



FUTURE MATERIALS 2025

Santa Cruz de Tenerife, Spain

6th International Conference on Materials Science & Nanotechnology

October 27-29, 2025: In-Person | October 30, 2025: Online, Zoom

📍 **GF VICTORIA**
*Fernando Lopez Arvelo Street 1, 38660
Costa Adeje, Santa Cruz de Tenerife*

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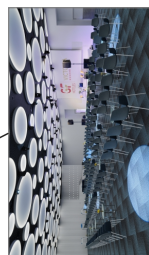
Organized by



PROGRAM

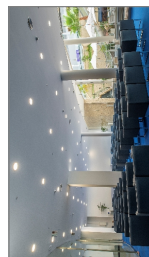


1. Main Entrance - Reception (planta 0)
3. Sunny Room (planta -1) | Parallel Room
3. Go Fun Terrace (planta -1) | Coffee Break | Poster Presentations
4. Las Olas Room (planta 0) | Main Room
5. Chaboco Buffet Restaurant (planta 0) | Lunch area



Sala Las Olas (planta 0)

Teatro/teather 548pax
Montaje en U/ U-shape 48pax
Banquete/banquet 375pax
Imperial/Boardroom 52pax
Escuela/Classroom 220pax
Cocktail 600pax
M² 818
Altura/Height 4,64m



Sala Sunny (planta -1)

Teatro/teather 90pax Montaje en U/ U-shape 34pax
Banquete/banquet 56pax
Imperial/Boardroom 16pax
Escuela/Classroom 62pax
Cocktail --
M² 199
Altura/Height 3,51m

In-Person Program Outline

OCTOBER 27, 2025, MONDAY, DAY 1			
LAS OLAS ROOM MAIN ROOM		SUNNY ROOM PARALLEL ROOM	
08:45-09:00 h	Welcome and Opening Remarks		
09:00-09:40 h	Plenary Talk		
09:40-10:40 h	Keynote Talks		
10:40-11:10 h	Networking & Coffee		@Go Fun Terrace
11:10-11:40 h	Keynote Talk		
PARALLEL SYMPOSIA			
11:45-13:05 h	Biomaterials Session 1 Biomaterials for Cancer Treatments	11:45-13:05 h	Electronic Materials Session 1 Next-Gen Luminescent & Optical Materials
13:05-14:00 h	Group Photo (Main Room) followed by Lunch		@Chaboco Buffet Restaurant
14:00-14:30 h	Keynote Talks		
14:35-17:10 h	Biomaterials Session 2 BioNano- Toxicity and Safety	14:35-15:55 h	Electronic Materials Session 2 Magnetism, Spintronics & Ferroelectrics
16:05-16:30 h	Coffee	15:55-16:25 h	Coffee
17:10-18:30 h	Biomaterials Session 3 Smart Biomaterials for Sensing and Recognition	16:25-18:05 h	Electronic Materials Session 3 Nanostructures in Electronics and Devices
18:30 h	POSTERS AND DRINKS		@Go Fun Terrace

OCTOBER 28, 2025, TUESDAY, DAY 2			
LAS OLAS ROOM MAIN ROOM		SUNNY ROOM PARALLEL ROOM	
08:40-08:50 h	Opening Remarks		
08:50-09:30 h	Plenary Talk		
09:30-10:30 h	Keynote Talks		
10:30-11:00 h	Networking & Coffee		@Go Fun Terrace
PARALLEL SYMPOSIA			
11:00-13:00 h	Nano Session 1 Characterization and Modeling	11:00-13:00 h	Energy Materials Session 1 Functional Materials and Fundamental Studies
13:00-14:00 h	Lunch		@Chaboco Buffet Restaurant
14:00-14:30 h	Keynote Talk		
14:35-15:55 h	Nano Session 2 Bioengineered Nanomaterials	14:35-15:35 h	Energy Materials Session 2 Solar Energy and Photoelectrochemistry
16:10 h	VISIT followed by Informal Dinner (Ticket Required*)		

OCTOBER 29, 2025, WEDNESDAY, DAY 3

LAS OLAS ROOM MAIN ROOM		SUNNY ROOM PARALLEL ROOM	
08:50-09:00 h	Opening Remarks		
09:00-09:30 h	Editorial Insights Lecture		
09:30-10:30 h	Keynote Talks		
10:30-11:00 h	Networking & Coffee		@Go Fun Terrace
PARALLEL SYMPOSIA			
11:00-12:00 h	Nano Session 2 Functional and Hybrid Nanomaterials	11:00-12:00 h	Energy Session 3 Catalysis for Energy and Environment
12:00-12:10 h	Session Break		
12:10-13:25 h	Young Researcher's Sessions I	12:10-13:10 h	Young Researcher's Sessions II
13:25-14:10 h	Lunch	13:10-14:10 h	Lunch
14:10-14:40 h	Keynote Talk		
14:45-16:25 h	Nano Session 3 Synthesis and Nanoarchitectures	14:45-16:05 h	Energy Session 4 Advanced Energy Storage
16:25-16:45 h	Coffee	16:05-16:30 h	Coffee
16:45-18:05 h	Nano Session 4 Smart and Sustainable Nanomaterials	16:30-17:50 h	Energy Session 5 Electrochemical Conversion and Storage
18:10 h	Awards Distribution followed by In-Person Closing Remarks (Main Room)		

Zoom Links

Las Olas Room | Main Room and Online Program

<https://us06web.zoom.us/j/83843850556?pwd=OOXAAe8K8MjksPWHqLhbpOeFMCPV1x.1>

Meeting ID: **838 4385 0556**

Passcode: **417963**

Sunny Room | Parallel Room

<https://us06web.zoom.us/j/86474847981?pwd=QQ5bC2UtP0z7OSv2eUnLOUHRtAUaKH.1>

Meeting ID: **864 7484 7981**

Passcode: **960204**

Presentation Guidelines

Plenary Talks: Each plenary speaker will have **35 min** for presentation, followed by a **5-min discussion**.

