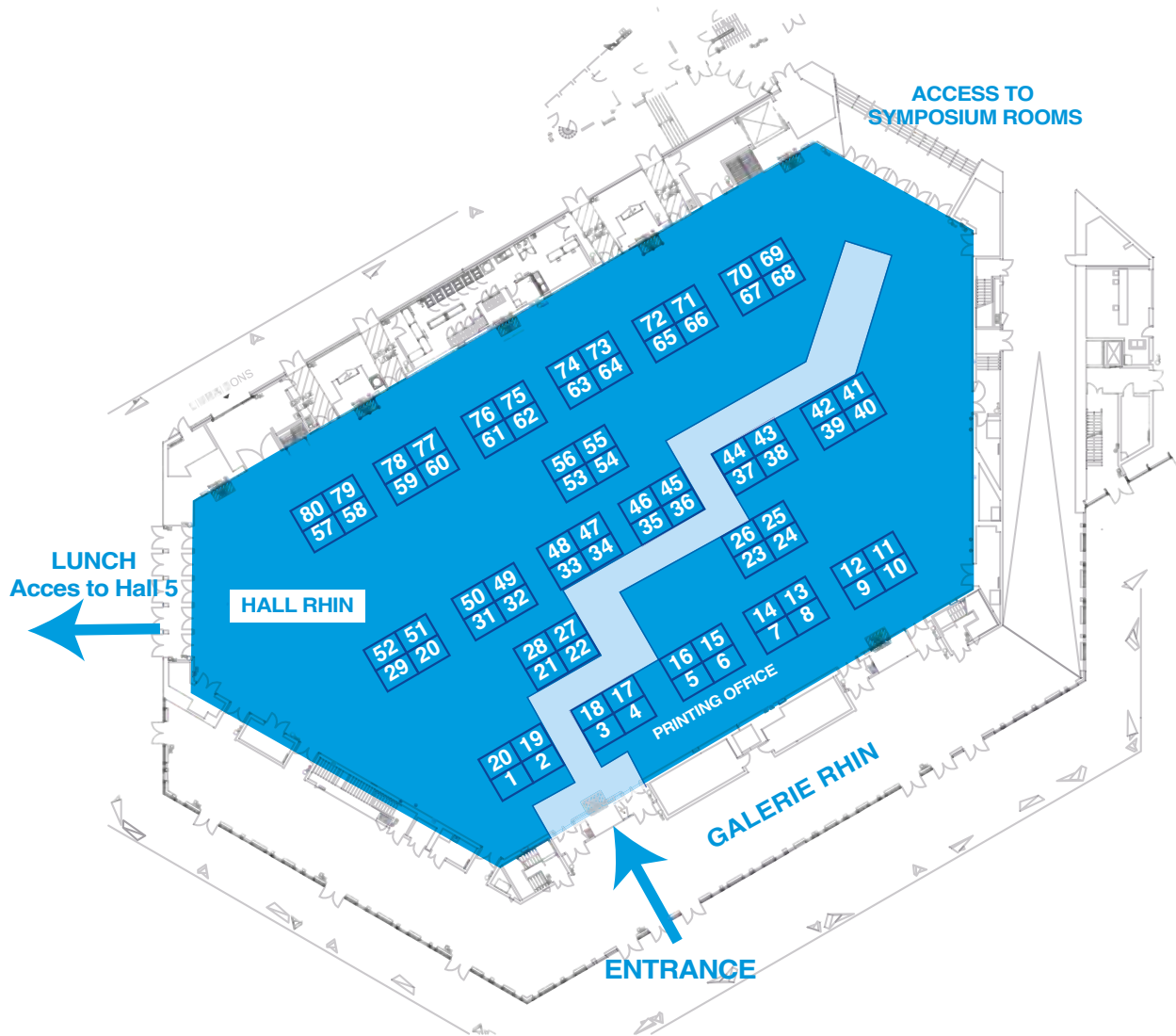
**STRASBOURG CONVENTION CENTRE**  
GROUND FLOOR





STRASBOURG CONVENTION CENTRE  
1<sup>ST</sup> FLOOR





**EXHIBITION FLOOR PLAN**  
GROUND FLOOR

# EXHIBITORS

**3D-OXIDES**  
3D NANOMATERIALS TECHNOLOGY  
 booth 51

**EDINBURGH INSTRUMENTS**  
 booth 69

**Kashiyama**  
Vacuum Solutions  
 booth 16

**neyco**  
VACUUM & MATERIALS  
 booth 03 + 04

**Quantum Design**  
DAQDC  
 booth 12

**SOL**  
instruments®  
 booth 33

**ACS Publications**  
Most Trusted. Most Cited. Most Read.  
 booth 47

**edp sciences**  
 booth 48

**KEYENCE**  
 booth 59

**n-ink**  
 booth 68

**Rigaku**  
 booth 63

systems for nanometrology  
**SURFACE**  
... always smarter solutions  
 booth 65

**AIP Publishing**  
 booth 19

**EISMEA**  
 booth 23

**KORVUS TECHNOLOGY**  
 booth 64

**noivion**  
 booth 49

**ROVAK**  
PLASMA-LAMP SYSTEMS  
 booth 28

UVV + PLD systems technology  
**SURFACE**  
... always one step ahead  
 booth 66

**ANNEALSYS**  
 booth 44

**FAIRmat**  
 booth 35

**KPI TECHNOLOGY**  
 booth 01

**NT-MDT**  
Spectrum Instruments  
 booth 21

**ROYAL SOCIETY OF CHEMISTRY**  
 booth 17

**SYNERGIE4**  
 booth 32

**ASCENSUS™**  
 booth 45

**ICSD**  
FIZ Karlsruhe  
 booth 11

**Malvern Panalytical**  
a spectris company  
 booth 61

**PalmSens**  
 booth 38

**schaefer**  
 booth 58

**tecum**  
optical sensor technology  
 booth 43

**chemPUR**  
the Partner for Clean & Pure  
 booth 53

**FLUXIM**  
HEAT FLOW SENSORS  
 booth 55

**MaTech**  
 booth 15

**Park SYSTEMS**  
 booth 36

**SCIPRIOS**  
Building on the Future  
 booth 54

**UNTEMP**  
HEAT FLOW SENSORS  
 booth 25

**COHERENT**  
 booth 42

**universität freiburg**  
Freiburger Materialwissenschaftliches Institut  
 booth 31

**MERCK**  
 booth 34

**PLASMATERIALS**  
 booth 02

**SEMILAB**  
 booth 24

**vitroTEM**  
 booth 39

**DE GRUYTER**  
 booth 46

**HORIBA Scientific**  
 booth 30

**microworld®**  
 booth 67

**ProChem Inc.**  
 booth 50

**上海交通大学**  
SHANGHAI JIAO TONG UNIVERSITY  
 booth 14

**WILEY**  
 booth 60

**DEMCON** | **YSST**  
 booth 40

**HTDS**  
Hi-Tech Detection Systems  
 booth 37

**nanosurf**  
 booth 57

**PRINTING OFFICE**  
 booth 05

**SIMUNE**  
ATOMISTICS  
 booth 52

**Zurich Instruments**  
 booth 18

**MBE**  
KOMPONENTEN | DR. EGOR  
 booth 41

**ibs** **Innovative Ion Implant**  
 booth 26

**NEXTRON**  
MICRO PROBE SYSTEM  
 booth 22 + 27

**PRO-VIDE**  
 booth 16

**SmarAct | group**  
 booth 62

# WIFI

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

**Network name: EMRS 2023  
No password required**

**Instructions for Wireless connection:**

- 1. View available wireless network**
- 2. Connect to EMRS 2023**
- 3. Login should appear**
- 4. Enter your full name and email address**
- 5. Accept the terms of service**
- 6. Click on connection**





# CONFERENCE RECEPTION SOCIAL EVENT

**Wednesday May 31 (19:30 - 22:00)**

**Schweitzer Gallery**

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



The background is a gradient of blue, transitioning from a darker shade at the top to a lighter shade at the bottom. Overlaid on this gradient are numerous thin, light blue lines that form a series of concentric, wavy, and somewhat irregular shapes, creating a sense of depth and movement. The overall effect is reminiscent of a stylized fingerprint or a complex, organic pattern.

# HIGHLIGHTS

## MONDAY MAY 29

- 08:45 - 18:30 ORAL SESSIONS
- 10:00 - 10:30 COFFEE BREAK - SCHWEITZER GALLERY
- 12:00 - 13:30 LUNCH - HALL 5
- 16:00 - 16:30 COFFEE BREAK - SCHWEITZER GALLERY
- 16:30 - 18:30 POSTER SESSIONS - ETOILE

## TUESDAY MAY 30

- 08:45 - 09:45 PLENARY SESSION - SCHWEITZER
- 09:00 - 18:30 EXHIBITION - HALL RHIN
- 09:30 - 10:00 COFFEE BREAK - HALL RHIN
- 10:00 - 18:30 ORAL SESSIONS
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- 16:30 - 18:30 POSTER SESSIONS - ETOILE
- 18:30 - 19:30 YOUNG RESEARCHER AWARDS - SCHWEITZER
- 19:30 - 22:00 SOCIAL EVENT - SCHWEITZER GALLERY

## THURSDAY JUNE 1


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## FRIDAY JUNE 2

- 08:45 - 12:00 ORAL SESSIONS
- 10:00 - 10:30 COFFEE BREAK - SCHWEITZER GALLERY
- 12:00 CONFERENCE CLOSING





The background of the page is a dark blue gradient with a pattern of lighter blue, wavy, concentric lines that create a sense of depth and movement. The lines are most prominent in the lower half of the page.

# SUMMARY TIMETABLE



<b>SUMMARY TIMETABLE</b>		<b>ROOM</b>	<b>FLOOR</b>
	<b>ENERGY MATERIALS</b>		
<b>A</b>	<b>Solid state ionics: bulk, interfaces and integration in devices</b>	MARIE CURIE B	First Floor
<b>B1</b>	<b>Materials for energy conversion systems: fundamentals, designs and applications</b>	SCHWEITZER	Ground Floor
<b>B2</b>	<b>Materials for energy conversion systems: fundamentals, designs and applications</b>	DRESDE	First Floor
<b>C</b>	<b>Advanced materials for environmental challenges</b>	MARIE CURIE A	First Floor
<b>D1</b>	<b>Advanced sustainable materials for energy applications</b>	CASSIN	Ground Floor
<b>D2</b>	<b>Advanced sustainable materials for energy applications</b>	BOSTON	First Floor
	<b>NANOMATERIALS AND ADVANCED CHARACTERIZATION</b>		
<b>E</b>	<b>Carbon- and/or nitrogen-containing thin films and nanomaterials</b>	MADRID 2	Ground Floor
<b>F</b>	<b>Smart materials for nanoelectronics and nanophotonics</b>	OPS	Ground Floor
<b>Fbis</b>	<b>Smart materials for nanoelectronics and nanophotonics</b>	MADRID 1	Ground Floor
<b>T</b>	<b>Frontiers of in-situ materials characterization - from new instrumentation and methods to imaging aided materials design</b>	VARSOVIE	Ground Floor
	<b>BIOMATERIALS AND SOFT MATERIALS</b>		
<b>G</b>	<b>Flexible bioelectronics: a rising star for in situ bioanalysis</b>	LONDRES 1	Ground Floor
<b>H</b>	<b>Advanced strategies for smart functional and multifunctional biomaterials and biointerfaces</b>	ROME	Ground Floor
<b>I</b>	<b>Bioinspired and biointegrated materials as new frontiers nanomaterials (11th edition)</b>	BRUXELLES	Ground Floor
<b>J</b>	<b>Design and scaling up of theranostic nanoplatfoms for health: towards translational studies</b>	LUXEMBOURG	Ground Floor
	<b>ELECTRONICS, MAGNETICS AND PHOTONICS</b>		
<b>K</b>	<b>Organic and hybrid transistors and electrochemical transistors: materials and devices</b>	BERLIN	Ground Floor
<b>L</b>	<b>Making light matter: lasers in material sciences and photonics</b>	ETOILE A	First Floor
<b>M</b>	<b>Materials engineering for advanced semiconductor devices</b>	SCHUMAN	First Floor
<b>N</b>	<b>Hybrid photonics: integration, design and devices</b>	LONDRES 1	Ground Floor
<b>O</b>	<b>Halide Perovskites for photonic applications: stability and durability issues</b>	CHURCHILL	First Floor
	<b>FUNCTIONAL MATERIALS</b>		
<b>P</b>	<b>Computations for materials – discovery, design and the role of data</b>	LONDRES 2	Ground Floor
<b>Q</b>	<b>Advanced functional films grown by pulsed deposition methods – II</b>	AMSTERDAM	Ground Floor
<b>R</b>	<b>Diamond for electronics, sensors and detectors V</b>	MADRID 1	Ground Floor
	<b>EDUCATION AND TRAINING</b>		
<b>S</b>	<b>Entrepreneurial mindset in materials</b>	VARSOVIE	Ground Floor
<b>U</b>	<b>Merging voices in Cultural Heritage: protection through innovation in materials and method</b>	BERLIN	Ground Floor
	<b>SATELLITE EVENT</b>		
<b>V</b>	<b>Final SuperCol Symposium - Colloids: synthesis, super-resolution characterization and biomedical applications</b>	LUXEMBOURG	Ground Floor
	<b>OTHER</b>		
	<b>Plenary sessions / Young Researcher Awards ceremony</b>	SCHWEITZER	Ground Floor
	<b>Poster sessions</b>	ETOILE B, C	First Floor
	<b>Exhibition</b>	HALL RHIN	Ground Floor
	<b>Coffee breaks</b>	HALL RHIN	Ground Floor
	<b>Printing office</b>	HALL RHIN	Ground Floor
	<b>Lunch: Mo/Tue/Wed/Thu at 12:00</b>	HALL 5	Ground Floor
	<b>Social event: Wed at 19:30</b>	GALLERY SCHWEITZER	Ground Floor
	<b>Cloakroom</b>	GALLERY SCHWEITZER	Ground Floor
	<b>Rescue station</b>	GALLERY SCHWEITZER	Ground Floor
	<b>Registration desk - Main entrance</b>	GALLERY RHIN	Ground Floor



MONDAY MAY 29				
MORNING		AFTERNOON		
<b>A01</b> Fundamentals: space charges and local transport	<b>A02</b> High temperature oxygen exchange kinetics	<b>A03</b> Catalyst exsolution	<b>A04</b> Complex oxides for high and low temperature electrolysis	<b>A05</b> Oxide catalyst for fuel production
<b>B1_01</b> Smart Conversion Materials and Technology 1	<b>B1_02</b> Smart Conversion Materials and Technology 1	<b>B1_03</b> Smart Conversion Materials and Technology 2		<b>B_P01</b> Poster session 1
<b>C01</b> Polymers for Environment 1	<b>C02</b> Air remediation	<b>C03</b> Purification by using inorganic materials	<b>C04</b> Photocatalysis 1	<b>C05</b> Photocatalysis 2
<b>D1_01</b> Batteries 1	<b>D1_02</b> Batteries 2	<b>D1_03</b> Batteries 3	<b>D1_04</b> Batteries 4	<b>D1_05</b> Batteries 5
<b>D2_01</b> Metal Halide Perovskites	<b>D2_02</b> Metal Halide Perovskites and optical materials	<b>D2_03</b> Thermoelectric and optical materials 1	<b>D2_04</b> Thermoelectric and optical materials 2	<b>D2_05</b> Magnetic Materials
	<b>E01</b> Sensors 1	<b>E02</b> Monolayer and multilayer C based materials		<b>E_P</b> Poster session
<b>F01</b> Plasmonics 1	<b>F02</b> Plasmonics 2	<b>F03</b> Plasmonics 3	<b>F04</b> Plasmonics 4	<b>F05</b> 2D Materials
				<b>T_P</b> Poster session
<b>G01</b> Session 1	<b>G02</b> Session 2	<b>G03</b> Session 3		<b>G_P</b> Poster session
<b>H01</b> Bioinspired Materials	<b>H02</b> Smart Biohybrid Materials	<b>H03</b> Biointerfaces at Electrodes		<b>H_P</b> Poster session
<b>I01</b> Smart Nano Materials and Systems Multifunctionality Strategy from Nature	<b>I02</b> Smart Nano Materials and Systems Multifunctionality Strategy from Nature	<b>I03</b> Smart Nano Materials and Systems Multifunctionality Strategy from Nature	<b>I04</b> Smart Nano Materials and Systems Multifunctionality Strategy from Nature	
<b>J01</b> Design of molecular based nanoplatfoms for nanomedicine	<b>J02</b> Design of nanomaterials for biomedical applications 1	<b>J03</b> Polymeric nanoparticles designed for imaging	<b>J04</b> Design of biomaterials for nanomedicine	<b>J05</b> Gel based Nanomedicines and analysis approaches
<b>K01</b> Bioelectronics and Green Electronics 1	<b>K02</b> Bioelectronics and Green Electronics 2	<b>K03</b> Bioelectronics and Green Electronics 3	<b>K04</b> Manufacturing and Device Design 1	<b>K_P</b> Poster session
<b>L01</b> Industrial Laser Machining	<b>L02</b> Laser Additive Manufacturing I	<b>L03</b> Biological Laser Surface Engineering	<b>L04</b> Laser Additive Manufacturing II	<b>L05</b> Laser induced Periodic Surface Structures I
<b>M01</b> Integration Challenges	<b>M02</b> Simulation and Modeling I	<b>M03</b> Substrate Technologies and Layer Synthesis I	<b>M04</b> Metrology and Characterization I	<b>M05</b> Advanced Doping Technologies
<b>P01</b> Materials Discovery	<b>P02</b> Batteries	<b>P03</b> Electrochemistry	<b>P04</b> 2D Materials	
<b>R01</b> Diamond Devices I	<b>R02</b> Diamond Devices II	<b>R03</b> Quantum devices I		<b>R_P</b> Poster session

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<b>V</b>	<b>Final SuperCol Symposium - Colloids: synthesis, super-resolution characterization and biomedical applications</b>	LUXEMBOURG	Ground Floor
	<b>OTHER</b>		
	<b>Plenary sessions / Young Researcher Awards ceremony</b>	SCHWEITZER	Ground Floor
	<b>Poster sessions</b>	ETOILE B, C	First Floor
	<b>Exhibition</b>	HALL RHIN	Ground Floor
	<b>Coffee breaks</b>	HALL RHIN	Ground Floor
	<b>Printing office</b>	HALL RHIN	Ground Floor
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<b>SUMMARY TIMETABLE</b>		<b>ROOM</b>	<b>FLOOR</b>
	<b>ENERGY MATERIALS</b>		
<b>A</b>	<b>Solid state ionics: bulk, interfaces and integration in devices</b>	MARIE CURIE B	First Floor
<b>B1</b>	<b>Materials for energy conversion systems: fundamentals, designs and applications</b>	SCHWEITZER	Ground Floor
<b>B2</b>	<b>Materials for energy conversion systems: fundamentals, designs and applications</b>	DRESDE	First Floor
<b>C</b>	<b>Advanced materials for environmental challenges</b>	MARIE CURIE A	First Floor
<b>D1</b>	<b>Advanced sustainable materials for energy applications</b>	CASSIN	Ground Floor
<b>D2</b>	<b>Advanced sustainable materials for energy applications</b>	BOSTON	First Floor
	<b>NANOMATERIALS AND ADVANCED CHARACTERIZATION</b>		
<b>E</b>	<b>Carbon- and/or nitrogen-containing thin films and nanomaterials</b>	MADRID 2	Ground Floor
<b>F</b>	<b>Smart materials for nanoelectronics and nanophotonics</b>	OPS	Ground Floor
<b>Fbis</b>	<b>Smart materials for nanoelectronics and nanophotonics</b>	MADRID 1	Ground Floor
<b>T</b>	<b>Frontiers of in-situ materials characterization - from new instrumentation and methods to imaging aided materials design</b>	VARSOVIE	Ground Floor
	<b>BIOMATERIALS AND SOFT MATERIALS</b>		
<b>G</b>	<b>Flexible bioelectronics: a rising star for in situ bioanalysis</b>	LONDRES 1	Ground Floor
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	<b>ELECTRONICS, MAGNETICS AND PHOTONICS</b>		
<b>K</b>	<b>Organic and hybrid transistors and electrochemical transistors: materials and devices</b>	BERLIN	Ground Floor
<b>L</b>	<b>Making light matter: lasers in material sciences and photonics</b>	ETOILE A	First Floor
<b>M</b>	<b>Materials engineering for advanced semiconductor devices</b>	SCHUMAN	First Floor
<b>N</b>	<b>Hybrid photonics: integration, design and devices</b>	LONDRES 1	Ground Floor
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	<b>FUNCTIONAL MATERIALS</b>		
<b>P</b>	<b>Computations for materials – discovery, design and the role of data</b>	LONDRES 2	Ground Floor
<b>Q</b>	<b>Advanced functional films grown by pulsed deposition methods – II</b>	AMSTERDAM	Ground Floor
<b>R</b>	<b>Diamond for electronics, sensors and detectors V</b>	MADRID 1	Ground Floor
	<b>EDUCATION AND TRAINING</b>		
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**WEDNESDAY MAY 31**

MORNING		AFTERNOON			
PLENARY SESSION	A09 SOFC/SOEC devices	A10 Surface catalysis	A11 Proton conduction in oxides		
	B1_06 Defects in Perovskites 1	B1_07 Defects in Perovskites 2	B1_08 b Defects in Perovskites 3		
	B2_03 Atomic scale modeling of ferro optical properties	B2_04 Simulation and Modeling of Energy Conversion Systems: From Materials to Devices	B2_05 Simulation of Energy Materials from Atomistic to Continuum Scales		
	C08 Nanocomposites for Environment 1	C09 Photocatalysis 3	C10 Nanocomposites for Environment 2		
	D1_09 Electrochemical	D1_10 Water splitting/HER OER 1	D1_11 Water splitting/HER OER 2	D_P02 Poster session 2	
	D2_09 Photocatalysis and photocatalytic materials 4	D2_10 Photocatalytic and photovoltaic materials	D2_11 Photovoltaics 1	D_P02 Poster session 2	
PLENARY SESSION	E07 Carbon based thin films 2	E08 Carbon based nanomaterials for energy applications	E09 Carbon based nanomaterials for bio applications		
	F10 Energy/Sensors 1	F11 Energy/Sensors 2	F12 Energy/Sensors 3	F_P Poster session	
	T05 Beam sensitive and 2D materials	T06 Solar Cells and Photocatalysts	T07 Heating and environmental TEM	T08 Electron Microscopy and Micromechanics	
PLENARY SESSION	H07 Biointerfaces Engineering	H08 New Materials for Biomedical Applications	H09 New Materials for Biomedical Applications II		
	I08 Living Systems/Materials and Biomimetics Multifunctionality from Nature	I09 Living Systems/Materials and Biomimetics Multifunctionality from Nature	I10 Living Systems/Materials and Biomimetics Multifunctionality from Nature		
	J09 Elaboration strategies of nanoparticles for nanomedicine	J10 Continuous flow synthesis approaches	J11 Nanoplatfroms for imaging 1	J12 Nanoplatfroms for imaging 2	
PLENARY SESSION	K09 Materials, Structure, and Additives 3	K10 Manufacturing and Device Design 2	K11 Sensors and Neuromorphic Electronics 1	K12 Sensors and Neuromorphic Electronics 2	
	L10 Laser Surface Texturing Applications	JOINT LQ 01 PLD of Thin Films I (ROOM ETOILE A)	JOINT LQ 02 PLD of Thin Films I (ROOM ETOILE A)	L_P Poster session	
	M09 Metrology and Characterization II	M10 Simulation and Modeling III	M11 Silicides and Germanides II	M12 Applications in Advanced Devices	
	N01 Light emission & Topology	N02 Integration of functional materials	N03 Integration of functional materials 2	N_P Poster session	
	O4 Advanced characterization	O5 Devices and stability 2	O6 Devices and stability 3	O_P Poster session	
	P08 Biomaterials Design	P09 AI Accelerated Materials Discovery II	P10 Optical and Magnetic Properties	P_P Poster session	
	Q05 Functional oxides & TCO's II	JOINT LQ 01 PLD of Thin Films I (ROOM ETOILE A)	JOINT LQ 02 PLD of Thin Films I (ROOM ETOILE A)	Q_P Poster session	
	R06 Quantum devices II	R07 Processing Optics and Thermal Management	R08 Sensors and Bio devices		

<b>SUMMARY TIMETABLE</b>		<b>ROOM</b>	<b>FLOOR</b>
	<b>ENERGY MATERIALS</b>		
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<b>B2</b>	<b>Materials for energy conversion systems: fundamentals, designs and applications</b>	DRESDE	First Floor
<b>C</b>	<b>Advanced materials for environmental challenges</b>	MARIE CURIE A	First Floor
<b>D1</b>	<b>Advanced sustainable materials for energy applications</b>	CASSIN	Ground Floor
<b>D2</b>	<b>Advanced sustainable materials for energy applications</b>	BOSTON	First Floor
	<b>NANOMATERIALS AND ADVANCED CHARACTERIZATION</b>		
<b>E</b>	<b>Carbon- and/or nitrogen-containing thin films and nanomaterials</b>	MADRID 2	Ground Floor
<b>F</b>	<b>Smart materials for nanoelectronics and nanophotonics</b>	OPS	Ground Floor
<b>Fbis</b>	<b>Smart materials for nanoelectronics and nanophotonics</b>	MADRID 1	Ground Floor
<b>T</b>	<b>Frontiers of in-situ materials characterization - from new instrumentation and methods to imaging aided materials design</b>	VARSOVIE	Ground Floor
	<b>BIOMATERIALS AND SOFT MATERIALS</b>		
<b>G</b>	<b>Flexible bioelectronics: a rising star for in situ bioanalysis</b>	LONDRES 1	Ground Floor
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	<b>FUNCTIONAL MATERIALS</b>		
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	<b>EDUCATION AND TRAINING</b>		
<b>S</b>	<b>Entrepreneurial mindset in materials</b>	VARSOVIE	Ground Floor
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THURSDAY JUNE 1				
MORNING		AFTERNOON		
PLENARY SESSION	A12 In situ and operando analysis I: devices	A13 In situ and operando analysis II: surfaces and interface phenomena	A14 Alternative storage in the solid state	A_P02 Poster session 2
	B1_09 Development, Characterization, and Applications of Energy Materials	B1_10 Development, Characterization, and Applications Atomic and Microscale	B1_11 Development, Characterization, and Applications Atomic and Microscale	B_P03 Poster session 3
	B2_06 Processing and Properties of Chalcogenides Semiconductors including Perovskites 1	B2_07 Processing and Properties of Chalcogenides Semiconductors including Perovskites 2	B2_08 Photonic Materials: Structure & properties	B2_09 Photonic Materials: Structure & properties
	C11 Photocatalysis 4	C12 Photocatalysis 5	C13 Adsorption methods	C_P02 Poster session 2
	D1_12 Water splitting/HER OER 3	D1_13 Water splitting/HER OER 4	D1_14 Water splitting/HER OER 5	D_P03 Poster session 3
	D2_12 Photovoltaics 2	D2_13 Photovoltaics 3	D2_14 Photovoltaics 4	D_P03 Poster session 3
PLENARY SESSION	E10 Thin Films and Nanomaterials 1	E11 Sensors 2	E12 Optical, electrical and thermal applications	E13 Thin Films and Nanomaterials 2
	F13 Synthesis/Characterization 1	F14 Synthesis/Characterization 2	F15 Synthesis/Characterization 3	F16 Synthesis/Characterization 4
	Fbis01 Photonics/Optoelectronics 1	Fbis02 Photonics/Optoelectronics 2	Fbis03 Photonics/Optoelectronics 3	Fbis04 Photonics/Optoelectronics 4
PLENARY SESSION	H10 Nanostructures and Nanoparticles for Biomaterials Applications	H11 Bioinspired Coatings and Thin Film	H12 Bioinspired Coatings and Thin Film II	
	H11 Tutorial Advancing Frontiers in Biomaterials and Nanomedicine	H12 Tutorial Advancing Frontiers in Biomaterials and Nanomedicine	H13 Tutorial Advancing Frontiers in Biomaterials and Nanomedicine	
PLENARY SESSION	L11 Laser induced Plasma and Applications	L12 Ultra short and Ultra high Power Laser Interaction with Matter II	L13 Laser induced Melting and Crystallization	L14 Lasers and Applications
	M13 Substrate Technologies and Layer Synthesis II	M14 Simulation and Modeling IV	M15 Silicides and Germanides III	M_P02 Poster session 2
	N04 Fabrication & Patterning	N05 Phase change Materials	N06 Photodetectors	N07 Systems & circuits
	O7 Novel materials and deposition techniques	O8 Perovskites for photonic applications 1	O9 Perovskites for photonic applications 2	O10 Perovskites for photonic applications 3
	P11 Methods for Materials Discovery I	P12 Materials Acceleration Platforms	P13 Methods for Materials Discovery II	
	Q06 Applications	Q07 Nanoparticles, nanostructures & nanoscale materials I	Q08 Nanoparticles, nanostructures & nanoscale materials II	Q09 Metal & alloy functional coatings
S01 Session 1		S02 Session 2		
U01 Techniques and Methods for a deeper knowledge of CH	U02 World Heritage Case Studies	U03 Poster Pitch	U_P Poster session	
V01 Nanoparticles: synthesis and interactions	V02 Super resolution microscopy and nanoparticles	V03 Biomedical applications of nanoparticles		

<b>SUMMARY TIMETABLE</b>		<b>ROOM</b>	<b>FLOOR</b>
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# SYMPOSIA







European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM A

Solid state ionics: bulk, interfaces and integration in devices

*Symposium Organizers:*

Ainara AGUADERO, Imperial College London, U.K.

Emiliana FABBRI, Paul Scherrer Institut, Switzerland

Francesco CIUCCI, HKUST, Hong Kong

Miguel LAGUNA-BERCERO, Universidad de Zaragoza, Spain

Published in Solid State Ionics by Elsevier

UHV + PLD systems technology  
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Y MATERIALES DE ARAGÓN



**Monday May 29**

**A01**

## **Fundamentals: space charges and local transport**

**Chairperson(s) : TARANCON Albert**

**Marie Curie B (1st floor)**

<b>08:45</b>	<b>809</b>	<b>INV</b>	The Consequences of Space-Charge Zones for Short-Circuit Diffusion along Extended Defects	<b>DE SOUZA Roger</b>
<b>09:15</b>	<b>715</b>		Understanding local mass transports at grain boundaries in perovskite oxide electrodes	<b>SKINNER Stephen</b>
<b>09:30</b>	<b>728</b>		A molecular-dynamics study of oxygen diffusion in polycrystalline (La,Sr)FeO <sub>3</sub>	<b>BONKOWSKI Alexander</b>
<b>09:45</b>	<b>696</b>		Exploring space charge effects at SrTiO <sub>3</sub> mixed ionic and electronic oxide heterojunctions	<b>STEINBACH Claudia</b>

**Monday May 29**

**A02**

## **High-temperature oxygen exchange kinetics**

**Chairperson(s) : DE SOUZA Roger**

**Marie Curie B (1st floor)**

<b>10:30</b>	<b>2784</b>	<b>INV</b>	High-throughput screening of defect-mediated properties: ionic conductivity and surface exchange kinetics	<b>PERRY Nicola H.</b>
<b>11:00</b>	<b>430</b>		Effect of transition metal impurities on oxygen exchange kinetics in mixed ionic and electronic conducting oxides	<b>ABDOULI Insaf</b>
<b>11:15</b>	<b>1140</b>		Oxygen exchange kinetics of mixed conducting oxide ceramics covered by dendritic surface particles	<b>PREIS Wolfgang</b>
<b>11:30</b>	<b>698</b>		Interplay between surface chemistry, transport properties, and oxygen exchange kinetics in mixed conducting oxides	<b>MERIEAU Alexandre</b>
<b>11:45</b>	<b>1455</b>		Modifying the surface exchange kinetics of Fe-substituted SrTiO <sub>3</sub> via the infiltration of acidic/basic binary oxides	<b>HARRINGTON George</b>

**Monday May 29**

**A03**

## **Catalyst exsolution**

**Chairperson(s) : PERRY Nicola H.**

**Marie Curie B (1st floor)**

	<b>2837</b>		Printing wearable and bioelectronic sensors with microfibr	<b>WANG Wenyu Andy</b>
<b>13:30</b>	<b>2779</b>	<b>INV</b>	Control of Surface Cation Segregation through Strain Engineering	<b>HAN Jeong Woo</b>
<b>14:00</b>	<b>517</b>		Understanding the exsolution of Ni-Co-Fe alloyed nanoparticles in double perovskites electrodes by synchrotron-based in situ NAP-XPS and XRD	<b>CARRILLO Alfonso J.</b>
<b>14:15</b>	<b>1835</b>		On the influence of pressure on multicomponent metallic exsolution	<b>LÓPEZ-GARCÍA Andrés</b>
<b>14:30</b>	<b>1533</b>		Exsolution Catalysts as a Plaything of Atmosphere and Electrochemical Polarization	<b>OPITZ Alexander K.</b>
<b>14:45</b>	<b>498</b>		Visualizing the Evolution of Exsolved Nanoparticles from Nanoporous Perovskites	<b>INANGHA Princess</b>

**Monday May 29**

**A04**

## **Complex oxides for high and low temperature electrolysis**

**Chairperson(s) : FABBRI Emiliana**

**Marie Curie B (1st floor)**

<b>15:00</b>	<b>2777</b>	<b>INV</b>	Low content Ru pyrochlores as efficient and stable electrocatalysts for PEMWE anodes	<b>RETUERTO M.</b>
<b>15:30</b>	<b>2780</b>		OER Catalysts derived from Ir double perovskites for PEMWE	<b>ROJAS Sergio</b>
<b>15:45</b>	<b>2791</b>		Ferrites for High-Performance Protonic Ceramic Fuel Cells	<b>CIUCCI Francesco</b>



**Monday May 29**

**A05**

**Oxide catalyst for fuel production**

**Chairperson(s) : CARRILLO Alfonso J.**

**Marie Curie B (1st floor)**

<b>16:30</b>	<b>2776</b>	<b>INV</b>	Optimization of metal oxide catalysts for water splitting	<b>TSUR Yoed</b>
<b>17:00</b>	<b>352</b>		Mechanochemical route to novel high-entropy sulfides for rechargeable battery battery and electrocatalytic water splitting	<b>LIN Ling</b>
<b>17:15</b>	<b>1459</b>		CeO <sub>2</sub> -promoted Cu <sub>2</sub> O-based catalysts for the electrocatalytic reduction of carbon dioxide to ethylene	<b>ALARCÓN Andreina</b>
<b>17:30</b>	<b>1270</b>		Insights into triple conducting oxides as cathodes for electrochemical nitrogen hydrogenation	<b>WEISS Maximilian</b>
<b>17:45</b>	<b>1985</b>		Understanding Fluorite-Type Electrodes for CO <sub>2</sub> Electrolysis: A Multi-Analytical Approach Employing Well-Defined Model Electrodes	<b>RATH Kirsten</b>
<b>18:00</b>	<b>1569</b>		Electrochemical CO <sub>2</sub> reduction with MgO support for methane production	<b>WANG Yifei</b>
<b>18:15</b>	<b>2526</b>		Porous MgO stabilized ZrO <sub>2</sub> plates from directionally solidified composites as supports of dual membranes.	<b>MERINO Rosa Isabel</b>

Tuesday May 30

A06

## Sustainable routes in electrochemical storage

Chairperson(s) : JIMÉNEZ RIOBÓO Ricardo

Marie Curie B (1st floor)

10:00	2773	INV	Sustainable battery design	KENDRICK Emma
10:30	1820		The Effect of Configurational Entropy on Acoustic Emission of P2-Type Layered Oxide Cathodes for Sodium-Ion Batteries	DREYER Sören L.
10:45	2576		The route matters: effect of liquid-phase processing on bulk properties of high-capacity cathode materials	GADERMAIER Bernhard
11:00	732		Development of fast Li conductor halides with non-critical elements	ARTAL Raul
11:15	2728		Novel hybrid solid electrolytes based on metal organic frameworks	HANZU Ilie
11:30	1899		Rechargeable oxide ion batteries based on mixed conducting oxygen insertion electrodes	SCHMID Alexander
11:45	2637		Magnetic Thermally-Chargeable Textile Supercapacitor: Synergy Between CNT@ MnFe <sub>2</sub> O <sub>4</sub> Hybrid Electrodes & Glow-in-the-Dark Solid-gel Electrolyte	TEIXEIRA Joana S.

Tuesday May 30

A07

## Solid state electrolytes for secondary batteries

Chairperson(s) : CIUCCI Francesco

Marie Curie B (1st floor)

13:30	2774	INV	Protecting solid-state batteries from failure by using pulsed current waveform and ion implantation	RETTENWANDER Daniel
14:00	2457		Overscreening and underscreening: the emergence of oscillatory space charge layers in solid electrolytes	COLES Samuel William
14:15	1436		Ionic diffusion in the argyrodite-type Li <sub>6</sub> PS <sub>5</sub> Br: Influence of Br/S site-exchange and grain boundaries	SADOWSKI Marcel

14:30	2529	Influence of the powder preparation method on the Self-diffusion coefficients obtained by $^7\text{Li}$ PFG (Pulse Field Gradient) NMR spectroscopy in polycrystalline $\text{Li}_{1+x}\text{Ti}_2\text{-xAl}_x(\text{PO}_4)_3$ ( $0.2 = x = 0.4$ ) samples.	JIMÉNEZ RIOBÓO Ricardo
14:45	1675	Lowering the sintering temperature of garnet electrolytes for Solid-State Batteries by cold sintering process	PESCE Arianna

Tuesday May 30

A08

## Solid state batteries development

Chairperson(s) : KENDRICK Emma

Marie Curie B (1st floor)

15:00	1401	Solid-state architectures based on ultra-thin NASICON electrolytes and oxide-based anodes	GONZALEZ-ROSILLO Juan Carlos
15:15	2354	Rapid screening of materials and interfaces for high rate capability in energy storage and conversion	ADAMS Stefan
15:30	210	Solution-phase synthesis of Li metal protective interlayer for stable anodic interface in all-solid-state batteries	LEE Seong Gyu
15:45	2353	High Performance Solid State Lithium Batteries by Ultrathin In-situ-cured Composite Solid Electrolytes	ADAMS Stefan
16:00	379	Predicting the ionic conductivity of superionic conductors	CARVALHO Alexandra
16:15	1905	Monolithically-stacked thin-film cells for high-power solid-state batteries	FUTSCHER Moritz H.

Tuesday May 30

A\_P01

## Poster session 1

Etoile (1st floor) - 4.30 p.m to 6.30 p.m

01_1069	Clarification of Li Deposition Behavior on a Porous Interlayer Anode in Li-free All-Solid-State Batteries	JUN Dayoung
02_11	Modulating the electronic conductivity of hematite ( $\alpha\text{-Fe}_2\text{O}_3$ ) via biaxial mechanical strain: A density functional theory study.	ABDULMUTALIB Sheriff Naziru



03_1126	Stability of high-temperature electrical and acoustic properties of congruent and near stoichiometric single crystalline lithium niobate-tantalate solid solutions	<b>SUHAK Yuriy</b>
04_1128	Modelling of oxygen vacancy diffusion in acceptor doped barium titanate: a molecular dynamics approach	<b>PREIS Wolfgang</b>
05_1142	New solid-state electrolyte based on 2-adamantanone for sodium all-solid-state batteries	<b>BUUDE Joshua</b>
06_1244	Understanding quantum phenomena in multiferroic $A_2CoB_2O_7$ (A = Sr, Ba; B = Ge, Si) single crystals	<b>DUTTA Rajesh</b>
07_1247	A molecular dynamics study of oxygen diffusion in brownmillerite $Sr_2Fe_2O_5$	<b>AMBAUM Sonja</b>
08_1261	Insight into the Transport of Li Polysulfides in Solid Polymer Electrolytes	<b>AHIAVI Ernest</b>
09_1263	A general expression for the statistical error in a diffusion coefficient obtained from a solid-state Molecular-Dynamics simulation	<b>USLER Adrian L.</b>
10_1291	A novel sample cell for the detection of protons in ceramic materials by an in-situ combination of laser induced breakdown spectroscopy and electrochemistry	<b>WEISS Maximilian</b>
11_1318	An oxide ion all-solid-state synaptic transistor with efficient energy consumption for low temperature applications	<b>LANGNER Philipp</b>
12_1343	Understanding seed layers for lithium metal plating in all-solid-state batteries with 3D microscopy	<b>MUELLER Andre</b>
13_1359	Polyether based Polyhydroxy urethane Network as Polymer Electrolyte Solid-state Lithium Metal Batteries	<b>RAJ Ashish</b>
14_1362	Electrical and Optical Properties of $SrTi_{0.7}Fe_{0.3}O_{3-d}$ Perovskite-Type Oxide	<b>YILDIRIM Ceren</b>
15_1365	Diffusion of cobalt ions in strontium titanate	<b>MA Qian</b>
16_1367	Depth-dependent characterization of (Ag,Cu)(In,Ga)Se <sub>2</sub> by X-ray absorption spectroscopy	<b>BABUCCI Melike</b>
17_1372	Coupling of an experimental and numerical study on high performance oxygen electrodes for micro-Solid Oxide Cells	<b>PANISSET Silvère</b>
18_1377	Solid-state Li metal battery with hybrid electrolyte: An overview of the Horizon Europe SEATBELT project.	<b>BOULMIER Thomas</b>

19_1413	Understanding the structure, ionic conductivity and transport mechanisms of A2ZrCl6.	<b>BARKER Kit</b>
20_1415	Computational Study on the Effect of Inactive Fillers in Hybrid Electrolytes using Empirical Molecular Dynamics	<b>MARTIN DALMAS CEA Joël</b>
21_1442	Dendritic growth study by coupling phase field equations and Poisson Nernst Planck equation for Li metal batteries	<b>WORTHEMPHY Mahung Khuiya Shimray</b>
22_1446	In-situ impedance spectroscopy to identify mechanisms in cold sintering process of Li <sub>1-x</sub> Al <sub>x</sub> Ti <sub>2-x</sub> (PO <sub>4</sub> ) <sub>3</sub> (LATP) solid electrolyte	<b>VICENTE-AGUT Nuria</b>
23_179	Interstitial segregation has the potential to mitigate liquid metal embrittlement in iron	<b>AHMADIAN Ali</b>
24_184	Solid polymer electrolytes via click chemistry for all solid state lithium batteries	<b>HALTTUNEN Niki</b>
25_197	Novel mesoporous carbon supports for sustainable PEMFC catalysts	<b>PERRIN Eugénie</b>
26_199	Mixed Ion-Electron Transport in Composite Electrodes	<b>CHEN Chia-Chin</b>
27_1020	Analysis of interfacial defects in InGaZnO TFT using nonlinear optics	<b>HYUNMIN Hong</b>
28_229	Influence of Sm doping on structural, ferroelectric, electrical, optical and magnetic properties of BaTiO <sub>3</sub>	<b>ALSHOAIBI Adil</b>
29_230	Effect of Sm <sup>3+</sup> Substitutions on the Lithium Ionic Conduction and Relaxation Dynamics of Li <sub>5+2x</sub> La <sub>3</sub> Nb <sub>2-x</sub> Sm <sub>x</sub> O <sub>12</sub> Ceramics	<b>ALSHOAIBI Adil</b>
30_231	Enhancement of Optical Activity and Properties of Barium Titanium Oxides to Be Active in Sunlight through Using Hollandite Phase Instead of Perovskite Phase	<b>ALSHOAIBI Adil</b>
31_234	Colossal Permittivity Characteristics of (Nb, Si) Co-Doped TiO <sub>2</sub> Ceramics	<b>ALSHOAIBI Adil</b>
32_1059	Multi-ferroic glass properties of cubic Sm-doped ceria	<b>LAVIE Anna</b>
33_236	Investigation of Chemical Bath Deposited Transition Metals/GO Nanocomposites for Supercapacitive Electrodes	<b>ALSHOAIBI Adil</b>
34_2717	Prediction of Sodium Ion Transport in NaSICON Materials by DFT and Monte Carlo methods	<b>NEITZEL-GRIESHAMMER Steffen</b>

<a href="#">35_2830</a>	Performance of NaSICON electrolytes in anodeless sodium solid-state batteries	<b>GARCÍA Cristina</b>
<a href="#">36_29</a>	Tuning Ionic Conductivity and Stability of Superionic Solid-State Electrolyte	<b>KC Santosh</b>
<a href="#">37_314</a>	Nanostructured air electrodes for reversible solid oxide fuel cells via crystallization-assisted infiltration	<b>SEUNG-BOK Lee</b>
<a href="#">39_416</a>	Physically Transient Devices Based on Biological Materials with Agarose as an Active Layer for Nonvolatile Memory Application	<b>NGUYEN Tan Hoang Vu</b>
<a href="#">40_463</a>	Interface studies in solid lithium metal batteries based on halide hybrid electrolytes	<b>STANKIEWICZ Natalia</b>
<a href="#">41_491</a>	Pulsed laser deposition of epitaxial Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> thin films as an all-solid-state microbattery anode	<b>ŽUNTAR Jan</b>
<a href="#">42_532</a>	First principles calculations of oxygen vacancies and protonic defects in Sr <sub>2</sub> FeO <sub>4±d</sub>	<b>MASTRIKOV Yuri A.</b>
<a href="#">43_536</a>	Enlargement of band gaps on thermal wave crystals by using heterostructures	<b>MORALES-MORALES Gerardo</b>
<a href="#">44_592</a>	Composite coating for suppressing undesirable interfacial reactions in sulfide-based all-solid-state batteries.	<b>JI Yong Jun</b>
<a href="#">45_615</a>	Optimization of Thermoelectric n- & p-type Bismuth-Tellurium and Antimony-Tellurium Based Alloys through Mechanical Alloying, Hot Pressing and Hot Deformation	<b>VOURLIAS Georgios</b>
<a href="#">46_537</a>	Prolongating Cycling Lifetime of Lithium Metal Batteries with Monolithic and Inorganic-Rich Solid Electrolyte Interphase	<b>YANG Jinlin</b>
<a href="#">47_629</a>	Synthesis of Thermoelectric Copper Selenide Compounds by High Energy Ball Milling and Pack Cementation	<b>VOURLIAS Georgios</b>
<a href="#">48_631</a>	Control of local thermal conductivity in oxide thin films through ionic manipulation	<b>VARELA-DOMÍNGUEZ Noa</b>
<a href="#">49_636</a>	Synthesis of silver selenide for thermoelectric applications via Pack Cementation and Ball Milling	<b>MALLETZIDOU Lamprini</b>
<a href="#">50_671</a>	Preparation and analysis of EVA-ZnO composite for solar cell encapsulation	<b>PATHI Prathap</b>
<a href="#">51_703</a>	Partial pressure dependence of the space charge between SrTiO <sub>3</sub> and mixed conducting La <sub>0.6</sub> Sr <sub>0.4</sub> FeO <sub>3</sub> , La <sub>0.65</sub> Sr <sub>0.35</sub> MnO <sub>3</sub> and La <sub>0.9</sub> Sr <sub>0.1</sub> CrO <sub>3</sub>	<b>STEINBACH Claudia</b>



52_760	Theoretical insights into the monolayer adsorption and characterization of HB238 merocyanine on Ag(100) surface	<b>TOMAR Ritu</b>
53_80	Unleashing the potential of solid-state thin film electrolyte with pulsed laser deposition (PLD)	<b>CHEN Jixi</b>
54_821	Effect of deposition regime on the microstructure and electrochemical performances of reactively sputtered VO <sub>x</sub> Ny pseudo-capacitive thin films	<b>BARBÉ Jérémy</b>
55_90	Grafted MXenes Based Electrolytes for 5V-class Flexible Solid-state Batteries	<b>CHEN Ze</b>
56_905	Investigation of Proton Diffusion in Nanostructured TiO <sub>2</sub> with H <sub>2</sub> O/D <sub>2</sub> O Isotope Exchange by In Situ Raman Spectroscopy	<b>ZHAO Zihan</b>
57_910	Properties of the ALD Zn <sub>1-x</sub> Sn <sub>x</sub> O <sub>y</sub> /Cu <sub>2</sub> Zn(Ge <sub>x</sub> Sn <sub>1-x</sub> )S <sub>4</sub> interface relevant for earth abundant thin film solar cells	<b>MARTIN Natalia</b>
58_724	Screening mixed conducting oxide storage electrodes via chemical capacitance measurements	<b>WAGNER Barbara</b>
59_933	Magnetic Phase Transition in MoS <sub>2</sub> detected with AFM	<b>GUPTA Akash</b>
60_935	Cation and oxygen vacancy ordering in BaLnCo <sub>2</sub> O <sub>6-d</sub> double perovskites revealed by atomic-resolution analytical TEM/STEM	<b>GHICA Corneliu</b>
62_945	Ionic conductivity in the hexagonal LiBH <sub>4</sub> -LiI-LiBr solid solution	<b>MAZZUCCO Asya</b>
63_1702	The Achilles heel of Li <sub>10</sub> GeP <sub>2</sub> S <sub>12</sub> : determining the rate limiting diffusion steps in ultrafast solid electrolytes	<b>HOGREFE Katharina</b>
64_2624	Low dimensional Li <sup>+</sup> diffusion in halide electrolytes	<b>STAINER Florian</b>

**Wednesday May 31**

**A09**

**SOFC/SOEC devices**

**Chairperson(s) : LAGUNA-BERCERO Miguel**

**Marie Curie B (1st floor)**

<b>10:00</b>	<b>2067</b>	<b>INV</b>	Recent advances in 3D printing of Solid Oxide Cells and Stacks	<b>TARANCON Albert</b>
<b>10:30</b>	<b>2689</b>		Boosting the performance of solid oxide cells by infiltrated electrodes	<b>ORERA Alodia</b>
<b>10:45</b>	<b>1741</b>		Ni-Fe bimetallic alloying and Sm-Zr co-doping of CeO <sub>2</sub> for Intermediate Temperature Solid Oxide Electrolyzers and Fuel Cells	<b>SUAREZ ANZORENA Rosario</b>
<b>11:00</b>	<b>1154</b>		In creatio analysis: electrode optimisation by in situ electrochemical studies during the growth of nano structures	<b>STANGL Alexander</b>
<b>11:15</b>	<b>2482</b>		Interfaces, dopant segregation and oxygen vacancies in Gd-doped CeO <sub>2</sub> /CoO and CeO <sub>2</sub> /NiO ceramic eutectics	<b>LARREA Angel</b>
<b>11:30</b>	<b>132</b>		All solid state electro-chemo -electrical ceria based device	<b>FREIDZON Daniel</b>
<b>11:45</b>	<b>1765</b>		Dynamics of the topotactic phase transition in complex oxide La <sub>0.6</sub> Sr <sub>0.4</sub> CoO <sub>3-d</sub> thin films	<b>HE Suqin</b>
<b>12:00</b>	<b>2770</b>	<b>INV</b>	Development of Oxygen Electrode Materials for Reversible Solid Oxide Cells Based on Proton Conductors	<b>LIU Meilin</b>

**Wednesday May 31**

**A10**

**Surface catalysis**

**Chairperson(s) : HARRINGTON George**

**Marie Curie B (1st floor)**

<b>13:30</b>	<b>2771</b>	<b>INV</b>	Exsolution: Rethinking the Role of Nanoparticles in Materials	<b>NEAGU Dragos</b>
<b>14:00</b>	<b>971</b>		Electronic and ionic effects of acidic adsorbates on SOFC cathode surfaces	<b>SIEBENHOFER Matthäus</b>

14:15	1499		Measurements of oxygen surface exchange kinetics on porous mixed conducting oxides, and strategies to improve ceramic processing for surface reaction studies	NICOLLET Clement
14:30	2034		Exsolved Palladium Doped Double Perovskite as a Potential SOFC Anode Material	SENGODAN Sivaprakash
14:45	1524		Production and Characterization of Tubular Solid Oxide Cells with infiltrated nanocatalyst precursors	MORALES-ZAPATA Miguel Angel
15:00	2775	INV	Air Electrode Stability for Reversible Solid Oxide Cells	ZHU John
15:30	2015		Oxygen mass transport properties of bulk and grain boundaries in Mn-deficient $\text{La}_{0.8}\text{Sr}_{0.2}\text{MnO}_{3\pm d}$ thin films	CHIABRERA Francesco
15:45	362		Study of oxygen ion conductivity in high-entropy oxides	KANTE Mohana Veerraju

**Wednesday May 31**

**A11**

## **Proton conduction in oxides**

**Chairperson(s) : CHIABRERA Francesco**

**Marie Curie B (1st floor)**

16:30	2772	INV	Novel Nanoscale optimized electrodes and proton ceramic electrolytes for electrochemical reactions	FONTAINE Marie-Laure
17:00	819		Hydration Entropy and Enthalpy of $\text{SrTiO}_3$ from Oxygen Tracer Diffusion Experiments	KLER Joe
17:15	1896		Proton mobility in triple-conducting perovskites	MERKLE Rotraut
17:30	469		Proton uptake and transport properties of self-generated $\text{Ba}(\text{Ce},\text{Fe},\text{Y})\text{O}_{3-d}$ and $\text{Ba}(\text{Ce},\text{Fe},\text{In})\text{O}_{3-d}$ composites	NADER Christina
17:45	365		Atomistic insight into proton migration barriers in $\text{BaFeO}_{(3-d)}$	CESNOKOVs Andrejs
18:00	1822		Exploring the nature of the oxidation states of tungsten and ionic conductivity in W-doped $\text{LaNbO}_4$	HUANG Kehan
18:15	1141		Understanding the Meyer-Neldel rule in fast ionic conductors	CHEN Qianli

Thursday June 1

## A12

### In situ and operando analysis I: devices

Chairperson(s) : OPITZ Alexander K.

Marie Curie B (1st floor)

10:00	2801	INV	Spatially and temporally resolved operando measurements on solid oxide cells of device-representative size	VAN HERLE Jan
10:30	1426		Study of ion transport in thin-film batteries by operando spectroscopic ellipsometry	MORATA Alex
10:45	2333		Exploration of the resistive switching mechanisms in $\text{La}_2\text{NiO}_{4+d}$ -based devices by in situ and operando spectroscopic techniques	BURRIEL Monica
11:00	4		In-operando optical tracking of phase change and oxygen vacancy migration in ultra-thin film binary oxide ferroelectric memories	JAN Atif
11:15	1443		Electronic structure and charge transport in $\text{NaNbO}_3$	KLEIN Andreas
11:30	489		Analysis of Behaviours and Characteristics for All-Solid-State-Batteries via In-situ XRD technique	KOO Jehyoung
11:45	2470		Sustainable solution-processed oxide memristors: Approaches to interface analysis by XPS	DEUERMEIER Jonas

Thursday June 1

## A13

### In situ and operando analysis II: surfaces and interface phenomena

Chairperson(s) : ORERA Alodia

Marie Curie B (1st floor)

13:30	2741	INV	In situ photoelectron spectroscopy reveals the chemical nature of semiconductor surface states	FAVARO Marco
14:00	1882		Probing Electrode/Electrolyte Interfaces via Operando Piezoelectric Sensing	SEL Ozlem



14:15	325	In Operando XAFS on Local Structure and Electronic State of Tungsten Oxide Nanoparticles with Different Crystal Structure under Electrochromism	TAKAHASHI Mari
14:30	2322	Growth and Resistive Switching Properties of Single Crystalline HfO <sub>2</sub> Thin Films	GOSS Kalle
14:45	2007	In-operando spatiochemical depth profiling of interfaces in Li/LiPON/LMO on-chip solid-state batteries.	PANAGIOTOPOULOS Apostolos

Thursday June 1

A14

## Alternative storage in the solid state

Chairperson(s) : BURRIEL Monica

Marie Curie B (1st floor)

15:00	2778	INV	Symmetry breaking – A peek into the field of oxide heterostructures	PRYDS Nini
15:30	1888		Investigation of the low-temperature thermoelectric transport and intrinsic electronic structure of half-Heusler TiCoSb	SERRANO SANCHEZ Federico
15:45	1714		Increased filling, structural disordering, and correlation with thermoelectric properties in Sn-doped CoSb <sub>3</sub> skutterudites	GAINZA Javier
16:00	2352		CMOS-Compatible and Scalable Electrochemical Synaptic Transistor Arrays for Deep-Learning Accelerator	CAO Qing

Thursday June 1

A\_P02

## Poster session 2

Etoile (1st floor) - 4.30 p.m to 6.30 p.m

01_1460	Enhanced ionic conductivity in composite solid electrolytes via Cold Sintering Process	FERRER-NICOMEDES Sergio
02_1463	Preparation of cold sintered (1-x)-Li <sub>1.3</sub> Al <sub>0.3</sub> Ti <sub>1.7</sub> (PO <sub>4</sub> ) <sub>3</sub> :x-Bi <sub>2</sub> O <sub>3</sub> solid-state electrolytes	MORMENEO-SEGARRA Andrés
03_1485	The mixed proton- and electron-conducting material BaFe <sub>0.9</sub> Y <sub>0.1</sub> O <sub>3-??</sub> : Synthesis, characterization, and application as fuel electrode in proton conducting solid oxide cells	ANSTISS Melanie

04_1509	Investigation of the real performance of proton conducting ceramic cells with double perovskite positrode	ZHENG Haoyu
06_1558	Magnetron sputtering of C- or Si-doped LiPON as Li-ion conducting thin-film separator for solid-state batteries	OSENCIAT Nicolas
07_1629	An NIR dual-emitting/absorbing inorganic compact pair: A self-calibrating LRET system for homogeneous virus detection	KANG Dongkyu
09_1708	Lithium metal passivation by atmospheric-pressure plasma	RANGASAMY Vijay Shankar
10_1712	Effect of (External) Electric Fields on The Heterogeneous Solid State Reaction between Al <sub>2</sub> O <sub>3</sub> and Y <sub>2</sub> O <sub>3</sub> Forming Multiple Product Layers	KORTE Carsten
11_1737	Polyelectrolytes based on Nafion for Lithium Rechargeable Batteries	RANGASAMY Vijay Shankar
12_1743	Electrical conductivity and chemical diffusion coefficients of self-generated Ba(Ce,Fe,Y) O <sub>3-d</sub> composites	BUCHER Edith
13_1767	Strain engeenering of thermoelectric and dielectrical properties of misfit cobaltates	HARIZANOVA Sonya
14_1793	Water adsorption and surface protonics of mixed conducting oxide materials	KANG Xiaolan
15_1846	Elucidation of Crystallization Mechanism of NASICON Glass-ceramics Toward Aqueous Sodium-ion Batteries	SAKAEDA Kento
16_1847	A comparative study: Influence of magnetic (Fe) and non-magnetic (In) doping on structural, magnetic, and weak anti-localization properties of Bi <sub>2</sub> Te <sub>3</sub> topological insulator	KANDER Niladri
17_1873	Control of functional properties of perovskite oxides by voltage-driven oxygen-ion transport	NIZET Paul
18_1880	Stereoactivity and disorder cause fluorite BaSnF <sub>4</sub> to be stranger than it seems	COLES Samuel William
19_1897	Strategy of Enhancing Ionic Conductivity with Accurate Sintering Conditions in Li <sub>7</sub> La <sub>3</sub> Zr <sub>2</sub> O <sub>12</sub>	PARK Kwangjin
20_1903	A solid oxide harvestore for combined harvesting and storing photovoltaic energy	SCHMID Alexander
21_1917	Upscaling strategies for the fabrication of solid oxide cells	RUIZ Kandela

<a href="#">22_1951</a>	Size and Shape Optimization of Silicon Anodes for All-Solid-State Batteries	<b>GRANDJEAN</b> Martine
<a href="#">23_1980</a>	Towards all-phosphate solid-state lithium batteries	<b>GONZALEZ-ROSILLO</b> Juan Carlos
<a href="#">25_2014</a>	Stability analysis of Ni-doped SrTiO <sub>3</sub> using ab-initio thermodynamics	<b>LEE</b> Na-Young
<a href="#">26_2022</a>	Gaining Insight into the Role of Electrochemical Polarisation on Degradation Phenomena in Solid Oxide Cells by Experiments on Thin Film Electrodes	<b>RATH</b> Kirsten
<a href="#">27_2029</a>	Effect of (Y,Co) co-doping on the space charge and electrical conductivity of CGO based materials sintered by hot pressing	<b>ABRANTES</b> João
<a href="#">28_2039</a>	Effect of yttrium ion on the space charge potential across grain boundaries regions of gadolinia-doped ceria electrolytes	<b>GOMES</b> Eduarda
<a href="#">29_2045</a>	Silica scavenging effect of praseodymium on tetragonal zirconia – effects on conductivity and space charge	<b>FERREIRA</b> António
<a href="#">30_2071</a>	Reducing interfacial resistance in garnet-based solid-state batteries by an ex-situ formed SEI interlayer	<b>SUN</b> Yanyan
<a href="#">31_2106</a>	Explaining Hysteresis in Metal Halide Perovskite-based Memristors by Numerical Simulations	<b>PÉREZ MARTÍNEZ</b> José Carlos
<a href="#">32_2157</a>	Thin-film (Cu, Fe)-Li-F conversion cathodes for high-energy solid-state batteries	<b>CASELLA</b> Joel
<a href="#">33_2189</a>	Understanding molecular-scale dynamics inside composite polymer electrolyte	<b>NAVALLON</b> Guillaume
<a href="#">34_2199</a>	Numerical Modeling of Two-Dimensional Memristive Devices for Neuromorphic Computing	<b>SPETZLER</b> Benjamin
<a href="#">35_2300</a>	Novel 3D Structured Electrode Fabrication as Free-Standing Carbon Lattice for Al –Air Batteries	<b>TAVERNE</b> Mike
<a href="#">36_2372</a>	Modified polytetrahydrofuran-based solid polymer electrolytes for safe lithium-ion batteries	<b>NURGAZIYEVA</b> Elmira
<a href="#">37_2787</a>	Antiperovskite Materials for Li-ion Solid-State Batteries: A Computation-Guided Design Approach	<b>SHEN</b> Longyun
<a href="#">38_2387</a>	The role of doping in all-inorganic mixed-halide perovskites for ozone sensing	<b>ARGYROU</b> Aikaterini

<a href="#">40_2506</a>	Effect of Intentional Potassium Incorporation in Solution-Processed Cu(In,Ga)(S,Se) <sub>2</sub> (CIGSSe) Solar Modules on Structural Shunt Defects	<b>LEE Seung Hoon</b>
<a href="#">42_2525</a>	Fast microwave-assisted syntheses for old and new positive electrodes in conventional and solid-state batteries	<b>MURGIA Fabrizio</b>
<a href="#">44_2652</a>	Evaluation of Potential Induced Degradation in Silicon Solar Cells	<b>PATHI Prathap</b>
<a href="#">45_2681</a>	Interface studies on reactively sputtered TiO <sub>x</sub> N <sub>y</sub> -based MIS device	<b>GAJULA Hari Priya</b>
<a href="#">46_2788</a>	Surface reconstruction enables highly active catalyst for oxygen catalysis	<b>BI Yixin</b>
<a href="#">47_2789</a>	Self-recovered Symmetric Protonic Ceramic Fuel Cell with Smart Reversible Exsolution/ Dissolution Electrode	<b>WANG Yuhao</b>
<a href="#">48_2790</a>	In-situ Polymerized PDOL-based Quasi-solid-state Electrolyte for Practical Li-Metal Battery	<b>WANG Zilong</b>







European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM B

Materials for energy conversion systems:  
fundamentals, designs, and applications

*Symposium Organizers:*

Maria Rita CICCONE, FAU Erlangen, Germany

Brahim DKHIL, Centrale SUPELEC, Paris, France

Marin ALEXE, University of Warwick, U.K.

