European Materials Research Society

2026 Spring Meeting

May 25 - 29
Strasbourg Convention Centre

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SYMPOSIUM H

Interdisciplinary approaches in materials science for addressing energy/ environmental challenges

Oral sessions : ORCHESTRE - GROUND FLOOR
Poster sessions : ETOILE - FIRST FLOOR

Symposium Organizers:

Andreas BORGSCHULTE, Empa Swiss Federal Laboratories for Materials Science and Technology, Switzerland

Astrid PUNDT, Karlsruher Institut für Technologie (KIT), Institut für Angewandte Materialien-Werkstoffkunde, Germany

Shin-ichi ORIMO (Main organizer), Advanced Institute for Materials Research (WPI–AIMR), Tohoku University, Japan

Symposium Sponsor:

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Monday May 25

HO1 Session 1

Chairperson(s): ORIMO Shin-ichi

View session abstracts

08:30	866	«The role of hydrogen in the global energy transition» **ZÜTTEL Andreas (Invited)**
09:10	987	25 Years of Metal-Organic Frameworks for Cryo-Adsorption Hydrogen Storage **HIRSCHER Michael (Invited)**

Monday May 25

HO2 Session 2

Chairperson(s): AKAGI Kazuto

View session abstracts

10:30	1592	In-situ backside electrochemical hydrogen charging cell for studying local hydrogen-materials interactions: a correlative microscopic approach based on Secondary Ion Mass Spectrometry **SURESH KUMAR Athira**
10:45	1429	Hydrogen Embrittlement and Cryogenic Reliability of 304 Stainless Steel for Liquid Hydrogen Transport Applications **SCHULZ Camelia**
11:00	1500	Intelligent design of electron-rich materials for green ammonia catalytic synthesis **WANG Junjie**
11:15	258	Monitoring, Characterization, and In-Vitro Toxicity Assessment of Particulate Matter Emissions from Lithium-Ion Battery Recycling **HUANG Tianle**
11:30	1674	Interfacial engineering of NASICON-type electrolyte via metallic sintering aid for next-generation lithium-ion batteries **CHEN Yen Lin**

Monday May 25

HO3 Session 3

Chairperson(s): SUEMITSU Maki

View session abstracts

14:30	2415	Development of Lithium Nickel Manganese Oxide Cathode and Nickel Vanadate Mixed Metal Oxide Anode materials for Rechargeable Lithium-Ion Batteries **DAS Siddhartha**
14:45	2800	Sustainable Electrolyte Design Strategies Using Deep Eutectic Systems for Aluminum-Ion Batteries **NAMACHIVAYAM Karthik**
15:15	2636	The influence of grain boundaries on hydrogen absorption in Mg and ZK60 at low and moderate temperatures **GUARDI Giorgia**
15:30	864	Neutron imaging for e-fuels **LEE Jongmin**

