

Materials Oceania 2026	
November 09-11, 2026 Hilton Tokyo Odaiba, Japan	
Conference Program	
DAY – 1, 09, November, 2026	
15:00 Onwards	Welcome Reception
16:00	Opening Remark by Associate Professor Asakura, Associate Professor Kaneti, and Dr. Emtiaz
DAY – 2, 10, November, 2026- Room A	
08:30 - 09:00	Registrations
Session: Energy and Environmental Materials	
09:00-09:20	Boron-doped Diamond Powder-packed Electrolysis Flow Cell for Water Treatment
	Takeshi Kondo, Tokyo University of Science, Japan
09:20-09:40	Efficient Low-Voltage CO₂-to-CO Electrolysis Using a Polymer-Coupled Mn Molecular Catalyst
	Keita Sekizawa, Toyota Central R&D Labs, Japan
09:00-10:00	Engineering Iron Oxides: The Roles of Metal Elements in Solid Solutions and Phase Separation
	Seishi Abe, Research Institute for Electromagnetic Materials, Japan
10:00-10:20	From Chemical Solution Processes to Functional Nanostructured Thin Films for Energy and Environmental Applications
	Fabien Grasset, National Institute for Materials Science, Japan
10:20-10:40	Coffee Break
10:40-11:00	Bifunctional Metal-Organic Frameworks for Electrochemical Energy Storage and Green Hydrogen Generation
	Christine Young, National Yunlin University of Science and Technology, Taiwan
11:00-11:20	Beyond PEO: Redesigning Polymer Electrolytes for Scalable Solid-State Batteries
	Lee Sangyoung, Yonsei University, South Korea
11:20-11:40	Multidimensional Hierarchical Metal nanoparticles/two-dimensional Transition Metal Dichalcogenide Nanocomposites as Electrocatalysts for Efficient Hydrogen Evolution Reaction
	Kung-Hwa Wei, National Yang Ming Chiao Tung University, Taiwan
11:40-12:00	Role of Oxygen in Enhancing Catalytic Activity for Ammonia Synthesis: The Case of Ru/CaH₂-2xO_x
	Takaya Ogawa, Kyoto University, Japan
12:00-13:00	Lunch Break
13:00-13:20	Machine-Learning Molecular Dynamics with Born Effective Charges for Predicting Dielectric and Ionic Properties of Complex Materials
	Ryoji Asahi, Nagoya University, Japan
13:20-13:40	Digital Twin-Guided Materials and Electrode Design for High-Energy-Density Rechargeable Batteries
	Yong Min Lee, Yonsei University, South Korea
13:40-14:00	Metal-Organic Carboxylates: From Hydrated Ion Conductors to Heterometallic Cluster Assemblies
	Nobuto Yoshinari, The University of Osaka, Japan

14:00-14:20	Development of Cost-Effective and High-Energy Cathodes for Next-Generation Rechargeable Battery
	Hiroaki Kobayashi, University of Tokyo, Japan
14:20-14:40	Scalable Ternary-Solvent Growth of Ultrathin 2D Perovskite Crystals for Custom Optoelectronic Functionalities
	Sudha Mokkapati, Monash University, Australia
14:40-15:00	Coffee Break
15:00-15:20	Hydrophobic Modification of MOF-based Photocatalysts for H₂O₂ Production
	Yoshifumi Kondo, University of Osaka, Japan
15:20-15:40	Graphene coating of Zn Metal Powder for Aqueous Zn-ion Batteries
	Junyoung Mun, Sungkyunkwan University, South Korea
15:40-16:00	Partially Thiolated, Atomically Precise Gold Clusters as Model Heterogeneous Catalysts
	Shinya Masuda, Institute of Science Tokyo, Japan
16:00-16:20	Defect Engineering in Electrocatalysts for Sustainable Energy Conversion
	Xiaoyan Jin, University of Seoul, South Korea
16:20-16:40	Spin Polarized Chiral Materials for Catalytic/Asymmetric Catalytic Multicarbon CO₂ Reduction
	Yuxi Fang, Shanghai Jiao Tong University, China
16:40-18:00	Poster Presentations
	DAY – 2, 10 November, 2026 Room B