Tomokatsu HAYAKAWA, Nagoya Institute of Technology, Japan

**Applied Physics Letters**

Monday May 29

B1\_01

## Smart Conversion Materials and Technology 1

Chairperson(s) : KUPFER Christian - PLANTEVIN Olivier

Schweitzer (Ground floor)

08:45	887	INV	Effect of 1,3-disubstituted urea derivatives as additives on the efficiency and stability of perovskite solar cells	KRUSZYNSKA Joanna
09:15	1870		Piezo-phototronic and Piezoelectric Energy Harvesting Using a Tin Halide Double Perovskite Nanocomposite	MALLICK Zinnia
09:30	2000		Efficiency Potential and Voltage Loss of Inorganic CsPbI <sub>2</sub> Br Perovskite Solar Cells	GRISCHEK Max
09:45	2579		Diverging expressions of anharmonicity in halide perovskites	COHEN Adi

Monday May 29

B1\_02

## Smart Conversion Materials and Technology 1

Schweitzer (Ground floor)

10:30	516		Evolution with temperature of mixed cation mixed halide perovskite solar cells with two different architectures	ROMERO Beatriz
10:45	2082		Understanding the photophysical processes at interfaces between perovskites and hole-transporting self-assembled monolayers	MATIASH Oleksandr
11:00	1528		Towards an improved understanding of the reverse bias stability of perovskite solar cells	MOHAMMADI Mahdi
11:15	1361		A lateral heterojunction device as a tool to study perovskite-based solar cells	REGALDO Davide
11:30	1048		Investigation of the hysteresis effect in printed and flexible perovskite solar cells with SnO <sub>2</sub> quantum dot-based electron transport layers	JUMABEKOV Askhat n.
11:45	1235		Spectrum on Demand Light Source (SOLS) for Advanced Photovoltaic Characterization	CASADEMONT-VIÑAS Miquel

Monday May 29

B1\_03

## Smart Conversion Materials and Technology 2

Chairperson(s) : KATO Masashi - KIRCHNER Jens

Schweitzer (Ground floor)

13:30	82	INV	Influence of morphologies in electrochemical performance	QURESHI Mohammad
14:00	78		Nickel Molybdenum Phosphide Nanosheets Engineered with Ruthenium Doping Supported on Nickel Foam as Bifunctional Electrocatalyst for Efficient Alkaline Sea Water Splitting	GUPTA Akanksha
14:15	2556		Ni-Foam-Graphene-CNTs-SnSe-P: An Efficient Electrocatalyst covering universal pH range and tap water splitting for Hydrogen evolution reaction	PAHUJA Mansi
14:30	2246		Hybrid electrode materials containing carbon and perovskite-like oxides as effective and highly stable catalysts for water splitting	ILNICKA Anna
15:00	121		Functional Materials for Triboelectric Nanogenerator based Self-powered Applications	KHANDELWAL Gaurav
15:15	2535		Beads-on-string Structured Nanofibers for Enhancing Output Performance of Triboelectric Nanogenerators	YANQIN Huang
15:30	1085		High performance triboelectric nanogenerator via film capacitor-based charge carrier	CHUNG Seh-hoon
15:45	1060		Ultrahigh performance flutter triboelectric nanogenerator	HEO Deokjae



**Monday May 29**  
**B\_P01**  
**Poster session 1**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

<b>01_1398</b>	In-situ Grazing-Incidence X-ray Scattering and Photoluminescence Study of Cubic FAMAPbI <sub>3</sub> During Vacuum co-Deposition	<b>HELD Vladimir</b>
<b>02_766</b>	Solar hydrogen generation and successive battery power generation using iodine molecule encapsulation of single-walled carbon nanotubes	<b>UMAKOSHI Midori</b>
<b>03_2664</b>	Optoelectronic, and Magnetic Properties of High-Purity Hematite/Magnetite Nanoparticles for Optoelectronics	<b>AKRAM Muhammad aftab</b>
<b>04_2628</b>	Effect of Inserting Intrinsic Polysilicon Layer between Tunnel Oxide and Doped Polysilicon Layer in TOPCon Solar Cell	<b>LEE Haejung</b>
<b>05_1807</b>	Single phase "Cr" rich Cr <sub>x</sub> Ir <sub>1-x</sub> O <sub>2</sub> alloy architectures with the boosted electron transfer kinetics for water splitting reaction	<b>KIM Myung hwa</b>
<b>06_679</b>	Cu <sub>x</sub> NiCo Layered Double Hydroxide heterostructure nanosheets as an efficient and cost-effective electrocatalyst for overall water splitting	<b>KANSAL Sakshi</b>
<b>07_2727</b>	Experimental identification of structural and interface defects controlling the conduction through the ZnO/Si interface	<b>CHABANE Lamia</b>
<b>08_2665</b>	ZnSnN <sub>2</sub> thin films: Physical properties vs. technology	<b>VATAVU Sergiu</b>
<b>09_2558</b>	An electrochemical-thermal multiphysics model for a nickel-iron battery	<b>DEL ROSARIO Julie anne</b>
<b>10_2532</b>	Design of thin films of polymers derived from poly-EDOT by the spin-coating method for photovoltaic applications	<b>RODRIGUEZ Maria isabel</b>
<b>11_2494</b>	Performance analysis of Lead-Free Perovskite-SnS Tandem solar cell using alternative hole transport and buffer layers	<b>DJEFFAL Faycal</b>
<b>12_2285</b>	Molybdenum sulfide modified with nickel nanoparticles as an effective catalyst for hydrogen evolution reaction	<b>ILNICKA Anna</b>
<b>13_1475</b>	Fast thinning of germanium wafers for photo and thermophotovoltaic applications	<b>SANCHEZ-PEREZ Clara</b>

14_2102	Self-Assembled All Inorganic Metal Halide Perovskite on 2-Dimensional Bi <sub>2</sub> O <sub>2</sub> CO <sub>3</sub> Petals for Efficient Photocatalytic CO <sub>2</sub> Reduction	CHO Won seok
15_2078	Study of the Effect of Ambient Temperature on the Output Performances of Triboelectric Nanogenerator	MONDAL Arun
16_2079	Improved Thermoelectric Performance of Polyaniline by Incorporating Liquid Phase Exfoliated Tungsten Disulfide Nanosheets	SINGH Manoj
17_2012	Spectral Splitting Geometries for High Efficiency Multijunction Organic Solar Cells	CASADEMONT-VIÑAS Miquel
18_1969	Investigation of cross-linkable hole transporting material as a donor in binary and ternary bulk heterojunction photovoltaic cells	CEPAS Romualdas
19_1952	Elastic, thin film thermoelectric generator (TEG) produced by multisource magnetron sputtering for energy harvesting from heat exchanger waste heat.	LEWANDOWSKI Ariel
20_1938	Hierarchically structured quantum-dot films for highly efficient photovoltaics	KO Doo-hyun
21_1824	Controlling the surface morphology and localized surface plasmon resonance of Au, Ag, and Pt, via solid state thermal dewetting process	SINOPOLI Alessandro
22_1785	Modelling excitonic effects in kesterite solar cells for improvement in solar cell technology	GRECENKOV Jurij
23_1730	Synthesis of Ruddlesden-Popper manganites for hot polaron photovoltaics	HAUSMANN Christopher
24_1770	Copper–Cobalt Bimetallic Phosphides as efficient electrocatalysts for Overall Water Splitting and methanol oxidation reaction	BANDYOPADHYAY Dyuti
25_1658	Solid-state Hydrogen Energy Storage Properties in Porous Silicon	KALE Paresh
26_1364	Floatable photocatalytic platform for practical solar hydrogen production	LEE Wang hee
27_1209	Flexible Nanogenerators based on Enhanced Flexoelectricity in Hausmannite Membranes	CHOWDE GOWDA Chinmayee
28_952	Effect of the heating temperature profile of monocrystalline FZ silicon seeds on dislocation dynamics studied in-situ by X-ray diffraction imaging	REGULA Gabrielle

<a href="#">29_928</a>	Synthesis and Characterization of LaMnO <sub>3</sub> Perovskite Epitaxial Thin Films Using Sputtering to Find the Possibility for Solar Cell Applications	<b>SEO Hyunwoo</b>
<a href="#">30_660</a>	Nanostructured and porous antimony-doped tin oxide films as electrodes in thermo-electrochemical cells for the heat-to-electricity energy conversion	<b>CASTRO-RUIZ Sergio</b>
<a href="#">31_782</a>	Hierarchical Wrinkled Architecture with Ultrathin Plasma Polymer Fluorocarbon Film for Transparent/Conformal Triboelectric Nanogenerators	<b>CHO Eunmi</b>
<a href="#">33_685</a>	Combining doping by anion exchange and orientation by high temperature rubbing affords stable and efficient thermoelectric polymer films	<b>GUCHAIT Shubhradip</b>
<a href="#">34_656</a>	Structural and electrochemical investigation of Co-doped NiFe <sub>2</sub> O <sub>4</sub> for use in high performing supercapacitors	<b>HALDER Joyanti</b>
<a href="#">35_640</a>	Investigation of the unique capped carbon structures for high performing supercapacitors electrode material	<b>ANSHU Satvik</b>
<a href="#">36_450</a>	Ultralow platinum loading for hydrogen bromine redox flow battery	<b>SAADI Kobby</b>
<a href="#">37_601</a>	Electrolyte Design on Thermally Regenerative Electrochemical Cycle for Low-grade Thermal Energy Harvesting	<b>WU Angyin</b>
<a href="#">38_107</a>	TiO <sub>2</sub> additive improving the performance of the sulfur composite cathode in Li-sulfur batteries	<b>ZUKALOVA Marketa</b>
<a href="#">39_219</a>	Organic Polymer Dots in Bio-hybrid Systems for Photocatalysis	<b>TIAN Haining</b>
<a href="#">40_85</a>	Boosted Output Voltage of BiSbTe-Based Thermoelectric Generators via Coupled Effect between Thermoelectric Carriers and Triboelectric Charges	<b>BAIK Jeong min</b>
<a href="#">41_2598</a>	In-plane oriented AlN(0001)/Al(111)/Si(111) seed layers for Al <sub>0.7</sub> Sc <sub>0.3</sub> N(0001) thin films prepared by magnetron sputter epitaxy	<b>RAGHUWANSHI Mohit</b>
<a href="#">42_2217</a>	Energy Harvesting from Mechanical Strain of Electrostrictive Polymeric Nanocomposites	<b>PATRINI Maddalena</b>
<a href="#">43_1583</a>	Aging Mechanisms of a High-Temperature Solar Absorber Coating under Different Accelerated Aging Tests	<b>HOSSEINI Sahar</b>

44_1422	Illumination dependent hot polaron photovoltaics in strongly correlated perovskite oxides	DEHNING Annika
45_1217	Fabrication of plasmonics Au nanostructures on the surfaces of TiO <sub>2</sub> thin films by a solid state thermal dewetting for solar cells applications	AISSA Brahim
46_467	Small Hole and Electron Polarons in Cs <sub>2</sub> AgBiBr <sub>6</sub> Halide Double Perovskites	BASKURT Mehmet
47_2604	Accelerating Electrochemical Nitrogen Reduction through attached active site on Ni-based catalysts	AN Tae-yong
48_2530	Nitrogen-friendly Surface Design of Catalysts for Electrochemical Ammonia Production	AN Tae-yong
49_370	MOVPE Grown Dilute Nitrides: Physical Properties vs. Growth Parameters Enabling Highly Performance Optoelectronic and Photovoltaic Devices	GABÁS Mercedes
50_1478	The effect of concentrated electrolytes on the dissolution rate of Fe electrode in aqueous redox flow batteries .	ALMALKI Hind
51_669	Enhancement of wettability and electrical conductivity through low energy nitrogen ion irradiation of MXene	PATRA Shyamapada
52_1681	Tracking the in-Operando Charge Carrier Dynamics of Metal Oxide Heterojunctions – Studying the Effect of Glycerol for Enhancing Solar-Driven Hydrogen Production	LI Longren
53_1005	All-Printed Wearable Triboelectric Nanogenerator with Ultra-Charged Electron Accumulation Polymers Based on MXene Nanoflakes	KIM Kyeong nam
54_977	Silver telluride-nylon nanocomposite multifunctional flexible film designed for harvesting mechanical and thermal energy	GAUTAM Amish kumar
55_822	Parallel combination of electrically conducting materials and redox electrolytes for the heat-to-electricity energy conversion	SOLIS DE LA FUENTE Mauricio
56_89	The Unified Theory for Triboelectric Nanogenerators: Sliding Mode vs Contact Mode	DHARMASENA Randunu devage ishara gihan
57_2148	Janus Nanomaterials—Design, Fabrication and Applications	LACHGAR Abdou
58_1861	Activation of metal exsolution catalysts for the oxygen evolution reaction in aqueous medium	WEBER Moritz lukas



59\_1203

Thermoelectric Properties of Hot-Carrier  
Solar Cell Energy Selective Contacts

**DURÁN Inés**

60\_2841

Mixed metal sulfides (FeNiS<sub>2</sub>) nanosheets  
decorated reduced graphene oxide  
for efficient electrode materials for  
supercapacitors

**MIAH Milon**

Tuesday May 30

## B1\_04

### Smart Conversion Materials and Technology 3

Chairperson(s) : KHANSUR Neamul - MARTIN Alexander

Schweitzer (Ground floor)

10:00	1982	INV	Electromechanical response in multilayered materials from non-ferroelectric polymers – Toward piezoelectric and triboelectric generators	SUTKA Andris
10:30	1760		Piezo-phototronic Aided Photodetector and Piezoelectric Nanogenerator Based on Perovskite Interfaced Polymer	MONDAL Bidya
10:45	1155		Piezoelectric bimorph beam for simultaneously harvesting thermal and vibration energies	YAMAMOTO Ryota
11:00	1936		3D printed flexible thermoelectric generators	MASSETTI Matteo
11:15	1891		Quantum advantage in a molecular spintronic engine that harvests thermal fluctuation energy	ZAFAR Talha
11:30	2306		Perovskite oxides for photovoltaic applications	HLINKA Jiri
11:45	1784		Perovskite-inspired materials for indoor photovoltaics devices application	ZHU Huimin

Tuesday May 30

## B2\_01

### Advances in wide band-gap semiconductors 1

Chairperson(s) : LOBO Ntumba - RHO Kongshik - ZHANG Endong

Dresde (1st floor)

10:00	1624	INV	Development of wide-bandgap perovskite materials for high-efficiency and stable photovoltaics	HEPING Shen
10:30	2047		Strategies to manipulate AVT and PCE in wide bandgap perovskite solar cells for BIPV	MATTEOCCI Fabio
10:45	2474		Enhancing photon upconversion in large-area amorphous films via suppression of energy back-transfer	RAIŠYS Steponas

11:00	1514	Designing spectral conversion layers for enhancing photosynthesis in algae growth	FLAUCHER Ina
11:15	1994	Ultra thin Zr-doped Indium Oxide as Transparent Electrode for Si-based solar cells	LO MASTRO Andrea
11:30	1269	Influence of temperature on the film properties of aluminum nitride thin films prepared by magnetron sputter epitaxy	SUNDARAPANDIAN Balasubramanian
11:45	954	Ferroelectric-Photocatalyst Nanocomposite Thin Films for Enhanced Photoelectrocatalytic Activity	BRISCOE Joe

**Tuesday May 30**

**B1\_05**

## **Smart Conversion Materials and Technology 4**

**Chairperson(s) : BRABEC Christoph - HAYAKAWA Tomokatsu**

**Schweitzer (Ground floor)**

13:30	2248	INV Pulsed laser annealed Ga or B hyperdoped poly-Si/SiO <sub>x</sub> passivating contacts for high-efficiency monocrystalline Si solar cells	NAPOLITANI Enrico
14:00	582	Monolithic perovskite/silicon tandem solar cells using transparent conductive polymer PEDOT:PSS/n-Si hybrid heterojunction device as a bottom cell	SHIRAI Hajime
14:15	2610	Raman amplification for trapped radiation in crystalline single Si nanoparticle	CONDORELLI Marcello
14:30	2338	Improvement of photoluminescence from GaAsPN/GaP alloys by electron irradiation and rapid thermal annealing	PAVELESCU Emil mihai
15:00	259	Optical determination of the seebeck coefficient in InGaAsP single quantum well	VEZIN Thomas
15:15	2028	Understanding the effect of cross diffusion in GaAs/Ge heterojunctions grown by MOVPE on photovoltaic devices performance	OREJUELA Víctor
15:30	494	Novel concept for an optimal solar cell based on self-assembling organic molecules	KRANER Stefan
15:45	2686	Molecular doping of fully printed flexible organic solar cells using F4-TCNQ additive	PALIAGKAS Alexandros

**Tuesday May 30**

**B2\_02**

**Advances in wide band-gap semiconductors 2**

**Chairperson(s) : HEPING Shen**

**Dresde (1st floor)**

<b>13:30</b>	<b>239</b>	<b>INV</b>	Effects of polishing on carrier recombination in TiO <sub>2</sub> and SrTiO <sub>3</sub> single crystals	<b>KATO Masashi</b>
<b>14:00</b>	<b>1015</b>		Defects mediated high Seebeck coefficient and power factor in transparent thermoelectric thin films	<b>MURMU Peter</b>
<b>14:15</b>	<b>454</b>		A CMOS Compatible Al/Silica Multilayer Selective Emitter for Use in A Thermophotovoltaic System for Medium Grade Waste Heat Applications	<b>MASOOD Maria</b>
<b>14:30</b>	<b>57</b>		Facial synthesis of p-p heterojunction composites: Evaluation of their electrochemical properties with photovoltaics-electrolyzer water splitting using two-electrode system	<b>KANNAN Karthik</b>
<b>14:45</b>	<b>947</b>		Ferroelectric-enhanced photoelectrodes: Improvement of photogenerated hole lifetime, population and photocurrent upon poling a ferroelectric BaTiO <sub>3</sub> photoanode	<b>FORRESTER Chloe</b>
<b>15:00</b>	<b>985</b>		Giant photostrictive actuation in free-standing ferroelectric membranes	<b>GANGULY Saptam</b>
<b>15:15</b>	<b>2229</b>		Molybdenum oxide as alternative hole selective contact for Silicon Hetero-Junction Solar cells	<b>LA MANNA Salvatore</b>
<b>15:30</b>	<b>802</b>		Synthesis of metal-doped self-supported nickel nitride as efficient electrocatalysts for hydrogen evolution reaction	<b>LUAN Chuhao</b>
<b>15:45</b>	<b>2110</b>		Linking cation site distribution to the photoelectrochemical performance of spinel ferrite photoelectrodes for green hydrogen production	<b>RASHKOVSKIY Alexander</b>



**Tuesday May 30**

**B1\_08 a**

**Defects in Perovskites 3 a**

**Chairperson(s) : BRABEC Christoph**

**Schweitzer (Ground floor)**

<b>16:30</b>	<b>744</b>	Enhancing High-Pressure Conductivity through Redox-Active Molecules in an Expanded Halide Perovskite Analog	<b>MATHEU Roc</b>
<b>16:45</b>	<b>2708</b>	Simulating the transient luminescence of perovskite light-emitting diodes under pulsed operation	<b>TORRE Miguel a.</b>
<b>17:00</b>	<b>823</b>	Hydrothermal synthesis and optical characterizations of eco-friendly Bi-based halide perovskites	<b>HASHIMOTO Haruto</b>

**Tuesday May 30**

**B\_P02**

**Poster session 2**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

<b>01_2473</b>	Study and characterizations of Langmuir-Schaefer films of low bandgap polymers	<b>BORRO Marcelo s.</b>
<b>02_2119</b>	Multiquantum band-to-impurity optical transitions in CdTe luminescence and phonon-plasmon replicas	<b>VARZARI Alexandru</b>
<b>03_2384</b>	Features of beyond bandgap emission of Cu <sub>2</sub> ZnSnS <sub>4</sub> kesterites	<b>REDKO Roman</b>
<b>04_1913</b>	Transient Photocurrents and Defect States in Hierarchically Structured ZnO Nanowires	<b>SCHWARZ Reinhard</b>
<b>05_1587</b>	Development of direct bonded InGaP/GaAs/Si material for solar optoelectronic conversion that combines light concentrating and non-concentrating	<b>KIM Hyo jin</b>
<b>06_417</b>	Impact of silver nanoparticles on crack growth in silica glass coating	<b>MOMMA Hiroya</b>
<b>07_1612</b>	Role of Oxygen Vacancy in Visible Light Absorbing Ferroelectric Perovskite Oxides	<b>N V Sarath</b>
<b>08_94</b>	Minimization of the escape cone losses in tandem and lateral luminescent solar concentrators	<b>CHKREBTII / SHKREBTII Anatoli</b>

09_984	Influence of solvents on the morphology and optoelectronic properties of Langmuir and Langmuir–Schaefer films of poly(fullerene)s	<b>OLIVATI Clarissa</b>
10_1107	Gallate Spinel Oxides as Promising Cathodes for Photocatalytic Fuel Cells	<b>CAN Musa</b>
11_837	Wet-chemical Synthesis and Catalytic Properties of Metal Nanomaterials with Unconventional Crystal Phases	<b>CHEN Ye</b>
12_774	Fabrication of color glass for building integrated photovoltaic by polymer solution process	<b>LIM Seongmin</b>
13_589	A study on EVA-free lamination process and high transmittance colored glass using pearlescent pigment and optical adhesive	<b>AHN Hyeon-sik</b>
14_686	A Tunable Structural Family with Ultralow Thermal Conductivity: Copper-Deficient $\text{Cu}_{1-x}\text{Pb}_x\text{Bi}_{1+x}\text{S}_3$	<b>MAJI Krishnendu</b>
15_143	Optimization and Efficiency Improvement of Photovoltaic Solar Cell Device Using Inorganic ETL and HTL	<b>JEONG Byoung-seong</b>
16_12	Switching of photocurrent polarity in electrochemical cells with light via an excited state proton transfer mechanism	<b>YUCKNOVSKY Anna</b>
17_292	Effect of thiolate monolayers on $\text{CO}_2$ photoreduction using CuPt nanoparticle decorated $\text{TiO}_2$ nano-ellipsoids	<b>CHAULAGAIN Narendra</b>
18_387	Enhancement of photocatalytic performance of $\text{Cu}_2\text{O}$ by decreasing oxygen vacancy density	<b>CHIEN Forest shih-sen</b>
19_1000	Investigation of the physical properties of copper oxide $\text{Cu}_x\text{O}$ in thin film: Application to the detection of ethanol	<b>CHAFFAR AKKARI Ferid</b>
20_1173	Near-infrared sensitized Z-E photoswitching of azobenzene derivatives in bioplastics	<b>NAIMOVICIUS Lukas</b>
21_2450	Nanostructured semiconducting oxide ( $\text{SnO}_2$ , FTO) thin films for thermoelectric energy harvesters	<b>KARUPPIAH Deva arun kumar</b>
22_311	Investigation of $\text{Li}_3\text{PS}_4 \cdot 2\text{THF}$ solvato-complex formation, impact of solvent reactivity on the reaction mechanism	<b>POIRIER Romain</b>
23_2427	Phase Transition Behavior and Enhanced Piezoelectric Properties of $(\text{Bi}_{0.97}\text{Sm}_{0.03})\text{ScO}_3\text{-PbTiO}_3$ Textured Ceramics using $\text{BaTiO}_3$ Templates for High Temperature Piezoelectric Device Applications	<b>JEONG Younghun</b>

24_2326	The influence of Fe on the Ni electrocatalytic activity for the urea oxidation reaction: operando FT-IR spectroscopy investigation	ZEMTSOVA Viktoriia
25_2222	Main-chain poly(fullerene xylene)s – new materials for optoelectrical and biomedical applications	HIORNS Roger
26_2211	Germanium incorporation routes for CZTS solar absorbers	NAYLOR Matthew
27_2186	Structural Investigation of (1-x) Bi(Mg <sub>2/3</sub> Sc <sub>1/3</sub> )O <sub>3</sub> – (x)PbTiO <sub>3</sub> Near the Morphotropic Phase Boundary Region	PADMANABAN Aravinthkumar
28_2124	Nanosopic characterisation of ferroelectric materials under external stimuli	PAL Subhajit
31_1645	Building 3D-organized Nanocrystallites to Harness Grain-boundary Defects	OH Myoung hwan
30_1086	Coating of Ti <sub>1-x</sub> Nb <sub>x</sub> O <sub>2</sub> thin film on stainless steel separators for polymer electrolyte fuel cells by mist chemical vapor deposition	XU Han
32_337	Average and local structure analysis of near-infrared reflective black pigments by using synchrotron radiation X-ray	OKA Ryohei
33_662	Tuning of CoFe <sub>2</sub> O <sub>4</sub> nanostructured electrode material for electrochemical performance under magnetic field	MANDAL Debabrata
34_520	Synthesis and characterization of novel oxyfluoride LaSrCrO <sub>4</sub> F <sub>2</sub>	VASALA Sami
35_103	Enhanced thermoelectric efficiency in Bi-substituted La <sub>0.95</sub> Sr <sub>0.05</sub> CoO <sub>3</sub>	DUBEY Divya prakash
36_137	Ground-state electronic structure of LaSrCoO <sub>4</sub> potential catalyst in energy conversion systems	HAW Shu-chih
37_150	Electrostrain properties of (1-x)BaTiO <sub>3</sub> -xSrSnO <sub>3</sub> Pb-free ceramics and interpretation of their hysteresis behavior using simple mathematical functions	LIM Young soo
38_2312	Design of well-defined grain boundary in nanocrystal for CO <sub>2</sub> conversion reaction.	KIM Seungkyu
39_2302	Multivalent metal ion additive assist ultra high performance aqueous zinc ion batteries	WU Zhuoxi
40_2445	Design and preparation of high k polymer nanocomposite for thin film capacitors for control circuit of active-matrix display	WANG Mingqing

<a href="#">41_2379</a>	Effect of TiO <sub>2</sub> protection layers on the efficiency of Si-based PEC devices	<b>KHAN Ramsha</b>
<a href="#">42_1391</a>	Thermoelectric performance of nanostructured Si/SiGe superlattices	<b>JULIA BURMESTER Julia</b>
<a href="#">43_903</a>	Influence of field-induced phase transformation on the photoferroelectric response of Sn-doped BaTiO <sub>3</sub>	<b>KRAFT Viktoria</b>
<a href="#">44_544</a>	Study for relaxor polymer matrix for piezoelectric nanocomposite energy harvesters	<b>JEONG Chang kyu</b>
<a href="#">45_1879</a>	Influence of Al <sub>2</sub> O <sub>3</sub> on the electrical properties of lead-free Na <sub>0.5</sub> K <sub>0.5</sub> NbO <sub>3</sub> ceramics	<b>MARTIN Alexander</b>
<a href="#">46_1625</a>	Electric and Atomic Structure Analysis of Oxide / GaN interface	<b>TOMITA Hiroto</b>
<a href="#">47_1541</a>	The influence of 3D printing methods and materials on the response of printed symmetric carbon supercapacitors	<b>FERGUSON Matthew</b>
<a href="#">48_346</a>	Influence of Scandium concentration on crystallographic and functional properties of a-plane AlScN films	<b>NAIR Akash</b>
<a href="#">49_1606</a>	Enhancing electrochemical performances of spinel NiCoS nanowire arrows	<b>MARKHABAYEVA Ayymkul</b>
<a href="#">50_1490</a>	All-Additively-Fabricated Microsupercapacitors: Fine-Tuning Chemistry to Maximize Performance	<b>HODAEI Amin</b>
<a href="#">51_104</a>	Silver Nanoparticles Decorated Carbon Nanotubes-based Thin film Supercapacitors for Flexible and Wearable electronics applications	<b>TIWARI Pranjala</b>
<a href="#">52_1685</a>	Carbonized foam-red mud /paraffin composites as Phase Changing Materials (PCMs) for thermal shielding applications.	<b>SALMAS Constantinos</b>
<a href="#">53_2108</a>	Preparation and study of advanced building components: paraffin- PCMs/activated carbon composite gypsum boards	<b>KARAKASSIDES Michael</b>
<a href="#">54_1354</a>	Photoexcited charge carrier and spin dynamics in methylammonium lead bromide doped by magnetic transition metals.	<b>BODNAR Stanislav</b>
<a href="#">55_2209</a>	MOF-derived Fe-Zn-N-C Catalysts as Non-Noble Metal Oxygen Reduction Catalysts for High Performing Anion Exchange Membrane Fuel Cells	<b>ELSAESSER Patrick</b>
<a href="#">56_88</a>	Structural and optical characterization of 2D pristine and hydrogenated In <sub>2</sub> Se <sub>3</sub> nanolayers for photovoltaic applications	<b>CHKREBTII / SHKREBTII Anatoli</b>

**Wednesday May 31**

## **B1\_06**

### **Defects in Perovskites 1**

**Chairperson(s) : HEISS Wolfgang - REHM Viktor**

**Schweitzer (Ground floor)**

<b>10:00</b>	<b>2054</b>	<b>INV</b>	The role of Frenkel pair defects and atomic layer deposited alumina on the perovskite solar cells' stability	<b>KOT Malgorzata</b>
<b>10:30</b>	<b>2540</b>		Semi-Transparent FAPb(Br <sub>1-x</sub> Cl <sub>x</sub> ) <sub>3</sub> Perovskite for BIPV Applications: a systematic study	<b>ORY Daniel</b>
<b>10:45</b>	<b>2486</b>		Fabrication and characterization of large-scale perovskite solar devices	<b>AIDER Celia</b>
<b>11:00</b>	<b>2304</b>		carrier dynamics and lasing activities in halide perovskites under continuous & pulsed wave stimulation.	<b>LOBO Ntumba</b>
<b>11:15</b>	<b>2288</b>		Investigating the Application of Organometallic Complexes in Tin Halide Perovskite Solar Cells	<b>VANIN Francesco</b>
<b>11:30</b>	<b>560</b>		Defect metastability in metal halide perovskites	<b>SCHEBLYKIN Ivan</b>
<b>11:45</b>	<b>814</b>		A quantitative model of ion transport in methylammonium lead iodide	<b>DE SOUZA Roger</b>

**Wednesday May 31**

## **B2\_03**

### **Atomic scale modeling of ferro-optical properties**

**Chairperson(s) : SPREAFICO Samuele - WENDLER Fank**

**Dresde (1st floor)**

<b>10:00</b>	<b>2006</b>	<b>INV</b>	Second-principles modelling of ferroelectric oxides and related compounds with MULTIBINIT	<b>SASANI Alireza</b>
<b>10:30</b>	<b>659</b>		Microscopic origins of enhancement of dielectric permittivity in substituted and co-doped transition metal oxides	<b>KUTANA Alex</b>
<b>10:45</b>	<b>2321</b>		First principal calculation of structural, electronic and optical properties of ZnX (X = Te, S and O): Application to Cu(In,Ga)Se <sub>2</sub> solar cells	<b>BOUCHAMA Idris</b>



11:00	221	Investigation of Photocatalytic Properties of Undoped and Doped BaTiO <sub>3</sub> Compounds	ISOE Wycliffe
11:30	1355	First principles phase diagram calculation and theoretical investigation of electronic structure properties of KCuTe <sub>1-m</sub> Se <sub>m</sub> for photoelectrode applications	KAR Arini
11:45	1280	Defect control and ab initio thermodynamics for synthesising chalcogenide perovskite	LI Zhenzhu

**Wednesday May 31**

**B1\_07**

## **Defects in Perovskites 2**

**Chairperson(s) : HEISS Wolfgang - REHM Viktor**

**Schweitzer (Ground floor)**

13:30	1264	INV	Defect engineering in Mixed Halide Perovskites with Ion Irradiation	PLANTEVIN Olivier
14:00	956		Unrevealing Defects During Lead-Halide Perovskite Film Formation	MRKYVKOVA Nada
14:15	1117		Surface Treatment and Control of Perovskite Film Growth to Achieve High Efficiency Solar Cells.	PAUपोर्टÉ Thierry
14:30	1302		Temperature-Dependent Ionic Conductivity and Properties of Iodine-Related Defects in Metal Halide Perovskites	TAMMIREDDY Sandhya
14:45	1342		Surface passivation to control charge carrier injection in electroluminescent lead-halide perovskite nanocrystals	JAYABALAN Roshini
15:00	995	INV	Carbazole Based Self-Assembled Monolayer as Hole Transport Layer for Efficient and stable Pb/Sn perovskite Solar Cells	LOI Maria antonietta
15:30	1371		Removal of surface traps leads to enhancement of exciton-to-dopant energy transfer in Mn:CsPbCl <sub>3</sub> nanocrystals	LÓPEZ-FERNÁNDEZ Iago
15:45	2181		Probing perovskite/C60 interface modifications by near-UV photoemission spectroscopy: defect states and band line-up	MENZEL Dorothee

Wednesday May 31

**B2\_04**

## Simulation and Modeling of Energy Conversion Systems: From Materials to Devices

Chairperson(s) : HEGENDÖRFER Andreas - YAMAMOTO Ryota

Dresde (1st floor)

13:30	51	INV	Design and develop a commercializable piezoelectric energy harvesting system	BAI Yang
14:00	2064		Optimization of a vibrating MEMS electromagnetic energy harvester : from simulations to demonstrator	LACROIX Lise-marie
14:15	1017		Artificial Intelligence Enabled Self-Powered Sensors for Next-Generation Electronic Devices	BABU Anand
14:30	916		An implicit finite element method-electronic circuit simulator coupling for accurate simulations of piezoelectric energy harvesting systems	HEGENDÖRFER Andreas
14:45	676		The effect of contact motion components on the optimization of surface texture of triboelectric materials: A theoretical study	VERNERS Osvalds
15:00	381	INV	Microscopically motivated continuum modeling of domain switching effects in ferroelectrics	SUTTER Felix
15:30	2115		Combining image information with integrated device quantities of perovskite solar cells for improved modelling and material parameter estimation	KNAPP Evelyne
15:45	1601		Numerical analysis of new generation of smart laminated panels embedded with multiple piezoelectric patches utilizing ambient vibration-based energy harvesting	LAHE MOTLAGH Peyman

Wednesday May 31

B1\_08 b

## Defects in Perovskites 3

Chairperson(s) : BRABEC Christoph

Schweitzer (Ground floor)

16:30	547	INV	Resolving defect densities and lifetimes in perovskite solar cells using frequency domain methods	RAVISHANKAR Sandheep
17:00	2701		Photophysics of light-induced halide segregation in wide bandgap perovskites interfaced with self-assembled monolayers	PETOUKHOFF Christopher
17:15	2172		Microwave photoconductivity – A powerful characterization method for perovskite solar materials	KUPFER Christian
17:30	1615		Structural Disorders in Double Perovskite Cs <sub>2</sub> AgBiBr <sub>6</sub>	HAN Byoung-gun

Wednesday May 31

B2\_05

## Simulation of Energy Materials from Atomistic to Continuum Scales

Chairperson(s) : DURDIEV Dilshod - WENDLER Fank

Dresde (1st floor)

	494		Novel concept for an optimal solar cell based on self-assembling organic molecules	KRANER Stefan
16:30	456	INV	„Interplay of domain structure, phase transitions and functional responses in ferroelectric BaTiO <sub>3</sub> “	GRÜNEBOHM Anna
17:00	847		Ferroelectric 90° domain wall migration and free energy in BaTiO <sub>3</sub> via molecular dynamics simulations	AZUMA Hikaru
17:15	557		Dislocation effects on the inversion of ferroelectric polarization in BaTiO <sub>3</sub> using a graph neural network potential	DEGUCHI Genki
17:30	714		A phase-field model for ferroelectrics with defects configured by molecular dynamics	DURDIEV Dilshod
17:45	1179		Hot carriers in metal halide perovskites: the cold background effect	FABER Tim

**18:00**

**1070**

Using Molecular Dynamics simulations as a tool to better understand reactive multilayers

**SCHWARZ Fabian**

Thursday June 1

**B1\_09**

## Development, Characterization, and Applications of Energy Materials

Chairperson(s) : MAIER Juliana - ROSCOW James

Schweitzer (Ground floor)

10:00	1382	INV	Structure property relationships in polar perovskite oxides	KHANSUR Neamul
10:30	870		Phonon dispersions of Ta- and Ti-doped Fe <sub>2</sub> VAl Heusler-type thermoelectric materials studied by inelastic X-ray scattering	KIMURA Koji
10:45	913		Clarification of the structural origin of an enhanced ductility in Mg-REEs alloys using x-ray fluorescence holography	KATO Tatsuya
11:00	1071		X-ray fluorescence holography (XFH) of $\beta$ -PdBi <sub>2</sub> imaging using point- and 2D- CdTe detectors at ambient temperature	SEKHAR Halubai
11:15	539		Structural study on ZnFe <sub>2</sub> O <sub>4</sub> by x-ray fluorescence holography	HOSOKAWA Shinya
11:30	1486		Robust chemical state analysis of Sn-based perovskites via Auger parameter analysis in XPS	WIECZOREK Alexander
11:45	1013		Structural and surface properties of Ca-doped BaTiO <sub>3</sub>	GAN Rongguang

Thursday June 1

**B2\_06**

## Processing and Properties of Chalcogenides Semiconductors including Perovskites 1

Chairperson(s) : WELLMANN Peter

Dresde (1st floor)

10:00	400	INV	Synthesis of chalcogenide perovskite thin films	SCRAGG Jonathan
10:30	2069		Optimization of interface carrier transport in band gap graded flexible Cu(In,Ga)Se <sub>2</sub> thin film solar cells	PARK Ha kyung
10:45	2170		Fabrication of Precursors for Chalcogenide Perovskite Thin Films	FREUND Tim



11:00	1348	Metastability in Dark Current Diode Characteristics of Chalcogenide Photovoltaic Modules	FRIEDEL Bettina
11:15	363	Complete determination of thermoelectric and thermal properties of supported few layers 2D materials	RAHIMI Mehrdad
11:30	21	Comparison of one and two-stage growth approaches for close space sublimation deposited Sb <sub>2</sub> Se <sub>3</sub> thin film solar cell.	SINDI Daniya

Thursday June 1

B1\_10

## Development, Characterization, and Applications - Atomic and Microscale

Chairperson(s) : GAN Rongguang - MARTIN Alexander

Schweitzer (Ground floor)

13:30	2254	INV	Electronic Coupling of Highly Ordered Perovskite Nanocrystals in Supercrystals	SCHALL Peter
14:00	843		Bulk Photovoltaic Effect in Ferroelectric Vertically Aligned Nanocomposites	PALLADINO Emanuele
14:15	1945		Thin film of lanthanum cobaltite LaCoO <sub>3</sub> for solar thermal collectors	BANDE Abdoul azise
14:30	1374		Texturing and ferroelectric properties of SrxBa1-xNb2O6 thin films prepared by aqueous solution deposition	PEDERSEN Viviann hole
14:45	307		Increasing the Open-circuit Voltage in a-Si:H/ oxide Ultrathin Transparent PV Devices via Electron Transport Layer Optimization by Incorporating Dipolar Molecules	LOPEZ-GARCIA Alex
15:00	1445		Influence of cooling rate and atmosphere on the structural and dielectric behavior of lead free-ferroelectric Bi <sub>1/2</sub> K <sub>1/2</sub> TiO <sub>3</sub> (BKT)	EYOUM Gina estelle
15:15	2305		Local structure-function control in a low band gap Mn-Nb co-doped BaTiO <sub>3</sub> ferroelectric	MUKHERJEE Soham
15:30	1971		Doping control in metal oxides transparent electrodes by ion implantation	TRINGALI Fiorella
15:45	340		Synthesis of PVDF-based materials for optimal multiphysic energy harvesting	FRICAUDET Matthieu

Thursday June 1

**B2\_07**

## Processing and Properties of Chalcogenides Semiconductors including Perovskites 2

Chairperson(s) : FREUND Tim

Dresde (1st floor)

13:30	1602	INV	Hybrid Pulsed Laser Deposition of Perovskite and Related Phases of Chalcogenides	RAVICHANDRAN Jayakanth
14:00	1326		Fundamental Vibrational Properties and Crystallographic Orientation Evaluation of Sb <sub>2</sub> S <sub>3</sub> by Means of Multiwavelength Raman Spectroscopy	ROTARU Victoria
14:15	1368		Effect of composition on structural and optoelectronic properties in combinatorially synthesized BaZrS <sub>3</sub> thin films	RÖTTGER Adriana
14:30	223		Negative Doping in Semiconducting 2H-MoS <sub>2</sub> and Surface Functionalisation	KRAJEWSKA Aleksandra
14:45	1595		MoS <sub>2</sub> Wrapped N-Doped Carbon for Batteries Beyond Lithium	PRIYA Surbhi

Thursday June 1

**B2\_08**

## Photonic Materials: Structure & properties

Chairperson(s) : DOBESH David k. - OTSUKA Takahito

Dresde (1st floor)

15:00	1855	INV	Development of Transparent Nanocrystallization of Oxyfluoride Glasses in Melt-quenching Process by Glass Structure Design	SHINOZAKI Kenji
15:30	1711		Energy Conversion properties of Eu-doped barium fluoride thin films through a simple MOCVD approach	LO PRESTI Francesca
15:45	76		The Local Atomic Structure of Amorphous Organotin Sulfide Compounds with Extreme Nonlinear Optical Properties	STELLHORN Jens r.

Thursday June 1

**B1\_11**

## Development, Characterization, and Applications - Atomic and Microscale

Schweitzer (Ground floor)

16:30	31	INV	Engineering the electromechanical properties of ferroelectric composites: domains to devices	ROSCOW James
17:00	1366		Defect modulated negative thermal expansion in ceramic films for energy harvesting deposited with powder aerosol deposition	WEBBER Kyle
17:15	214		Exploring electro mechano thermal potentialities of lead-free hybrid molecular ferroelectrics dabcoH[A]	MORVEZEN Gwenn
17:30	369		Conversion polymorphism in the high-pressure stabilized BiMg <sub>0.5</sub> Ti <sub>0.5</sub> O <sub>3</sub> -BiZn <sub>0.5</sub> Ti <sub>0.5</sub> O <sub>3</sub> solid solution system – a lead-free structural analogue of PbZrO <sub>3</sub> -PbTiO <sub>3</sub>	SALAK Andrei n.
17:45	1659		Improving stability and open-circuit voltage of perovskite mini-modules by tuning laser processing conditions	JEONG Yujin

Thursday June 1

**B2\_09**

## Photonic Materials: Structure & properties

Dresde (1st floor)

16:30	836		Charge Transfer Complexes for Advanced Optical Materials	TIAN Shuang
16:45	323		Filterless Visible-Range Color Sensing and Wavelength-Selective Photodetection Based on Barium/Nickel Codoped Bandgap-Engineered Potassium Sodium Niobate Ferroelectric Ceramics	BALANOV Vasilii
17:00	1440		Synthesis and characterization of highly durable P <sub>2</sub> O <sub>5</sub> -ZnO-Na <sub>2</sub> O/CaO-Fe <sub>2</sub> O <sub>3</sub> glasses for low-temperature sealing applications	MAZINANI Babak

17:15

58

Low-cost WO<sub>3</sub> nanoparticles / PVA smart photochromic glass windows for sustainable building energy savings

BADOUR Yazan

Thursday June 1

B\_P03

Poster session 3

Etoile (1st floor) - 4.30 p.m to 6.30 p.m

01_2417	First-principles study of perovskite/halide interfaces	SPREAFICO Samuele
02_842	Tuning physical properties of ferroelectric BaTiO <sub>3</sub> by lateral compression: A molecular dynamics simulation study	AZUMA Hikaru
03_1519	On numerical modelling and experimental approach of Heterojunction Tandem Solar Cells based on Si and Cu <sub>2</sub> O/ZnO. Results and perspectives	CHILIBON Irinela
04_2425	Strong Robust Generalized Cross-validation for Deconvolving the Distribution of Relaxation Times through Tikhonov Regularisation	PY Baptiste
05_2284	Octadecanona-ene: Relation of theories of electrical conductivity and chemical reaction in the solid	AHMANE Younes
06_894	Thermodynamics and Kinetics of Charge Transfer in Solid Boosted Flow Batteries: Case of CuHCF and TEMPTMA	MOGHADDAM Mahdi
07_1568	New ab-initio calculations of Tunneling Current in Graphene/n-GaAs forward-biased Schottky Diodes	VARONIDES Argyrios
08_962	Piezoelectric Response of Poly (L-Lactic Acid) a Form on the Stress State	ZADOROZHNI Vitalii
09_771	A Low-Cost and Environmentally Friendly Mixed Polyanionic Cathode for Sodium-Ion Storage	SONG Tianyi
10_694	Strain Driven Anomalous Anisotropic Enhancement in the Thermoelectric Performance of Monolayer MoS <sub>2</sub>	CHAUDHURI Saumen
11_506	Numerical simulation of earth abundant and non-toxic Kesterite-based solar cells using Solar Cell Capacitance Simulator (SCAPS-1D)	KHEMIRI Naoufel

12_438	Evaluating the nature of arsenic-involving bonds and interactions together with their relationship to piezoelectric properties using Quantum crystallography and complementary bonding analysis	BALMOHAMMADI Yaser
13_97	Method to explore optimal multi-metallic alloy hydrogen evolution reaction catalyst by active learning and experiment	KIM Minki
14_2125	Revisiting Conversion Electrode Materials for Lithium-ion Batteries	HUA Xiao
15_2249	All Organic d-PVDF based Self-powered Nanogenerator for Signal Recognition Approach Through Machine Learning	GUPTA Varun
16_1821	Rationalising the Effect of Electrical Double Layer Structure on the Oxygen Evolution Reaction	YE Yuhong
17_1052	Photoluminescence color prediction of Eu <sup>3+</sup> -doped perovskite-type oxide by supervised machine learning	OTSUKA Takahito
18_2150	Europium as a structural probe within Ti/Zr containing glasses and glass-ceramics for energy harvesting materials	DOBESH David k.
19_1301	Recyclable photon upconversion bioplastics for broad-band light harvesting	BHARMORIA Pankaj
20_2544	Optical super-absorbers and organic thermoelectrics for energy harvesting	ANGUITA Jose
21_2711	Thin Films Quaternary materials for photovoltaic applications	BEN RABEH Mohamed
22_1470	Charged Nanomaterials via Electrochemical Redox Processes	AMAR Paul-benjamin
23_2196	Photoemission spectroscopy study of BaZrS <sub>3</sub> perovskite crystals	RIVA Stefania
24_597	Composition-dependent electronic structure changes in CuxInSe <sub>2</sub> (x	MOHAMED Ahmed yousef sayed
25_2722	Ga <sub>2</sub> S <sub>3</sub> thin films in UV detector applications: physics vs. technology	GHILETCHII Gheorghe
26_156	Metal telluride compounds synthesized using a liquid metal-based technique for active hydrogen evolution	MOUSAVI Maedehsadat
27_1146	Presodiation strategy for enhancing performance of metal sulfide anodes	CHOE Jacob



28_1001	Effect of defects induced by the GLAD technique on the Sb <sub>2</sub> S <sub>3</sub> material on structural and morphological properties: Anisotropy study	CHAFFAR AKKARI Ferid
29_1564	Operando Raman Spectroscopy Revealing Lithium Consumption Source and Phase Changes at the Electrode/Electrolyte Interface in Lithium-Ion Battery Systems	GRANT Alex
31_382	Chiral conjugated polymers based on a helicene moiety for increased performances in organic photovoltaics	GEDEON Clement
32_652	A Deprotection-free Method for High-yield Synthesis of Graphdiyne Powder to construct a highly active materials for photocatalytic H <sub>2</sub> generation	GHAZZAL Mohamed nawfal
33_658	Glassy thermal conductivity in Cs <sub>3</sub> Bi <sub>2</sub> I <sub>6</sub> Cl <sub>3</sub> single crystal	ACHARYYA Paribesh
34_1321	A Physical Unclonable Function Security Device Generated by Irregular Grain Boundaries of Perovskite Calcium Titanate	LEE Subin
35_1341	Unravel the role of doping in high performance blue organic photodetectors	ZHANG Tianyi
36_1535	Understanding the polysulfide shuttle effect using Ampero-Coulometry	GULZAR Umair
37_1943	Thermal ALD process for Aluminum doped zinc oxide films and their effective silicon surface passivation	KUMAR Abhishek
38_1976	Hydrothermal synthesis of composition controlled (K,Na)NbO <sub>3</sub> perovskite particles	ELLAWALA KANKANAMGE Chandima pradeep
39_2176	Optical Properties of Chalcogenide Perovskite Precursor Films	FREUND Tim
40_2269	Reactive Metals as Seasonal Energy Storage	ESPINOSA-ANGELES Julio-cesar
41_22	Thermally Compatible High Performance Reversible Protonic Ceramic Cell	TAHIR Abdullah
42_49	Sustainable highly charged Polyimide in non-contact mode triboelectric nanogenerator	LEE Jae won
43_87	Refined vertical nanodevice patterning to develop robust (spin) electronics across molecules	ZAFAR Talha
44_136	Plasma Assisted Reconstruction of Defect-rich Porous Bismuthene Arrays for Highly active Electrocatalytic CO <sub>2</sub> Reduction to HCOOH	BU Shuyu

45_291	Redox stability of Sc-doped La <sub>0.6</sub> Sr <sub>0.4</sub> FeO <sub>3-d</sub> for tubular solid oxide electrolysis cells interconnector	<b>KIM Sun-dong</b>
46_425	Controlling Trap-Assisted Recombination in Organic Photovoltaic Cells for Indoor Application	<b>RHEE Seunghyun</b>
47_449	Core-shell heterojunction engineering of TiN nanorod arrays@Co-MOF nanoparticles bifunctional electrocatalyst for highly enhanced electrochemical overall water splitting	<b>NGUYEN Dinh chuong</b>
48_453	Semiconductive MoS <sub>2</sub> nanoparticles/metallic CoS <sub>2</sub> nanotube arrays contact induced Mott-Schottky heterostructure for improving the catalytic behavior of water-splitting electrocatalyst	<b>DOAN Thi luu luyen</b>
49_654	Microwave Dielectric properties of Zn <sub>2</sub> (Te <sub>1-2x</sub> Nb <sub>x</sub> Sc <sub>x</sub> ) <sub>3</sub> O <sub>8</sub>	<b>VINAYA KUMAR Asapu</b>
50_900	Ultra-small anatase nanoparticles for energy applications	<b>IESALNIEKS Mairis</b>
51_1402	Topochemical domain engineering to construct 2D mosaic heterostructure with internal electric field for high-performance overall water splitting	<b>QUAN Quan</b>
52_1665	Thermoelectric Properties of Delafossite CuCr <sub>1-x</sub> Fe <sub>x</sub> O <sub>2</sub> (0 = x = 1)	<b>MAJEE Mithun kumar</b>
53_2036	Transition Metal Antimonates for Oxygen Electrocatalysis	<b>ALSAIDI Walaa</b>

Friday June 2

**B1\_12**

## Development, Characterization, and Applications - Micro to Macroscale

Chairperson(s) : KIRCHNER Jens - MARTIN Alexander

Schweitzer (Ground floor)

08:45	2587	INV	Flexible Wireless Energy Transfer Printable Devices based on Thermoelectricity: from Concept to Application	PEREIRA A
09:15	1885		High throughput 3D printed based Ferro, piezo and pyroelectret structure for mechanical and thermal energy harvesting	KUMAR Ajay
09:30	514		Influence of grain size on functional properties of BCZT: A multiscale analysis using Spark Plasma Sintering and Aerosol Deposition	MAIER Juliana
09:45	1622		Self-powered Nanogenerator as an Aqueous Processable Printable Ink and Strain-Induced Piezo-phototronic Effect	MISHRA Hari krishna

Friday June 2

**B1\_13**

## Development, Characterization, and Applications - Micro to Macroscale

Schweitzer (Ground floor)

10:30	93	INV	All-Textile Triboelectric Nanogenerators for Next Generation Wearable Electronics	DHARMASENA Randunu devage ishara gihan
11:00	969		Sol-gel-derived Ordered Mesoporous High Entropy Spinel Ferrites and Assessment of their Photoelectrochemical and Electrocatalytic Water Splitting Performance	EINERT Marcus
11:15	1444		A Sol-gel inkjet printable PZT ink for additively fabricated mechanical transducers for energy harvesting, sensing, and mechanical actuation	FADLELMULA Mustafa
11:30	216		Impact of the polymer matrix in GaN nanowire-based devices for energy harvesting	CHEVILLARD Amaury

11:45

883

Patch-type thermoelectric for energy  
harvesting with efficient thermal contact  
properties

LEE Taek seong



European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM C

Advanced materials for environmental challenges

*Symposium Organizers:*

Sabrina Carola CARROCCIO, IPCS-CNR, Catania, Italy

Anne KAHRU, NICPB, Tallinn, Estonia

Anne MORRISSEY, Dublin City University, Ireland

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**Monday May 29**

**C01**

## **Polymers for Environment 1**

**Chairperson(s) : AMBROGI Veronica**

**Marie Curie A (1st floor)**

<b>08:45</b>	<b>529</b>	<b>INV</b>	Polymer based hydrogels for water treatment	<b>FRAGOULI Despina</b>
<b>09:15</b>	<b>2569</b>		Novel multi-functional organic-polymer based hybrid photocatalyst as a potential disinfectant.	<b>HAZRA Moulika</b>
<b>09:30</b>	<b>61</b>		Novel composite polymer membranes incorporated with nano-additives for water treatment and desalination	<b>KOCHKODAN Viktor</b>
<b>09:45</b>	<b>976</b>		The scale-up of CrioPurA via a more sustainable strategy	<b>SCAMPORRINO Andrea</b>

**Monday May 29**

**C02**

## **Air remediation**

**Chairperson(s) : BYRNE John Anthony**

**Marie Curie A (1st floor)**

<b>10:30</b>	<b>2414</b>		New polymeric macroporous catalyst for CO2 conversion	<b>ZAGNI Chiara</b>
<b>11:00</b>	<b>142</b>		CO2 Reduction to Solid Carbon Using Liquid Metals	<b>ZURAQI Karma</b>
<b>11:15</b>	<b>367</b>		Solar photothermo-catalysis for the air purification and the CO2 valorization	<b>FIORENZA Roberto</b>

**Monday May 29**

**C03**

## **Purification by using inorganic materials**

**Chairperson(s) : FIORENZA Roberto**

**Marie Curie A (1st floor)**

<b>13:30</b>	<b>2745</b>	<b>INV</b>	Design and development of sustainable hybrid nanostructured materials for innovative and eco-friendly approaches in water remediation	<b>PLUTINO Maria Rosaria</b>
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14:00	8	Preparations and characterizations of low-cost porous ceramics for wastewater remediation and air cleaning	HA Jang-Hoon
14:15	1725	Novel hybrid rare-earth metalorganic frameworks for water purification	LO PRESTI Francesca
14:30	2438	Design of zeolite-based 3D printed materials for environmental remediation	LUZZI Enrica

**Monday May 29**

**C04**

## Photocatalysis 1

Chairperson(s) : IMPELLIZZERI Giuliana

Marie Curie A (1st floor)

15:00	1287	INV Photocatalytic nanomaterials for sustainable solutions of complex environmental challenges	CURRI Maria Lucia
15:30	2025	Hybrid Magnetic Imprinted Hydrogels for selective removal and degradation of pollutants from water	PUGLISI Roberta
15:45	849	Influence of WO <sub>3</sub> Doping on SnO <sub>2</sub> Thin Films for Enhanced Photocatalytic Water Treatment	ISAHN Victor

**Monday May 29**

**C05**

## Photocatalysis 2

Chairperson(s) : FERNANDEZ-IBANEZ Pilar

Marie Curie A (1st floor)