Keynote Talks: Each keynote speaker will have **25 min** for presentation, followed by a **5-min discussion**.

Featured Talks: Each featured speaker will have **17 min** for presentation, followed by a **3-min discussion**.

Young Researchers' Presentations: Each young researcher will have **10 min** for presentation, followed by a **5-min Q&A session**.

Time Management: Please ensure that your presentation does not exceed the allotted time.

Presentation Files: Speakers should bring their presentation saved on a **USB memory stick**.

Backup Submission: We recommend emailing a backup copy of your presentation to https://materialsconference.yuktan.com/submit_presentation.

Multimedia Content: If your presentation includes videos or animations, please ensure all files are correctly linked and formatted. You may test your slides during the breaks.

Q&A Procedure: During the discussion, conference chairs or moderators will facilitate questions by moving the microphone. Audience members are requested to raise their hands to receive the mic.

Join Zoom Meeting:

<https://us06web.zoom.us/j/83843850556?pwd=OOXAAe8K8MjksPWhqLhbpOeFMCpV1x.1>

Meeting ID: **838 4385 0556**

Passcode: **417963**

- 8:00 On-site Registration & Badge Pickup
- 8:45 Welcome and Opening Remarks by
Conference Chair: **Ester Vazquez**, University of Castilla-La Mancha, Spain

Moderator: **Ester Vazquez**, University of Castilla-La Mancha, Spain

Plenary Talk

- 9:00 **Andreas Hirsch**, University of Erlangen-Nuremberg, Germany
Chemical Patterning of Graphene and Inorganic 2D-Materials
Talk Supported by: CICA- Interdisciplinary Center for Chemistry and Biology, Spain



Keynote Talks

- 9:40 **Daniel Nieto**, University of A Coruña, Spain
Advancing Tissue Engineering and Regenerative Medicine: The Role of New Materials and Bioprinting Technologies in Next-Generation Therapeutic Applications
- 10:10 **Goreti Sales**, University of Coimbra, Portugal
Autonomous Electrochemical Sensing

10:40 **Networking & Coffee** @Go Fun Terrace

- 11:10 **Dulce Belo**, Instituto Superior Técnico, Portugal
Design and Development of TTF- and M-BDT-Based Molecular Conductors

Symposium I: Future Biomaterials-Biomedical, Medicine and Other Applications (I)

Session 1: Biomaterials for Cancer Treatments

Chair: **Daniel Nieto**, University of A Coruña, Spain

- 11:45 **Fernando Novio**, Autonomous University of Barcelona, Spain
Photoactive Nanostructured Coordination Polymers as Novel Materials for Cancer Therapy
- 12:05 **Valeria Secchi**, University of Milano-Bicocca, Italy
Multifunctional Nanotubes for X-Ray Activated Photodynamic Therapy (X-PDT)
- 12:25 **Sebastián Salazar Sandoval**, University of Chile, Chile
Controlled Release of the Anticancer Drug Cyclophosphamide from a Superparamagnetic β -Cyclodextrin Nanosponge by Local Hyperthermia Generated by an Alternating Magnetic Field
- 12:45 **Naira Ibrahim**, Jackson State University, United States
Dual Role of *Nerium oleander* L.: Investigating its Potential for Heavy Metal Remediation and Colorectal Cancer Treatment

13:05 **Group Photo followed by Lunch** @Chaboco Buffet Restaurant

Keynote Talk

14:00 **Bengt Fadeel**, Karolinska Institute, Sweden
Graphene and Post-Graphene Materials: Lessons from the Graphene Flagship

Session 2: BioNano- Toxicity and Safety

Chair: Marco Pelin, University of Trieste, Italy

14:35 **Keynote Virtual: Mar Gonzalez**, OECD, France
Advancing Safety and Innovation: OECD WPMN's Role in Nanomaterials and Advanced Materials

15:05 **Maurizio Gualtieri**, University of Milano - Bicocca, Italy
Reference and New Approach Methodologies in the Evaluation of New (Nano) Materials in the Safe and Sustainable by Design Framework: The INTEGRANO Project Experience

15:25 **Leire Barruetabeña**, GAIKER Technology Centre, Spain
Simplified Life Cycle Assessment of Nanoenabled Products in Early Design Phases: Application to the Additive Manufacturing Sector

15:45 **Blanca Suarez-Merino**, TEMAS Solutions GmbH, Switzerland
Safety Assessment of Advanced Nanomaterials. Challenges and Gaps

16:05 **Networking & Coffee** @Go Fun Terrace

16:30 **Michela Carlin**, University of Trieste, Italy
Safety Evaluation of Two-Dimensional Nanomaterials: Overcoming Challenges in Skin Sensitization Testing

16:50 **Nida Zaib**, University of Trieste, Italy
Fabio Candotto Carniel, University of Trieste, Italy
Environmental Nanosafety of 2D-Nanomaterials: A Case Study on the Sexual Reproduction of Seed Plants

Session 3: Smart Biomaterials for Sensing and Recognition

Chair: Cristina Martín Jiménez, University of Castilla-La Mancha, Spain

17:10 **Alessandro Silvestri**, Ca' Foscari University of Venice, Italy
Nanomaterial-Based Smart Inks for Electrochemical Sensors

17:30 **Davide Campagnol**, University of A Coruña (UDC), Spain
Charge Density Modulation in Graphene FET Biosensors for Virus Detection via Chemical Modification

