

ACEPS 13

**Asian Conference on Electrochemical
Power Sources - 13**

11th- 14th January, 2026

Indian Institute of Science, Bengaluru | India



Program Schedule

Asian Conference on Electrochemical Power Sources (ACEPS13)
Chemical Sciences Building (CSB), Indian Institute of Science, Bengaluru, INDIA

January 11, 2026, SUNDAY

Arrivals

Registration at Chemical Science Building (CSB)

January 12, 2026, MONDAY

REGISTRATION

Inauguration (AVR)

Plenary Session 1

Session Chair: Aninda J. Bhattacharyya (IISc)

09:20 to 10:00 Hours PLENARY-1 (Venue: AVR): Atsuo Yamada (Univ. of Tokyo, Japan): Toward Sustainable and Safe Battery

10:00 to 10:40 Hours PLENARY-2 (Venue: AVR): Bing-Joe Hwang (NTUST, Taiwan): Nanocatalysts for Electrochemical Energy Conversion Reactions

Break

Parallel Sessions (1.1 to 1.3)

Session 1.1: Solid State Batteries (Venue: AVR)

Session Chair: Prabber Barpanda (IISc)

11:10 to 13:00 Hours KL-1: Sang-Young Lee (Yonsei Univ., Korea): Scalable Electrode Engineering for High-Areal-Capacity Lithium Batteries

KL-2: Nae-Lih Wu (NTU, Taiwan): A Robust Li-ion Permeable Interphase to Address Interfacial Instability and Structural Degradation of Ni-Rich NCM Cathodes In Poly(ethylene oxide)-Based All-Solid-State Li-Ion Batteries

IL-1: Naga Phani B Aetukuri (IISc-BLR, India): Towards a Mechanistic Understanding of Dendrite Growth in Solid State Batteries

IL-2: Hirotohi Yamada (Nagasaki Univ., Japan): All-solid-state batteries using low-temperature-sintered $\text{Li}_7\text{Al}_6\text{O}_5\text{Ge}_{13}(\text{PO}_4)_2$

11:10 to 13:00 Hours Session 1.2: Li-based Batteries (Venue: RBM)

Session Chair: Palani Balaya (NUS)

KL-3: Nobuyuki Imanishi (Mie Univ., Japan): Enhancing Lithium Metal Electrode Stability with Ceramic Layer Coatings

KL-4: Hikari Sakaabe (Kyushu Univ., Japan): Iron-based conversion electrode material-from lithium batteries to anion-shuttle system

IL-3: Minkyung Kim (Kwangju Univ., Korea): Suppressing surface and bulk degradation of single-crystal cathodes for lithium-ion batteries

IL-4: Seung-Wan Song (Chungnam Nat. Univ., Korea): Suppressing Thermal Runaway of High-Energy Lithium-ion Battery Using Nonflammable Liquid Electrolyte

11:10 to 13:00 Hours Session 1.3: Aqueous / Multivalent Batteries (Venue: ANZ)

Session Chair: Rama Kant (DU)

KL-5: C. Retna Raj (IIT-KGP, India): Unlocking the Power of Aqueous Batteries with Rationally Engineered Anode and Cathode

IL-5: Ashutosh Singh (CeNS-BLR, India): Thermo-Electrochemical Activation of V_2O_5 to ZnV_2O_6 for Ultra-Stable Zinc-Ion Batteries

IL-6: Min-Hsin Yeh (NTUST, Taiwan): Developing the Value-added Reaction-assisted Zn-air Battery via 2e- Oxygen Reduction Reaction

IL-7: Aditi Halder (IIT-Mandi, India): Addressing Issues in Next Generation Electrochemical Energy Storage Devices

IL-8: Arindam Sarkar (IIT-Bombay, India): A rechargeable Zn-ion battery

Group Photo, Lunch & Poster Session-1 (Poster Session-1: 3rd Floor)

Parallel Sessions (1.4 to 1.6)

Session 1.4: (Post) Li-Ion Batteries (Venue: AVR)

Session Chair: Stefan Adams (NUS)

15:00 to 16:50 Hours KL-6: Shinichi Komaba (TUS, Japan): Layered NaMeO_2 (Me = 3d metals): Synthesis, Polytypes, and Solid-State Redox