	Session: Biomaterials, Bioengineering and Bio-related Applications
09:00-09:20	TBA
	Alberto Bianco, Université de Strasbourg, France
09:20-09:40	Next-Generation Polymeric Materials Development and Their Clinical Applications
	Dokyoung Kim, Kyung Hee University, South Korea
09:00-10:00	Biopolymer Piezoelectric Technology for Health Applications
	Massimo De Vittorio, Istituto Italiano di Tecnologia, Italy
10:00-10:20	Diamond-Like Carbon Coating Modulates Staphylococcus aureus Biofilm Formation on Polymeric Medical Substrates Under Static and Flow Conditions
	Yasuhiro Fujii, Okayama University of Science, Japan
10:20-10:40	Coffee Break
10:40-11:00	Biomaterials from Extreme Environments: The Promise of Microbial Biopolymers
	Sandra Pucciarelli, University of Camerino, Italy
11:00-11:20	Next-Generation Molecularly Templated Materials From Biomimetics to Biosuperiors
	Boris Mizaikoff, Ulm University, Germany
11:20-11:40	Label-free and Image-based Electrical Characterization of Cell Membrane
	Mashairo Motosuke, Tokyo University of Science, Japan
11:40-12:00	Molecular Design of Porphyrin-Containing Glycopolymers for Biomedical Applications
	Koji Matsuoka, Saitama University, Japan
12:00-13:00	Lunch Break
13:00-13:20	Molecular Engineering Enables Bright, Narrow-Emissive Carbon Dots for Multiplexed Super-Resolution Mapping of Organelle Dynamics
	Yang Tian, School of Chemistry and Molecular Engineering, China
13:20-13:40	Beyond Surface Modification: Designing Titanium Biointerfaces for Dentistry
	Peng Chen, Tohoku University, Japan

13:40-13:55	Photoinactivation of <i>S. aureus</i> by molybdenum cluster and graphene oxide coatings Émilie Fragnaud, University of Rennes, France
13:55-14:10	A evaluation method for lipid membrane viscosity via the diffusion of particles adsorbed on lipid membranes Taichi Nishizawa, Tohoku University, Japan
14:10-14:25	Iron-Based Layered Double Hydroxide Nanoparticles Co-Loaded with S-Nitrosoglutathione: A Multifunctional Sonosensitiser Platform with Tunable ROS Generation and T2-Weighted MRI Contrast Firasti Sumadi, Australian Institute for Bioengineering and Nanotechnology
14:25-14:40	Mesoporous Gold SERS Platform for Extracellular Vesicle-based Detection of Ovarian Mahedi Hasan, The University of Queensland, Australia
14:40-15:00	Coffee Break
	Session: Electronics and Optical Materials
15:00-15:20	Van der Waals assembly of 2D materials for reconfigurable electronics Joohoon Kang, Yonsei University, South Korea
15:20-15:40	Development of Small-molecule and Polymeric Semiconductors for High-performance In Hwan Jung, Hanyang University, South Korea
15:40-16:00	III–V Thermophotovoltaic Cells for Low-Cost Thermal Energy Conversion Systems Jihun Lim, Jeonbuk National University, South Korea
16:00-16:20	Narrow gap semiconductor for IR imaging and sensing: A review Gravrand Olivier, Univ. Grenoble Alpes, France
16:20-16:40	Functional Development of Unexplored Materials Utilizing Informatics Methods: With a Isao Ohkubo, National Institute for Materials Science, Japan
16:40-18:00	Poster Presentations
	DAY – 2, 10 November, 2026- Room C
	Session: Nanotechnology and Nanoscience
09:00-09:20	Hybrid Electrode Systems Using Unique Inorganic Materials for Nanoenergy Technology Hyojong Yoo, Hanyang University, South Korea
09:20-09:40	Creation of Highly Dispersed Ni Nanoparticles with Various Unique Catalysis Takafumi Yatabe, The University of Tokyo, Japan