17:50 **Tomohiro Nobeyama**, Kyoto University, Japan
Bio-LLPS Engineering

18:10 **Shirin Saberianpour**, University of Brighton, United Kingdom
3D In Vitro Model of Human Skin Wound Healing Using Phen Drive-Y as a Biomimetic Basement Membrane

18:30 **Poster Presentation & Networking Drinks** @Go Fun Terrace

Join Zoom Meeting:

<https://us06web.zoom.us/j/86474847981?pwd=OQ5bC2UtP0z7OSv2eUnLOUHRtAUaKH.1>

Meeting ID: **86474847981**

Passcode: **960204**

Symposium II: Materials for Electronics, Optics and Photonics

Session 1: Next-Gen Luminescent and Optical Materials

Chair: Sergi Riera-Galindo, ICMAB-CSIC, Spain

- 11:45 **Inocencio R. Martin**, University of La Laguna, Spain
Luminescence-Based Optical Sensors and their Integration into 3D-Printed Materials
- 12:05 **Juozas V. Grazulevicius**, Kaunas University of Technology, Lithuania
Organic Semiconductors and Emitters for OLEDs and Optical Sensors
- 12:25 **Ribal Georges Sabat**, Royal Military College of Canada, Canada
Plasmonic Nano-Coatings for Sensing Applications
- 12:45 **Yuyan Wang**, Tsinghua University, China
Magneto-Photoresponse in 2D Optoelectronic Materials and Devices for Reconfigurable In-Sensor Vision Systems

13:05 **Group Photo (Main Room) followed by Lunch** @Chaboco Buffet Restaurant

Session 2: Magnetism, Spintronics and Ferroelectrics

Chair: Goret Sales, University of Coimbra, Portugal

- 14:35 **Cong Wang**, Beihang University, China
Regulation of Magnetic Structures and the Physical Properties in Antiperovskite Antiferromagnetic $Mn_3XN(C)$ Compounds
- 14:55 **Miao Jiang**, Beijing Institute of Technology, China
Highly Efficient Room-Temperature Spin-Orbit Torque in an Epitaxial Half-Heusler Alloy NiMnSb Single Layer
- 15:15 **Raffaella Soave**, CNR SCITEC, Italy
Nanoscale Distortions Produce Mesoscale Modulations in Li-Doped KTa/NbO_3 Perovskite Ferroelectrics
- 15:35 **Yassine Beldjoudi**, University of Nizwa, Oman
The Origin of the Spin-Peierls Transition in π -Stacked 1,2,3,5-Dithiadiazolyl Radicals

15:55 **Networking & Coffee** @Go Fun Terrace

Session 3: Advanced Electronic & Semiconductor Materials

Chair: Gabriel A. Lopez, University of the Basque Country, Spain

- 16:25 **Van Dong Pham**, Paul Drude Institute for Solid State Electronics (PDI), Germany
Atomic-Scale Characterization of Artificial Defects in Epitaxial Graphene by Scanning Tunneling Microscopy
- 16:45 **Mohammed Mamor**, Cadi Ayyad University, Morocco
Gaussian Distribution of Barrier Heights in $Pd/n\text{-Type } Si_{0.90}Ge_{0.10}$ Schottky Diode from Reverse Current-Voltage Characteristics

- 17:05 **Aleksandar Ciric**, University of Belgrade, Serbia
Judd-Ofelt Analysis of Pr^{3+} : A Direct Emission Spectrum Approach for Advanced LED Phosphors and Scintillators
- 17:25 **Sisonke Sigonya**, University of South Africa, South Africa
Uniformly Assembled 2D-Engineered Electroactive CuO Nanoleaflet Sensor for Glucose Monitoring
- 17:45 **Akshay Kumar**, Changwon National University, Republic of Korea
Structural, Magnetic and Magnetocaloric Performance of Double Layered Manganites and Potential Utilization of Van der Waals Compounds
-
- 18:30 **Poster Presentation & Networking Drinks** @Go Fun Terrace
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List of Poster Presentations

Judges: Dulce Belo, Instituto Superior Técnico, Portugal
 Ester Vazquez, University of Castilla-La Mancha, Spain
 Gabriel A. Lopez, University of the Basque Country, Spain