Monday May 25

HPO1 Poster session 1

View session abstracts

16:15	01_1021	Synthesis and engineering of hybrid heterostructures for energy harvesting applications **SYNGELAKIS Ioannis**
16:15	02_103	Search for superconducting ternary hydrides at moderate and low pressures with EDDPs **CAUSSE Maelie**
16:15	03_1033	A new electromagnetic method for analyzing urban road dust **SOLECKA Barbara**
16:15	04_1037	High-Performance Polydiacetylene Organic Cathode for Zinc-Ion Batteries **Samage Anita**
16:15	05_108	Efficient Water Desalination and Wastewater Treatment with Solar Evaporators **SHI Weiwei**
16:15	07_1133	Harmonic Hydrogen: Periodic excitations unravel hydrogenation reactions **BORGSCHULTE Andreas**
16:15	08_114	Conductive Textile Embedded with Bioinspired Wettability for Prolonged and Energy E?cient Thermal Management **SARKAR Debasmita**
16:15	09_1190	Microstructural evolution and mechanical properties of ductile iron subjected to quenching & partitioning and austempering **KARUNA NIDHI Kumar**
16:15	10_1238	Piezoelectric Electrospun Biopolymer Nanofibers with Covalent Organic Framework dispersions for high performance CO2 adsorption **CHUA Zhan Au**
16:15	11_1239	Chemical Recycling of PVC: From Polymer Recovery to Advanced Polymer Reprocessing and Applications **BON Léo**
16:15	12_1266	Low Thermal Conductivity in Single Crystalline Mg3Bi2 and Its Thermopower Enhanced by Electron-Phonon Interaction **LIU Huili**
16:15	13_1331	Influence of Relative Content of Ni and Mn on Microstructure-Property Correlation in medium-Mn Lightweight Steels **KUMAR Navanit**
16:15	14_1348	Evaluating NaCl Residue Accumulation and Its Role in Corrosion Risk on Superhydrophobic Micropillar Surfaces **VAEZ GHASEMI Fariba**
16:15	15_1361	Development of Durable, Non-Corrosive, and Environmentally Friendly Dust-Phobic Coatings **CHEHREHSAZ Yalda**
16:15	16_1388	Ultrasonic Synthesis of High Entropy Sulfide as Efficient Catalysts for Sulfion Oxidation based on Hard Soft Acid Base Theory **KWON Junheyok**
16:15	17_1449	Novel Magnetic Diamond Composite Abrasives for High-Efficiency Magnetorheological Finishing of SiC: Design, Preparation and Performance **WANG Chao**

16:15	18_1467	Aluminum waste based hydrogen production **GRISCENKO Nikita**
16:15	19_1488	Instant Solid-Solid Joining of Lithium Metal and Oxide Electrolyte **CHENG Eric**
16:15	20_1503	Structure-Driven Modulation of Electrical Behavior in ABO3-Type Rare-Earth Indates **CHAHAL Jyoti**
16:15	21_159	Wetting of nitride ceramic with medium entropy alloys **STESYUK Tatyana**
16:15	22_1644	AI-Assisted SEM–EDX Analysis for Quantitative Classification of MXene Energy Materials **DEEBANSOK Siraprapha**
16:15	23_1650	Design and characterization of a new, sustainable, bio-inspired, antifouling silicone-based coating for marine hulls **BARLETTA Francesco**
16:15	24_1686	Innovative Methods to improve TMT bar quality to save Energy and Environment **AKESHKUMAR Burle A M B**
16:15	25_1694	Structural Optimization of V2O5 Quantum Dot-Sensitized TiO2 Nanorod Heterojunctions for Efficient Betavoltaic Cells **WANG Na**
16:15	26_1699	Fiber-based Plasmonic Microreactor for Flow Chemistry **ADOLFS Veronika**
16:15	27_1707	"Big" Thermal Bridge Method for Multiscale Thermal Measurement **GUO Haichang**
16:15	30_1826	Research on the Effects of Element Substitution and Au Addition on the Structural Optimization and Hydrogen Storage Properties of Ti-V Based Alloys **WANG Guo An**
16:15	31_186	Energy-Efficient Water Remediation via Photothermal/Photocatalytic Peroxymonosulfate Activation Using SrFe12O19@Ni-P **RIGUAL-MIRET Jordi**
16:15	32_187	Terahertz Charge Transport Dynamics in structural architecture Graphene: for Oil Field Applications **PARIDA Manas Ranjan**
16:15	33_1872	Study of Defect Induced Electrochemical Performance of Sr2-xFeCoO6-d with Suitable Current Collector **KUMAR Pramod**
16:15	34_1930	Electrode Engineering using a PEDOT-PSSTFSI functional and redox-active binder for aqueous supercapacitor applications **DUTTA Swagata**
16:15	35_1962	High-Performance Fully Printed Organic Electrochemical Transistors for Electrochemical Sensing **ESKANDARI Ali**
16:15	36_1969	Recycled-Waste-Derived Molybdenum Carbide Nanoparticles obtained by Pulsed Laser Ablation in Liquids for Hydrogen Evolution Reaction **IACONO Valentina**
16:15	37_2014	Bridging Bio-Nanotechnology and Energy Storage: Advanced Material Design and In-situ Diagnostics of Solid-State Batteries **HUANG Wen-Tse**