IL-9: Manjusha V. Shelke (CSIR-NCL Pune, India): Advanced Electrolyte and Interface Engineering for Next-Generation Sodium Batteries

IL-10: AS Prakash (CECRI, India): Advancements and challenges in sodium-ion battery technology: from novel cathode materials to full-cell systems

IL-11: Premkumar Senguttuvan (JNCASR, India): Exploring NASICON Frameworks for Rechargeable Sodium-ion Batteries

15:00 to 16:50 Hours Session 1.5: Solid State Batteries (Venue: RBM)

Session Chair: Nobuyuki Imanishi (Mie University)

KL-7: Sangmin Lee (POSTECH, Korea): Rational Interfacial-design of Sulfide-Based Solid Electrolytes for All-Solid-State Batteries

KL-8: Palani Balaya (NUS, Singapore): Solid-state Na-ion Batteries via Two Dimensional Filler based Composite Polymer Electrolyte

IL-12: Abhik Banerjee (TCG CREST, India): Role of Cationic Sublattice Configuration for Designing Low-Cost Li^+ Superionic Halospinel

IL-13: Swapan Kumar Pati (JNCASR, India): Computational insights for designing frameworks of intercalation devices for energy storage systems

IL-14: Mir Wasim Raja (CGCRI, India): "Liquid" and "Solid" Therapeutic Approaches for Overcoming Interfacial Challenges in LLZO-Based Solid-State Lithium Metal Batteries

Session 1.6: Fuel Cells (Venue: ANZ)

Session Chair: Anil Verma (IIT-Delhi)

KL-9: Minoru Inaba (Doshisha, Japan): Development of Next-Generation Fuel Cells in GtX Project in Japan

IL-15: Tushar Jana (Univ. of Hyderabad, India): Polymer Membranes for the use in Fuel Cell

IL-16: Muhammed Musthafa (IISER-Pune, India): Electricity from Acid Base Reaction

IL-17: Hideo Daimon (Doshisha Univ., Japan): Cell Performance of Pt Catalyst Supported on Mesoporous Carbon

IL-18: Farsa Ram (IISc-BLR, India): Molecularly Engineered Ion Exchange Membranes for Fuel Cells

Break

Parallel Sessions (1.7 to 1.9)

Session 1.7: (Post) Li-Ion Batteries (Venue: AVR)

Session Chair: Sai Gautam G (IISc)

17:10 to 18:30 Hours IL-19: Wei-Ren Liu (Christian Univ., Taiwan): Nano-crystalline $\text{Fe}_3\text{V}_5\text{O}_{13}$ Material as an Efficient Advanced Anode for Energy Storage Applications

IL-20: Thangavelu Palaniselvam (IIT-Madras, India): Self-Healing Liquid Gallium Alloy Composite Anode for High-Performance Sodium-Ion Storage

IL-21: Wei-Nien Su (NTUST, Taiwan): Design of Localized High Concentration Electrolytes for High-Voltage Anode-Free Lithium Metal Batteries

IL-22: Urmimala Maitra (IACS, India): What happens to Li-rich Layered oxides when we cation disorder them?

17:10 to 18:30 Hours Session 1.8: Solid State/(Post) Li-Ion Batteries (Venue: RBM)

Session Chair: Tushar Jana (UOH)

KL-10: Hsihsheng Teng (National CH Univ., Taiwan): Copper-integrated Solid Polymer Electrolyte with Enhanced Li^+ Transport and Durability in Lithium Metal Batteries

IL-23: Derrick Fan (A-Star, Singapore): All-Solid Polymer Electrolyte System Enabling Li-metal Batteries

IL-24: Rahul Salunkhe (IIT-Jammu, India): Functional Quasi-Solid-State Electrolyte Based on an Ionic MOF for Enhanced Sodium Metal Battery Stability

OL-1: Prasada Rao Rayavarapu (NUS, Singapore): Fire-Retardant Electrospun Gel Polymer Electrolytes for Safe, High-Performance Lithium-Metal Batteries

17:10 to 18:30 Hours Session 1.9: Supercapacitors (Venue: ANZ)

Session Chair: C. Retna Raj (IIT-KGP)

KL-11: Wataru Sugimoto (Shinshu Univ., Japan): Pseudocapacitive Properties of Birnessite Nanosheets