09:40-10:00	Localized Electrochemical Imaging and Active-Site Analysis by Scanning Electrochemical Cell Microscopy Akichika Kumatani, Tohoku University, Japan
10:00-10:20	Structural Effects of Cu Nanoclusters in Electrochemical Nitrate Reduction Reaction toward Ammonia Synthesis Tokuhisa Kawawaki, Yokohama City University, Japan
10:20-10:40	Coffee Break
10:40-11:00	Hepatocyte-Specific Nanoparticle for Sensitive and Precise Hepatobiliary Magnetic Resonance imaging Haiming Fan, Northwest University, China
11:00-11:20	Why Is Blue Fluorescence generated by Carbon Quantum Dots and Amine-Branched Toyoko Imae, National Taiwan University of Science and Technology, Taiwan
11:20-11:35	In situ-grown amorphous oxide trilayer for self-rectifying resistive switching Seungwon Lee, Jeonbuk National University, South Korea

11:35-11:50	Channel-length scaling effects on the electrical performance of top-gate In-Ga-Zn-O thin Jinuk Kwon, Jeonbuk National University, South Korea
11:55-12:10	Characterization of Joule heating in submicron metal lines Hyunho Jung, Jeonbuk National University, South Korea
12:10 -13:00	Lunch Break
13:00-16:40	Special Session (ERATO)
16:40-18:00	Poster Presentations
MO1	Sustainable Ir-catalyzed Hydroaminimethylation of Olefines with Formic Acid as H₂-source via Ligand Architecture Tuning Ye Liu, East China Normal University, China
MO2	Detachable Block Copolymer Distributed Bragg Reflectors for Wavelength-Matched SERS Sensing YunGyu Jeong, Yonsei University, South Korea
MO3	Analysis of Ammonia Dispersion and Water Curtain Mitigation Following a Safety Valve Release from an Ammonia Storage Tank Keunwon Lee, Ajou University, South Korea
MO4	Effect of Laser Polishing Process Parameters on the Surface Roughness of Martensitic 420J2 Stainless Steel Kyumin Kim, Korea Institute of Industrial Technology, South Korea
MO5	Giant Piezoresponse in Nanoporous (Ba,Ca)(Ti,Zr)O₃ Thin Films Enabled by Pore-Induced Lattice Strain Yukana Terasawa, Kumamoto University, Japan
MO6	Thermomechanical and optical properties of germanotellurite glasses doped with Ho³⁺ and co-doped with Ho³⁺/Yb³⁺/Tm³⁺ Barbara Klimesz Politechnika Opolska, Poland
MO7	Methodology for measuring Joule heating from electrical power dissipation Joowon Lee, Jeonbuk National University, South Korea
MO8	Dendrite-Free Lithium Metal Cycling Enabled by a new novel Ionic Additive Dongwon Lee, Soongsil University, South Korea
MO9	Analysis of Ammonia Dispersion and Water Curtain Mitigation Following a Safety Valve Release from an Ammonia Storage Tank Seojin Lee, Ajou university, South Korea
MO10	Development of a Corrosion Testing and Evaluation Method for Metallic Materials Considering Ammonia Handling Environments Yoomin Oh, Ajou University, South Korea
MO11	ulfonated Fe-MOF–Polytriazole Hybrid Membranes with Enhanced Proton Conductivity: Structure–Property Relationships and Application Potential Riddhi Kamble, Indian Institute of Technology, Kharagpur, India
MO12	Entropy-Laddered High-Entropy Materials for Reliable Electrochemical Energy Storage Across Wide Temperatures Jong G. Ok, Seoul National University, South Korea
MO13	Skin-conformal nanofiber-based adhesive electronics with octopus-inspired 3D suction cups for enhanced transdermal delivery Minwoo Song, Sungkyunkwan University, South Korea

