

World Congress on

MATERIALS SCIENCE & ENGINEERING

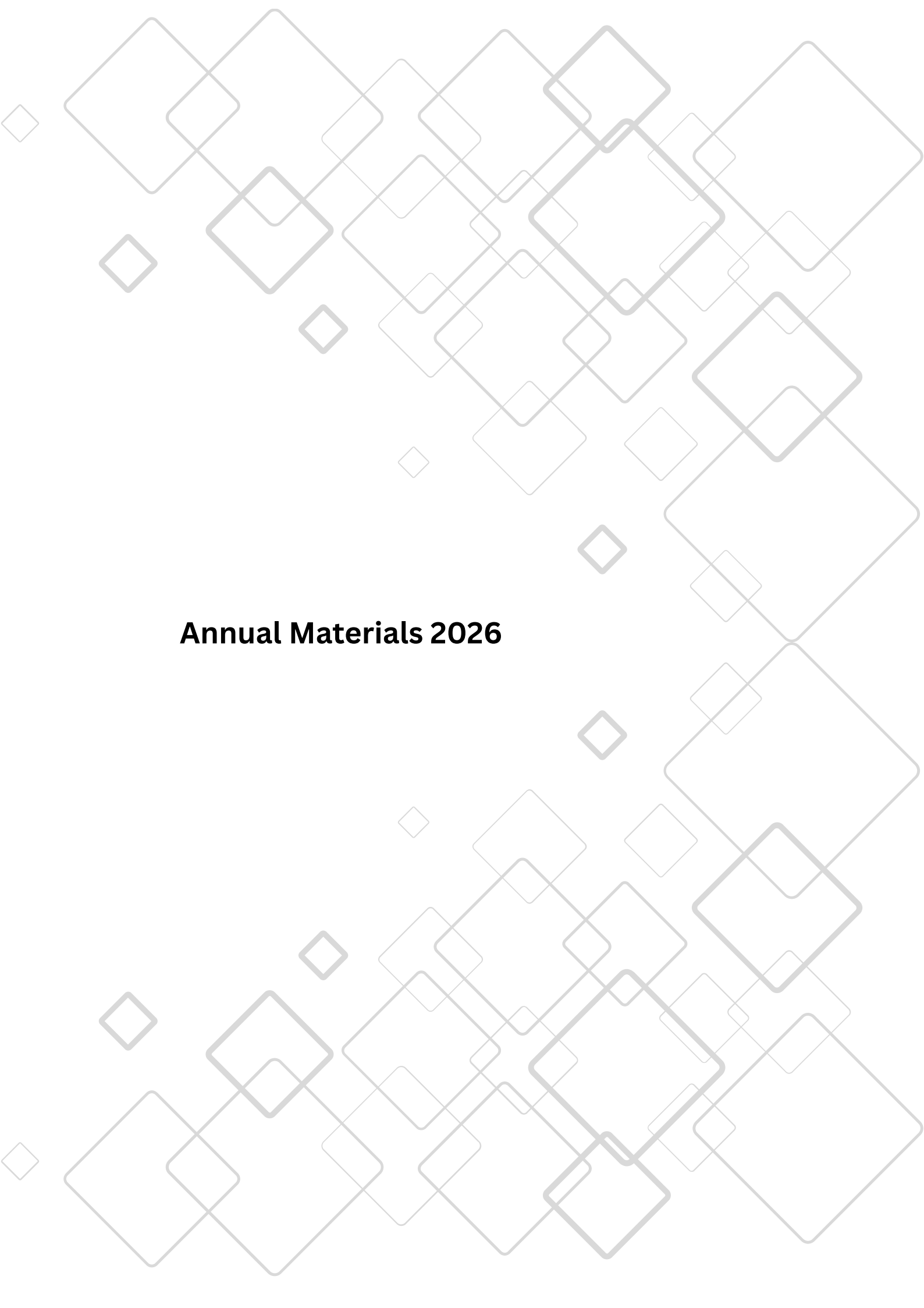
Theme:
“Exploring the
Frontiers of
Materials
Science and
Engineering”

Dates:

September 14-15, 2026 (In-Person)

