

Tentative Program

6th INTERNATIONAL CONFERENCE ON MATERIALS SCIENCE & NANOTECHNOLOGY

Future Materials 2025

TENERIFE, SPAIN | OCTOBER 27-29, 2025

ONLINE, ZOOM | OCTOBER 30, 2025

Committee Members



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WELCOME TO FUTURE MATERIALS 2025!

Dear Attendees,

Welcome to **Future Materials 2025**, the 6th International Conference on Materials Science & Nanotechnology to be held October 27-31, 2025, in Tenerife, Canary Islands, Spain and Online.

We are organizing an attractive program that will address the most current issues and challenges in Materials Science. The conference is designed to attract and stimulate scientists working in areas as diverse as chemistry, physics, biomedicine, and engineering. It is intended to be a forum to foster collaboration, exchange of ideas, and creativity. Moreover, we will pay special attention to young researchers who represent the future of science, reserving slots for their oral talks and rewarding their best presentations and posters.

As chair of the conference, I would like to express my special thanks to the scientific committee for their helpful advice and brilliant suggestions in organizing the technical program and for their thorough and timely review of the abstracts. Many thanks to the organizers for their dedicated efforts in overseeing the various aspects of the conference and coordinating related social activities.

Tenerife, in the enchanting Canary Islands, offers a unique and inspiring setting where nature and innovation come together. This stunning destination promises to captivate attendees and provide an unforgettable experience, both academically and culturally.

We look forward to seeing you all in Tenerife.



Prof. Ester Vázquez Fernández-Pacheco

Conference Chair, Future Materials-2025

Director of IRICA

University of Castilla-la Mancha (UCLM)

Spain



Tentative Program Outline

October 27, 2025, Monday, Day 1

08:45-09:00 h	Welcome and Opening Remarks		
09:00-09:40 h	Plenary 1		
09:40-10:10 h	Keynote 1		
10:10-10:40 h	Keynote 2		
10:40-11:10 h	Coffee Break		
11:10-11:40 h	Keynote 3		
	PARALLEL SYMPOSIA		
	ROOM 1	ROOM 2	
	Biomaterials Session 1		Electronic Mat. Session 1
11:45-12:05 h	Feat. Presentation Bio. Mat. 1	11:45-12:05 h	Feat. Presentation Elec. Mat. 1
12:05-12:25 h	Feat. Presentation Bio. Mat. 2	12:05-12:25 h	Feat. Presentation Elec. Mat. 2
12:25-12:45 h	Feat. Presentation Bio. Mat. 3	12:25-12:45 h	Feat. Presentation Elec. Mat. 3
12:45-13:05 h	Feat. Presentation Bio. Mat. 4	12:45-13:05 h	Feat. Presentation Elec. Mat. 4
13:05-14:00 h	Group Photo followed by Lunch Break		
14:00-14:30 h	Keynote 4		
	Biomaterials Session 2	14:35-14:55 h	AEM Journal's Talk
14:35-14:55 h	Feat. Presentation Bio. Mat. 5		Electronic Mat. Session 2
14:55-15:15 h	Feat. Presentation Bio. Mat. 6	14:55-15:15 h	Feat. Presentation Elec. Mat. 5
15:15-15:35 h	Feat. Presentation Bio. Mat. 7	15:15-15:35 h	Feat. Presentation Elec. Mat. 6
15:35-15:55 h	Feat. Presentation Bio. Mat. 8	15:35-15:55 h	Feat. Presentation Elec. Mat. 7
15:55-16:15 h	Feat. Presentation Bio. Mat. 9	15:55-16:15 h	Feat. Presentation Elec. Mat. 8
16:15-16:45 h	Coffee Break		
	Biomaterials Session 3		Electronic Mat. Session 3
16:45-17:05 h	Feat. Presentation Bio. Mat. 10	16:45-17:05 h	Feat. Presentation Elec. Mat. 9
17:05-17:25 h	Feat. Presentation Bio. Mat. 11	17:05-17:25 h	Feat. Presentation Elec. Mat. 10
17:25-17:45 h	Feat. Presentation Bio. Mat. 12	17:25-17:45 h	Feat. Presentation Elec. Mat. 11
17:45-18:05 h	Feat. Presentation Bio. Mat. 13	17:45-18:05 h	Feat. Presentation Elec. Mat. 12
18:05-18:25 h	Feat. Presentation Bio. Mat. 14	18:05-18:25 h	Feat. Presentation Elec. Mat. 13
18:25-18:45 h	Feat. Presentation Bio. Mat. 15	18:25-18:45 h	<i>To be Confirmed</i>
18:45 h	POSTERS AND DRINKS		

October 28, 2025, Tuesday, Day 2

08:40-08:50 h	Opening Remarks		
08:50-09:30 h	Plenary 2		
09:30-10:00 h	Keynote 5		
10:00-10:30 h	Keynote 6		
10:30-11:00 h	Coffee Break		
	PARALLEL SYMPOSIA		
	ROOM 1	ROOM 2	
	Energy Session 1		Nano Session 1
11:00-11:20 h	Feat. Presentation Ene. Mat. 1	11:00-11:20 h	Feat. Presentation Nano. 1
11:20-11:40 h	Feat. Presentation Ene. Mat. 2	11:20-11:40 h	Feat. Presentation Nano. 2
11:40-12:00 h	Feat. Presentation Ene. Mat. 3	11:40-12:00 h	Feat. Presentation Nano. 3
12:00-12:20 h	Feat. Presentation Ene. Mat. 4	12:00-12:20 h	Feat. Presentation Nano. 4
12:20-12:40 h	Feat. Presentation Ene. Mat. 5	12:20-12:40 h	Feat. Presentation Nano. 5
12:40-13:00 h	Feat. Presentation Ene. Mat. 6	12:40-13:00 h	Feat. Presentation Nano. 6
13:00-14:00 h	Lunch Break		
14:00-14:30 h	Keynote 7		
	Energy Session 2		Nano Session 2
14:35-14:55 h	Feat. Presentation Ene. Mat. 7	14:35-14:55 h	Feat. Presentation Nano. 7
14:55-15:15 h	Feat. Presentation Ene. Mat. 8	14:55-15:15 h	Feat. Presentation Nano. 8
15:15-15:35 h	Feat. Presentation Ene. Mat. 9	15:15-15:35 h	Feat. Presentation Nano. 9
15:35-15:55 h	Feat. Presentation Ene. Mat. 10	15:35-15:55 h	Feat. Presentation Nano. 10
16:15 h	VISIT followed by INFORMAL DINNER		