MO14	Effective HA-Loading Strategy in Internal Dome-Assisted Suction Cups for Enhanced Transdermal Delivery Under Vertical Adhesion and Vibration
	Minjin Kim, Sungkyunkwan University, South Korea
MO15	Discovery of a Physicochemically Robust Co-reactant for Reliable Electrochemiluminescence
	Sang hyeon Jeon, Soongsil University, South Korea
MO16	Anisotropic Characterization of Makino Bamboo/Epoxy Composites: Fiber Volume Fraction Effects and Transverse Strength Modeling
	wen-biin young, National Cheng Kung University, Taiwan
MO17	Policy-Adjusted Economic and Life-Cycle Assessment of Green, Blue, and Gray Hydrogen Production in Australia
	DongHyun Kim, Yonsei University, South Korea
MO18	Interpretable Machine Learning-Guided Catalyst Design and Process Optimization for Furfural Hydrogenation
	Youngkeun Kim, Yonsei University, South Korea
MO19	Automated Prediction of Coverage-Dependent Binding Energies for Self-Consistent Microkinetic Modeling
	Khayankhyarvaa Narmandakh, Yonsei University, South Korea
MO20	Heterointerface site-triggered lattice oxygen activation for enhanced alkaline water oxidation
	Wei Tao, Yonsei University, South Korea
MO21	Multifunctional MOF/Glycolipid Nanocomposite Topical Gel for Potent Antimicrobial, Antibiofilm and Wound Healing Activities
	Shivani Chauhan, Dr. B. R. Ambedkar National Institute of Technology, India
MO22	Synthesis of Chiral Gold Nanostructures on Gold-Coral-Coated Transparent Conductive Oxide Substrates via [AuCl₄]⁻ and Cysteine Interactions for Enhanced Chiral Sensing
	Wang Junhe, Waseda University, Japan
MO23	Effect of Cysteine Oxidation Products on the Formation of Electrodeposited Chiral Gold Nanostructures
	Tianji Zhang, Waseda University, Japan
MO24	Examination of Time-Reversal Symmetry in the Pseudogap of Cuprate Superconductors using G-HAUP
	Komei Okano, Waseda University, Japan
MO25	Transmittance and Coupling Efficiency of Metalenses with Inter-Nanopillar Filling
	Masaki Okamoto, Waseda University, Japan
MO26	Dendrite-Free Lithium Metal Cycling Enabled by a New Novel Ionic Additive
	Park Junseo, Soongsil University, South Korea
MO27	Dendrite-Free Lithium Metal Cycling Enabled by a New Novel Ionic Additive
	Jinyoung Choi, Korea Institute of Industrial Technology (KITECH), South Korea
MO28	TBA
MO29	TBA
MO30	TBA
	Closing of day 2

	DAY – 3, 11th, November, 2026- Room A
	Session: Energy and Environmental Materials
09:00-09:20	Chemo-mechanical failure mechanisms in high-performance Li-ion batteries Cheng Yan, Queensland University of Technology , Australia
09:20-09:40	Electrochemical CO₂ Reduction to C₂ H₄ Using Cu-Based Electrocatalysts Tsutomu Minegishi, The University of Tokyo, Japan
09:00-10:00	Development of Organic Energy Materials Kouki Oka, Tohoku University, Japan
10:00-10:20	Sulfided-ZnBiMo heterostructures for the photocatalytic production of hydrogen from water splitting Arturo Barrera Rodríguez, UNIVERSIDAD DE GUADALAJARA, Mexico
10:20-10:40	Rational Design of La-Based Non-Equimolar High-Entropy Metal Oxides for Efficient Oxygen Evolution Aditi Singhal, Ahmedabad University, India
10:40-11:00	Particle-Selective Consolidation with a Citrate-Crosslinked β-Cyclodextrin Co-Binder for Dry-Processed Thick Cathodes Seho Sun, Yeungnam University, South korea
11:00-11:20	Coffe Break
11:20-11:35	Stable In-Water Operation of Acid-Treated PEDOT:PSS Thermoelectric Films Jongan Choi, Pukyong National University, South Korea
