SYNERGIA SUMMITS
...fostering collaborations

FINAL PROGRAM

AICMSN2026

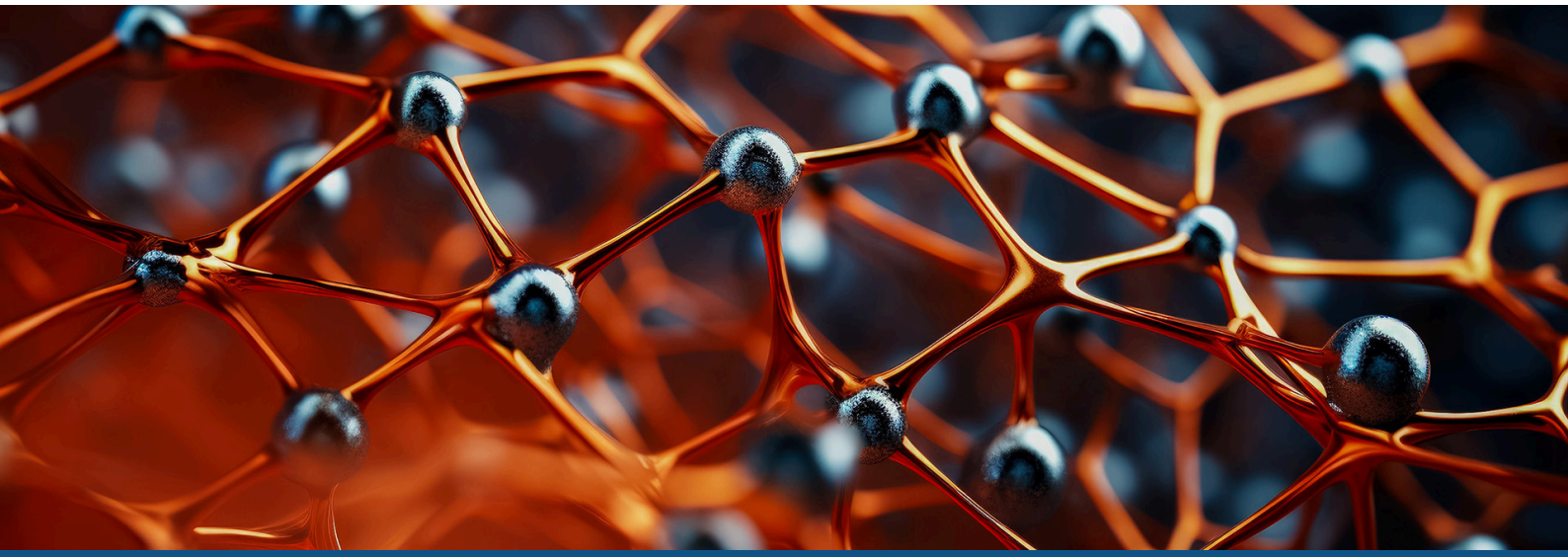
April 13-14, 2026 | Lisbon, Portugal

Venue: **Jupiter Lisboa Hotel**

Address: Avenida da República, 46, 1050-195 Lisboa, Portugal

Poster Awards Sponsor

electronic materials
an Open Access Journal by MDPI



SYNERGIA SUMMITS PVT LTD

Flat No-3006, Block No-2, My Home Avatar,
Puppalaguda, Narsingi, Gandipet Mandal,
Rangareddy, Hyderabad, Telangana, India, PIN-500089

E: contact@synergiasummits.com M: +91-9885-871-872

https://synergiasummits.com/

WHO WE ARE

Synergia Summits is a professional academic conference organizing company dedicated to fostering knowledge exchange, collaboration, and innovation across disciplines. We specialize in creating high-quality platforms where researchers, academicians, and industry experts come together to share ideas and advance global scholarship.

Our conferences have hosted over 700 participants, featured 500 high-quality research presentations, and welcomed 5 valued exhibitors, creating dynamic platforms for scholarly discussion, networking, and innovation. Each event is carefully designed to maintain high academic standards while fostering meaningful engagement among participants. We take pride in our ability to deliver well-structured, impactful conferences that support researchers at every stage of their academic journey. Through our growing conference portfolio, we continue to strengthen international research networks and contribute to the advancement of knowledge worldwide.

We warmly welcome you to be part of our future conferences and look forward to supporting your research and academic goals.