October 29, 2025, Wednesday, Day 3

08:50-09:00 h	Opening Remarks		
09:00-09:40 h	Plenary 3		
09:40-10:10 h	Keynote 8		
10:10-10:40 h	Keynote 9		
10:40-11:10 h	Coffee Break		
	PARALLEL SYMPOSIA		
	ROOM 1	ROOM 2	
	Energy Session 3		Nano Session 3
11:10-11:30 h	Feat. Presentation Ene. Mat. 11	11:10-11:30 h	Feat. Presentation Nano. 11
11:30-11:50 h	Feat. Presentation Ene. Mat. 12	11:30-11:50 h	Feat. Presentation Nano. 12
11:50-12:10 h	Feat. Presentation Ene. Mat. 13	11:50-12:10 h	Feat. Presentation Nano. 13
	Young Researcher's Sessions		
12:10-12:25 h	YRF 1	12:10-12:25 h	YRF 1
12:25-12:40 h	YRF 2	12:25-12:40 h	YRF 2
12:40-12:55 h	YRF 3	12:40-12:55 h	YRF 3
12:55-13:10 h	YRF 4	12:55-13:10 h	YRF 4
13:10-13:25 h	YRF 5	13:10-13:25 h	YRF 5
13:25-14:25 h	Lunch Break		
14:25-14:55 h	Keynote 10		
	Energy Session 4		Nano Session 4
15:00-15:20 h	Feat. Presentation Ene. Mat. 14	15:00-15:20 h	Feat. Presentation Nano. 14
15:20-15:40 h	Feat. Presentation Ene. Mat. 15	15:20-15:40 h	Feat. Presentation Nano. 15
15:40-16:00 h	Feat. Presentation Ene. Mat. 16	15:40-16:00 h	Feat. Presentation Nano. 16
16:00-16:20 h	Feat. Presentation Ene. Mat. 17	16:00-16:20 h	Feat. Presentation Nano. 17
16:20-16:40 h	Feat. Presentation Ene. Mat. 18	16:20-16:40 h	Feat. Presentation Nano. 18
	Energy Session 5		Nano Session 5
16:40-17:00 h	Feat. Presentation Ene. Mat. 19	16:40-17:00 h	Feat. Presentation Nano. 19
17:00-17:20 h	Feat. Presentation Ene. Mat. 20	17:00-17:20 h	Feat. Presentation Nano. 20
17:20-17:40 h	Feat. Presentation Ene. Mat. 21	17:20-17:40 h	Feat. Presentation Nano. 21
18:00 h	Awards followed by Closing Ceremony		

Please note this schedule is subject to change

Tentative Program Draft

**Day-1,
Monday**

Room I

October 27, 2025

08:00 **On-site Registration & Badge Pickup**

08:45 **Welcome and Opening Remarks**

Conference Chair: Prof. Ester Vazquez, *University of Castilla-La Mancha, Spain*

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

Pleenary Talk (35+5 Mins)

09:00 **From Molecules to Nanostructures: The Versatile World of Carbon Nanodots**

Maurizio Prato, *University of Trieste, Italy & CIC biomaGUNE, Spain*

Keynote Addresses (25+5 Mins)

09:40 **Advancing Tissue Engineering and Regenerative Medicine: The Role of New Materials and Bioprinting Technologies in Next-Generation Therapeutic Applications**

Daniel Nieto, *University of A Coruña, Spain*

10:10 **Autonomous Electrochemical Sensing**

Goreti Sales, *University of Coimbra, Portugal*

10:40 **Networking Coffee Break**

11:10 **Design and Development of TTF- and M-BDT-Based Molecular Conductors**

Dulce Belo, *Instituto Superior Técnico, Portugal*

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

Featured Presentations (15+5 Mins)

Session 1: Biomaterials for Cancer Treatments

Chair: TBA

11:45 **"Smart" Photoactive Theranostic Nanoplatfoms for Precision Cancer Therapy**

Ding-Kun Ji, *Shanghai Jiao Tong University, China*

12:05 **Photoactive Nanostructured Coordination Polymers as Novel Materials for Cancer Therapy**

Fernando Novio, *Autonomous University of Barcelona, Spain*

12:25 **Controlled Release of the Anticancer Drug Cyclophosphamide from a Superparamagnetic β -Cyclodextrin Nanosponge by Local Hyperthermia Generated by an Alternating Magnetic Field**

Sebastián Salazar Sandoval, *University of Chile, Chile*

12:45 **Dual Role of *Nerium oleander* L.: Investigating Its Potential for Heavy Metal Remediation and Colorectal Cancer Treatment**

Naira Ibrahim, *Jackson State University, United States*

13:05 **Group Photo** followed by **Lunch Break**

Keynote Address (25+5 Mins)

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

Featured Presentations (15+5 Mins)