- FM-1 **Katarzyna Haraźna**, Cracow University of Technology, Poland
Covalent Modification of Polymers as a Tool for the Production of New, Bioactive Materials for the Regeneration of Osteochondral Defects
- FM-2 **Dagmara Słota**, Cracow University of Technology, Poland
3D-Printed Bioactive Composites: Polymer-Ceramic Materials for Bone Repair
- FM-3 **Julia Sadlik**, Cracow University of Technology, Poland
Influence of PEEK Processing Methods on its Physicochemical Properties and its Potential Use as a Biomaterial
- FM-4 **Karina Niziołek**, Cracow University of Technology, Poland
Calcium Phosphates in Biomedical Applications: Influence of Synthesis Methods on Biological Properties
- FM-5 **Edyta Kosińska**, Cracow University of Technology, Poland
Physicochemical Properties of Calcium Phosphates Obtained by Different Methods
- FM-6 **Dominika Träger**, Cracow University of Technology, Poland
Nano-Composite Scaffolds for Osteochondral Tissue Regeneration
- FM-7 **Bożena Tyliszczak**, Cracow University of Technology, Poland
Innovative Polymer-Ceramic Composites for Functional Osteochondral Tissue Reconstruction
- FM-8 **Agnieszka Sobczak-Kupiec**, Cracow University of Technology, Poland
3D-Printed, Biologically Active Layered Scaffolds for Osteochondral Tissue Regeneration
- FM-9 **Gabriela Komorowska**, Warsaw University of Technology, Poland
Multi-Aspect Cathode Porosity Shaping to Increase the Efficiency of High-Temperature Fuel Cells
- FM-10 **Tomáš Skala**, Czech University of Life Sciences Prague, Czech Republic
Antimicrobial and Cytotoxic Evaluation of Carvone Encapsulated in Chitosan Particles
- FM-11 **Jan Hájíček**, Czech University of Life Sciences Prague, Czech Republic
In Vitro Antimicrobial and Cytotoxic Activity of Encapsulated Cinnamon Essential Oil in Chitosan Nanoparticles
- FM-12 **Ramon Beck**, Technical University Berlin, Germany
Optimization of Glass Capillary Geometries for Maximum Gravimetric Hydrogen Storage Efficiency
- FM-13 **Niloy Mridha**, Indian Institute of Technology Bombay, India
Photo-Assisted Energy Harvesters and Sensors Using PVDF Matrix Stabilized α -FAPbI₃ Perovskite
- FM-14 **Jean Alchemaly**, CEA / University of Grenoble Alpes, France
Solid State Electrolytes by Hybridization of Ionomer Membrane: Structure-Properties Interplay
- FM-15 **Hoang Tuan Nguyen**, Jeonbuk National University, Republic of Korea
Tailoring Electronic Properties of 3D Pt-doped Hydrogenated TiO₂ Nanotube Arrays for Enhancing Hydrogen Evolution in Acidic Media
- FM-16 **Thokchom Anjali Devi**, Jeonbuk National University, Republic of Korea
3D Hierarchical Electrocatalyst Derived from Pt,Mo-Dually Doped NiSeO₄/NiSe₂-Coated Co₂P Enables High-Performance Overall Water Splitting

- FM-17 **Nguyen Tram Anh Duong**, Jeonbuk National University, Republic of Korea
Rational Design of High Entropy Alloy Nanoparticles-Immobilized Graphene with Rich Exposed Multiple Active Sites for Promoting Water Splitting Kinetics
- FM-18 **Duy Thanh Tran**, Jeonbuk National University, Republic of Korea
Rational Design of CoNi-PtCoNi Dual-Alloy Catalyst for pH-Universal Outstanding Hydrogen Evolution
- FM-19 **Nam Hoon Kim**, Jeonbuk National University, Republic of Korea
Lattice Restructuring in Transitional Metal Hexacyanoferrate Positrodes for High Performance Sodium Ion Pouch Batteries
- FM-20 **Yohei Ito**, Mitsubishi Electric Corporation, Japan
Development of Printed Circuit Board Materials Using Bio-Based Raw Materials
- FM-21 **Ayagoz Bakkara**, The Institute Combustion Problems, Kazakhstan
Modified Aluminum Powders with Enhanced Reactivity for Energy Systems
- FM-22 **Il-Ho Choi**, Korea Institute of Energy Research, South Korea
Development of Cascade Catalyst for Sustainable Production of Even-Numbered Paraffins from Biomass-Derived Fats and Oils
- FM-23 **Wasan Maiaugree**, Thammasat University, Thailand
Biomass Waste for the Preparation of rGO-Like Carbon /TiO₂ Composites Derived from Cassava Residue for Counter Electrodes in Dye-Sensitized Solar Cells
- FM-24 **Roberto Castro-Munoz**, Gdansk University of Technology, Poland
Desalination Performance of MIL-68(In) MOF-Filled PVDF Membranes in Vacuum Membrane Distillation
- FM-25 **Piotr Kunecki**, Mineral and Energy Economy Research Institute, PAS, Poland
Functionalized Natural and Waste-Derived Zeolites for Elemental Mercury Control: Activation Strategies and Structural Considerations
- FM-26 **Marzhan Kalmakhanova**, M. Kh. Dulaty Taraz University, Kazakhstan
Sustainable Materials for Purification of Effluents from Wastewater Treatment Plants by Permeable Reactive Barriers
- FM-27 **Yasumitsu Matsuo**, Setsunan University, Japan
Biofuel Cell based on Photosynthetic Reaction and its Application to Architecture
- FM-28 **Greta Merkininkaitė**, Center for Physical Sciences and Technology, Lithuania
Additive Manufacturing of Boron-Based Functional Ceramics for Photocatalytic Applications
- FM-29 **Emilia Gontarek-Castro**, University of Gdansk, Poland
Cu-NH₂-MIL-125(Ti) Protected by PVDF for Hydrogen Production
- FM-30 **Florin Nastase**, IMT-Bucharest, Romania
Effects of Dopants on The Structural and Electrical Properties of Hafnium Oxide Thin Films Deposited by Atomic Layer Deposition
- FM-31 **Jolanta Makowska**, University of Silesia, Poland
Effect of the Zr/Ti Ratio on the Properties of Ba(Zr_xTi_{1-x})O₃ Ceramics with a Perovskite-Type Structure
- FM-32 **Beata Wodecka-Duś**, University of Silesia, Poland
Preparation and Characterization of Ba_{0.996}La_{0.004}Ti_{0.999}O₃ Perovskite Ceramics Doped with Special Glass
- FM-33 **Riccardo Pinotti**, University of A Coruña, Spain
Graphene-Based Inks with Controlled Antibody Orientation via Hydrazone Bond for Enhanced Biosensing Applications