Venue:

Hotel – Movenpick Hotel Budapest
Centre, Hungary



Annual Materials 2026

08:00 - 08:30 Onsite Registration & Seating Arrangement
08:30 - 09:00 Introduction & Open Ceremony

Keynote Presentation

09:00 - 09:25	Prof. Dr. José L. Ocana Universidad Politécnica De Madrid, Spain	Laser Shock Processing: An Advanced Technique for the Enhancement of the Fatigue Life and Mechanical Performance of Strategic Metallic Materials
09:25 - 09:50	Prof. Leszek A. Dobrzański Design & Production Asklepios, Poland	The 3xI 5.0 Industry Concept in the Context of the Role of Engineering Materials and the 6xR Principle
09:50 - 10:15	Prof. Lech B. Dobrzański Design & Production Asklepios, Poland	Advanced CAD/CAM Processes with Particular Emphasis on Ecological Aspects and the 6xR Principle as Applied to Dental Engineering

Refreshment & Coffee - 10:15 - 10:30

Keynote Presentation

10:30 - 10:55	Prof. Sibudjing Kawi National University of Singapore, Singapore	Sustainable Catalysis with Membrane or Plasma for Greenhouse Gas Valorization
10:55 - 11:20	Dr. Michael Zharnikov Heidelberg University, Germany	New Aspects of Electrostatic Engineering of Surfaces and Interfaces
11:20 - 11:45	Prof. Lev S. Rapoport Holon Institute of Technology, Israel	Crystal Plasticity of FCC Metals Under Steady-State and Instable Friction
11:45 - 12:10	Prof. Joseph H. Koo The University of Texas at Austin, USA	Novel Fiber-Reinforced Polysiloxane Composites for Extreme Aerospace Applications
12:10 - 12:35	Prof. Win-long Chia Fu Jen Catholic University, Taiwan	A Lifetime on Synthesis of Nitrogen-Containing Liquid Crystals in Taiwan

Oral Presentation

12:35 - 12:55	Prof. Karolina Kielbasa West Pomeranian University of Technology in Szczecin, Poland	Carbon Materials: Synthesis Pathways from Nonporous to Microporous Carbon Adsorbents Derived from Molasses for CO ₂ Removal Applications
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Memorable Group Photo & Tempting Buffet lunch - 12:55 - 13:25

Keynote Presentation.

13:25 - 13:50	Prof. Mineo Hiramatsu Meijo University, Japan	Engineering Three-Dimensional Graphene Architectures by Plasma Processes for Advanced Carbon Materials
13:50 - 14:15	Prof. Natasha Lushetich University of Dundee, UK	On Energetic-Intelligent Materials and their Modes of Production

Oral Presentation

14:15 - 14:35	Assoc. Christl Lauterbach Future-Shape GmbH, Germany	A Smart Textile Underlay Providing a Large-Area Sensor Floor
14:35 - 14:55	Prof. Juan Casado University of Malaga, Spain	Photonic Materials from Chemical Design: Narrowband Emitters and Laser Dyes