Session 2: BioNano- Toxicity and Safety

Chair: Marco Pelin, University of Trieste, Italy

14:35 **Reference and New Approach Methodologies in the Evaluation of New (Nano) Materials in the Safe and Sustainable by Design Framework: The INTEGRANO Project Experience**
Maurizio Gualtieri, University of Milano - Bicocca, Italy

14:55 **Simplified Life Cycle Assessment of Nanoenabled Products in Early Design Phases: Application to the Additive Manufacturing Sector**
Leire Barruetaña, GAIKER Technology Centre, Spain

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

15:35 **Environmental Nanosafety of 2D-Nanomaterials: A Case Study on the Sexual Reproduction of Seed Plants**
Fabio Candotto Carniel, University of Trieste, Italy

15:55 **Safety Evaluation of Two-Dimensional Nanomaterials: Overcoming Challenges in Skin Sensitization Testing**
Michela Carlin, University of Trieste, Italy

16:15 **Coffee Break**

Session 3: Engineering Biomaterials

Chair: TBA

16:45 **Mucoadhesive and Nanoparticle-Based Drug Delivery System for Oral Mucosa: Production and *In Vitro* Evaluation**
Giuseppina Nocca, Catholic University of the Sacred Heart, Italy

17:05 **Development and Characterization of Thermoplastic Starch Composites with Carrageenan Additive and Reed Biomass Derived Reinforcement**
Remo Merijs-Meri, Riga Technical University, Latvia

17:25 **Anti-Wear Laser Dimples on Ti/HAP Bio Composites Loaded with Gentamycin**
Agnieszka Maria Tomala, Cracow University of Technology, Poland

17:45 **Tailored Chemistry of Magnetic Nanomaterials for Neural Control**
Danijela Gregurec, Friedrich-Alexander University of Erlangen-Nuremberg, Germany

18:05 **Synthesis of Magnetoelectric Nanoparticles via Hydrophobic Layer Deposition of Barium Titanate and their Application in Neuron Stimulation**
Vicente Duran Toro, Friedrich-Alexander University of Erlangen-Nuremberg, Germany

18:25 **3D *In Vitro* Model of Human Skin Wound Healing Using Phen Drive-Y as a Biomimetic Basement Membrane**
Shirin Saberianpour, University of Brighton, United Kingdom

18:45 **Poster Presentation and Networking Drinks** @Foyer

Day-1,
Monday

Room II

October 27, 2025

Symposium II: Materials for Electronics, Optics and Photonics

Featured Presentations (15+5 Mins)

Session 1: Next-Gen Luminescent and Optical Materials

Chair: TBA

- 11:45** **Luminescence-Based Optical Sensors and their Integration into 3D-Printed Materials**
Inocencio R. Martin, University of La Laguna, Spain
- 12:05** **Organic Semiconductors and Emitters for OLEDs and Optical Sensors**
Juozas V. Grazulevicius, Kaunas University of Technology, Lithuania
- 12:25** **Plasmonic Nano-Coatings for Sensing Applications**
Ribal Georges Sabat, Royal Military College of Canada, Canada
- 12:45** **Judd-Ofelt Analysis of Pr^{3+} : A Direct Emission Spectrum Approach for Advanced LED Phosphors and Scintillators**
Aleksandar Ciric, University of Belgrade, Serbia

13:05 **Group Photo in Room I followed by Lunch Break**

- 14:35** **Advanced Electronic Materials- Wiley Journal Talk**
Gaia Tomasello, Editor in Chief - Advanced Electronic Materials

Featured Presentations (15+5 Mins)

Session 2: Magnetism, Spintronics and Ferroelectrics

Chair: TBA

- 14:55** **Regulation of Magnetic Structures and the Physical Properties in Antiperovskite Antiferromagnetic $\text{Mn}_3\text{XN}(\text{C})$ Compounds**
Cong Wang, Beihang University, China
- 15:15** **Highly Efficient Room-Temperature Spin-Orbit Torque in an Epitaxial Half-Heusler Alloy NiMnSb Single Layer**
Miao Jiang, Beijing Institute of Technology, China
- 15:35** **Nanoscale Distortions Produce Mesoscale Modulations in Li-Doped KTa/NbO_3 Perovskite Ferroelectrics**
Raffaella Soave, CNR SCITEC, Italy
- 15:55** **The Origin of the Spin-Peierls Transition in π -Stacked 1,2,3,5-Dithiadiazolyl Radicals**
Yassine Beldjoudi, University of Nizwa, Oman

16:15 **Coffee Break**

Session 3: Nanoelectronics & Advanced Device Materials

Chair: TBA

16:45

Atomic-Scale Characterization of Artificial Defects in Epitaxial Graphene by Scanning Tunneling Microscopy

Van Dong Pham, Paul Drude Institute for Solid State Electronics (PDI), Germany

17:05

Gaussian Distribution of Barrier Heights in Pd/n-Type $\text{Si}_{0.90}\text{Ge}_{0.10}$ Schottky Diode from Reverse Current-Voltage Characteristics

Mohammed Mamor, Cadi Ayyad University, Morocco

17:25

Magneto-Photoresponse in 2D Optoelectronic Materials and Devices for Reconfigurable In-Sensor Vision Systems

Yuyan Wang, Tsinghua University, China

17:45

Structural, Magnetic and Magnetocaloric Performance of Double Layered Manganites and Potential Utilization of Van der Waals Compounds

Akshay Kumar, Changwon National University, Republic of Korea

18:05

Uniformly Assembled 2D-Engineered Electroactive CuO Nanoleaflet Sensor for Glucose Monitoring