16:15	38_2065	Short time acid recovery treatments for degraded polymer electrolyte membrane (PEM) water electrolysis cells **MITSUISHI Yuya**
16:15	39_2066	The restoration of PEM cell performance by acid and polymer-based dispersant **GOTO Taiga**
16:15	40_2072	Composition-Dependent Morphological Evolution of Ni–Cu Alloy Particles during Chemical Vapor Synthesis **YANG Seung-Min**
16:15	41_2078	Multifunctional Sm3+-Activated SrCeO3 Phosphors for Energy Conversion and Solid Oxide Fuel Cell Applications **TRIPATHI Arpita**
16:15	42_210	High Energy Storage Performance and Superior Thermal Stability in Lead-Free (1-x)[0.94(Bi0.5Na0.5) TiO3–0.06BaTiO3]–xBa(Mg1/3Nb2/3)O3 Ferroelectric Ceramics **MONDAL Prosun**
16:15	43_2103	Transforming Polyethylene Foam into a Hard Carbon Anode: A Study on its Structure and Sodium Storage Behavior **MOON Seungjae**
16:15	44_2106	A Comparative Study of Molecular Dynamics Approaches for Melting Point Estimation in Organic Crystals **Chi Nahyun**
16:15	45_212	Engineered Carbon Dots for Sustainable Environmental Sensing, Remediation, and Smart Nanodevices **MANAYIL PARAMBIL Ajith**
16:15	46_2123	Rapid Fabrication of Highly Ordered Graphitic Nanostructured Membranes from Lyotropic Liquid Crystals with Pi-Conjugated Mesogens **ZHANG Yizhou**
16:15	47_219	Electrocatalytic Valorization of Levulinic Acid through Integrated Catalyst–Solvent–Temperature Control **VILARIÑO Pol**
16:15	48_2232	Quantifying SEM images of metallic structures based on persistent homology **AKAGI Kazuto**
16:15	49_2239	Synthesis of Bioactive 2,4-disubstituted Quinolines by Ruthenium(II) Homobimetallic-NHC **KARAN Saswata**
16:15	50_224	An Open-Air Laboratory for Innovative Renewable Energy Technologies **SHARMA Parsu Ram**
16:15	51_2251	LMWG-Derived Cobalt Metallogel as a Robust Electrocatalyst for Overall Water Splitting **PRADHAN Koshis Kumar**
16:15	52_2259	Interface-engineered anodes for ultralow-Iridium proton exchange membrane water electrolyzers **DOO Gisu**
16:15	53_2263	Evaluating Radio Frequency O2-Plasma Treatment of Carbon Felts: A Stoichiometric Insight into C1s and O1s XPS with Correlated Raman and SEM Characterization **ALEM Ahmad**
16:15	54_2285	Synthesis, Characterization and Catalytic Application of a Low Molecular Weight Copper(Cu)-Metallohydrogel **SAHAW Anannya**