IL-25: Narendra Kurra (IIT-HYD, India): Pseudocapacitive Charge Storage of MXene-Organic Hybrids in Divalent Metal-Ion Electrolytes

OL-2: Suman Yadav (IIT-HYD, India): Pseudocapacitance of Vanadium Carbide MXene in Concentrated Calcium-ion Electrolyte

OL-3: Ankita Chuidwal (IISER-Pune, India): A Biodegradable Peptide-based Supercapacitor

19:00 to 22:00 Hours Conference Banquet (@Sheraton)

January 13, 2026, TUESDAY

REGISTRATION

Plenary Session 2

Session Chair: Amartya Mukhopadhyay (IIT-Bombay)

08:45 to 09:25 Hours PLENARY-3 (Venue: AVR) : Kisuk Kang (SNU, Korea): Oxygen-redox chemistry in layered transition metal oxides for advanced lithium-ion battery cathode materials

09:25 to 10:05 Hours PLENARY-4 (Venue: AVR): Clare Grey (Univ. Cambridge, UK): Operando studies of intercalation processes

Battery Research Society of India Introduction: Amartya Mukhopadhyay, IIT-Bombay

Break

Parallel Sessions (2.1 to 2.3)

Session 2.1: Solid State/(Post) Li-Ion Batteries (Venue: AVR)

Session Chair: Shinichi Komaba (TUS)

KL-12: Yong-Mook Kang (Korea Univ., Korea): Disorder-Engineered Oxide Cathodes and Solid-State Electrolytes: Mechanistic Insights into Structural and Ionic Modulation

KL-13: Stefan Adams (NUS, Singapore): Compressible Lightweight Solid Electrolytes for Durable Batteries

KL-14: Philipp Adelhelm (HUB, Germany): Beyond intercalation – Solvent co-intercalation and spillover in layered sulfides and sulfur/carbon composites

IL-26: Surendra K Martha (IIT-HVD, India): Toward Sustainable Lithium-Ion Batteries: Advances in Low- and Zero-Cobalt Electrode Materials

IL-27: Nonglak Meethong (Khon Kaen Univ., Thailand): Enhancing Rate and Cycling Stability of Na₂MnV(PO₄)₃-Carbon Dots Composite Cathode for Sodium-Ion Batteries

Session 2.2: Solar Harvesting/Photoelectrochem Storage (Venue: RBM)

Session Chair: Sayan Bhattacharyya (IISER-Kolkata)

KL-15: Jae-Joon Lee (Dongguk Univ., Korea): Expanding the Frontiers of Dye-Sensitized Photoelectrochemical Cells: Solar Valorization of Biomass and Beyond

IL-28: Kyungkon Kim (Ewha Univ., Korea): Vacuum-Processable Additive for Controlling Growth of Perovskite Crystals in Vacuum Processed Perovskite Solar Cell

IL-29: Srabanti Ghosh (CGCRI, India): Advancement of Surface Engineered Semiconductor heterostructures in Photoelectrochemical devices for solar water splitting

IL-30: Rajendra K Singh (BHU, India): Photo-Rechargeable Sodium-Ion Batteries

OL-4: Kumar Shubham (CeNS-BLR, India): Development of High-Performance Silicon-Based n-p Heterojunction Photoanode for Large-Scale Photoelectrochemical Water Splitting Applications

Session 2.3: Electrocatalysis (Venue: ANZ)

Session Chair: Sunil Kumar (IIT-Indore)

KL-16: Hajime Arai (IOSC, Japan): Electrode materials synthesized by soft chemistry

KL-17: Shigenori Mitsuhashi (Yokohama Univ., Japan): Degradation mechanism and ADT protocols for alkaline water electrolyzers

IL-31: Vishal M Dhavale (CECRI, India): Electrocatalyst and Electrolyte Engineering for Energy Applications

IL-32: Hidenori Kuroki (TIT, Japan): Three-Dimensionally Connected Nanoparticles for Advanced Oxygen Reduction Catalysts in PEMFCs

IL-33: Chinmoy Ranjan (IISc-BLR, India): Solid oxide electrolysis of CO₂: Power to X

Group Photo, Lunch & Poster Session-2 (Poster Session-2: 3rd Floor)