Sisonke Sigonya, University of South Africa, South Africa

18:45

Poster Presentation and Networking Drinks

@Foyer

List of Poster Presentations

FM-1	NIR-Responsive Laser-Textured Titanium Implants with MOF Coatings for Effective Antimicrobial Action Lekshmi Gopakumari , Lodz University of Technology, Poland
FM-2	Biogenic Cockle-Derived Calcium Chloride: A Potential Agent for Biomedical Applications Bridget C.N. Obitte , University of Nigeria, Nigeria
FM-3	Covalent Modification of Polymers as a Tool for the Production of New, Bioactive Materials for the Regeneration of Osteochondral Defects Katarzyna Harażna , Cracow University of Technology, Poland
FM-4	3D-Printed Bioactive Composites: Polymer-Ceramic Materials for Bone Repair Dagmara Słota , Cracow University of Technology, Poland
FM-5	Influence of PEEK Processing Methods on its Physicochemical Properties and its Potential Use as a Biomaterial Julia Sadlik , Cracow University of Technology, Poland
FM-6	Calcium Phosphates in Biomedical Applications: Influence of Synthesis Methods on Biological Properties Karina Niziołek , Cracow University of Technology, Poland
FM-7	Physicochemical Properties of Calcium Phosphates Obtained by Different Methods Edyta Kosińska , Cracow University of Technology, Poland
FM-8	Nano-Composite Scaffolds for Osteochondral Tissue Regeneration Magdalena Bańkosz , Cracow University of Technology, Poland
FM-9	Innovative Polymer-Ceramic Composites for Functional Osteochondral Tissue Reconstruction Bożena Tyliszczak , Cracow University of Technology, Poland
FM-10	3D-Printed, Biologically Active Layered Scaffolds for Osteochondral Tissue Regeneration Agnieszka Sobczak-Kupiec , Cracow University of Technology, Poland
FM-11	Multi-Aspect Cathode Porosity Shaping to Increase the Efficiency of High-Temperature Fuel Cells Gabriela Komorowska , Warsaw University of Technology, Poland
FM-12	Antimicrobial and Cytotoxic Evaluation of Carvone Encapsulated in Chitosan Particles Tomáš Skala , Czech University of Life Sciences Prague, Czech Republic
FM-13	<i>In Vitro</i> Antimicrobial and Cytotoxic Activity of Encapsulated Cinnamon Essential Oil in Chitosan Nanoparticles Jan Hájíček , Czech University of Life Sciences Prague, Czech Republic
FM-14	Optimization of Glass Capillary Geometries for Maximum Gravimetric Hydrogen Storage Efficiency Ramon Beck , Technical University Berlin, Germany
FM-15	Photo-Assisted Energy Harvesters and Sensors Using PVDF Matrix Stabilized α-FAPbI₃ Perovskite Niloy Mridha , Indian Institute of Technology Bombay, India
FM-16	Solid State Electrolytes by Hybridization of Ionomer Membrane: Structure-Properties Interplay Jean Alchemaly , CEA / University of Grenoble Alpes, France

FM-17	Tailoring Electronic Properties of 3D Pt-doped Hydrogenated TiO₂ Nanotube Arrays for Enhancing Hydrogen Evolution in Acidic Media Hoang Tuan Nguyen , Jeonbuk National University, Republic of Korea
FM-18	3D Hierarchical Electrocatalyst Derived from Pt,Mo-Dually Doped NiSeO₄/NiSe₂-Coated Co₂P Enables High-Performance Overall Water Splitting Thokchom Anjali Devi , Jeonbuk National University, Republic of Korea
FM-19	Rational Design of High Entropy Alloy Nanoparticles-Immobilized Graphene with Rich Exposed Multiple Active Sites for Promoting Water Splitting Kinetics Nguyen Tram Anh Duong , Jeonbuk National University, Republic of Korea
FM-20	Rational Design of CoNi-PtCoNi Dual-Alloy Catalyst for pH-Universal Outstanding Hydrogen Evolution Duy Thanh Tran , Jeonbuk National University, Republic of Korea
FM-21	Lattice Restructuring in Transitional Metal Hexacyanoferrate Positrodes for High Performance Sodium Ion Pouch Batteries Nam Hoon Kim , Jeonbuk National University, Republic of Korea
FM-22	Development of Printed Circuit Board Materials Using Bio-Based Raw Materials Yohei Ito , Mitsubishi Electric Corporation, Japan
FM-23	Development of Cascade Catalyst for Sustainable Production of Even-Numbered Paraffins from Biomass-Derived Fats and Oils Il-Ho Choi , Korea Institute of Energy Research, South Korea
FM-24	Biomass Waste for the Preparation of rGO-Like Carbon /TiO₂ Composites Derived from Cassava Residue for Counter Electrodes in Dye-Sensitized Solar Cells Wasan Maiaugree , Thammasat University, Thailand
FM-25	Desalination Performance of MIL-68(In) MOF-Filled PVDF Membranes in Vacuum Membrane Distillation Roberto Castro-Munoz , Gdansk University of Technology, Poland
FM-26	Functionalized Natural and Waste-Derived Zeolites for Elemental Mercury Control: Activation Strategies and Structural Considerations Piotr Kunecki , Mineral and Energy Economy Research Institute, PAS, Poland
FM-27	Sustainable Materials for Purification of Effluents from Wastewater Treatment Plants by Permeable Reactive Barriers Marzhan Kalmakhanova , M. Kh. Dulaty Taraz University, Kazakhstan
FM-28	Biofuel Cell based on Photosynthetic Reaction and its Application to Architecture Yasumitsu Matsuo , Setsunan University, Japan
FM-29	Additive Manufacturing of Boron-Based Functional Ceramics for Photocatalytic Applications Greta Merkininkaitė , Center for Physical Sciences and Technology, Lithuania
FM-30	Cu-NH₂-MIL-125(Ti) Protected by PVDF for Hydrogen Production Emilia Gontarek-Castro , University of Gdansk, Poland
FM-31	Effects of Dopants on The Structural and Electrical Properties of Hafnium Oxide Thin Films Deposited by Atomic Layer Deposition Florin Nastase , IMT-Bucharest, Romania