16:15	55_231	Tailoring toughening mechanisms for enhanced mechanical performance in an Al2O3-B4C-ZrO2 composite fabricated via hot pressing **MURUGESAN Ayyappan**
16:15	56_2369	Unraveling Nitrogen Reduction Pathways on Transition Metal Electrocatalysts: Insights from First-Principles Calculation **GORAI Deepak**
16:15	57_2388	Electrochemical evaluation of mixed-metal oxide Ni2V2O7 nanorods anchored on electrophoretically deposited porous carbon black for high-performance lithium-ion battery anodes² **ANAND Rohit**
16:15	58_2409	Effect of 100 h cyclic exposure at 1250 and 1400 °C on oxide scale evolution and post-oxidation mechanical behaviour of 2.5D and 3D Cf/SiC composites **KRISHNA Ramya**
16:15	59_243	High-Performance Polydiacetylene Organic Cathode for Zinc-Ion Batteries **Samage Anita**
16:15	60_2443	Sodium-ion Storage Mechanisms in Biomass and Synthetic Polymer-Derived Hard Carbon. **OVHAL Manoj**
16:15	61_2462	Fabricating room-temperature gas sensing devices for ppb level detection of NOx utilizing 2D Molybdenum dichalcogenide nanomaterials **DUTTA Priyanka**
16:15	62_252	Water Purification Using MXenes Based Nanomembranes **BENFDILA Arezki**
16:15	63_2539	Electrode Structures Governing Capacity and Lithium Diffusion Parameters in LiFePO4 Cathodes **GUL Mahwash**
16:15	64_2640	Effect of Heat Treatment on the Microstructure and Properties of a Scrap-Based Al–85i–0.25Mg High-Pressure Die-Cast Alloy **YOON Youngok**
16:15	65_267	A study of magnetism and magnetocaloric effect in NdVO4 **OUBAD Sokayna**
16:15	66_2680	Novel gating mechanism employed on nano bio-FET towards real-time, point-of-care diagnostics in human whole blood **GARIKA Vijay Kumar**
16:15	67_270	Electrocatalytic reduction of carbon dioxide over copper delafossite complex electrode surface **SUBRAMANIAN Sakthinathan**
16:15	68_2701	Oxide-Coated Metallic Nanowire Networks: Sustainable Transparent Electrodes and Percolation-Driven Optical Functionalities for Energy Applications **Bellet Daniel**
16:15	69_2723	Eco-Friendly Electrode Materials: Lignin Hard Carbon Composites Integrated with MoS2 for Superior Energy Storage **GASPAR Diana**
16:15	70_279	Maya Blue-Inspired Hybrid Coating for Robust and Superhydrophilic Solar Evaporators Using Commercial Black Acrylic Paint **Lee Seung-Mo**
16:15	71_2798	Mechanistic Insights Uncovering Balanced Charge Transfer at Photoelectrode/Electrolyte Interface for Efficient Unassisted Overall Water Splitting **SAINI Ankush**

16:15	73_2850	Altered-Gravity-Driven Hydrothermal Crystallization of MoO3 Using a Rotating Positioning Machine **ELOCLA Norhan**
16:15	74_2854	Applicability range of potential step chronoamperometry for determining reliable diffusion coefficients of hydrogen in host metals **SEILER Magdalena**
16:15	75_2862	Green Catalytic Microwave Pyrolysis of PLA for Circular Materials Recovery: From 3D-printing scrap to fuel-relevant liquids **ABAKAR Ruaa**
16:15	76_2937	High-energy milling synthesis of Ce0.9Zr0.1O2 and its impact on electrostriction performance **MARQUES Larissa**
16:15	77_2984	Polydopamine-Assisted Control of Copper Reconstruction for Enhanced Stability and C2+ Selectivity in CO2 Electroreduction **MORADLOU Omran**
16:15	78_2998	Coordination-Driven Copper Hydrogels as Recyclable Catalysts for CS2 and CO2 Fixation via Epoxide Cycloaddition **SAMANTA Mahesh**
16:15	79_3001	Core-Shell Structured Mn-Metallogel as a Flexible Soft Semiconductor **GAZI Samim Javed**
16:15	80_303	Surface Enhancement of Industrial-Grade Aluminium through Thermochemical and Precipitation Hardening Treatment **MC Gowri Shankar**
16:15	81_304	Mechanics-Guided and Data-Driven Characterisation of Bio-Inspired Soft Functional Materials **KUMAR Nitesh**
16:15	82_3045	Tailoring Defects in Bismuth-Based Cs3Bi2Br9 Perovskite-Inspired Materials through Cooling-Rate Modulation for Photo-Supercapacitors **KUMAR Tanuj**
16:15	83_3050	Harnessing Chalcogenide based Hybrid Organic-Inorganic Nanocomposites for Advanced Gas Sensing applications and Breathomics **DUTTA Priyanka**
16:15	84_3061	Biomass-Derived Functionalized Porous Carbon Microspheres as Electrode Materials for Electro-Fenton Wastewater Treatment **CAZAN Cristina**
16:15	85_3081	Suppressing SEI Growth for Al Foil Anode under a Low Stack Pressure with Solid Polymer Electrolytes **LEE Dong Gyu**
16:15	86_31	The Micro structure and Mechanical Properties of The Ball-Milled Al-Mn-Zr Alloys with Ce And Y Additions **ESHETU Mintesenot Admasu**
16:15	87_3103	Electrolyte Design Strategies for Stable and Dendrite-Free Aqueous Zinc-Ion Batteries **KAKOTY Bhaskar**
16:15	88_3104	A Contrasting Tale of Two Lactam Co-Solvents in Affecting Zn-Anode Performance **KAKOTY Bhaskar**
16:15	89_3196	Impact of Ce doping on the properties of NaMnPO4 for sodium-ion batteries **URBANO Alexandre**