BRINGING GLOBAL MINDS TOGETHER

OUR MISSION AND VISION

Our mission is to empower researchers by delivering high-quality academic conferences that foster collaboration, knowledge exchange, and meaningful global impact.

Our vision is to create a world where researchers are seamlessly connected through **impactful conferences** that inspire ideas and drive global progress.

DAY-1

MONDAY, APRIL 13, 2026

MEETING ROOM: MOCA

08:00-08:45		On-site Registration & Badge Pickup
08:45-09:00		Welcome and Opening Remarks by **Prof. Elvira Fortunato,** NOVA University Lisbon, Portugal**, Prof. Ute Kaiser,** Ulm University, Germany, **Prof. Dieter Bimberg,** CIOMP Changchun, China and TU Berlin, Germany

Opening Talks

09:00-09:40	P	**Ute Kaiser**, Ulm University Germany Engineering and Discovering Matter at the Atomic Scale in 2D Materials
09:40-10:20	P	**Dieter Bimberg**, CIOMP of CAS, Changchun, China and TU Berlin, Germany Energy Efficient Multi Terabit Photonics: Quantum Dots at Work
10:20-10:40		Group Photograph followed by Coffee Break

Session-01: Materials Sciene and Nanoscience

Session Chair: Ute Kaiser, Ulm University, Germany

10:40-11:20	P	**Bernd Szyszka,** Technische Universität Berlin, Germany New concepts for PVD synthesis of electrical and optical films utilizing the advantage of low energy plasma activation
11:20-12:00	P	**Fei Wei,** Tsinghua University, China Molecular evolutionary growth of carbon nanotubes and its mass production
12:00-12:40	P	**Georg S. Duesberg,** University of the Bundeswehr Munich, Germany Hybrid devices with 2D materials
12:40-13:10	P	**Christopher Synatschke,** Max Planck Institute for Polymer Research Mainz, Germany Peptide-Polymer Hydrogels As Cell Scaffolds
13:10-14:10		**Lunch Break**
14:10-14:50	P	**Andrea C. Ferrari,** University of Cambridge, UK Graphene and layered materials for photonics and optoelectronics

Session Chair: Mindaugas Lukosius, IHP, Germany

14:50-15:20	K	**Christophe Coupeau,** University of Poitiers, France Buckling Structure, a Relevant Signature of the Mechanical Properties of Film/Substrate Systems
15:20-15:40	I	**Joana Maria Rodrigues Curto,** University of Beira Interior, Portugal Compostability and Ecotoxicological Assessment of a Functional Cellulose-Based Laminate: Challenges and Opportunities for Sustainable Materials

P- Plenary Talk K- Keynote Talk I- Invited Talk V- Vitual Talk

15:40-16:00	I	**Laura Polito,** CNR - SCITEC, Italy Microfluidics as Versatile Tools for the Synthesis of Engineered Metal Nanoparticles
16:00-16:20	V	**Susana Freitas,** Universidade de Lisboa, Portugal To be confirmed
16:20-16:40		**Coffee Break**
16:40-18:00		**POSTERS SESSION | Room: MOCA**
P001		**Vidas Pakstas**, State Research Institute Center for Physical Sciences and Technology, Lithuania Vacuum-Based Synthesis and Structural Characterization of $AgBiS_2$ Thin Films for Sustainable Optoelectronics
P002		**Dagmara Słota,** Cracow University of Technology, Poland Synthesis Methods of Calcium Phosphates and Their Impact on Cellular Response
P003		**Karina Niziołek**, Cracow University of Technology, Poland Effect of Synthesis Methods on the Physicochemical Properties of Calcium Phosphate Ceramics
P004		**Agnieszka Richert,** Niclaus Copernicus University, Poland Eco-Active Antimicrobial Films: Functionalized Polycaprolactone for Sustainable Infection Control
P005		**Gołacki Krzysztof,** University of Life Scineces in Lublin, Poland Viscoelastic characteristics of plant tissue on the example of sugar beet root tissue
P006		**Sang-Soo Chee,** Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea Enhancing Breakdown Strength of Atomic Layer Deposition-deposited TiO2 Thin-Films for Si Capacitor Applications
P007		**Augusto Giovane,** Universidade do Extremo Sul Catarinense (UNESC), Brazil Biocement with Zinc Oxide Combustion: Validation of Mechanisms of Action in Endodontic Bioceramic Cements
P008		**Augusto Giovane,** Universidade do Extremo Sul Catarinense (UNESC), Brazil Development of Nanostructured Biocement Based on Tricalcium Silicate and Niobium Pentoxide: Evaluation of Physical-Chemical Properties and Biocompatibility
P009		**Daeup Kim,** Korea Institute of Industrial Technology, Korea Effect of Surface Treatment and Resizing on the Interfacial Bonding Properties of PA6 with Recycled Carbon Fibers for Upcycling
P010		**Anis Arisa Roslan,** University College London, UK Data-Driven Optimization of More Sustainable High Entropy Perovskites for Oxygen Evolution Catalysts