FM-32	Effect of the Zr/Ti Ratio on the Properties of Ba(Zr_xTi_{1-x})O₃ Ceramics with a Perovskite-Type Structure Jolanta Makowska , University of Silesia, Poland
FM-33	Preparation and Characterization of Ba_{0.996}La_{0.004}Ti_{0.999}O₃ Perovskite Ceramics Doped with Special Glass Beata Wodecka-Duś , University of Silesia, Poland
FM-34	Graphene-Based Inks with Controlled Antibody Orientation via Hydrazone Bond for Enhanced Biosensing Applications Riccardo Pinotti , University of A Coruña, Spain
FM-35	Technological Optimization of MXenes' Dielectrophoretic Alignment within Polar Solvents Ina Turcan , Iasi University of Life Sciences, Romania
FM-36	Enhancing Performance Behavior of Polybutylene Succinate Composites with Antimicrobial Chitosan Additives Janis Zicans , Riga Technical University, Latvia
FM-37	Synergistic Effects of MWCNTs and Chemical Admixtures on the Foam Stability and Rheological Behavior of Lightweight Cement Pastes Jolanta Prancevičienė , Vilnius Gediminas Technical University, Lithuania
FM-38	Synthesis of N, B-Doped Carbon Quantum Dots from Spruce Lignin and Their Use as a Temperature Probe Jelena Papan Djaniš , University of Ljubljana, Slovenia
FM-39	Eu³⁺-Doped Sr₂LaF₇ Nanopowders for Indoor Plant Growth LED Applications Ljubica Dacanin Far , University of Belgrade, Serbia
FM-40	Deep-Red Emitting Mg₂TiO₄:Mn⁴⁺ and Ag@SiO₂@Mg₂TiO₄:Mn⁴⁺ Nanoparticles Mina Medic , University of Belgrade, Serbia
FM-41	Emission Enhancement by Bi³⁺ Co-Doping of Red-Emitting Nanophosphor for Horticulture LEDs Sanja Kuzman , University of Belgrade, Serbia
FM-42	Green Synthesis of Bimetallic Nanoparticles and their Catalytic Activity in the Degradation of Harmful Organic Dyes Moldovan Bianca , Babeş-Bolyai University, Romania
FM-43	Probing the Impact of Deposition Energy on CAE-PVD of Hard Multi-Nanolayer TiMoN/NbN Coatings Olga Maksakova , V.N. Karazin Kharkiv National University, Ukraine
FM-44	Reduced Graphene Oxide Aerogels as Adsorbents for Gas Phase Separations Maksymilian Plata Gryl , Gdansk University of Technology, Poland
FM-45	Investigation of Embraced Metal Effects on Super Atomic Molecular Orbital of C₇₀ Tomohiro Nobeyama , Kyoto University, Japan
FM-46	Aerobic Ethanol Oxidation by Magnetic Inductive Heating of Pd on Ni-Foam Anna Maria Ferretti , CNR SCITEC, Italy
FM-47	The Magnetism of Hollow High-Entropy Spinel Oxide Nanofibers Anna Maria Ferretti , CNR SCITEC, Italy

FM-48	Sodium Ion Thermodiffusion in Aqueous Solutions Confined in Silica-Based Nanoporous Materials for Low-Grade Heat Conversion to Electricity Irina Olisevca , University of Latvia, Latvia
FM-49	Nanostructured Anodes for Zn-Based Rechargeable Batteries Jana Andzane , University of Latvia, Latvia
FM-50	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 Anatolii Bukivskiy , Institute of Physics of National Academy of Sciences of Ukraine, Ukraine
FM-51	Life Extension of Biobased Biodegradable Pipes through Mechanical Recycling Francesco Paolo LA MANTIA , University of Palermo and INSTM, Italy
FM-52	Design and Functionalization of ABO₃ Perovskite Oxides for Energy and Environmental Applications Kais Iben Nassar , University of Aveiro, Portugal
FM-53	Highly-Flexible Fiber-Based Magneto-Mechano-Electric Generator Using Organic Polymer-Inorganic Hybrid Composites for Wireless Power Transmission Nayak Ram , National Institute of Technology Tiruchirappalli, India
FM-54	Metal Organic Framework Materials for Efficient Lithium Adsorption from Aqueous Solution Safiah Almuqhwawi , University of Birmingham, United Kingdom
FM-55	Modified Aluminum Powders with Enhanced Reactivity for Energy Systems Ayagoz Bakkara , The Institute Combustion Problems, Kazakhstan
FM-56	Cobalt Oxyhydroxide Nanosheet-Based Efficient Sensing System for Pharmaceutical Pollutant Detection Sunayana Bora , Indian Institute of Technology (BHU) Varanasi, India
FM-57	Plasma-Oxidation Driven Surface Instability in PDMS: Mechanisms and Morphological Evolution Sushree Ritu Ritanjali , Indian Institute of Technology Kharagpur, India
FM-58	Exploring Thermoluminescence Properties of Gadolinium Aluminum Borate Phosphors Doped with Europium: Effects of Europium Incorporation Under Beta Radiation Osama Madkhali , Jazan University, Saudi Arabia
FM-59	Nanomaterials and Their Applications for Metal Recycling from Waste Waters Aleksandra Lobnik , University of Maribor, Slovenia
FM-60	ZnO-SnO₂ Nanocomposite Thin Films: Structural and Optical Tuning for Optoelectronic and Solar Cell Applications Mohamed Amine Benali , Nour Bachir University Center of El Bayadh, Algeria
FM-61	A Plasmonic-Based Approach to Enhance Light Absorption in Silicon Using Silver Nanoparticles Meriem Zineb BELMEHDI , University of Science and Technology of Oran - Mohamed Boudiaf, Algeria