16:15	90_3200	Structural investigation of the synergistic effect of K? and Nb5? doping in P2-Na0.80Mn0.75Ni0.25O2 cathodes for sodium-ion batteries **URBANO Alexandre**
16:15	91_3201	Resynthesis, characterization, and performance of NMC 532 lithium-ion batteries with graphene **Urbano Alexandre**
16:15	92_3216	Single and co-doping effects of La3+ and Ce3+/4+ in carbon-coated Na3V2(PO4)2F3/C cathodes for sodium-ion batteries **URBANO Alexandre**
16:15	93_3218	Electrolytes and separators for flexible wire-shaped devices. **SELLER Francesco**
16:15	94_3237	Tribological performance of coated and uncoated thermochemical treated steels for free-wheel hub gears **SANTOS Jorge**
16:15	95_3246	Mitigating Interdendritic Failure in BZL-12Y Cast Superalloy through Enhanced Multi-Stage Homogenization **GOSAIN Om Puri**
16:15	96_3289	Ammonium-Ion Induced Redox Charge Storage of Porous Organic Polymer **PERUMTHODY Sreelakshmi**
16:15	97_330	High-pressure elastic properties of GeO2 polymorphs up to 120 GPa **KUMAR Gulshan**
16:15	98_3307	Sonochemically intensified carbonisation for sustainable hard carbon synthesis from biomass as a negative electrode material for sodium-ion batteries **SINHA Shruti**
16:15	99_3344	Computational screening of metal sulfides for hydrogen recovery from hydrogen sulfide via thermocatalytic chemical looping **TOLSTOVA Polina**
16:15	100_370	Designing of an amine functionalised worm-hole silica catalyst to lock anthropogenic CO2 into anode protective styrene carbonate in a highly durable aqueous zinc-ion batteries **GORAI Twinkle**
16:15	101_386	Natural Fiber-Reinforced Composite Incorporated with Anhydride-Cured Epoxidized Linseed-Oil Resin and Atmospheric Pressure Plasma-Treated Flax Fibers **SAVICHEVA Sofya**
16:15	102_428	Barocaloric Effects in Neopentyl Glycol for Solid-State Cooling **SANUY Ares**
16:15	103_445	Australian Eucalyptus in Action: Transforming Biomass into CO2 Capture Powerhouse **Saini Pallavi**
16:15	104_484	Comparative photovoltaic and thermal stability analysis of lead-free MASnI3 and FASnI3 perovskite solar cells using deep learning and SCAPS-1D **DJEFFAL Faycal**
16:15	105_5	Optimizing Iron Removal from Fly Ashes of Varying Compositions for Use in Diverse Applications **SHADDEL Shahrzad**
16:15	106_506	Nickel-Bismuth Alloy Promoted by Copper for Improved Hydrogen Production and High-quality Carbon from Methane Pyrolysis **MOHAPATRA Gourab**

