FUTURE MATERIALS ASIA 2026

Accelerating Next-Generation Materials Research & Development

7th International Conference on

Materials Science & Nanotechnology - Asia Edition

April 8-10, 2026 | Novotel Phuket Resort, Thailand

Preliminary Program Draft

Day-1, Wednesday — **April 8, 2026**

08:00 On-site Registration & Badge Pickup

09:00 Welcome and Opening Remarks

Chair: TBA

09:10 **Plenary: Soft Iontronics for Sensing and Energy Harvesting**
Hyunhyub Ko, Ulsan National Institute of Science and Technology, Republic of Korea

09:50 **Keynote: Cry Protein Crystals as a Platform for Revolutionizing Immobilized Enzyme Biocatalysis**
Michael Chan, The Chinese University of Hong Kong, Hong Kong

10:20 **Keynote: Natural Rubber Nanocomposites Based on ZnO-Decorated Carbon Nanotubes and Coupling Agent Interaction**
Charoen Nakason, Prince of Songkla University, Thailand

10:50 Networking & Coffee

Session I: Future Biomaterials - Biomedical, Medicine & Beyond

Chair: TBA

11:20 **Intracellular Peptide Self-Assembly for Anti-Cancer Therapy**
Ja-Hyoung Ryu, Ulsan National Institute of Science and Technology, Republic of Korea

11:40 **A Genetically Encoded pH-Responsive Antimicrobial Crystals to Combat *H. Pylori* Infection and Restore Gut Dysbiosis**
Marianne M. Lee, The Chinese University of Hong Kong, Hong Kong

12:00 **3D-Printed Carbon Microlattices: A Novel Scaffold Platform for Musculoskeletal Tissue Engineering**
Monsur Islam, Polytechnic University of Madrid, Spain

12:20 **PLAL-Synthesized Metallic Nanoparticles as SERS Platforms for Trace Detection of the Flavonoid Nobiletin**
Satyam Shinde, Pandit Deendayal Energy University, India

12:40	**Metabolites Quantifiable by Magnetic Resonance in Spinal Cord Injury Implanted with Plasma-Synthesized Polymer *In Vivo*** **Axayacatl Morales Guadarrama,** National Research Center in Imaging and Medical Instrumentation (CI3M), Mexico

13:00 **Group Photo** followed by **Lunch**

Session II: Advanced Materials for Energy Storage and Conversion

Chair: TBA

14:00	**Direct Repair of Spent Li-Ion Batteries** **Zheng Liang,** Shanghai Jiao Tong University, China
14:20	**Study of Hole Transport Layer for Highly Efficient Sn-Pb Perovskite Solar Cells** **Donghoe Kim,** Korea University, Republic of Korea
14:40	**Rational Backbone Planarization Toward Doping-Resilient Polymeric Hole Transport Layers for Scalable Perovskite Solar Cells** **Minjun Kim,** Kyonggi University, Republic of Korea
15:00	**Young Researcher Presentation: Electrochemical Properties of C-Si-N Ternary Composites as Negative Electrodes for Lithium-Ion Batteries** **Jang Jeewon,** Soonchunhyang University, Republic of Korea
15:15	**TBA**

15:25 **Session Break**

Session III: Future Polymeric Materials

Chair: TBA

15:40	**Polysaccharide/Molecularly Imprinted Polymer Composite Hydrogel Beads as Selective Tetracycline Adsorbents** **Joanna Kurczewska,** Adam Mickiewicz University, Poland
16:00	**Lignite Based Bicyclo [3.3.1] Nonanes for Treating Neurodegenerative Diseases and Cashew Nut Liquid Based "High Ortho-Novolacs" for Microelectronics and e-beam Lithography for Nano-Patterning and for Making Nano-Devices** **S V Eswaran,** FITT, IIT Delhi, India
16:20	**Structure–Property Relationships in PEDOT-Based Thermoplastic Composites: Effects of Matrix and Particle Morphology** **Karst Adele,** CNRS Institut Charles Sadron, France