Day-2,
Tuesday

Room I

October 28, 2025

08:45 Introduction and Day 2 Opening Remarks

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

Plenary Talk (35+5 Mins)

08:50 **Chemical Patterning of Graphene and Inorganic 2D-Materials**

Andreas Hirsch, University of Erlangen-Nuremberg, Germany

Talk Supported by: CICA- Interdisciplinary Center for Chemistry and Biology, Spain

Keynote Addresses (25+5 Mins)

09:30 **Synthetic Extracellular Matrix Analogues: Driving Tissue Regeneration through Highly-Tuned Control of Bioligand Presentation to the Cells**

Matteo Santin, University of Brighton, United Kingdom

10:00 **Advances in Materials and Technology for Volumetric 3D Printing**

Christophe Moser, EPFL (Swiss Federal Institute of Technology Lausanne), Switzerland

10:30

Coffee Break

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

Featured Presentations (15+5 Mins)

Session 1: Functional Materials and Fundamental Studies

Chair: TBA

11:00 **Super-Emitting and Porous Materials for Applications In Energy-Water-Air Nexus**

Primož Poredoš, University of Ljubljana, Slovenia

11:20 **Sulfur Tuned Advanced Carbons: Towards Subtle Modifications of Sulfur Lining**

Teresa J. Bandosz, The City College of New York, United States

11:40 **Ab Initio Study of Reaction Kinetics Occurring at the Surface of SrFeO₃-Based SOFC/SOEC**

Mario Italo Trioni, CNR SCITEC, Italy

12:00 **Hidden Aspects of Solid-State Reactions - View Under the Hood**

Nikola Biliskov, Rudjer Boskovic Institute, Croatia

12:20 **Removal of Azo Dyes from Water Using Carbon Based Material - A DFT Study**

Eva Scholtzová, Institute of Inorganic Chemistry, Slovak Academy of Sciences, Slovakia

12:40 **Fabrication, Characterization, and Evaluation of Guar Gum-Grafted Tannic Acid based Polymer Composite for the Removal of Pb(II) from Wastewater**

Ghada Taha, National Research Centre, Egypt

13:00

Lunch Break

Keynote Address (25+5 Mins)

14:00

Electroactive Framework Materials for Energy Storage: Dual Proton-Electron Conductors and Organic Electrodes for Rechargeable Batteries

Manuel Souto Salom, University of Santiago de Compostela, Spain

Featured Presentations (15+5 Mins)

Session 2: Solar Energy and Photoelectrochemistry

Chair: TBA

14:35

SYNATRA Project - Synergistic Architectures for Next Gen Agrivoltaics Incorporating Transparent Organic Solar Modules

Ignasi Burgés-Ceballos, Polytechnic University of Catalonia (UPC), Spain

14:55

Towards Two New Atomic Layer Deposition Processes for the Synthesis of Single-Phase CoO or Co₃O₄ Layers for the Conversion of Solar Energy into Hydrogen

Olivier Debieu, CRISMAT - ENSICAEN, France

15:15

Ag₁(InGa)₁(S₁Se_{1-x})₂ Quantum Dot Sensitized Cobalt Sulphide Cocatalyst Activated TiO₂ Photoelectrode for Photoelectrocatalytic Water Splitting

Oluwasesan Adegoke, University of Dundee, United Kingdom

15:35

Organic Photovoltaics for Urban Environments

Sergi Riera-Galindo, ICMAB-CSIC, Spain

16:15

VISIT followed by Informal Dinner (20:00) (Ticket Required)

Day-2,
Tuesday

Room II

October 28, 2025

Symposium IV: Nanotechnology and Nanomaterials

Featured Presentations (15+5 Mins)

Session 1: Synthesis and Manufacture

- 11:00** **Ultra-Fast DC Sputtering of Silver Nanoparticles for Tailored Plasmonic Architectures Without Templates**
Arturo Rodríguez-Gómez, Institute of Physics - UNAM, Mexico
- 11:20** **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**
Riccardo Scarfiello, CNR-NANOTEC, Italy
- 11:40** **Graphene- Si_3N_4 Nanocomposites: From the Powder Synthesis to the Properties**
Alicia Weibel, CIRIMAT / University of Toulouse, France
- 12:00** **Synthesis and Characterization of TiO_2 Nanostructures on $Ti_{28}Nb_4Sn$ Alloy via Electrochemical Anodization**
José Rodrigo Muñoz Hoyos, Antonio Narino University, Colombia
- 12:20** **Eco-Design of Porous Silica Adsorbents**
Ivalina Trendafilova, Institute of Organic Chemistry with Center of Phytochemistry, BAS, Bulgaria
- 12:40** **Smart Solutions for Liquid Purification: Porous Materials for Water and Oil**
Sunny Freitas, NOVA School of Science and Technology, Portugal

13:05 **Lunch Break**

Session 2: Characterization and Modeling

- 14:35** **Advanced Characterization of Oxide Nanomaterials Using Infrared Spectroscopy**
Iñigo González de Arrieta, University of the Basque Country UPV/EHU, Spain
- 14:55** **Atomistic Simulation for Nanoparticle and Nanodevice Design**
Panagiotis Grammatikopoulos, University of Castile-La Mancha, Spain
- 15:15** **Tailoring the Ultrafast Coincidence Time Resolution in Novel Highly Luminous Metascintillators**
Irene Villa, University of Milano-Bicocca, Italy
- 15:35** **Study of Water and Ethanol Sorption in ZIFs for Heat Storage**
Ciara Byrne, National Institute of Chemistry, Slovenia