14:55 - 15:15	Prof. Shing-jiang Jessie Lue Chang Gung University, Taiwan	Comparative Analysis of Green and Chemically Synthesized AgNPs: Particle Size Correlations, Biocompatibility, and Antimicrobial Mechanisms against <i>S. aureus</i>
15:15 - 15:35	Prof. Bing Yan Guangzhou University, China	A Systematic Exploration of Structure-Bioactivity Relationship of Nanoparticles
15:35 - 15:55	Prof. Paddy French Delft University of Technology, The Netherlands	Silicon Carbide for Harsh Environments
15:55 - 16:15	Mr. Hector Georgy Freire Cabrera Escuela Politecnica Nacional, Ecuador	Conversion of Aluminum-Rich Industrial Wastes into High-Value Ceramic Materials and Aluminum Compounds
16:15 - 16:35	Dr. Hiroyuki Aoki Japan Atomic Energy Agency, Japan	Interface Engineering to Enhance Adhesion Strength in High Humidity
16:35 - 16:55	Prof. Maria Glushkova Rostov State Medical University, Russia	Systemic Blood Changes in Skin Hyperpigmentation. Correction Possibilities
Refreshment & Coffee - 16:55 - 17:10		
Oral Presentation Cont.....		
17:10 - 17:30	Prof. Seung Gu Shin Gyeongsang National University, Republic of Korea	In Situ Reduction of Graphene Oxide During Anaerobic Digestion Shifts its Role from Inhibitor to Potential Promoter of Methanogenesis
17:30 - 17:50	Prof. Michael A. Morris Trinity College Dublin, Ireland	Design, Synthesis and Use of Nanofluids for Advanced Heat Transfer Applications
Poster Presentation (17:50 - 18:10)		
NBC261	Dr. Juhee Shin Gyeongsang National University, Republic of Korea	Methanogenic Recovery under Organic Overload using Starfish-Derived Powder as a Microreactor-Like Additive
ME261	Dr. Laura Tamayo University of Chile, Chile	Dynamic Interfacial Remodeling Governs Early Bacteria–Polymer Adhesion
ME262	Dr. Andrea Czompa Semmelweis University, Hungary	Propylene Carbonate as Green Solvent and Reagent
End of Day 1 Conference		

08:30 - 09:00 Introduction & Open Ceremony

Keynote Presentation

09:00 - 09:25	Prof. Tohru Higuchi Tokyo University of Science, Japan	Clean Energy Device Using Oxide Superionic Conductor Solid Electrolyte Thin Film
09:25 - 09:50	Dr. Héctor Hugo Pérez Garza DENSolutions BV, The Netherlands	Next-Generation Environmental In Situ System for Correlative Research Across TEM, SEM, and Synchrotrons
09:50 - 10:15	Prof. Yukiharu Uraoka Nara Institute of Science and Technology, Japan	High Performance Metal Oxide Thin Film Transistor Using ALD Method

Refreshment & Coffee - 10:15 - 10:30

Oral Presentation

10:30 - 10:50	Prof. Masatoshi Shimoda Toyota Technological Institute, Japan	Topology Optimization with Optimized Design Domain for Designing Biologically Derived Microstructures
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Keynote Presentation

10:50 - 11:15	Prof. Masahiro Miyauchi Institute of Science Tokyo, Japan	Semiconductor-Based Photocatalyst for Gas-Phase CO ₂ Reduction
11:15 - 11:40	Prof. Stephen W Tsai Stanford University California, USA	Double-double: A Revolutionary Laminate Theory
11:40 - 12:05	Prof. Bo-Qing Xu Tsinghua University, China	Precious Metal-Efficient Heterogeneous Catalysts for Thermal and Electro Catalysis
12:05 - 12:30	Prof. Bun Tsuchiya Meijo University, Japan	Hydrogen Absorption and Desorption Characteristics of Li _x CoO ₂ Positive Electrode Materials in Li ⁺ Ion Rechargeable Batteries
12:30 - 12:55	Prof. Andrea Lamberti Politecnico Di Torino, Italy	Electrochemistry at the Nanoscale: Powering Sustainable Energy Harvesting and Storage for Industrial Applications

Memorable Group Photo & Tempting Buffet lunch - 12:55 - 13:25

Keynote Presentation Cont.....

13:25 - 13:50	Prof. Jacob Gavan Holon Institute of Technology, Israel	Power Beaming for Commercial Solar Energy and Defense Applications
13:50 - 14:15	Prof. Olivier Bonnaud University of Rennes, France	The Future of Higher Education in Microelectronics and Nanotechnology in the Evolving Digital World: Role of the Materials
14:15 - 14:40	Dr. Sven Simon University of Stuttgart, Germany	The AI Revolution in Laboratory and Synchrotron X-ray Computed Tomography
14:40 - 15:05	Prof. Show-An Chen National Tsing Hua University, Taiwan	Molecular Design on Semiconductive Polymers for Opto-Electronics Interconversion with High Device Performance

Oral Presentation

15:05 - 15:25	Mr. Eiki Masutomi Tokyo University of Science, Japan	Growth of Highly c-Axis Oriented Eu-Doped ZnO Thin Film and Its Next-Generation Semiconductor Device
15:25 - 15:45	Mr. Gunther Van Kerckhove OCSiAl Group, Luxembourg	Importance of Exposure Assessment Along Life Cycle of Nanocomposites