16:15	107_531	Toxicological Profiles of Hollow Silica Nanoparticles: Implications for Environmental and Health Safety **GARCIA Sheena Anne Henson**
16:15	108_56	Design of an Amine-Functionalised Wormhole Silica Catalyst Enabling CO2 Fixation into Anode-Protective Styrene Carbonate for Highly Durable Aqueous Zinc-Ion Batteries **GORAI Twinkle**
16:15	109_614	The Role of Vesicle Fusion Temperature in Dictating the Efficiency of Charge Transport via Bacteriorhodopsin-Based Molecular Junctions **REJI Joel G.**
16:15	111_648	Open-Source Software for Rational Design of Drugs via Hansen Solubility Parameters **ALMEIDA Edvaldo Antonio De**
16:15	112_652	Characterization of Biomass-Derived Resin Materials by 2D-NMR **QU Chen**
16:15	113_662	Breaking the Stoichiometric Limit: Defect-Engineered n-type Bulk Bi2Te3 Thermoelectrics via Unique Kinetic Phase Control **YOO Jungwoo**
16:15	114_675	Warm plasticity and metalworking for inorganic semiconductors and thermoelectric materials **WEI Tianran**
16:15	115_716	From Quantum Chemistry to Solar Reactors: Redox Materials for Sustainable Nitrogen Purification **KLAAS Lena**
16:15	117_777	Mechanistic Insights Uncovering Balanced Charge Transfer at Photoelectrode/Electrolyte Interface for Efficient Unassisted Overall Water Splitting **SAINI Ankush**
16:15	118_887	Reactive flash sintering of high-entropy Ferrites: Effect on microstructure and magnetic properties **TYAGI Parmanand Kumar Tyagi**
16:15	119_9	Sunlight-driven degradation of dyes and antibiotics in water by magnetically separable Fe3O4/CQDs-ZnO photocatalyst **NANAN Suwat**
16:15	120_906	Electron Microscopy Investigation of AM316L before and after Heat Treatment: Implications for Hydrogen Diffusion **PALAZZO Gabriele**
16:15	121_925	Microstructure Controlled Hydrogen Uptake and Embrittlement of Additively Manufactured 316L Stainless Steel **LAGEMANN Kai Stefan**
16:15	122_951	Facile and Rapid Detection of PFOA in Water Using an Ultrasensitive Reusable MIP Sensor **CHUGH Vibhas**
16:15	123_964	Photoluminescence and chemical imaging to probe emission characteristics in bulk single-crystal anatase TiO2 **MUTUBUKI Arnold**
16:15	124_982	Recovery of critical metals from End-of-life Light Emitting Diodes for Next-Gen Electronics **SHUKLA Neha**
16:30	125_1916	Atomistic modeling of thermal transport in bulk amorphous materials and at amorphous/metal interfaces **CAPRANI Emeric**

Tuesday May 26

HO5 Session 5

Chairperson(s): ODA Reiko

View session abstracts

08:30	379	Multifunctional semiconductor Janus micro- and nanoparticles with enhanced photocatalytic efficiency for green hydrogen production and depollution **KUHN Alexander (Invited)**
09:10	554	Leveraging atomic disorder to modulate hydrogen storage thermodynamics in intermetallics **PISTIDDA Claudio (Invited)**
09:40	888	Tuning functional properties of high entropy hydrides towards hydrogen storage **ZLOTEA Claudia (Invited)**

Tuesday May 26

HO6 Session 6

Chairperson(s): PUNDT Astrid

View session abstracts

10:30	971	High-Entropy Oxides as Tailorable Catalysts for CO2 Conversion **KNORPP Amy (Invited)**
11:00	875	Local Hydrogen detection by STEM-EELS **KORNEYCHUK Svetlana (Invited)**
11:30	2746	Impact of constraint conditions on Metal-Hydrogen systems thermodynamic properties **WAGNER Stefan (Invited)**