16:15 **VISIT followed by Informal Dinner (20:00) (Ticket Required)**

Day-3,
Wednesday

Room I

October 29, 2025

08:45 Introduction and Day 3 Opening Remarks

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

Plenary Talk (35+5 Mins)

09:00 Nanotechnology-Enabled Energy Efficiency Electronics

Bingqing Wei, University of Delaware, United States

Keynote Addresses (25+5 Mins)

09:40 Polypeptide-Based Therapeutics: Exploring Tropism and Overcoming Biological Barriers

Maria Jesus Vicent, The Príncipe Felipe Research Center Foundation (CIPF), Spain

10:10 Materials and Strategies for Became Polymers More Bio

José Luis Vilas Vilela, University of the Basque Country UPV/EHU, Spain

10:40

Coffee Break

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

Featured Presentations (15+5 Mins)

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

Chair: TBA

11:10 Immobilization of a Molecular Copper Complex on Carbon Electrodes for the Carbon Dioxide Reduction Reaction

Gonzalo García, University of La Laguna, Spain

11:30 Nickel, Cobalt and Ferrocene: Promising Combined Catalysts for Enhanced Oxygen Evolution Reaction

Jose María Abad, Consejo Superior de Investigaciones Científicas (CSIC), Spain

11:50 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

Mohammad Imteyaz Ahmad, Indian Institute of Technology (BHU), India

Young Researchers Presentations (10+5 Mins) (I)

Solid State Electrolytes By Hybridization of Ionomer Membrane: Elaboration and Properties

Jean Alchemaly, CEA / University of Grenoble Alpes, France

Microstructure Modeling for Efficient Processing

Talina Terrazas, Graz University of Technology, Austria

Harnessing the Dual Functionality of Carbon Nano-Onions: A Synergistic Approach to Light-Driven Biomedical Applications

Julia M. Requena Ramírez, ICMol - University of Valencia, Spain

Hydrogel-Based 3D Printed Anthropomorphic Phantoms for Microwave Breast Imaging
Carlos Martín Andreu, University of Castilla-La Mancha/IRICA, Spain

13:25

Lunch Break

Keynote Address (25+5 Mins)

14:25

Development of Self-Healing Aluminium Alloys
Cecilia Poletti, IMAT- TU Graz, Austria

Featured Presentations (15+5 Mins)

Session 4: Advanced Energy Storage

Chair: TBA

15:00

Low-Carbon Footprint Synthesis of Si Anodes for Li-Ion Batteries from the SiO₂ Shells of Diatom Microalgae
Maria Valeria Blanco, ICMAB-CSIC, Spain

15:20

Strategies to Enhance the Performance of the LNMO Cathode for Generation 3b Li-Ion Batteries
Jordi Jacas Biendicho, Catalonia Institute for Energy Research-IREC, Spain

15:40

Alternative Polymer Host Matrix for Lithium Metal Polymer Solid-State Batteries
Shanmukaraj Devaraj, CIC EnergiGune, Spain

16:00

Boosting Cathodes for Next-Gen Sodium-Ion Batteries through Interface Engineering with *In Situ* Electropolymerized PEDOT
Rafael Orlando Klee Morán, University of Córdoba, Spain

16:20

Molecular Dynamics Insights into the Ethaline/Au₍₁₀₀₎ Interface for Sustainable Memory/Storage Applications
M. Natalia D.S. Cordeiro, LAQV-REQUIMTE, University of Porto, Portugal

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

Chair: TBA

16:40

Green Energy Harvesting from the Air by Capturing CO₂ in an Electrochemical Capacitors
Andrea Lamberti, Polytechnic University of Turin, Italy

17:00

Nickel@Polypyrrole nanofiber as a High-Performance Electrode Material for Supercapacitor Applications
Suparna Das, CIIAE - Iberian Centre for Research in Energy Storage, Spain

17:20

Development and Investigation of High Surface Area Porous Carbon for Efficient Hydrogen Storage
Fail Sultanov, National Laboratory Astana, Nazarbayev University, Kazakhstan

18:00

Awards followed by In-Person Closing Ceremony

Day-3,
Wednesday

Room II

October 29, 2025

Symposium IV: Nanotechnology and Nanomaterials (II)

Featured Presentations (15+5 Mins)

Session 3: Functional & Hybrid Nanomaterials

Chair: TBA

- 11:10** **Light-Driven Skyrmion Crystal Generation in Plasmonic Metasurfaces Through the Inverse Faraday Effect**
Mathieu Mivelle, CNRS, Sorbonne University, INSP, France
- 11:30** **Nanomaterials Based on Quinoid Complexes: From Solution to Surface**
Olivier Siri, Aix-Marseille University, France
- 11:50** **Design of Protein-Based Hydrogels Loaded with Graphene**
Giulia Quaglia, University of Perugia, Italy

Young Researchers Presentations (10+5 Mins) (II)

- Reductant Assisted Hydrothermally Synthesized Ni-Fe Based Magnetic Nanoalloys for Tunable Magnetization**
Aiswarjya Bastia, Indian Institute of Technology (BHU) Varanasi, India
- MXene-Reinforced Carrageenan/PVA Nanocomposite Films with Advanced Functionalities for Sustainable Packaging Applications**
Hongna Yuan, Queen Mary University of London, United Kingdom
- Transport of Micrometer Sized Chips with Patterned Liquid Micro Rails**
Pedro H. O. Moreira, Ilmenau University of Technology, Germany
- Systematic Design Evolution of Pillar[5]arene-Based Nanopores: From Membrane Spanning to Stability Optimisation**
Kharina Fenton, King's College London, United Kingdom