Session 2.4 (Sponsor Invited Lectures): Academia-Industry Interface (AVR)

Session Chair: Pramod Kumar (IISc)

IL-34: Rajesh Mekkat (Ola Electric, India): Industrializing Dry Electrode Production for Lithium-Ion Cells

IL-35: Suraj Vallamkonda (Ather Energy, India): Indian Cell - Insights from 7 years of Lab and Field Data

IL-36: Rashi Gupta (Vision Mechatronics, India): Sustainable Lifecycle Management: Balancing Performance and Circularity in Industrial Battery Production

IL-37: K. P. Rudrapaiah (KREDL, India): Scaling Renewable Energy and Storage: Karnataka's Journey from Policy to Deployment

Break

Parallel Sessions (2.5 to 2.7)

Session 2.5: (Post) Li-Ion Batteries (Venue: AVR)

Session Chair: Wei Ren Liu (Christian Univ.)

KL-18: Jeng-Kuei Chang (NYMCTU, Taiwan): Fabrication of Lithium Metal Powder with Surface Protection Shells for High-Performance Lithium Batteries

IL-38: M.M. Shaijumon (IISER-TVM, India): Modified Current Collectors for Stable Anode-less Lithium/Sodium Metal Batteries

IL-39: Sunil Kumar (IIT-Indore, India): Composition Tuning Effects on the Phase Formation and Electrochemical Performance of Na₂(Mn-Fe-Ni)O₂ Cathodes

IL-40: Subhashish Basu Majumder (IIT-KGP, India): Effect of particle morphology of as prepared sulfur on the electrochemical performance of Li-S batteries

IL-41: Anandan Srinivasan (ARCI, India): Design and Development of Electrode Materials for Li- and Na-ion Batteries: From Lab-Scale Innovation to Demonstration

OL-5: Adrija Goswami (IIT-Bombay, India): Unraveling the Oxygen Redox Mechanism in 'Layered' Sodium-Transition Metal Oxide Cathodes for Sodium-Ion Batteries

OL-6: Sharad D. Pinjari (IISER-Bhopal, India): Controlled Cation Doping in Iron-Based NASICON Frameworks Toward High-Performance Sodium-Ion Batteries

Session 2.6: (Post) Li-Ion Batteries (Venue: RBM)

Session Chair: Rahul Salunkhe (IIT-Jammu)

IL-42: Rajendra S Dhaka (IIT-Delhi, India): Development of Sodium-ion batteries for energy storage

IL-43: Srinivasan Ramakrishnan (IIT-Bombay, India): Reactive Interfaces for Ambient Pressure Anodeless Solid-state Batteries

IL-44: R. Kothandaraman (IIT-Madras, India): Reinforcing a Lithium-ion Battery Cathode (NCA) with Mn Doping

OL-7: Tripti Agnihotri (NTUST, Taiwan): Enhancing the safety and performance of Li-metal battery via a multifunctional fluoro-phosphonate-based additive

OL-8: Zachary T. Gossage (Tokyo Univ. Sc., Japan): Impact of Co-Solvents during Co-intercalation at Graphite for Sodium Ion Batteries

OL-9: Sanghamitra Moharana (NIT-Warangal, India): Suppressing Lithium Dendrite Growth in Graphite Anodes using Potassium Additives via Interphase Engineering for Lithium-Ion Batteries

OL-10: Neha Dagar (IIT-Indore, India): Al/Ti co-doping Boosts Electrochemical Performance and P3/O3 Structural Stability of Na-ion Battery Cathode

Session 2.7: Theory and Computation (Venue: ANZ)

Session Chair: Ananth Govind Rajan (IISc)

KL-19: Jyh-Chiang Jang (NTUST, Taiwan): Computation-Aided Design of Materials Related to Lithium-Ion/Metal Batteries

KL-20: Rama Kant (Univ. Delhi, India): Work Function Centric Theory for Heterogeneous Electron Transfer Kinetics : ORR on Single Crystal Pt (h k l)

IL-45: Sang Cheol Kim (NUS, Singapore): Solvation Thermodynamics and its Impact on Electrolyte Properties and Lithium Battery Performance

IL-46: Sai Gautam Gopalakrishnan (IISc-BLR, India): Predicting migration barriers in battery materials