- FM-34 **Ina Turcan**, Iasi University of Life Sciences, Romania
Technological Optimization of MXenes' Dielectrophoretic Alignment within Polar Solvents
- FM-35 **Janis Zicans**, Riga Technical University, Latvia
Enhancing Performance Behavior of Polybutylene Succinate Composites with Antimicrobial Chitosan Additives
- FM-36 **Jolanta Prancėvičienė**, Vilnius Gediminas Technical University, Lithuania
Synergistic Effects of MWCNTs and Chemical Admixtures on the Foam Stability and Rheological Behavior of Lightweight Cement Pastes
- FM-37 **Jelena Papan Djaniš**, University of Ljubljana, Slovenia
Synthesis of N, B-Doped Carbon Quantum Dots from Spruce Lignin and their Use as a Temperature Probe
- FM-38 **Ljubica Dacanin Far**, University of Belgrade, Serbia
Eu³⁺-Doped Sr₂LaF₇ Nanopowders for Indoor Plant Growth LED Applications
- FM-39 **Mina Medic**, University of Belgrade, Serbia
Deep-Red Emitting Mg₂TiO₄:Mn⁴⁺ and Ag@SiO₂@Mg₂TiO₄:Mn⁴⁺ Nanoparticles
- FM-40 **Sanja Kuzman**, University of Belgrade, Serbia
Emission Enhancement by Bi³⁺ Co-Doping of Red-Emitting Nanophosphor for Horticulture LEDs
- FM-41 **Moldovan Bianca**, Babeş-Bolyai University, Romania
Green Synthesis of Bimetallic Nanoparticles and their Catalytic Activity in the Degradation of Harmful Organic Dyes
- FM-42 **Olga Maksakova**, Slovak University of Technology in Bratislava, Slovakia & VN Karazin Kharkiv National University, Ukraine
Probing the Impact of Deposition Energy on CAE-PVD of Hard Multi-Nanolayer TiMoN/NbN Coatings
- FM-43 **Maksymilian Plata Gryl**, Gdansk University of Technology, Poland
Reduced Graphene Oxide Aerogels as Adsorbents for Gas Phase Separations
- FM-44 **Tomohiro Nobeyama**, Kyoto University, Japan
Investigation of Embraced Metal Effects on Super Atomic Molecular Orbital of C₇₀
- FM-45 **Anna Maria Ferretti**, CNR SCITEC, Italy
Aerobic Ethanol Oxidation by Magnetic Inductive Heating of Pd on Ni-Foam
- FM-46 **Anna Maria Ferretti**, CNR SCITEC, Italy
The Magnetism of Hollow High-Entropy Spinel Oxide Nanofibers
- FM-47 **Irina Oliseveca**, University of Latvia, Latvia
Sodium Ion Thermodiffusion in Aqueous Solutions Confined in Silica-Based Nanoporous Materials for Low-Grade Heat Conversion to Electricity
- FM-48 **Anatolii Bukivskyi**, Institute of Physics of National Academy of Sciences of Ukraine, Ukraine
Study of Structural, Optical and Photoelectric Properties of 3D-Printed Nanostructured CuO Films on Flexible Substrates for Environmentally Friendly Solar Cells: Effect of Thermal Annealing
- FM-49 **Bridget C.N. Obitte**, University of Nigeria - Nsukka, Nigeria
Biogenic Cockle-Derived Calcium Chloride: A Potential Agent for Biomedical Applications
- FM-50 **Sushree Ritu Ritanjali**, Indian Institute of Technology Kharagpur, India
Plasma-Oxidation Driven Surface Instability in PDMS: Mechanisms and Morphological Evolution

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Meeting ID: **838 4385 0556**

Passcode: **417963**

8:45 Introduction and Day 2 Opening Remarks

Moderator: Ester Vazquez, University of Castilla-La Mancha, Spain

Plenary Talk

8:50 **Bingqing Wei**, University of Delaware, United States
Nanotechnology-Enabled Energy Efficiency Electronics

Keynote Talks

9:30 **Matteo Santin**, University of Brighton, United Kingdom
Synthetic Extracellular Matrix Analogues: Driving Tissue Regeneration through Highly-Tuned Control of Bioligand Presentation to the Cells

10:00 **Christophe Moser**, Ecole Polytechnique Fédérale de Lausanne, EPFL, Switzerland
Advances in Materials and Technology for Volumetric 3D Printing

10:30 **Networking & Coffee**

@Go Fun Terrace

Symposium III: Nanotechnology and Nanomaterials (II)

Session 1: Characterization and Modeling

Chair: Bingqing Wei, University of Delaware, United States

11:00 **Panagiotis Grammatikopoulos**, University of Castilla-La Mancha, Spain
Atomistic Simulation for Nanoparticle and Nanodevice Design

11:20 **Iñigo González de Arrieta**, University of the Basque Country UPV/EHU, Spain
Advanced Characterization of Oxide Nanomaterials Using Infrared Spectroscopy

11:40 **Riccardo Scarfiello**, CNR-NANOTEC, Italy
Ternary $W_xTi_{1-x}O_2$ and Heterostructured TiO_2-WO_{3-x} Nanoarchitectures: Scalable Microwave-Assisted Synthesis, Hot-Carriers Dynamics and Photocatalytic Effectiveness in the Solar Range

12:00 **Irene Villa**, University of Milano-Bicocca, Italy
Engineered Hybrid Nanoscintillators for Simultaneous High LY and Ultrafast Bimolecular Processes Towards < 20 ps Coincidence Time Resolution in ToF-PET

12:20 **Ciara Byrne**, National Institute of Chemistry, Slovenia
Study of Water and Ethanol Sorption in ZIFs for Heat Storage

Session 2: Bioengineered Nanomaterials

12:40 **Remo Merijs-Meri**, Riga Technical University, Latvia
Development and Characterization of Thermoplastic Starch Composites with Carrageenan Additive and Reed Biomass Derived Reinforcement