15:45 - 16:05	Ms. Inoue Honoka Tokyo University of Science, Japan	Surface Ionic Conduction of $\text{Ce}_{0.85}\text{Sm}_{0.15}\text{O}_{2-\delta}$ Thin Film with Oxygen Vacancies Prepared by RF Magnetron Sputtering
16:05 - 16:25	Ms. Reina Fujita Tokyo University of Science, Japan	Electronic Structure and Electrical Properties of Orientation- Controlled Nb-Doped TiO_2 Thin Films
16:25 - 16:45	Prof. Marc W. Bockrath Ohio State University, USA	Many-Body Phases in Multilayer Graphene: From Half-Integer Quantum Hall Effects to Magnetism
Refreshment & Coffee - 16:45 - 17:00		
Oral Presentation Cont.....		
17:00 - 17:20	Dr. Masooma Ibrahim Karlsruhe Institute of Technology, Germany	From Structure to Function: Functional Polyoxometalate Systems for Advanced Applications
17:20 - 17:40	Prof. Jiandong Guo Chinese Academy of Sciences, China	Growth of Ultrathin Cr_xTe_y Films and Their Magnetism in the Two-Dimensional Limit
17:40 - 18:00	Prof. Marianne Noel Université Gustave Eiffel, France	"Not Smallness but Complexity of Biological Systems". The Emergence of Supramolecular Chemistry at the University of Strasbourg (1961-2011)
18:00 - 18:20	Dr. Huseyin Karaca Inonu University, Türkiye	Synthesis of DME in a Fixed-Packed-Bed Reactor Using Dual-Function $\text{Cu}_2\text{O}/\text{ZnO}$ and $\text{Cu}_2\text{O}/\text{ZnO}/\gamma\text{-Al}_2\text{O}_3$ Catalysts
End of Day 2 Conference		

World Congress on

MATERIALS SCIENCE & ENGINEERING

Theme:
“Exploring the
Frontiers of
Materials
Science and
Engineering”

Dates:
September 16, 2026 (Virtual)

Venue:
Via Zoom Platform

05:30- 05:40	Introduction & Open Ceremony		GMT(Greenwich Mean Time)
Plenary Presentation			
05:40 - 06:05	Dr. Chi-Ping Li National United University, Taiwan	Mesoporous Tungsten Oxide Nanocrystalline Films for Electrochromic Windows	
06:05 - 06:30	Prof. Naseem Ahmad Kunsan National University, South Korea	Defect-Driven Band-Gap Narrowing and Transport Enhancement in CoWO ₄	
Keynote Presentation			
06:30 - 06:55	Prof. Junhui Hu Nanjing University of Aeronautics & Astronautics, China	Ultrasonic Enhancement and Fabrication of Gas Sensors	
06:55 - 07:20	Prof. Shuji Ogata Nagoya Institute of Technology, Japan	Unravelling Protonation-initiated Decomposition Processes of Hexahydro-s-triazine-cured Epoxy Resin: First-principles Simulation Study	
Oral Presentations			
07:20 - 07:40	Mr. Homare Tsugifuji & Prof. Masanao Imai Kanto Gakuin University, Japan	New Horizons of Liquid Marbles for Controlled Release of Volatile Bio-functional Components	
07:40 - 08:00	Ms. Doha Kabouchi LaMCScI, Faculty of Sciences, Mohammed V University in Rabat, Morocco	Shape-Dependent Magnetic Properties of Graphene Nanostructures: A Monte Carlo Investigation for Spintronics	
Poster Presentation			
08:00 - 08:10	Prof. Sang Hyeon Im Dong Eui University, Korea	Approximation of the Deperm-ME Protocol Using Dual Anhysteretic Demagnetization Processes	
08:10 - 08:20	Prof. Sang Hyeon Im Dong Eui University, Korea	Analysis of Coil Configuration Differences Between Experimental and Practical Deperming Environments	
Plenary Presentation			
08:20 - 08:45	Prof. Timur Ashirov University of Fribourg, Switzerland	The Role of Shape-Persistent Macrocycles in Separation Applications	
Keynote Presentation			
08:45 - 09:10	Prof. Yoed Tsur Technion, Israel	The Doping Factor Approach in Solid State Ionics	
09:10 - 09:35	Dr. Osman Adiguzel Firat University, Turkey	Memory Characteristics and Thermomechanical Transformations Governing Reversibility in Shape Memory Alloys	
09:35 - 10:00	Mr. Albin Kälin CEO epeaswitzerland gmbh, Switzerland	Cradle to Cradle Design Innovations	
10:00 - 10:15 (Eye Relaxation Break & Breakout Rooms - Greenwich Mean Time)			
Oral Presentations			
10:15 - 10:35	Prof. Marc Maresca Aix Marseille Université, France	Doing Better than Nature: Use of Synthetic Antibacterial Copolymers (SACs) Mimicking Natural Antimicrobial Peptides (AMPs) to Confer Antimicrobial Properties to Materials	
10:35 - 10:55	Dr. Dimitrios Kotzias Former Senior Official, European Commission—Joint Research Centre, Italy	Smart Surfaces: Heterogeneous Photocatalysis of Priority Air Pollutants on TiO ₂ -Based Coatings in Indoor and Outdoor Environments- A Mechanistic View of The Processes at the Air/Catalyst Interface.	