IL-47: Swastika Banerjee (IIT-Roorkee, India): Tuning Ion Transport and Host Interactions in Beyond-Lithium Ion Storage: Insights from First-Principles Simulations

IL-48: Mudit Dixit (CSIR-CLRI, India): Designing Cathode Materials for Li-Ion and Na-Ion Batteries Using Advanced Computational Methods

IL-49: Priya Johari (Shiv Nadar Univ., India): Atomistic Understanding of Electrode Materials for High-Performance Alkali-Ion Batteries

OL-11: Archana R. Kanwade (IIT-Indore, India): Computational Design and Experimental Realization of Na₃FeV(PO₄)₃ as a Sustainable Cathode for High-Performance

Conference Dinner (JVH Lawns, IISc)

19:00 to 21:30 Hours

January 14, 2026, WEDNESDAY	
07:30 Hours onwards	REGISTRATION Plenary Session 3
08:45 to 09:25 Hours	PLENARY-5 (Venue: AVR): Satish Ogale (TCG CREST, India): Controlling Interface Phenomena in Batteries by Innovative Materials Engineering
09:25 to 10:05 Hours	PLENARY-6 (Venue: AVR): Li Hong (CAS, China): Practical solid batteries via in situ solidification technologies
10:05 to 10:35 Hours	Break
Parallel Sessions (3.1 to 3.3)	
10:35 to 12:45 Hours	Session 3.1: (Post) Li-ion Batteries (Venue: AVR) Session Chair: Aditi Halder (IIT-Mandi)
	IL-50: Prabeer Barpanda (IISc-BLR, India): Perovskite and Spinel Compounds as Anode Materials for Sodium-ion Batteries
	IL-51: Kingshuk Roy (TCG CREST, India): Plating Dynamics in Sodium Metal Anodes: Linking Molecular Interactions to Macroscopic Stability
	IL-52: Sattwick Haldar (IIT Tirupati, India): Li-Organopolysulfide Batteries: Opening New Avenues in Battery Chemistry
	IL-53: Saikat Dutta (Amity Univ., India): Fe-N _x -O ₂ and Mn-N _x -C=N Single Atom Incorporated Anodes for Sodium Ion Storage and Transport with Hollow Diffusion Sites
	OL-12: Manu Patel U.M. (Manipal Inst. Tech., India): The Importance of Chemical Reactions in the Charging Process of Lithium-Sulfur Batteries
	OL-13: Debalina Deb (IISc-BLR, India): In-Situ Synthesized Gel Polymer Electrolyte for Long-Life Sodium-Ion Batteries
	OL-14: Monalisha Mahapatra (TUS, Japan): Impact of Air Stability through Alkaline Earth Metal Doping on P2- Na _{0.67} Fe _{0.3} Mn _{0.5} O ₂
	OL-15: Jaya Yadav (IISc-BLR, India): Investigation of the Layered Structure and Electrochemical Behaviour of Na ₂ -Li ₃ Mn ₂ O ₇ ·yH ₂ O
10:35 to 12:45 Hours	Session 3.2: Electrocatalysis (Venue: RBM) Session Chair: Farsa Ram (IISc)
	KL-21: Kuei-Hsien Chen (NTU, Taiwan): Modulating the Electronic Structure of Ni Single-Atom via Phosphorous for Efficient CO ₂ Electroreduction
	IL-54: Sayan Bhattacharyya (IISER-Kolkata, India): From Unstoppable Electrons in Unlikely Alloys to Hydrogen Harmony
	IL-55: Shanmugam Sangaraju (DGIST, Korea): Electrochemical Transformation of Pollutants to Value-Added Chemicals
	IL-56: Di-Yan Wang (NTHU, Taiwan): Enhancing Hydrogen Evolution at Lower Potentials via Developing New Catalysts for Alternative Anodic Oxidation Reactions
	IL-57: CN Tharamani (IIT Ropar, India): Designing greener energy conversion system for a sustainable future
	OL-16: Takuma Korekawa (Univ. Hyogo, Japan): Screen printed MEAs incorporating carbon nanotube-structures as structural additives to enhance electrocatalytic performance
	OL-17: Ashwini Anshu (IISc-BLR, India): N-doped graphitic layer encapsulated AuCo nanoparticles as core-shell structured bifunctional electrocatalyst for Zn-air batteries