13:00 **Lunch**

@Chaboco Buffet Restaurant

Keynote Talk

- 14:00 **Manuel Souto Salom**, University of Santiago de Compostela, Spain
Electroactive Framework Materials for Energy Storage: Dual Proton-Electron Conductors and Organic Electrodes for Rechargeable Batteries

Session 2: Bioengineered Nanomaterials *Continues*

Chair: **Alejandro Criado**, University of A Coruña, Spain

- 14:35 **Giuseppina Nocca**, Catholic University of the Sacred Heart, Italy
Mucoadhesive and Nanoparticle-Based Drug Delivery System for Oral Mucosa: Production and In Vitro Evaluation
- 14:55 **Agnieszka Maria Tomala**, Cracow University of Technology, Poland
Anti-Wear Laser Dimples on Ti/HAp Bio Composites Loaded with Gentamycin
- 15:15 **Danijela Gregurec**, Friedrich-Alexander University of Erlangen-Nuremberg, Germany
Tailored Chemistry of Magnetic Nanomaterials for Neural Control
- 15:35 **Vicente Duran Toro**, Friedrich-Alexander University of Erlangen-Nuremberg, Germany
Synthesis of Magnetoelectric Nanoparticles via Hydrophobic Layer Deposition of Barium Titanate and their Application in Neuron Stimulation

16:10 VISIT followed by Informal Dinner (19:00) (Ticket Required*)

*Participants joining the visit, please gather near the Future Materials Registration Desk at 16:00.

Join Zoom Meeting:

<https://us06web.zoom.us/j/86474847981?pwd=OQ5bC2UtP0z7OSv2eUnLOUHRtAUaKH.1>

Meeting ID: **864 7484 7981**

Passcode: **960204**

Symposium IV: Future Materials for Energy, Environment and Sustainability (I)

Session 1: Functional Materials and Fundamental Studies

Chair: Manuel Souto Salom, University of Santiago de Compostela, Spain

- 11:00 **Primož Poredoš**, University of Ljubljana, Slovenia
Super-Emitting and Porous Materials for Applications In Energy-Water-Air Nexus
- 11:20 **Teresa J. Bandoz**, The City College of New York, United States
Sulfur Tuned Advanced Carbons: Towards Subtle Modifications of Sulfur Lining
- 11:40 **Mario Italo Trioni**, CNR SCITEC, Italy
Ab Initio Study of Reaction Kinetics Occurring at the Surface of SrFeO₃-Based SOFC/SOEC
- 12:00 **Nikola Biliskov**, Rudjer Boskovic Institute, Croatia
Hidden Aspects of Solid-State Reactions - View Under the Hood
- 12:20 **Eva Scholtzová**, Institute of Inorganic Chemistry, Slovak Academy of Sciences, Slovakia
Removal of Azo Dyes from Water Using Carbon Based Material - A DFT Study
- 12:40 **Rafael Orlando Klee Morán**, University of Córdoba, Spain
Boosting Cathodes for Next-Gen Sodium-Ion Batteries through Interface Engineering with *In Situ* Electropolymerized PEDOT

13:00 **Lunch** @Chaboco Buffet Restaurant

Session 2: Solar Energy and Photoelectrochemistry

Chair: Teresa J. Bandoz, The City College of New York, United States

- 14:35 **Ignasi Burgés-Ceballos**, Polytechnic University of Catalonia (UPC), Spain
SYNATRA Project - Synergistic Architectures for Next Gen Agrivoltaics Incorporating Transparent Organic Solar Modules
- 14:55 **Oluwasesan Adegoke**, University of Dundee, United Kingdom
Chalcogen-Tuned Band-Gap Engineering in Ag(InGa)Zn(Se_yS_{1-y})₂ Quantum Dots Enables Cascade Alignment with TiO₂/ZnS-NiFe LDH for Efficient Photoelectrochemical Water Splitting
- 15:15 **Sergi Riera-Galindo**, ICMAB-CSIC, Spain
Organic Photovoltaics for Urban Environments

16:10 VISIT followed by Informal Dinner (19:00) (Ticket Required*)

*Participants joining the visit, please gather near the Future Materials Registration Desk at 16:00.

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Meeting ID: **838 4385 0556**

Passcode: **417963**

8:50 Introduction and Day 3 Opening Remarks

Moderator: Ester Vazquez, University of Castilla-La Mancha, Spain

9:00 **Gaia Tomasello**, Editor in Chief - Advanced Electronic Materials
Editorial Insights Lecture: The Use of GAI Tools in Scientific Publishing with Wiley

Keynote Talks

9:30 **Maria Jesus Vicent**, The Príncipe Felipe Research Center Foundation (CIPF), Spain
Polypeptide-Based Therapeutics: Exploring Tropism and Overcoming Biological Barriers

10:00 **José Luis Vilas Vilela**, University of the Basque Country UPV/EHU, Spain
Serendipity Sometimes Works

10:30 Networking & Coffee

@Go Fun Terrace

Symposium III: Nanotechnology and Nanomaterials (II)

Session 3: Functional and Hybrid Nanomaterials

Chair: Alejandro Criado, University of A Coruña, Spain

11:00 **Martina Lihter**, Institute of Physics, Croatia
Functionalization of 2D Materials and the Development of Nano-Hybrid Platforms for Biosensing and Nanofluidic Applications

11:20 **Andrei Chumakov**, DESY - German Electron Synchrotron, Germany
Novel Magnetic Cellulose Nanocomposite Coating as a Potentially Flexible Electronic Material

11:40 **Giulia Quaglia**, University of Perugia, Italy
Design of Protein-Based Hydrogels Loaded with Graphene

12:00 Session Break

Young Researchers Presentations (I)

Judges: Bingqing Wei, University of Delaware, United States
Gabriel A. Lopez, University of the Basque Country, Spain