16:30	747	Multicatalytic approaches for environmental challenges: simultaneous remediation of water pollutants and H <sub>2</sub> production	MALANNATA Enrica Maria
16:45	859	Z-scheme ZnFe <sub>2</sub> O <sub>4</sub> @pDOPA-ZnO heterojunctions using polyDOPA as electron transfer layer for enhanced visible light photocatalytic activity	TOLOMAN Dana
17:00	2177	Application of graphitic carbon nitride nanosheets as a multifunctional nanofiller in cryogels for wastewater treatment and quality monitoring	DZIZA Katarzyna

<b>17:30</b>	<b>967</b>	Synthesis of spiky ZnO nanorods: The importance of tuning synthesis conditions to perform advanced novel materials for water treatment applications	<b>SOTELO-VAZQUEZ Carlos</b>
<b>17:45</b>	<b>1188</b>	Nb, N co-doped TiO <sub>2</sub> nanoparticles for broad spectrum solar light activation photocatalysis	<b>XI Qingyang</b>
<b>18:00</b>	<b>1191</b>	Development and optimisation of spray pyrolysis-synthesised Bi <sub>2</sub> O <sub>3</sub> thin films for photocatalytic applications <sup>2</sup>	<b>SYDORENKO Jekaterina</b>

Tuesday May 30

C06

## Polymers for Environment 2

Chairperson(s) : CERRUTI Pierfrancesco

Marie Curie A (1st floor)

10:00	953	INV	Synergistic effects in composite materials for environmental remediation: dream or reality?	SALZANO DE LUNA Martina
10:30	2435		Polydopamine Modified Graphene Oxide Nanocomposite Membranes for Efficient Dye Removal from Water	GAHLOT Swati
10:45	1842		Sulfonated Pentablock Copolymer used as Antimicrobial Coating for Innovative Multifunctional Water Filters	FILICE Simona
11:00	2348		Removal of organic dyes from aqueous solution using stimuli-responsive copolymers	GOMEZ DAYALA Giovanna
11:15	28		Ultrasonic Activation of ZIF-based Nitrogen-Carbon Materials Confining Single-atom Calcium Dipoles With PVDF Membranes For Piezocatalytic Water Decontamination	ZHAO Qi
11:30	426		Functional PES based electrospun mats for adsorption and photodegradation of pollutants in water	FRAGALA Maria Elena
11:45	320		Natural polyphenol-inspired sequential interpenetrating polymer network membrane using PVDF-polyaniline-polypyrrole for improved cationic and anionic dye removal from water	DUTTA Soumi

Tuesday May 30

C07

## Catalysis for environment

Chairperson(s) : MORRISSEY Anne

Marie Curie A (1st floor)

13:30	2098	INV	Transparent Polypropylene Jerrycans for Solar Disinfection of drinking water; antimicrobial properties, durability, and human toxicity	PILLAI Suresh C.
14:00	998		Plasmonic Catalysts for the Green Capture and Conversion of SF6 and CO2 Greenhouse Gases	LOSURDO Maria

14:15	1789	Structural and compositional characterization of AgXCu100-X bimetallic NPs deposited on Si micropillars as advanced photocathodes for PEC CO2 reduction	CHALIYAWALA Harsh
15:00	428	Catalytic conversion of nitroaromatic pollutants mediated by metal-cryogels hybrid nanostructured catalysts	SCURTI Stefano
15:15	2377	Combating Indoor Pollution: The Efficacy of Hybrid Organic-Inorganic Photocatalytic System	PORCU Stefania

**Tuesday May 30**

**C\_P01**

**Poster session 1**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

01_678	pH and thermo-responsive copolymers for the removal of anionic and cationic dyes from aqueous solution	CERRUTI Pierfrancesco
02_729	Al and Ga co-doping of ZnO nanowires grown by chemical bath deposition	APPERT Estelle
03_765	Selective and Continuous Ion Recovery Using Flow Electrode Capacitive Deionization with Polymer Multilayers functionalized Ion Exchange Membrane	CHO Younghyun
04_874	Nano-devices based on Fe3O4 coated by meglumine ligands for the adsorption of metal anions from water	DATTILO Sandro
05_881	Novel, environmentally friendly dynamic system based on titanium dioxide photocatalysts, for the elimination of Escherichia coli bacteria from water	PEZZOTTI ESCOBAR Gianni
06_1004	Multifunctionalized silver nanoparticles for arsenic ions removal from water	VENDITTI Iole
07_1012	Growth of metal-doped MoS2 nanostructures toward catalytic applications	SHIU Hung Wei
08_1065	Interaction of newly synthesized Dipeptide Schiff bases with mild steel surface in aqueous HCl: Experimental and theoretical study on thermodynamics, adsorption and anti-corrosion characteristics	SATPATI Sanjoy
09_1096	Effect of the nature of both cations and anions substitution on the structural symmetry of Li-rich 3d-metal chalcogenides electrodes	LOUIS Jacques



<a href="#">10_1122</a>	Sponges for emerging pollutants removal	<b>CURCURUTO Giusy</b>
<a href="#">11_1231</a>	Effect of the heterocyclic group on the anti-corrosion performance of heterocyclic Schiff bases of benzothiazole for mild steel in 1 M aqueous HCl	<b>SUHASARIA Aditya</b>
<a href="#">12_1293</a>	Kinetic and comparative study of the isomerization reaction of substituted dodecahexaene by ab-initio and dft method	<b>MECHACHTI Fatima</b>
<a href="#">13_1313</a>	Investigation of the interactions between water and mesoporous functional metal oxides	<b>COLOMBO Filippo</b>
<a href="#">14_1414</a>	Reconstruction-induced copper/nickel-based catalysts for Highly-Efficient Ammonia Electrosynthesis	<b>YIN Di</b>
<a href="#">15_1437</a>	Silica based hybrid coatings for writing surfaces - whiteboards	<b>ALMEIDA José Carlos</b>
<a href="#">16_1464</a>	Visible-light absorption of In <sub>2</sub> O <sub>3</sub> thin films and nanorods by incorporation of Bismuth for visible light-responsive photocatalyst	<b>TANIGUCHI Yoko</b>
<a href="#">17_1491</a>	Preparation and optical properties of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> /ZnO nanocomposite as a photocatalyst for the efficient degradation of organic compounds under the action of ultraviolet radiation	<b>GIRTAN Mihaela</b>
<a href="#">18_1563</a>	Heterogeneous ion-exchange membranes containing aligned ion-exchange resin particles and ionomer binder	<b>LEE Ji-Min</b>
<a href="#">19_1582</a>	Interlocking structured bipolar membranes with highly durable bipolar junction	<b>KANG Moon-Sung</b>
<a href="#">20_1693</a>	Molding Analysis of GIS Spacers Using Cure kinetics and Reactive Viscosity Models of Bio-Based Epoxy Composites	<b>LEE Chanyong</b>
<a href="#">21_1695</a>	UV and Visible light photocatalysis of methyl orange dye using titanium dioxide/ graphene nanocomposites	<b>M Steffi Antony</b>
<a href="#">22_1736</a>	PVD coating on chromium (III) as a viable solution for the replacement of decorative chromium (VI)	<b>PINHEIRO Xavier Leitão</b>
<a href="#">23_1753</a>	Porphyrin based Cryogel for water remediation	<b>MERCORILLO Giuseppa</b>
<a href="#">24_1764</a>	Physical and chemical decoration of graphene-based materials by metal nanoparticles for the development of gas sensors dedicated to sulfur-containing pollutants	<b>NDIAYE Amadou</b>

<a href="#">25_1813</a>	Intrinsic impacts of Graphene oxide entrapped Polystyrene (GO@PS) nanohybrid inferred toxicological effects on embryonic zebrafish ( <i>Danio rerio</i> )	<b>SINHA Adrija</b>
<a href="#">26_1829</a>	Low cost copolymer for the removal of heavy metal from water	<b>MIRABELLA Emanuele Francesco</b>
<a href="#">27_1925</a>	Chitosan-based Laser-induced Graphene Sensors for VOC Detection	<b>LARRIGY Cathal</b>
<a href="#">28_2194</a>	Oxidation kinetics of Sm <sub>2</sub> (Co, Fe, Cu, Zr) <sub>17</sub> alloy powder: Enhanced activation energy barrier at high oxidation temperature	<b>MITTIREDDI Ravi</b>
<a href="#">29_2205</a>	Multi-solvent method for doping oxide thin films in solution-based techniques	<b>VATAVU Sergiu</b>
<a href="#">30_2210</a>	Non-stoichiometric amorphous titanium dioxide nanoparticles for efficient dye-degradation	<b>ROY Remiya</b>
<a href="#">31_2215</a>	Morphology changes of zeolite formed using a waste material: preliminary data on the action of laser beam	<b>ORLANDO Stefano</b>
<a href="#">32_2239</a>	Femtosecond Laser Patterned Graphene Oxide based SERS Platform for Dye Detection	<b>JOSHI Sarika</b>
<a href="#">33_2256</a>	kinetic and comparative study of the isomerization reaction of substituted tetradecahepta-ene by ab-initio and dft method	<b>AHMANE Younes</b>
<a href="#">34_2283</a>	Ab initio calculations of OH- group adsorption on TiO <sub>2</sub> surface	<b>NEILANDE Elina</b>
<a href="#">35_2365</a>	A chemiresistive methane gas sensing properties of nanorods of hexahydroxytriphenylene-based metal-organic frameworks	<b>NAVALE Sachin Tatyasaheb</b>
<a href="#">36_2380</a>	Plasmon Resonance Variations of Quasi-Spherical Gold Nanoparticles for Environmental Ion Detection	<b>RAGUINDIN Ricky Kristan</b>
<a href="#">37_2459</a>	Boosting the kinetics with graphene quantum dots functionalized MoS <sub>2</sub> wrapped ZIF-67 derived Co <sub>3</sub> O <sub>4</sub> for efficient photodegradation of norfloxacin	<b>KIM Do-Heyoung</b>
<a href="#">38_2493</a>	Unveiling the mechanistic reaction pathway of selective photocatalytic CO <sub>2</sub> reduction over 2D ZnIn <sub>2</sub> S <sub>4</sub>	<b>SABBAH Amr</b>
<a href="#">39_2498</a>	Tailoring High Entropy Oxides (HEOs) as emerging radiative materials for green energy saving buildings	<b>BORGHESI Costanza</b>

<a href="#">40_2503</a>	Piezo-Photocatalytic Effect of ZnO-MoS <sub>2</sub> Heterostructures on the Efficiency of Catalytic Degradation of Methyl Orange	<b>NARVAEZ James Albert</b>
<a href="#">41_2570</a>	Porous polymer membrane modified with pure and copper-doped titanium dioxide for filtering and light facilitated bacteria sterilization	<b>BOCHAROV Dmitry</b>
<a href="#">42_2603</a>	Robust CA-GO-PTFE membranes for azithromycin photo-degradation in wastewaters	<b>MITU Bogdana</b>
<a href="#">43_2607</a>	Advanced functionalisation of Borophene/graphitic carbon nitride as a photocatalyst for textile wastewater treatment application	<b>EMADIAN Seyedehsadrieh</b>
<a href="#">44_2653</a>	Conception and optimization of heterojunction between TiO <sub>2</sub> "sol-gel" and g-C <sub>3</sub> N <sub>4</sub>	<b>MARY Caroline</b>
<a href="#">45_2669</a>	NO and CO capture by titanium- and copper-decorated two-dimensional carbides	<b>PÉREZ Luis A.</b>
<a href="#">46_2736</a>	Design and synthesis of calixarene-based cryopolymers for air pollutant treatment and sensing	<b>MECCA Tommaso</b>
<a href="#">47_2747</a>	Innovative solutions to monitor and to mitigate plastic and microplastic pollution in REMEDIES project	<b>COCCA Maria Cristina</b>
<a href="#">48_2748</a>	Electrospun nanofiber membranes for sustainable wastewater remediation: eco-friendly design and development	<b>RANDO Giulia</b>
<a href="#">49_607</a>	Synthesis of Metal Oxide and Carbon Materials from Metal-Organic Frameworks (MOFs) and Its Applications	<b>LEE Hee Jung</b>

Wednesday May 31

C08

## Nanocomposites for Environment 1

Chairperson(s) : FILIPPONE Giovanni

Marie Curie A (1st floor)

10:00	315	INV	Synthesis of various metal oxide/hydroxide composites immobilized on magnetic particles as reusable adsorbents for phosphate from wastewater and assessing their ecotoxicity to marine bioluminescent bacteria <i>Vibrio fischeri</i>	DRENKOVA-TUHTAN Asya
10:30	993		Novel functionalized porous carbons as sensor-adsorbents for water purification applications	SANDBERG Mats
10:45	2105		Microwave-assisted in-situ synthesis of TiO <sub>2</sub> /graphene oxide nanoparticles with homo-/heterojunction for highly efficient visible-light photocatalysis	KATO Kunihiko
11:00	897		Redox-active Porous Polymers: Synthesis and Applications	AL SIYABI Safa
11:15	1746		Design of magnetic graphene/iron oxide nanocomposites for the adsorption of relevant persistent organic pollutants	VAZ-RAMOS Joana
11:30	1345		Carbon-Polymer Dots as Optical Sensors for the Drone Mapping of Thiols in Industrial Plants	CORSARO Paolo
11:45	902		Developing nano plastics models to study their fate in the environment.	MANJU SUDHEER Malavika

**Wednesday May 31**  
**C09**  
**Photocatalysis 3**

**Chairperson(s) : PAZ Yaron**

**Marie Curie A (1st floor)**

<b>13:30</b>	<b>440</b>	<b>INV</b>	Innovative photocatalytic nanocomposites for water treatment	<b>IMPELLIZZERI Giuliana</b>
<b>14:15</b>	<b>2666</b>		Design of Z-scheme photocatalytic systems and studies of their photocatalytic activity in wastewater and air pollutants degradation	<b>ANDRONIC Luminita</b>
<b>14:30</b>	<b>2310</b>		Understanding the photocatalytic activity of sodium hexatitanate: A spectroscopic approach	<b>DOS SANTOS Ieda</b>
<b>14:45</b>	<b>978</b>		Photocatalytic removal of gaseous ethyl acetate in a continuous reactor pilot scale : reactor efficiency in simulated real conditions	<b>HAJJAJI Mohamed Aziz</b>
<b>15:30</b>	<b>2804</b>	<b>INV</b>	Materials for electrochemical nitrogen reduction leading to a new catalysts design strategy	<b>CASPARY TOROKER Maytal</b>

**Wednesday May 31**  
**C10**  
**Nanocomposites for Environment 2**

**Chairperson(s) : SALZANO DE LUNA Martina**

**Marie Curie A (1st floor)**

<b>16:30</b>	<b>1167</b>	<b>INV</b>	Synthesis and biocompatibility testing of nanosized metal organic frameworks (nanoMOFs) for heavy metal contamination remediation	<b>MORTIMER Monika</b>
<b>17:00</b>	<b>140</b>		Protein nanofibrils: new sustainable materials for environmental remediation	<b>PEYDAYESH Mohammad</b>
<b>17:15</b>	<b>649</b>		An in-line magnetic separation system for the recovery of water adsorbents: Simulation and laboratory validation	<b>SIMEONIDIS Konstantinos</b>
<b>17:30</b>	<b>2432</b>		Biopolymer/graphene oxide nanocomposite aerogels for water purification from organic dyes	<b>VITIELLO Libera</b>
<b>17:45</b>	<b>37</b>		Composite Adsorbents from Waste Gelatin for the Removal of Methylene Blue	<b>SUDSAKORN Kandis</b>

**18:00**

**940**

Spray-coating of superhydrophobic surfaces  
for oil water separation

**GORALCZYK Andreas**



Thursday June 1

C11

## Photocatalysis 4

Chairperson(s) : KAHRU Anne

Marie Curie A (1st floor)

10:00	2746	INV	Photo-electrocatalytic degradation of contaminants of emerging concern in water and wastewater – materials and challenges	FERNANDEZ-IBANEZ Pilar
10:30	1241		Design and Characterization of 2D and 3D Nanostructures of ZnO for an Efficient Photocatalytic Performance	DAHER Elias (Elie)
10:45	1831		Green synthesis of photocatalytic TiO <sub>2</sub> /Ag nanoparticles for application in water treatment	CANTARELLA Maria
11:00	2027		Titanium dioxide-based heterojunctions study and photocatalysis	GIUFFRIDA Federico
11:15	1955		Development of efficient ZnO nanorod based photocatalysts	KRUNKS Malle
11:30	2630		Simultaneous oxidation of urea and production of hydrogen using photoelectrocatalysis	BYRNE John Anthony
11:45	980		Polymer/TiO <sub>2</sub> hybrid films activated by laser annealing: Application in water purification	ZIMBONE Massimo

Thursday June 1

C12

## Photocatalysis 5

Chairperson(s) : MORTIMER Monika

Marie Curie A (1st floor)

13:30	713	INV	Enhanced Assisted Photocatalytic Performance of Cu-doped TiO <sub>2</sub> Semiconductors through the Addition of MXene Layers – Application for Wastewater Treatment and H <sub>2</sub> Production	ROOSTAEI Ziba
14:00	20		Enhanced removal of volatile organic compounds using carbon modified visible light active cerium oxide photocatalysts	SAQLAIN Shahid
14:15	115		A novel synthesis of ternary hybrid nanocomposite (WS <sub>2</sub> /ZnO/PPy) for waste water-treatment	TYAGI Nahid

<b>14:30</b>	<b>502</b>	<b>INV</b>	Highly efficient nanostructured ZnO based catalysts synthesized by novel mist chemical vapor deposition	<b>LI Chaoyang</b>
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**Thursday June 1**

**C13**

**Adsorption methods**

**Chairperson(s) : CARROCCIO Sabrina Carola**

**Marie Curie A (1st floor)**

<b>15:00</b>	<b>2744</b>	<b>INV</b>	Rethinking Food Protein Waste	<b>MEZZENGA Raffaele</b>
<b>15:30</b>	<b>1461</b>		A TiO <sub>2</sub> sponge to prevent lead pollution in water	<b>SPAMPINATO Carlo</b>
<b>15:45</b>	<b>1884</b>		Enhanced Cr(VI) uptake from drinking water using biochar-based nanocomposites	<b>ASIMAKIDOU Theopoula</b>

**Thursday June 1**

**C\_P02**

**Poster session 2**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

<b>01_19</b>	A Study on the Mechanical Properties of Polymer-Based Materials	<b>WOO Chang Su</b>
<b>02_167</b>	MOF-coated nylon microfiber mesh for immobilized photocatalyst in RhB and Cr(VI) removal	<b>CHO Sangho</b>
<b>03_209</b>	Exploring microfluidic platform for photocatalytic reduction of Cr(VI) using nanosized titanium dioxide.	<b>KATOCH Vibhav</b>
<b>04_240</b>	Development of a filter system to reduce microplastics generated during Laundry process	<b>KIM Jooran</b>
<b>05_241</b>	Development of superhydrophobic surface with green hollow nanosilica-octadecyltrichlorosilane	<b>KIM Jooran</b>
<b>06_283</b>	Novel approach to produce boron doped micro and ultrananocrystalline diamond on titanium grid	<b>GOMES FERREIRA Neidenei</b>
<b>07_304</b>	Preparation and characterization of RF sputtered Zinc tungstate thin films for photocatalytic applications	<b>CHAABOUNI Fatma</b>

<a href="#">08_343</a>	Carbon-based nanocomposite porous materials as electrocatalysts for valorisation of biomass	<b>POTA Filippo</b>
<a href="#">09_359</a>	Combined effect of porous silicon substrate and rare earth doping on photo-catalytic activities of zinc oxide thin films	<b>ATYAOUI Malek</b>
<a href="#">10_408</a>	Low temperatures Electrical characterization of single layer graphene ribbons	<b>REMMOUCHE Riad</b>
<a href="#">11_411</a>	Metal–Nitrogen–Carbon Single-Atom Aerogels for Dechlorination of 1,2-Dichloroethane	<b>GAN Guoqiang</b>
<a href="#">12_533</a>	Study of the transport mechanisms of the interfaces of ZnO/p-Si heterojunctions by the current-voltage-temperature (I-V-T) technique: Effect of argon flow rate	<b>TATA Sonia</b>
<a href="#">13_542</a>	Development of Fe <sub>3</sub> O <sub>4</sub> -decorated Sn-hydroxide nanocomposites for advanced Cr(VI) capture in drinking water	<b>SIMEONIDIS Konstantinos</b>
<a href="#">14_563</a>	Metal oxide nanoheterostructures as De-NO <sub>x</sub> photocatalysts	<b>GASPAROTTO Alberto</b>
<a href="#">15_646</a>	Lightweight and hard AlCrCuFeMnNi complex concentrated alloys obtained by hot-pressing	<b>OLIVEIRA Filipe J.</b>
<a href="#">16_687</a>	Replicative Manufacturing of Metal Moulds for Optical-Grade Polymer Replication	<b>KLUCK Sebastian</b>
<a href="#">17_768</a>	The role of metal sulfides precursor on the sulfur resistance property for NH <sub>3</sub> -SCR catalyst	<b>YE Bora</b>
<a href="#">18_1037</a>	Excellent strength-ductility synergy in a novel medium manganese steel: development and thermo-mechanical processing	<b>KUMAR Suman</b>
<a href="#">19_1189</a>	Waste-to-Biosensor: A Potential Approach for Translating the Waste Materials into Prospective Biomedical Sensors	<b>BABU Anand</b>
<a href="#">20_1213</a>	Role of hole conductor and electron conductor toward enhancement of Ag <sub>3</sub> PO <sub>4</sub> -based photocatalysts for enhanced photodegradation	<b>SARI Fitri Nur Indah</b>
<a href="#">21_1240</a>	Enhanced gas sensing properties of pristine and metal nanoparticle decorated 2D SnS thin films	<b>BISHT Prashant</b>
<a href="#">22_1262</a>	Numerical and kinetic study of isomerization reaction of oriented polyacetylene induced by laser impact, shown by multichannel Raman	<b>BOUZAHER Yassine</b>

<a href="#">23_1279</a>	An Environmental-Inert and Highly Self-Healable Elastomer Obtained via Double-Terminal Aromatic Disulfide Design and Zwitterionic Crosslinked Network for Use as a Triboelectric Nanogenerator	<b>CHOU Syun-Hong</b>
<a href="#">24_1439</a>	Green Laser Induced Graphene Electrochemical Sensors from Cork for Sensitive Tyrosine Detection	<b>VAUGHAN Eoghan</b>
<a href="#">25_1592</a>	Hygroscopic-superhydrophilic natural fibrous fabric for repelling highly viscous heavy oil	<b>LEE Young A</b>
<a href="#">26_1599</a>	Enhancement of SO <sub>2</sub> resistance in CO-SCR catalyst through WS <sub>2</sub> over NiFe/CeO <sub>2</sub>	<b>KIM Woon-Gi</b>
<a href="#">27_1600</a>	De-NO <sub>x</sub> performance of V, W supported on modified morphology of TiO <sub>2</sub> at wide temperature range	<b>JUNG Jae-II</b>
<a href="#">28_1621</a>	Two dimensional In <sub>2</sub> S <sub>3</sub> nanosheets coupled with Mxene heterostructure composite for efficient photoelectrochemical and photocatalytic activity	<b>ILANCHEZHIAN Pugazhendi</b>
<a href="#">29_1623</a>	Liquid Crystal-Assisted Alignment Control of Metal–Organic Frame-work Crystals	<b>BAK Yeongseo</b>
<a href="#">30_1692</a>	13X zeolite- chitosan composite aerogels as versatile materials for environmental remediation	<b>LUZZI Enrica</b>
<a href="#">31_1768</a>	Intrinsic impacts of Graphene oxide entrapped Polystyrene (GO@PS) nanohybrid inferred toxicological effects on embryonic zebrafish (Danio rerio)	<b>SINHA Adrija</b>
<a href="#">32_1851</a>	Optical and photoelectrical properties of Ag/Au doped transition metal oxide thin films	<b>NEMKAYEVA Renata</b>
<a href="#">33_1919</a>	Preparation of High Performance Ultra-low Loading PEM Fuel Cell Catalyst layers	<b>METAXAS Michalis</b>
<a href="#">34_1930</a>	N-doped TiO <sub>2</sub> thin films for photoelectrochemical CO <sub>2</sub> reduction	<b>GUSTAVSEN Kim Robert</b>
<a href="#">35_1996</a>	Light induced room-temperature gas sensing by donor doped Anatase TiO <sub>2</sub> ultrasmall nanoparticles	<b>SUTKA Andris</b>
<a href="#">36_2033</a>	Sulfonated Pentablock Copolymer/GO Coating of Polypropylene Filters for Dye and Metal Ions Effective Removal from water	<b>LA PIANA Luana</b>
<a href="#">37_2053</a>	Versatile synthesis of TiO <sub>2</sub> -Cu composites by plasma electrolytic oxidation for photoelectrochemical and photocatalytic applications	<b>LEVINAS Ramunas</b>

<a href="#">39_2190</a>	Chemoresistive gas sensor fabrication by laser direct transfer	<b>BONCIU Anca</b>
<a href="#">40_2292</a>	Dispersion of tunicate cellulose nanofibers with hydroxyl groups by silica nanoparticles	<b>HONG Yeongbeom</b>
<a href="#">41_2355</a>	Fully biobased, biodegradable imine vitrimer derived from epoxidized soybean oil for flexible food packaging	<b>SAFARPOUR Milad</b>
<a href="#">42_2437</a>	Shape-Controlled Block Copolymer Particles and Their Energy Applications	<b>KIM Bumjoon</b>
<a href="#">43_2441</a>	Complex ternary TiO <sub>2</sub> /SnO <sub>2</sub> /ZnO nanocomposites with photocatalytic properties obtained by facile one-step laser method	<b>FLEACA Claudiu Teodor</b>
<a href="#">45_2504</a>	Immobilization of the polyphenol oxidase AbPPO4 on mesoporous silica: towards mimicking key enzymatic processes in peat soils	<b>IRIARTE-MESA Claudia</b>
<a href="#">46_2545</a>	Natural Acid-Assisted Synthesis of Hierarchical Silver Nanostructures for Surface-Enhanced Raman Scattering Applications	<b>SAYSON Luce Vida</b>
<a href="#">47_2609</a>	Plasma engineering and in-situ oxidation of Ti <sub>2</sub> C MXene using atmospheric pressure plasma printing	<b>DAMPTEY Lois</b>







European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM D

Advanced sustainable materials for energy applications

*Symposium Organizers:*

Daniel SALAZAR JARAMILLO, BCMaterials, Spain

Benoit P. PICHON, IPCMS, Strasbourg, France

Pier Carlo RICCI, University of Cagliari, Italy

Svetlana NERETINA, University of Notre Dame, USA

**Monday May 29**

## **D1\_01 Batteries 1**

**Chairperson(s) : SALAZAR Daniel**

**Cassin (Ground floor)**

<b>09:00</b>	<b>1160</b>	<b>INV</b>	Developing polymer nanoparticles as high-capacity charge carriers in low-cost, aqueous redox flow systems	<b>CARRETERO GONZALEZ Javier</b>
<b>09:30</b>	<b>158</b>		Porous Carbon Textile Decorated with VC/V2O3-X Hybrid Nanoparticles: Dual-Functional Host for Flexible Li-S Full Batteries	<b>LEE Seung-Mo</b>
<b>09:45</b>	<b>1854</b>		Bio-waste derived hard carbon for sodium ion batteries: a Small Angle Scattering study	<b>GRECO Giorgia</b>

**Monday May 29**

## **D2\_01 Metal Halide Perovskites**

**Chairperson(s) : DESCHLER Felix - RICCI Pier Carlo**

**Boston (1st floor)**

<b>09:00</b>	<b>1941</b>	<b>INV</b>	Halide Perovskite and Perovskite-Related Nanocrystals: Synthesis, Optical Properties, Heterostructures	<b>MANNA Liberato</b>
<b>09:30</b>	<b>1430</b>		Exsolution of metal nanoparticles from perovskite oxides nanoparticles	<b>FEZAI Emna</b>
<b>09:45</b>	<b>2060</b>		Encapsulation of lead halide perovskite emitters in resonant silica spheres	<b>RIGTER Susan A.</b>

**Monday May 29**

## **D1\_02 Batteries 2**

**Chairperson(s) : OKHAY Olena**

**Cassin (Ground floor)**

<b>10:30</b>	<b>965</b>	<b>INV</b>	Challenges in the synthesis of sustainable electrode materials for sodium-ion batteries: controlling the oxidation state of iron or the side effects of carbon-based additives	<b>VERTRUYEN Benedicte</b>
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11:00	599	Highly Crystalline Ordered Macroporous Metal Organic Framework for Aqueous Aluminum Ion Battery: Effect of Redox Additives in Charge Storage	CHANDRA Amreesh
11:15	670	Sulfur-rich carbons as sustainable cathode material for room-temperature sodium-sulfur batteries: from optimal structure towards maximum sulfur utilisation.	SENOKOS Evgeny
11:30	501	Comparative study of kapok-based self supported composites with TiO <sub>2</sub> or SiO <sub>2</sub> usable in Li-ion batteries	WAGNER Julia
11:45	38	A novel close-loop method for recycling spent lithium-ion batteries using alginate hydrogel and deep eutectic solvent	WANG Yifeng

**Monday May 29**

**D2\_02**

## **Metal Halide Perovskites and optical materials**

**Chairperson(s) : MANNA Liberato**

**Boston (1st floor)**

10:30	1087	INV	Bright Circularly-Polarized Photoluminescence in Chiral Layered Hybrid Lead-Halide Perovskites	DESCHLER Felix
11:00	1389		Progress in SrTi <sub>0.7</sub> Fe <sub>0.3</sub> O <sub>3-d</sub> as Interlayer in Perovskite-based Optoelectronic Devices	YILDIRIM Ceren
11:15	1115		Holographic Imaging of Spin Dynamics in 3D Perovskites	GESSNER Julia Anthea
11:30	484		Development of noble metal-based MEA/HEA nanofilms by ALD-EJH method for water splitting	ZOU Yiming
11:45	1571		Thermally and electrically responsive single organic molecule: a new strategy in visible-to-near-infrared light trapping energy saving windows	PUGUAN John Marc

**Monday May 29**

**D1\_03**

## **Batteries 3**

**Chairperson(s) : RICCI Pier Carlo - VERTRUYEN Benedicte**

**Cassin (Ground floor)**

13:30	813		Edible Triboelectric Nanogenerators and Supercapacitors	LAMANNA Leonardo
14:00	180		Effect of doping on Ni-rich layered cathode materials for low-Cobalt Li-ion batteries	BANO Amreen
14:30	5		Polyrotaxane-based networks as electrolytes and catholytes for all solid state lithium battery	YAN Shanshan
14:45	573		New water-soluble binder for commercially relevant mass loadings of cobalt-free LiNi <sub>0.5</sub> Mn <sub>1.5</sub> O <sub>4</sub> lithium-ion cathodes	LI Qi

**Monday May 29**

**D2\_03**

**Thermoelectric and optical materials 1**

Chairperson(s) : TAE HYUN Park

**Boston (1st floor)**

13:30	2589	INV	Novel high-performance organic thermoelectric materials	ANGUITA Jose
14:00	222		Triplet-triplet Annihilation: for Photon Upconversion and Triplet Fusion-enhanced LEDs (FuLEDs)	YANG Le
14:15	1400		Piezo-luminescence characteristic of Manganese doped ZnS microcrystals embedded inside PVDF matrix	SHARMA Pallavi
14:30	1438		Investigation of the thermomechanical and elastocaloric properties of NiMnTi shape memory alloy for solid-state cooling applications	VILLA Francesca
14:45	1920		3D Printed Thermoelectret with Giant Piezoelectric Coefficient as Self-Powered Wearable Pressure Sensor and Futuristic Implementation for On-spot Bone Injury	SAINI Dalip

**Monday May 29**

**D1\_04**

**Batteries 4**

Chairperson(s) : HALANKAR Kruti

**Cassin (Ground floor)**

15:00	1208	INV	Aerogel materials for capacitive electrodes in energy storage devices	OKHAY Olena
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15:30	856		Impact of Lithiation on Si-anode/binder interfaces for next generation Lithium ion batteries	MAJI Rita
15:45	2077		Investigation of Volatile Electrolyte Decomposition Products with Operando GCMS for Lithium-Ion Batteries	KAHR Juergen

**Monday May 29**

**D2\_04**

## Thermoelectric and optical materials 2

Chairperson(s) : ANGUITA Jose

**Boston (1st floor)**

15:00	1038	INV	Stretchable polymer ionic thermoelectric supercapacitors	TAE HYUN Park
15:30	667		Effective control of thermal transport with light in molecular materials.	RIVADULLA Francisco
15:45	2412		Structural Evolution and Nanostructure of Thermoelectric Materials	NEMES Norbert Marcel

**Monday May 29**

**D1\_05**

## Batteries 5

Chairperson(s) : LA CARBONARA Giampaolo

**Cassin (Ground floor)**

16:30	2705	INV	A prospective toward next generation lithium sulphur batteries	HALANKAR Kruti
17:00	2651		Vitrimer-like, self-healing solid polymer electrolytes, facilitated by disulfide metathesis at room temperature, for lithium-ion batteries	BARAKAT Carla
17:15	1550		The improved lithium storage performance of low-temperature grown LiCoO <sub>2</sub> cathode by dual-function modification	ZHANG Yan
17:30	1123		Developing Highly Stable Solid-State Organic Batteries Employing a Single-Ion Polymer Electrolyte	SHAO Yunfan
17:45	1517		Nanocomposite Carbon/TiO <sub>2</sub> Inverse Opals as Lithium-Ion Battery with High Capacity Retention	CARROLL Aoife

18:00 2419 Lithium-sulfur battery operational at high C-rate achieved by an interlayer of 3D crumpled MoS<sub>2</sub> nanosheets **PASTE Rohan**

**Monday May 29**

**D2\_05**

**Magnetic Materials**

**Chairperson(s) : PICHON Benoit - SALAZAR Daniel**

**Boston (1st floor)**

16:30	2070	INV	Fabrication of rare-earth free permanent magnets for energy harvesting : magnetophoresis assembly of Co nanorods	<b>LACROIX Lise-Marie</b>
17:00	2783	INV	Magnetic anisotropy engineering in onion-structured, doubly exchange-coupled, rare earth-free nanoparticles	<b>DE TORO José A.</b>
17:30	2693		Energy efficiency and economic comparison of different methods for recycling NdFeB permanent magnets	<b>GARCÍA-FRANCO Andrés</b>
17:45	1832		Oxygen vacancy-driven polarization imprint in ferroelectric BFCO thin films	<b>HENNING Xavier</b>
18:00	1694		Magnetic ordering through itinerant ferromagnetism in a metal-organic framework	<b>PARK Jesse Gaehyun</b>
18:15	34		Hydrogen Storage in Mg-CuNiCoFeV composite for hydrogen storage	<b>GUPTA Anshul</b>



**Tuesday May 30**

## **D1\_06** **Batteries 6**

**Chairperson(s) : RICCI Pier Carlo**

**Cassin (Ground floor)**

<b>10:00</b>	<b>1734</b>	Effect of ammonium and tetraalkylammonium hexafluorophosphates additives on Lithium metal-electrolyte interphase	<b>LA CARBONARA Giampaolo</b>
<b>10:45</b>	<b>1562</b>	High-Capacity Inverse Opal Tin Oxide Electrodes for Lithium-Ion and Sodium-Ion Energy Storage	<b>GRANT Alex</b>
<b>11:00</b>	<b>225</b>	Smart Design for Sustainable High Mass Loading Organic Battery Electrodes	<b>SHI Kai</b>
<b>11:15</b>	<b>1157</b>	High-Performance Li-S Batteries Through Advanced ZIF-Derived Carbon Decorated with 2D MXene	<b>YUKSEL Recep</b>
<b>11:30</b>	<b>1469</b>	The Effect of Ge-Substitution on Electronic and Lattice Vibration Properties of the Thermoelectric Semiconductor FeGa <sub>3</sub>	<b>MARTIN Catalin</b>

**Tuesday May 30**

## **D2\_06** **Photocatalysis and photocatalytic materials 1**

**Chairperson(s) : PORCU Stefania**

**Boston (1st floor)**

<b>10:00</b>	<b>562</b>	<b>INV</b> Developing extended visible light responsive polymeric carbon nitrides for photocatalytic and photoelectrocatalytic applications	<b>MONDAL Sanjit</b>
<b>10:30</b>	<b>196</b>	Recovered transition metal phosphates as functional materials for electrocatalysis	<b>KARAFILUDIS Stephanos</b>
<b>10:45</b>	<b>418</b>	Tandem Photocatalysis for Non-oxidative Coupling of CH <sub>4</sub> to C <sub>2</sub> H <sub>4</sub>	<b>HUANG Haowei</b>
<b>11:00</b>	<b>943</b>	Organic pi-conjugated donor-acceptor-based oligomers for photocatalytic H <sub>2</sub> production	<b>CLOUTET Eric</b>
<b>11:15</b>	<b>742</b>	Enhanced Photocatalytic water-splitting of C-based TiO <sub>2</sub> nanocomposites for H <sub>2</sub> production	<b>SHARMA Sanjeev K.</b>

11:30	2076		High Stability Molybdenum Sulfide Catalysts for the Hydrogen Evolution Reaction	JOHNSON Hannah
11:45	531		Two-dimensional Semiconductive Ni <sub>3</sub> TeO <sub>6</sub> for H <sub>2</sub> production applications	FERNÁNDEZ CATALÁ Javier
12:00	872		Unconventional photocatalysts for the H <sub>2</sub> production by solar photoreforming	FIORENZA Roberto

**Tuesday May 30**

**D1\_07**

**Batteries 7**

Chairperson(s) : LAMANNA Leonardo

**Cassin (Ground floor)**

13:30	1432	INV	Potassium salts of Schiff Bases as anodes in Potassium ion based batteries	CASTILLO-MARTINEZ Elizabeth
14:00	1739		Flexible and binder-free efficient supercapacitor electrode using vertical array of MoS <sub>2</sub> with transition metals	SASEENDRAN Swathy
14:15	266		Polyaniline/VS <sub>2</sub> Composite with Nano-wired Morphology for All-solid-state Supercapacitor and Zinc-ion Battery Applications	ZAFAR Saad
14:30	781		Poly(2-ethyl-2-oxazoline) binder for low-cost and high heat resistant lithium rechargeable battery applications	PARK Young-Sam
14:45	1066		Triflate anions enabled good rate capability and long-term stability of aqueous aluminum ion batteries	LI Xiaoya

**Tuesday May 30**

**D2\_07**

**Photocatalysis and photocatalytic materials 2**

Chairperson(s) : MONDAL Sanjit

**Boston (1st floor)**

13:30	852	INV	Metal based transparent electrodes for energy applications: a brief overview	BELLET Daniel
14:00	541		Theoretical and Experimental Investigation on Solar driven Hydrogen production Capacity of new Janus Coupled Photocatalyst	EDATHIRINJI SUDHEER Anjana

14:15	419		Visible-light-driven photocatalytic hydrogen production using intercalative hybrid composite of CdS nanoparticles and N-doped TiO <sub>2</sub> nanosheets	KIM Tae Woo
14:30	1776		Low-cost and high throughput synthesis of ZnO nanostars for Energy Storage applications.	DI MARI Gisella Maria
14:45	1727		SrTiO <sub>3</sub> thin films photoanodes deposited by a combinatorial chemical beam vapor deposition: study of the mono- and co-doping with nitrogen and tantalum to enhance the visible light activity	ROGÉ Vincent

**Tuesday May 30**

**D1\_08**

**Batteries 8**

**Chairperson(s) : RICCI Pier Carlo**

**Cassin (Ground floor)**

15:00	2518	INV	Aqueous Eutectic Electrolytes for Zinc Metal Batteries	BOUCHAL Roza
15:45	1977		Effect of precursor concentration on the electrochemical properties of carbon composite nanofibers of zinc phosphide as anode materials for lithium-ion batteries	SAGYNBAYEVA Yryskul

**Tuesday May 30**

**D2\_08**

**Photocatalysis and photocatalytic materials 3**

**Chairperson(s) : BELLET Daniel**

**Boston (1st floor)**

15:00	1932	INV	Post-annealing treatment of Cu <sub>2</sub> ZnSnS <sub>4</sub> -based multilayer photocathodes for enhancing photocurrent stability during photoelectrochemical water reduction	WIBOWO Rachmat Adhi
15:30	151		Study of Enhanced Catalytic Properties of Multi Component Alloy and Stabilized Oxide Composites	PARK Dahee
15:45	840		Combinatorial deposition of mono- and co-doped sodium tantalate: material characterization and photoelectrochemical properties	GARLISI Corrado

**Tuesday May 30**  
**D\_P01**  
**Poster session 1**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

<b>01_114</b>	One-step Electrochemical Synthesis of Ni-Fe-S/Nickel foam for Efficient Electrocatalysts of Water Splitting	<b>CHOI Daegeon</b>
<b>02_329</b>	3D characterization of nanocatalysts for energy conversion application	<b>KIM Taekyung</b>
<b>03_538</b>	Electrical properties of inorganic hybrid PP-based ternary blends for power cable	<b>SE WON Han</b>
<b>04_633</b>	Oxidation and hot corrosion properties of Rene-N4 and FSX-414 superalloys used for turbine applications	<b>AHMAD Mairaj</b>
<b>05_1016</b>	The heterojunction strategy with work function-tunable graphene for efficient photoelectrochemical water-splitting in WO <sub>3</sub> -based photoelectrode	<b>CHO A. Young</b>
<b>06_1407</b>	Time resolved photo-driven charge transfer of BiVO <sub>4</sub> thin films for photoelectrochemical water splitting	<b>OTTINGER Natalie</b>
<b>07_2046</b>	Excited state calculations of two-dimensional nanostructured transition metal dichalcogenides for water-splitting applications	<b>ISAKOVICA Inta</b>
<b>08_507</b>	Study of earth abundant and non-toxic transparent conductive oxides for solar cell applications	<b>KHEMIRI Naoufel</b>
<b>09_2691</b>	Ionogels as promising anti-icing surfaces	<b>BAHAL Simrandeep</b>
<b>10_2714</b>	Development of sustainable high energy density lithium-sulfur batteries	<b>HALANKAR Kruti</b>
<b>11_2566</b>	Architecture design of Two-Dimensional/ Three-Dimensional MoS <sub>2</sub> -PbS Hybrid Material for High-Performance Supercapacitor Electrode Material	<b>CHAUDHARY Nahid</b>
<b>12_2061</b>	Green Supercapacitors Based on Electrodes Fabricated by Single-step Visible Direct Laser Writing of Chitosan film	<b>ISLAM Jahidul</b>
<b>13_2516</b>	Lattice Engineering of Noble Metal-based Nanomaterials through Inserting Light Elements towards Enhanced Catalytic Applications	<b>HAN Peng</b>

14_2430	Flexible and stretchable Li ion battery using origami scale based structure	<b>HYUN Seungmin</b>
15_2422	Electrophoretically deposited 2D V <sub>2</sub> C/Carbon fiber composite as an efficient potential anode material for flexible asymmetric supercapacitors	<b>RAFIQUE Amjid</b>
16_2145	Phloroglucinol as a Promising Precursor for Carbon Dots: Synthesis and Characterization for LED Applications	<b>OLLA Chiara</b>
17_2376	Raman Spectroscopy for Monitoring Residues in Copper-based Redox Flow Batteries	<b>PORCU Stefania</b>
18_2318	Thin Films Quaternary materials for photovoltaic applications	<b>BEN RABEH Mohamed</b>
19_2317	Nanostructured iron oxides for efficient H <sub>2</sub> production via thermochemical water splitting	<b>MATTHEWS Jayden</b>
20_2303	Optimization of Solid Electrolyte Interphase in Diatom Derived Silica Anodes	<b>HUA Weicheng</b>
21_906	Study and characterization of non-fullerene nanostructured films for application in photovoltaic devices	<b>MEDINA Maria Eduarda</b>
22_1249	Investigation of the charge dynamics of BiVO <sub>4</sub> for water splitting by absorption spectroscopy techniques	<b>LI Sirui</b>
23_2159	New film scintillator based on 8-hydroxyquinolate lithium	<b>AVETISOV Igor</b>
24_2130	Novel BGO/PVA composite material for gamma-scintillation	<b>AVETISOV Igor</b>
25_2121	Effect of solvents polarity on quantum yield of the fluoralkylated carbon nanodots	<b>NAZAROV Alexei</b>
26_2072	WS <sub>2</sub> nanosheets/vertically aligned Fe <sub>2</sub> O <sub>3</sub> nanoflakes as a 2D heterojunction for efficient photoelectrochemical water splitting.	<b>BEHERA Govinda Chandra</b>
27_2073	Synthesis of cadmium sulfide nanowires in an ion track template	<b>AKILBEKOV Abdirash</b>
29_1643	Novel Recycling Method of Spent Li-Ion Batteries for the Synthesis of Spinel Co <sub>3</sub> O <sub>4</sub> Nanoparticle	<b>KIM Hyun-Su</b>
30_1981	Environmentally sustainable direct recycling of spent lithium-ion batteries	<b>KIM Kwang</b>
31_1817	Sodium transition metals sulfates as modish electrode materials with electrochemical properties in hybrid metal-ion batteries	<b>MARINOVA Delyana</b>

<a href="#">32_1958</a>	Zinc-manganese dioxide battery with immobilized pH gradient electrolyte	<b>ZUKULS Anzelms</b>
<a href="#">33_1956</a>	2.4 V Open-Circuit Potential Aqueous Zn-MnO <sub>2</sub> Rechargeable Battery with pH gradient electrolyte	<b>DURENA Ramona</b>
<a href="#">34_1937</a>	Fabrication of 2D MoS <sub>2</sub> nanosheets based binder-free electrodes for electrochemical applications	<b>MANNAYIL Jasna</b>
<a href="#">35_1904</a>	Oxygen Redox Reaction at Elevated Temperature for Layered Na <sub>2</sub> /3Mg <sub>1</sub> /3Mn <sub>2</sub> /3O <sub>2</sub> Oxides with three and two-layer stacking	<b>KUKEVA Rositsa</b>
<a href="#">36_1893</a>	Formation of metal oxide-polyaniline nanohybrids by plasma-driven electrolysis for efficient energy storage devices	<b>RADOMTSEU Anton</b>
<a href="#">37_1346</a>	Synthesis and Characterization of Magnetron Sputtered SnO <sub>2</sub> and its application as Electron Transport Layer	<b>ZAKARIA Yahya</b>
<a href="#">38_1867</a>	Extensive ex-situ infrared and Raman studies of low-temperature electrochromic vanadium oxide films in different states	<b>SURCA Angelja Kjara</b>
<a href="#">39_1866</a>	First Principle investigation of multi-interstitial defects in germanium	<b>ABDURRAZAK Abdulgaffar</b>
<a href="#">40_1828</a>	Fabrication and characterization of oxysulfide Y <sub>2</sub> Ti <sub>2</sub> O <sub>5</sub> S <sub>2</sub> photoelectrode thin film for solar water splitting	<b>FUKATANI Naoto</b>
<a href="#">41_1795</a>	Zinc Oxide/Carbon Hierarchical Nanostructures Fabricated by Liquid Mediated Laser Ablation in Applied Electric Field as Material for Electrodes of Supercapacitors	<b>TARASENKA Natalie</b>
<a href="#">42_994</a>	A new method to produce redox active porous carbons for electrochemical energy storage	<b>PETSAGKOURAKIS Ioannis</b>
<a href="#">43_1758</a>	Electrochemical properties of sodium iron phosphate cathodes using pyrrolidinium-based ionic liquid electrolyte	<b>TUSHEV Trajche</b>
<a href="#">44_1762</a>	Boron Nitride Nanotube-ZnO QDs core-shell composites for transparent flexible piezoelectric nanogenerator	<b>DONG ICK Son</b>
<a href="#">45_1637</a>	Green Synthesis of SnO <sub>2</sub> microspheres and their excellent performance as an active anode material in low temperature lithium-ion batteries	<b>ISSATAYEV Nurbolat</b>



46_1732	Unraveling multiple active sites and band engineering of 1T-2H phase MoSe <sub>2</sub> /MoO <sub>3</sub> with pH universal HER catalysis	ROY Dipayan
47_1717	Synergetic effect of bulk and surface modification of layered Na <sub>2</sub> /3Ni <sub>1</sub> /2Mn <sub>1</sub> /2O <sub>2</sub> oxide for enhancing the electrochemical performance	KALAPSAZOVA Mariya
48_1724	Enhanced Stability of Organo-Metallic Electrocatalysts By Intercalation between Clay Materials	YOO Hye Yeon
49_1696	Synthesis of High-Performance Aramid Polymers for Energy Applications	SONG Wonseong
50_527	Towards oxygen evolution reaction catalyst activity descriptors using model hydroxide perovskites.	CROSSLEY Kenneth
51_1662	Room Temperature Argon/Hydrogen Plasma Post-treatment of AZO-Ag-AZO Transparent Conductive Multilayers	SERGEEV Oleg
52_1676	Leveraging Reduced Graphene Oxide as a Charge Reservoir of Manganese Oxide to Enhance the Charge Storage Property of MnOx-Based Micro-Supercapacitors Through Interfacial Interaction	YOO Jungjoon
53_1618	Effect of Li-Doping on Micro-Supercapacitor Performances of ZnO/rGO	LEE In Sik
54_1616	FeOOH-Decorated Nickel Selenides on Ni Foam for Efficient Overall Water splitting	KIM Sun Mi
55_1573	Improved Cycle Stability of Nickel-rich Single-Crystal Cathode Materials for Lithium-ion Batteries	JONG-TAE Son
56_1064	Facile fabrication of large-scale BiVO <sub>4</sub> photoelectrodes for solar water splitting	HWANG Hyojung
57_1454	Environmental transmission electron microscopy study of doped ZnO films	TANNERT Tobias
58_1536	Influence of electrode design on the electrochemical performance of heteroatom-doped carbon anodes in sodium ion batteries	YILMAZ Elif Begum
59_1504	Luminescent hybrid materials in SrF <sub>2</sub> -Liq, SrF <sub>2</sub> -LaF <sub>3</sub> -Liq systems obtained by co-precipitation	AVETISOV Igor
60_1278	Microstructural characterization of thin films based on HfNbTaTiZr high-entropy alloy	HRUSKA Petr

**Tuesday May 30**

**D1\_09**

**Electrochemical**

**Chairperson(s) : SCALESE Silvia**

**Cassin (Ground floor)**

<b>10:00</b>	<b>2378</b>	<b>INV</b>	The Mg electrode cycling mechanism in simple salt glyme electrolytes	<b>JOHNSON Lee</b>
<b>10:30</b>	<b>2555</b>		Electrodes Based on Selenium Anchored on NiCoP and Carbon Nanofibers for Flexible Energy Storage Devices	<b>AFSHAN Mohd</b>
<b>10:45</b>	<b>226</b>		Sputtered ternary transition metal oxide-based electrodes for micro-supercapacitors applications: approach, challenges and prospects	<b>JOLAYEMI Bukola</b>
<b>11:00</b>	<b>1545</b>		The Exploration of Electrochemical Sodium Storage Performance using TiO <sub>2</sub> Inverse Opal scaffolds with Controlled Pore Sizes	<b>ZHANG Yan</b>
<b>11:15</b>	<b>1185</b>		Semitransparent aligned and spaced titania nanotubes materials formed out of TiAg alloys with unique electrochemical activities.	<b>KOUAO Dujearic-Stephane</b>
<b>11:30</b>	<b>1245</b>		Exploring the recycling chemistry of layered lithiated transition metal oxide positive electrodes with molten salts	<b>DAMBOURNET Damien</b>
<b>11:45</b>	<b>2117</b>		Fabrication of Novel 3D Structured Electrode for Electrocatalytic Hydrogen Generation Applications using Additive Manufacturing	<b>MEETHALE PALAKKOOL Nadira</b>

**Tuesday May 30**

**D2\_09**

**Photocatalysis and photocatalytic materials 4**

**Chairperson(s) : BERESTOK Taisiia**

**Boston (1st floor)**

<b>10:00</b>	<b>1284</b>	<b>INV</b>	Design of multi-functional photocatalysts on the basis of titania and heteropolyacids for methane activation and conversion to valuable products at room temperature	<b>KHODAKOV Andrei</b>
<b>10:30</b>	<b>1132</b>		Enhanced electrochemical performance of treated graphite felt for AORFB	<b>BASSIL Patricia</b>

10:45	2122		Covalente Organic Frameworks Based on BODIPY and BOPHY Dyes for Artificial Photosynthesis	NARANJO Teresa
11:00	2085		Single atom doped 2D nanosheets of layered niobate for photocatalytic CO <sub>2</sub> reduction	YILMAZ Bengisu
11:15	707		CuOx/N-GDY as electrocatalysts for efficient ammonia production via nitrate reduction	LI Jian
11:30	2261		Co <sub>3</sub> O <sub>4</sub> nanopetals layers for photoelectrochemical degradation of organophosphate pesticides	RAGONESE Paola
11:45	1532		Evaluation of the catalytic potential of melt-spun and chemical-treated aluminium-based intermetallic alloys	ZIEBA Amelia

**Tuesday May 30**

**D1\_10**

**Water splitting/HER OER 1**

**Chairperson(s) : MANWAR Nilesh R.**

**Cassin (Ground floor)**

13:30	2044	INV	Growth of MoO <sub>3</sub> NWs by thermal evaporation for OER application	SCALESE Silvia
14:00	2371		Conception of a heterostructured bismuth vanadate based photoanode for solar-driven water oxidation in acidic conditions	BLOT Adeline
14:15	620		Mechanism of Alkaline Water Splitting by Pt, Pd, Pt <sub>80</sub> Pd <sub>20</sub> and Cu(OH) <sub>2</sub> Nanoparticles Obtained by PLAL	SCANDURRA Antonino
14:30	565		Enhancing Broadband Light Absorption in Ultrathin Film Absorbers for Solar Fuel Generation	SHOR PELED Saar
14:45	212		Structure-Induced Catalytic Activity of Ni- and Co-substituted Layered MoB <sub>2</sub> toward Hydrogen Evolution	PEIGHAMBARDOUST Naeimeh Sadat

**Tuesday May 30**

**D2\_10**

**Photocatalytic and photovoltaic materials**

**Chairperson(s) : KHODAKOV Andrei**

**Boston (1st floor)**

<b>13:30</b>	<b>1803</b>	<b>INV</b>	Metastable Ni(I)-TiO <sub>2</sub> -x Photocatalyst: Self-Amplifying H <sub>2</sub> Evolution from Plain Water without Noble Metal Co-Catalyst and Sacrificial Agent	<b>ALTOMARE Marco</b>
<b>14:00</b>	<b>1755</b>		Improved specific capacitance of WO <sub>3</sub> nanostructures obtained by hydrothermal synthesis for energy storage applications.	<b>MINEO Giacometta</b>
<b>14:15</b>	<b>740</b>		Precious Metal-Free N-rGO-based ORR electrocatalyst for Graphene Oxide-Hydrogen Membrane Fuel Cells (GOHMFCs)	<b>CHOWDURY Md Shahjahan Kabir</b>
<b>14:30</b>	<b>479</b>		Photocatalytic Partial Oxidation of Methane to Carbon Monoxide and Hydrogen over CIGS Solar Cell	<b>ORDOMSKY Vitaly</b>

**Tuesday May 30**

**D1\_11**

**Water splitting/HER OER 2**

**Chairperson(s) : JOHNSON Lee**

**Cassin (Ground floor)**

<b>15:00</b>	<b>551</b>	<b>INV</b>	Plasmon-induced 2D supported atomic site catalysts for thermo-photocatalytic simultaneous conversions of CO <sub>2</sub> into fuels and biomass Valorization	<b>MANWAR Nilesh R.</b>
<b>15:30</b>	<b>48</b>		Novel Substrate-Agnostic Fabrication of High-Performance Regenerative Water Splitting (Photo)electrodes	<b>SOO Joshua Zheyuan</b>
<b>15:45</b>	<b>603</b>		Is Fe <sub>3</sub> C can alone improve the oxygen reduction reaction kinetics in fuel cell cathodes?	<b>ARYAGOPAL S</b>

**Tuesday May 30**

**D2\_11**

**Photovoltaics 1**

**Chairperson(s) : RICCI Pier Carlo**

**Boston (1st floor)**

<b>15:00</b>	<b>1997</b>	<b>INV</b>	Development of monolithically integrated photosupercapacitors based on different photovoltaic technologies	<b>BERESTOK Taisiia</b>
<b>15:30</b>	<b>2732</b>		Multifunctional powder feedstock as a sustainable key enabling technology in additive manufacturing	<b>ROSERO ROMO James Janderson</b>
<b>15:45</b>	<b>1728</b>		Trade-Off between Photovoltaics Parameters and Thermal Annealing in Non-Fullerene Acceptors Organic Solar Cells	<b>ALAM Shahidul</b>

**Tuesday May 30**

**D\_P02**

**Poster session 2**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

<b>01_1335</b>	Scalable Fabrication of High-performance Perovskite Solar Modules and their Application to Photo-rechargeable Batteries	<b>KIM Young Yun</b>
<b>02_1207</b>	Sodium titanates with controlled morphology as effective anode materials for lithium- and sodium-ion batteries	<b>STANCHOVSKA Silva</b>
<b>03_1307</b>	Electrochemical Suzuki-Miyaura cross-coupling using peptide bolaamphiphile hydrogel supported Pd NPs as heterogeneous electrocatalyst	<b>KORI Deepak K. K.</b>
<b>04_1274</b>	The effect of Sn doping on the optical properties of polycrystalline Sb <sub>2</sub> Se <sub>3</sub>	<b>USLU Mehmet Ender</b>
<b>05_1256</b>	A water-based flowless energy-dense Zinc-ion Bromine Battery	<b>ZHU Jiaxiong</b>
<b>06_1184</b>	Studying the Membrane Electrode Assembly (MEA) for a Hydrogen-Manganese Redox Flow Battery (RFB)	<b>ZHANG Haoyu</b>
<b>07_1195</b>	Heat Activated Nb-Doped Vanadium Dioxide Cathodes for Zinc Ion Batteries	<b>AYDIN Selay</b>

08_1194	Molybdenum Doped Vanadium Dioxide as High-Performance Aqueous Zinc-Ion Battery	AYDOGDU Busra
09_1050	RF Energy Harvesting with Vertical Pt/MoSe <sub>2</sub> Schottky Diode-Based Crystal Radio	HONG Sungjae
10_987	Fabrication, photovoltaic characterization, and study of degradation mechanisms of a dye-sensitized solar cell based on sustainable tetrapyrrole-dyes extracted from Baltic microalgae	SIEBERT Liv
11_1067	Synthesis of PdRh alloy@ZnO-CeO <sub>2</sub> core-shell nanoparticles with different shell composition for photocatalyst	OH Geun-Jae
12_1006	Development of Si-organic-based Binder for High-performance Li-ion batteries	YOON Jihee
13_1002	Improvement of the physical properties of nanostructured Ag <sub>x</sub> O thin films grown by Glancing Angle Deposition (GLAD) method	CHAFFAR AKKARI Ferid
14_997	Materials for the conversion of solar energy with photovoltaic applications	CHILIBON Irinela
15_274	Electrochemical Influence of Aqueous Binders on LiFePO <sub>4</sub> Cathodes	PARMENTER Ryan
16_973	Constructing MWCNT/ZIS nanocomposite to enhance photoelectrochemical water splitting performance	MOHIT Mohit
17_942	Computational analysis of the enhancement of photoelectrolysis using transition metal dichalcogenide heterostructures	BAKER Edward
18_554	Modification of Aluminum Alloy Anode using Iron for Enhancing Rechargeable Aluminum Battery Operation	RAZAZ Ghadir
19_787	The Investigation of Carbon Coating on Iron-Oxide Actives for Lithium-ion Batteries	SU Wei-Chun
20_857	Investigation of the order-disorder transition in (Cu,Ag) <sub>2</sub> ZnSn(S,Se) <sub>4</sub> monograin powders	MENGÜ Idil
21_841	Transition metal dichalcogenides for photovoltaics	BOZHEYEV Farabi
22_403	The Effect of Zinc-based-oxide Coating on Iron-oxide Actives for Lithium-Ion Batteries	LIU Wei-Chen
23_800	Porous network carbon structure on Si-C composite for lithium ion battery	CHUNG Hee-Suk
24_783	Improvement of Li metal compatibility in all solid state batteries via SSZ-13 zeolite filler	KIM Jae Hyeon