11:35-11:50	Self-Healing and Recoverable Organic Thermoelectrics Enabled by Single-Walled Carbon Nanotube-Based Ternary Composites Jihoon Shin, Pukyong National University, South Korea
11:50-12:05	Electronically Conductive Composite Binder for High-Performance Silicon-Based Electrodes in Lithium-Ion Batteries Seungyeop Choi, Yonsei University, South Korea
12:05-12:20	Sustainable Cherry Blossom-Based Triboelectric Nanogenerator for Self-Powered Energy Harvesting and Intelligent Human–Machine Interfaces Omkar Ashok Patil, Jeonbuk National University, South Korea
12:20-12:35	Rational Design of Large-Format Sulfide-Based Solid-State Batteries for Low-Temperature Operation Yongjun Kwon, Yonsei University, South Korea
12:35-12:50	Durable Anticorrosion Coating for Metallic Substrates Kwang Keat Leong, The University of Queensland, Australia
12:50-13:05	In-Situ Electrochemical Transformation of HKUST-1 into Mixed-Valence Oxide-Derived Copper for Selective CO₂-to-C₂ + Conversion Huangang Lin, UNSW, Australia
13:05-13:20	Balancing Transparency and Catalytic Activity in NiFeCoO_x Cocatalysts for Photoelectrochemical Water Oxidation Koichi Yoshiyama, University of Miyazaki, Japan
13:20-13:35	TBA
13:35-13:50	TBA
14:00 Onwards	Sayonara Party

[illegible]

	DAY – 3, 11 November, 2026- Room C
	Session: Porous materials
09:00-09:20	Coupling Mesoporosity and Amorphous Disorder in High-Entropy Alloy Films Toward Highly Efficient Methanol Electrocatalysis Lintang Sakti, The University of Queensland, Australia
09:20-09:40	Synthesis of Single-Crystalline Ordered Nanoporous Metal Oxides by Confined Crystal Growth inside Silica Colloidal Crystals Takamichi Matsuno, Waseda University, Japan
09:00-10:00	Ultrasonic Monitoring of Zeolite and MOF Crystallization Martin Hartmann, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
10:00-10:20	Comparison of four types of alumina adsorbents developed for domestic production of ⁹⁹Mo/^{99m}Tc Fukumitsu Nobuyoshi, Kobe Proton Center, Japan
10:20-10:40	TBA
10:40-11:00	TBA
11:00-11:20	Coffee Break
	Session: Structural Materials
11:20-11:40	Cu Precipitation and Grain Boundary Phosphorus Segregation upon Direct Ageing of Laser Powder Bed Fusion 17-4 PH Stainless Steel Vitor Rielli, UNSW Sydney, Australia
11:40-12:00	Design of Structural Colloids as Catalytic Support Kanao Watanabe, Tohoku University, Japan
12:00-12:20	Super-Resolved Real-Space Evaluation of Exciton Migration in Organic Solid Materials Syoji Ito, The University of Osaka, Japan
12:20-12:40	Magnetocaloric Materials for Clean and Efficient Cooling: The Promise of HoAl₂ and HoB₂ Mahboobeh Shahbazi Manshadi, University of Queensland, Australia
12:40-13:00	TBA
13:00-13:15	Data Assimilation-assisted Multi-Phase-Field Simulation of Grain Growth: Estimation of Anisotropic Grain Boundary Mobility and Energy Falak Beigh, Indian Institute of Technology Hyderabad, India
13:15-13:30	Microstructural Evolution and Mechanical Performance of High-Entropy Dual-Phase Boride-Carbide Ultra-High Temperature Ceramics Kunwar Pratap Singh, Indian Institute of Technology Kanpur, India
13:30-13:45	Electric-Field Directed Assembly in Fluorine-containing Block Copolymer Films Mingeun Park, Yonsei University, South Korea
13:45-14:00	Fast Fabrication of Eu₂O₃-Doped Silicate Glass Scintillator Prepared by Microwave Melting Technique Nakarin Singkiburin, Nakhon Pathom Rajabhat University, Thailand
14:00 Onwards	Sayonara Party