P011 **Woo-Jin Kim,** Kunsan National University, Republic of Korea
Interfacial Characteristics of Carbon Fiber Composites Using Micro-mechanical and Acoustic Emission Technique

P012 **JiHui Lee,** Korea Institute of Ceramic Engineering & Technology (KICET), Korea
Bi content-driven Dielectric Permittivity of BiZnNbO Ceramics governed by Locally Structural Distortion

P013 **Haruki Ikushima,** Muroran Institute of Technology, Japan
Mechanochemical Synthesis of Poly(arylacetylene)s and the Effect of Additives on Molecular Structure

P014 **Hyo Soon Shin,** Korea Institute of Ceramic Engineering and Technology (KICET), Korea
Title: To be announced.

P015 **Keigo Urushidate,** Muroran Institute of Technology, Japan
LCST-like Phase Separation Behavior of Alkyl Gallates with Oligoethylene Glycol Chains

P016 **Byungwook Jeon,** Kunsan National University, Republic of Korea
Probabilistic Mechanical Property Evaluation of Basalt Fiber Composites using Homogenization Analysis and Machine Learning

P017 **Tinatin Kuchukhidze,** LEPL Ilia Vekua Sukhumi Institute of Physics and Technology, Georgia
Obtaining and Investigation of Ceramic Composite Materials Reinforced with Basalt Fibers

P018 **Katarzyna Rucińska,** Łukasiewicz Research Network – Institute of Polymer Materials, Poland
Innovative antibacterial elastomeric materials with the addition of graphene oxide or its compositions with other substances

P019 **Yong Geun Choi,** Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea
Phase-Engineered Low-Loss SiO2-Based LTCC Substrates for Millimeter-Wave RF Filter Applications

P020 **Pichayanoot Rotkrua,** Thammasat University, Thailand
Aptamer-Functionalized Niosomes for Co-Delivery of Doxorubicin and Harrisonia perforate Extract

P021 **Wei-Hsing Huang,** National Central University, Taiwan
Utilization of Fly Ashes from Co-Combusting Solid Refuse Fuel and Coal as Construction Materials

P022 **Hakgeun KIM,** Kunsan National University, Republic of Korea
Fatigue Crack Growth Behavior of Adhesively Bonded Hybrid Composite Joints in Wind Turbine Blades

P023	**Eunji Jeong,** Yonsei university, Republic of Korea Advanced Rapid and Visible Influenza A Virus Detection Platform Based on Enzyme-Mimicking Layered Gold Nanoparticles
P024	**Suzana Santos,** CTCV- Centro Tecnológico da Cerâmica e do Vidro, Portugal Rheological Properties of Earthenware Ceramic Body: An Analysis of Viscosity, Hardness and Plasticity
P025	**Edyta Kosińska,** Cracow University of Technology, Poland SPEEK as a potential biomaterial: preparation, characterization, and biological evaluation
P026	**Julia Sadlik,** Cracow University of Technology, Poland Bioactive granules based on PEEK for 3D printing biomaterials
P027	**Dustan Bonnin,** Paretor LLC, USA Manufacturing Constraints Reveal Coordination-Governed Alternative Iron Oxide Nanoparticle Materials Library

End of Day-1

DAY-2

TUESDAY, APRIL 14, 2026

BREAK OUT ROOM: MOCA

SESSION 02 — Advanced Nanomaterials & 2D Materials | Structural, Functional & Mechanical Materials