25_792	Evaluation of characteristics according to cathode material particle size in PEO/LLZO-based all-solid-state battery	<b>SONG Young-Woong</b>
26_764	Lithium-ion battery with the carbon nanofibers applied carbon nanowalls	<b>KIM Kangmin</b>
27_738	Enhanced Proton-conducting Nanohybrid Membranes with Graphene Oxide and (3-mercaptopropyl)trimethoxysilane for PEMFCs	<b>CHOWDURY Md Shahjahan Kabir</b>
28_576	Manganese-Based Tunnel & Layered oxide Cathode Materials for Secondary Metal-Ion Batteries	<b>YADAV Jaya</b>
29_718	The Impact of Different Spin Coating speed on the Properties of Cu <sub>2</sub> ZnSnS <sub>4</sub> Nanocrystal Thin Films	<b>ALLUHAYBI Asaad</b>
30_673	Design of conductive and ultrathin iridium catalyst layers for highly efficient and stable PEM-water electrolysis	<b>LIM Ahyoun</b>
31_251	Reconstruction of Cobalt Molybdenum Oxide Pre-catalyst for Boosted Hydrogen Production: Structure Evolution and Performance Enhancement Mechanism Insight	<b>ZHU Anquan</b>
32_613	Interface engineering for organic and perovskite solar cells introducing simple non-conjugated polymer	<b>HONG Soonil</b>
33_612	Fabrication of Hydrogen Permeation Leak Element using Atomic Layer Deposition on Anodic Aluminum Oxide	<b>CHUNG Nak-Kwan</b>
34_598	N-doped carbon framework encapsulated Pt-Ni dual-site single atoms and alloy nanoparticles for ORR/HER bifunctional electrocatalyst	<b>LE Thanh Duc</b>
35_577	Insights into Controlled Multiphasic Growth of Zinc Tungstate Hierarchical Nanostructures for Improved Electrochemical Energy Storage	<b>TIWARI Pranjala</b>
36_569	Self-activated porous carbon template for lithium ion battery anode	<b>CHUNG Hee-Suk</b>
38_423	Fabrication of Nickel Antimony Oxide-Carbon Black Composite Anode for Alkali-ion Batteries by Electrophoretic Deposition Technique	<b>RAY Unmesha</b>
39_505	Investigations on Na-doped Cu <sub>2</sub> ZnSnS <sub>4</sub> thin films as a critical raw material-free for photovoltaic applications	<b>KHEMIRI Naoufel</b>

<a href="#">40_371</a>	A novel synthesis method of sulfide-based solid electrolytes for the high energy density all-solid-state batteries.	<b>PARK Jun Woo</b>
<a href="#">41_420</a>	Microwave-Induced Surface Defects in Lithium Titanate Oxide over the Wide Voltage Window for High Energy Li-Ion Hybrid Capacitors	<b>BYUN Segi</b>
<a href="#">42_415</a>	Synthesis of garnet LLZO by aliovalent co-doping, and electrochemical behavior of composite solid electrolyte for all-solid lithium batteries	<b>KIM Min-Young</b>
<a href="#">43_392</a>	Effect of Charge Transport Layers and applied potential on the impedance spectra in CH <sub>3</sub> NH <sub>3</sub> PbI <sub>3</sub> perovskite solar cells	<b>KHALIFA Marouan</b>
<a href="#">44_331</a>	Practical Solid-State Synthesis of Supported Pt-Co Nanoparticles for Proton Exchange Membrane Fuel Cells	<b>YOO Tae Yong</b>
<a href="#">45_335</a>	The solution-based synthesis of Li <sub>6</sub> PS <sub>5</sub> Cl solid electrolyte for effective lithium ion conduction in the cathode electrode of all-solid-state batteries	<b>PARK Jun-Ho</b>
<a href="#">46_303</a>	TiO <sub>2</sub> nanograss tubes as hybrid membrane in Li-S Battery	<b>DOOHUN Kim</b>
<a href="#">47_301</a>	Electroplated Nickel-phosphorous HER catalysts with the enhanced performance and stability via electrochemical surface-treatment	<b>EOM Kwangsup</b>
<a href="#">48_299</a>	Plasma-induced Heterojunction Material as Cathode Additive to Adjust Polysulfides Conversion of Lithium-sulfur Battery	<b>LEI Yechen</b>
<a href="#">49_279</a>	Characteristics of VO <sub>x</sub> thin films fabricated by closed-field unbalanced magnetron sputtering system for thermochromic devices	<b>LEE Jaehyeong</b>
<a href="#">50_264</a>	An interfacial wetting water based hydrogel electrolyte for high-voltage flexible quasi solid-state supercapacitors	<b>LIU Ta-Chung</b>
<a href="#">51_245</a>	Interface chemistry engineering for advanced aqueous Zn metal batteries	<b>HAN Weiwei</b>
<a href="#">53_182</a>	Hydrogen Spillover and Storage on Graphene with Single-Site Ti Catalysts	<b>WU Chung-Lin</b>
<a href="#">54_203</a>	Unassisted Solar water splitting via Organometal Halide Perovskite-Based dual Photoelectrodes	<b>LEE Sanghan</b>
<a href="#">55_183</a>	Electrolyte Engineering Enables Stable Zn-Ion Deposition for Long-Cycling Life Aqueous Zn-ion Batteries	<b>WU Yan</b>

<a href="#">56_155</a>	Effect of doping on Ni-rich layered cathode materials for low-Cobalt Li-ion batteries	<b>BANO Amreen</b>
<a href="#">57_154</a>	Enhanced performances of lithium metal batteries by synergistic effect of low concentration bisalt electrolyte	<b>PHAM Thuy Duong</b>
<a href="#">58_133</a>	Direct and in situ growth of 1T' TMDs on electrochemically synthesized MXene as an electrocatalyst for hydrogen generation	<b>PANG Sin Yi</b>
<a href="#">59_117</a>	Modified MXene for Regulating Sulfur Evolution Reactions in High-Volumetric-Energy-Density Lithium-Sulfur Batteries	<b>NGUYEN Viet Phuong</b>
<a href="#">60_1648</a>	The important role of thermal stability for the design of Cu <sub>3</sub> N films by RF sputtering as solar absorbers	<b>RODRIGUEZ Maria Isabel</b>

Thursday June 1

D1\_12

## Water splitting/HER OER 3

Chairperson(s) : SURCA Angelja Kjara

Cassin (Ground floor)

10:00	743	INV	Nanoporous Cubic Silicon Carbide for Hydrogen Production from Solar Water Splitting	SUN Jianwu
10:30	2030		Low-cost synthesis of MoS <sub>2</sub> /MoO <sub>3</sub> nanostructures from recycled metallic powder for water splitting applications	URSINO Federico
10:45	746		ZnO/BiOI Heterojunction with Enhanced Photoelectrochemical Activity Fabricated via Aerosol-assisted Chemical Vapour Deposition	WANG Mingyue
11:00	1576		Development of N-GQDs@NF as highly efficient and stable electrocatalyst for the oxygen evolution reaction.	IM Min Ji
11:15	2075		Composition-controlled chemical bath deposition of Fe-doped NiO microflowers for boosting oxygen evolution reaction	BATTIATO Sergio
11:30	566		Guidance to Sustainable Materials Processing by Early-Stage Screening Life Cycle Assessment	WIDENMEYER Marc
11:45	556		Neutral Overall Water Splitting Microreactor of Bifunctional Monolayer WSe <sub>2</sub> /Graphene Self-Stitching Heterojunction	CHIANG Chun-Hao

Thursday June 1

D2\_12

## Photovoltaics 2

Chairperson(s) : MULA Guido

Boston (1st floor)

10:00	2309	INV	High performance transparent silver grid electrodes for organic photovoltaics fabricated by selective metal condensation	HATTON Ross
10:30	2574		Optimisation of performance and reliability of Electron Transport Layer (ETL) in Organic Solar Cells : for a sustainable and low carbon technology	CHADAIGNE Arthur

10:45	553	Solution processed Na-doped and Ag-alloyed Cu <sub>2</sub> ZnSnS <sub>4</sub> thin film based photovoltaic devices	KUMARI Neha
11:00	701	Low-cost Synthesis of Silicon Quantum Dots and their Applications on Luminescent Solar Concentrators	ZHOU Jingjian
11:15	1328	New Earth-Abundant Thin Film Solar Cells Based on Cu-doped Antimony Selenide	JAKOMIN Roberto
11:30	475	Sprayed quaternary chalcogenides for superstrate solar cells	PAYNO David
11:45	1520	Manganese-substituted Kesterite thin-films for Earth-abundant Photovoltaic applications	TRIFILETTI Vanira

Thursday June 1

D1\_13

Water splitting/HER OER 4

Chairperson(s) : SUN Jianwu

Cassin (Ground floor)

13:30	1074	INV	Porphyrins that ROCKs: Meeting rational design rules for OER catalysis at lower overpotentials.	CARDENAS-MORCOSO Dryalis
14:00	247		Designing In-situ Grown Ternary Oxide / 2D Ni- $\eta$ BDC MOF Nanocomposites on Nickel Foam as $\eta$ Efficient Electrocatalysts for Electrochemical Water $\eta$ Splitting	SADEGHI Ebrahim
14:15	59		Interfacial interaction of Metal-Organic Framework-Derived Zn-Co-Fe LDH on Ultrathin Mxene Nanosheet for Electrocatalytic HER/OER Evolution	BEHERA Arjun
14:30	1062		Exploring the Role of Mo and Mn in Improving the OER and HER Performance of CoCuFeNi-based High-Entropy Alloys	UNAL Ugur
14:45	73		Cobalt Copper sulphide /Tungsten Disulphide Nanowire Heterostructure as an Excellent Bifunctional Electrocatalyst for Overall Water Splitting	GAUTAM Jagadis

**Thursday June 1**  
**D2\_13**  
**Photovoltaics 3**

**Chairperson(s) : TSEBERLIDIS Giorgio**

**Boston (1st floor)**

<b>13:30</b>	<b>948</b>	<b>INV</b>	The interplay of chemical structure, physical properties, and structural design as a tool to modulate the properties of melanins within mesopores	<b>MULA Guido</b>
<b>14:00</b>	<b>571</b>		First-principles calculations of defects in CsPbX <sub>3</sub> (X = Br, I) crystals for photovoltaic applications	<b>KOTOMIN Eugene</b>
<b>14:15</b>	<b>464</b>		(Sb,Bi) <sub>2</sub> Se <sub>3</sub> thin films for short wavelength infrared region solar cell applications	<b>KUMAR Jitendra</b>
<b>14:30</b>	<b>1901</b>		Understanding the role of organic hole transport layers in Sb <sub>2</sub> Se <sub>3</sub> solar cells	<b>SHALVEY Thomas</b>
<b>14:45</b>	<b>820</b>		Germanium Substrate Manifold Reusability: A Cost-effective and Sustainable Manufacturing Path for III-V Solar Cells	<b>CHAPOTOT Alexandre</b>

**Thursday June 1**  
**D1\_14**  
**Water splitting/HER OER 5**

**Chairperson(s) : CARDENAS-MORCOSO Dryalis**

**Cassin (Ground floor)**

<b>15:00</b>	<b>1706</b>	<b>INV</b>	Comparative study of IrO <sub>2</sub> and Ir metal nanoparticles: Raman spectroscopy and activity for oxygen evolution reaction	<b>SURCA Angelja Kjara</b>
<b>15:30</b>	<b>128</b>		Liquid metal catalysts for the production of ammonia	<b>DAENEKE Torben</b>
<b>15:45</b>	<b>989</b>		Manipulating Spin Exchange Interactions of Two-dimensional Metal Phosphosulfide Crystals for Water Oxidation	<b>HUANG Chih-Ying</b>



Thursday June 1

D2\_14

## Photovoltaics 4

Chairperson(s) : HATTON Ross

Boston (1st floor)

15:00	653	INV	Cd-free kesterite solar cells featuring titania as buffer layer	TSEBERLIDIS Giorgio
15:30	618		Highly improved photocurrent density and power conversion efficiency of perovskite solar cell by plasma-polymerized-fluorocarbon antireflection coating	CHO Eunmi
15:45	2572		Sustainable Zinc tin oxide artificial synapses towards energy-efficient in-memory computation architecture	KIAZADEH Asal

Thursday June 1

D\_P03

## Poster session 3

Etoile (1st floor) - 4.30 p.m to 6.30 p.m

01_119			Materials and Printed processes for Flexible Smart window films	KIM Haekyoung
02_112			Manipulating nucleation and hydrogen evolution by N-methylthiourea additive for highly reversible Zn anode	YOON Sukeun
03_102			Deep Eutectic Solvents for Rice Husk Treatment for Sustainable Battery Material	PADWAL Chinmayee
04_36			A novel process to isolate pure rare earth oxides (REOs) from rare earth-bearing waste streams (with a focus on waste permanent magnets and Ni-MH batteries)	KHAYYAM NEKOU EI Rasoul
05_25			Self-reconstruction of sulfate-containing high entropy sulfide for exceptionally high-performance oxygen evolution reaction electrocatalyst	NGUYEN Thi Xuyen
06_26			Design of flame-retardant hybrid polymer/inorganic electrolytes with enhanced ionic conductivities	ZHANG Yinghui
07_41			Adsorption of H <sub>2</sub> on metal-organic frameworks at 20 K for the mitigation of boil-off losses of liquid hydrogen tanks	OH Hyunchul

08_81	Tantalum Pentoxide/MXene Hybrid Composite as Bi-functional Electrocatalyst for Highly Efficient and Stable Overall Water Splitting	KANNAN Karthik
09_139	PTMPM@SiO <sub>2</sub> functional fillers to improve the performance of commercial PEO as solid electrolyte	CHEN Zehan
10_168	Synthesis of crystalline NiO/NiAl <sub>2</sub> O <sub>4</sub> catalysts for coking free low temperature partial oxidation of methane	ABBAS Muzafar
11_171	Insights into the electronic structure of PEDOT with AlCl <sub>4</sub> <sup>-</sup> and its use as an electrode material in batteries and supercapacitors	CRAIG Ben
14_302	Bismuth-Carbon Anodes with Hierarchical Structure for Fast-Charging Sodium-Ion Battery	PARK Byeongho
15_383	Nanostructured Thermoelectric Materials Fabricated Using Chemically-Synthesized Tin Diselenide Nanosheets	MOORE Simon
16_407	Bridge percolation: electrical connectivity of discontinued conducting slabs by metallic nanowires	BARET Amaury
17_1390	Near-Infrared Organic photodiodes	OH Sang Hee
18_486	Chromium Tetrphosphide (CrP <sub>4</sub> ): A New and High-performance Anode for Li-ion and Na-ion batteries	LEE Jongwon
20_648	A facile blow spinning technique for green cellulose acetate/polystyrene composite separator for flexible energy storage devices	RAFIQUE Amjid
24_773	Electronic structure modification and N-doped carbon shell nanoarchitectonics of Ni <sub>3</sub> FeN@NC for overall water splitting performance evaluation	JEONG Dong In
25_794	Intercalation-type TiNb <sub>24</sub> O <sub>62</sub> anode for sodium-ion and potassium-ion batteries enabled via a synergetic strategy of oxygen vacancy and carbon incorporation	VIJAYA KUMAR SAROJA Ajay Piriya
26_826	Co <sub>4</sub> N nanoparticles encapsulated in Fe/N-doped carbon nanoboxes as superior trifunctional electrocatalysts for zinc-air battery and water electrolysis	CHOI Hyung Wook
27_831	Ni-d orbital modulation via the in situ 2D core-shell formation of Ni(CN) <sub>2</sub> @Ni <sub>2</sub> P upon Hofmann-type MOF nanoplate for highly efficient oxygen evolution reaction	KIM Jiwon

<a href="#">29_862</a>	Dense/porous bilayer structured BiVO <sub>4</sub> photoanode for efficient PEC water splitting performance	<b>SUNG Hansang</b>
<a href="#">30_979</a>	Synthesis of Fractal-like Structure of Fe <sub>2</sub> O <sub>3</sub> : A Study of Negative Electrode for Supercapacitor Applications	<b>JAISWAL Rishabh</b>
<a href="#">31_1010</a>	Facile In Situ Preparation of NiCoFe LDH Films as Oxygen- Evolving Catalysts with Self-Healing Capability	<b>BAMBA Jaira Neibel</b>
<a href="#">32_1011</a>	Cobalt Oxide Synthesis thru Thermal Decomposition with Various Solvents for the Development of High-Performance Electrocatalysts for Oxygen Evolution Reaction	<b>MATIENZO Dj Donn</b>
<a href="#">33_1093</a>	Strain engineering of the optoelectronic properties of epitaxial BiVO <sub>4</sub> thin films	<b>FERNANDEZ Erwin</b>
<a href="#">34_1166</a>	Elastocaloric properties of polycrystalline NiMnGa produced by open die pressing	<b>VILLA Elena</b>
<a href="#">35_1198</a>	Charge Transfer Induced Geometric Distortion of Ni(HCO <sub>3</sub> ) <sub>2</sub> @CNT and its Effect on the Catalytic Performance Enhancement for Oxygen Evolution and Reduction Reaction	<b>JEONG Jea Ryeol</b>
<a href="#">36_1352</a>	Nanotechnology application for the human energy problem solution	<b>EGOROV Vladimir</b>
<a href="#">37_1408</a>	Non-unity photogeneration yield of mobile charge carriers in open d-shell transition metal oxide photoelectrodes	<b>GRAVE Daniel</b>
<a href="#">38_1409</a>	Encapsulated BN nanocages and capped nanotubes as anode materials for Magnesium-Ion Batteries: A DFT Study	<b>CORONA Domenico</b>
<a href="#">39_1425</a>	Exsolved bimetallic Ni-Fe catalysts for CO <sub>2</sub> conversion applications	<b>COLOMBO Filippo</b>
<a href="#">40_1565</a>	Ultrafine-grained and nanocrystalline steels with enhanced properties for nuclear energy applications	<b>WEN Haiming</b>
<a href="#">41_1593</a>	Compacted Laser-Induced Graphene with Bamboo-like CNTs for Flexible Energy Storage Electrodes	<b>HYEONG Seok-Ki</b>
<a href="#">42_1628</a>	Nanostructure characterization by transmission electron microscope for energy conversion application	<b>BAIK Hion Suck</b>
<a href="#">43_1638</a>	WO <sub>3</sub> /Ag <sub>2</sub> S type-II hierarchical heterojunction for improved charge carrier separation and photoelectrochemical water splitting performance	<b>YADAV Jyoti</b>

44_1639	Zigzag Ag <sub>2</sub> Se nanorod arrays with ultrahigh room temperature thermoelectric performance	<b>KHAN Jamal</b>
45_1644	Optimizing Concentration-dependent Thermal and Structural Behaviors of Water-in-salt Electrolytes for Wide-temperature-range Electric Double-layer Capacitors	<b>PARK Jaeil</b>
46_1660	Raman analysis of CD/Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene hybrid for supercapacitor application	<b>ASHOK Anamika</b>
47_1669	Revealing chemistry and structure of dual salt-plastic crystals blended with polymer electrolytes affecting the solid-electrolyte interface for high-performance Li metal batteries.	<b>BAE Junho</b>
48_1720	Molecular Engineering to develop 3d and 3d-4f metal based Molecular Ferroelectric complexes and their potential applications in Piezoelectric Energy Harvesting	<b>HALDAR Rajashi</b>
50_1733	High Figure of Merit p-Type Copper(I) Iodide Films with Sulphur Incorporation	<b>MIRZA Adeem Saeed</b>
51_1816	Copper mediated NiFe double-layered hydroxide electrocatalyst for oxygen evolution reaction in photovoltaic-coupled electrochemical cell	<b>CHANDA Debabrata</b>
52_1887	Nanostructured spinel ferrite films in solar energy conversion systems	<b>BOMBACI Matteo</b>
53_2087	Enhancing Thermoelectric and Mechanical Properties of p-type (Bi, Sb) <sub>2</sub> Te <sub>3</sub> through Rickardite Mineral Incorporation	<b>YAHYA OGLU Müjde</b>
54_2127	Synthesis of Pt Double-Walled Nanoframes with Controllable Facets and Their Catalytic Performance toward the Methanol Oxidation Reactions	<b>HADDADNEZHAD Mohammadnavid</b>
55_2184	Engineering of solid-solid interface in Si-Transition Metal Oxide photoanodes	<b>MAURIZIO Chiara</b>
56_2216	Low Temperature Based V <sub>2</sub> O <sub>5</sub> Nano-Spheres for High-Yield Electrodes in Supercapacitor Application	<b>SINGH Arun</b>
57_2225	Microwave-Assisted Reduction of Bimetal/ Graphene Aerogel for Efficient Oxygen Evolution Reaction	<b>KANAT Gizem Hasibe</b>
58_2236	Investigation of Thermal ALD deposited AlO <sub>x</sub> and HfO <sub>x</sub> bilayer films for Silicon Surface Passivation	<b>DEVI Meenakshi</b>

<a href="#">59_2266</a>	Elucidating Molecular-level Charge Storage Mechanisms in Flexible and Organic Nanocellulose/Graphite Battery Electrodes	<b>FOUNTA Evangelia</b>
<a href="#">60_2290</a>	Fabrication of $\beta$ -Ga <sub>2</sub> O <sub>3</sub> nanowires via aerosol-assisted chemical vapor deposition	<b>CHEN Ruizhe</b>
<a href="#">61_2329</a>	Nanostructured 3D mesoporous $\alpha$ -Fe <sub>2</sub> O <sub>3</sub> Nano-cubes as a high-performance electrode for supercapacitors.	<b>SINGH Umisha</b>
<a href="#">62_2374</a>	Phase equilibria and solubility limits in the B-Ce-Fe-Nd system	<b>DE VILLOUTREYS Eloi</b>
<a href="#">63_2534</a>	Structural Analysis for Maximum Energy Yield of Soundproof Photovoltaics	<b>JANG Hongjun</b>
<a href="#">64_2559</a>	Nano-hierarchical Metal-Organic Frameworks for Enhanced Dew Harvesting Efficiency	<b>KABI Prasenjit</b>
<a href="#">65_2573</a>	Process-structure-property relationships of pulse-laser-deposited ZnFe <sub>2</sub> O <sub>4</sub> thin film photoelectrodes for solar water splitting	<b>SHRIQUI Yarden</b>
<a href="#">66_2621</a>	Mechanically enhanced performance of textile triboelectric nanogenerators; a sustainable way forward.	<b>HUMAYOUN Usama Bin</b>
<a href="#">67_377</a>	Transition Metal Dopants on Graphitic Carbon Nitride (g-C <sub>3</sub> N <sub>4</sub> ) for Electrocatalytic Carbon Dioxide Reduction Reaction	<b>HSU Yao-Jane</b>
<a href="#">68_2718</a>	Novel materials for Metal Additive Manufacturing (MAM) technologies	<b>ROSE RO ROMO James Janderson</b>
<a href="#">69_570</a>	The Perovskite Band Gap Engineering For Photostimulated Water Splitting	<b>KOTOMIN Eugene</b>
<a href="#">70_1304</a>	Eco-friendly Solvents for Organic Photovoltaics	<b>CHEUNG Aidan</b>

Friday June 2

D1\_15

## Water splitting/HER OER 6

Chairperson(s) : RICCI Pier Carlo

Cassin (Ground floor)

08:45	319	INV	Tailoring oxygen evolution performances of carbon nitride systems fabricated by electrophoresis through Ag and Au plasma functionalization	RIZZI Gian Andrea
09:15	17		Facile Electron Transfer in Atomically Coupled Heterointerface for Accelerated Oxygen Evolution	IBRAHIM Kassa Belay
09:30	572		Hydrogen and Oxygen Evolution Reactions on stepped SrTiO <sub>3</sub> surface.	MASTRIKOV Yuri A.
09:45	548		Boosting the Hydrogen Evolution Reaction Kinetics of CdS Nanorods via Integration of ZIF-67 Derived Co-C Nanostructures and 2D WS <sub>2</sub> Nanosheets	VARMA Pooja

Friday June 2

D2\_15

## Transparent Materials 1

Chairperson(s) : DOLCET SADURNÍ Marc

Boston (1st floor)

08:45	1987	INV	Chemical Control of Correlated Metals as Transparent Conductors	ALARIA Jonathan
09:15	1697		Transparent conductive n-ZnO polycrystalline layers fabricated by RF magnetron sputtering in methane ambient	NAZAROV Alexei
09:30	1799		Tuning Graphene Oxide electrical properties through low-temperature thermal annealing	VALENTINI Cataldo
09:45	699		Development of a two-step process based on ultrasonic spray pyrolysis to optimize optical and electrical properties of ZnMgAlO	EL BERJALI Wafae



Friday June 2

D1\_16

## Water splitting/HER OER 7

Chairperson(s) : RIZZI Gian Andrea

Cassin (Ground floor)

10:30	1872	INV	Transition metal oxide core-shell nanoparticles as a new approach to design efficient OER electrocatalysts for the H <sub>2</sub> production by water electrolysis	MAKARCHUK Iryna
11:00	855		Highly N doped carbon shell-encapsulated Cobalt iron nano cube as efficient for hydrogen evolution reaction	LEE Ui Young
11:15	1850		Efficient oxygen evolution reaction catalyzed by Ni/NiO nanoparticles produced by pulsed laser ablation in liquid environment	IACONO Valentina
11:45	2086		Optimized electroless deposition of NiCoP electrocatalysts for enhanced water splitting	BATTIATO Sergio

Friday June 2

D2\_16

## Transparent Materials 2

Chairperson(s) : ALARIA Jonathan

Boston (1st floor)

10:30	2094	INV	Preparation and characterization of SbSeI thin films	DOLCET SADURNÍ Marc
11:00	2142		Wafer-scale tunable porous Ge: Emerging engineered substrate for epitaxial growth of freestanding membranes	HANUS Tadeas
11:15	2243		Fast switching kinetics of silver nanowires-based transparent electrode films: A comparison of various electrochromic materials	AMBREEN Ambreen
11:30	1652		ALD of conformal, transparent conducting BaSnO <sub>3</sub> passivation layers on textured Si	MANDOL Bireswar
11:45	2521		Hydrogel based stretchable and self-healing triboelectric nanogenerator	BAGCHI Biswajoy





European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM E

Carbon- and/or nitrogen-containing thin films and nanomaterials

*Symposium Organizers:*

Jean-François PIERSON, Institut Jean Lamour, Nancy, France

Carla BITTENCOURT, University of Mons, Belgium

Eloisa SARDELLA, CNR - NANOTEC, Bari, Italy

Sigitas TAMULEVICIUS, Kaunas University of Technology, Lithuania



**Monday May 29**

**E01**

## **Sensors 1**

**Chairperson(s) : PIERSON Jean-François - SARDELLA Eloisa**

**Madrid 2 (Ground floor)**

<b>10:30</b>	<b>2320</b>	<b>INV</b>	Functional and responsive thin polymer films deposited from initiated chemical vapor deposition	<b>COCLITE Annamaria</b>
<b>11:00</b>	<b>42</b>		Preparation of bio-based carbon nanomaterials via plasma arc discharge and their application as humidity sensors	<b>ABBEL Robert</b>
<b>11:15</b>	<b>427</b>		The use of Carbon Black fillers in epoxy-based nanocomposites for moisture detection	<b>FAUCHE Rémy</b>
<b>11:30</b>	<b>2700</b>		Developing novel conductive MOFs for chemiresistive greenhouse gas sensors	<b>FORT GRANDAS Ignasi</b>
<b>11:45</b>	<b>1849</b>		Sensing molecules with metal-organic framework functionalised graphene transistors	<b>KUMAR Sandeep</b>

**Monday May 29**

**E02**

## **Monolayer and multilayer C-based materials**

**Chairperson(s) : BITTENCOURT Carla - SCHNEIDER Grégory**

**Madrid 2 (Ground floor)**

<b>13:30</b>	<b>2803</b>	<b>INV</b>	From polycyclic aromatic hydrocarbons to two dimensional devices: nanopores, nanogaps and fuel cells	<b>SCHNEIDER Grégory</b>
<b>14:00</b>	<b>1079</b>		Conductance of electrostatic wire junctions in bilayer graphene	<b>SERRA Llorenç</b>
<b>14:15</b>	<b>1282</b>		Functionalization and exfoliation of graphite with low temperature pulse plasma in distilled water	<b>FONTANA Sebastien</b>
<b>14:45</b>	<b>1418</b>		Influence of the functionalization treatment on thermal conductivity and stability of carbon-based nanofluids.	<b>PAVÍA Mauricio</b>
<b>15:15</b>	<b>1275</b>		Deformation response mechanism and transfer process of GO stack film under gradient humidity	<b>ZHAO Yue</b>

15:30	2405	Semiconducting Graphene Nanoribbons based on Edge-Directed Self-Assembly of Block Copolymer	JIN Hyeong Min
15:45	2203	A novel and large-scale rapid green synthesis of few-layer and multi-layer graphene	NOWDURU Ravikiran

**Monday May 29**  
**E\_P**  
**Poster session**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

01_98	Study of boron doped silicon nanocrystals embedded in amorphous SiNx Matrix	BOURIDAH Hachemi
02_207	Growth of high quality GaN-based LED on boron nitride nanotube as a heat sinking layer	SEO Tae Hoon
03_217	Nondestructive visualization of grain boundaries in monolayer two- dimensional materials by assembling and disassembling of stacked bilayer	MOON Ji-Yun
04_341	Study of electrophilic surface functional groups on ageing amorphous carbon films using immersion IRRAS	RAEV Vitaly
05_424	Oxidation of Wear Resistant Multilayer Nanolaminate Coating Based on (TiAlCrSiY) N / (TiAlCr)N for cutting tools During dry cutting and Annealing	VAKHRUSHEV Valdimir
06_459	Features of tribooxidation of a high - entropy coating (AlCrZrTiTa)N during dry high-speed cutting	KONOVALOV Egor
07_477	Tailored electrode architectures based on carbon nitride functionalized with cobalt and cobalt-iron oxides for water splitting applications	GASPAROTTO Alberto
08_511	Biocompatibility Experiments of Albumin & Fibrinogen on Conductive Metal Nitride Nanocomposites	ODUTOLA Tamara
09_693	Graphene-manganite structures for magnetic sensors applications	JANKAUSKAS Šarunas
10_753	The electronic and dielectric properties of SrTiO3 perovskite crystals with oxygen vacancies and nitrogen impurities: First principles simulations	RUSEVICH Leonid

11_762	Properties of Silver Nanoparticles Partially Imbedded Carbon Nanowalls	<b>KIM Chulsoo</b>
12_786	Highly Conductive and Printable Elastic Composite Films using Single-walled Carbon Nanotube-embedded Silver Nanoparticles	<b>LEE Geon-Woong</b>
13_803	Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> /TiO <sub>2</sub> /CuO nanocomposite-based gas sensors with high- performance ethanol sensing at room temperature	<b>MING ZHOU Ming</b>
14_901	Cathodic arc synthesis of CrSiCN protective coatings used for stainless steel improved performance in industrial woodworking application	<b>CONSTANTIN Lidia Ruxandra</b>
15_1099	Reduced graphene oxide thin films thickness dependency for Chemical warfare agents detection	<b>BITRI Nabila</b>
16_1127	Transient absorption spectroscopy quality study of graphene grown on a seeding layer of nickel	<b>MONSHI Marjan</b>
17_1130	Enhanced photoelectroactivity of hydrothermally annealed titania nanotubes covered with melamine derived C <sub>3</sub> N <sub>4</sub> nanomaterial	<b>MASZCZAK Agata</b>
18_1163	Tuneable Plasmonic and Luminescent Properties of Laser-Synthesized Carbon-Based Nanocomposites	<b>RYABCHIKOV Yury</b>
19_1165	Characteristics of high entropy alloy thin films grown by pulsed laser deposition	<b>CRACIUN Valentin</b>
20_1289	A Microscopic and Spectroscopic Approach on the Inhibition of Fibrillation of Single Amino Acids and Amino Acid Derivatives in Presence of Cellulose Nanocrystals.	<b>LAYEK Souvik</b>
21_1331	The prediction of coating microstructure in plasma spray process	<b>BENOUMSAAD Kamel</b>
22_1344	numerical and theoretical study of different structures of the cis-trans transition of substituted octadecanona-ene by dft and mp2 (td-mp2) methods	<b>BOUZAHER Yassine</b>
23_1488	Microwave electromagnetic properties of epoxy composites with nanocarbon/Co <sub>3</sub> O <sub>4</sub> filler	<b>VOVCHENKO Ludmila</b>
24_1510	Melt growth of bulk tris(8-quinoline) aluminium single crystal	<b>AVETISOV Igor</b>
25_1570	Chemical inhomogeneity Evaluation of PS-b-PMMA Thin Films by X-ray Scattering and s-SNOM Analysis	<b>AHN Hyungju</b>

26_1607	The effect of solvent combinations on coating solution of epoxy-acrylate and SiNx deposited hybrid film for moisture barrier properties	<b>KIM Kiho</b>
27_1668	Ti3C2Tx MXene/cellulose nanocrystal (CNC) composite film for high-performance supercapacitors	<b>YUK Seoyeon</b>
28_1745	Large-scale Synthesis of 3D Nanonetworked Silica Film for Polymer-free Drug-eluting Stent	<b>JEON Eunyoung</b>
29_1772	Nanoscale morphology and sensor properties of a-CN <sub>x</sub> thin films deposited by magnetron plasma enhanced chemical vapor deposition	<b>NAZAROV Alexei</b>
30_1858	Solvent Driven Optical features variations of Selective Enrichment of Single Walled Carbon Nanotubes Dispersions by Flavin Surfactant	<b>HWANG Seongjoo</b>
31_1860	A novel multilayered surface-functionalized microneedle platform for local gene delivery	<b>GONZÁLEZ-SÁENZ Patricia</b>
32_1877	Multi-Band Photoluminescence of Silicon Nitride Nanocomposites for Optical Nanothermometry	<b>RYABCHIKOV Yury</b>
33_2049	The use of a novel biographene for glucose detection in biological fields	<b>GOURNIS Dimitrios</b>
34_2118	Electrochemical detection of neurotransmitters using microelectrodes based on electropolymerized organic polymers	<b>CHILIBON Irinela</b>
35_2167	Intra-architecture of molecular nanotubes	<b>KRISHNASWAMY Sundar Raj</b>
36_2191	Controlled molecular doping of artificial light-harvesting complexes for photoluminescence localization	<b>KUEVDA Aleksei, V.</b>
37_2262	DFT computational studies of interatomic interactions in cellulose-carbon nanocomposite materials	<b>NEDILKO Sergii</b>
38_2268	Solidification dynamics of two molten droplets in plasma spray forming process	<b>BENOUMSAAD Kamel</b>
39_2366	Obtaining of gadolinium endofullerenes	<b>AKHANOVA Nazym</b>
40_2640	A novel reduced graphene oxide/carbon dots/graphitic carbon nitride (rGO/CDs/g-C <sub>3</sub> N <sub>4</sub> ) nanocomposite for CO <sub>2</sub> detection using microwave resonators	<b>OBREJA Alexandru Cosmin</b>
41_2805	Development of multifunctional coatings for dental implants	<b>FERNANDES CARVALHO Sandra Maria</b>



**Tuesday May 30**

**E03**

**Nitride thin films & nanomaterials**

**Chairperson(s) : TAMULEVICIUS Sigitas**

**Madrid 2 (Ground floor)**

<b>10:00</b>	<b>1993</b>	Non-reactive magnetron sputtering of Ti-Al-N coatings	<b>HAJAS Balint Istvan</b>
<b>10:15</b>	<b>908</b>	Sputter-based preparation of plasmonic and photoluminescent ZrN nanofluids	<b>SHUKUROV Andrey</b>
<b>10:30</b>	<b>689</b>	Ge nitrides as perspective cheap host materials for other thin film nitrides: Growth, chemistry and properties	<b>CICHON Stanislav</b>
<b>10:45</b>	<b>1552</b>	Effect of the substrate temperature on the depth concentration profile of reactively sputtered ZnGeN <sub>2</sub> thin films.	<b>PIERSON Jean-François</b>
<b>11:00</b>	<b>717</b>	Correlation between crystallization and oxidation process in ScN films, effect on microstructure, optical and vibrational properties	<b>MORE-CHEVALIER Joris</b>
<b>11:30</b>	<b>316</b>	Using the cluster route to prepare nanometric transition metal nitrides and carbides	<b>TESSIER Franck</b>
<b>11:45</b>	<b>2052</b>	Fabrication of High-Quality Refractory Titanium Nitride Nanostructures	<b>PANOS Stavros</b>

**Tuesday May 30**

**E04**

**Carbon nanomaterials**

**Chairperson(s) : BITTENCOURT Carla - SARDELLA Eloisa**

**Madrid 2 (Ground floor)**

<b>13:30</b>	<b>186</b>	<b>INV</b> Mitigation of the impact of carbon nanomaterials through surface chemistry modifications	<b>FLAHAUT Emmanuel</b>
<b>14:00</b>	<b>99</b>	Highly selective partitioning of complex mixtures of single-walled carbon nanotubes	<b>JANAS Dawid</b>
<b>14:15</b>	<b>2010</b>	Selforganization of carbonaceous nanoparticles over polymer interface	<b>SARKAR Jayati</b>

14:30	2174	Probing the electrical properties of graphene and hexagonal boron nitride multi-layers at nanoscale via Scanning Probe Microscopy techniques	KLASEN Alexander
14:45	2673	In-situ Synthesis of Nanodiamond on polyester fabric Surface	CHANDRAKAR Karan

**Tuesday May 30**

**E05**

**Hybrid materials**

Chairperson(s) : FLAHAUT Emmanuel

**Madrid 2 (Ground floor)**

15:00	232	Trimetallic Oxides/GO Composites Optimized with Carbon Ions Radiations for Supercapacitive Electrodes	ALSHOAIBI Adil
15:15	2462	Preparation of atomic layer deposition alumina/graphene porous hybrids with high adsorption capacity of Congo red	VIGOLO Brigitte
15:30	680	Novel SiOxNy protective coatings with aligned carbon nanotubes network	SHMAGINA Elizaveta
15:45	334	Thermal and light-induced electrical properties in nanocomposites of reduced graphene oxide and silver nanoparticles	GURUNG Sweta

**Tuesday May 30**

**E06**

**Carbon-based thin films 1**

Chairperson(s) : FERNANDES CARVALHO Sandra Maria

**Madrid 2 (Ground floor)**

16:30	2104	Nano indentation mechanical testing of Boron Carbonitride	JAHN Yarden
17:00	705	Low-temperature spin arrangement in magnetic MAX phase Mn <sub>2</sub> GaC thin film - NMR study.	WOJCIK Marek
17:15	704	Carbon superstructure formed by the preferential site penetration in Mn <sub>5</sub> Ge <sub>3</sub> C <sub>0.5</sub> epitaxial films	JEDRYKA Ewa
17:30	2340	Pt carbide formation during graphitic carbon growth studied using in situ TEM	NERL Hannah

<b>17:45</b>	<b>2725</b>	Effect of different thickness of copper nanolayer on nucleation of CVD diamond	<b>SHAHSAVARI Fatemeh</b>
<b>18:00</b>	<b>808</b>	Synthesis and application of carbon nitride film and nanomaterials deposited on metal substrates	<b>SONG Zihan</b>
<b>18:15</b>	<b>791</b>	The role of C/N ratio in corrosion behavior of TiSi-based carbonitrides obtained by cathodic arc evaporation	<b>VLADESCU (DRAGOMIR) Alina</b>

Wednesday May 31

E07

## Carbon-based thin films 2

Chairperson(s) : SARDELLA Eloisa - TAMULEVICIUS Sigitas

Madrid 2 (Ground floor)

10:00	2295	INV	Carbon- & Nitrogen-containing Nanostructured Thin Films for Health and Medical Devices	MANTOVANI Diego
10:30	1393		Diamond like carbon film wettability control: superhydrophilic and highly hydrophobic surfaces	MEŠKINIS Šarunas
10:45	2342		An Insight Into Improved Mechanical and Thermal Stability of a-C:H:Si:O coatings	CAVALEIRO Albano
11:00	1111		Influence of molybdenum concentration on the microstructure and tribological properties of diamond like carbon thin films	ZHAIRABANY Hassan
11:15	1187		Industrial Deposition of Hard and Moderately Ductile Coatings: Properties and Process Modelling	VAŠINA Petr
11:30	1909		Experimental and numerical investigation of a low-temperature/large-area microwave process based on distributed antenna array plasma used for nanocrystalline diamond film synthesis	MAHI Chaimaa
11:45	2601		Molecular dynamics simulations of hydrocarbon film deposition in an Ar/CH <sub>4</sub> low-pressure plasma	OTAKANDZA KANDJANI Glenn Christopher

Wednesday May 31

E08

## Carbon-based nanomaterials for energy applications

Chairperson(s) : MANTOVANI Diego - PIERSON Jean-François

Madrid 2 (Ground floor)

13:30	723	INV	Carbon-nitrogen cold-plasma-deposited nanomaterials – a new step forward in photocatalysis	FRONCZAK Maciej
14:00	1299		Hybrids cobalt-based catalysts and carbon nitride/carbon quantum dots for the catalytic oxidation of water into dioxygen.	AVIGNON Frédéric

14:15	2401	Mesoporous Carbon Thin Films as Electrocatalyst Support for the Oxygen Evolution Reaction	WAGNER Lysander Quentin
14:30	290	Remarkable CO <sub>2</sub> photoreduction and photoelectrochemical water-splitting performance using narrow bandgap carbon-rich carbon nitride nanosheets	CHAULAGAIN Narendra
14:45	970	Near-percolation Nanodielectrics of Conductive Carbon-based Nanoparticles for High-voltage Structural Composite Capacitors	WINDEY Ruben
15:00	1255	Carbon model electrodes for the kinetics investigation of vanadium redox couples	COSTA DE OLIVEIRA Maida Aysla
15:15	749	Conformal carbon nitride thin film inter-active interphase heterojunction with sustainable carbon enhancing sodium storage performance	EREN Enis Oguzhan
15:30	1950	Synthesis of CoxPy-based carbon composite nanofibers as a lithium-storage anode using polyvinylpyrrolidone as a carbon source	BERIKBAIKYZY Samal
15:45	1657	Liquid crystalline Ti <sub>3</sub> C <sub>2</sub> T <sub>x</sub> MXene fiber-electrodes for flexible supercapacitors	KIM Seulgi

**Wednesday May 31**

**E09**

## **Carbon-based nanomaterials for bio applications**

**Chairperson(s) : TAMULEVICIUS Sigitas**

**Madrid 2 (Ground floor)**

16:30	2341	INV	How carbon-based matrix determines the functional behaviour of antimicrobial nanomaterials?	FERNANDES CARVALHO Sandra Maria
17:00	663		SiOCH-based plasma surface functionalization of photocatalytic metal oxides for antimicrobial applications	NAVASCUÉS Paula
17:15	1946		Detection of carbon-containing micro- and nanoplastic materials in carbon-rich biological matrices for biomedical applications	SARAU George
17:30	1852		Laser synthesis of nanometric-sized silicon carbide and nanodiamonds containing silicon vacancy centers	PICCOLI Alessandro
17:45	54		Bioresource-Derived Colloidal Nitrogen-Doped Graphene Quantum Dots as Ultrasensitive and Stable Nanosensors for Cancer and Neurotransmitter Biomarkers	CHEN Yan-Yi

Thursday June 1

E10

## Thin Films and Nanomaterials 1

Chairperson(s) : PIERSON Jean-François

Madrid 2 (Ground floor)

10:00	2402	INV	Nanocomposites and polymer thin films: from gas phase synthesis to functional applications	FRANZ Faupel
11:00	513		Carbon Nitride Thin Films: an Innovative Platform for Energy Conversion and Storage	GIUSTO Paolo
11:15	878		Performance Enhancement of P3HT:PCBM Polymer Solar Cell by Doping with Phosphorus Doped Carbon Dots Additive	KIRBIYIK KURUKAVAK Çisem
11:30	2235		NH <sub>3</sub> -induced activation of atomically dispersed Fe-N-C cubic nanobox for enhanced oxygen reduction reaction	WU Bin
11:45	720		High Performance Zinc Ion Capacitor Enabled by Pseudocapacitance of Doped Nitrogen Active Sites	LIU Kunlun

Thursday June 1

E11

## Sensors 2

Chairperson(s) : COCLITE Annamaria - TAMULEVICIUS Sigita

Madrid 2 (Ground floor)

13:45	2489		Laser-induced graphene functionalised with carboxymethyl cellulose for real-time ambient sensing of volatile organic compounds	HOQUE Md Khairul
14:00	1369		Controlled growth of 1D TiO <sub>2</sub> nanotubes and their coupling with reduced graphene oxide for efficient sensing applications	GALSTYAN Vardan
14:15	2023		Quick large-area detection of thin silicone films with Coherent-Anti Stokes Raman Scattering (CARS) Microscopy	NASER Julian
14:30	2156		Room temperature sensing of volatile organic compounds using hybrid SnO nanoflower and Laser-Induced Graphitic carbon devices.	MURRAY Richard

Thursday June 1

## E12

### Optical, electrical and thermal applications

Chairperson(s) : BITTENCOURT Carla

Madrid 2 (Ground floor)

15:00	2020	Exploring the Complex Structure and Luminescent Properties of Nitrogen-doped Carbon Dots via Optical and Nuclear Magnetic Resonance Spectroscopies	OLLA Chiara
15:15	2399	Thermal and electrical properties of nanographene-coated mesoporous silicon	NAR Sibel
15:30	992	Photoresponse enhancement of C nanofiber-based photodetector on CuNi nanoparticle inclusion	SHUKLA Shivam
15:45	1856	Microelectronic technology on patterned ultra-thin reduced graphene oxide films.	MAJUMDER Sudarsan

Thursday June 1

## E13

### Thin Films and Nanomaterials 2

Chairperson(s) : PIERSON Jean-François

Madrid 2 (Ground floor)

16:30	482	Exploration of Cu functionalized MXene in aqueous urea adsorption	YEN Zhihao
16:45	974	Tailoring the photophysics of atomically-precise distorted nanographenes by structural engineering	REALE Marco
17:00	665	In situ actuation of Gallium liquid metal alloys on polypyrrole coated electrodes	BHAGWAT Sagar









European Materials Research Society

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## SYMPOSIUM F

Smart materials for nanoelectronics and nanophotonics

*Symposium Organizers:*

Yogendra Kumar MISHRA, University of Southern Denmark

Dawid JANAS, Silesian University of Technology, Poland

Maksym KOVALENKO, ETH Zurich, Switzerland

Teresa MONTEIRO, University of Aveiro, Portugal



**APL Machine  
Learning**

**Monday May 29**

**F01**  
**Plasmonics 1**

**Chairperson(s) : MISHRA Yogendra Kumar - SHARMA Sunny**

**OPS (Ground floor)**

<b>08:45</b>	<b>758</b>	<b>INV</b>	Silicon nanowires: synthesis and characterization of the plasmonic properties	<b>PUGLISI Rosaria Anna</b>
<b>09:30</b>	<b>1221</b>		Selective IR emitters based on plasmonic metasurfaces - design and fabrication	<b>CRISTEA Dana</b>
<b>09:45</b>	<b>1360</b>		Self-Assembled Au Nanoparticle Monolayers on Silicon in Two- and Three-Dimensions for SERS Sensing	<b>BARTSCHMID Theresa</b>

**Monday May 29**

**F02**  
**Plasmonics 2**

**Chairperson(s) : MISHRA Yogendra Kumar - PUGLISI Rosaria Anna**

**OPS (Ground floor)**

<b>10:30</b>	<b>534</b>	<b>INV</b>	Periodic Arrays of Epitaxially Aligned Atomically Flat Single-Crystal Gold Nanoplates	<b>NERETINA Svetlana</b>
<b>11:00</b>	<b>712</b>		Plasmonic nanoparticles growth in polymeric thin films in situ monitored by spectroscopic ellipsometry	<b>KFOURY Patrick</b>
<b>11:30</b>	<b>2618</b>		Probing into the plasmonic effect on surface reactions of Au clusters on CeO <sub>2</sub> and UO <sub>2</sub> single crystals and thin films	<b>IDRISS Hicham</b>
<b>11:45</b>	<b>2847</b>	<b>INV</b>	Charge transport mechanisms in printed thin films based on two-dimensional materials	<b>TORRISI Felice</b>

**Monday May 29**

**F03**  
**Plasmonics 3**

**Chairperson(s) : AVASTHI Devesh Kumar - PUGLISI Rosaria Anna**

**OPS (Ground floor)**

<b>13:00</b>	<b>2853</b>	<b>INV</b>	Nanoengineered Surfaces for Functional Applications: Self-Cleaning/Wetting Control / SERS-PIERS	<b>AKTAS Oral Cenk</b>
<b>13:30</b>	<b>2279</b>	<b>INV</b>	Smart materials based on metallic nanowires: a brief overview	<b>BELLETT Daniel</b>
<b>14:00</b>	<b>2710</b>		Plasmonic effect of aluminum nanoparticles elaborated by self assembling method	<b>LACHEBI Ines</b>
<b>14:15</b>	<b>1358</b>		Bimetal Ag/Cu/PEG plasmonic nanofluids prepared by sputter-based gas aggregation cluster sources	<b>BILIAK Kateryna</b>
<b>14:30</b>	<b>1033</b>		Nanostructured dielectric metasurfaces and plasmonic displays via controlled fluid Instabilities	<b>DASGUPTA Tapajyoti</b>
<b>14:45</b>	<b>2083</b>		Rh in the Gap: Maximizing E-Field Enhancement Within Nanorod Heterodimers	<b>PIASKOWSKI Joshua</b>

**Monday May 29**

**F04**  
**Plasmonics 4**

**Chairperson(s) : AVASTHI Devesh Kumar - SHARMA Sunny**

**OPS (Ground floor)**

<b>15:00</b>	<b>123</b>	<b>INV</b>	Friend or foe: Unraveling the SiO evolution reaction and how it impacts silicon quantum formation	<b>VEINOT Jonathan</b>
<b>15:30</b>	<b>955</b>		Modulation of optical properties in self-assembled Carbon dot-Plasmonic functional nanohybrids	<b>REALE Marco</b>

**Monday May 29**

**F05**

**2D Materials**

**Chairperson(s) : JANAS Dawid - MISHRA Yogendra Kumar**

**OPS (Ground floor)**

<b>16:30</b>	<b>535</b>	<b>INV</b>	Liquid metals for harvesting low dimensional materials	<b>KALANTAR-ZADEH Kourosh</b>
<b>17:00</b>	<b>130</b>		Liquid metal-based synthesis of high mobility 2D semiconductors	<b>DAENEKE Torben</b>
<b>17:15</b>	<b>642</b>		Ternary Mixed Metal Thiophosphate (FexMnyNiz)2P2S6 (x + y + z = 1) - Study of structural evolution and tuning of physical properties.	<b>CHATURVEDI Apoorva</b>
<b>17:30</b>	<b>848</b>		Intrinsic ionic superlattices in two-dimensional DJ-phase oxide perovskites	<b>CHO Kyungjune</b>
<b>17:45</b>	<b>1118</b>		De-wrinkling the 2D black phosphorus using electron beam irradiation	<b>KAUR Manpreet</b>
<b>18:00</b>	<b>1137</b>		First Principle Investigation of Strain Induced Electronic Properties of Janus MoSeTe Monolayer	<b>SINGH Sanjai</b>
<b>18:15</b>	<b>2257</b>		3D-Heterostructuring via Mechanochemical Reshuffling of Layered and Non-Layered 2D - Metal Chalcogenides.	<b>BALEMA Viktor</b>

**Tuesday May 30**

**F06**

## **Electronic Applications 1**

**Chairperson(s) : PUGLISI Rosaria Anna - SRIVASTAVA Sanjeev Kumar**

**OPS (Ground floor)**

<b>10:00</b>	<b>1503</b>	<b>INV</b>	2D materials in back-gate field effect transistors: electric transport and photoresponse	<b>DI BARTOLOMEO Antonio</b>
<b>10:30</b>	<b>960</b>		Electrical Transport in Monolithic Al-Si/Al-Ge Heterojunction based Nanowire Schottky Barrier Field-Effect Transistors	<b>SISTANI Masiar</b>
<b>10:45</b>	<b>282</b>		Integrated photodetectors for compact Fourier-transform waveguide spectrometers	<b>GROTEVENT Matthias J.</b>
<b>11:00</b>	<b>711</b>		Reconfigurable Silicon Transistors with Single-Elementary Metal Contacts for Complementary and Combinational Logic	<b>BEHRLE Raphael</b>
<b>11:30</b>	<b>493</b>		Tin-based phases distribution along silicon nanowires matrix	<b>LIU Poting</b>
<b>11:45</b>	<b>2187</b>		Excellent Ferroelectric and Long Retention Response in $\beta$ -PVDF thin film Prepared by Direct Heat-Controlled Spin Coating	<b>MALIK Pinki</b>

**Tuesday May 30**

**F07**

## **Electronic Applications 2**

**Chairperson(s) : PUGLISI Rosaria Anna - SHARMA Sunny**

**OPS (Ground floor)**

<b>14:00</b>	<b>496</b>		Green Electrically Conductive Textile with Tunable Piezoresistivity and Transiency	<b>CATALDI Pietro</b>
<b>14:15</b>	<b>348</b>		Molecular Engineering Improves Thermoelectric Performance of Carbon Nanotubes/p-Conjugated Organic Small Molecule Hybrids	<b>KIM Tae-Hoon</b>
<b>14:30</b>	<b>312</b>		Controlling Liquid Crystal Topological Defects on Fixed Boojum Colloidal Arrays via Capillary-Assisted Particles Assembly	<b>YUN Hee Seong</b>



**Tuesday May 30**

**F08**

## **Nanomaterials growth**

**Chairperson(s) : JANAS Dawid - MISHRA Yogendra Kumar**

**OPS (Ground floor)**

<b>15:00</b>	<b>587</b>	<b>INV</b>	Square Tin Dioxide Nanotubes: Synthesis, Structure, and Devices	<b>ALLEN Martin</b>
<b>15:30</b>	<b>1451</b>		Optical and electrical properties of magnetron sputtered CrN films for thermoelectric devices	<b>BULIR Jiri</b>
<b>15:45</b>	<b>2003</b>		Improved low temperature sinter bonding using Ag nanocube superlattices	<b>GOUGEON Julie</b>

**Tuesday May 30**

**F09**

## **Electronic Applications 3**

**Chairperson(s) : SHARMA Sunny - SRIVASTAVA Sanjeev Kumar**

**OPS (Ground floor)**

<b>16:30</b>	<b>2434</b>	<b>INV</b>	Phase transition in atomically thin structures for memristive devices	<b>SONG Peng</b>
<b>17:00</b>	<b>907</b>		Ag-PEG nanofluid – a versatile medium with memristive properties	<b>NIKITIN Daniil</b>
<b>17:15</b>	<b>543</b>		Immobilizing polyoxovanadates on surfaces as molecular memristors	<b>MOORS Marco</b>
<b>17:30</b>	<b>2716</b>		Polyoxometalate memories fabricated with coplanar nanogap electrodes	<b>GEORGIADOU Dimitra</b>
<b>18:00</b>	<b>1131</b>		In-situ TEM Observation of Filament Formation in Twined Copper Oxide Nanowire for Resistive random-access memory	<b>HUNG Ching-Heng</b>
<b>18:15</b>	<b>1387</b>		HfO <sub>2</sub> -based memristive devices for neuromorphic networks that learn from mistakes	<b>NIKIRUY Kristina</b>

**Wednesday May 31**

**F10**

**Energy/Sensors 1**

**Chairperson(s) : KUMAR Vipin - MISHRA Yogendra Kumar**

**OPS (Ground floor)**

10:00	2850	INV	Engineering photocatalytic 2D systems using Atmospheric pressure plasma jet for wastewater treatment	KRISHNAMURTHY Satheesh
10:30	141		Advanced Characterization of SnO <sub>2</sub> and TiO <sub>2</sub> Nanomaterials for Energy Applications	KAVAN Ladislav
10:45	1786		Low cost, high yield zinc oxide based nanostars for alkaline overall water splitting	DI MARI Gisella Maria
11:00	1683		Cost-effective spray coating of graphene ink for smart antifog substrates in sustainable greenhouse applications	LEONARDI Antonio Alessio
11:15	2731		One pot synthesis of Cu@M (M=Ni, Sn) bimetallic core-shell nanowires for a new generation of transparent electrodes	KRIZAN Andela
11:30	2018		A new platform based on MoTe <sub>2</sub> (1-x)Se <sub>2x</sub> alloy and functionalized with EGaIn nanoparticles for H <sub>2</sub> gas sensing	GORDILLO Nuria
11:45	750		Publishing for Impact: A guide to peer review and tips & tricks to make your paper stand out	ALLEN Jeremy

**Wednesday May 31**

**F11**

**Energy/Sensors 2**

**Chairperson(s) : KUMAR Vipin - PUGLISI Rosaria Anna**

**OPS (Ground floor)**

13:30	641	INV	Tetrapods based Smart Materials for Advanced Technologies	MISHRA Yogendra Kumar
14:00	354		Novel Nanoporous Gold Organic Hybrid Materials for Photocatalytic Oxidation Reactions	WITTSTOCK Arne
14:15	559		Enhanced the selectivity and sensitivity of SnO <sub>2</sub> -rGO nanocomposites synthesized from sol-gel for NO gas sensors	SINGH Vishal

14:30	2240	Metal Halide Perovskites as Gas Sensing Elements: From Bulk to Micro to Nano	ALEXAKI Konstantina
14:45	2057	Fabrication of MoTeSe alloy based hydrogen gas sensor	TABARES Gema

**Wednesday May 31**

**F12**

## Energy/Sensors 3

Chairperson(s) : AVASTHI Devesh Kumar - SRIVASTAVA Sanjeev Kumar

**OPS (Ground floor)**

15:00	1634	INV	Cu-based nanostructures embedded in transparent and conductive oxides thin films: new plasmonic systems for photovoltaic applications	BOSCARINO Stefano
15:30	1489		Photothermal Application of Plasmonic Titanium Nitride Nanotubes in Solar Steam Generation	AFSHAR Morteza
15:45	2667		Gold nanorods as shape-dependent light-harvesting plasmonic enhancers in perovskite solar cells	CARVALHO Diogo

**Wednesday May 31**

**F\_P**

## Poster session

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

01_75	pH sensing, bioimaging, and Fluorescence lifetime imaging microscopy using polyethyleneimine coated carbon dots and gold nanoparticles	SHWETA PAWAR Shweta
02_1147	Cellulose Acetate-Based Plasmonic Crystals for Surface-Enhanced Raman and Fluorescence Spectroscopy	RICE James
03_1239	Fabrication of Ag nanostructures directly from Piezo Inkjet printed equidistance microdots for surface plasmonics resonance enhancement	AISSA Brahim
04_1257	The influence of the shape and size of gold nanoparticles on their ultrafast plasmon relaxation dynamics	TAMULEVICIUS Sigitas