Tuesday May 26

HO7 Session 7

Chairperson(s): BORGSCHULTE Andreas

View session abstracts

13:30	1181	Phonon-based design principle for light-ion solid conductors **RULEV Alexey**
13:45	1496	Reaction-Driven Construction of Durable Ru Single Atoms for High-Pressure Ammonia Decomposition **KIM Gunjoo**
14:00	820	Supersaturation-Driven Co-Precipitation Approach for Halide Solid Electrolytes toward All-Solid-State Lithium Metal Batteries **FANG Mu-Huai**
14:15	1268	Fast-Charging Single Crystalline O3-NaNi1/3Fe1/3Mn1/3O2 via Molten Salt Synthesis for Sodium-Ion Batteries **BILLA Rajashekar**
14:30	520	Degradation of LCO in aqueous electrolytes through in situ liquid-cell Transmission Electron Microscopy **SERRA MAIA Rui**

14:45	2112	Enhancing the performance of aqueous energy storage systems with redox-active electrolytes **YOO Seung**
15:00	3034	Waste-to-value carbon dots from grape biomass: the critical role of purification and proof-of-concept for anti-counterfeiting **CABRAL DA FONSECA Gabriel**
15:15	402	Rutile nanoparticles decorated onto permanently polarized hydroxyapatite for polypropylene solar photodegradation **ARNAU Marc**
15:30	1556	Development of Petcoke-Derived Activated Carbon for CO2 Capture Using Experimental and Machine Learning Approaches **HUSSEIN Mohamed**
15:45	915	Sustainable broad range PFAS removal from water via surface functionalized superparamagnetic iron oxide nanoparticles **VOß Johannes**

Wednesday May 27

HO9 Session 9

Chairperson(s): YABU Hiroshi

View session abstracts

08:30	2681	Novel gating mechanism employed on nano bio-FET towards real-time, point-of-care diagnostics in human whole blood **GARIKA Vijay Kumar**
08:45	1876	Lipase-functionalized hydroxyapatite as a green catalyst for microplastics degradation: harnessing the synergy between catalytic and enzymatic mechanisms **VILLA-MORENO Marta**
09:00	2064	Application of Polymer-Based Dispersants for cationic contaminant removal in PEM water electrolysis **SHWE SIN Pyae Pyae**
09:15	832	Highly Efficient Photothermal-Catalytic Depolymerization of Polyester **LI Xin**
09:30	412	Coupling Direct Air Capture with Low-Energy Ammonia Synthesis through Chemical Looping **ZAVABETI Ali**
09:45	218	Hierarchical Pollen-Templated Photothermal Catalysts for Water Treatment **VILARIÑO Pol**

Wednesday May 27

H10 Session 10

Chairperson(s): PUNDT Astrid

View session abstracts

10:30	1478	Li-Stuffed Garnet Electrolyte for Solid-State Lithium Metal Batteries **CHENG Eric**

10:50	2109	Plant-Derived Nanostructured Proton-Conductive Membranes with Enhanced Phosphoric Acid Retention **ZHANG Yizhou**
11:10	1625	Multiscale Analysis of Electrochemical Interfaces in MXene Energy Materials: In-Situ Imaging and AI-Driven Quantification **DEEBANSOK Siraprapha**

Wednesday May 27

H11 Session 11

Chairperson(s): BORGSCHULTE Andreas

View session abstracts

13:30	3080	Next-Generation Mobility Integrated with Local Renewable Energy: AI-Driven Electrification and Diversification on a University Campus **ANDO Hiroyasu**
13:50	409	Defect-Driven Graphene Growth on Oxide Ceramics: Synthesis Strategy toward Energy and Environmental Applications **NISHIHARA Hirotomo**
14:10	830	Synthetic Neurosystems: Rebuilding and Analyzing Neuronal Circuits and Molecules **HIRANO-IWATA Ayumi**
14:30	1501	Structural analysis and design of energy related materials based on persistent homology **AKAGI Kazuto**
14:50	2022	Advanced polymer-based hydrogen sensors for real-time 2D visualization of microscopic hydrogen diffusion in metals **KAKINUMA Hiroshi**