Session Chair: Georg S. Duesberg, University of the Bundeswehr Munich, Germany

09:00-09:30	K	**Ariel Ismach**, Tel Aviv University, Israel Strategies for Controlled Growth and Interfacial Engineering of 2D Materials
09:30-10:00	K	**Christian Mueller**, University of Applied Sciences Zwickau, Germany Recent advances in resistive switching – prussian blue analog materials, mechanisms and devices
10:00-10:20	I	**Vojtech Kundrat**, Masaryk University, Czech Republic Topologically protected interlayer excitons in core-shell WS2@ReS2 multi-walled nanotubes
10:20-10:40	I	**Levente Tapaszto**, HUN-REN Centre for Energy Research (EK-MFA), Hungary Ultrathin metal nanoparticles with novel electronic structure stabilized by their interaction with 2D crystals
10:40-11:00		**Coffee Break**

Session Chairs: Ariel Ismach, Tel Aviv University, Israel & **Zdeněk Sofer,** University of Chemistry and Technology Prague, Czech Republic

11:00-11:20	I	**Gertych Arkadiusz**, Warsaw University of Technology, Poland Thermal Conductivity in 2D Materials
11:20-11:40	I	**Bela Pecz**, HUN-REN Centre for Energy Research (EK-MFA), Hungary TEM characterization of 2D compound semiconductors
11:40-12:00	I	**Michael Horn von Hoegen**, University of Duisburg-Essen, Germany Interplay of Kinetic Limitations and Precursor Disintegration: Selective Growth of Hexagonal Boron Nitride and Borophene Monolayers on Metals
12:00-12:20	I	**Ji-Hee Kim**, Pusan National University, Korea Hot carrier diffusion in 2D Materials for Quantum Optoelectronics
12:20-12:40	I	**Carola Meyer**, Universität Osnabrück, Germany Biosensing using graphene within and beyond the Debye length
12:40-13:00	I	**Alexander Moewes**, University of Saskatchewan, Canada Exploring mono- and multilayers of Graphene, Silicene and their oxides with soft X-ray spectroscopy and DFT calculations
13:00-14:00		**Lunch Break**

Session Chair: Fei Wei, Tsinghua University, China

14:00-14:30 K **Zdeněk Sofer,** University of Chemistry and Technology Prague, Czech Republic
2D Materials for electronic and energy storage applications

14:30-14:50 I **Mindaugas Lukosius**, The Leibniz Institute for High Performance Microelectronics (IHP), Germany
Integration of Graphene Photonics with Silicon Nitride Waveguides in a 200-mm Pilot Line

14:50-15:10 I **René Fulchiron**, Universite Claude Bernard Lyon 1, France
In Situ Development of Phosphate Glass Fillers with High Aspect Ratio in Polymer Composites

15:10-15:35 I **Ing-Shouh Hwang**, Institute of Physics, Academia Sinica, Taiwan
How Gas Dissolves in Water: Insights from Transmission Electron Microscopy

15:35-15:55 I **Mihaela Baibarac**, National Institute of Materials Physics, Romania
New Insights into Photochemical Processes of the Carbon Nanotubes-Based Composites

15:55-16:10 **Coffee Break**

Session Chairs: Carola Meyer, Universität Osnabrück, Germany **& Alexander Moewes,** University of Saskatchewan, Canada

16:10-16:30 I **Zsolt Czigány**, HUN-REN Centre for Energy Research, Hungary
Possible Mechanisms of Phase Transformation in Oxide Dispersion Strengthened 316L Stainless Steel in Spark Plasma Sintering Procedure

16:30-16:50 I **Wu Wang,** Shenzhen Technology University, China
Structural Characterization and Design of High-entropy Thermoelectric Materials via Advanced Transmission Electron Microscopy

16:50-17:10 I **Thibaut DE RESSEGUIER,** CNRS - Institut Pprime, France
Shock response of additively manufactured Ni-based superalloys

17:10-17:30 I **Marika Schleberger,** University of Duisburg-Essen, Germany
Transition Metal Dichalcogenides: Microstructure as a Challenge and an Opportunity

17:30-17:50 I **Wolf Gero Schmidt**, Paderborn University, Germany
Modeling Ultrafast Dynamics in Excited Materials

17:50-18:10 I **Myonglae Chu,** IMEC, Belgium
Pixel-Level Design Considerations for Next-Generation SWIR Image Sensors Based on Monolithic Thin-Film Photodiodes on CMOS

18:10-18:30 I **Mikhail Fonin,** University of Konstanz, Germany
Electron correlation effects in highly-doped single-layer graphene

SESSION 03 — Energy Materials, Materials Chemistry & Computational Design | Surface Engineering, Coatings, Polymers & Materials Characterization