<a href="#">05_1427</a>	Morphology optimized MoS <sub>2</sub> /Ag nanocomposites based SERS substrates with ultralow detection limits	<b>KAUSHIK Arvind</b>
<a href="#">07_2469</a>	Electron tomography: a powerful method for the characterization of Au chiral nanoparticles.	<b>MYCHINKO Mikhail</b>
<a href="#">08_162</a>	High quantum yield InP based quantum dots synthesis and QD film coating to prevent light pollution	<b>LEE Jeong-Mi</b>
<a href="#">09_202</a>	InP quantum dot adhesive sheet with high dissipating bio-inspired composite 4CL resins	<b>LEE Min-Sang</b>
<a href="#">10_465</a>	Optical Activation of Different Rare-Earth Ions Implanted into AlN Nanowires	<b>CORREIA Maria</b>
<a href="#">11_632</a>	Optimized NiO/ZnS Nanoparticles as a Hole Injection Layer for Enhanced Quantum Dot Light-Emitting Diodes	<b>KIM JungHo</b>
<a href="#">12_635</a>	Highly efficient quantum dots light-emitting diodes with a Zn <sub>0.85</sub> Mg <sub>0.15</sub> O thin films as an electron transport layer by RF sputtering	<b>KIM Bomi</b>
<a href="#">13_1495</a>	Thermoluminescent powder lead material doped with Gd <sup>3+</sup> /Sm <sup>3+</sup>	<b>AVETISOV Igor</b>
<a href="#">14_1787</a>	Ionizing radiation detection and dosimetric applications of Cr-doped Zinc Gallogermanate	<b>BATISTA Maria</b>
<a href="#">15_2037</a>	Impact of functionalization of MoTe <sub>2</sub> (1-x)Se <sub>2x</sub> alloy by EGaIn nanoparticles on its optical properties	<b>MAGRO Raúl</b>
<a href="#">16_2258</a>	Optically active centres in Pr-implanted β-Ga <sub>2</sub> O <sub>3</sub> single crystals	<b>ZANONI Julia</b>
<a href="#">17_2267</a>	Synchrotron-excited luminescence of Zn <sub>2</sub> SiO <sub>4</sub> nanoparticles in ion-implanted silica	<b>BUNTOV Evgeny</b>
<a href="#">18_2291</a>	Luminescent performance of polylactic acid/lanthanide-based metal-organic framework composites	<b>ZANONI Julia</b>
<a href="#">19_2590</a>	Study of passive, active and smart programmable shape memory nanocomposite polymers for 3D printing	<b>GUARNACCIO Ambra</b>
<a href="#">20_170</a>	Strong piezoelectric response in two-dimensional van der Waals layered CuInP <sub>2</sub> S <sub>6</sub> for piezoelectric nanogenerators	<b>IO Weng Fu</b>
<a href="#">21_485</a>	Facile fabrication of tin monoxide and application of bendable memristor	<b>LEE Dong Jin</b>

22_946	Giant photo-amplification in air-stable a-CsPbI <sub>3</sub> nanocrystals / WS <sub>2</sub> 0D / 2D mixed-dimensional phototransistor with asymmetric contacts	<b>DAS Shreyasi</b>
23_1912	Nanoscale probing of surface potential landscape at MoS <sub>2</sub> /BP van der Waals p-n heterojunction	<b>RATURI Mamta</b>
24_2585	Transparent and anti-icing MXene-polymer self-cleaning coatings for solar panels	<b>MARIAM Ezrah</b>
25_278	Characteristics of V doped TiO <sub>2</sub> thin films fabricated by spray coating system for photovoltaic application	<b>PARK Yong Seob</b>
26_830	X-ray absorption spectroscopy study of ZnS:M (M=Mn, Cu) nanoparticles	<b>KUZMIN Alexei</b>
27_846	Comparison of Electroconductive Properties of Silver, Copper-Silver and Copper Nanowire Films	<b>POLYAKOV Boris</b>
28_873	Dispersion kinetics of silver, gold and palladium nanofilms deposited onto oxide materials and annealed in vacuum	<b>STESYUK Tatyana</b>
29_909	Synthesis, characterization and spectroscopic properties of Er, Yb -doped SrTiO <sub>3</sub> ceramics sintered from sol-gel derived powders	<b>TIHON Elena-Cristina</b>
30_922	Investigation of rare earth (Er, Yb) effects on structural, morphological, and optical properties of SrTiO <sub>3</sub> doped ceramics elaborated from sol-gel synthesized nanopowders.	<b>STANCIU Catalina</b>
31_1215	Study of the stabilization of the orthorhombic phase pure ZrO <sub>2</sub> deposited on a Nb:SrTiO <sub>3</sub> substrate with different orientations, using TEM/HRTEM techniques	<b>ISTRATE Marian Cosmin</b>
32_1340	numerical simulation of splat formation dynamics of two molten ceramic particles in plasma spray process	<b>BENOUMSAAD Kamel</b>
33_2278	Bio-Inspired Polymeric Functional Platform for Sensing application	<b>VERMA Gulshan Kumar</b>
34_606	Composition effect of Pd-Au gradient alloy core on hydrogen gas sensing performance of Pd-Au-gr-alloy@ZnO core-shell nanoparticles	<b>TRAN Tuong Van</b>
35_2551	MOF Textile Patch for Humidity Sensing	<b>XU Lulu</b>
36_647	Nickel Coated Silver Core-Shell Nanowires for High Efficient Electromagnetic Interference Shielding	<b>SAHOO Raghunath</b>

<a href="#">38_1487</a>	A new efficient strategy based on light management to improve the broadband photodetector performances	<b>DJEFFAL Faycal</b>
<a href="#">39_1492</a>	A efficient design paradigm of nanoscale junctionless TFET via global and multi-objective optimization approach	<b>DJEFFAL Faycal</b>
<a href="#">40_1794</a>	Relationship between Processing Conditions and Electrical Properties of Single-Walled Carbon Nanotube Networks for Infrared Detectors	<b>SHIBUYA Taizo</b>
<a href="#">41_2264</a>	Quantum study of different structures of the Cis-Trans transition of substituted polyacetylene by different methods: semi empirical AM1+PM6, HF (Ab-initio) and DFT (B3LYP)	<b>MASMOUDI Redha</b>
<a href="#">42_62</a>	A mechanochromic strain sensor of wide working range with angle compensators	<b>NGUYEN Hoang Minh</b>

Thursday June 1

F13

## Synthesis/Characterization 1

Chairperson(s) : PUGLISI Rosaria Anna - SRIVASTAVA Sanjeev Kumar

OPS (Ground floor)

10:00	1523	INV	The Amphipathic Nature of Pristine Graphene Flakes and Short and Thin Pristine Carbon Nanotubes	MILOWSKA Karolina Z.
10:30	2299		Novel self-assembled supramolecular dyads on graphene	KREHER David
10:45	2557		Synergy effects in carbon/magnetic nanoparticles epoxy resin composites	MACUTKEVIC Jan
11:00	1663		Study of Magneto-Electric (M-E) Coupling Effect in Spin Triangle Based Metal (III) Carboxylate $[M_3O(O_2CPh)_6(py)_3] ClO_4 \cdot py$ (M= Fe, Ga) Molecular Nanomagnet.	CHAUHAN Balwant Singh
11:15	233		Influence of Fe and Cu Co-Doping on Structural, Magnetic and Electrochemical Properties of CeO <sub>2</sub> Nanoparticles	ALSHOAIBI Adil
11:30	235		Structural, Electrical and Optical Properties of TM (Mn and Cr) Doped BiFeO <sub>3</sub> Nanoparticles	ALSHOAIBI Adil
11:45	406		Synthesis of palladium nanoparticles using colloid approach	SALDAN Ivan

Thursday June 1

Fbis01

## Photonics/Optoelectronics 1

Chairperson(s) : MISHRA Yogendra Kumar - SHARMA Sunny

Madrid 1 (Ground floor)

10:00	688	INV	Nanoprobes based on 3D GaP nanocones prepared by integration on single mode fibre.	NOVÁK Jozef
10:30	124		Improvement of strained quantum well based on new material ZnSnN <sub>2</sub> /InyGa <sub>1-y</sub> N for optical components applications	AISSAT Abdelkader
10:45	1428		Absorption dominant electromagnetic interference shielding effectiveness of reduced graphene oxide/zinc oxide coated cellulose-based textiles	GUPTA Shivam



11:00	790		Inverted top-emitting red quantum-dot light-emitting diodes on silicon for microdisplay applications	SIM Soobin
11:15	1531		Oxidation in nanocrystalline silicon: spatial resolution, photooxidation, and photoluminescence quenching after laser irradiation	RAMIREZ-PORRAS Arturo
11:30	1963		Synthesis and optical characterization of NIR photoluminescent PbS nanocrystal-based aerogels	PLUTA Denis

Thursday June 1

F14

## Synthesis/Characterization 2

Chairperson(s) : AVASTHI Devesh Kumar - KUMAR Vipin

OPS (Ground floor)

13:30	1526	INV	Solution grown multifunctional ZnO nanostructures: From heterostructured to large-scale efficient growth	GOKARNA Anisha
14:00	1678		Structural, electrical and optical properties of indium-zinc oxide thin films prepared from solutions	KUSCER Danjela
14:15	1707		Synthesis of 3D metal oxide fiber networks using polymer-egg protein electrospun fibers as templates	EVANGHELIDIS Alexandru
14:30	1153		Influence of electrodes on electrical properties of CBVD grown high-k composite ternary oxides.	RANI Rashmi
14:45	1370		High uniform thickness thin film on 450 mm substrates by Chemical Beam Vapour Deposition for smart multi-functional complex oxides	BENVENUTI Giacomo

Thursday June 1

Fbis02

## Photonics/Optoelectronics 2

Chairperson(s) : MISHRA Yogendra Kumar - SHARMA Sunny

Madrid 1 (Ground floor)

13:30	287	INV	Enhancing the Electrical and Optical Properties of Thermochromic VO <sub>2</sub> : The Impact of Nanostructuring and Gold Nanoparticles	SAVORIANAKIS Gregory
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14:00	2218		Thermo- and Electrochromic Properties of Nanostructured Porous Silicon/VO <sub>2</sub> Hybrid Thin Films	VOLK János
14:15	2103		Antireflective structures directly imprinted on chalcogenide glasses	TZADKA Sivan
14:30	1566		One-step printing for high-efficiency metasurfaces down to the deep Ultra violet region	KIM Wonjoong
14:45	1357		Smart radiation fluxes for nanoelectronics and nanophotonics	EGOROV Vladimir

Thursday June 1

F15

### Synthesis/Characterization 3

Chairperson(s) : AVASTHI Devesh Kumar - JANAS Dawid

OPS (Ground floor)

15:00	1763	INV	Engineering hexagonal/monoclinic WO <sub>3</sub> phase junctions for improved electrochemical hydrogen evolution reaction	MINEO Giacometta
15:30	588		All-ceramic Zirconia-Alumina Nanofibers for Durable Passive Daytime Radiative Cooling	CHEN Tai-Chi

Thursday June 1

Fbis03

### Photonics/Optoelectronics 3

Chairperson(s) : BENIWAL Ajay - MISHRA Yogendra Kumar

Madrid 1 (Ground floor)

15:00	460	INV	New Emissive Organic-Inorganic Hybrid Nanomaterials Based on Organic Fluorophores Grafted onto Nanocrystals	MARGEAT Olivier
15:30	1864		Spectroscopic studies of hybrids derived from organic-phosphonic acid with alkaline earth elements (Mg, Ca, Sr, Ba)	GANESAN Parameshwari
15:45	1420		EDOT-based nanostructures written by STED-inspired nanolithography	GVINDZHILIA Georgii

Thursday June 1

F16

## Synthesis/Characterization 4

Chairperson(s) : AVASTHI Devesh Kumar - SRIVASTAVA Sanjeev Kumar

OPS (Ground floor)

16:30	2677	INV	Direct Laser Writing of Complex 3D Ag Nanoparticle Patterns inside Prefabricated Polymer Microstructures	LAVELLE Luisa
17:00	2662		Mechanical and Optical Properties of Silica Nanocomposite Microstructures Fabricated via Direct Laser Writing	AUGUSTINE Amrutha
17:15	700		Gelation Methods to Achieve Tunable Properties of Semiconductor and Noble Metal Nanoparticles in Assemblies	ROSEBROCK Marina
17:45	1467		Preparing and exploring the versatility of mixed surface silicon quantum dots	TRACH Jonathan
18:00	851		One-Step printed metahologram using Nanoparticle-Embedded-Resin	PARK Chanwoong
18:15	361		Elaboration and characterization of pure carbon transparent electrodes presenting equivalent performances to Indium Tin Oxide	MEYER Renzo

Thursday June 1

Fbis04

## Photonics/Optoelectronics 4

Chairperson(s) : BENIWAL Ajay - SHARMA Sunny

Madrid 1 (Ground floor)

16:30	1700	INV	Efficient White LEDs Made of Near Unity Emitting Quantum Dots for Wide Color Gamut Displays	ONAL Asim
17:00	444		Zinc germanate (Zn <sub>2</sub> GeO <sub>4</sub> ) deep-red emitter	BATISTA Maria
17:15	2683		Investigations on shape-property relationship of magnetic and persistence luminescence nanomaterials coupled in a single assembly	ULLAH Hameed
17:30	1962		Understanding the texture degree on Zinc Aluminate Nd, Ce sub-micrometer films by screen printing for NIR Emitting applications	ROJAS HERNANDEZ Rocio

<b>18:00</b>	<b>1119</b>	Rare-earth complex as self-calibrated photoluminescent sensor for low-range pressure measurement	<b>ZHOU Yujiao</b>
<b>18:15</b>	<b>914</b>	Nanocatalyst-enabled physically unclonable functions as smart reversible anticounterfeiting agents with instrument-free AI-aided authentication	<b>MOGLIANETTI Mauro</b>

Friday June 2

F17

## Photonics/Optoelectronics 1

Chairperson(s) : BENIWAL Ajay - MISHRA Yogendra Kumar

OPS (Ground floor)

08:45	982	INV	Reconfigurable THz Metamaterials: Present and Future	SHARMA Sunny
09:15	2019		Beyond Metal-Halide Perovskites: Metal Free Halide Perovskites as Materials for THz Photonics	GALLOP Nathaniel
09:30	1516		Kerker Conditions in Mid-index Mesoscale Dielectric Materials	MANNA Uttam
09:45	1220		Patternable Physical Unclonable Functions Based on Racemized Photonic Crystals	PARK Hyewon

Friday June 2

F18

## Nanomaterials Growth and Applications

Chairperson(s) : MISHRA Yogendra Kumar - PUGLISI Rosaria Anna

OPS (Ground floor)

10:30	2792	INV	Nature-inspired Shapes Using Integration of Electrospinning and Additive Processing for Atmospheric Water Harvesting	VASEASHTA Ashok
11:00	2786		Materials at Nanoscale: Manifestations of Quantum Phenomena and Other Aspects	SRIVASTAVA Sanjeev Kumar
11:15	2768		Disposable Sensors for Non-invasive Disease Detection: Current Trends and Future	BENIWAL Ajay
11:30	1462		Green and Facile Synthesis of Hyperbranched Gold Nanostructures for SERS Applications	REGULACIO Michelle D.
11:45	2754		Low Energy Ions Induced Structural Modifications in Tungsten Carbide (WC) thin films	BIST Shristi





European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM G

Flexible bioelectronics: a rising star for in situ bioanalysis

*Symposium Organizers:*

Wolfgang KNOLL, AIT, Vienna, Austria

Annalisa BONFIGLIO, University of Cagliari, Italy

Sabine SZUNERITS, Université de Lille, France

Tanja WEIL, MPIP Mainz, Germany



**Monday May 29**

**G01**

**Session 1**

**Chairperson(s) : KNOLL Wolfgang - SZUNERITS Sabine**

**Londres 1 (Ground floor)**

<b>08:45</b>	<b>938</b>	<b>INV</b>	Wearable organic biosensing on textiles	<b>ISMAILOVA Esma</b>
<b>09:15</b>	<b>220</b>		On-Skin Biosensors: Wearable Sweat-analytics for Healthcare (WISH)	<b>YANG Le</b>
<b>09:30</b>	<b>401</b>		Integration of flexible sensors with 3D-printed structures for the development of customized in vitro monitoring platforms	<b>SANDOVAL BOJORQUEZ Diana Isabel</b>
<b>09:45</b>	<b>1916</b>		Laser-based micro-Fabrication of stretchable neural probes for peripheral nerve stimulation	<b>ELMAHMOUDY Mohammed</b>

**Monday May 29**

**G02**

**Session 2**

**Chairperson(s) : KNOLL Wolfgang - SZUNERITS Sabine**

**Londres 1 (Ground floor)**

<b>10:30</b>	<b>2825</b>	<b>INV</b>	Lab-on-a-thread for tissue embedded sensing and drug delivery	<b>SONKUSALE Sameer</b>
<b>11:00</b>	<b>237</b>		Towards high performing self-healing electronics: hydrogen bonded conjugated polymers via Ureidopyrimidinone	<b>WESTWOOD Megan</b>
<b>11:15</b>	<b>682</b>		Integrated Enzymatic Bioelectrodes/ Biopolymer-Microneedle Devices for Transdermal Electrochemical Sensing	<b>DARMAU Bastien</b>
<b>11:30</b>	<b>1161</b>		Field-Effect Transistor with a Plasmonic Gate Electrode as a Multivariable Biosensor Device	<b>HASLER Roger</b>
<b>11:45</b>	<b>2368</b>		Direct Recording of Action Potentials of Cardiomyocytes Through Solution Processed Electrolyte-Gated Field-Effect Transistors	<b>KYNDIAH Adrica</b>

**Monday May 29**

**G03**

**Session 3**

**Chairperson(s) : BONFIGLIO Annalisa - MACCHIA Eleonora**

**Londres 1 (Ground floor)**

<b>13:30</b>	<b>2403</b>	<b>INV</b>	Chemical and physical sensing with low-dimensional materials	<b>SAMORÌ Paolo</b>
<b>14:00</b>	<b>402</b>		A multi-scale mechanical behavior study of an electrical interconnection solution stretchable and removable for flexible electronic components for biomedical applications	<b>DESPAX-FERRERES Auriane</b>
<b>14:15</b>	<b>871</b>		Printed human machine interfaces using touchless interaction via magnetic fields	<b>OLIVEROS MATA Eduardo Sergio</b>
<b>14:30</b>	<b>925</b>		Biodegradable microneedle-based electrode interface for robust biopotential measurements	<b>TEXIER Isabelle</b>
<b>15:00</b>	<b>1771</b>		PEDOT:Curcumin Electrodes in Neural Interfacing	<b>EL MERHIE Amira</b>
<b>15:30</b>	<b>1927</b>		Silk microelectrodes as deep brain implants	<b>MOUSAVI Hajar</b>
<b>15:45</b>	<b>1649</b>		Thermal drawing of graphene-embedded PVDF fiber for improved performance in wearable triboelectric nanogenerator	<b>ORDU Mustafa</b>

**Monday May 29**

**G\_P**

**Poster session**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

<b>01_1034</b>	Modification of properties of AMPS-based hydrogels prepared by electron-beam-initiated copolymerization with acrylic monomers	<b>SHIN Seunghan</b>
<b>02_1397</b>	Electrolyte gated organic field-effect transistor for point-of-care tests	<b>ORTIZ-AGUAYO María Jesús</b>
<b>03_1609</b>	Robust wireless power transfer system for implantable bioelectronics	<b>YOO Seungwon</b>

<b>04_1653</b>	MoS <sub>2</sub> -embedded polyvinylidene fluoride flexible nanocomposite fibers for triboelectricity generation via thermal drawing technique	<b>ORDU Mustafa</b>
<b>05_1686</b>	Optimizing Electrode Design for Flexible and Stretchable Displays: A Stress Analysis Study	<b>PARK Ah-Young</b>
<b>06_1965</b>	Kinematic Reliability Evaluation of Sport Motion for Knitted E-textile Sensor at Joint	<b>LEE Jonghan</b>
<b>07_263</b>	A Porous Microneedle Electrochemical Aptamer-Based Sensor for Continuous and Real-Time Creatinine Monitoring	<b>LIU Ta-Chung</b>
<b>08_2151</b>	Intelligent colorimetric sensor for kidney failure assessment in veterinary practice	<b>CHILIBON Irinela</b>

**Tuesday May 30**

**G04**

**Session 4**

**Chairperson(s) : SONKUSALE Sameer - SZUNERITS Sabine**

**Londres 1 (Ground floor)**

<b>10:15</b>	<b>317</b>	Single-molecule bioelectronic sensor: improving reliability with machine learning approaches	<b>MACCHIA Eleonora</b>
<b>10:30</b>	<b>1656</b>	Electrolyte-Gated Field-Effect Transistors for sensing an Alzheimer's disease biomarker	<b>RUIZ-MOLINA Sara</b>
<b>10:45</b>	<b>1671</b>	On-Textiles Organic Microfluidic Biosensing via Additive Manufacturing	<b>GALLIANI Marina</b>
<b>11:15</b>	<b>1989</b>	Molecular Layer Deposition of Flexible Hybrid Materials	<b>NOLAN Michael</b>
<b>11:30</b>	<b>2058</b>	Organic and flexible X-ray detectors for medical dosimetry and diagnosis applications	<b>MARTINEZ-DOMINGO Carmen</b>
<b>11:45</b>	<b>2160</b>	Large area flexible conductive cardiac scaffolds by direct laser writing	<b>FARID Nazar</b>

**Tuesday May 30**

**G05**

**Session 5**

**Chairperson(s) : KNOLL Wolfgang - WEIL Tanja**

**Londres 1 (Ground floor)**

<b>13:30</b>	<b>2409</b>	From disposable to wearable bioelectronics using paper-derived laser induced graphene	<b>PINHEIRO Tomás</b>
<b>13:45</b>	<b>2837</b>	Printing wearable and bioelectronic sensors with microfibr	<b>WANG Wenyu Andy</b>
<b>14:00</b>	<b>270</b>	Multimodal machine learning enables improved label-free biosensing: COVID-19 diagnostics	<b>YUNDA Jhonny</b>
<b>14:15</b>	<b>788</b>	Capacitive BaTiO <sub>3</sub> -PDMS hand-gesture sensor and its signal classification using machine learning	<b>FERNANDEZ Frances Danielle</b>
<b>14:30</b>	<b>1225</b>	Capacitive Coupling Phenomenon in Multi-Conductive Layer Bioelectronic Devices	<b>CORNUEJOLS Remy</b>

<b>14:45</b>	<b>1642</b>	MXene-Fluoropolymer nanocomposite fibers as piezoelectric nanogenerators	<b>HASAN Md Mehdi</b>
<b>15:00</b>	<b>2088</b>	Microfluidic Device Integrated Electrochemical Sensor for Detection of Peroxynitrite Anion	<b>KUMAR Vijayesh</b>
<b>15:30</b>	<b>2840</b>	Colorimetric pH sensing via onsite fiber spinning	<b>SHUI Molly Yuan</b>

**Tuesday May 30**

**G06**

**Session 6**

**Chairperson(s) : HASLER Roger - ISMAILOVA Esma**

**Londres 1 (Ground floor)**

<b>16:30</b>	<b>912</b>	Development of a novel, cost-effective paper-based SERS substrate fabricated using GLAD with improved enhancement for the detection of nosocomial infection causing bacteria	<b>SENAPATI Sneha</b>
<b>16:45</b>	<b>2543</b>	Conductive, recyclable, and biocompatible vitrimer ink for skin-contact applications	<b>NAJAFI Maedeh</b>
<b>17:00</b>	<b>2421</b>	Fabrication Strategy Using Aerosol Jet Printer for Flexible Bioelectronic Devices	<b>JING Qingshen</b>
<b>17:30</b>	<b>258</b>	Impedance-based eutectogel artificial skin with wireless readout system for smart prosthetics	<b>OWYEUNG Rachel</b>









European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM H

Advanced strategies for smart functional  
and multifunctional biomaterials and biointerfaces

*Symposium Organizers:*

Grazia ML MESSINA, University of Catania, Italy

Ayşe G. KARAKECILI, Ankara University, Turkey

Paula E. COLAVITA, Trinity College Dublin, Ireland



**Monday May 29**

**H01**

**Bioinspired Materials**

**Rome (Ground floor)**

<b>09:00</b>	<b>2796</b>	<b>INV</b>	Supramolecular Broad-Spectrum Antivirals	<b>STELLACCI Francesco</b>
<b>09:30</b>	<b>254</b>		Nanoparticle-enabled Laser Tissue Soldering	<b>CIPOLATO Oscar</b>
<b>09:45</b>	<b>2331</b>		Bioinspired Nanomaterials for Drug-free Antipathogen Surfaces	<b>SHOKUHFAR Tolou</b>

**Monday May 29**

**H02**

**Smart Biohybrid Materials**

**Rome (Ground floor)**

<b>10:30</b>	<b>2793</b>	<b>INV</b>	Bioactive glasses as multifunctional biomaterials for tissue engineering, drug delivery and biofabrication	<b>BOCCACCINI Aldo R.</b>
<b>11:00</b>	<b>1353</b>		Combining Liquid Crystal Networks and Protein Motors for Milli-Scale Mechanical Devices	<b>PINCHIN Natalie</b>
<b>11:15</b>	<b>1561</b>		Functional Shape-Morphing Hydrogels for Soft Robotic Applications	<b>PINCHIN Natalie</b>
<b>11:30</b>	<b>986</b>		Versatile Ultra-Soft Electromagnetic Actuators with Integrated Strain Sensing Cellulose Nanofibril Foams	<b>MOHAMMADI Mohsen</b>
<b>11:45</b>	<b>1152</b>		Light-responsive azopolymer-based metamaterials as locally, anisotropically, and reversibly stretchable polymer substrates	<b>URBAN David</b>

**Monday May 29**

**H03**

**Biointerfaces at Electrodes**

**Rome (Ground floor)**

<b>14:00</b>	<b>2795</b>	<b>INV</b>	Single impact electrochemistry onto ultramicroelectrode surface for bacterial sensing	<b>LEBÈGUE E.</b>
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14:30	1090	On-bench Characterization and In-Vitro Biocompatibility of Nanowire-based Electrodes for Neural Interfaces	ARCHÉ-NÚÑEZ Ana
14:45	1627	Electric field mediated control of enzyme orientation for efficient electron transfer at bioelectrode surface	YOON Taeyoung
15:00	2465	Design and Characterization of Flexible and Wearable Low-Cost Stencil-Printing Electrodes for Enzyme-based Bioelectronics	TRICASE Angelo
15:15	1480	Ti based intermetallic thin films for a new generation of high performance wearable electrodes with enhanced biomedical sensing	LOPES Claudia
15:30	443	Kelvin probe force microscopy platform for antigen/antibody pair formation at a large electrode interface	DI FRANCO Cinzia
15:45	238	Molecularly Imprinting of Cortisol onto Conductive Polymer-Coated 3D Printed Microneedles	MUSTAFA Yasemin

**Monday May 29**

## H\_P Poster session

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

01_1043	Polydiacetylenes-Based Colorimetric Sensors for Detecting Various Biohazard Metal ions	YANG Seah
02_1044	Study on Two-Photon Excitation Photodynamic Therapy and Fluorescence Bioimaging with Heavy-atom-free Photosensitizers based on Carbazole and Imidazole Conjugates.	HAN Jeonghye
03_988	Unraveling the unexpected behavior of polypyrrole artificial muscles	MASZCZAK Agata
04_1212	Design rules for remote controlled biology: Acoustic activation of synthetic cells using nanoparticle organelles	LI Zhuoer
05_759	Investigation of Printable Overhang Angle for Direct Printing of Sodium Alginate / Gelatin Hydrogel	MAHMOODI Nasim
06_1320	Long-term antibacterial properties of ZrN-Cu coatings deposited by industrial reactive magnetron sputtering	BEHRANGI Sahand

07_1386	Engineering ECM-like hydrogels with Schiff-base dynamic covalent cross-links	TEXIER I.
08_1433	The role of texture in governing the in-vitro bio-corrosion behaviour of Mg-4Zn-0.5Ca-0.8Mn alloy	BAIRAGI Darothi
09_1473	Mesoporous Silica as the Carrier of Hydrophobic Drugs	IQBAL Sumiya
10_1481	Current state of the art and next-generation of materials for a customized IOL according to a patient-specific eye power	VACALEBRE Martina
11_15	3D-Printed ZnL2-BPs Composite Bone Scaffolds with Dual Antibacterial and Osteogenic Capabilities Aided by Mild Photothermal Regulation	WU Yuzheng
12_1518	Zein based biomaterials for active wound healing	GNOCCHI Chiara
13_1581	Rheological studies of a 3D Printable Sodium Alginate/Vitreous Humos Ink for cartilage regeneration	MARTINEZ PÉREZ Carlos Alberto
14_1596	An integrated bioaerosol sampling and detection platform for on-site monitoring of airborne viruses	LEE Inae
15_161	A highly sensitive magnetic SERS detection of hemozoin biomarker for rapid malaria diagnosis	YADAV Sarjana
16_1640	Reactive Oxygen Species Mediated Theranostic Materials	LIM Chang-Keun
17_165	Application of natural para rubber as a functional biodegradable-reinforced material for road reinforcement	CHAIYAPUT Salisa
18_1650	All-Organic Nanomedicine for Photothermal (PTT)/Photodynamic (PDT) Combination Therapy	URAZALIYEVA Anel
19_1651	Metal and Ceramic 3D printing for the fabrication of dental metal-ceramic restoration	DIMITRIADIS Konstantinos
20_169	Functional Porous Glass-Ceramic biomaterials from Eggshell Waste for Biomedical Use as Prosthetic Eyes	AYAWANNA Jiratchaya
21_1722	Colloidal AgBiS <sub>2</sub> Quantum Dots in Cellular Environments	ONAL Asim
22_1726	NIR Signal-based Sensor Platform with Wireless Data Transmission System for Detection of infectious disease Virus	KIM Suyeon

<a href="#">23_1752</a>	Antibacterial activity of PDMS-Aminosilanes organic-inorganic hybrid coating	<b>PARK Yeji</b>
<a href="#">24_1834</a>	Folate receptor beta targeting pH-sensitive drug delivery system for non-small cell lung cancer therapy	<b>NAH Sanghee</b>
<a href="#">25_1895</a>	Facile fabrication of self-cleaning powder coating through surface-modified biogenic silica	<b>NAZARLOU Ziba</b>
<a href="#">26_1902</a>	Characterization of the viscoelastic properties of different gels and ex vivo animal tissues for ultrasound-guided imaging	<b>QUINAGORAN Dionella Jitka</b>
<a href="#">27_1914</a>	Study of the development of bacterial resistance to silver-chitosan nanocomposites and cross-resistance to common antibiotics	<b>SIHTMÄE Mariliis</b>
<a href="#">28_1918</a>	Multilayer structures based on Si-doped metal oxynitrides used for biological applications	<b>VITELARU Catalin</b>
<a href="#">29_194</a>	Facile synthesis of whiskered gold nanosheets with low percolation threshold for stretchable bioelectrodes	<b>LIM Chaehong</b>
<a href="#">30_2013</a>	Reprocessable and Weldable Shape Memory Vitriimer Enabled by Controlled Formulation for Extrusion-Based 4D Printing Applications	<b>PARK Sungmin</b>
<a href="#">31_1076</a>	ZrCuCa- based quaternary thin films metallic glasses used for medicine	<b>PANA Iulian</b>
<a href="#">32_2048</a>	pH Sensitivity and amino acid dependent interaction on the Aggregation Induced Emission of Surface Ligand Controlled Gold Nanoclusters.	<b>BERA Nanigopal</b>
<a href="#">33_2063</a>	Development of a SERS-based lateral flow immunoassay for detection of penicillin in milk via direct writing of functional materials	<b>RUSSO Alida</b>
<a href="#">34_2116</a>	Hemocompatibility studies of PTFE coated TiO <sub>2</sub> thin film for application in mechanical heart valves.	<b>MISHRA Subhashree</b>
<a href="#">35_2153</a>	Deformation-diffusion model of the CdSe-core / ZnS/CdS/ZnS-shell quantum dot with an electrically neutral impurity	<b>DAN'KIV Olesya</b>
<a href="#">36_2195</a>	Fabricating Mycelium-Agrowaste 3D Composite Materials for use in Building Construction Insulation	<b>BONGA Kumba Bintunia</b>
<a href="#">37_2220</a>	Sweat droplet evaporation: implications for human body health	<b>BEIGTAN Mohadese</b>
<a href="#">38_2231</a>	Photodithazine-nanoclay composites to improve antimicrobial activity	<b>TARGON CAMPANA Patricia</b>

39_2391	Studies on the Development of Titanium Foam for Bioimplant Application	<b>DUTTA MAJUMDAR Dibyendu</b>
40_2451	Mesoporous and Nano-Flowers (ZnO <sub>2</sub> ) via Hydrothermal Technique for Dye Removal and Antibacterial Applications	<b>AL NAIM Abdullah</b>
41_2536	Process window for electron beam melting of Ti-42Nb wt. %	<b>IRINA Grubova</b>
42_2593	Zwitterionic coatings on Polydimethylsiloxane Surface for biological application	<b>DINCA Valentina</b>
43_2538	Nanoprobes for intracellular imaging: testing reproducibility in the nanobiosciences	<b>SAID Maha</b>
44_2549	NIR-induced drug release from liposomes entrapped with gold nanoparticles for synergistic cancer therapy	<b>BUDIME SANTHOSH Poornima</b>
45_2594	New polyphenols-enriched excipients from grape processing waste to develop spray-dried matrix for buccal tablets useful to treat oromucosal diseases	<b>BELFIORE Elena</b>
46_2606	Composition impacts the structural, magnetic, and heating features of Mn <sub>x</sub> Fe <sub>3-x</sub> O <sub>4</sub> MNPs	<b>DEL SOL-FERNÁNDEZ Susel</b>
47_2623	Digital light 3D printing of robust, self-healing and recyclable polymer composite with tailorable mechanical properties	<b>HUANG Wei</b>
48_2668	Exploring the Size Effect of Silver Nanoparticle on Structural Properties of Coatings	<b>ABAKEVICIENE Brigita</b>
49_2684	Hybrid bio-platforms engineered by laser based method with tailored antibacterial and antitumor activity	<b>RUSEN Laurentiu</b>
50_65	The effect of heat treatment on the mechanical behavior of an ASTM-F2063 nitinol stent intended for venous application.	<b>SALLAMI Achref</b>
52_332	Development and Evaluation of the Bioinspired pH-responsive Sericin-Chitosan Based Hydrogels for the Controlled Colonic Delivery of PETase; Harnessing the PETase Triggered Degradation of Microplastics	<b>ULLAH Aziz</b>
53_55	Adipocyte-targeting Type I AIE Photosensitizer for Obesity Treatment via Photodynamic Lipid Peroxidation	<b>LEE Mei Suet</b>
54_56	A Ratiometric Theranostic System for Visualization of ONOO <sup>-</sup> Species and Reduction of Drug-Induced Hepatotoxicity	<b>CHAU Hon Chung</b>

<a href="#">55_567</a>	In situ characterization of the structural changes induced by acidity fluctuations in hydrated collagen hydrogels	<b>BRONNER Orit</b>
<a href="#">56_600</a>	Stimuli-responsive collagen-based thin films from <i>Stichopus cf. horrens</i> body wall	<b>SISICAN Kim Marie</b>
<a href="#">57_630</a>	Reduction-responsive and bioorthogonal carboxymethyl cellulose based soft hydrogels cross-linked via IEDDA click chemistry for cancer therapy application	<b>ALI Israr</b>
<a href="#">58_719</a>	Formation and Properties of Oxidized Metallographene-NSAID Nanoparticles	<b>RADZIUK Darya</b>
<a href="#">59_735</a>	Multiphysics computational modelling of the dynamic interface between on-chip microneedles and skin layers	<b>MOHIZIN Abdul</b>
<a href="#">60_835</a>	Structural, mechanical and degradation properties of Mg doped hydroxyapatite deposited on AZ31B alloys	<b>VITELARU Catalin</b>
<a href="#">61_875</a>	Antibacterial and antifungal efficacy of novel chitosan-silver nanocomposites	<b>KASEMETS Kaja</b>



**Tuesday May 30**

**H04**

**Functional Biomaterials**

**Rome (Ground floor)**

<b>10:00</b>	<b>2794</b>	<b>INV</b>	Tailoring Collagen Piezoelectricity	<b>RODRIGUEZ Brian</b>
<b>10:30</b>	<b>2696</b>		A synergy of laminin and strain-stiffening in hydrogels promotes directed migration of neural cells	<b>NAGHILOU Aida</b>
<b>10:45</b>	<b>1306</b>		Fabrication of uniaxially oriented DNA based hydrogel by controlling monomer diffusion	<b>KIM Juri</b>
<b>11:00</b>	<b>816</b>		Oleogel: a new thermoplastic-like material for bioengineering application	<b>LAMANNA Leonardo</b>
<b>11:15</b>	<b>91</b>		Polyethylene glycol diacrylate / poly (epsilon L-Lysine) hydrogels for preventing bacteria and fungi infections	<b>LEBAUDY Eloïse</b>
<b>11:30</b>	<b>2546</b>		Ex vivo detection of anal sphincter defects using a sensorised surgical glove	<b>SALVADORES FERNANDEZ Carmen</b>
<b>11:45</b>	<b>2539</b>		Smart functional pH-sensing scaffolds for extracellular pH mapping in in vitro tumor models	<b>ONESTO Valentina</b>

**Tuesday May 30**

**H05**

**Bioelectronics and Bioelectrochemical Systems**

**Rome (Ground floor)**

<b>14:00</b>	<b>2798</b>	<b>INV</b>	Multifunctional bandages as potential strategy for chronic skin wound management	<b>SZUNERITS Sabine</b>
<b>14:30</b>	<b>1747</b>		Development of nanoprobe array technology for high resolution electrophysiology of brain-on-chip.	<b>BELOT Emilie</b>
<b>14:45</b>	<b>1144</b>		Electric Field Tunability of Photoluminescence from a Hybrid Peptide–Plasmonic Metal Microfabricated Chip	<b>RICE James</b>
<b>15:00</b>	<b>2636</b>		Graphene-MoS2 heterostructure for promising detection of diabetes through acetone and glucose biomarkers	<b>KAPOOR Sakshi</b>

15:15	869	Multimodal machine learning in chronic wound management: A bright future for biomaterials and soft materials	MELINTE Sorin
15:30	200	Ultrasensitive Detection of Aromatic Water Pollutants Through Protein Immobilization Driven Organic Electrochemical Transistors	SAHU Subhankar

**Tuesday May 30**

**H06**

## Multifunctional Biomaterials

**Rome (Ground floor)**

16:30	1051	Mechanical, tribological, and in vitro and in vivo studies of commercially pure Zn-Cu-Mn/Mg alloys for biodegradable application	PALAI Debajyoti
16:45	1088	Surface modification by nanosecond laser texturing of biodegradable pure Zn: surface morphology and degradation behaviour	FIOCCHI Jacopo
17:00	376	Effect of laser surface remelting on the microstructure, mechanical, tribological and corrosion properties of the Ti <sub>40</sub> Nb <sub>25</sub> Zr <sub>25</sub> Ta <sub>10</sub> (with 0.5 at. % O) medium entropy alloy (MEA)	MUSTAFI Labani
17:15	991	Antibacterial Zn added NiTi alloy produced by laser powder bed fusion	TUISSI Ausonio
17:30	2680	Silver based MOFs Synthesis for antibacterial application and nanoMOFs growth on Titanium scaffold alloy.	PARATORE Vincenzo
17:45	2311	The Influence of the Nature of Doping on the Antibacterial Activity of SrSnO <sub>3</sub> Eu Perovskite Nanoparticles	MENEZES DE OLIVEIRA Andre Luiz

**Wednesday May 31**  
**H07**  
**Biointerfaces Engineering**  
**Rome (Ground floor)**

<b>10:30</b>	<b>2446</b>	Surface Functionalization of Poly(D, L-lactide-co-trimethylene carbonate) Nanofibers Incorporated with Hydroxyapatite Nanoparticles for Osteogenesis and Vascularization in Bone Tissue Engineering	<b>LI Huihua</b>
<b>10:45</b>	<b>33</b>	Fabrication of chitosan/gelatin hybrid aerogel for use as a drug carrier.	<b>CHAROENCHAITRAKOOL Manop</b>
<b>11:00</b>	<b>1853</b>	Spherical garnet-based persistent nanophosphors suitable for long-lasting optical imaging	<b>ARROYO Encarnacion</b>
<b>11:15</b>	<b>2345</b>	Multifunctional Nanocomposite Hydrogels for Bioanalytical and Antibacterial Applications	<b>SACHDEV Abhay</b>
<b>11:30</b>	<b>1251</b>	Three-dimensional extrusion printing of gelatin methacryloyl (GelMA)-based biomaterial ink with high shape integrity	<b>DAS Soumitra</b>

**Wednesday May 31**  
**H08**  
**New Materials for Biomedical Applications**  
**Rome (Ground floor)**

<b>14:00</b>	<b>2797</b>	<b>INV</b> Effect of Nanoparticles on the Bulk Shear Viscosity of a Lung Surfactant Fluid	<b>BERRET J.-F.</b>
<b>14:30</b>	<b>593</b>	4D Bioprinted Multilayered Biomimicking Scaffolds for Uterine Tissue Regeneration	<b>CHEN Shangsi</b>
<b>14:45</b>	<b>739</b>	Polymeric composites of electroactive P3HT-MWCNT thin films for bioelectronics application	<b>CAMPIONE Paola</b>
<b>15:00</b>	<b>829</b>	Lipid coated Mesoporous Silica as the Carrier of Hydrophobic Drugs	<b>IQBAL Sumiya</b>
<b>15:15</b>	<b>1172</b>	Laser assisted structuring of bio-polymer for the oriented proliferation of stem cells	<b>MURRU Clarissa</b>
<b>15:30</b>	<b>691</b>	A green and sustainable approach for the preparation of antimicrobial alginate fibers	<b>TORDI Pietro</b>

**Wednesday May 31**

**H09**

**New Materials for Biomedical Applications II**

**Rome (Ground floor)**

<b>16:30</b>	<b>2439</b>	Alternative peptide grafting strategies for enhancing PEEK bioactivity in bone regeneration	<b>CASSARI Leonardo</b>
<b>16:45</b>	<b>1543</b>	Atomic force microscopy for characterizing plasma proteins adsorption morphology on poly(styrene sodium sulfonate)-functionalized silicone surfaces	<b>LAM Mylan</b>
<b>17:00</b>	<b>2245</b>	PVA-based hydrogels with active biocidal effect: From polymer functionalization to real-time observation of the gels' efficacy against model bacteria through confocal laser scanning microscopy	<b>ROSCIARDI Vanessa</b>
<b>17:15</b>	<b>356</b>	Tracheal engineering to the reconstruction of the larynx	<b>BERTSCH Christelle</b>

Thursday June 1

H10

## Nanostructures and Nanoparticles for Biomaterials Applications

Rome (Ground floor)

10:00	2799	INV	High Temperature Stable Anti-microbial Photocatalytic Nanomaterials for Building Material Applications	PILLAI Suresh C.
10:30	1672		Smart core/shell magnetic nanoparticles and their further use in cancer therapy	ALEM Halima
10:45	321		Biofunctionalized circa 2 nm gold nanoparticles for exploring intracellular machineries of human cells at cryo-Electron Microscopy resolution level	ZUBER Guy
11:00	2567		A versatile and controllable strategy for synthesizing a cadherin-magnetic nanoparticle bioconjugate as a novel magneto-mechanical cell actuator	CASTRO-HINOJOSA Christian
11:15	2608		In vivo enhancement of tissue regeneration through Magnetic Hyperthermia mediated ROS production	DEL SOL-FERNÁNDEZ Susel
11:30	338		Synthesis of Surfactant-Free Starch-Based Microspheres in Different Size Ranges and Factors Affecting the Synthesis Process	KARAGULLE Elif Naz
11:45	2024		Application of hybrid magnetoplasmonic nanoparticles for SERS detection of cancerous kidney areas	ADOMAVICIUTE-GRABUSOVE Sonata

Thursday June 1

H11

## Bioinspired Coatings and Thin Film

Rome (Ground floor)

14:00	96		The antibacterial properties of multiple antigenic peptides: in vitro MIC evaluation and molecular dynamic simulations	LEBAUDY Eloïse
14:15	435		Poly(2-Ethyl-2-Oxazoline)-co-Polyethyleneimine and Heparin Multifunctional Coatings	GHAZALEH Azizi Saadatlou

<b>14:30</b>	<b>580</b>	Silicon bioinsructive engineering for preventing microbial and fibrosis development	<b>DINCA Valentina</b>
<b>14:45</b>	<b>1003</b>	Biodegradable Zein/Polyvinylpyrrolidone-based films for underwater delivery of Curcumin mitigate thermal stress effects in corals	<b>CONTARDI Marco</b>
<b>15:00</b>	<b>1136</b>	Limiting bacterial adhesion through bioinspired combinations of thin film coatings and topography	<b>WHITELEY Amelia</b>
<b>15:15</b>	<b>174</b>	Crystal Engineering of Pyroelectric and Piezoelectric amino Acid mixed Crystals	<b>EHRE David</b>

**Thursday June 1**

**H12**

## **Bioinspired Coatings and Thin Film II**

**Rome (Ground floor)**

<b>16:30</b>	<b>2571</b>	Artificial extracellular matrices for organoid formation: from novel patient-derived preclinical models to human immune cell culture	<b>GUASCH Judith</b>
<b>17:00</b>	<b>797</b>	Physico-chemical and in vitro biological behavior of plate-like hydroxyapatite coatings obtained in pulsed galvanostatic mode	<b>VLADESCU (DRAGOMIR) Alina</b>
<b>17:15</b>	<b>350</b>	Aqueous Protein-Polymer Bioconjugation via Photoinduced RAFT Polymerization Using Porphyrinic Metal-Organic Frameworks	<b>HUANG Ya</b>
<b>17:45</b>	<b>596</b>	-45 3D Printing of Bioceramic Scaffolds with Graded Pore Sizes for Bone Regeneration	<b>WANG Yue</b>







European Materials Research Society

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40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

# SYMPOSIUM I

Bioinspired and biointegrated materials as new frontiers nanomaterials (11th edition)

*Symposium Organizers:*

Emmanuel STRATAKIS, IESL - FORTH, Heraklion, Crete

Eugenia BUZANEVA, University of Kyiv, Ukraine

Masaru TANAKA, Kyushu University, Japan

Peter SCHARFF, TU Ilmenau, Germany

Monday May 29

I01

## Smart Nano-Materials and Systems Multifunctionality Strategy from Nature

Chairperson(s) : CIOFANI Gianni - ERDEM Arzum - STRATAKIS Emanuel - TANAKA Masaru

Bruxelles (Ground floor)

09:00	2826	10	Introduction	SIFFERT Paul
09:10	2838	50	It just says click – and the molecules are coupled together	MELDAL Morten Peter

Monday May 29

I02

## Smart Nano-Materials and Systems Multifunctionality Strategy from Nature

Bruxelles (Ground floor)

10:30	2832	INV	Design and Synthesis of Functional Biomaterials-Intermediate Water Concept for Medical Devices	TANAKA Masaru
11:00	2501	INV	Induction of neuroregeneration and functional neural network development in adECM/rGO scaffolds	RANELLA Anthi
11:30	2552		4D printed scaffolds composed of natural polymers for bone tissue engineering	DASKALAKIS Panagiotis
11:45	2550		Effect of topography and statin-loaded biodegradable micropatterned polymeric replicas on osteogenic differentiation	KANAKOUSAKI Eleni

Monday May 29

I03

## Smart Nano-Materials and Systems Multifunctionality Strategy from Nature

Bruxelles (Ground floor)

13:30	595		Design and Fabrication of Biomimicking Radially Graded Scaffolds via Vat Photopolymerization for Bone Tissue Engineering	WANG Yue
13:45	2678		Composite coatings for osteoblast growth attachment obtained by pulsed deposition techniques	GRUMEZESCU Valentina
14:00	246	INV	Biomimetic antioxidant nanomaterials in biomedicine	CIOFANI Gianni
14:30	2293		Co-delivery of chemotherapeutics by polydopamine based nanomaterials	MRÓWCZYNSKI Radoslaw
14:45	1782		Fast Light-Driven Motion of Polydopamine Nanomembranes	GRACZYKOWSKI Bartlomiej
15:00	1253		Development of functional Si nanoparticles elaborated by laser method in liquid medium for non-invasive TPE-PDT biomedical applications	AL-KATTAN Ahmed
15:15	14		Versatile Phenol-Incorporated Nanoframes for In Situ Antibacterial Activity Based on Oxidative and Physical Damages	LIU Pei
15:45	968		Engineering materials with DNA towards building nucleic acid sensors	KIM Youngeun

**Monday May 29**

**I04**

## **Smart Nano-Materials and Systems Multifunctionality Strategy from Nature**

**Bruxelles (Ground floor)**

16:30	2709	INV	Recent Applications of Electrochemical Nucleic Acid Biosensors based on Carbon Nanomaterials	ERDEM Arzum
17:00	192		Cuprous Oxide Nanoparticles Decorated Fabric Materials with Anti-biofilm Properties	GUPTA Akanksha
17:15	1759		Development of a glucose electrochemical biosensor based on scribing laser induced graphene on natural biopolymer platforms	HAMIDI Hassan
17:30	2839	INV	Carbon materials chemistry and processing for multi-functionality: from graphite to fullerenes-tubes-graphene	SCHARFF Peter

**Tuesday May 30**

**I05**

**Young Investigators Forum - Grown the Biofuture**

**Chairperson(s) : NOZAWA Koki**

**Bruxelles (Ground floor)**

<b>10:30</b>	<b>2846</b>	10	Keynote Introduction	<b>SIFFERT Paul</b>
<b>10:40</b>	<b>2845</b>	50	An ingenious tool for building molecules	<b>LIST Benjamin</b>
<b>11:30</b>	<b>2831</b>	<b>INV</b>	Molecularly imprinted polymer nanogels as synthetic antibody mimics for diagnostics and therapy	<b>HAUPT Karsten</b>

**Tuesday May 30**

**I06**

**Young Investigators Forum - Grown the Biofuture**

**Bruxelles (Ground floor)**

<b>13:00</b>	<b>578</b>		Development of Topical Drug Formulations for the Treatment of Ocular Neovascularization	<b>YETISGIN Alp</b>
<b>13:15</b>	<b>775</b>		High carrier mobilities in polycrystalline germanium layers for flexible electronics	<b>NOZAWA Koki</b>
<b>13:30</b>	<b>2471</b>		2D hybrids of palladium nanozymes and graphene oxide as a new multimodal theranostic platform	<b>SATRIANO Cristina</b>
<b>13:45</b>	<b>2515</b>		Development and characterization of FusionRed variants	<b>HUNG Sheng-Ting</b>
<b>14:00</b>	<b>2522</b>		Thermoelectric application of Ge-based group IV semiconductor layers	<b>MAEDA Shintaro</b>
<b>14:15</b>	<b>2533</b>		Epitaxial growths of Mn <sub>4</sub> -xGaxN films and their X-ray magnetic circular dichroism spectra	<b>HATATE Aoi</b>
<b>14:30</b>	<b>380</b>		Current generation by direct electron pumping by Escherichia Coli to Au electrode	<b>MONDAL Sovanlal</b>
<b>14:45</b>	<b>594</b>		Heparin Release and Sustained Delivery of Ionic Dissolution Products for Quick Endothelialization in 3D Printed Vascular Grafts	<b>CHEN Shangsi</b>
<b>15:00</b>	<b>1802</b>		CART: Carrier-based Actuatable and Reprogrammable Transport	<b>MANDSBERG Nikolaj Kofoed</b>

15:15	2490	Nitrogen-doped graphene quantum dots as versatile carriers for nanomedicine	ZAJICKOVA Lenka
15:30	2356	Machine learning techniques for analyzing time evolution in microscope images	ISHIYAMA Takamitsu
15:45	1805	Kuramoto-Model-Based Data Classification Using the Synchronization Dynamics of Uniform-Mode Spin Hall Nano-Oscillators	GARG Neha

**Tuesday May 30**

**I07**

## Young Investigators Forum - Grown the Biofuture

**Bruxelles (Ground floor)**

16:30	963	Cells' preferable uptake of microdiamonds and the role of myosin motor proteins in the particle uptake and transport	EBRAHIMI Armin
16:45	561	Bio-inspired radiative cooling aerogel for sustainable cold chains in developing countries	PIN-HUI Lan
17:00	39	PEG-heparin biohybrid synthetic hydrogels for tumour culture	CASTELLOTE-BORRELL Miquel
17:15	277	The compression strength of carbon fibre composite increases with a nanostructured interface inspired by nacre	WANG Shifan

**Tuesday May 30**

**I\_P**

## Poster session

**Chairperson(s) : SOLÉ PORTA Anna**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

01_166	Sustainable and transparent gas barrier films for food packaging	CHO Sangho
02_528	Leaching mechanisms of PVP coated silver nanoparticles from anti-microbial bioplastics	HERMANS Dries
03_1150	Synthesis of chitosan-clay composite for potential packaging application	RAZONADO Ivy Ann
04_1242	Nano-zirconia dental implants via additive manufacturing	GKOMOZA Paraskevi

<a href="#">05_1268</a>	Numerical and kinetic study of isomerization reaction of oriented polyacetylene induced by laser impact, shown by multichannel Raman	<b>LAKHZOUM Abderrahim</b>
<a href="#">06_1336</a>	kinetic study and synthesis of new macroinitiator by ozonization of poly (vinylidene fluoride)	<b>KRIBAA Ilhem Rafika</b>
<a href="#">07_44</a>	Thermally Stable and Reusable Ceramic Encapsulated CalB Enzyme Particles for Rapid Hydrolysis and Esterification	<b>CHANG Jeong-Ho</b>
<a href="#">08_45</a>	Magnetic Nanoparticles Immobilized CalB Enzyme Particles for reusable and rapid esterolysis of p-nitrophenyl alkanoates	<b>CHANG Jeong-Ho</b>
<a href="#">09_1661</a>	Cationic Surface Modification of Tunicate-based Cellulose Nanofibers for the Development of Environmentally Friendly Materials and Its Application	<b>LEE Jun Hyuk</b>
<a href="#">10_1586</a>	Cellulose/Aramid Nanocomposite for flame retardant	<b>HYUN BEEN Park</b>
<a href="#">11_2849</a>	Theranostic Polymeric Nanocarriers Administered to the Brain and Lungs	<b>SOLE PORTA Anna</b>
<a href="#">12_2852</a>	4D printed scaffolds composed of natural polymers for bone tissue engineering	<b>DASKALAKIS Panagiotis</b>

Wednesday May 31

I08

## Living Systems/Materials and Biomimetics Multifunctionality from Nature

Chairperson(s) : CHUKOVA Oksana - FELIX Olivier - ZHU Bo

Bruxelles (Ground floor)

10:30	357	INV	Biomimetic photoswitchable dry adhesives	STAUBITZ Anne
11:00	195	INV	Functionnalized plant virus-based nanomaterials: From synthesis to applications	HA DUONG Nguyet Thanh
11:30	2833	INV	Catalytic Bioempowerment of Individual Cells in Single-Cell Nanoencapsulation	CHOI Insung S.

Wednesday May 31

I09

## Living Systems/Materials and Biomimetics Multifunctionality from Nature

Bruxelles (Ground floor)

13:00	2149	INV	Hierarchical bio-inspired nanocomposite materials with anisotropic properties	FELIX Olivier
13:30	716		Biobased vitrimers - novel dynamic materials from vegetable oils and their applications	ZYCH Arkadiusz
13:45	1548		Nanolipogels for drug delivery applications	CHU Renee
14:00	2147	INV	Green synthesis and characterization of luminescent ZnO@polymer core-shell nanoparticles with natural biopolymer coatings	CHUKOVA Oksana
14:30	1604		Scission of a specific covalent bond by mechanical force transferred through DNA	KIM Gyurin
14:45	2394		A Simple(r) Approach to Making DNA	CALLAGHAN Kimberley
15:00	2463		Design and Synthesis of Programmable DNA Hydrogels Based on Rolling Circle Amplification Products	HANIF Wildan
15:15	1603		Antifreeze protein-DNA hybrid nanostructures for inhibition of ice recrystallization	KANG Mingyeong

15:30 1641 Introduction of a lipophilic nucleobase to DNA by enzymatic reaction **SOERIAWIDJAJA Banyu Firdaus**

**Wednesday May 31**

**I10**

**Living Systems/Materials and Biomimetics  
Multifunctionality from Nature**

**Bruxelles (Ground floor)**

16:30	1580	INV	Biomimicking Organic Electronic Materials Toward Bioelectronic Devices Intrinsically Resisting Nonspecific Interactions	<b>ZHU Bo</b>
17:00	1226		Facile but Tunable Electroassembly of Tubular Functionalized nano PEDOTs toward Bioelectronics	<b>ZHI Geng</b>
17:15	1654		Nanoconfined PEDOT:PSS with One- and Two-Dimensional Alignment	<b>LEE Seunghyeon</b>
17:30	706		Magnetic membrane polymers with on-board electronic skins for supervised actuation	<b>OLIVEROS MATA Eduardo Sergio</b>
17:45	445		3D multiphoton lithography of protein-based photoresists	<b>SIVUN Dmitry</b>



Thursday June 1

I11

## Tutorial Advancing Frontiers in Biomaterials and Nanomedicine

Chairperson(s) : CHEN Peilin

Bruxelles (Ground floor)

11:00	2826	10	Introduction	SIFFERT Paul
11:10	2827	50	Frontiers in Neurosensorics	JULIUS David

Thursday June 1

I12

## Tutorial Advancing Frontiers in Biomaterials and Nanomedicine

Bruxelles (Ground floor)

13:00	147	INV	Validation of Nanomedicine in Animal Models by Real-time Two Photon Imaging	CHEN Peilin
13:30	1837	INV	Indocyanine Green-loaded Activatable Theranostic Nanogels for Image-guided Photodynamic Therapy and Enhanced Immunotherapy of Rapidly Growing Cancers	CHOI Yong Doo
14:00	684	INV	Magnetic Nanoparticles for Theranostics	ICHIYANAGI Yuko
14:30	780	INV	Concurrent and sensitive detection of duplex in opto-electrochemical platform	LEE Min-Ho
15:00	769	INV	From Waste to Biomedical Resources: Applications of Keratin to Tissue Regeneration, Nanomedicine and Hemostasis Agent	YU Jiashing
15:30	564	INV	Development of Bacteria-Targeted Mesoporous Silica Nanotherapeutics for Wound Healing	WU Si-Han

Thursday June 1

I13

## Tutorial Advancing Frontiers in Biomaterials and Nanomedicine

Bruxelles (Ground floor)

16:30	1578	INV	Regulation of liquid-liquid phase separation induced by G-quadruplex nucleic acids	MIYOSHI Daisuke
17:00	763	INV	Bioinspired Surfaces Designed for Stem Cell Expansion	KATO Koichi
17:30	1072	INV	Using Real-time and High throughput Force-sensing Biochip Reveal Cellular Heterogeneity Under Drug Treatment	SHIU Jau-Ye

Friday June 2

I14

## Tutorial Frontiers in Biodiagnostics

Chairperson(s) : CHEN Peilin - PICHON Benoit

Bruxelles (Ground floor)

09:00	201	INV	Probing Circulating Tumor Cells in Animal Model Using Quantum Dots and Real-time Intravital Imaging	KUO Chiungwen
09:30	176	INV	Investigation of high refractive index non plasmonic nanoparticle assemblies supported onto a metal thin film as a promising platform for SPR biosensor	PICHON Benoit

Friday June 2

I15

## Tutorial Frontiers in Biodiagnostics

Bruxelles (Ground floor)

10:30	2660	INV	Development of an Ag@Au core/shell system as label-free SERS investigation tool for malignant/non-malignant cells assessment	CHILIBON Irinela
11:00	330	INV	Air-Stable Bio-Protonic Devices with Ion Channels for Electronic Control of Hydrogen Ion Flow through Phospholipid Membranes	MS SADHUKHAN Riya
11:30	293	INV	Behaviour of citrate-capped gold nanoparticles at biomembranes – atomic insight at supported lipid bilayer and liposome interfaces.	ELBOURNE Aaron





European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM J

Design and scaling up of theranostic nanoplatforms for health:  
towards translational studies

*Symposium Organizers:*

Sylvie BEGIN-COLIN, IPCMS, Strasbourg, France,

Nguyen TK THANH, University College London, U.K.