12:10 **Aiswariya Bastia**, Indian Institute of Technology (BHU) Varanasi, India
Reductant Assisted Hydrothermally Synthesized Ni-Fe Based Magnetic Nanoalloys for Tunable Magnetization

12:25 **Hongna Yuan**, Queen Mary University of London, United Kingdom
MXene-Reinforced Carrageenan/PVA Nanocomposite Films with Advanced Functionalities for Sustainable Packaging Applications

12:40 **Pedro H. O. Moreira**, Ilmenau University of Technology, Germany
Transport of Micrometer Sized Chips with Patterned Liquid Micro Rails

- 12:55 **Kharina Fenton**, King's College London, United Kingdom
Design Evolution of Pillar[5]arene-Based Nanopores: From Dynamic Control to High Sensitivity Sensing
- 13:10 **Priyanka**, University of Delhi, India
Advances in MOF-Based Magnetic Composites and MOF-Derived Nanomaterials: Synthesis and Catalysis

13:25 **Lunch** @Chaboco Buffet Restaurant

Keynote Talk

- 14:10 **Maria Cecilia Poletti**, IMAT - Graz University of Technology, Austria
Development of Self-Healing Aluminium Alloys

Session 4: Synthesis and Nanoarchitectures

Chair: **Gabriel A. Lopez**, University of the Basque Country, Spain

- 14:45 **Arturo Rodríguez-Gómez**, Institute of Physics - UNAM, Mexico
Ultra-Fast DC Sputtering of Silver Nanoparticles for Tailored Plasmonic Architectures Without Templates
- 15:05 **Alicia Weibel**, CIRIMAT / University of Toulouse, France
Graphene-Si₃N₄ Nanocomposites: From the Powder Synthesis to the Properties
- 15:25 **Olivier Siri**, Aix-Marseille University, France
Nanomaterials Based on Quinoid Complexes: From Solution to Surface
- 15:45 **José Rodrigo Muñoz Hoyos**, Antonio Narino University, Colombia
Synthesis and Characterization of TiO₂ Nanostructures on Ti₂₈Nb₄Sn Alloy via Electrochemical Anodization
- 16:05 **Mathieu Mivelle**, CNRS, Sorbonne University, INSP, France
Light-Driven Skyrmion Crystal Generation in Plasmonic Metasurfaces Through the Inverse Faraday Effect

16:25 **Coffee** @Go Fun Terrace

Session 5: Smart and Sustainable Nanomaterials

Chair: **Martina Lihter**, Institute of Physics, Croatia

- 16:45 **Ojodomo Achadu**, Teesside University, United Kingdom
Engineering Innovative Nanobiosensors with Tunable SERS Hotspots for Ultra-Sensitive Detection of Viral Pathogens in Food and Water
- 17:05 **Ana Rita Cardoso**, BioMark - University of Coimbra, Portugal
Molecularly Imprinted Polymer for IL-6 Using Conductive Nanomaterials
- 17:25 **Ivalina Trendafilova**, Institute of Organic Chemistry with Center of Phytochemistry, BAS, Bulgaria
Eco-Design of Porous Silica Adsorbents
- 17:45 **Sunny Freitas**, NOVA School of Science and Technology, Portugal
Smart Solutions for Liquid Purification: Porous Materials for Water and Oil

18:10 **Awards Distribution followed by In-Person Closing Remarks**

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Symposium IV: Future Materials for Energy, Environment and Sustainability (II)

Session 3: Catalysis for Energy and Environment (Evolution and Reduction Reactions)

Chair: Maria Cecilia Poletti, IMAT - Graz University of Technology, Austria

- 11:00 **Gonzalo García**, University of La Laguna, Spain
Nickel-Induced Reduced Graphene Oxide Nanoribbon Formation on Highly Ordered Pyrolytic Graphite for the Hydrogen Evolution Reaction
- 11:20 **Jose María Abad**, Institute of Catalysis and Petrochemistry (ICP), CSIC, Spain
Nickel, Cobalt and Ferrocene: Promising Combined Catalysts for Enhanced Oxygen Evolution Reaction
- 11:40 **Mohammad Imteyaz Ahmad**, Indian Institute of Technology (BHU), India
Influence of Li and Na Addition on the Stability, Structure and Electrocatalytic Activity of (Mg, Co, Ni, Cu, Zn)O High Entropy Oxide for Oxygen Evolution Reaction

12:00 Session Break

Young Researchers Presentations (II)

Judges: Ester Vazquez, University of Castilla-La Mancha, Spain
Sergi Riera-Galindo, ICMAB-CSIC, Spain

- 12:10 **Jean Alchemaly**, CEA / University of Grenoble Alpes, France
Solid State Electrolytes By Hybridization of Ionomer Membrane: Elaboration and Properties
- 12:25 **Talina Terrazas**, IMAT - Graz University of Technology, Austria
Microstructure Modeling for Efficient Processing
- 12:40 **Julia M. Requena Ramírez**, ICMol - University of Valencia, Spain
Harnessing the Dual Functionality of Carbon Nano-Onions: A Synergistic Approach to Light-Driven Biomedical Applications
- 12:55 **Carlos Martín Andreu**, University of Castilla-La Mancha/IRICA, Spain
Hydrogel-Based 3D Printed Anthropomorphic Phantoms for Microwave Breast Imaging
- 13:10 Lunch @Chaboco Buffet Restaurant