10:35 to 12:45 Hours	Session 3.3: Methodologies / Recycling (Venue: ANZ) Session Chair: Abhik Banerjee (RISE-TCG-CREST)
	KL-22: Li-Chyong Chen (NTU, Taiwan): In situ visualization of local electrochemical activity of 2D catalysts
	IL-58: Minah Lee (POSTECH, Korea): Chemical Regeneration of Spent Battery Cathodes under Ambient Conditions
	IL-59: Yuki Orikasa (Ritsumeikan Univ., Japan): Analysis of Silicon-Anode Degradation Mechanisms in All-solid-state Batteries via X-ray Nano-CT
	IL-60: Mamata Mohapatra (CSIR-IMMT, India): Generation of Battery materials from end of life LIBs: Pros and Cons
	IL-61: He-Yun Du (MCUT, Taiwan): Local Electrochemical Mapping of 2D Materials Using Scanning Electrochemical Cell Microscopy
	OL-18: Cheng-Pang Chen (NCYUT, Taiwan): Systematic study on operating conditions and interaction mechanisms for enhanced VRFB Stack performance
	OL-19: Jnanesh Anand (CSIR-CECRI, India): From Lab to Production: Evaluating Coating Techniques for Catalyst Coated Membrane Fabrication for Scale-Up
12:45 to 14:00 Hours	Group Photo & Lunch
14:00 to 14:15 Hours	Session 3.4 (Sponsor Invited Lecture): Meet the Editor!
	Rohini Kitture, Wiley: From Manuscript to Impact: An Editor's Perspective
14:15 to 16:40 Hours	Session 3.5: Electrocatalysis (Venue: AVR) Session Chair: Aninda J. Bhattacharyya, Prabeer Barpanda (IISc)
	IL-62: Amit Paul (IISER-Bhopal, India): Electrochemical Dimerization of 1,3-Dicarbonyls through PCET Mechanisms: Many Routes, One Destination
	IL-63: Ramendra Sundar Dey (IIST, India): Challenges of Electrochemical Ammonia Production: Pathways to Green Future
	IL-64: Mohsin A. Bhat (Univ. of Kashmir, India): Surface Active Ionic Liquids: The Electrocatalytic Electrolytes for Green Electrochemistry
	OL-20: Kritika Mahajan (Univ. Delhi, India): Work Function Centric Theory for Heterogeneous Electron Transfer on Graphene and Graphene/Metal Composites
	OL-21: Priti Singh (CSIR-CLRI, India): Unraveling the Fundamental Understanding of Anionic Redox Chemistry in Transition Metal Oxide Cathode Materials through First-Principles Calculations
	OL-22: Pranaya K. Nahak (IIT-Bombay, India): Dimensional change study of Li metal anode during operation of Solid-state battery
15:45 to 16:00 Hours	Break
	OL-23: Yanan Sun (HUB, Germany): Solvent co-intercalation in layered cathode active materials for sodium-ion batteries
	OL-24: Vivek Vishwakarma (IIT-HYD, India): Upcycling of spent lithium-iron phosphate cathode material through the embedding of pitch carbon precursor
	OL-25: Rikta Das (IISc-BLR, India): Decoupling Mechanical and Ionic Properties via Molecular Engineering of Polymers for Anion Exchange Membrane Fuel Cell
	OL-26: Sheetal Gupta (IIT-Indore, India): Nickel-Coated Hollow Mn-PBAs as Durable Cathodes for High-Performance for Sustainable Sodium-Ion Battery
	OL-27: Mohd. Aman (IIT-K, India): Stabilisation of Metastable β-Bi ₂ O ₃ @Carbon Core-Shell Architecture and its Application in Na-Ion Battery
16:40 Hours onwards	Session 3.6: Conclusions and Poster Awards

Lecture Duration (incl. of Q&A)
 Plenary Lecture (PL): 40 min
 Keynote Lecture (KL): 30 min
 Invited Lecture (IL): 20 min
 Industry/Sponsor Lecture: 15 min
 Oral Lecture (OL): 10 min
 Venues

AVR: AV Rama Rao Auditorium (Second Floor)
 RBM: Rajarshi Bhattacharyya Memorial (Ground Floor)
 ANZ: ANZ Group Capacity Centre (Ground Floor)

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