Sophie LAURENT, University of Mons, Belgium

Teresa PELLEGRINO, IIT, Genova, Italy,

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**Monday May 29**

**J01**

## **Design of molecular-based nanoplatforms for nanomedecine**

**Chairperson(s) : BEGIN Sylvie - THANH Nguyen T. K.**

**Luxembourg (Ground floor)**

<b>08:45</b>	<b>1863</b>	<b>INV</b>	A study of the biological Fate of Polymeric and Supramolecular Carriers for Gene delivery	<b>MOYA Sergio</b>
<b>09:15</b>	<b>2730</b>		Leveraging Magnetic Hyperthermia by Means of Hybrid Polymeric Nanostructures	<b>MAI Binh</b>
<b>09:30</b>	<b>1022</b>		Structure switching molecules for biosensors and real-time imaging	<b>PARK Chan Ho</b>
<b>09:45</b>	<b>1630</b>		siRNA incorporated nucleic acid micelles to suppress USE1 expression for lung cancer treatment	<b>KIM Haejoo</b>

**Monday May 29**

**J02**

## **Design of nanomaterials for biomedical applications - 1**

**Chairperson(s) : LAURENT Sophie - MOYA Sergio**

**Luxembourg (Ground floor)**

<b>10:30</b>	<b>2389</b>	<b>INV</b>	Tuning nanomaterials for biomedical applications : it's all in the coating.	<b>BRUYLANTS Gilles</b>
<b>11:00</b>	<b>2361</b>		Plasmonic and Magnetic Nanoparticles for Biomedical Applications	<b>THANH Nguyen T. K.</b>
<b>11:15</b>	<b>1423</b>		Synthesis of Gold Nanorods for targeted phototherapy of cancer cells	<b>ROMAIN Mélanie</b>
<b>11:30</b>	<b>810</b>	<b>INV</b>	Development of a chelating polymer for a medical device designed for metal extraction: from concept to clinic with Mexbrain	<b>TILLEMENT Olivier</b>

**Monday May 29**

**J03**

## **Polymeric nanoparticles designed for imaging**

**Chairperson(s) : BRUYLANTS Gilles - TILLEMENT Olivier**

**Luxembourg (Ground floor)**

<b>13:30</b>	<b>2429</b>	<b>INV</b>	Fluorescent polymeric nanoparticles for diagnostics and bioimaging	<b>KLYMCHENKO Andrey</b>
<b>14:00</b>	<b>106</b>		Covalent organic frameworks for fluorescent imaging of hypoxia	<b>SKORJANC Tina</b>
<b>14:15</b>	<b>1833</b>		Developing a FRET based device for RNA biosensing using CRISPR/Cas	<b>CHEN Haihan</b>
<b>14:30</b>	<b>975</b>	<b>INV</b>	Image guided triggered release nanoparticles	<b>THANOU Maya</b>

**Monday May 29**

**J04**

## **Design of biomaterials for nanomedicine**

**Chairperson(s) : KLYMCHENKO Andrey - THANOU Maya**

**Luxembourg (Ground floor)**

<b>15:00</b>	<b>1940</b>	<b>INV</b>	Bio-inspired apatite particles: a multifunctional platform in nanomedicine	<b>DROUET Christophe</b>
<b>15:30</b>	<b>3</b>		Raman Spectroscopy as a possible alternative to Histology for bone evaluation in Oral / Regenerative Surgery	<b>GATIN Eduard</b>
<b>15:45</b>	<b>16</b>		Physiological polyphosphate as an effective biomaterial for chronic wound healing: Proof of Concept by in vitro studies and clinical applications	<b>PROF. DR. MÜLLER Werner E. G.</b>

**Monday May 29**

**J05**

## **Gel-based Nanomedicines and analysis approaches**

**Chairperson(s) : DROUET Christophe - PELLEGRINO Teresa**

**Luxembourg (Ground floor)**

<b>16:30</b>	<b>1788</b>	The proton sponge trick for tuned disassembly of nucleic acids delivery systems upon sensing endosomal pH: toward nano carriers with in vivo therapeutic potential	<b>ZUBER Guy</b>
<b>16:45</b>	<b>2638</b>	Design of magnetic hydrogels for AC-field hyperthermia: towards high efficiency and reproducible performance	<b>NIGOGHOSSIAN Karina</b>
<b>17:00</b>	<b>2112</b>	Theranostic Polymeric Nanocarriers Administered to the Brains and Lungs	<b>SOLÉ PORTA Anna</b>
<b>17:15</b>	<b>2502</b>	Au nanoparticles loaded hydrogels for advanced wound care	<b>FOTI Alice</b>
<b>17:30</b>	<b>431</b>	The effect of microscopic calcifications containing Zn on the malignancy of thyroid nodules	<b>GOTNAYER Lotem</b>



Tuesday May 30

J06

## Design of theranostic nanoplatforms-1

Chairperson(s) : PELLEGRINO Teresa - THANH Nguyen T. K.

Luxembourg (Ground floor)

10:00	2253	INV	Designer therapeutic and diagnostic tools: From cancer to chemical weapons	DAVIES Gemma-Louise
10:30	2477		Stimuli-responsive platforms for in vitro cell growth and cancer therapy: towards precision medicine	FORCINITI Stefania
10:45	1379		Study of the influence of Mn <sup>2+</sup> -insertion in Prussian blue nanoparticles on their photothermal properties	SENE Saad
11:00	1197		Design of Iron Oxide Nanoparticles for imaging and active targeting: theranostic in one formulation	RAMIREZ Maria De Los Angeles
11:15	2597		DMSA-Coated Cubic Iron Oxide Nanoparticles as Potential Therapeutic Agents	THANH Nguyen T. K.
11:30	1718		Advances in the mechanistic understanding of iron oxide nanoparticles' radiosensitizing properties	STANICKI Dimitri
11:45	2277		Chemical design of Ga <sub>0.9</sub> Fe <sub>2.1</sub> O <sub>4</sub> system as nanoparticles and thin films	MESAROS Amalia-Zorica

Tuesday May 30

J07

## “Drug delivery session” driven by SFNanomedicine french association

Chairperson(s) : DAVIES Gemma-Louise - THANOU Maya

Luxembourg (Ground floor)

13:30	2392	INV	Elastin-like polypeptides-based nanoparticles: strengths and weaknesses for drug delivery applications	GARANGER Elisabeth
14:00	2042		Novel liposomal nanoformulation targeting NLRP3 inflammasome for treating hepatocellular carcinoma: synthesis, characterization, in vitro and in vivo studies	MASTROGIACOMO Rita

14:15	2263		Elaboration of Crystalline Nanoparticles for Theranostic and Drug Delivery Applications	CORVIS Yohann
14:30	2128	INV	Design of a viral-inspired nanoparticle for translational studies in infectiology and cancer	FENDER Pascal
15:00	2129		Magnetic nanoparticles-conjugated E. coli as a potent drug delivery agent for multimodal therapy of pancreatic cancer	KAUR Tashmeen
15:15	1009		Escherichia coli adhesin protein-conjugated thermal responsive hybrid nanoparticles for photothermal and immunotherapy against cancer and its metastasis	HWANG Juyoung
15:30	737	INV	Evolution of Chameleon Nanocarriers: RNA Transfer at Ultra-low Picogram Dose	WAGNER Ernst

**Tuesday May 30**

**J08**

## **Design of theranostic nanoplatforms-2**

**Chairperson(s) : FENDER Pascal - WAGNER Ernst**

**Luxembourg (Ground floor)**

16:30	944	INV	Near Infrared Emitting Polymer Dots for Bioimaging	ROSENZWEIG Zeev
17:00	1162		mRNA based cytokine delivery	SUN Hongning
17:15	2523		UCNP Based Targeted Imaging of Cancer	CINAR Meric Cansu
17:30	1385		Radical release induced by Magnetothermia	FÉLIX Gautier
17:45	1957		Surface modification of mesoporous silica nanoparticles to enhance colloidal stability for theranostic purposes	HERNANDO ABAD Eduardo
18:00	181		Theranostic NIR/MR Multimodal Amyloid- $\beta$ Oligomer-Targeted Upconversion Gadolinium-Based Nanoprobe for Alzheimer's Disease	WONG Man Shing

Wednesday May 31

J09

## Elaboration strategies of nanoparticles for nanomedicine

Chairperson(s) : CONTEH John Santigie - TIETZE Rainer

Luxembourg (Ground floor)

10:00	1525	INV	Hybrid mesoporous silica nanoplatfoms for magnetic hyperthermia, NIR photothermia and drug delivery	MERTZ Damien
10:30	1966		A promising functional Si nanoparticles elaborated by laser method in liquid medium for non-invasive TPE-PDT biomedical applications	AL-KATTAN Ahmed
10:45	923		Controlling the silica shell growth of core-shell iron oxide@ stellate mesoporous silica nanoparticles: effects on MRI, magnetic hyperthermia and NIR-photothermia properties	BIZEAU Joëlle
11:00	2026		Two-cycle Stöber protocol for the tailored synthesis and biotinylation of dual-color Silica Nanosystems for Biomedical Approaches	RAMIREZ-MORALES Maria Antonieta
11:15	2410	INV	Scale-up approach for the preparation of ferrite nanocubes for magnetic hyperthermia application	GAVILÁN Helena
11:45	2685		Facile and scalable synthesis of ultrasmall and fluorescent copper clusters for biomedical application	DI GIROLAMO Alessandro
12:00	2336		Improved 800nm Emission of Upconversion Nanoparticles via Ca-doped NaYF <sub>4</sub> :Nd,Yb for bio sensing application	SHAHSAVAR GOCMEN Mahla

Wednesday May 31

J10

## Continous flow synthesis approaches

Chairperson(s) : DETAPPE Alexandre - MULLER Robert

Luxembourg (Ground floor)

13:30	2373	INV	Thermo-responsive magnetic nanoparticles for anti-cancer drug delivery: from synthesis on bench to a scale-up approach and their applications	CONTEH John Santigie
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14:00	1477		Microwave assisted continuous-flow synthesis of magnetic nanocrystals for metabolites detection	SIMEONIDIS Konstantinos
14:15	2350		A microfluidic photo-induced platform to shape ultrasmall functionalized gold and platinum nanoparticles	MARELLI Marcello
14:30	1323		Continuous flow manufacturing of magnetic nanoparticles using polyol solvents: the Magnified project	VANGIJZEGEM Thomas
14:45	934		Biofunctionalized iron oxide nanoparticles for diagnostic purposes	TIETZE Rainer

**Wednesday May 31**

**J11**

## Nanoplatforms for imaging 1

Chairperson(s) : GAVILAN RUBIO Helena - MERTZ Damien

**Luxembourg (Ground floor)**

15:15	1688	INV	Functionalized ultrasmall nanoparticles as multimodal imaging biomarkers	DETAPPE Alexandre
15:45	461	13	Dynamic Metal-Enhanced Fluorescence Microarray for ultrasensitive detection of Neurodegenerative Disease Biomarkers	XIONG Qirong
16:00	364		Nanozymatic magnetic nanomixers for enzyme immobilization and multiplexed detection of metabolic disease biomarkers	LI Di

**Wednesday May 31**

**J12**

## Nanoplatforms for imaging 2

**Luxembourg (Ground floor)**

16:30	2688	INV	From Ions to Molecules and Particles, the Saga of Contrast Agents for MRI	MULLER Robert
17:00	1731		Evaluation of oxidative stress in metastatic breast cancer cells using nanodiamond relaxometry	REYES-SAN-MARTIN Claudia
17:15	972		Synthesis of Size-Controlled Cubic Iron Oxide Nanoparticles for MPI-MFH Application	HARVELL--SMITH Stan
17:30	1458		Enhancement of Phosphate Removal in Peritoneal Dialysis using designed magnetic Iron Oxide Nanostructures.	LUCANTE Theo

17:45

208

Green-light responsive Carbon based nanosystems for chemo-photothermal combined anticancer therapy.

**PETRALIA Salvatore**





European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM K

Organic and hybrid transistors and electrochemical transistors: materials and devices

*Symposium Organizers:*

John LABRAM, University College London, U.K.

Alexandra F. PATERSON, University of Kentucky, USA

Björn LUESSEM, University of Bremen, Germany

Christian NIELSEN, Queen Mary University of London, U.K.

Monday May 29

**K01**

## Bioelectronics and Green Electronics 1

Chairperson(s) : LABRAM John - LUESSEM Bjoern

Berlin (Ground floor)

08:45	609		Inkjet-printed, deep sub-threshold operated integrated circuits for biomedical applications	PRADHAN Jyoti Ranjan
09:00	634		Ultraflexible Organic Active Sensor Matrix for Tactile and Biosignal Monitoring	PRIETL Christine
09:15	2212		Assessing carotenoids as renewable, natural-based materials for organic thin-film transistors	SCACCABAROZZI Alberto
09:30	2766	INV	Scalable manufacturing of soft microelectronics for biomedical applications: materials, devices, and applications	ZHANG Shiming

Monday May 29

**K02**

## Bioelectronics and Green Electronics 2

Chairperson(s) : LUESSEM Bjoern - ZHANG Shiming

Berlin (Ground floor)

10:30	2765	INV	Organic Integrated Bioelectronics and Artificial Neurons for Enhanced Biosensing and Biointerfacing	TORRICELLI Fabrizio
11:00	2347		Copper Phthalocyanine Based Electrochemical Transistors for Future Edible Electronics	LUZIO Alessandro
11:15	257		Circuit implementations of thread-based organic eutectogel gated electrochemical transistors	SONKUSALE Sameer
11:30	1501		Wood Electrochemical Transistor	TRAN Van Chinh
11:45	2163		Bacterial cellulose from Kombucha's SCOBY as multipurpose material for fully edible electronics	FERRARESE Fabrizio Mario



Monday May 29

K03

## Bioelectronics and Green Electronics 3

Chairperson(s) : LUESSEM Bjoern - NIELSEN Christian

Berlin (Ground floor)

13:30	2760	INV	Direct Recording of Action Potentials of Cardiomyocytes Through Solution Processed Planar Electrolyte-Gated Field-Effect Transistors	CAIRONI Mario
14:00	1484		Towards a materials design platform aimed at bioelectronics applications	AL YAMAN Yasmina

Monday May 29

K04

## Manufacturing and Device Design 1

Chairperson(s) : LABRAM John - PATERSON Alexandra

Berlin (Ground floor)

14:15	125	INV	Development of high-performance Sn based halide perovskite transistors	NOH Yong-Young
14:45	2762	INV	Flexible nanoscale organic thin-film transistors	KLAUK Hagen
15:15	1008		Vacuum-Processable & Photopatternable High-k Polymer Gate Dielectrics for Oxide Thin-Film Transistors	JANG Seongcheol
15:30	177		Rolled-up nanomembrane-based vertical organic field-effect transistors and sensors	NAWAZ Ali
15:45	2617		Local Potential Mapping of Functional Electrolyte-Gated Transistors	TANWAR Shubham

Monday May 29

K\_P

## Poster session

Etoile (1st floor) - 4.30 p.m to 6.30 p.m

01_471	Temperature effect on the charge transport mechanism in nanocomposite dielectric-based organic field-effect transistors	MALLIK Samik
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<a href="#">02_936</a>	Atomistic simulations of an ionic liquid/WSe <sub>2</sub> interface for next generation nanoelectronics and energy storage applications	<b>ISHISONE Kana</b>
<a href="#">04_2548</a>	A Facile and Easy Way to Enhance the Performance of Organic Phototransistors Using UV Treatment:	<b>SHAHARUKH, Sk.</b>
<a href="#">05_18</a>	Development and optimization of polymer gate dielectrics for reliable and flexible field-effect transistors	<b>PARK Hyunjin</b>
<a href="#">07_657</a>	Ion-Exchange Doping of Single-Walled Carbon Nanotubes	<b>HAWKEY Angus</b>
<a href="#">08_1039</a>	Hysteresis-free MoS <sub>2</sub> negative capacitance transistors using 5 nm P(VDF-TrFE)-brush ferroelectric layer	<b>CHO Hyunmin</b>
<a href="#">09_1073</a>	Double-bond Contained PVDF-based Fluoropolymer Gate Dielectrics for Low-Voltage Operating Organic Transistors	<b>RYU Soo-Min</b>
<a href="#">10_1139</a>	Fiber-shaped organic ferroelectric transistor memories for wearable artificial synapse applications	<b>KANG Minji</b>
<a href="#">11_1170</a>	Security Key Generation by Circularly Polarized Light Detection based on Chiroptical-Conjugated Polymer Devices	<b>JU Hyunsu</b>
<a href="#">12_1468</a>	Mixed solvents treated poly (methyl methacrylate) (PMMA) gate dielectric based organic field effect transistors (OFETs)	<b>SANGWAN Satayender K.</b>
<a href="#">13_1585</a>	Solution-processed copper (I) thiocyanate (CuSCN) film as a hole injection layer for organic light-emitting diodes (OLED)	<b>JANG Eun-Jeong</b>
<a href="#">15_1682</a>	A Study on Securing Light and Bias Reliability through Surface Control of High Mobility Oxide Transistors	<b>KIM Jong Woo</b>
<a href="#">16_1778</a>	Structural analysis of DPP-based organic thin films for photodetector applications	<b>FYNBO Cecilie C.</b>
<a href="#">17_1948</a>	On the electrical characteristics and reliability of electrolyte-gated transistors based on reduced-graphene oxide aiming sensing applications	<b>FURLAN DE OLIVEIRA Rafael</b>
<a href="#">18_2066</a>	Bioelectronic devices and deep learning imaging for the prediction of KRAS alteration.	<b>CAPUTO Mariapia</b>
<a href="#">19_2244</a>	Molecular imprinted polymer for low-trace food contaminants detection	<b>TRICASE Angelo</b>
<a href="#">20_2390</a>	Single Molecule Transistor and ultrasensitive immunoassay array: a comparison of two technologies	<b>SCANDURRA Cecilia</b>

**Tuesday May 30**

**K05**

## **Device Theory, Transport, and Circuits 1**

**Chairperson(s) : KANG Keehoon - NIELSEN Christian**

**Berlin (Ground floor)**

<b>10:00</b>	<b>2764</b>	<b>INV</b>	Electrochemical Transistors: A Platform for Exploring Carrier Transport and Ion-Carrier Correlations at High Charge Densities in Organic Semiconductors	<b>FRISBIE Daniel</b>
<b>10:30</b>	<b>144</b>	<b>INV</b>	Simulations-guided device design for high-performance, low-cost organic field-effect transistors	<b>JURCHESCU Oana</b>
<b>11:00</b>	<b>1691</b>		Understanding Scaling Laws of Organic Electrochemical Transistors	<b>SKOWRONS Michael</b>
<b>11:15</b>	<b>2671</b>		Organic magnetoresistance in conjugated polymers	<b>ORGIU Emanuele</b>
<b>11:30</b>	<b>1190</b>		Reconfigurable Physically Unclonable Functions Based on Organic Thin-Film Transistors with Multiscale Polycrystalline Blends	<b>IM Seongil</b>
<b>11:45</b>	<b>1677</b>		Electrical Conductivity of DNA Origami	<b>DEMIR Busra</b>

**Tuesday May 30**

**K06**

## **Device Theory, Transport, and Circuits 2**

**Chairperson(s) : JURCHESCU Oana - LABRAM John**

**Berlin (Ground floor)**

<b>13:30</b>	<b>2848</b>	<b>INV</b>	Strategic Molecular Doping and Defect Passivation in 2D Ruddlesden-Popper Phase Metal-Halide Perovskites	<b>KANG Keehoon</b>
<b>14:00</b>	<b>1594</b>		Doping Effect of MoO <sub>3</sub> Encapsulation Layer on DNTT-based Organic Transistors and their Application to Unipolar Inverter Circuits	<b>JEON Yunchae</b>
<b>14:15</b>	<b>879</b>		Solution-Processed Complementary Inverters Using p-type Copper Iodide: Improving Stability with Passivation Layers	<b>LEE Kyumin</b>
<b>14:30</b>	<b>1109</b>		Multivalued Logic Circuits based on Vertically Integrated Organic Transistors	<b>YOO Hocheon</b>

14:45 1327 From Key Generation to Destruction of Physical Unclonable Function Using a-IGZO-based Transistor Doped with PVDF-HFP and Its Randomly-Tunable Electrical Properties Depending on the Phase Transition **LEE Subin**

**Tuesday May 30**

**K07**

## **Materials, Structure, and Additives 1**

**Chairperson(s) : NIELSEN Christian - PATERSON Alexandra**

**Berlin (Ground floor)**

15:00 2761 INV Development of semiconducting polymers for organic electrochemical transistors **KOUSSEFF Christina**

15:30 2763 INV Mixed conduction in conjugated polymers: structure-property relationships **SALLEO Alberto**

**Tuesday May 30**

**K08**

## **Materials, Structure, and Additives 2**

**Chairperson(s) : LABRAM John - NIELSEN Christian**

**Berlin (Ground floor)**

16:30 1836 INV New approaches for high-performance organic transistors **LEO Karl**

17:00 385 Controlling polymorphism in zone-cast PDIF-CN2 thin films **HERRMANN Niklas**

17:15 798 Conformational Change of Alkyl Chains at Phase Transitions of Ph-BTBT-C10 **SHIOYA Nobutaka**

17:30 118 Enhancing the thermal conductivity of amorphous polyimide by molecular-scale manipulation **QUACH Thai Quyen**

17:45 436 N-doping of electron transport layers in organic light-emitting diodes studied by combining TOF-SIMS and XPS **GUYOT Claire**

18:00 468 Assessing the crystallization of OLED molecules using mass spectrometry **HIRCHENHAHN Pierre**

18:15 1547 Ultrafast singlet fission dynamics in high quality organic single crystals **MASLENNIKOV Dmitry**

Wednesday May 31

K09

## Materials, Structure, and Additives 3

Chairperson(s) : LABRAM John - LUESSEM Bjoern

Berlin (Ground floor)

10:30	2759	INV	High performing conjugated polymers of low-synthetic complexity	HEENEY Martin
11:00	1719		Halogen bonding to boost the charge carrier mobility in NDI-based organic transistors	RUOKO Tero-Petri
11:15	806		Optimizing chain alignment and preserving the pristine structure of single-ether based PBTTT helps improve thermoelectric properties in sequentially doped thin films	BRINKMANN Martin
11:30	886		Combining doping by anion exchange and orientation by high temperature rubbing affords stable and efficient thermoelectric polymer films	GUCHAIT Shubhradip

Wednesday May 31

K10

## Manufacturing and Device Design 2

Chairperson(s) : FABIANO Simone - LUESSEM Bjoern

Berlin (Ground floor)

13:30	664	INV	Advanced materials and manufacturing paradigms for emerging electronics	ANTHOPOULOS Thomas
14:00	1740		A n-type, stable electrolyte gated organic transistor based on a printed polymer	VIOLA Fabrizio Antonio
14:15	1248		Toward fast and stable organic electrochemical transistors	ZHANG Silan

**Wednesday May 31**

**K11**

## **Sensors and Neuromorphic Electronics 1**

**Chairperson(s) : ANTHOPOULOS Thomas - PATERSON Alexandra**

**Berlin (Ground floor)**

<b>14:30</b>	<b>2757</b>	<b>INV</b>	Biorealistic organic electrochemical neurons: materials and challenges	<b>FABIANO Simone</b>
<b>15:00</b>	<b>1761</b>		Two-terminal Organic Electrochemical Diode-based Novel Neuromorphic Operation	<b>HEO Dongmi</b>
<b>15:15</b>	<b>2337</b>		Bio-electronic Sensors for Fast and Selective Detection of <i>Xylella fastidiosa</i>	<b>SARCINA Lucia</b>
<b>15:30</b>	<b>2675</b>		Organic double-gate FET for high-quality chemical sensing	<b>HATAMI Davood</b>
<b>15:45</b>	<b>389</b>		Toxic Water soluble Mercury metal-ions detection by Organic Field Effect Transistors using Pyridine-end oligo p-Phenylenevinylene oligomer as a sensing material	<b>VERMA Shiv Prakash</b>

**Wednesday May 31**

**K12**

## **Sensors and Neuromorphic Electronics 2**

**Chairperson(s) : LABRAM John - PATERSON Alexandra**

**Berlin (Ground floor)**

<b>16:30</b>	<b>2758</b>	<b>INV</b>	Organic electrochemical diodes for current rectification, digital logic, and neuromorphic devices	<b>YOON Myung-Han</b>
<b>17:00</b>	<b>2140</b>		A flexible optically stimulated synaptic transistor based on rGO-ZnO NRs based hybrid channel	<b>BAG Atanu</b>
<b>17:30</b>	<b>294</b>		Fabrication of photo-transistor using perovskite materials as a gate dielectric	<b>MANDAL Ajoy</b>
<b>17:45</b>	<b>503</b>		Investigating the dielectric properties of Tb <sup>3+</sup> doped LaPO <sub>4</sub> nanoparticle-PMMA composite thin films and its application as organic phototransistor for UV detection	<b>BANERJEE Rajdeep</b>









European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM L

Making light matter: lasers in material sciences and photonics

*Symposium Organizers:*

Jörn BONSE, BAM, Berlin, Germany

Irina Alexandra PAUN, INFLPR, Bucharest, Romania

Johannes HEITZ, Johannes Kepler University Linz, Austria

Razvan STOIAN, University of Saint Etienne, France



**Monday May 29**

**L01**

## **Industrial Laser Machining**

**Chairperson(s) : BONSE Jörn**

**Etoile A (1st floor)**

<b>08:45</b>	<b>575</b>	<b>INV</b>	Optical data writing in glass for the archival cloud storage	<b>SAKAKURA Masaaki</b>
<b>09:15</b>	<b>2580</b>		Advanced focal beam shaping in rotational and quadratic symmetry for improved laser material interaction	<b>FUCHS Ulrike</b>
<b>09:30</b>	<b>193</b>		Multifunctional laser-induced nanostructures for highly demanding photonic applications	<b>ANTONIS Papadopoulos</b>
<b>09:45</b>	<b>1673</b>		Laser processing and analysis of hybrid lead halide perovskite solar modules	<b>JEONG Yujin</b>

**Monday May 29**

**L02**

## **Laser Additive Manufacturing - I**

**Chairperson(s) : PAUN Irina Alexandra**

**Etoile A (1st floor)**

<b>10:30</b>	<b>1063</b>	<b>INV</b>	3D nano-printing with light	<b>FARSARI Maria</b>
<b>11:00</b>	<b>2031</b>		Laser sintering: A universal additive manufacturing method for sensing devices, automotive solutions and space applications	<b>PERVOLARAKI Maria</b>
<b>11:15</b>	<b>839</b>		Sub Diffractive STED-Inspired Cationic Lithography	<b>ISLAM Sourav</b>
<b>11:30</b>	<b>384</b>		Assessment of a massively parallel non-linear polymerisation process using scalar light propagation simulation tools	<b>OGOR Florie</b>
<b>11:45</b>	<b>1356</b>		Compositionally gradient 3D multimaterial structures through laser metal deposition	<b>TOBAR Maria Jose</b>

**Monday May 29**

**L03**

## **Biological Laser Surface Engineering**

**Chairperson(s) : HEITZ Johannes**

**Etoile A (1st floor)**

<b>13:30</b>	<b>1483</b>	<b>INV</b>	Addressing icing with laser-assisted biomimicry and envisioning a waste-free surface functionalization process	<b>KIETZIG Anne-Marie</b>
<b>14:00</b>	<b>2679</b>		Laser Technologies to Generate Active and Passive Solutions for Anti-icing Surfaces	<b>DE LA FUENTE German Francisco</b>
<b>14:15</b>	<b>2756</b>	<b>INV</b>	Laser Direct Write Bioprinting Enriched Cell Types in the Breast Tumor Microenvironment	<b>CHRISEY Douglas B.</b>
<b>14:45</b>	<b>2615</b>		Production of bioactive glass nanofibers by laser spinning for wound healing applications	<b>FERNÁNDEZ-ARIAS Mónica</b>

**Monday May 29**

**L04**

## **Laser Additive Manufacturing - II**

**Chairperson(s) : FARSARI Maria**

**Etoile A (1st floor)**

<b>15:00</b>	<b>1988</b>		Heat accumulation study for low diameter own produced stainless steel powder particle fusion using femtosecond pulse laser	<b>RAMON-CONDE Iñigo</b>
<b>15:15</b>	<b>280</b>		Effect of Laser Parameters on the Microstructural, Electrochemical and High-Temperature Oxidation Properties of the CoNiCrAlY Cladding on Inconel through Direct Metal Laser Deposition	<b>KARMAKAR Ranit</b>
<b>15:30</b>	<b>1419</b>		Expanding the toolbox for STED-inspired lithography	<b>GVINDZHILIA Georgii</b>
<b>15:45</b>	<b>2751</b>		Pulsed laser deposited BN/VO2/BN architected films with thermochromic properties at low transition temperature	<b>BOURQUARD Florent</b>

**Monday May 29**

**L05**

**Laser-induced Periodic Surface Structures - I**

**Chairperson(s) : GRÄF Stephan**

**Etoile A (1st floor)**

<b>16:30</b>	<b>1798</b>	Formation of laser-induced periodic surface structures observed with extreme temporal and spatial resolution	<b>BONSE Jörn</b>
<b>16:45</b>	<b>447</b>	Nano-scale dots, grids, ripples and heterostructures on PET by UV laser processing	<b>HEITZ Johannes</b>
<b>17:00</b>	<b>1748</b>	Laser induced surface nanostructures in ferroelectric polymers	<b>REBOLLAR Esther</b>
<b>17:15</b>	<b>1381</b>	Modification of Kapton wettability by laser nanostructuring	<b>MARTÍNEZ-GARCÍA Patricia</b>
<b>17:45</b>	<b>868</b>	Tailoring surface topographies on solids with Mid-IR femtosecond laser pulses	<b>MARAGKAKI Stella</b>
<b>18:00</b>	<b>79</b>	Comparison of laser inscribed micropillars on flat versus tilted substrates	<b>ABOUD Damon</b>
<b>18:15</b>	<b>1577</b>	LIPSS for secondary electron yield reduction: influence of spherical and cylindrical lenses	<b>JJ NIVAS Jijil</b>

**Tuesday May 30**

**L06**

## **Laser-induced Periodic Surface Structures - II**

**Chairperson(s) : BONSE Jörn**

**Etoile A (1st floor)**

<b>10:00</b>	<b>1999</b>	Competition between the laser-induced chemical reactions and periodic surface structures (LIPSS)	<b>GUREVICH Evgeny</b>
<b>10:15</b>	<b>617</b>	Formation of laser-induced periodic surface structures on Zr-based bulk metallic glasses with different chemical composition	<b>GRÄF Stephan</b>
<b>10:30</b>	<b>405</b>	Role of Machining and Exposure Conditions on the Surface Chemistry Modification of Ultrafast Laser-Machined Copper Surfaces.	<b>JOY Nithin</b>
<b>10:45</b>	<b>1883</b>	The role of surface roughness on the regularity of LIPSS generated in metals with femtosecond lasers	<b>GALLEGO Diego</b>
<b>11:00</b>	<b>1931</b>	Effect of initial surface roughness on LIPSS formation and its impact on cell and bacteria attachment on metallic surfaces for bone implant applications	<b>SARAU George</b>
<b>11:15</b>	<b>404</b>	Impact of plasmonic modes and metal thermophysical properties on the formation of self-organised nano-patterns in thin films	<b>STRATAKIS Emmanuel</b>
<b>11:30</b>	<b>1715</b>	LIPSS formation on complex oxide thin films: the case of Yttrium Stabilized Zirconia	<b>KARIM Wael</b>
<b>11:45</b>	<b>1330</b>	Influence of femtosecond laser repetition rate on the formation of Laser Induced Periodic Surface Structures on thin films of Poly (ethylene terephthalate)- expanded graphite nanocomposite.	<b>PRADA-RODRIGO Javier</b>

**Tuesday May 30**

**L07**

## **Ultra-short and Ultra-high Power Laser Interaction with Matter - I**

**Chairperson(s) : DERRIEN Thibault**

**Etoile A (1st floor)**

<b>13:30</b>	<b>2059</b>	<b>INV</b>	Subcycle dynamics of plasma formation in fs laser irradiated solid dielectrics	<b>MERMILLOD-BLONDIN Alexandre</b>
<b>14:00</b>	<b>1324</b>		Time resolved mid-infrared absorption in silica: a new approach to study the electron-phonon coupling in glassy dielectric materials	<b>DE MICHELE Vincenzo</b>
<b>14:15</b>	<b>1234</b>		Analysis of ultrashort laser-induced plasma anisotropy in Zinc Telluride, by using terahertz probe pulses	<b>ZHANG Daiwei</b>
<b>14:30</b>	<b>2721</b>		Characterizing Solid State Sensors for Particle Detection at High Spatial and Temporal Resolution Using Wavelength-Tunable Two-Photon Photocurrent	<b>AL AMAIRI Nawal</b>
<b>14:45</b>	<b>624</b>		Ultrafast laser 3D processing of semiconductor materials using burst-mode irradiation strategies	<b>SOPENA Poi</b>

**Tuesday May 30**

**L08**

## **Laser Beam Engineering for Surface Processing**

**Etoile A (1st floor)**

<b>15:00</b>	<b>522</b>	<b>INV</b>	Periodic structures created by laser interference irradiation	<b>SIMON Peter</b>
<b>15:30</b>	<b>1091</b>		Well-defined periodic pattern fabrication on biomaterial surfaces using direct laser interference patterning	<b>VOISIAT Bogdan</b>
<b>15:45</b>	<b>2584</b>		Dual lasers self-alignment system for materials processing	<b>LAN Yu-Pin</b>

**Tuesday May 30**

**L09**

## **Laser Surface Processing - I**

**Chairperson(s) : SIMON Peter**

**Etoile A (1st floor)**

<b>16:30</b>	<b>966</b>	<b>INV</b>	Wavelength dependencies in ultrashort laser processing of dielectrics and semiconductors	<b>GARCIA-LECHUGA Mario</b>
<b>17:00</b>	<b>2442</b>		Wide band gap materials texturing using femtosecond laser	<b>KARUPPIAH Deva Arun Kumar</b>
<b>17:15</b>	<b>2519</b>		Femtosecond laser processing of niobium oxide layers with improved electro-optical properties for environmental applications	<b>SOTILLO Belen</b>
<b>17:30</b>	<b>1104</b>		Generation of high aspect ratio micro-pillars by ultrafast first-order Bessel beam	<b>BELLONI Valeria Viviana</b>
<b>17:45</b>	<b>1151</b>		X-Ray hazard upon ultrashort laser pulse processing of biological materials	<b>KRAFT Sebastian</b>
<b>18:00</b>	<b>2468</b>		Femtosecond Laser Induced Oxidation Mechanism on Tungsten Surfaces	<b>GARRELIE Florence</b>
<b>18:15</b>	<b>899</b>		Light-induced Reshaping of Complex 3D Mesostuctures on Azopolymer surfaces	<b>JANUARIYASA I Komang</b>

**Wednesday May 31**

**L10**

## **Laser Surface Texturing Applications**

**Chairperson(s) : STOIAN Razvan**

**Etoile A (1st floor)**

<b>10:00</b>	<b>1954</b>	Laser texturing of metallic surfaces for water harvesting applications	<b>POU-ÁLVAREZ Pablo</b>
<b>10:15</b>	<b>2605</b>	Study of CO2 laser-induced soda-lime glass fracture mechanisms for decorative purposes	<b>CAPELLE Alex</b>
<b>10:30</b>	<b>163</b>	Corrosion, Tribocorrosion and Bioactivity of Ultrafast Laser Structured Titanium alloy (Ti6Al4V)	<b>MADAPANA Dileep</b>
<b>10:45</b>	<b>1434</b>	Femtosecond laser micromachining of metal surfaces to change the overall adhesion of resins on metal	<b>RATHNAYAKA Shashini</b>
<b>11:00</b>	<b>1744</b>	Ultrafast laser paint removal of GFRP composites used in shipbuilding	<b>LÓPEZ Ana J.</b>
<b>11:15</b>	<b>2230</b>	Ultrashort laser-treated PVD ZrCu-based thin film metallic glasses, or how to switch the biological behaviour of surfaces from biocide to biocompatible?	<b>BRUHIER Hugo</b>
<b>11:30</b>	<b>915</b>	Durability of stainless steel surfaces against chemical and mechanical stress modified by laser and chemical techniques	<b>ZIMMER Klaus</b>
<b>11:45</b>	<b>2632</b>	Ultra-fast Laser texturing : A New Approach for Deterministic Graphene Folds	<b>JUAREZ SABORIO Ana Florencia</b>

**Wednesday May 31**

**JOINT LQ 01**

## **PLD of Thin Films I (JOINT SESSION L & Q)**

**Symposia**

**Chairperson(s) : HARO-PONIATOWSKI Emmanuel**

**Etoile A (1st floor)**

	<b>2344</b>	High quality MnZn soft ferrite films grown by pulsed laser deposition for applications in high frequency planar transformers and inductors	<b>PETRESCU Lucian-Gabriel</b>
<b>13:30</b>	<b>2743</b>	<b>INV</b> A brief historical overview of PLD for complex oxides	<b>BLANK Dave H. A.</b>



14:00	1182	Low-Dimensional Eu <sup>2+</sup> Based Emitters on Si by means of Nano- and Femtosecond Laser Processing	MARISCAL-JIMÉNEZ Antonio
14:15	904	PLD-based pyramidal-shaped ceria biointerfaces	BONCIU Anca

**Wednesday May 31**

**JOINT LQ 02**

**PLD of Thin Films I (JOINT SESSION L & Q)**

**Symposia**

**Chairperson(s) : BLANK Dave H. A.**

**Etoile A (1st floor)**

15:00	2448	Morphology control of self-organized Sr <sub>3</sub> (VO <sub>4</sub> ) <sub>2</sub> and Ca <sub>3</sub> (VO <sub>4</sub> ) <sub>2</sub> nanostructures on SrVO <sub>3</sub> and CaVO <sub>3</sub> perovskite PLD films	DEMANGE Valérie
15:15	2672	Perovskites-based thin films for photoelectrochemical water-splitting applications	ANDREI Florin
15:30	2644	Fabrication of nanostructured glasses by laser ablation	HARO-PONIATOWSKI Emmanuel
15:45	178	A Hybrid p-n Junction Based on metal chalcogenides for Highly Efficient Self-Powered Photodetection	KUMAWAT Kishan Lal

**Wednesday May 31**

**L\_P**

**Poster session**

**Chairperson(s) : KIETZIG Anne-Marie - PERVOLARAKI Maria - REBOLLAR Esther**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

01_63	Laser-Printed Emissive Metasurface as an Optical Security Platform	KANG Dongkyun
02_145	Laser induced graphene synthesis from photoresist	KWON Soongeun
03_2260	kinetic and comparative study of the isomerization reaction of substituted tetradecahepta-ene by ab-initio and dft method	LEKBIR Choukri
04_2274	study of the isomeric ratio of oriented polyacetylene isomerization reaction by laser beam	DJEBAILI Abdelbaki

<a href="#">05_1271</a>	Numerical and kinetic study of isomerization reaction of oriented polyacetylene induced by laser impact, shown by multichannel Raman	<b>DJEBAILI Abdelbaki</b>
<a href="#">06_1216</a>	Controllable wettability behavior of stainless steel surfaces developed by femtosecond laser texturing for application in high traffic objects	<b>DASKALOVA Albena</b>
<a href="#">07_2687</a>	Bimetallic copper oxide/Pd nanoparticles obtained by laser ablation in water for antibacterial applications.	<b>VILAS Ana María</b>
<a href="#">08_1705</a>	Chitosan-metal nanocomposite with enhanced antibacterial and photocatalytic activity obtained by laser ablation in liquid	<b>DE BONIS Angela</b>
<a href="#">09_2062</a>	Experimental investigation and numerical modeling of melt pool dynamics during direct laser interference patterning	<b>VOISIAT Bogdan</b>
<a href="#">10_2219</a>	Organic heterostructures with nanopatterned electrode and nanoparticle buffer layer prepared by laser technique	<b>BREAZU Carmen</b>
<a href="#">11_2241</a>	Structural and electrochemical properties of epitaxial titanium carbide thin films grown by laser processing on MgO (111) and Al <sub>2</sub> O <sub>3</sub> (001) substrates	<b>CONSTANTINESCU Catalin-Daniel</b>
<a href="#">12_2226</a>	Laser-induced forward transfer (LIFT) of metals for multiscale printing of 3D micro-objects and surface structuring	<b>CONSTANTINESCU Catalin-Daniel</b>
<a href="#">13_801</a>	High resolution patterning of doping in semiconducting polymer films by non-resonant laser excitation	<b>RAINER Christian</b>
<a href="#">14_1791</a>	High yield C-SiC composite nanoparticles synthesized by laser pyrolysis and their application for thermal transfer as aqueous nanofluids	<b>FLEACA Claudiu</b>
<a href="#">15_2720</a>	Experimental study of short and ultrashort pulse laser processing modes of solar silicon cells	<b>TSANKOV Docho</b>
<a href="#">16_1068</a>	Ambient pressure influence on the conductivity of tracks fabricated by picosecond laser pulses on the surface of AlN ceramic	<b>DIKOVSKA Anna</b>
<a href="#">17_2271</a>	Carbide Dispersed Surface on Beta Titanium Alloy (Ti-13Nb-13Zr) by Laser surface Alloying	<b>BERA Tapas</b>
<a href="#">18_2275</a>	Corrosion and Tribocorrosion Behavior of Laser Surface Melted Titanium Based Alloy (Ti6Al4V)	<b>DAS Bipasha</b>

19_2280	Studies on Mechanical, Electrochemical and Mechanochemical Behaviour of AISI 316L Stainless Steel for Bioimplant Application	IMANNA@METAL.IITKGP.ERNET.I Indranil
20_921	Secondary electron yield engineering of copper using ultra-short laser pulse irradiation	ZIMMER Klaus
21_929	Fabrication of micro cubes with plasmonic functionalization by laser precision machining of modified polymers foils	ZIMMER Klaus
22_1875	Production of iron oxide nanoparticles through laser pyrolysis using isopropanol as sensitizer	LUNGU Iulia Ioana
23_1138	Effect of picosecond laser illumination direction on P3 scribing of CuInGaSe2 thin-film solar cell architecture based on transparent back electrode	JEONG Jeung-Hyun
24_1494	Chemical and topographical changes upon sub-100-nm laser-induced periodic surface structure formation on titanium alloy	BONSE Jörn
25_1620	Picosecond laser processing of hierarchical micro-nanostructures on titanium alloy upon pre- and post-anodization	BONSE Jörn
26_1183	Impact of laser-induced periodic surface structures on the bactericidal properties of copper and brass	MEISSNER Sven
27_2315	Femtosecond laser intraoral robotic: the future of modern dentistry	BRAND Julia
28_2328	Microwave Induction heating for Non-contact and Ultra-fast Annealing of Conductive Thin Film	KIM Daeho
29_508	Tuning the optical and structural properties Sn-Sb-S (TAS) thin films by 248 nm excimer laser irradiation	KHEMIRI Naoufel
30_1180	High-rate laser texturing for advanced coating substrate preparation	KRAFT Sebastian
31_1783	Bacterial adhesion on fs-laser processed laser-induced periodic surface structures	RAZKIN Malen
32_2542	Study of laser textured polymer to control wettability and emissivity	FLURY Manuel
33_1995	Polymer thin films with hole transport properties for organic solar cell applications	STÎNGESCU Maria-Luiza
34_2476	Microstructure of the EVA thin films deposited by MAPLE process from three - component target	MITU Bogdana

<a href="#">35_2626</a>	Magnesium Nanoparticles obtained by Laser Ablation in Ethanol	<b>FERNÁNDEZ-ARIAS Mónica</b>
<a href="#">36_1406</a>	Laser assisted synthesis and optical properties of hybrid silicon nanoparticles for solar-thermal applications	<b>TARASENKO Nikolai</b>
<a href="#">37_1986</a>	Laser ablation fabrication of anisotropic metal oxides nanoparticles for the novel electrochemical sensors	<b>TARASENKA Natalie</b>
<a href="#">38_672</a>	Surface structuring and ablation characteristics of nitride ceramics induced by picosecond laser pulses	<b>NEDYALKOV Nikolay</b>
<a href="#">39_2164</a>	Charge transfer induced robust spin polarization in hBN/TMDC/PbI <sub>2</sub> heterostructures in type I and type II configurations	<b>BARMAN Prahalad Kanti</b>
<a href="#">40_2158</a>	Robust photoluminescence enhancement of in-band-engineered TMDC/PbI <sub>2</sub> heterostructure by non-radiative energy transfer process	<b>BARMAN Prahalad Kanti</b>
<a href="#">41_2658</a>	Fabrication of TiOx/copper oxide nanostructures by laser ablation as photocatalyst for hydrogen production	<b>POU-ÁLVAREZ Pablo</b>
<a href="#">42_579</a>	Core-selective silver-doping of gold nanoclusters by surface-bound sulphates on colloidal templates: From synthetic mechanism to relaxation dynamics	<b>CHANDRA Sourov</b>
<a href="#">43_1690</a>	Exploring subthreshold control over HfO <sub>2</sub> mirrors upon fs laser irradiation via target current measurements. Towards Understanding Damage Threshold Limit	<b>IRIMICIUC Stefan</b>
<a href="#">44_2467</a>	Effects of fs pulsed laser ablation on synthetic zeolite targets	<b>ORLANDO Stefano</b>
<a href="#">45_1214</a>	Laser micromarking of dental implants for improved traceability	<b>CRACIUN Valentin</b>
<a href="#">46_1777</a>	Production of copper-based nanostructures via pulsed laser ablation in different solvents and their properties for water splitting in alkaline electrolyte	<b>IACONO Valentina</b>
<a href="#">47_262</a>	Lasing in Atoms Green: a New Phenylene-Based Conjugated Polymer	<b>KUMAR Vishal</b>

Thursday June 1

L11

## Laser-induced Plasma and Applications

Chairperson(s) : DE LA FUENTE German Francisco

Etoile A (1st floor)

10:00	1960	Laser ablation combined with electric sparks for element analysis of steels and polymers by optical emission spectroscopy	PEDARNIG Johannes
10:15	492	Laser-induced reactive micro plasma as an advanced tool for high quality surface engineering	ZIMMER Klaus
10:30	937	Combining atmospheric pressure plasma jet processing with pulsed laser ablation for ultra-precise processing of technical glasses	HEINKE Robert
10:45	1679	Rethinking ionic oscillations in ns-laser produced plasmas	IRIMICIUC Stefan
11:00	1429	Laser-Induced Thermal Desorption for Probing Adsorption on Carbon Surfaces: A Combined Experimental and Theoretical Study	AL ASEEL Joelle
11:15	2712	Application of laser technologies to control the crystallinity of Cu <sub>2</sub> O and ZnO layer deposited by SALD	FRECHILLA Alejandro
11:30	616	Laser-Induced Graphene as electrode material in Proton-Exchange Membrane Fuel Cells	SERRA Tommaso
11:45	692	Laser-synthesis of Tin Sulfides	AVERCHENKO Aleksandr

Thursday June 1

L12

## Ultra-short and Ultra-high Power Laser Interaction with Matter - II

Chairperson(s) : MERMILLOD-BLONDIN Alexandre

Etoile A (1st floor)

13:30	67	INV	Holographic optical engine (HoIOE) for laser processing with beam shaping	HAYASAKI Yoshio
14:00	284		Ionisation dynamics, damage conditions and surface patterning in fused silica irradiated with Mid-Infrared femtosecond pulses	MARAGKAKI Stella

14:15	1193	Laser-induced symmetry breaking in energy absorption of silicon induced by intense femtosecond laser pulse	DERRIEN Thibault
14:30	2297	Correlating High-Harmonic Generation and Ionization Dynamics in Bulk Solids	JUERGENS Peter
14:45	313	Few-cycle laser-written surface waveguides for evanescent field sensing	RAMMELT Laura

Thursday June 1

L13

## Laser-induced Melting and Crystallization

Chairperson(s) : GARCIA-LECHUGA Mario

Etoile A (1st floor)

15:00	2252	Laser Heating, Melting and Quenching of Thin Films	RESL Josef
15:15	1149	Pulsed laser crystallization of sputtered MoS <sub>2</sub> layers	TONON Alessandro
15:30	2213	Synthesis of relaxed Ge <sub>0.9</sub> Sn <sub>0.1</sub> /Ge by nanosecond pulsed laser melting	DI RUSSO Enrico
15:45	1186	Pulsed Laser Melting for Sb heavy doping of Ge <sub>1-x</sub> Sn <sub>x</sub> epilayers	FONTANA Daris

Thursday June 1

L14

## Lasers and Applications

Chairperson(s) : PEDARNIG Johannes

Etoile A (1st floor)

16:30	1497	New technologies for High Purity Germanium segmented detectors: from virgin crystals to innovative devices.	BERTOLDO Stefano
16:45	308	Polariton condensation from a bound state in the continuum	RIMINUCCI Fabrizio
17:15	540	Naturally Occurring Halloysite Nanotubes as Stable Passive Light Scatterers for Random Lasing	PRAMANIIC Ashim
17:30	2648	From optical pumping to electrical pumping: the threshold overestimation in metal halide perovskites	QIN Jiajun

<b>17:45</b>	<b>2656</b>	Transport layer engineering towards lower threshold for perovskite lasers	<b>ZHANG Jia</b>
<b>18:00</b>	<b>1840</b>	Laser processes for HPGe gamma ray detectors	<b>CARRARO Chiara</b>
<b>18:15</b>	<b>1871</b>	Fast and low temperature detection of Nitric Oxide (NO) based on CuO nanoparticles obtained by pulsed laser ablation in liquid	<b>IACONO Valentina</b>

Friday June 2

L15

## Laser-Induced Forward Transfer

Chairperson(s) : SOPENA Pol

Etoile A (1st floor)

08:45	366	INV	The Power of Light: Creation of Polymer-based Nanocomposites with Bactericidal Effect	SIEGEL Jakob
09:15	1474		LIFT printing of conductive patterns on reconfigurable substrates	FERNANDEZ PRADAS Juan Marcos
09:30	1710		Shape control for laser-printed microlenses through substrate reconfiguration	MARTÍ Ernest
09:45	2091		Laser-Induced Forward Transfer for the creation of relevant bio-models	DUVERT Lucas

Friday June 2

L16

## Laser Surface Processing

Chairperson(s) : BONSE Jörn

Etoile A (1st floor)

10:30	860		Laser-induced periodic surface structures in polymers with tailored laser fields	DE NALDA Rebeca
10:45	1243		Laser induced periodic surface structuring of Germanium with circularly polarized femtosecond pulses	JJ NIVAS Jijil
11:00	1689		Spatially Regulated Pressure of Shockwave for the Generation of 2D Micro Patterns	LEE Jaejun
11:15	2287		Effect of Si Addition on the Microstructure and High Temperature Oxidation Resistance Property of Titanium Aluminide	DUTTA MAJUMDAR Jyotsna









European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM M

Materials engineering for advanced semiconductor devices

*Symposium Organizers:*

Fuccio CRISTIANO, LAAS-CNRS, Toulouse, France

Alessandra ALBERTI, CNR-IMM, Catania, Italy

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**Monday May 29**

## **M01**

### **Integration Challenges**

**Chairperson(s) : PICHLER Peter**

**Schuman (1st floor)**

<b>08:45</b>	<b>2740</b>	<b>INV</b>	Recent advances in 3D sequential integration	<b>BRUNET Laurent</b>
<b>09:15</b>	<b>958</b>		Reconfigurable Field-Effect Transistor Technology via Heterogeneous Integration of SiGe with Crystalline Al Contacts	<b>WIND Lukas</b>
<b>09:30</b>	<b>1411</b>		Engineering of HZO layer for the fabrication of ultimate 3D vertical transistors for Memory-in-Logic applications	<b>MOUSTAKAS Konstantinos</b>
<b>09:45</b>	<b>817</b>		Isotopically Enriched <sup>28</sup> Si Substrates for Quantum Computers Produced Using Ion Implantation Layer Exchange	<b>ENGLAND Jonathan</b>

**Monday May 29**

## **M02**

### **Simulation and Modeling I**

**Chairperson(s) : MARQUES Miguel A. L.**

**Schuman (1st floor)**

<b>10:30</b>	<b>1974</b>	<b>INV</b>	Modelling of Interfaces and Surface reactions	<b>NOLAN Michael</b>
<b>11:00</b>	<b>1417</b>		First Principles Calculation of Alloy Scattering Parameters and their Effect on the Mobility of GeSn	<b>SEWELL Kevin</b>
<b>11:15</b>	<b>1551</b>		Metal-Dielectric Adhesion Improvement Using Germanium Incorporation	<b>BAZIZI El Mehdi</b>
<b>11:30</b>	<b>1830</b>		Electronic properties of interstitial atom clusters in silicon and their impact on devices	<b>JAY Antoine</b>
<b>11:45</b>	<b>2168</b>		Variability in Si Spin Qubits Due to Disordered Si/SiO <sub>2</sub> Interfaces	<b>CVITKOVICH Lukas</b>

Monday May 29

## M03

### Substrate Technologies and Layer Synthesis I

Chairperson(s) : SAWANO Kentarou

Schuman (1st floor)

13:30	188	INV	New Substrate Materials for Advanced Electronic Devices	RADU Ionut
14:00	198		Low temperature epitaxial SiGe:P for gate-all-around(GAA) nMOS devices	FUJIMOTO Yuta
14:15	622		Deposition of Zr <sub>0.05</sub> Sn <sub>0.95</sub> O <sub>2</sub> Thin Film using Mist Chemical Vapor Deposition and Its Application to Thin-Film Transistor	HSU Meng-Yu
14:30	1129		CVD-Growth of Tellurium-Based 2D Materials	GHOMI Sara
14:45	360		Direct growth of wafer-scale self-separated GaN on reusable two-dimensional material substrate	HUANG Chang-Hsun

Monday May 29

## M04

### Metrology and Characterization I

Chairperson(s) : EYBEN Pierre

Schuman (1st floor)

15:00	512		Raman spectroscopy in Ge and GeSn: Temperature dependence	SPIRITO Davide
15:15	1779		Polarized Raman scattering of epitaxially grown GeSn layers with different Sn contents	CORLEY-WICIAK Agnieszka Anna
15:30	526		Coupling X-ray Beam Induced Current and X-ray Diffraction Imaging to characterize diamond plates used as semiconductor-based detectors	LAFONT Fabien
15:45	1522		X-ray Nanobeam Mapping of Lattice Strain Modulations from CMOS-Processed TiN Gate Electrodes for Quantum Technologies	CORLEY-WICIAK Cedric

**Monday May 29**

**M05**

**Advanced Doping Technologies**

**Chairperson(s) : BAUER Matthias**

**Schuman (1st floor)**

<b>16:30</b>	<b>2509</b>	<b>INV</b>	Novel Processes for Advanced Nanoelectronics Devices	<b>SHARMA Shashank</b>
<b>17:00</b>	<b>638</b>		Title of abstract: Study on the electrical properties of ultrathin in situ Boron-doped strained Si <sub>0.7</sub> Ge <sub>0.3</sub> layers annealed by nanosecond pulsed laser	<b>DAUBRIAC Richard</b>
<b>17:15</b>	<b>1027</b>		Study on structural and electrical properties of Si:P and Si:As films treated by RTA and NLA	<b>LEE Kihyen</b>
<b>17:30</b>	<b>1171</b>		Sb heavy doping of Ge <sub>1-x</sub> Sn <sub>x</sub> epilayers by Pulsed Laser Melting	<b>FONTANA Daris</b>
<b>17:45</b>	<b>1308</b>		Evolution of carrier mobility and carrier density of femtosecond laser sulfur hyperdoped silicon after different post-processing treatments	<b>PAULUS Simon</b>
<b>18:00</b>	<b>1808</b>		Impact of Nanosecond Laser Annealing on the Structural and Electrical Properties of Heavily in-situ B-doped SiGe Epitaxial Films	<b>JO Chunghee</b>
<b>18:15</b>	<b>926</b>		Phosphorus monolayers formation on Ge: towards a reliable monolayer doping	<b>SGARBOSSA Francesco</b>

**Tuesday May 30**

## **M06**

### **Simulation and Modeling II**

**Chairperson(s) : NOLAN Michael**

**Schuman (1st floor)**

<b>10:00</b>	<b>2737</b>	<b>INV</b>	Machine-learning-assisted determination of the global zero-temperature phase diagram of materials	<b>MARQUES Miguel A. L.</b>
<b>10:30</b>	<b>1196</b>		Ground and excited state properties of meta-stable allotropic forms of 2D Tellurium from first principles approaches	<b>GRILLO Simone</b>
<b>10:45</b>	<b>574</b>		Charged intrinsic defect states in amorphous Si <sub>3</sub> N <sub>4</sub>	<b>WILHELMER Christoph</b>
<b>11:00</b>	<b>710</b>		Multiscale modeling of ultrafast transformations and structural disorder in laser annealed SiGe nanostructures	<b>CALOGERO Gaetano</b>
<b>11:15</b>	<b>858</b>		Functionality of polycrystalline-Si channel: insight from first-principles and multi-scale modeling	<b>MAJI Rita</b>
<b>11:30</b>	<b>1769</b>		A Multiscale Modeling Approach for Revealing Defects Relevant in Charge Trapping Related Phenomena	<b>WALDHOER Dominic</b>
<b>11:45</b>	<b>2065</b>		Kinetic Monte Carlo simulations of heated boron implantation and non-melt laser annealing in Si and SiGe layers	<b>MUNDINAR Simon</b>

**Tuesday May 30**

## **M07**

### **Power Devices I**

**Chairperson(s) : SCHUSTEREDER Werner**

**Schuman (1st floor)**

<b>13:30</b>	<b>1508</b>	<b>INV</b>	Virtualization of processes, metrology and maintenance for advanced SiC-based device manufacturing	<b>PAGANO Daniele</b>
<b>14:00</b>	<b>1538</b>		Growth of thick GaN layers on Si (111) for vertical power devices	<b>MICHLER Sondre</b>
<b>14:15</b>	<b>681</b>		Investigation of electron mobility in AlGaN channel heterostructures with different Al content	<b>BASSALER Julien</b>

14:30	1292	Novel Energy-Filtered Field Stop Technology for IGBT Power Devices	KOCH Robert
14:45	932	Single step of $\mu$ s UV laser annealing for Si IGBT back-side activation	CHEHADI Zeinab

**Tuesday May 30**

**M08**

## Silicides and Germanides I

Chairperson(s) : MANGELINCK Dominique

Schuman (1st floor)

15:00	227	INV	Optimization of the contact engineering processes in the frame of advanced semiconductor devices development.	GREGOIRE Magali
15:30	524		Effects of roughness variation on the electrical and structural properties of Ni silicide ohmic contacts formed by UV laser annealing	BADALÀ Paolo
15:45	2131		Investigation of the formation of nickel silicides on vertical silicon nanostructured channel for advanced electronics	MÜLLER Jonas