Session 4: Advanced Energy Storage

Chair: Andrea Lamberti, Polytechnic University of Turin, Italy

- 14:45 **Maria Valeria Blanco**, ICMAB-CSIC, Spain
Low-Carbon Footprint Synthesis of Si Anodes for Li-Ion Batteries from the SiO₂ Shells of Diatom Microalgae
- 15:05 **Jordi Jacas Biendicho**, Catalonia Institute for Energy Research-IREC, Spain
Strategies to Enhance the Performance of the LNMO Cathode for Generation 3b Li-Ion Batteries

- 15:25 **Shanmukaraj Devaraj**, CIC EnergiGune, Spain
Alternative Polymer Host Matrix for Lithium Metal Polymer Solid-State Batteries
- 15:45 **M. Natalia D.S. Cordeiro**, LAQV-REQUIMTE, University of Porto, Portugal
Molecular Dynamics Insights into the Ethaline|Au₍₁₀₀₎ Interface for Sustainable Memory/Storage Applications

16:05 **Networking & Coffee** @Go Fun Terrace

Session 5: Electrochemical Conversion and Storage (Supercapacitors and Hydrogen)

Chair: Jose María Abad, Institute of Catalysis and Petrochemistry (ICP), CSIC, Spain

- 16:30 **Andrea Lamberti**, Polytechnic University of Turin, Italy
Green Energy Harvesting from the Air by Capturing CO₂ in an Electrochemical Capacitors
- 16:50 **Suparna Das**, CIIAE - Iberian Centre for Research in Energy Storage, Spain
Nickel@Polypyrrole nanofiber as a High-Performance Electrode Material for Supercapacitor Applications
- 17:10 **Fail Sultanov**, National Laboratory Astana, Nazarbayev University, Kazakhstan
Development and Investigation of High Surface Area Porous Carbon for Efficient Hydrogen Storage
- 17:30 **Ghada Taha**, National Research Centre, Egypt
Fabrication, Characterization, and Evaluation of Guar Gum-Grafted Tannic Acid based Polymer Composite for the Removal of Pb(II) from Wastewater

18:10 **Awards Distribution followed by In-Person Closing Remarks** (Main Room)

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Meeting ID: **838 4385 0556**

Passcode: **417963**

10:20 AV Check

10:30 Introduction and Day 4 Opening Remarks

Keynote Talk

10:40 **Alexander Seifalian**, NanoRegMed Ltd, Nanoloom Ltd, & Liberum Health Ltd, United Kingdom
Building Human Organs with Butterfly, Graphene and Stem Cell

Chair: **Alexander Seifalian**, NanoRegMed Ltd, Nanoloom Ltd, & Liberum Health Ltd, United Kingdom

Online Symposium I: Future Biomaterials-Biomedical, Medicine and Other Applications

11:10 **Ding-Kun Ji**, Shanghai Jiao Tong University, China
"Smart" Photoactive Theranostic Nanoplatforams for Precision Cancer Therapy

11:30 **Andreas Stylianou**, European University Cyprus/ EUC Research Centre, Cyprus
Mechanics Meets Light in Biomaterials: Novel MechanoOptical Biomarkers for Cancer and Pulmonary Fibrosis

11:50 **Elizabeth Rendon-Morale**, University of Sussex, United Kingdom
3D Printed Magnetic Scaffolds for Precise and Tunable On-Demand Drug Delivery

Online Symposium II: Nanotechnology and Nanomaterials

12:10 **Gil Alberto Batista Gonçalves**, University of Aveiro, Portugal
Carbon Dots Powering Innovation in Health and Environment

12:30 **Edvin Hevorkian**, University of Life Sciences in Lublin, Poland
Effect of Graphene Additives on the Physical and Mechanical Properties of Zirconium Dioxide

12:50 **Break**

Online Symposium III: Future Materials for Energy, Environment and Sustainability

Chair: **Maria Gimenez Lopez**, CIQUS- University of Santiago de Compostela, Spain

13:00 **Maria Gimenez Lopez**, CIQUS- University of Santiago de Compostela, Spain
Nanostructured Materials for Energy Conversion

13:20 **Carlos Ziebert**, Karlsruhe Institute of Technology, IAM-AWP, Germany
Comparative Safety Assessment of Commercial Cylindrical 18650 Sodium-Ion Cells and POLiS Reference Pouch Cells

13:40 **Nieves López Salas**, Paderborn University, Germany
Designing Carbonaceous Materials for Environmental Applications

14:00 **Olga Kulitckaya**, University of Münster, Germany
Mass Transport in Iron, FeCr Alloys and Ferritic Steels

14:20 **E-Poster: Sidh Jaddu**, Thomas Jefferson High School For Science and Technology, United States
Computational Evaluation of Copolymer Synthesizability for New Materials for Environmental Sustainability

14:30 **Break**

Online Symposium IV: Materials for Electronics, Optics and Photonics

Chair: Laura Maggini, University of Vienna, Austria

14:40 **Laura Maggini**, University of Vienna, Austria
Highly Efficient Polymeric Electrochromic Devices- Modifying the Chemical Structure of the Chromophores and the Polymer Backbone

15:00 **Taher Ghomian**, University of Maine, United States
Carbon Nanotube Device Engineering

15:20 **Osama Madkhali**, Jazan University, Saudi Arabia
Exploring Thermoluminescence Properties of Gadolinium Aluminum Borate Phosphors Doped with Europium: Effects of Europium Incorporation Under Beta Radiation

15:40 **Asmaa Hassan**, University of Debrecen, Hungary
YRP: On the Strong Composition Dependence of the Martensitic Transformation Temperature and Heat in Shape Memory Alloys

15:55 **Online Closing Remarks (Zoom Session)**

We wish to see you again @
FUTURE MATERIALS-2026

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Abstract Submission Deadline: November 25, 2025

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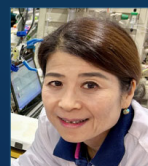
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