Poster Presentation

10:55 - 11:05	Malgorzata Szafraniec, MSc Eng Lublin University of Technology, Poland	From Newspaper Waste to Foam Stabilizer: How Nanocellulose Shape Controls Interfacial Function
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Keynote Presentation

11:05 - 11:30	Prof. Benigno Rodriguez Diaz Universidad de la Republica, Uruguay	The Design of More Efficient Antennas as a Strategy for Climate Change Mitigation
11:30 - 11:55	Dr. Anita-Ioana Visan National Institute for Lasers, Plasma and Radiation Physics, Romania	Bioinspired and Biomimetic Nanomaterials as Coatings for Advancing Nanomedicine
11:55 - 12:20	Dr. Irina Negut National Institute for Lasers, Plasma and Radiation Physics, Romania	Thin Films Deposited by Matrix-Assisted Pulsed Laser Evaporation for Tissue Engineering Applications
12:20 - 12:45	Prof. Cristina Satriano University of Catania, Italy	Multipurpose Hybrids Beyond Graphene with Plasmonic Nanoparticles and Magnetite for Theranostics and Sustainable Environmental Applications
12:45 - 13:10	Prof. Gerard Tobias Rossell Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Spain	Tubular One-Dimensional Van Der Waals Heterostructures

13:10 - 13:25 (Eye Relaxation Break & Breakout Rooms - Greenwich Mean Time)

Keynote Presentation

13:25 - 13:50	Prof. Vladimir Sobolev South Dakota School of Mines & Technology, USA	Control of Kinetics of Ferroelectric Phase Transition for Improvement of Piezo Properties of Solid Solutions
13:50 - 14:15	Prof. Brian Cantor University of Oxford, UK	Nanostructures in Multicomponent High-Entropy Cantor Alloys
14:15 - 14:40	Prof. Brigita Rožič Jožef Stefan Institute, Slovenia	Liquid Crystal-Based Caloric Materials for Green Cooling Technologies

Oral Presentations

14:40 - 15:00	Prof. Kyriakos Komvopoulos University of California at Berkeley, USA	Modulating the Surface Properties of Electrospun Fibrous Scaffolds to Promote Cell Integration
15:00 - 15:20	Dr. Usha Philipose University of North Texas, USA	Nucleation-Driven Synthesis of Doped Gallium Oxide Nanowires on Gallium Arsenide Substrate
15:20 - 15:40	Dr. Gwendolyn D. Boyd-Shields Mississippi State University, United States	Engineering Citric Acid–Crosslinked Chitosan Networks for Next-Generation Sustainable Wood Protection
15:40 - 16:00	Dr. George Paskalov Omstar Environmental Products LLC, United States	PLASMA Technologies: from R&D to Commercial

****End of Day 3 Conference****



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