**Tuesday May 30**

**M\_P01**

## Poster session 1

Etoile (1st floor) - 4.30 p.m to 6.30 p.m

01_40	Defects visualization in Gallium Nitride by Scanning Transmission Electron Microscopy	BONGIORNO Corrado
02_148	Investigation of carrier Lifetime variation with nanopillar spacing in Si-nanopillar/SiGe composite materials for MOSFET application by laser heterodyne photothermal displacement measurements	HARADA Tomoki
03_300	Deep Level Transient Spectroscopy-Secondary Ion Mass Spectrometry combined study of H <sup>+</sup> irradiation effects on 4H-SiC	SCALISI Melissa Lucia
05_778	Super-Resolution Fluorescence Imaging for Semiconductor Nanoscale Metrology and Inspection	MUN Seohyun



06_811	Band Bending and Surface Composition Analysis by Angle Resolved XPS and Their Impact on Minority Carrier Lifetime After Germanium Wet Etching	CHAPOTOT Alexandre
07_930	Manipulating spin texture in a hybrid nanostructure comprised of topological insulator and 2D semiconductor with varied band alignment types	CHENG Cheng-Maw
08_950	Thermal transport on few-layers Fe <sub>3</sub> GeTe <sub>2</sub>	CLARO Marcel S.
09_1102	Stress/strain-induced Raman frequency shift in Gallium Nitride (GaN) Packaged Devices	DAHROUCH Zainab
10_1471	Features of Ultrathin SiO <sub>2</sub> Layers on Si and Their Physical Manifestations	KONIN Konstantin
11_1472	4H-SiC RIE etch: Design of Experiments optimization for striations recovery by using ImageJ software	BARCELLONA Matteo
12_2639	Sub-Picosecond Carrier Dynamics Explored using Automated High-Throughput Studies of Doping Inhomogeneity within a Bayesian Framework	AL-ABRI Ruqaiya
13_355	Radiation-enhanced annealing of vacancy-oxygen defects in Cz n-Si: features of the experiment, factor of the radiation ionization, and a possible annealing mechanism	KRAS'KO Mykola
14_518	New states of $\text{V}_{\text{Si}}$ defect in boron-doped Si	KHIRUNENKO Lyudmila
15_627	The Diffusion Behavior and Electrical Characteristics of Ru Interconnect with Polycrystalline MoS <sub>2</sub> Diffusion Barrier	JHAN Dun Jie
16_2411	Density functional theory study of multi-interstitial defects complexes in germanium	ABDURRAZQAQ Abdulgaffar
17_2001	Gibbs free energy for MoO <sub>2</sub> Cl <sub>2</sub> reaction on SiO <sub>2</sub> surface by density function theory	KIM Hyun-Kyu
18_2043	Two-dimensional carrier gas at a polar interface without surface band gap states: A first principles perspective	BRIVIO Federico
19_2095	Two-dimensional van der Waals heterostructures for energy-efficient tunneling transistors	IORDANIDOU Konstantina
20_69	General Purpose Machine Learning Interatomic Potential for Silicon-Germanium	MILARDOVICH Diego
21_2050	Ab-initio study of the effects of Pb intercalation in Graphene/SiC heterostructures	BROZZESI Simone

<a href="#">22_1380</a>	Tuning the Schottky Contacts of graphene/phosphorene heterostructure: a DFT study	<b>MURONI Alessia</b>
<a href="#">23_893</a>	TCAD modelling of a-Si:H devices for particle detection applications	<b>PASSERI Daniele</b>
<a href="#">24_1206</a>	Post growth thermal treatments of Si <sub>1-x</sub> -yGe <sub>x</sub> Sny alloys	<b>STEUER Oliver</b>
<a href="#">25_43</a>	New method for the deposition of thin films on the inner walls of a deep cavity: application to germanium doping	<b>CARRARO Chiara</b>
<a href="#">26_1476</a>	Strained sintered mesoporous silicon epifoils for IIIV/Si integration and substrate reuse	<b>SANCHEZ-PEREZ Clara</b>
<a href="#">27_2200</a>	Properties and perspectives of supersaturated (Si)Ge nanosheets grown via molecular beam epitaxy at ultra-low temperatures	<b>ABERL Johannes</b>
<a href="#">28_827</a>	Impact of annealing schemes on the formation and agglomeration of thin Ni(Pt)Si film for advanced 3D imagers technologies	<b>MORRIS ANAK Fabriziofranco</b>
<a href="#">29_2081</a>	In-situ transmission electron microscope observation of nickel metal-induced crystallization on a-Si	<b>HSIANG Chen-Chih</b>
<a href="#">30_2202</a>	Study of interfaces in nickel-based silicides through a multi-level modeling strategy	<b>JARA Cesar</b>
<a href="#">31_189</a>	Influence of the type of interlayer on current transport mechanisms and defects in n-ZnO/ZnCdO/p-Si and n-ZnCdO/ZnO/p-Si heterojunctions grown by molecular beam epitaxy	<b>SZYMON Radoslaw</b>
<a href="#">32_1572</a>	Phase transition control of crystalline Ga <sub>2</sub> O <sub>3</sub> grown on sapphire (0001) by MOCVD	<b>KIM Hyeong-Yun</b>
<a href="#">33_1915</a>	Deposition of Ga <sub>2</sub> O <sub>3</sub> and ZnGa <sub>2</sub> O <sub>4</sub> thin films by liquid metal target sputtering	<b>ZUBKINS Martins</b>
<a href="#">35_805</a>	Wafer-Scale Production of 2D SnSe: Synthetic Platform for Van der Waals Semiconductor-Based Broadband Photodetectors	<b>JO Hyeong-Ku</b>
<a href="#">36_605</a>	Formation of High-k Al-doped ZrO <sub>2</sub> Dielectric Using a New Cocktail Precursor	<b>KIM Hyeong</b>
<a href="#">37_1030</a>	Effect of dopant distribution on the remanent polarization of La-doped HfO <sub>2</sub> thin films	<b>JEONG Ju Young</b>
<a href="#">38_1019</a>	Ferroelectricity of La doped Hf <sub>0.5</sub> Zr <sub>0.5</sub> O <sub>2</sub> Films Deposited by Atomic Layer Deposition using Supercycles	<b>HAN Yoogeun</b>

39_1647	Oxygen Vacancy Control-mediated Ferroelectricity Enhancement in Hafnium Zirconium Oxide Via DUV Photoactivation	LEE Sangwoo
40_458	Chemical design of magnetoelectric GaFeO <sub>3</sub> epitaxial thin films	NASUI Mircea
41_861	Engineering Transition Metal Oxide and Transition Metal Dichalcogenide Memristive Devices for Neuromorphic Systems	LINKENHEIL Anna
42_113	Mist-CVD Deposited c-Axis Aligned Crystalline ITZO Thin Film and Its Application to Thin-Film Transistor	LIU Han-Yin
43_1238	A comprehensive study of the influence of various deposition parameters on the physical properties of ZnO:Al thin transparent conducting films	RACZ Adel Sarolta
44_1103	High mobility Oxide Thin Film Transistor with amorphous In-Ga-Sn-O fabricated by RF-magnetron sputtering	HYUNIL Jo
45_1125	Growth Control, Optical and Structural Characterization of Layered Gallium Sulfide Films Prepared by Chemical Vapor Deposition	DICORATO Stefano
46_1992	Growth of MoSe <sub>2</sub> -MoS <sub>2</sub> core-shell in-plane heterostructure TMDs using Chemical Vapor Deposition	LIM Insu
48_1827	Photothermal reaction based Low Temperature Synthesis of Vertically Integrated Two-dimensional Heterostructure	JEON Min-Ji
47_2454	Phase Change Sb <sub>2</sub> S <sub>3</sub> films grown by Chemical Vapor Deposition	GIANGREGORIO Maria Michela
49_625	Manifestation of Eu dopants in Raman spectra and doping concentration profiles of {ZnCdO/ZnO} superlattices	PERLIKOWSKI Igor
50_1441	Effect of gallium doping on structural and transport properties of the Topological Insulator Bi <sub>2</sub> Se <sub>3</sub> by molecular beam epitaxy	PÉREZ RODRÍGUEZ Ana
51_100	Extraction of single-walled carbon nanotubes of defined chirality with conjugated polymers in organic solvents	JANAS Dawid

**Wednesday May 31**

**M09**

## **Metrology and Characterization II**

**Chairperson(s) : VANTOMME André**

**Schuman (1st floor)**

<b>10:00</b>	<b>2577</b>	<b>INV</b>	Combining cutting-edge metrology techniques and TCAD to support device integration towards the 2nm Technological Node and Beyond	<b>EYBEN Pierre</b>
<b>10:30</b>	<b>1933</b>		Scanning Spreading Resistance microscopy on dopant profiles in elemental and compound semiconductors	<b>BÖCKENDORF Tim</b>
<b>10:45</b>	<b>391</b>		Local Strain and Alloy Composition in Ge <sub>1-x</sub> Sn <sub>x</sub> Microdisks: A Study by X-ray Nanoprobe	<b>ZOELLNER Marvin Hartwig</b>
<b>11:00</b>	<b>864</b>		Capacitance-Voltage Measurements on SiC-Based MOS Structures: What Information Can We Get from Them?	<b>BURENKOV Alex</b>
<b>11:15</b>	<b>1399</b>		On the bulk photovoltaic effect in non-uniformly strained Germanium	<b>MANGANELLI Costanza Lucia</b>
<b>11:30</b>	<b>1447</b>		Deep multi-energy proton implantation in silicon: a SIMS study	<b>SAMPERI Orazio</b>
<b>11:45</b>	<b>1713</b>		Photoemission Spectroscopy on photoresist materials: A useful tool to use with caution	<b>SAJJADIAN Faegheh</b>

**Wednesday May 31**

**M10**

## **Simulation and Modeling III**

**Chairperson(s) : LA MAGNA Antonino**

**Schuman (1st floor)**

<b>13:30</b>	<b>2698</b>	<b>INV</b>	Material Engineering for Advanced CMOS Technology	<b>MOROZ Victor</b>
<b>14:00</b>	<b>2325</b>		Gate-All-Around SRAM: Performance Investigation and Optimization Towards Vccmin Scaling	<b>VYAS Pratik B</b>
<b>14:15</b>	<b>2002</b>		Impact of solid and liquid phase reflectivity on the ultra-fast laser melting of silicon-germanium alloys	<b>RICCIARELLI Damiano</b>

14:30	2074		Boron diffusion in germanium and the impact of oxygen	KIPKE Felix
14:45	623		Generation and loss of hydrogen-boron pairs in fired silicon wafers	VORONKOV Vladimir

**Wednesday May 31**

**M11**

## Silicides and Germanides II

Chairperson(s) : GREGOIRE Magali

Schuman (1st floor)

15:00	964	INV	Some challenges and issues for contacts formation and stability in microelectronics	MANGELINCK Dominique
15:30	1332		NiGe formation on thin Ge films by flash lamp annealing: electrical properties	REBOHLE Lars
15:45	1046		NiSi <sub>2</sub> /Si interface with segregation of one-atomic Au layer in a silicide-embedded silicon nanowires	WU Chia-Yi

**Wednesday May 31**

**M12**

## Applications in Advanced Devices

Chairperson(s) : ENGLAND Jonathan

Schuman (1st floor)

16:30	844		Back-end-of-line and flexible substrate compatible ferroelectric memories for neuromorphic computing and adaptive sensing	MAJUMDAR Sayani
16:45	1029		Indium Gallium Zinc Oxide Based Ferroelectric Thin Film Transistors for Content Addressable Memory Cell Applications	DE Sourav
17:15	1114		Impact of ferroelectricity on the electron-phonon coupling at oxide interfaces	HUSANU Marius Adrian
17:30	1272		Site-controlled fabrication of integrated graphene nanoribbons-based quantum dot devices using scanning probe nanopatterning	LIU Xiao
17:45	1312		Physically Unclonable Functions Capable of Preventing Machine Learning Hacking Attacks Obtained by Disordered Interfacial-doping of Graphene Using Mixed Self-assembled Monolayers	LEE Subin

<b>18:00</b>	<b>1493</b>	New technologies for High Purity Germanium segmented detectors: from virgin crystals to innovative devices.	<b>BERTOLDO Stefano</b>
<b>18:15</b>	<b>2484</b>	Different Schottky barriers have been obtained by varying the Schottky metal and deposition parameters	<b>MILAZZO Simone</b>

Thursday June 1

M13

## Substrate Technologies and Layer Synthesis II

Chairperson(s) : RADU Ionut

Schuman (1st floor)

10:00	1555	INV	Strain engineering of Si/Ge heterostructures based on Ge virtual substrates	SAWANO Kentarou
10:45	920		Synthesis of MoS2 layers by sputter deposition and pulsed laser annealing.	TONON Alessandro
11:00	2166		Growth of transferable germanium membranes on porous substrate for flexible optoelectronics	HANUS Tadeas
11:15	1337		Van der Waals epitaxy of CdTe on 2D surfaces	TOURARD Enguerrand
11:30	2011		Lamellar GeP thin films: a first step on the road toward 2D-GeP	STOFFEL Mathieu
11:45	2197		Synthesis of relaxed Ge <sub>0.9</sub> Sn <sub>0.1</sub> /Ge by nanosecond pulsed laser melting	DI RUSSO Enrico

Thursday June 1

M14

## Simulation and Modeling IV

Chairperson(s) : HEMERYCK Anne

Schuman (1st floor)

13:30	1168	INV	Multiscale simulations of critical processes for the fabrication and functionalization of nanostructures	LA MAGNA Antonino
14:00	1655		Multi-Threshold Voltages Enablement Using Oxide Dipoles in WFM-Less Gate Stack for n- and p- Type GAA Devices	JADAUN Priyamvada
14:15	2089		A simulation workflow to couple the meso and atomistic scale for the CVD epitaxy of Si and SiGe-based structures	FISICARO Giuseppe
14:30	433		Accurate and efficient 3-D analytic model of ion implantation based on Legendre polynomials	ZOGRAPHOS Nikolas
14:45	1363		TCAD process simulation of self-limiting oxidation of silicon nanowires	ROSSI Chiara

Thursday June 1

M15

## Silicides and Germanides III

Chairperson(s) : ALBERTI Alessandra

Schuman (1st floor)

15:00	2154	INV	Tuning nickel silicide properties via ion implantation: the role of defects and impurities	VANTOMME André
15:30	898		Formation of the C54-TiSi <sub>2</sub> phase using nanosecond laser annealing and RTA enhanced by amorphous silicon	GUELLADDRESS Reda
15:45	614		Influence of the Si surface preparation on CoSi <sub>2</sub> agglomeration	NEWMAN Andréa

Thursday June 1

M\_P02

## Poster session 2

Etoile (1st floor) - 4.30 p.m to 6.30 p.m

01_1404	A low-temperature route to the green synthesis of CsPbBr <sub>3</sub> films on rigid and flexible substrates	SIRNA Lorenzo
02_1200	A new Combinatorial Approach for Solution Deposition of Thin Films	ZAKAY Noy
03_126	Pulsed 193 nm Excimer laser processing of 4H-SiC(0001) wafers with radiant exposure dependent "in situ" reflectivity studies for process optimization.	DELMDAHL Ralph
04_1026	Investigation of the dopant activation in ultra-highly B-doped Si <sub>1-x</sub> Ge <sub>x</sub> films	LEE Kiseok
05_1506	Wet etching characteristics of poly-Si depending on the various structures for advanced 3D integrated circuits	JI Sanghyeon
06_1539	Impact of Si <sub>3</sub> N <sub>4</sub> stoichiometry on the formation of an AlN layer in an Al/Ti/Si <sub>3</sub> N <sub>4</sub> thin film system during AlGaIn/GaN Ohmic contact formation for HEMT device	COLOMBO Selene
07_1159	Neuromorphic Synapse Implementation using InOx Interfacial Layer in InAs Nano-Wire Field-Effect Transistor	LEE Junseo



08_1574	Symmetric nitride-based ambipolar transistors with tunable electrical properties by high electronegativity dopant	PARK Ji-Min
09_2488	Fabricating Cfet Devices with Vertically Stacked P/N Si Channels Using Ge/Si 2D Epitaxy and High Ge/Si Selective Etching Ratio	CHUN-LIN Chu
11_1868	Electrical properties of graphene field-effect transistor (GFET) by minority carrier resistance effect of graphene	GU Taejun
12_1865	Electrical Characteristics (80 – 525 K) of High Quality Pt SBDs Fabricated on HVPE-Grown $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Epilayers	SHEORAN Hardhyan
13_138	Reliable Multiply-Accumulate Operation of a Ru/TaOx/Si:ZrOx/TiN Stacked Device	SEO Hyun Kyu
14_149	Tailoring the multilevel resistive switching characteristics of hafnium oxide-based memory devices by differential work function engineering	S. P. Swathi
15_1626	Self-assembled Tantalum oxide/2H-TaS <sub>2</sub> as van der Waals Platform of Multilevel Memristor Circuit with $\beta$ -Ga <sub>2</sub> O <sub>3</sub> Transistor	KIM Taewook
16_1674	Multiply-Accumulate Operation on One Selector-One Resistor(1S1R) 32 x 32 crossbar arrays	LEE Su Yeon
17_2155	Synthesis of Large-Area Monolayer MoS <sub>2</sub> for Two-Terminal Neuromorphic Devices with Short-Term Memory	THOOL Asmita
18_2204	Transposable 1T-SRAM for neuromorphic computing	LIM Doohyeok
19_2508	Resistive switching properties of Cu <sub>x</sub> O films through phase transition during low-temperature annealing	KIM Eun Kyu
20_2514	Synthesis and memristor properties of CVD grown ReS <sub>2</sub> thin film: Change from DRAM to WORM	AGGARWAL Pallavi
21_772	Deposition of TiO <sub>2</sub> Thin Films by Mist Chemical Vapor Deposition and Their Application to Resistive Random Access Memory	CHENG Yun-Yun
22_1007	Efficient Inverted Tandem Structure of Quantum Dot Light-Emitting Diodes with Inorganic Charge Generation Layers	LEE Kwangkeun
23_1058	Ligand exchanged highly dispersed NiO nanoparticles for hole injection layer of Quantum Dots LED	HYOJUN Lim

24_1338	Interplay between strain, Sn content and temperature in GeSn optoelectronic devices	ZAITSEV Ignatii
25_1544	Investigation of Chiral Halide Perovskite/III-V LEDs with Circularly Polarized Emission	HAUTZINGER Matthew
261921	Carrier dynamics and structural properties of hybrid orange-red LED based on In-rich InGaN/GaN multiple quantum wells	ALAMOUDI Hadeel
27_1926	Studying the carrier dynamic of pyramid-shaped InGaN/GaN micro-light-emitting diodes ( $\mu$ -LEDs) by using Time-resolved photoluminescence	ALRESHIDI Fatimah
28_333	Al <sub>x</sub> Zn <sub>1-x</sub> O-based Ultraviolet Photodetectors with Tunable Cutoff Wavelength from Near-UV to Deep-UV	CHEN Wei-Han
29_1250	Gate/Light Co-Tunable Negative Differential Resistance Behaviors and 9 by 9 Photodetectors Array from Small-Molecules Heterostructure	JEON Yunchae
30_1703	Effect of Sn <sup>+</sup> ion implantation and post-annealing on enhancing $\beta$ -Ga <sub>2</sub> O <sub>3</sub> -based DUV self-powered photodetector performance	UPADHYAYA Kishor
31_1223	Photosensitive graphene field-effect transistor with porous silicon supporting layer	OLENYCH Igor
32_834	Large area 4H-SiC Schottky barrier diodes as radiation detectors	KNEZEVIC Tihomir
33_1521	Ultrafast low power room temperature H <sub>2</sub> gas sensor based on atomically sharp nanopatterned exfoliated MoS <sub>2</sub> flakes	AGRAWAL Abhay Vivek
34_1801	Mercury (II) Selective Probe by Thin Film Transistor Based on Supramolecular Flavin-Wrapped Single-Chirality Single-Walled Carbon Nanotube	KIM Dong Hwan
35_2554	A High-temperature stable Self-driven Broadband-photodetector based on MoS <sub>2</sub> /GaN Heterostructure.	VASHISHTHA Pargam
36_2645	Exploring light trapping of nanopillar arrays decorated with self-aligned quasi-nanolenses using near-field optical microscopy	KUMAR Ankit
37_2674	Development of AlGaAsBi for the Next Generation of APDs	CARR Matthew
381922	Synthesis of Pb-free Ag-Bi-based double perovskites thin films for photovoltaic applications	RUIZ RAGA Sonia

<a href="#">40_1928</a>	Template synthesis and experimental-theoretical study of a new type of heterostructures	<b>DAULETBEKOVA Alma</b>
<a href="#">41_1084</a>	3D-printed metasurface structure with thermal-compressed circuit patterns for phase shifter fabrication	<b>LEE Gyeongyeong</b>
<a href="#">42_1205</a>	Electrical Conductivity and Light Sensing based on 3D Printed Nanoporous Structures	<b>XIA Kai</b>
<a href="#">43_1373</a>	Oxide Nanopatterning using Sequential Infiltration Synthesis – In Situ FTIR study	<b>BISWAS Mahua</b>
<a href="#">44_480</a>	Development of nanoelectromechanical device based on complementary metal oxide semiconductor for three dimensional integrated associative memory-augmented neural networks	<b>JUNG Sang Hyun</b>
<a href="#">45_876</a>	Effect of stress and different crystal orientations on 3C-SiC resonator	<b>LA VIA Francesco</b>
<a href="#">46_2335</a>	Investigation of Thermal ALD deposited AlOx and HfOx bilayer films for Silicon Surface Passivation	<b>DEVI Meenakshi</b>
<a href="#">47_1889</a>	Design rules for selective deposition of silver by condensation coefficient modulation	<b>ABRAHAMCZYK Szymon</b>
<a href="#">48_1716</a>	Control of interfacial reaction between high TC superconductor Tl <sub>2</sub> Ba <sub>2</sub> CaCu <sub>2</sub> O <sub>8</sub> and topological insulator Bi <sub>2</sub> Se <sub>3</sub>	<b>CHUNG Yong-Duck</b>
<a href="#">49_1023</a>	Elucidating the effects of impurities on interfacial void formation of Cu and Sn-Ag electrodeposits	<b>JO Yugeun</b>

**Friday June 2**

**M16**

**Power Devices II**

**Chairperson(s) : PAGANO Daniele**

**Schuman (1st floor)**

<b>08:45</b>	<b>77</b>	<b>INV</b>	Advanced Processes for Power Devices	<b>SCHUSTEREDER Werner</b>
<b>09:15</b>	<b>342</b>		Heteroepitaxy 3C-SiC/Si Power Devices - Key Materials Challenges	<b>WARD Peter</b>
<b>09:30</b>	<b>2096</b>		Defect formation in 3C-SiC grown on compliance Si substrates	<b>BONINELLI Simona</b>
<b>09:45</b>	<b>1911</b>		Impact of doping on the stress evaluation of Si/3C-SiC hetero-epitaxy	<b>LA VIA Francesco</b>

**Friday June 2**

**M17**

**High-Mobility Electron Devices**

**Chairperson(s) : BAZIZI El Mehdi**

**Schuman (1st floor)**

<b>10:30</b>	<b>344</b>	<b>INV</b>	Enabling High-capacity 6G Wireless Communication: Harnessing the Potential of InP Semiconductors	<b>COLLAERT Nadine</b>
<b>11:00</b>	<b>610</b>		Isolation of Bidimensional Electron Gas in AlGaIn/GaN Heterojunction using C, Fe and Ar Ion Implantation	<b>SCANDURRA Antonino</b>
<b>11:15</b>	<b>1939</b>		Fabrication of Self-aligned Quantum Well InGaAs MOSFETs for High Frequency Applications	<b>GARIGAPATI Navya Sri</b>
<b>11:30</b>	<b>152</b>		Qualitative and quantitative defect analysis of high mobility InGaZnO oxide thin film transistor with polyimide insulator	<b>KIM Min Jung</b>
<b>11:45</b>	<b>72</b>		Mechanical Stress Confinement Effects on Microelectronics Reliability	<b>HAQUE Aman</b>







European Materials Research Society

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## SYMPOSIUM N

Hybrid photonics: integration, design and devices

*Symposium Organizers:*

Sébastien CUEFF, Ecole Centrale Lyon, France

Dries VAN THOURHOUT, Ghent University, Belgium

Joyce POON, MPI-Halle, Germany

Laurent VIVIEN, University Paris Saclay, France

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# Applied Physics Letters

Wednesday May 31

N01

## Light emission & Topology

Londres 1 (Ground floor)

10:00	2829	INV	Topo lasers and the Berkeley Surface-emitting laser (BerkSEL). How we overcame a six-decade challenge in wave-physics	KANTÉ Boubacar
10:30	1530		GaN-on-Insulator platform for nonlinear processes and laser integration	BHAT Nagesh
10:45	448		Solution-processable CP-TADF polymers for next-generation OLED display applications	XU Zhiyu
11:00	1081		Electroluminescence from Single-Walled Carbon Nanotubes with Quantum Defects	SINIGALIA Alisa
11:15	2650		Thermally activated doping mechanism enabled high-performance metal halide perovskite light emitting diodes	QIN Jiajun
11:30	499	INV	Topological Metaphotonics	GENEVET Patrice

Wednesday May 31

N02

## Integration of functional materials

Londres 1 (Ground floor)

13:30	2828	INV	Heterogeneous material approaches in integrated photonics: the challenging path from explorative research to industrial manufacturing	BAETS Roel
14:00	558		High performance Si OPA for LiDARs by interface control of direct fusion bonding	LEE Eun Kyung
14:15	784		Carrier dynamics engineering for enhanced radiative recombination in graphene/QD mixed-dimensional heterostructures	LUNG Nhat Dang Quang
14:30	1617		Formation of (Er <sub>0.1</sub> Y <sub>0.9</sub> ) <sub>2</sub> Zr <sub>2</sub> O <sub>7</sub> waveguide amplifier by digitally processed DC sputtering toward heterogeneous integration on SiN <sub>x</sub> waveguide circuits	ISSHIKI Hideo
14:45	2444		Hybrid integration of nitrogen-vacancy centres in nanodiamond with foundry silicon nitride photonics	SMITH Joe



**Wednesday May 31**  
**N03**  
**Integration of functional materials 2**

**Londres 1 (Ground floor)**

<b>15:00</b>	<b>931</b>	<b>INV</b>	Doped crystalline zirconia oxides for photonic applications	<b>MATZEN Sylvia</b>
<b>15:30</b>	<b>1298</b>	<b>INV</b>	AlGaAs-on-insulator hybrid platforms for guided and free-space nonlinear photonics	<b>LEO Giuseppe</b>

**Wednesday May 31**  
**N\_P**  
**Poster session**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

<b>1_64</b>	Simultaneous Recording of Independent Visible and Infrared Images in a Thin-Film Cavity for Multispectral Optical Security	<b>KANG Dongkyun</b>
<b>2_111</b>	Selective growth of magnetic garnet crystals for optical isolator with Si guiding layer	<b>YOKOI Hideki</b>
<b>3_272</b>	Traffic flow control on road intersections: Communication through Visible Light.	<b>VIEIRA Manuel Augusto</b>
<b>4_586</b>	Wafer-scale characterization of high-brightness blue micro-LED arrays with a high pixel density of 4233 pixels per inch for industrial mass production	<b>PARK Hyeong-Ho</b>
<b>5_770</b>	Fabrication of hierarchical surface structure by using nanoscale lateral wet-etching of Nickel films in lamellae layers	<b>KIM Jeong Hwan</b>
<b>6_777</b>	Photoluminescence and Electron Paramagnetic Resonance Spec-troscopy for Intrinsic Defects of ZnO Quantum Dots	<b>KIM Hong Hee</b>
<b>7_796</b>	Engineering of Formamidinium and Cesium for High-performance Perovskite Photodetectors with Low Dark Current	<b>HONG Eunyong</b>
<b>8_1252</b>	Voltage-Tunable Broadband Ni-doped CuCrO2 Photodetector and Its Application in Optoelectrical AND Gate Logic	<b>JEON Yunchae</b>
<b>9_1333</b>	Elaboration of perovskite thin films with metal-insulator transition for infrared optical modulation	<b>TAUSCH Arthur</b>

<a href="#">10_1350</a>	Fiber photonics in frame of the optical fluxes waveguide-resonance propagation	<b>EGOROV Vladimir</b>
<a href="#">11_1431</a>	Gallium-Doped Zinc Oxide Thin Film on Silicon for Near Infrared Plasmonics	<b>HSU Klaus Yung-Jane</b>
<a href="#">13_1881</a>	Bulk and Micro-Photoluminescence Studies of Perovskites	<b>ARVANITAKIS Georgios</b>
<a href="#">14_1906</a>	Uniform and scalable printing of perovskite ink for new generation solar cells	<b>AKIN KARA Duygu</b>
<a href="#">15_2123</a>	Interactions in interphase regions of “KBi(MoO <sub>4</sub> ) <sub>2</sub> crystal / K <sub>2</sub> O-P <sub>2</sub> O <sub>5</sub> -MoO <sub>3</sub> -Bi <sub>2</sub> O <sub>3</sub> glass” nanocomposite material	<b>HIZHNYI Yuriy</b>
<a href="#">16_2143</a>	Effect of oxygen deficiency on Bi <sub>12</sub> GeO <sub>20</sub> crystal phase luminescent properties	<b>AVETISOV Igor</b>
<a href="#">17_2286</a>	Theoretical study of the structural, optical and ONL properties of some polyacetylene derivatives	<b>HAFIED Wahab</b>
<a href="#">18_2289</a>	Structural, optical and non-linear-ONL-optical analysis of halogen-substituted hexatriene	<b>DJEBAILI Abdelbaki</b>
<a href="#">19_2298</a>	Influence of the small cation on the spin relaxation in quasi-2D layered hybrid perovskites	<b>STADLBAUER Anna</b>
<a href="#">20_2512</a>	Dual-Light-Emitting Printable Fluorescent-Phosphorescent Metal-Organic Frameworks for Three-Dimensional Encryption	<b>OH Jin Woo</b>
<a href="#">21_2541</a>	Development of light-controlled nanoparticle-polymer cell isolation array	<b>HUNG Sheng-Ting</b>
<a href="#">22_2647</a>	The Play Role of Absorbers/Collectors in the Efficiency of Pioneering Radial Flexible Photo-Thermoelectric Optical Sensors.	<b>PIRES Ana Lucia</b>
<a href="#">23_2654</a>	Establishing charge-transfer excitons in 2D perovskite heterostructures	<b>ZHANG Jia</b>
<a href="#">24_2726</a>	Charge control of manganese ions in red phosphors based on magnesium germanates	<b>BORKOVSKA Lyudmyla</b>

**Thursday June 1**  
**N04**  
**Fabrication & Patterning**

**Londres 1 (Ground floor)**

<b>10:00</b>	<b>497</b>	<b>INV</b>	Top-down and bottom-up fabrication of electro-optic lithium niobate and barium titanate devices	<b>GRANGE Rachel</b>
<b>10:30</b>	<b>2520</b>		Structuring and Patterning Silicon Nanowire Arrays for Engineering Light Absorption in Three Dimensions	<b>BOURRET Gilles</b>
<b>10:45</b>	<b>2426</b>		Gate Tunable Near-Infrared Plasmonic Resonances in Atomically Thin NbSe <sub>2</sub>	<b>ZHAO Meng</b>
<b>11:00</b>	<b>2313</b>		Strategies to obtain chiral perovskites via surface modification	<b>HEINDL Markus</b>
<b>11:15</b>	<b>10</b>		High-Pressure-Engineered Optical Properties of Hybrid Perovskites from Bulk to Low Dimension	<b>YIN Tingting</b>
<b>11:30</b>	<b>2843</b>	<b>INV</b>	3D additive fabrication for CMOS-compatible integration of scalable neural networks	<b>BRUNNER Daniel</b>

**Thursday June 1**  
**N05**  
**Phase-change Materials**

**Londres 1 (Ground floor)**

<b>13:30</b>	<b>2362</b>	<b>INV</b>	Photonic in-memory computing	<b>PERNICE Wolfram</b>
<b>14:00</b>	<b>1546</b>		Optical switch of Sb <sub>2</sub> S <sub>3</sub> phase change material for tunable nanophotonic applications	<b>LAPRAIS Capucine</b>
<b>14:15</b>	<b>153</b>		Gallium Sulfide as Phase-Change Material for Photonic Applications	<b>GUTIERREZ Yael</b>
<b>14:30</b>	<b>1738</b>	<b>INV</b>	New functionalities enabled by phase change materials in silicon devices	<b>SANCHIS Pablo</b>

**Thursday June 1**  
**N06**  
**Photodetectors**  
**Londres 1 (Ground floor)**

<b>15:00</b>	<b>2641</b>	<b>INV</b>	Optimization of light coupling, third order optical nonlinear properties and mid-IR photodetectors using integrated hybrid photonics	<b>SERNA Samuel</b>
<b>15:30</b>	<b>1790</b>		Influence of Shell thickness in 2D CdSe/ CdS Core/Shell NPLs for High Performance Photodetector Applications	<b>MEDDA Anusri</b>

**Thursday June 1**  
**N07**  
**Systems & circuits**  
**Londres 1 (Ground floor)**

<b>16:30</b>	<b>2842</b>	<b>INV</b>	Integrated photonic devices for neuromorphic computing	<b>OFFREIN Bert Jan</b>
<b>17:00</b>	<b>261</b>		Visible Light Navigation System for mobile users inside large building	<b>VIEIRA Manuela</b>
<b>17:30</b>	<b>1435</b>		Towards all-optical polariton logic circuitry	<b>MAHRT Rainer</b>







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## SYMPOSIUM 0

Halide Perovskites for photonic applications: stability and durability issues

*Symposium Organizers:*

Giulia GRANCINI, Università di Pavia, Italy

Annamaria PETROZZA, IIT, Milano, Italy

Juan P. MARTINEZ PASTOR, University of Valencia, Spain

Michele DE BASTIANI, Università di Pavia, Italy

# APL Energy



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Tuesday May 30

O1

## High energy detection

Chairperson(s) : GRANCINI Giulia - PETROZZA Annamaria

Churchill (1st floor)

13:45	2393	INV	Radiation tolerance and stability of deep levels in PEA <sub>2</sub> PbBr <sub>4</sub> 2D perovskite crystals	CIAVATTI Andrea
14:15	50		Mechanosynthesis and wafers-shaping of 2D and mixed 2D/3D hybrid perovskites for designing new X-Ray detector with improved stability and performance	CAI Yihui
14:30	1796		Wide-Band Gap Perovskite based on bromide halide: Impact of light, thermal and X-Ray Irradiation stresses on semi-transparent perovskite solar cells and detectors	MATTEOCCI Fabio
14:45	1403		Mitigating effects of ion migration for stable perovskite image sensors	TSAREV Sergey

Tuesday May 30

O2

## Devices and stability 1

Chairperson(s) : GRANCINI Giulia - PETROZZA Annamaria

Churchill (1st floor)

15:00	1839	INV	MXenes for Stable Halide Perovskite Solar Cells	LIRA-CANTU Monica
15:30	1635		Elucidating the role of surface state in stability of perovskite solar cells using NiOx hole transport layer	JUNG Hye Ri
15:45	1135		Opportunities for the commercialization of stable perovskites based solar cells	BOUICH Amal

Tuesday May 30

O3

## Perovskite heterostructures

Chairperson(s) : GRANCINI Giulia - PETROZZA Annamaria

Churchill (1st floor)



<b>16:30</b>	<b>509</b>	<b>INV</b>	2D/3D bilayers for stable solar cells	<b>EVEN Jacky</b>
<b>17:00</b>	<b>637</b>		Manipulation of 2D Layered Perovskites Optoelectronic Properties by Crystalline Orientation Control	<b>ZANETTA Andrea</b>
<b>17:45</b>	<b>1075</b>		A comparative study on bulk and surface passivants in high efficiency p-i-n perovskite solar cells	<b>MONTECUCCO Riccardo</b>
<b>18:00</b>	<b>1277</b>		Dimensionality control and growth of bottom-up synthesized lead- free hybrid tin (II) halide perovskites micro- and nanostructures	<b>SÁNCHEZ Raúl Ivan</b>
<b>18:15</b>	<b>643</b>		Single-nanowire CsPbBr <sub>3</sub> perovskite nanodevices and green-blue nanoheterostructures via anion exchange	<b>LAMERS Nils</b>

Wednesday May 31

O4

## Advanced characterization

Chairperson(s) : GRANCINI Giulia - PETROZZA Annamaria

Churchill (1st floor)

10:00	2824	INV	Study of the formation mechanism of fluorophenylethylammonium - based 2D / triple cation - based 3D perovskite heterostructures for stable solar cells	DELEPORTE Emmanuelle
10:45	267		In-situ characterization monitoring of physical mechanisms acting during perovskite solar cell degradation and its stabilization when using molecular additive.	BAUMANN Fanny
11:15	398		Advanced Perovskite Interface Characterization by Admittance Spectroscopy on MOS Structures	PARION Jonathan
11:30	2755		Surface or Bulk Defects - Halide Perovskites Probed by Photothermal Deflection Spectroscopy	LEDINSKY Martin
11:45	2431		When photoluminescence, electroluminescence, and open-circuit voltage diverge – light soaking and halide segregation in perovskite solar cells	EBADI Firouzeh

Wednesday May 31

O5

## Devices and stability 2

Chairperson(s) : DE BASTIANI Michele - PETROZZA Annamaria

Churchill (1st floor)

13:30	2767	INV	Pathways to efficient and stable perovskite/silicon tandem solar cells	DE WOLF Stefaan
14:00	1395		Wide Band Gap Perovskites for Tandem Solar Cells Fabricated by Thermal Co-Evaporation	ROSS Marcel
14:15	271		Stability Assessment of Perovskite Solar Cells Under Real Outdoor Conditions: Effect of Encapsulation	TANKO Kenedy Tabah
14:30	1511		Visualizing Losses in Highly Efficient and Stable Perovskite-based Tandem Solar Cells	UGUR Esma

14:45    1844    Ageing and characterization of high-bandgap perovskites for all thin-film tandem solar cell devices    **CABAS VIDANI Antonio**

**Wednesday May 31**

**O6**

**Devices and stability 3**

Chairperson(s) : **DE BASTIANI Michele - PETROZZA Annamaria**

**Churchill (1st floor)**

15:00    1512    INV    Stability aspects of perovskite/silicon tandem solar cells on the path of industrialization    **AYDIN Erkan**

15:30    2496    Efficient and Stable Formamidineium Based Perovskite Solar Cells by Slot-Die Coating    **KUNNUMMAL MANGOTT Muhammed Salim**

15:45    2723    Structure and Stability Studies of Chlorine Addition to Flexible Printed Perovskite Solar Cells    **STAVRAKI Chrysi**

**Wednesday May 31**

**O\_P**

**Poster session**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

02\_2495    Performance analysis of Tin-based Perovskite-SnS Tandem solar cell using alternative hole transport and buffer layers    **DJEFFAL Faycal**

03\_2358    Effect of film composition and interlayers on the stability of tin perovskite solar cells.    **GUPTA Devina**

04\_1229    Increasing Halide Perovskite Stability with Food Additives    **CARTLEDGE Carsen**

05\_2316    Effect of A-site engineering on the crystal structure and UV light photodetection properties of cesium copper iodide perovskite    **NAWROCKI Jan**

06\_2111    Nano-filters for perovskite solar cell stability enhancement    **DELGADO RODRÍGUEZ Silvia**

07\_1319    Molecular doping of MAPbI<sub>3</sub> with hole transport triazatuxenes: effect on solar cell performance.    **COYA M. Carmen**

08\_1089    Magnetron Sputtered SnO<sub>2</sub> as Electron Transport Layer for Perovskite Solar Cells    **ZAKARIA Yahya**

<a href="#">09_1134</a>	Europium bromide doped-CH <sub>3</sub> NH <sub>3</sub> PbI for stable and organic perovskite films	<b>MARÍ-GUAITA Julia</b>
<a href="#">10_1781</a>	Synthesis of perovskite nanocrystals using bio-inspired passivation agent for stability enhancement	<b>YANG Hee Yun</b>
<a href="#">11_1825</a>	A 2D lead halide hybrid system with the lowest bandgap and exciton binding energy	<b>PARIARI Debasmita</b>
<a href="#">12_1729</a>	Ultrastretchable perovskite solar module with high areal coverage of active devices with 3D printer-based fabrication process	<b>LEE Phillip</b>
<a href="#">13_1322</a>	First principles investigation of microscopic effects of additives bication thiocyanate slats in wide bandgap perovskites	<b>CHANG Yun Hee</b>
<a href="#">14_1120</a>	Natural Clay Based Scaffold Layer for Perovskite Solar Cells	<b>BÜTÜN Buse Nur</b>
<a href="#">15_1014</a>	Impact of hexagonal stacking fault on defect distribution of metal halide perovskites	<b>WOO Young Won</b>
<a href="#">16_924</a>	Perovskite solar cells based on lead-deficient Perovskites	<b>PAUपोर्टÉ Thierry</b>
<a href="#">17_880</a>	Sulphur-doped CQDs to improve the photovoltaic parameters of perovskite solar cells	<b>KIRBIYIK KURUKAVAK Çisem</b>
<a href="#">18_867</a>	Controlling Intrinsic Quantum Confinement in Formamidinium Lead Triiodide Perovskite through Cs Substitution	<b>ELMESTEKAWY Karim</b>
<a href="#">19_683</a>	Over 20% efficient FAPbI <sub>3</sub> -based perovskite deposited by hybrid evaporation-solution method as a mid-cell for triple junction solar cells	<b>GOLOBOSTANFARD Mohammadreza</b>
<a href="#">20_552</a>	Encapsulated Cs <sub>0.1</sub> (MA <sub>0.17</sub> FA <sub>0.83</sub> ) <sub>0.9</sub> Pb(I <sub>0.83</sub> Br <sub>0.17</sub> ) <sub>3</sub> triple cation perovskite in MOF-5 as a highly efficient material for Stable perovskite solar cell	<b>GOEL Priyanshu</b>
<a href="#">21_439</a>	Super Stable Quadruple-cation Bromide Perovskite Solar Cells- From Fundamental Research To Final Application.	<b>HESHMATI Niusha</b>
<a href="#">22_297</a>	Using ZnCo <sub>2</sub> O <sub>4</sub> nanoparticles as the HTL for fabricating perovskite solar cells with enhanced device stability	<b>YANG Sheng-Hsiung</b>
<a href="#">23_296</a>	Synthesis of perovskite nanocrystals tethering conjugated sulfonate ligands for light-emitting application	<b>YANG Sheng-Hsiung</b>

<a href="#">24_206</a>	Full-Color Micro-LED Display Enabled by Highly Stable Photo-Patternable Perovskite Quantum Dot Resin	<b>SHIM Hyungcheoul</b>
<a href="#">25_2602</a>	Flash Annealed Nickel Oxide for Large Area Perovskite Solar Cells	<b>OCHOA-MARTÍNEZ Efrain</b>
<a href="#">26_2707</a>	Light and Iodine-Induced Phase Segregation in Mixed-Halide Perovskites Studied by Optoelectric and X-ray Diffraction Methods	<b>HOLOVSKÝ Jakub</b>
<a href="#">27_2562</a>	Dual passivation strategy to suppresses non-radiative recombination in narrow bandgap Pb-Sn perovskite solar cells for achieving efficiency above 20%	<b>KURISINKAL PIOUS Johnpaul</b>

Thursday June 1

07

## Novel materials and deposition techniques

Chairperson(s) : DE BASTIANI Michele - MARTÍNEZ-PASTOR Juan P.

Churchill (1st floor)

10:00	2009	INV	Pulsed Laser Deposition of Halide Perovskites: A Single-source, Dry, Vapor Deposition Approach	MORALES-MASIS Monica
10:30	353		Surface Functionalized MXene-based Halide Perovskite Solar Cells	PAINGOTT Ashitha
10:45	374		Investigation of perovskite solar cells with guanidinium iodide doped MAPbI <sub>3</sub> active layer	CHANG Ting-Chun
11:00	668		Interface Quality and Stability Correlation in Photonically Cured Solution Processed Tin Oxide Thin Films based Perovskite Solar Cells	SARDA Nisha
11:15	745		Out-of-Glovebox Integration of Recyclable Europium-Doped CsPbI <sub>3</sub> in Triple-Mesoscopic Carbon-Based Solar Cells Exceeding 9% Efficiency	VALASTRO Salvatore
11:30	1097		Control of Perovskite Film Crystallization and Growth Direction to Target Homogeneous Monolithic Structures	PAUPOURÉ Thierry

Thursday June 1

08

## Perovskites for photonic applications 1

Chairperson(s) : GRANCINI Giulia - MARTÍNEZ-PASTOR Juan P.

Churchill (1st floor)

13:30	2823	INV	Vapor phase deposited halide perovskites for photonic applications	ROLDAN CARMONA Cristina
14:00	2719		Demonstrating multiple Metal Oxide charge transport layers in fully Inkjet-Printed Halide Perovskite LEDs on Flexible Substrates	GONZALEZ-TORRES Sergio
14:15	1598		Temperature-Induced Morphology Optimization for High-Performance Green Emissive Cs <sub>3</sub> MnBr <sub>5</sub> Perovskite Nanoparticles	YOO Ho Chan

14:30 2360 The sharp blue and green emission in Eu-doped CsPbBr<sub>3</sub> halide perovskite for the Optical Applications **KACHHAP Santosh**

14:45 1929 Unveiling the electro-ionic coupling mechanisms in high-performance Perovskite Light-emitting Diodes through modulated techniques **SÁNCHEZ Rafael**

**Thursday June 1**

**O9**

## **Perovskites for photonic applications 2**

**Chairperson(s) : GRANCINI Giulia - MARTÍNEZ-PASTOR Juan P.**

**Churchill (1st floor)**

15:00 13 INV High-performance perovskite light-emitting diodes with tuneable near-infrared emissions and improved operational stability **YUAN Zhongcheng**

15:30 2188 Towards fully inkjet-printed 2D Lead-Free Halide Perovskite Red-emitting LEDs on Rigid and Flexible Substrates **VESCIO Giovanni**

15:45 756 Molecular Interaction Strategies Enable Highly Stable and Efficient Perovskite Light-Emitting Diodes **KUANG Chaoyang**

**Thursday June 1**

**O10**

## **Perovskites for photonic applications 3**

**Chairperson(s) : GRANCINI Giulia - MARTÍNEZ-PASTOR Juan P.**

**Churchill (1st floor)**

16:30 1416 INV Photovoltaic and excitonic properties of novel perovskite-like materials. **VOLONAKIS George**

17:00 1949 How Relevant are Long Diffusion Lengths for Efficient Halide Perovskite Solar Cells? **AKEL Samah**

17:15 1812 Multi-Stage Phase-Segregation of Mixed Halide Perovskites under Illumination: A Quantitative Comparison of Experimental Observations and Thermodynamic Models **SUCHAN Klara**

17:30 1556 Effect of anharmonicity and polymorphism on electron-phonon coupling in halide perovskites **ZACHARIAS Marios**

17:45 1178 Phase stability in MAPbI<sub>3</sub> from first principles calculations **MADAAN Kajaal**

<b>18:00</b>	<b>1892</b>	Temperature-dependence optical properties of CsCu <sub>2</sub> I <sub>3</sub> NCs	<b>DIAGO FORERO Joshua</b>
<b>18:15</b>	<b>891</b>	Interlayer-Sensitized Linear/Nonlinear Photoluminescence of Quasi-2D Perovskites Using Aggregation-induced Emission Active Organic Cation	<b>LIM Chang-Keun</b>



Friday June 2

O11

## Perovskites for photonic applications 4

Chairperson(s) : GRANCINI Giulia - PETROZZA Annamaria

Churchill (1st floor)

08:45	2802	INV	Low-dimensional perovskites: from structural design to photonic applications	CORTECCHIA Daniele
09:15	1230		Highly Stable Cesium Lead Halide Perovskites in Mesoporous Liquid Crystal Polymer Particles	LEE Geunjung
09:30	1410		High Performance All Inorganic Perovskite Solar Cells Based on Oxide/Halide/Oxide Architecture	JEONG Min Ju
09:45	1619		Simultaneous encapsulation of halide perovskite in polyethylene lamellar capsule through facile hot-injection method	YOO Junghyeon

Friday June 2

O12

## Perovskites for photonic applications 5

Chairperson(s) : GRANCINI Giulia - PETROZZA Annamaria

Churchill (1st floor)

10:30	996	INV	Next materials for future photonics devices	GIRTAN Mihaela
11:00	1502		Accelerating the development of stable vapor-deposited perovskite thin-films via combinatorial UV-Vis degradation studies	WIECZOREK Alexander
11:15	2005		Ionic liquid-based molecules and macromolecules to improve the performance of hybrid perovskite solar cells	CLOUTET Eric
11:30	1549		Thermal Evaporation of Self-Assembled Monolayers for Lossless Interfaces in p-i-n Perovskite Solar Cells	FEENEY Thomas





European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM P

Computations for materials – discovery, design and the role of data

*Symposium Organizers:*

Ivano CASTELLI, Technical University of Denmark, Lyngby, Denmark

Elif ERTEKIN, University of Illinois at Urbana-Champaign, USA

Vladan STEVANOVIC, Colorado School of Mines, Golden, USA

**APL Machine  
Learning**



**Monday May 29**

**P01**

## **Materials Discovery**

**Chairperson(s) : ERTEKIN Elif - STEVANOVIC Vladan**

**Londres 2 (Ground floor)**

<b>08:45</b>	<b>2323</b>	<b>INV</b>	Employing Chemical Heuristics in Computational Materials Design of Functional Materials	<b>SCANLON David</b>
<b>09:15</b>	<b>1233</b>		Molecular Dynamics Simulations of the Structure and Dynamics at Catalyst-Ionomer Interfaces	<b>A. DAVIS Binny</b>
<b>09:30</b>	<b>708</b>		Influence of Exchange-Correlation Functional on Descriptors for High-Entropy Protonic Ceramic Fuel Cells	<b>HECKSCHER SJØLIN Benjamin</b>

**Monday May 29**

**P02**

## **Batteries**

**Chairperson(s) : SCANLON David**

**Londres 2 (Ground floor)**

<b>10:30</b>	<b>390</b>	<b>INV</b>	Identification of descriptors in battery research	<b>GROSS Axel</b>
<b>11:00</b>	<b>1258</b>		Towards accurate computation of charged electrochemical interfaces at realistic reaction conditions	<b>TESCH Rebekka</b>
<b>11:15</b>	<b>470</b>		Pre-Pilot line upscaling of Na-ion batteries using robotic assembly	<b>NUSS Leah</b>
<b>11:30</b>	<b>190</b>		Catalysing the Performance of Li-Sulfur Batteries with Two-Dimensional Conductive Metal Organic Frameworks	<b>BHAURIYAL Preeti</b>
<b>11:45</b>	<b>752</b>		Autonomous millimeter scale high throughput battery research system (Auto-MISCHBARES)	<b>RAHMANIAN Fuzhan</b>

**Monday May 29**

**P03**

**Electrochemistry**

**Chairperson(s) : ERTEKIN Elif**

**Londres 2 (Ground floor)**

13:30	396	INV	Steps towards the understanding of the oxygen evolution reaction enigma by operando techniques supported by computational studies	FABBRI Emiliana
14:00	644		Accelerating the Discovery of 2D MXenes for Hydrogen Evolution Reaction through Machine Learning Strategy	BOKINALA Moses Abraham
14:15	1534		Atomistic Study of the Impact of Oxygen Vacancy Defect on Catalytic Activity of Monoclinic Zirconia	FAZELI Sara
14:30	328		Machine Learning Prediction of Surface Pourbaix Diagrams for the Electrochemical Stability of Metallic Nanoparticles	HAN Sang Soo
14:45	1479		Sustainable Hydrogen Production A Computational Study	LIU Xinyue
15:00	1110		Autonomous Discovery of Near Room Temperature Oxide Ion Conductors.	MORIN MARTINEZ Armando
15:15	2332		A multiphysics model of a proton exchange membrane acid-alkaline electrolyzer: Implications on novel materials for improved performance	OCON Joey

**Monday May 29**

**P04**

**2D Materials**

**Chairperson(s) : GROSS Axel**

**Londres 2 (Ground floor)**

16:30	324	INV	Topological Phases of MoS <sub>2</sub> Dipericodic Crystal Phases	MILOSEVIC Ivanka
17:00	1900		From Enhanced Sampling to Design – Exploring the Combined Powers of Classification and Molecular Dynamics Simulations	MENDELS Dan
17:15	911		First-principles Perspectives on Selected Functional 2d Materials	DE SARKAR Abir

<b>17:30</b>	<b>650</b>	Exploration of 2D ferromagnetic materials induced by hole doping	<b>MENG Ruishen</b>
<b>17:45</b>	<b>919</b>	DFTB study on mixed functionalized MXene	<b>SAKHRAOUI Taoufik</b>
<b>18:00</b>	<b>1388</b>	Transitions in Xenes between excitonic, topological and trivial insulator phases: influence of screening, band dispersion and external electric field	<b>PULCI Olivia</b>
<b>18:15</b>	<b>1908</b>	Electronic Consequences of 2D Tilt Layer Formation in Halide Perovskites	<b>JUNG Young-Kwang</b>

Tuesday May 30

P05

## AI-Accelerated Materials Discovery I

Chairperson(s) : TKATCHENKO Alexandre

Londres 2 (Ground floor)

10:00	1053	INV	Active materials exploration and characterization with Bayesian optimization	RINKE Patrick
10:30	24		Overlooked design parameters for efficient thermoelectric devices	MUSIC Denis
10:45	2517		Concepts for Predicting Phase Transition	GRAML Mario
11:00	1098		How quantum crystallography can aid materials design	GRABOWSKY Simon
11:15	1317		Lessons learned from an international Materials Acceleration Platform	VOGLER Monika
11:30	2527		Accurate estimation of diffusion coefficients and their uncertainties from computer simulation	MORGAN Benjamin
11:45	92		Machine Learning small datasets: The good, the bad and the average	VANPOUCKE Danny

Tuesday May 30

P06

## High-entropy and Disordered Materials

Chairperson(s) : STEIN Helge

Londres 2 (Ground floor)

13:30	2359	INV	Alchemical machine learning for high-entropy alloys	CERIOTTI Michele
14:15	549		Effects of disorder in the electronic properties of monolayers and nanoribbons MoS <sub>2</sub>	CASTENETTO Pauline
14:30	961	INV	High-Entropy Alloys for Catalyst Discovery	CLAUSEN Christian Møgelberg
15:00	2703		ULtrahigh TEmperature Refractory Alloys (ULTERA) Database and Data Quality Assurance	KRAJEWSKI Adam
15:15	1898		Materials for quantum computing : Magnetic impurities embedded in superconductors from first principles	ANTOGNINI SILVA David

<b>15:30</b>	<b>2247</b>	Ab-initio simulations in HfNbTiVZr high-entropy alloy: electronic structure and defects	<b>CASILLAS TRUJILLO Luis</b>
<b>15:45</b>	<b>2349</b>	Vacancy-ordered double perovskites Cs <sub>2</sub> BI <sub>6</sub> (B = Pt, Pd, Te, Sn): an emerging class of thermoelectric materials	<b>BHUMLA Preeti</b>

**Tuesday May 30**

**P07**

**PV materials**

**Chairperson(s) : GIORGI Giacomo**

**Londres 2 (Ground floor)**

<b>16:30</b>	<b>983</b>	Computational insights into emerging chalcogenide perovskite photovoltaics	<b>WANG Shirui</b>
<b>16:45</b>	<b>2616</b>	Computational screening for n-type doped ultrawide band gap oxides for power electronics	<b>GARRITY Emily</b>
<b>17:15</b>	<b>1843</b>	Designing novel semiconductor-ferroelectric photovoltaic devices using a new scheme to model semiconductor interfaces from first principles	<b>ONTANEDA Jorge</b>
<b>17:30</b>	<b>35</b>	First-principles Calculations combined with Machine Learning Design Approach toward Electrochemical Energy Storage and Conversion Materials	<b>HAN Byungchan</b>



**Wednesday May 31**  
**P08**  
**Biomaterials Design**

**Chairperson(s) : ERTEKIN Elif**

**Londres 2 (Ground floor)**

<b>10:00</b>	<b>892</b>	Nucleation of dislocation loop in TWIP steel: Assessing the meta-atom framework	<b>KUMARI Sweta</b>
<b>10:15</b>	<b>1177</b>	First principles electron transport in magnetoelectric SrRuO <sub>3</sub> /BaTiO <sub>3</sub> /SrTiO <sub>3</sub> interfaces	<b>PLUGARU Neculai</b>
<b>10:30</b>	<b>2599</b>	First-principles modeling of glasses as ensembles of crystalline microstates	<b>WOLF Laszlo</b>
<b>10:45</b>	<b>2250</b>	Symmetry-Induced Singlet-Triplet Inversions Beyond Azaphenalenenes: New Molecular Emitters from Known Chemistry	<b>BLASKOVITS J. Terence</b>
<b>11:00</b>	<b>1174</b>	Prediction of Biomaterials Properties via Machine Learning	<b>GRIBOVA Varvara</b>
<b>11:15</b>	<b>1032</b>	Knowledge acquisition of superconductivity information in literature and applications to materials science	<b>ASAHI Ryoji</b>
<b>11:30</b>	<b>651</b>	Modulating the Electromechanical Response of Bio-Inspired Amino Acid-Based Architectures through Supramolecular Co-Assembly	<b>THOMPSON Damien</b>
<b>11:45</b>	<b>1218</b>	Change point detection and econometrics in nanoscience data analysis	<b>HAMILL Joseph</b>

**Wednesday May 31**  
**P09**  
**AI-Accelerated Materials Discovery II**

**Chairperson(s) : ZAKUTAYEV Andriy**

**Londres 2 (Ground floor)**

<b>13:30</b>	<b>1611</b>	<b>INV</b> How deep learning can help with materials design.	<b>KADKHODAEI Sara</b>
<b>14:00</b>	<b>2511</b>	Machine Learning-Assisted Discovery of Lead-Free Perovskites for Solar Cell Applications	<b>SEUNG HWAN Jung</b>

14:15	2369	Fundamentals of photoactive chiral materials from simulation workflows	PIETROPAOLO Adriana
14:30	2364	Computational approaches for the design of materials with desired physicochemical properties	KOTSIS Konstantinos
14:45	2251	Computational Design of Photocathodes for Next Generation Light Sources	MILDNER Felix

**Wednesday May 31**

**P10**

## Optical and Magnetic Properties

Chairperson(s) : CHAN Maria

Londres 2 (Ground floor)

15:00	776	INV	Optoelectronic Features of 3D, mixed 2D/3D, and 2D Hybrid and Full Inorganic Perovskites from first principles	GIORGI Giacomo
15:30	135		Ferromagnetism and Ferroelectricity in a Superlattice of Antiferromagnetic Perovskite Oxides Without Ferroelectric Polarization	RAY Avijeet
15:45	1148		Tuning octahedral rotation and magnetism in perovskites	JIA Jiahui

**Wednesday May 31**

**P\_P**

## Poster session

Etoile (1st floor) - 4.30 p.m to 6.30 p.m

01_1589	Quantitative analysis of CNT network morphology of R2R-printed CNT-TFTs via machine learning AFM image processing	NA Soyoung
02_1670	Electronic Structure and magnetic properties of Eu doped GaN nanowires: An Ab-initio study for spin-optoelectronic applications	GUDELLI Vijay Kumar
03_1704	Locating the solvated electrons in alkali metal doped zeolites	SARKER Debalaya
05_2182	Prediction of icephobic performance on textured surfaces using experimental techniques combined with data-driven approach	MARZOOK Mariam