16:40 **Poster Presentation and Networking Drinks** @Foyer

List of Posters

FMA 1	**Biogenic Cockle-Derived Calcium Chloride: A Potential Agent for Biomedical Applications** **Bridget Chizobam Nkeiruka Obitte,** University of Nigeria, Nigeria
FMA 2	**Development of a Serum-Derived Exosome Nanocarrier for Intracellular Delivery of Antibiotics Against Multidrug-Resistant *Escherichia Coli* Causing Neonatal Sepsis** **Pallabi Chatterjee,** UPES (University of Tomorrow), India
FMA 3	**Enhanced Acute and Late Performances of Everolimus-Eluting Bioresorbable Scaffold with 100-µm Strut in a Rabbit Iliac Artery** **Dong-Sung Won,** Asan Medical Center/University of Ulsan College of Medicine, Republic of Korea
FMA 4	**Effects of CHDM Chain Extender Composition on Properties of Bio-Based TPU** **Bohyeon Cho,** Korean Institute of Materials Convergence Technology, Republic of Korea
FMA 5	**Cellulose Nanofiber Aerogel from Banana Peduncle/Carbon Nanomaterials as Bio-Adsorbents for Effective Adsorption of Heavy Metal Ions** **Anjar Priyatmojo,** Institut Teknologi Bandung, Indonesia
FMA 6	**Molecular Dynamic Study of PEGDE/Ionic Liquid Based Electrochemically Debondable Epoxy Adhesive Systems** **Taeyoung Yoon,** Changwon National University, Republic of Korea
FMA 7	**Active Hyperparameters Training in Adaptive Physical Neural Networks** **Sheng-Chung Chen,** National Yang Ming Chiao Tung University, Taiwan
FMA 8	**Monolithic 3D CFETs with Reversible Stacking for Logic and Memory Integration** **Tzu-Ting Weng,** National Yang Ming Chiao Tung University, Taiwan
FMA 9	**Fluorine-Free Siloxane-Polymer Hetero-Structured Binder Enabling Durable High-Voltage Ni-Rich Cathodes** **Hyeong-Gyun Im,** Korea Electrotechnology Research Institute, Republic of Korea
FMA 10	**A Fluorine-Free Siloxane Nanohybrid-Type Binder Enabling Highly Stable Ni-Rich Layered Cathodes in Lithium-Ion Batteries** **Junho Jang,** Korea Electrotechnology Research Institute, Republic of Korea
FMA 11	**Pushing Energy Density Limits: Anode-Free Solid-State Battery Integrated with Amorphous Lithium Vanadium Oxide Thin-Film Cathode** **Behera Subhashree,** Dongguk University, Republic of Korea

Day-2, Thursday

April 9, 2026

09:00	**Introduction and Day 2 Opening Remarks**

Chair: TBA

09:10	**Plenary: Metal Organic Frameworks for Water-Remediation** **Patricia Horcajada,** IMDEA Energy, Spain
09:50	**Plenary: Tunable Interfaces in Nanolayered Bimetallics** **Irene Beyerlein,** University of California at Santa Barbara, USA
10:30	**Networking & Coffee**

Session IV: Advanced Materials for Environmental Sustainability and Clean Energy

Chair: TBA

11:00	**Innovation in Flux-Grown Crystalline Materials Contributing to Next-Generation Environmental and Energy Devices** **Katsuya Teshima,** Shinshu University, Japan
11:20	**Poly(2-Oxazoline)s as Multifunctional Polymers for the Synthesis of Functional Adsorbents in Environmental Applications** **Michal Ceglowski,** Adam Mickiewicz University, Poland
11:40	**Enhanced Pb(II) Removal from Water Using a Compressible Bio-Inspired Adsorbent** **Caroline Bertagnolli,** CNRS, France
12:00	**Multiscale Investigation of [DBNH][Maba] (3-Methylaminobutanoate) Protic Ionic Liquid for CO_2 Capture: Insights from MD and DFT** **Rohit Srivastava,** Pandit Deendayal Energy University, India
12:20	**Vanadium-Doped Titanium-Squarate MOFs for Enhanced Green Hydrogen Production via Defect Engineering** **Sergio Carrasco,** IMDEA Energy, Spain
12:40	**Thermoplastic Composite Materials for Hydrogen Storage Under Pressure** **Grohens YVES,** University of Southern Brittany, France
13:00	**Boiling and Condensation Heat Transfer Enhancement with Advanced Surface Structures in Nuclear Reactors** **ZHAO Jiyun,** City University of Hong Kong, Hong Kong
13:20	**Lunch**