13:25

Lunch Break

Featured Presentations (15+5 Mins)

Session 4: Biosensing

Chair: TBA

- 15:00** **Functionalization of 2D Materials and the Development of Nano-Hybrid Platforms for Biosensing and Nanofluidic Applications**
Martina Lihter, Institute of Physics, Croatia
- 15:20** **Nanomaterial-Based Smart Inks for Electrochemical Sensors**
Alessandro Silvestri, Ca' Foscari University of Venice, Italy

15:40	Charge Density Modulation in Graphene FET Biosensors for Virus Detection via Chemical Modification Davide Campagnol , University of A Coruña (UDC), Spain
16:00	Engineering Innovative Nanobiosensors with Tunable SERS Hotspots for Ultra-Sensitive Detection of Viral Pathogens in Food and Water Ojodomo Achadu , Teesside University, United Kingdom
16:20	Molecularly Imprinted Polymer for IL-6 Using Conductive Nanomaterials Ana Rita Cardoso , BioMark@UC- University of Coimbra, Portugal
Session 5: Nano for Bioapplications	
Chair: TBA	
16:40	Novel Magnetic Cellulose Nanocomposite Coating as a Potentially Flexible Electronic Material Andrei Chumakov , DESY - German Electron Synchrotron, Germany
17:00	Multifunctional Nanotubes for X-Ray Activated Photodynamic Therapy (X-PDT) Valeria Secchi , University of Milano-Bicocca, Italy
17:20	Bio-LLPS Engineering Tomohiro Nobeyama , Kyoto University, Japan
18:00	Awards followed by In-Person Closing Ceremony

**Day-4,
Thursday**

Online Western European Summer Time (WEST)

October 30, 2025

09:40-09:50 **AV Check**

09:50-10:00 **Introduction and Day 4 Opening Remarks**

Keynote Addresses (25+5 Mins)

10:00 **Building Human Organs with Butterfly, Graphene and Stem Cell**
Alexander Seifalian, NanoRegMed Ltd, Nanoloom Ltd, & Liberum Health Ltd, United Kingdom

10:30 **TBA**
Mar Gonzalez, OECD, France

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

Chair: TBA

11:00 **Mechanics Meets Light in Biomaterials: Novel MechanoOptical Biomarkers for Cancer and Pulmonary Fibrosis**
Andreas Stylianou, European University Cyprus/ EUC Research Centre, Cyprus

11:20 **3D Printed Magnetic Scaffolds for Precise and Tunable On-Demand Drug Delivery**
Elizabeth Rendon-Morale, University of Sussex, United Kingdom

11:40 **Efficient Red-Emitting Carbon Dots and Albumin Composites for Precise Synovial Bioimaging in Rheumatoid Arthritis**
Qian He, Shanxi Bethune Hospital, China

12:00 *To be confirmed*

Online Symposium II: Nanotechnology and Nanomaterials

Chair: TBA

12:20 **Carbon Dots Powering Innovation in Health and Environment**
Gil Alberto Batista Gonçalves, University of Aveiro, Portugal

12:40 **Effect of Graphene Additives on the Physical and Mechanical Properties of Zirconium Dioxide**
Edvin Hevorkian, University of Life Sciences in Lublin, Poland

13:00 **Highlighting the Framework for Quality by Design in Nano Drug Delivery Systems**
Surya Kanta Swain, Amity University, Kolkata, India

13:20 **Key Scientific Issues in Electrocatalysis of CO₂RR**
Sun Guodong, Fujian Polytechnic Normal University, China

13:40 *To be confirmed*

Online Symposium III: Materials for Electronics, Optics and Photonics

Chair: TBA

14:00 **Highly Efficient Polymeric Electrochromic Devices- Modifying the Chemical Structure of the Chromophores and the Polymer Backbone**
Laura Maggini, University of Vienna, Austria

14:20	Carbon Nanotube Device Engineering Taher Ghomian , University of Maine, United States
14:40	Artificial Magnetoelectric Multiferroic Thin Films Combining Ferrites and Barym Titanate Antoine Barbier , Université Paris-Saclay, CEA, CNRS, SPEC, France
15:00	Ultrafast Laser Synthesis of Zeolites Sezin Galioglu , Bilkent University, Turkey
15:20	YRP: On the Strong Composition Dependence of the Martensitic Transformation Temperature and Heat in Shape Memory Alloys Asmaa Hassan , University of Debrecen, Hungary
15:35	<i>To be confirmed</i>

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

Chair: TBA

15:55	Lubricant Oils Conditions Monitoring Driven by a Triboelectric Sensor Jun Zhao , Beijing Institute of Technology, China
16:15	Nanostructured Materials for Energy Conversion Maria Gimenez Lopez , CIQUS- University of Santiago de Compostela, Spain
16:35	Designing Carbonaceous Materials for Environmental Applications Nieves López Salas , Paderborn University, Germany
16:55	Green Synthesis of MOF-Based Hybrid Nanostructures for Efficient Hydrogen Storage and Regeneration Laya Anjo , CANDLE SRI, Armenia
17:15	Enhancement of Hydrogen Evolution Reaction on Palladium (Pd) Black Surface using Activated Carbon Nanocomposites Olayemi Jola Fakayode , University of South Africa, South Africa
17:35	E-Poster: Computational Evaluation of Copolymer Synthesizability for New Materials for Environmental Sustainability Sidh Jaddu , Thomas Jefferson High School For Science and Technology, United States

Please note this schedule is subject to change

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