06_134	YSrFeCrO6 as a Robust Ferromagnetic Semiconductor with Large Photovoltaic Efficiency	RAY Avijeet
07_2440	Hydrogen impurity in the bulk and proper/improper ferroelectric domain walls	KHALID Muhammad Muhammad
08_2396	Modelling crack initiation processes in boron-based ceramics	KOUTNA Nikola
09_2452	Cellular Automata Simulation of Crystal Growth	TIRKEY Daya Kishor
10_1295	Physical Unclonable Functions with Unpredictably Disordered Resistance of HGO and PGO According to Concentration Control of Differently Synthesized Graphene Oxide Flakes	LEE Subin
11_1448	A neural network interatomic potential for nanoindentation: The case of pure molybdenum	NAGHDI DORABATI Amirhossein
12_74	Systematic Modification of Functionality Through Free Energy Surface Tailoring	MENDELS Dan
13_306	Calcium Silicate Hydrate Surface - Ca or Si Termination?	CASAR Ziga
14_474	Ab Initio Calculations of the Raman Spectra of Thin Strontium Titanate Films with and without Adsorbates	KRASNENKO Veera
15_584	Protamine-Controlled Reversible DNA Packaging: A Molecular Glue	LANSAC Yves
16_585	Molecular Modeling of Flexible Electronics: Enhancement of Conductivity and Stretchability of PEDOT:PSS by Hard-Cation-Soft-Anion Ionic Liquids	JANG Yun Hee
17_645	Interaction of graphene with 3d Cu(n) & 5d Au(n) atomic clusters (n =1-5): ab initio study to probe the structural, electronic, and spin-based properties	MURUGESAN Ramasamy
18_895	Core structure analysis of dislocations in TWIP steel under the Meta-atom framework: An assessment	PULAGAM Sri Sadgun Reddy
19_120	Fermi Level Instability as the Way to Tailor Properties of La3Te4	KHAN Muhammad Rizwan
21_244	Molecular Dynamics Studies of Organic Photovoltaics	HONG Janghee
22_275	Deciphering the electrochemical window potentials of ionic liquid electrolytes for Dual Ion Batteries: A Machine Learning Based Approach	MANNA Surya Sekhar

<a href="#">23_286</a>	Role of Electrolyte Components in Solid Electrolyte Interphase formation in Al Anode Dual-Ion Batteries	<b>DAS Sandeep</b>
<a href="#">24_310</a>	Dynamical thermal activated effects of metal atoms doped molecular and atomic gas adsorption in graphene: A multiscale computational study by SCC-DFTB	<b>ALIGAYEV Amil</b>
<a href="#">25_336</a>	Giant anomalous thermal Hall effect in tilted type-I magnetic Weyl semimetal Co <sub>3</sub> Sn <sub>2</sub> S <sub>2</sub>	<b>ROY KARMAKAR Abhirup</b>
<a href="#">26_414</a>	Effects of exchange-correlation functionals on predicted bulk properties of hexagonal hydroxyapatite	<b>WANG Xian</b>
<a href="#">27_422</a>	Machining mechanism and deformation behavior of NiAlTiCuZr alloy under conventional and multi-dimensional vibration cutting	<b>FANG Te-Hua</b>
<a href="#">28_455</a>	Effect of magnetic ordering on optoelectronic properties of 2D materials	<b>YADAV Asha</b>
<a href="#">29_462</a>	Noble gas defects promoting formation of acceptor defects in ZnO	<b>LOVELESH Lovelesh</b>
<a href="#">30_523</a>	Role of band filling correction in accurate calculations of defect formation energy in gapped metals	<b>GOPIDI Harshan Reddy</b>
<a href="#">31_555</a>	Martensitic Transformation and Electronic Properties in Zr and Cu-doped NiTi Alloys: A First-Principles Investigation	<b>ADHIKARY Tapasendra</b>
<a href="#">34_1121</a>	High Pressure Chemistry of Some Iron Complexes	<b>GAIN Pranab</b>
<a href="#">32_602</a>	Nonlocal correlation effects due to virtual spin-flip processes	<b>BUCZEK Pawel</b>
<a href="#">33_877</a>	Thermodynamic computations for the refractory compounds high temperature electrochemical synthesis possibility substantiation	<b>STESYUK Tatyana</b>
<a href="#">35_1045</a>	Data-Driven Design of Transition Metal-Substituted NASICON-Type Electrodes for Sodium Ion Battery Utilizing Graph-Based Neural Network	<b>YOONSU Shim</b>
<a href="#">36_1106</a>	High Pressure Chemistry of Some Iron Complexes	<b>GAIN Pranab</b>
<a href="#">37_1143</a>	Investigation of structural and magnetic properties for magnetic materials	<b>OKOS Alexandru</b>
<a href="#">38_1260</a>	A multi-scale study of Co-Free Cantor alloy: Thermodynamic stability and mechanical properties	<b>ALVAREZ-DONADO Rene</b>

39_1315	AI-based spreadability analysis of cosmetics and topical medications for improving sensory evaluation	YANG Yong Suk
40_1347	Giant Flexoelectricity in Janus IV–VI Nanotubes	ZHENG Kai
41_1505	Calculation of the Judd-Ofelt parameters for neodymium-activated new oxochloride lead-borate glasses	AVETISOV Igor
42_1608	A novel kinetic Monte Carlo model for magnesium phosphate conversion coatings film growth on a Mg AZ31 alloy substrate for car body applications	KEKARJAWLEKAR Prathamesh
43_1529	Effects of Crystallographic Orientation on Deformation Behavior of Monoclinic Zirconia Subjected to Nanoindentation: Molecular Dynamics Simulations	FAZELI Sara
44_1613	First-Principles Calculations of Energy Loss Near Edge Structure (ELNES) spectra of High-k Dielectric Thin Films	PARK Jucheol
45_1723	Synthetic Image Generation for Improving Surface Defect Classification in Solid Oxide Fuel Cells using Generative Adversarial Networks	LEE Won Jun
46_1631	Computational study of lipid-modified DNA: self-assembly and interaction with a bilayer membrane	JEON Eunryul
47_1859	Kinetic Monte Carlo (KMC) Simulation of Single-layer MoS <sub>2</sub> Compared to Actual Growth	KANG Yoonbeen
48_1886	Enhancing Materials Science Research through Machine Learning: A Study of Meta-Learning Techniques for Improving Predictions with Limited Data	BONG Seon Jong
49_1973	Computational Characterization for Electrical Conductivity of Hybrid Nanocomposite under mechanical deformation	AN Hyeontae
50_1978	First-principles study on phase stability of Ce <sub>1-x</sub> Ni <sub>x</sub> O <sub>2-d</sub> solid solution	KIM Hyun-Kyu
51_1991	Data-driven Fatigue Strength Prediction of Aluminum Alloys	QURASHY Md. Shahbaz
52_2008	A high-throughput search of 2d materials for Li-ion batteries	ALIPOUR Hassan
53_2016	Ab initio study of ScAlO <sub>3</sub> under high pressure	MUÑOZ Alfonso

54_2141	Time dependent density functional theory calculations of semiconducting materials for efficient visible light driven photocatalytical water splitting and photovoltaics	<b>PISKUNOV Sergei</b>
55_2327	Topology Optimization of Cantilevered Energy Harvesting Piezoelectric Structures	<b>MERCADO Candy</b>
56_2330	A Machine Learning-accelerated Density Functional Theory (ML-DFT) Screening of Bimetallic Transition Metal Surfaces based on Single-Atom Adsorption Energy Predictions	<b>OCON Joey</b>
57_2581	A DFT study of oxygen vacancy formation in pure and transition metal doped titanates	<b>BORKOVSKA Lyudmyla</b>

Thursday June 1

## P11

### Methods for Materials Discovery I

Chairperson(s) : ERTEKIN Elif

Londres 2 (Ground floor)

10:00	224	INV	Fully Quantum (Bio)Molecular Simulations: Dream or Reality?	TKATCHENKO Alexandre
10:30	1204		Thermodynamic Origin of nuclei formation, unimodal size distribution, and its temperature-dependent shape transition	SUNG Jaeyoung
10:45	1780		3d kMC modelling of Cu on Cu(001) homoepitaxy under GLAD growth conditions: ripple's formation and their orientation transition	NITA Florin
11:00	1953		Ab-initio high-throughput screening for magnetic MAX phases	MALIK Ali Muhammad
11:15	2627		Structural and energetic studies of boronic- acid-functionalized polyaniline (B@Pani) monomers and dimers using Density Functional Theory approach	SALVADOR Michele A.
11:30	2056		Combining Theoretical Approaches in Understanding Defect Chemistry and Ionisation Potential of CeO <sub>2</sub>	ZHANG Xingfan
11:45	2734		Off-stoichiometry and ordered defect compounds in Cu-(In,Ga)-Se system	SOPIHA Kostiantyn

Thursday June 1

## P12

### Materials Acceleration Platforms

Chairperson(s) : KADKHODAEI Sara

Londres 2 (Ground floor)

13:30	368	INV	The engineering of research - from screening to acceleration and beyond	STEIN Helge
14:00	1310		Improving Lithium metal battery performance by pulsed current charging and discharging	CICVARIC Katarina
14:30	2702	INV	Accelerated experimental synthesis of theoretically predicted semiconductors	ZAKUTAYEV Andriy

15:00	2276	INV	Integrating theory and AI/ML for materials characterization	CHAN Maria
15:45	1869		Atomistic simulation of strain ageing in low carbon steel	EKTA Ekta

**Thursday June 1**

**P13**

## **Methods for Materials Discovery II**

**Chairperson(s) : STEVANOVIĆ Vladan**

**Londres 2 (Ground floor)**

16:30	2228	INV	Generative adversarial networks for microstructure generation: A primer to Process-Structure linkage.	NIMMAL HARIBABU Gowtham
17:00	1057		Multiscale modelling to study the evolution of texture and associated deformation mechanism during single point incremental forming	RAKSHIT Rahul
17:15	451		A computational approach for the exciton diffusion in organic solar cells based on first-principles molecular dynamics	DIARRA Cheick Oumar
17:30	761		Efficient and reliable first-principles calculation method for evaluating electronic transport in complex materials	LI Zhen
17:45	191		A Combined DFT and Machine Learning-Driven Discovery of g-C <sub>3</sub> N <sub>4</sub> based Single Atom Catalysts for Efficient Hydrogen Generation	V JYOTHIRMAI Mullapudi
18:00	250		Predicting PV-PEC promising materials based on chemical composition: data-driven accelerated machine learning study	KIM Chihun
18:15	394		Accelerated design for magnetocaloric performance in Mn-Fe-P-Si compounds using machine learning	TU Defang









European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM Q

Advanced functional films grown by pulsed deposition methods – II

*Symposium Organizers:*

Magdalena NISTOR, INFIM, Bucharest, Romania

Amaël CAILLARD, GREMI, Orléans, France

José GONZALO, CSIC, Madrid, Spain

Stephanos KONSTANTINIDIS, University of Mons, Belgium



TSST



Tuesday May 30

## Q01

# Fundamentals, methods & diagnostics of Pulsed deposition processes I

Chairperson(s) : GONZALO Jose - KONSTANTINIDIS Stephanos

Amsterdam (Ground floor)

10:00	2408	INV	Temporally modulated vapor fluxes: a tool for controlling morphology and atomic arrangement in thin films	SARAKINOS Kostas
10:30	2139		Steps for decoupling the effects of the kinetic and potential energy of ions for pulsed filtered cathodic arc deposited (V,Al)N thin films	UNUTULMAZSOY Yeliz
10:45	2481		New High Power Impulse Magnetron Sputtering (e-HiPIMS) with a multi-level high power supply	ZGHEIB Joelle
11:00	33_949		Effect of annealing temperature on optical and microstructural properties of Cu-based transparent heat reflectors obtained by HiPIMS and RFMS processes	PANA Iulian
11:15	730		Pulsed Laser Deposited Nanostructured Manganese Oxides Thin Films: Decoupling Morphology and Phase for a Rationally Designed Material	MACRELLI Andrea
11:30	2560		Deposition inside silicon trenches and porous substrate using bipolar high power impulse magnetron sputtering	ATMANE Soumya
11:45	1614		Synthesis of functional crystalline oxides by digitally processed DC sputtering synchronized with oxygen gas pulsing	ISSHIKI Hideo

Tuesday May 30

## Q02

# Fundamentals, methods & diagnostics of Pulsed deposition processes II

Chairperson(s) : CAILLARD Amael - NISTOR Magdalena

Amsterdam (Ground floor)

13:30	2782	INV	Creation of Material Libraries by Pulsed Laser Deposition – History and Recent Developments	VON WENCKSTERN Holger
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14:00	939	Dependence of the ZrO <sub>2</sub> growth on the crystal orientation: growth simulations and pulsed magnetron sputtering	HOUSKA Jiri
14:15	2388	Growth and unusual epitaxial relations of NiO and CrN thin films on r-Al <sub>2</sub> O <sub>3</sub>	ALIJAN FARZAD LAHIJI Faezeh
14:30	1684	Tuning the properties of oxide thin films grown by pulsed laser depositions via plasma diagnostics tools	IRIMICIUC Stefan
14:45	2750	Developing a method with optical emission spectroscopy to control thin layer in R-HiPIMS deposition process	BOIVIN D.

**Tuesday May 30**

**Q03**

## Functional oxides & TCO's I

Chairperson(s) : LAIDANI Nadhira - SARA KINOS Kostas

**Amsterdam (Ground floor)**

15:00	1452	INV Tungsten oxide for chemical sensors Tungsten trioxide thin films fabricated by pulsed laser deposition, high power impulse magnetron sputtering and DC hollow cathode discharge for chemical sensor	LANCOK Jan
15:30	1482	Unraveling the H and O incorporation in EuOOH thin films prepared by pulsed laser deposition	MARISCAL-JIMENEZ Antonio
15:45	2351	Crystallization kinetics of TiO <sub>2</sub> thin films deposited by reactive High Power Impulse Magnetron Sputtering	FERNANDES Daniel

**Tuesday May 30**

**Q04**

## Interfaces, Heterostructures & low dimensional materials

Chairperson(s) : HOUSKA Jiri - LANCOK Jan

**Amsterdam (Ground floor)**

16:30	1990	PLD-grown epitaxial Fe <sub>3</sub> O <sub>4</sub> (111)/ZnO(0001) films with engineered interface	MADACI Ismail
16:45	2561	Structure and properties of low dimensional epitaxial oxides; interfaces and superlattices	KOSTER Gertjan

<b>17:00</b>	<b>2582</b>	Controlling the Schottky Barrier height via polar discontinuity at (La,Sr)MnO <sub>3</sub> / SrTiO <sub>3</sub> interface	<b>WOLFMAN Jerome</b>
<b>17:15</b>	<b>2729</b>	Interface control by chemical and dimensional matching in an oxide interface	<b>O'SULLIVAN Marita</b>
<b>17:30</b>	<b>95</b>	Choice of substrate for graphene growth by molecular dynamics ~theoretical and experimental approaches	<b>KANEKO Satoru</b>
<b>17:45</b>	<b>1273</b>	Reactive HiPIMS of hydrogenated amorphous carbon using toluene precursor	<b>GHOSH Monalisa</b>

**Wednesday May 31**

**Q05**

**Functional oxides & TCO's II**

**Chairperson(s) : ASPE Barthélemy - VON WENCKESTERN Holger**

**Amsterdam (Ground floor)**

<b>10:00</b>	<b>2742</b>	Transparent oxide films with permittivity enhanced via Ga-Cu co-doping	<b>LING Francis Chi-Chung</b>
<b>10:15</b>	<b>2595</b>	Proximity induced ferromagnetism in SrIrO <sub>3</sub>	<b>JAISWAL Arun Kumar</b>
<b>10:30</b>	<b>397</b>	The growth and properties of transparent conducting (La,Sr)VO <sub>3</sub> thin films of the perovskite type.	<b>EL KHALOUFI Oualyd</b>
<b>10:45</b>	<b>677</b>	Strain-Driven Metal-to-Insulator Transition and Charge Ordering in LiV <sub>2</sub> O <sub>4</sub>	<b>WU Yu-Mi</b>
<b>11:00</b>	<b>2629</b>	Vanadate TCO on glass substrate using CNO nanosheets as a template: effect of thickness on the film properties	<b>EL RAMI Marie</b>
<b>11:15</b>	<b>2706</b>	Transparent high conductive TiON nanofilms obtained by nucleation control for sustainable optoelectronics	<b>ESTHER Enríquez Pérez</b>
<b>11:30</b>	<b>1303</b>	Room temperature epitaxial growth of Zn-doped iron oxide films on c-, a- and r-cut sapphire substrates	<b>DEMANGE Valérie</b>

**Wednesday May 31**  
**JOINT LQ 01**  
**PLD of Thin Films I (JOINT SESSION L & Q)**  
**Symposia**

Chairperson(s) : HARO-PONIATOWSKI Emmanuel - KOSTER Gertjan

**Etoile A (1st floor)**

<b>13:30</b>	<b>2743</b>	<b>INV</b>	A brief historical overview of PLD for complex oxides	<b>BLANK Dave H. A.</b>
<b>14:00</b>	<b>1182</b>		Low-Dimensional Eu <sup>2+</sup> Based Emitters on Si by means of Nano- and Femtosecond Laser Processing	<b>MARISCAL-JIMÉNEZ Antonio</b>
<b>14:15</b>	<b>904</b>		PLD-based pyramidal-shaped ceria biointerfaces	<b>BONCIU Anca</b>
<b>14:30</b>	<b>2344</b>		High quality MnZn soft ferrite films grown by pulsed laser deposition for applications in high frequency planar transformers and inductors	<b>PETRESCU Lucian-Gabriel</b>

**Wednesday May 31**  
**JOINT LQ 02**  
**PLD of Thin Films I (JOINT SESSION L & Q)**  
**Symposia**

Chairperson(s) : BLANK Dave H. A. - SOLIS Javier

**Etoile A (1st floor)**

<b>15:00</b>	<b>2448</b>		Morphology control of self-organized Sr <sub>3</sub> (VO <sub>4</sub> ) <sub>2</sub> and Ca <sub>3</sub> (VO <sub>4</sub> ) <sub>2</sub> nanostructures on SrVO <sub>3</sub> and CaVO <sub>3</sub> perovskite PLD films	<b>DEMANGE Valérie</b>
<b>15:15</b>	<b>2672</b>		Perovskites-based thin films for photoelectrochemical water-splitting applications	<b>ANDREI Florin</b>
<b>15:30</b>	<b>2644</b>		Fabrication of nanostructured glasses by laser ablation	<b>HARO-PONIATOWSKI Emmanuel</b>
<b>15:45</b>	<b>178</b>		A Hybrid p-n Junction Based on metal chalcogenides for Highly Efficient Self-Powered Photodetection	<b>KUMAWAT Kishan Lal</b>



**Wednesday May 31**

**Q\_P**

**Poster session**

**Chairperson(s) : CAILLARD Amael - GONZALO Jose - KONSTANTINIDIS Stephanos - NISTOR  
Magdalena**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

<b>01_2238</b>	In situ monitoring of electrical resistivity during pulsed laser deposition of p-type copper halides films	<b>LANCOK Jan</b>
<b>02_1232</b>	Influence of deposition parameters on the microstructure of GeTe-Sb <sub>2</sub> Te <sub>3</sub> heterostructures grown by pulsed laser deposition	<b>CREMER Sonja</b>
<b>04_882</b>	Controlling the tungsten films structure by recessive and pulsed current electrolysis modes	<b>STESYUK Tatyana</b>
<b>05_2255</b>	Spectroscopic ellipsometry of porous black aluminium thin films	<b>MARESOVA Eva</b>
<b>06_2753</b>	Deposition of superhard WB <sub>2</sub> based films using HiPIMS	<b>LEWANDOWSKA M.</b>
<b>07_702</b>	Effect of PLD parameters on optical properties of nickel oxide thin films	<b>HORYNOVA Eva</b>
<b>08_345</b>	Photo-resistivity in nickelate films with tailored structure	<b>STUPAKOV Alexandr</b>
<b>09_349</b>	Tuning the infrared dielectric and plasmonic properties of pulsed laser deposited ZnO thin films	<b>TABBAL Malek</b>
<b>10_2620</b>	Zirconium oxynitrides thin films by reactive magnetron sputtering for the oxygen reduction reaction	<b>CAILLARD Amael</b>
<b>11_2713</b>	Effect of silicon content and thermal treatment on structural and optical properties of hafnia-based films	<b>KHOMENKOVA L.</b>
<b>12_393</b>	Thermal conductivity of thin films and bulk BiFeO <sub>3</sub> determined by opto-thermal Raman spectroscopy method	<b>HIMCINSCHI Cameliu</b>
<b>13_2404</b>	Growth and properties of Ga <sub>2</sub> O <sub>x</sub> (x < 3) thin films obtained by pulsed-laser deposition	<b>PERRIERE Jacques</b>
<b>14_2491</b>	Black amorphous zinc oxide thin films grown by pulsed electron beam deposition	<b>NISTOR Magdalena</b>

15_2035	Spectral and structural investigation of e-beam evaporated yttrium based oxide, and oxyhydride thin films	ARSLAN Halil
16_1265	Homo-epitaxial growth of Lithium Niobate by Pulsed-Laser Deposition	PERSHUKOV Ihor
17_1942	Effect of Ba <sup>+</sup> ion implantation on the composition of silicate glasses	TASHMUKHAMEDOVA Dilnoza
19_1405	Structure and properties of RVO <sub>3</sub> epitaxial thin films grown by pulsed laser deposition	MARTIROSYAN Mariam
20_2697	High Uniformity Thin Films Deposited on Large Areas by PLD	SOPRONYI Mihai
21_1112	Unusual angular dependence of the magnetoresistance in the LaVO <sub>3</sub> -KTaO <sub>3</sub> Rashba system	GUPTA Anshu
22_2101	Features of pulsed laser deposition of luminescent lanthanum vanadate films	CHUKOVA Oksana
23_2135	Phase-electrical function relationship of vanadium oxide based heterostructures	PLUGARU Rodica
24_2619	XPS characterization of functional materials: beyond the surface chemical nature analysis	LAIDANI Nadhira
25_1412	Ultrafast laser processing of PLD-deposited Yb <sub>2</sub> O <sub>3</sub> -doped ZnO films	SOLIS Javier
26_160	Effect of surfactant on the morphology and tarnishing behaviour of nanostructured Au coatings deposited via ultrasonic-assisted pulse-galvanostatic route from a deep eutectic solvent-based bath	SATPATHY Bangmaya
27_1080	Fabrication of nanostructures consisting of composite nanoparticles by open-air PLD	DIKOVSKA Anna
28_1228	Nanocrystals synthesis by atmospheric air breakdown voltage generated by the interaction between microwaves and metallic wires	CRACIUN Valentin
29_2537	Antibacterial activity of MAPLE coatings based on the magnetite nanoparticles functionalized with Nigella sativa and antibiotics	CRACIUN Valentin
30_2513	Fabrication of Gold and Silver Nanostructured Films by Pulsed Laser Ablation and Application to SERS Substrates	TAKEDA Naoki
31_1823	Exploring the biocompatibility and antibacterial activity of immobilized Ag NPs doped Bio-HEA coatings for orthopedic implants	MOTALLEBZADEH Amir

<a href="#">32_2578</a>	Cytocompatible and antimicrobial assessment of novel marine-derived hydroxyapatite coatings	<b>DUTA* Liviu</b>
<a href="#">34_1709</a>	Pulsed Laser Deposition of ceramic solid electrolyte thin films for solid state microbatteries	<b>DE BONIS Angela</b>
<a href="#">35_1201</a>	High-rate HiPIMS reactive sputter deposition of p-type Cu <sub>2</sub> O-based thin films for translucent electronics applications	<b>REZEK Jiri</b>
<a href="#">36_1305</a>	Pulsed laser deposition of LaAlO <sub>3</sub> films for MEMS applications	<b>BELLINGERI Emilio</b>
<a href="#">37_1392</a>	Gold thin film composites for highly sensitive plasmonic biosensor	<b>GIREAU Manon</b>
<a href="#">38_1246</a>	Electrical and gas sensing properties of ZnO-WO <sub>3</sub> mixed oxide nanostructures produced by open-air PLD	<b>DILOVA Tina</b>
<a href="#">39_2633</a>	Lead free BCTZ thin films for gas detection	<b>ION Valentin</b>
<a href="#">40_2715</a>	Physical-chemical characteristics and in vitro biofunctional performance of bioceramic implant-type coatings fabricated from renewable sources	<b>DUTA* Liviu</b>
<a href="#">42_1113</a>	Influence of the flexible substrate on the properties of the organic films prepared by MAPLE	<b>PETRE Gabriela</b>
<a href="#">43_2224</a>	Effect of laser deposited flexible transparent conductor electrode on the properties of organic heterostructures	<b>PETRE Gabriela</b>

Thursday June 1

Q06

## Applications

Chairperson(s) : DEMANGE Valérie - REZEK Jiri

Amsterdam (Ground floor)

10:00	2207	INV	Reactive pulsed sputtering of semiconducting ternary oxide thin films for photoelectrochemical water splitting and hydrogen production	HUBICKA Zdenek
10:30	1667		Growth of epitaxial $\alpha$ -Fe <sub>2</sub> O <sub>3</sub> and ZnFe <sub>2</sub> O <sub>4</sub> thin film photoelectrodes by pulsed laser deposition for solar water splitting	MIRIYALA Kumaraswamy
10:45	721		Growth of binary oxide thin films for medical applications.	YADAV Abhishek
11:00	305		Development of VO <sub>2</sub> thin films, the beginnings of a radiative thermal transistor	ALONZO-ZAPATA Irving
11:15	429		Influence of PLD deposition parameters on the structural properties of VO <sub>2</sub> epilayers for smart windows applications	RAI Ayushi
11:30	2232		AlxTayOz thin films deposited at low temperature by pulsed direct current reactive magnetron sputtering for dielectric applications	DREVET Richard
11:45	1124		Experimental band structure of ferroelectric Pb(Zr,Ti)O <sub>3</sub> and what can we learn from it	HUSANU Marius Adrian

Thursday June 1

Q07

## Nanoparticles, nanostructures & nanoscale materials I

Chairperson(s) : HUBICKA Zdenek - NISTOR Magdalena

Amsterdam (Ground floor)

13:30	1325	INV	A versatile technique for complex materials: a review on the Pulsed Electron Deposition	PATTINI Francesco
14:00	1815		3d – 4f exchange-strictive interactions in perovskite rare-earth vanadate thin films	COPIE Olivier
14:15	1542		In-flight decoration of gas-aggregated ZrN nanoparticles with Ag using continuous and pulsed magnetron sputtering	PROTSAK Mariia

14:30	2663	Ionised Jet Deposition system and method	NOZAR Petr
14:45	1848	Optical Properties of Silicon NCs Embedded in SiO <sub>2</sub> Fabricated by Ion Implantation and Reactive Pulsed Laser Deposition	IWAYAMA Tsutomu

Thursday June 1

Q08

## Nanoparticles, nanostructures & nanoscale materials II

Chairperson(s) : O'SULLIVAN Marita - PATTINI Francesco

Amsterdam (Ground floor)

15:00	2400	Pulsed-laser ablation of silver: formation of nanoparticles on a liquid substrate	BEJJIT Charaf Eddine
15:15	2483	Synthesis of gold nanoparticles by DC and High-Power Impulse Magnetron Sputtering using a liquid substrate	KONSTANTINIDIS Stephanos
15:30	2592	Tuning the functional properties of perovskite thin films through complex ensembles of nanoscale phase/nanodomain fluctuations.	SCARISOREANU Nicu Doinel
15:45	1811	Presence of Delocalized Ti 3d Electrons in Ultrathin Single-Crystal SrTiO <sub>3</sub>	HUANG Shih-Wen

Thursday June 1

Q09

## Metal & alloy functional coatings

Chairperson(s) : CAILLARD Amael - SCARISOREANU Nicu Doinel

Amsterdam (Ground floor)

16:30	273	Insights on CaTiS <sub>3</sub> Films Grown by Pulsed Laser Deposition	FIX Thomas
16:45	1698	FeCrNiCoMo-based coatings deposited via High Power Impulse Magnetron Sputtering	DEAMBROSIS Silvia Maria
17:00	1773	Preparation of FeNiCrCoAl Thin Films by Ionized Jet Deposition Method	SKOCDOPOLE Jakub
17:15	2282	Pulsed DC magnetron sputtering of thin films of black aluminium	NOVOTNY Michal
17:30	2475	Deposition of W films by HiPIMS: role of magnetic field and bias	VAVASSORI Davide

17:45

1841

PLD of Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>8</sub> thin films for ion-beam nanostructuring to uncover new vortex dynamics

KEPPERT Sandra









European Materials Research Society

2023 Spring Meeting May 29 | June 2

40<sup>th</sup> Anniversary

Congress & Exhibition Centre, Strasbourg, France

## SYMPOSIUM R

Diamond for electronics, sensors and detectors V

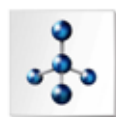
*Symposium Organizers:*

Richard B. JACKMAN, University College London, U.K.

Etienne GHEERAERT, University Grenoble, France

Philippe BERGONZO, Seki Diamond Systems, USA

Soumen MANDAL, University of Cardiff, U.K.



**DIAMOND  
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**Monday May 29**

**R01**

## **Diamond Devices I**

**Chairperson(s) : JACKMAN Richard**

**Madrid 1 (Ground floor)**

<b>09:00</b>	<b>845</b>	<b>INV</b>	Advances in diamond MOSFET technologies	<b>TOKUDA Norio</b>
<b>09:30</b>	<b>2466</b>		Vertical pin diodes on large freestanding (100) diamond film	<b>PINAULT-THAURY Marie-Amandine</b>
<b>09:45</b>	<b>1285</b>		Investigate the impact of the nitrogen doped layer on the electrical properties of diamond Schottky barrier diodes	<b>KASSEM Hussein</b>

**Monday May 29**

**R02**

## **Diamond Devices II**

**Chairperson(s) : TOKUDA Norio**

**Madrid 1 (Ground floor)**

<b>10:30</b>	<b>2625</b>	<b>INV</b>	Future prospect and challenges of Diamond power electronic devices: from deep depletion FETs to H-Terminated devices	<b>DONATO Nazareno</b>
<b>11:00</b>	<b>1934</b>		Design and technology of Normally-off Diamond Reverse Blocking MESFET	<b>GHEERAERT Etienne</b>
<b>11:15</b>	<b>2324</b>	<b>INV</b>	Recent developments in transfer-doping of diamond for electronic devices	<b>MORAN David</b>
<b>11:45</b>	<b>734</b>		Graphitic Micro-channels in Diamond: An Impedance Spectroscopy Study	<b>HENDERSON Calum</b>

**Monday May 29**

**R03**

## **Quantum devices I**

**Chairperson(s) : BECHER Christophe**

**Madrid 1 (Ground floor)**

<b>14:00</b>	<b>2472</b>	<b>INV</b>	Diamond-based quantum sensors for in situ monitoring of spin active chemical species in molecular structures and nanomaterials	<b>MATHER Melissa</b>
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14:30	2032		All-Optical Nuclear Quantum Sensing using Nitrogen-Vacancy Centers in Diamond	<b>SJÖLANDER Tobias</b>
14:45	1169		Investigation of diamond-based quantum sensors in laterally overgrown hole arrays	<b>OSHNIK Nimba</b>
15:00	1597		Evaluation of NV0 defects in single-crystal diamond grown directly on Si substrate using Raman spectroscopy	<b>YAMAZAKI Shohei</b>
15:15	2480		Interfacing diamond with silicon microtechnology for quantum applications	<b>SMITH Joe</b>
15:30	2381	INV	Two-dimensional spin systems in PECVD-grown diamond with tunable density and long coherence for enhanced quantum sensing and simulation	<b>HUGHES Lillian</b>

**Monday May 29**

**R\_P**

**Poster session**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

01_2612		Correlated micro-Raman, scanning spreading resistance and Kelvin-probe mapping of dislocations etch pits and sectoral boundaries in boron-doped HPHT-diamond	<b>NIKOLENKO Andrii</b>
02_2613		Temperature dependence of growth-sector-dependent Raman spectra of boron-doped HPHT- diamonds	<b>DANYLENKO Ihor</b>
03_2586		Temperature dependence of the Raman spectra of various multi-sectoral HPHT diamond plates	<b>DANYLENKO Ihor</b>
04_2383		Diamond nanowire transistor with high current capability	<b>MOORS Ralph</b>
05_754		First principles calculations of the electronic, vibrational and dielectric properties of defective diamond	<b>RUSEVICH Leonid</b>
06_373		Investigated performance of AlHfGaO UVC phototransistors deposited by vapor cooling condensation system at low temperature	<b>LEE Ching-Ting</b>

**Tuesday May 30**

**R04**

## **Detectors and Sensors**

**Chairperson(s) : BERGONZO Philippe**

**Madrid 1 (Ground floor)**

<b>10:00</b>	<b>2461</b>	<b>INV</b>	Design of innovative diamond detectors for beam monitoring in highly radiative environment for applications in nuclear and medical physics	<b>GALLIN-MARTEL Marie-Laure</b>
<b>10:30</b>	<b>86</b>		Diamond detectors for pulse resolved intensity measurements at European XFEL	<b>BOESENBERG Ulrike</b>
<b>10:45</b>	<b>66</b>		Diamond Sensor for XFEL Beam Diagnostics at the European XFEL	<b>FREUND Wolfgang</b>
<b>11:00</b>	<b>2458</b>	<b>INV</b>	An electrochemically assisted system based on heterojunction silicon/diamond sensor for natural uranium detection in liquid solutions	<b>POMORSKI Michal</b>
<b>11:30</b>	<b>1699</b>		A diamond/graphene/diamond sandwich structure electrode for waste water treatment	<b>YANG Nianjun</b>
<b>11:45</b>	<b>1176</b>		Nitrogen-doped carbon nanowalls/diamond films as efficient electrocatalysts toward oxygen reduction reaction	<b>ZHANG Chuyan</b>

**Tuesday May 30**

**R05**

## **Growth and Characterisation**

**Chairperson(s) : GHEERAERT Etienne**

**Madrid 1 (Ground floor)**

<b>14:00</b>	<b>2749</b>	<b>INV</b>	Two-Inch High Quality Diamond Heteroepitaxial Growth on Sapphire for High-End Applications	<b>KIM Seong-Woo</b>
<b>14:30</b>	<b>2591</b>		Development of new carbon solvent compositions for HPHT-growth of boron-doped large diamond single crystals for applications as electronic device substrates	<b>KOVALENKO Tetiana</b>
<b>15:00</b>	<b>2192</b>		Diamond growth on non-diamond substrate: A zeta potential preview	<b>MANDAL Soumen</b>
<b>15:15</b>	<b>1031</b>		Vertically Three-Dimensional Diamond-Graphene Nanohybrid Films: Preparation, Characterization and Application	<b>XIONG Ying</b>

**15:30**    **2781**    **INV**    A review of key developments and challenges in CVD diamond materials for sensor and detector applications    **FRIEL Ian**

**Wednesday May 31**  
**R06**  
**Quantum devices II**

**Chairperson(s) : MATHER Melissa**

**Madrid 1 (Ground floor)**

<b>10:00</b>	<b>2704</b>	<b>INV</b>	The tin vacancy center in diamond: control of charge states, spins and photons	<b>BECHER Christophe</b>
<b>10:30</b>	<b>661</b>		Widefield detection of NV center Rabi oscillations	<b>MAGALETTI Simone</b>
<b>10:45</b>	<b>2699</b>		Excited singlet and triplet states of the negatively charged NV-center in diamond calculated using a variation density functional approach	<b>JONSSON Hannes</b>
<b>11:00</b>	<b>2406</b>		Detecting spatial magnetic field gradients using a nanodiamond thin-film sensor on an optical fiber facet	<b>JANI Mona</b>
<b>11:15</b>	<b>2198</b>		Enhanced SiV magnetometry in diamond using electromagnetically induced transparency	<b>JIMENEZ Alejandro</b>
<b>11:30</b>	<b>1453</b>		Diamond-Based Magnetic Widefield-Microscopy of Domain Patterns in Transformer Steel	<b>PHILIPP Simon</b>
<b>11:45</b>	<b>1055</b>		Revealing impurity evolution in silicon-doped diamond film via thermal oxidation	<b>YANG Bing</b>

**Wednesday May 31**  
**R07**  
**Processing, Optics and Thermal Management**

**Chairperson(s) : FRIEL Ian**

**Madrid 1 (Ground floor)**

<b>13:45</b>	<b>1378</b>	<b>INV</b>	A TEM study of the 3D nanographitic generated structures generated by Laser writing process to induce local diamond conduction	<b>ARAUJO Daniel</b>
<b>14:15</b>	<b>521</b>		Surface Transfer Doped Diamond Diodes with Metal Oxide Passivation and Field-plate	<b>WATKINS Rebecca</b>
<b>14:30</b>	<b>2398</b>		Locally Ion Implantation and Annealing Effects in Diamond	<b>BOURAS Mohamed Elhachmi</b>

14:45	525	Diamond Electrochemical Sensors: Graphitic microchannels as both through substrate vias and patterned electrodes	MOORS Ralph
15:00	1857	Surface modification of thin boron doped diamond electrodes with controlled sp <sup>2</sup> sites – ultrashort laser pulses fabrication and electrochemical characterization	LAMBERT Nicolas
15:15	1750	Consistent manufacturing of high-quality in-diamond lens devices for enhanced Color Center Photoluminescence detection	TSAPANOU-KATRANARA Eftychia
15:30	2126	Nano-structured Diamond Sensors for Extreme Environments: Taking SERS from the laboratory to the Ocean	RAMSAY Massimiliano
15:45	2769	Low Thermal Budget Diamond Heat Spreader for Semiconductor Devices Channel Cooling	MALAKOUTIAN Mohamadali

**Wednesday May 31**

**R08**

## **Sensors and Bio-devices**

**Chairperson(s) : MANDAL Soumen**

**Madrid 1 (Ground floor)**

16:30	2423	INV	Boron-doped diamond enriched vertical graphene nanostructures for electronic and sensing applications	PIERPAOLI Mattia
17:00	1092		Protein immobilization on ultrananocrystalline diamond for biosensing applications	POPOV Cyril
17:15	2497		Exploring the impact of ionizing radiation on neuronal networks and neuroendocrine cells with advanced diamond-based cellular sensors	PICOLLO Federico
17:30	2487	INV	Virus Capture by nanodiamond modified membranes	WILLIAMS Oliver







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## SYMPOSIUM 5

Entrepreneurial mindset in materials

*Symposium Organizers:*

Francesco MATTEUCCI , EIC-EISMEA

Johannes BÜNZ, EIC-EISMEA

Gian Marco RIGNANESE, University of Louvain, Belgium

Roberto GIANNANTONIO, University of Milan, Italy

Valeria NICOLOSI, Trinity College Dublin, Ireland

**Thursday June 1**  
**Entrepreneurial mindset in material**

**Morning session 10.00h – 12.30h**

<b>10.00 – 10.20</b>	Introduction and EIC approach towards new materials (in person, confirmed)	<b>Francesco Matteucci</b>
<b>10.20 – 10.45</b>	Eco Strategies for the next generation of electronics and energy green power sources – 20mins + 5 mins Q&A (in person, confirmed)	<b>Rodrigo Martins</b>
<b>10.45 – 11.05</b>	Example of scale-up of advanced materials – 15 mins + 5 min Q&A (virtual, confirmed)	<b>Valeria Nicolosi</b>
<b>11.05 – 11.25</b>	Use of AI to design new advanced materials – 15mins + 5mins Q&A (in person, confirmed)	<b>Gian Marco</b>
<b>11.25 – 11.40</b>	Example of scale up of advanced materials – 15mins + 5mins Q&A (virtual, confirmed)	<b>Roberto Giannantonio</b>
<b>11.40 – 12.00</b>	What a VC wants: how to attract investment – 15mins + 5mins Q&A (in person OR virtual, to be confirmed)	<b>Anna Amat</b>
<b>12.00 – 12.20</b>	From the lab to the field: the case of Mirai Solar – 15mins + 5mins Q&A (in person, confirmed)	<b>Michele de Bastiani</b>

**Thursday June 1**  
**Entrepreneurial mindset in material**

**Afternoon session 14.30h – 16.30h**

<b>14.30 – 14.50</b>	Nanowings: Nanocoatings for energy application scale-up (in person, confirmed)	<b>Stefano Linar</b>
<b>14.50 – 15.10</b>	Giovanni Fevola – X-ray meet neutrons meet neutron IOMS meet electrons meet LASERS meet MAGNETS: combined access to multiple facilities through EU project “ReMade@ARI” – confirmed	<b>Giovanni Fevola</b>
<b>15.10 – 15.30</b>	Alla Kasakewitsch – Scale up of innovative nanostructured aluminum composites (EIC beneficiary) – confirmed	<b>Alla Kasakewitsch</b>
<b>15.30 – 15.50</b>	EIC funded start-up on circular economy - EIC beneficiary – confirmed -- accelerator tbd -- accelerator tbd	<b>Marco Bersani</b>
<b>16.10 – 16.30</b>	Round table moderated by Francesco Matteucci, Q&A and closure	

**Thursday June 1**  
**Posters**

An eco-friendly approach for the construction of wood-plastic composite of recycled HDPE enhanced with Hemp fibers

**Malletzidou Lamprini**

From highly engineered platinum nanoparticles to a consumer product: the pathway that leads to market – poster

**Mauro Moglianetti**

EIC poster / roll-up – brought by Francesco



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## SYMPOSIUM T

Frontiers of in-situ materials characterization - from new instrumentation  
and methods to imaging aided materials design

*Symposium Organizers:*

Jordi ARBIOL, ICREA & ICN2, Barcelona, Spain

Sara BALS, EMAT, University of Antwerp, Belgium

Maria Chiara SPADARO, ICN2, Barcelona, Spain

Milena HUGENSCHMIDT, EMAT, University of Antwerp, Belgium

systems for nanometrology  
**SURFACE**  
..... always sm@rter solutions

**ThermoFisher**  
SCIENTIFIC

 **DENS**  
solutions

**Wednesday May 31**

**T\_P  
Poster session**

**Etoile (1st floor) - 4.30 p.m to 6.30 p.m**

<b>01_2611</b>	Diffraction study on magnetic thin films for spintronics	<b>HIMANSHU Himanshu</b>
<b>02_2505</b>	Hexagonal Close-packed Palladium Hydride in liquid cell TEM by Radiolysis Engineering	<b>CHUN Dong Won</b>
<b>03_2564</b>	Atomic structure of partially reduced nickelate films	<b>YANG Chao</b>
<b>04_1300</b>	Time-resolved TEM of nanomaterials with nanosecond electron pulses	<b>PICHER Matthieu</b>
<b>05_1396</b>	Development of a Surface-Modified Quartz Crystal Microbalance Technique to monitor Hydroxyapatite Film Growth in situ	<b>MURPHY Brid</b>
<b>07_157</b>	Engineering the magnetic properties of dual-phase high-carbon steel by controlling the microstructure(Developing a non-destructive method for microstructural characterization)	<b>SARMADI Negin</b>
<b>08_68</b>	Automatic and on-demand synthesis of AgAu alloy nanoboxes by PID control	<b>BUI Hoang Khang</b>
<b>09_101</b>	Diffraction-limited hyperspectral mid-infrared micro-ellipsometry	<b>EBNER Alexander</b>
<b>10_105</b>	A new compact SEM detector for Reflection Energy Loss Spectroscopy (REELS) and Elastic Peak Electron Spectroscopy (EPES) with imaging capability	<b>STAIB Philippe</b>
<b>11_185</b>	Temperature Effect on the Nucleation and Crystallization of Formamidinium-based perovskite	<b>WANG Yunfan</b>
<b>12_187</b>	Unraveling the Crystallization Process in Mixed Halide Wide Bandgap Perovskite by In-situ Dynamic Optical Probing	<b>ZENG Zixin</b>
<b>13_242</b>	In situ growth of cyclodextrin-based metal organic framework air filters for reusable SO <sub>2</sub> adsorbent applications	<b>KIM Jooran</b>
<b>14_510</b>	Transmission electron microscopy and X-ray diffraction studies on tin antimony sulfide nanopowder	<b>KHEMIRI Naoufel</b>
<b>15_655</b>	Effects of electron beam irradiation in the all-inorganic halide perovskite, CsPbI <sub>3</sub>	<b>BOSE Shaona</b>

16_697	From Research to Development: Innovative multi-layer polypropylene-random pipes for heating-cooling systems with high dimensional stability	<b>VOURLIAS Georgios</b>
17_733	In-Operando Raman Spectroscopy during Electrochemical Ageing of Mn Oxide Thin Films in Aqueous Electrolytes	<b>MACRELLI Andrea</b>
18_793	Investigation of in-situ Scanning Electron Microscopy Technique for Microstructural Evolution of Li-ion Batteries	<b>CHO Jiung</b>
19_804	HERFD XAS study double-atom catalysts for the oxygen evolution electrocatalysis	<b>LIAO Yen-Fa</b>
20_884	Initial stages of crystals nucleation at the metal electrode – melt interface	<b>STESYUK Tatyana</b>
21_999	In-situ synchrotron X-ray diffraction analysis of pearlitic steel subjected to shear deformation	<b>ALVES DA SILVA Carlos</b>
22_1040	In-situ study of diameter control, composition and growth dynamics in Au-seeded GaSb nanowires	<b>MARNAUZA Mikelis</b>
23_1077	Unraveling the multilayer growth behavior of InGaAs nanowires using In-situ TEM	<b>SJÖKVIST Robin</b>
24_1283	In situ Transmission Electron Microscopy (TEM) study of the reduction of TiO <sub>2</sub> to Ti <sub>n</sub> O <sub>2n-1</sub> magnéli phase	<b>SCHMIDT Léon</b>
26_1792	Electron beam effects on the oxidation of Cu nanoparticles in environmental scanning transmission electron microscopy	<b>ZIASHAHABI Azin</b>
27_1826	Electron microscopy investigations of nanostructures transformation under e-beam illumination	<b>SPADARO Maria Chiara</b>
28_2460	In situ (S)TEM characterization of bimetallic atomic cluster catalysts	<b>BALALTA Deema</b>

Tuesday May 30

T01

## Liquid TEM, Batteries, and Fuel Cells

Chairperson(s) : ARBIOL Jordi - HUGENSCHMIDT Milena

Varsovie (Ground floor)

10:00	2308	INV	Accessing the radiation chemistry at nanomaterials/water interfaces using electron microscopy and spectroscopy	ABELLAN Patricia
10:30	1465		Understanding Zn Dendrite Growth in Different Aqueous Electrolytes by in situ liquid cell TEM	YUAN Yi
10:45	432		Understanding the role of the solid-electrolyte interphase in Li and Na batteries by operando transmission electron microscopy	ROBERTSON Alex
11:00	2397		In situ Raman spectroscopy to study phase transitions in La <sub>2</sub> NiO <sub>4+d</sub>	ADEEL RIAZ Adeel
11:15	2455		Shining a light on batteries: introducing a novel light scattering technique for the study of Li-ion dynamics and characterisation of battery electrode materials	LANGLEY Cathryn
11:30	639		In-situ TEM Observation of Phase Transformation of Materials at Nano Scale	HUANG Yizhong
11:45	2395		Characterizing Self-Assembled Nanoparticles in Liquid: Importance of Native environment for Electron Microscopy.	ARENAS ESTEBAN Daniel

Tuesday May 30

T02

## 3D techniques and Catalysts

Chairperson(s) : BALS Sara - SPADARO Maria Chiara

Varsovie (Ground floor)

13:30	2443	INV	Investigating nanoparticle restructuring and nanoparticle – support dynamics using advanced operando electron microscopy	JENKINSON Kellie
14:00	2596		In-Situ High-Temperature Gas and Vacuum 3D Electron Diffraction for Studying Structural Transformations upon Redox Reactions	VANDEMEULEBROUCKE Daphne
14:15	889		In situ transmission electron microscopy study on the restructuring of Au-Pd core-shell catalysts	PERXÉS I PERICH Marta



14:30	2464		Unraveling the diffusion at the atomic scale in 3D: heat-induced alloying in single-crystalline and pentatwinned Au@Ag nanoparticles.	MYCHINKO Mikhail
14:45	675		Operando proton-transfer-reaction time-of-flight mass spectrometry of carbon dioxide reduction electrocatalysis	REN Hangjuan

**Tuesday May 30**

**T03**

## Structure-Property relations

Chairperson(s) : BALS Sara - SPADARO Maria Chiara

Varsovie (Ground floor)

15:00	2694	INV	Revealing Structure-Property Correlations in Memristive Devices	MOLINA-LUNA Leopoldo
15:30	2575		Mechanisms of deformation processes in NiTi shape memory alloys determined by in situ study of texture evolution combined with post mortem analysis of martensite variant microstructures in TEM.	SITTNER Petr
15:45	2281		Infrared imagery: an advanced tool to characterize in-situ nanomaterials	BELLETT Daniel

**Tuesday May 30**

**T04**

## Nanostructured material investigation with TEM and X-ray-based methodology

Chairperson(s) : ARBIOL Jordi - HUGENSCHMIDT Milena

Varsovie (Ground floor)

16:30	500	INV	In-situ heating (scanning) transmission electron microscopy for exploring the thermal stability of a nanoscale complex solid solution thin film	ARBIOL Jordi
17:00	1116		Direct insight into the activation mechanism of Fe and Sb catalysts by operando TEM and XAS techniques	TRAORE Aliou Sadia
17:15	1742		Shedding lights on the birth of hybrid perovskites: a correlative study by In-Situ TEM and synchrotron based SAXS/WAXS	SIDHOUM Charles
17:30	824		In-situ study of Materials Performance and Structural Properties with high spatial resolution	DAVYDOK Anton

<b>17:45</b>	<b>1507</b>	Time-resolved cathodoluminescence spectroscopy of silicon nanoparticles	<b>FIEDLER Saskia</b>
<b>18:00</b>	<b>1878</b>	In-situ structural phase transition visualization and domain imaging in bulk NiO through dark field hard X-ray microscopy	<b>RODRIGUEZ-LAMAS Raquel</b>
<b>18:15</b>	<b>129</b>	Synthesis of functional metal in metal colloids for applications in catalysis and energy storage	<b>DAENEKE Torben</b>

Wednesday May 31

T05

## Beam sensitive and 2D materials

Chairperson(s) : BALS Sara - SPADARO Maria Chiara

Varsovie (Ground floor)

10:00	2179	INV	Advances in In-Situ Electron Microscopy: From Growth of 2D Materials to the Thermoresponsive Behaviour of PNIPAM Colloids	VAN HUIS Marijn
10:30	289		Fully optical in-operando investigation of electrical switches in ambient conditions	SYMONOWICZ Joanna
10:45	1845		An insight into the mechanism of dealumination in zeolite: an in situ TEM study on the route of Al	GIRELLI CONSOLARO Valentina
11:00	2273		Direct insight into phase transition of boehmite coupling electron tomography with in-situ gas phase Transmission Electron Microscopy	SUDHEER Nivedita
11:15	2375		Real-time observation of molecular dynamics and chemical reactions in STEM	ZAMANI Reza
11:30	2739		Doping-induced assembly of conjugated polymer interpreted by in-situ TEM	LEE Eunji
11:45	1983		Impact of electron beam irradiation on Carbon Black Oxidation	WAHLQVIST David

Wednesday May 31

T06

## Solar Cells and Photocatalysts

Chairperson(s) : BALS Sara - SPADARO Maria Chiara

Varsovie (Ground floor)

13:30	619	INV	Monitoring Structural dynamics Using In Situ Electron Microscopy	HANSEN Thomas Willum
14:00	399		Kelvin Probe Force Microscopy under variable illumination: a novel technique to unveil charge carrier dynamics in GaN	GONZÁLEZ-IZQUIERDO Palmerina
14:15	674		Operando FTIR investigation of surface species reactivity in the photocatalytic reduction of CO <sub>2</sub> in vapour phase over Pt/TiO <sub>2</sub>	DANKAR Joudy

14:30	727		How can three-dimensional and multimodal X-ray microscopy reveal the impact of voids in CIGS solar cells?	FEVOLA Giovanni
14:45	1449		In-line quality control of perovskite photovoltaics by using intensity dependent photoluminescence	HACENE Benjamin

**Wednesday May 31**

**T07**

## Heating and environmental TEM

Chairperson(s) : ARBIOL Jordi - HUGENSCHMIDT Milena

Varsovie (Ground floor)

15:00	309	INV	Operando TEM in catalysis research: Bridging the pressure gap	KOOYMAN Patricia
15:30	1286		High-Temperature Oxidation of Titanium Aluminium Nitride Coatings Visualized by Environmental Transmission Electron Microscopy	EK Martin
15:45	1133		In-situ TEM Observations of Interface Engineering between Ti and Ga <sub>2</sub> O <sub>3</sub>	HSIEH Pingwen

**Wednesday May 31**

**T08**

## Electron Microscopy and Micromechanics

Chairperson(s) : ARBIOL Jordi - HUGENSCHMIDT Milena

Varsovie (Ground floor)

16:30	1181	INV	Environmental Electron Tomography for material science	ROIBAN Lucian
17:00	260		Machine-learning-based, in-situ estimation of ceramic's microstructure upon the laser spot brightness during laser sintering	PENG Fei
17:15	736		Direct injection of coherent free-electron radiation into an optical fiber	LIEBTRAU Matthias
17:30	1797		Two Microscopes are better than One - in-situ Correlative Analysis by Combination of AFM and SEM	FRERICHS Hajo
17:45	1804		Nanoindentation material testing using SMART and SMART CUBES for non-ambient conditions	BEDORF Dennis

**18:00**

**2346**

In situ Extreme Micromechanics – Recent  
Innovations and Prospects

**WIDMER Remo**





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## SYMPOSIUM U

Merging voices in Cultural Heritage: protection through innovation in materials and methods

*Symposium Organizers:*

Anne BOUQUILLON, C2RMF, Paris, France

Giuseppina PADELETTI, CNR, Rome, Italy

João Pedro VEIGA, Universidade Nova Lisboa, Portugal



Thursday June 1

## U01

# Techniques and Methods for a deeper knowledge of CH

Chairperson(s) : PADELETTI Giuseppina

Berlin (Ground floor)

10:15	2785	INV	Non-invasive (chemical) imaging of works of art – some case studies illustrating current possibilities	JANSSENS Koen
10:45	2100		Stratigraphy of ancient frescoes: a new approach with photoacoustic and SORS imaging	PISU Francesca Assunta
11:00	1339		Innovative nano-engineered formulations for the protection of frescoes from microbiological attacks	MOGLIANETTI Mauro
11:15	2339		Innovative method for provenance study: a new algorithm based on observables from high-resolution Raman spectra	CHIRIU Daniele
11:30	495		Nanostructured ZnO/CuO based chitosan hydrogel coating for the protection of cultural heritage buildings and sculptures	BASAK Sayantani

Thursday June 1

## U02

# World Heritage Case Studies

Chairperson(s) : BOUQUILLON Anne

Berlin (Ground floor)

13:45	1687		Turning tragedy into opportunities: analyzing the fragments of the glass artefacts of the AUB Archeological Museum shattered by the Beirut August 2020 explosion	TABBAL Malek
14:00	1384		Mortars from the Monastery of Santa Maria de Alcobaça, in Portugal: characteristics and functions	VEIGA João Pedro
14:15	1756		Preservation of Bush Hammering Granite Ashlars of Casa de Mateus Palace Complex Chapel (Vila Real, Galicia-North Portugal Euroregion)	LÓPEZ Ana J.



14:30

1559

Cleaning the Sydney Harbour Bridge:  
comparison between femtosecond and  
nanosecond pulse lasers

**BRAND Julia**

**Thursday June 1**

**U03**

**Poster Pitch**

**Chairperson(s) : VEIGA João Pedro**

**Berlin (Ground floor) - 4.30 p.m to 6.30 p.m**

<b>01_722</b>	Mineral and Synthetic Ultramarine: Characterization study of commercial pigments towards their discrimination	<b>VOURLIAS Georgios</b>
<b>02_1421</b>	An introductory archaeometric study of Gharb Al-Andalus Ceramics from Setúbal (Portugal)	<b>VEIGA João Pedro</b>
<b>03_1537</b>	Consumed by flames: Study of a fire protocol applied to wall-painting mock-ups	<b>MALLETZIDOU Lamprini</b>
<b>04_2038</b>	Degradation study of semiconductor pigments through transient absorption	<b>PISU Francesca Assunta</b>
<b>05_2090</b>	Preliminary study on the effects of salinity on ancient paper by optical techniques	<b>CHIRIU Daniele</b>
<b>06_2307</b>	Application of femtosecond pulse laser to clean heritage marble from the Holy Samadh, India	<b>BRAND Julia</b>
<b>07_2237</b>	The materials in the 20th century art: a challenge for characterization and conservation	<b>TOMASIN Patrizia</b>





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## SYMPOSIUM V

SuperCol / Colloids:  
synthesis, super-resolution characterization  
and biomedical applications

*Symposium Organizers:*

Pierre CYBULSKI, KU Leuven, Belgium

Teun A. P. M. HUIJBEN, Technical University of Denmark

Bahar ROUHVAND, Eindhoven University of Technology, The Netherlands

Berend VAN DEN BERGE, Eindhoven University of Technology, The Netherlands

Peter ZIJLSTRA, Eindhoven University of Technology, The Netherlands



**SUPERCOL**

Thursday June 1

V01

## Nanoparticles: synthesis and interactions

Chairperson(s) : SCHEFFOLD Fank

Luxembourg (Ground floor)

10:00	2822	45	Self-assembly of patchy colloids for photonics: colloidal diamond and chiral structures	PINE David
10:45	2809		Surface-topography quantification of DNA-functionalized colloids via super-resolution microscopy	ROUHVAND Bahar
11:00	2810		Patterned assembly of DNA coated colloids using UV/Blue light input	MALHEIROS B.
11:15	2816		Transient Binding Events on DNA Simulations	RIVAS BARBOSA Rodrigo
11:30	2821		Probing temperature-responsivity of microgels by super resolution microscopy	SHAULLI Xhorxhina
11:45	2813		Unveiling the mechanism of laser trapping prepared Au nanoparticle swarming	CHEN Jui-Kai

Thursday June 1

V02

## Super-resolution microscopy and nanoparticles

Chairperson(s) : ZIJLSTRA Peter

Luxembourg (Ground floor)

13:30	2806	45	Plasmonic-polymer hybrid nanomaterials for light harvesting	LANDES Christy F.
14:15	2819		Super-resolution microscopy on nanoparticles: exploiting point-spread function deformations for precise localization	HUIJBEN Teun A.p.m.
14:30	2808		Orienting single molecules in DNA origami constructs	ADAMCZYK Aleksandra K.
15:15	2814		PSF distortion and mislocalization by dielectric nanoparticles in single-molecule microscopy	FAHIM Masih
15:30	2817		Exploiting plasmon-fluorophore coupling for 3D localization microscopy	MAHAJAN Sarojini

15:45 2812 Investigating proteins on the surface of nanoparticles with Cryo-Electron Microscopy HARLEY Ian

Thursday June 1

V03

## Biomedical applications of nanoparticles

Chairperson(s) : ROCHA Susana

Luxembourg (Ground floor)

16:30	2807	45	Photosensitized nanoparticles for photodynamic therapy against cancer and microbial infections	MARTÍNEZ-MARTÍNEZ Virginia
17:15	2815		Tracking the biological fate of functional nanoparticles in realistic cancer cell models: advances toward a more effective nanoparticle-based therapy	CYBULSKI Pierre
17:30	2820		Nanoantenna enhanced single-molecule biosensing using transient DNA interactions	LAMBERTI Vincenzo
17:45	2041		Two-cycle Stöber protocol for the tailored synthesis and biotinylation of dual-color Silica Nanosystems for Biomedical Approaches	RAMIREZ-MORALES Maria Antonieta
18:00	2811		Tailoring polymer nanoparticle synthesis strategies to maximize the availability of reactive handles for covalent attachment of biomolecules	MAZZOTTA Francesca
18:15	2818		Cluster Based Immunoassay for Detection of Biomarkers	GANDHI Shanil









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