Session Chair: Dominic Bresser, Karlsruhe Institute of Technology, Germany

09:00-09:30 K **Uwe Glatzel,** University of Bayreuth, Germany
Knowledge Increase of 20 Years Research on High Entropy Alloys

09:30-10:00 K **Cristina IOJOIU,** CNRS, LEPMI, France
Single-Ion Polymer Electrolytes and Novel Polymer Architectures for Enhanced Stability and Performance for Next Generation Batteries

10:00-10:30 K **Jannick Rumeau,** University of Lyon, France
Eco-Design of polyester for recycling and Valorization of textile Waste

10:30-11:00 K **Steven LE VOT,** ICGM, University of Montpellier, France
Design of Nitroxides: Stability Issues in Aqueous Organic Flow Batteries

11:00-11:20 **Coffee Break**

Session Chair: Uwe Glatzel, University of Bayreuth, Germany

11:20-11:50 K **Dominic Bresser**, Karlsruhe Institute of Technology (KIT), Germany
Atomic Redox Centers in Metal Oxide Host Matrices as Alkali Metal-Ion Electrodes for Rechargeable Batteries

11:50-12:10 I **Melinda Desse**, Université Jean Monnet-CNRS, France
Extrusion of various polymer compositions for positive electrodes and electrolytes in all solid-state batteries

12:10-12:30 I **Nourou AMADOU**, Université Abdou Moumouni de Niamey, Niger
Shock Compression, Release And Spall Fracture Along The Closest Packed [111] Crystallographic Direction In Single Crystal Iron

12:30-12:50 I **Darcy A Hughes,** Independent Researcher, USA
Simple Scaling Function Unites Micro to Nano Deformation Structures for Strength in fcc and bcc Metals/Alloys

12:50-13:50 **Lunch Break**

Session Chairs: Bela Pecz, HUN-REN Centre for Energy Research (EK-MFA), Hungary &
Nikolai Sobolev, Universidade de Aveiro, Portugal

13:50-14:30 P **Yong Lei,** Technical University of Ilmenau, Germany
Well-defined nanostructured materials for photoelectrochemical energy conversion and storage devices

14:30-14:50 I **Ivana Čorak Ribić,** University of Zagreb Faculty of Textile Technology, Croatia
Bio-innovative modification of polyester using Amano Lipase and Chitosan

14:50-15:10	I	**Julia Ivanisenko,** Karlsruhe Institute for Technology, Germany Phase transformations and deformation mechanisms in nanocrystalline high entropy alloys
15:10-15:30	I	**Santanu Patra,** Technical University of Denmark, Denmark Gastric Fluid-Powered Galvanic Cells as Self-activating Biobatteries for Ingestible Devices
15:30-15:50	I	**Dezhi Li,** University of Warwick, UK Achieving strength-ductility synergy of steels through partial recrystallisation and stress introduction
15:50-16:10	I	**Martina Kocijan**, University of Rijeka, Croatia Engineering Functional Thin Films for Next-Generation Solar Photocatalysis
16:10-16:30		**Coffee Break**
		Session Chair: Martina Kocijan, University of Rijeka, Croatia
16:30-16:50	I	**Ernst Gamsjäger**, Montanuniversität Leoben, Chair of Mechanics, Austria Formation of reverted austenite in martensitic stainless steels
16:50-17:10	I	**Paola Castrucci**, University of Rome Tor vergata, Italy Bi2Se3 for broadband photodetectors
17:10-17:30	I	**Tilo Soehnel**, University of Auckland, New Zealand Building New Metal Oxide Architectures: Novel Ir and Ru Cluster Discovery
17:30-17:50	I	**Mangayil Rahul,** Aalto University, Finland Biological constraints and design strategies for advanced bacterial cellulose-based Engineered Living Materials
17:50-18:20	K	**Nikolai Sobolev,** Universidade de Aveiro, Portugal Material-related problems of neuromorphic technologies
18:30-19:00		**Closing Plenary @ MOCA: Conference Highlights, Poster Prizes & Outlook**
		END OF CONFERENCE

****LOOKING FORWARD TO SEE YOU ALL AT NEXT EDITION****

NEXT EDITION

AICMSN2027

3rd Annual International Conference on Materials Science and Nanoscience

April 26-28, 2027 | Athens, Greece

https://aicmsn2027.synergiasummits.com/