Session V: Nanotechnology and Nanomaterials

Chair: TBA

14:20	**WS_2 & MoS_2 from 3D to 1D Structures: Curvature and Chirality Induced Properties of Nanotubes** **Alla Zak,** Holon Institute of Technology, Israel
14:40	**Dimensional Scaling Effects in Ultrathin Semiconductors** **Der-Hsien Lien,** National Yang Ming Chiao Tung University, Taiwan
15:00	**Programmable Patterning of Reconfigurable Microdroplets at Surfaces** **Young-Ki Kim,** POSTECH, Republic of Korea
15:20	Young Researcher Presentation: **Advanced Flexible Memristor RF Switch** **Shih-Chieh Chen,** National Yang Ming Chiao Tung University, Taiwan
15:35	**TBA**
16:00	**VISIT followed by Informal Dinner** (*Ticket Required)

Day-3, Friday

April 10, 2026

09:00	**Introduction and Day 3 Opening Remarks**

Chair: TBA

09:10	**Plenary: Epitaxial Metal/Semiconductor/Superconductor Heterostructures for Photonic, Plasmonic, and Quantum Applications** **Shangjr (Felix) Gwo,** Research Center for Applied Sciences, Academia Sinica, Taiwan

Session VI: Future Electronic, Optical & Magnetic Materials

09:50	**Keynote: Biomimetic Nano-Coral SERS Platform: Four-Stage Optical Amplification for Ultra-Sensitive Detection of Pesticide Leakage Pathways** **Jinsung Park,** Sungkyunkwan University, Republic of Korea
10:20	**A Monolithic Graphene/Germanium Junction Field Effect Phototransistor** **Zehao Song,** Hebrew University of Jerusalem, Israel
10:40	**Networking & Coffee**
11:00	**Antimony-Based Lead-Free Perovskite Thin Films for Highly Sensitive Ammonia (NH_3) Gas Detection** **Myungkwan Song,** Korea Institute of Materials Science, Republic of Korea
11:20	**Sol-Gel Based Nanosensors** **Aleksandra Lobnik,** Institute for Environmental Protection and Sensors (IOS) Ltd, Slovenia
11:40	**Towards a Comprehensive Multi-Technique Characterization of GaN HEMTs Through Correlated TEM-EDX, Nano-Auger, and XPS Analyses** **Kirene Gaffar,** Laboratoire Albert Fert, CNRS, Thales, Université Paris-Saclay, France

Young Researchers Presentations

12:00	**Ultrasensitive Electrochemical Detection of PFOA via Magnetically Enriched Poly(p-Phenylenediamine) Nanoparticles** **Wonjun Jo,** Sungkyunkwan University, Republic of Korea
12:15	**Ultra-Sensitive Manganese Ion Detection via a Vibration-Assisted Portable Sensor** **Daeil Park,** Sungkyunkwan University, Republic of Korea
12:30	**Ultrasensitive Mercury Detection via DNA-Engineered SERS with Coffee-Ring Signal Amplification** **Kyunghwan Chai,** Sungkyunkwan University, Republic of Korea
12:45	**Enabling High Performance Tellurium p-FET Through Interface Electrostatic Engineering** **Sung-Tsun Wang,** National Yang Ming Chiao Tung University, Taiwan

13:00	**PVD-Grown Solid Electrolyte for High-Mobility Proton-Driven Oxide Transistors** **Yu-Cheng Chang,** National Yang Ming Chiao Tung University, Taiwan	
13:15	**Closing Remarks**	
13:25		**Lunch & Departure**