Programme

International Workshop on Advanced Materials Challenges and Standardisation need for Net Zero Technologies (AMCSNZT-2023)

Day 1: Agenda 9th October 2023	
09:00-10:00 AM	**Arrivals / Tea / Registration**
10:00-11:00 AM	**Formal Inauguration of the workshop by** Dr. (Mrs.) N. Kalaiselvi, Secretary DSIR & Director General CSIR Prof. Fernando Castro, Chair VAMAS, NPL-UK Prof. Venu Gopal Achanta, Director CSIR-NPL
11:00-11:30 AM	**High Tea**
Technical Session 1: Materials for Energy Generation	
11:30-11:55 AM	Green hydrogen–a promising solution to the longstanding challenges of renewable energy **Prof. Gururaj V. Naik** Rice University, Texas, USA
11:55-12:20 PM	Hydrogen utilized Polymer Electrolyte Fuel Cells: Research Opportunities and Technology Challenges in Indian Context **Dr. S. D. Bhat** CECRI Madras Centre, Chennai, India
12:20-12:45 PM	Metrology for clean hydrogen energy **Dr. Dipak Shinde** National Physical Laboratory (NPL), UK
12:45-01:10 PM	Identification and characterisation methodologies for secondary life PV modules for re-use in distributed PV applications **Dr. Jai Prakash Singh** Deputy Director General, National Institute of Solar Energy (NISE), Gurugram, India
01:10-02:00 PM	**Lunch Break**
Technical Session 2: Materials for Energy Generation	
02:00-02:25 PM	Electron Energy Level Alignment in Next-generation Solar Cells **Dr. Jeong Won Kim** Korea Research Institute of Standards and Science (KRISS), Korea
02:25-02:50 PM	Challenges in measurements of metastable materials and devices for photovoltaics applications (On-line) **Dr. George Koutsourakis**

	National Physical Laboratory (NPL), UK
02:50-03:15 PM	Carbon and Water Recycling for Sustainable Energy: A Journey from Fundamental Chemistry to Green Technologies **Prof. Sebastian C. Peter** Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore, India
03:15-03:40 PM	Routes to Net Zero via Innovations in Energy Materials **Prof. Ravi Silva CBE FREng** Director, Advanced Technology Institute, University of Surrey, UK
03:40-04:00 PM	**Tea Break**
Session 3: Materials for Energy Storage and Carbon Capture	
04:00-4:25 PM	Safety in transport of Li ion batteries (On-line) **Dr. Anita Schmidt** Federal Institute for Materials Research and Testing (BAM), Germany
04:25 -04:50 PM	Metal-CO_2 batteries: New strategy for sustainable future **Prof. C.S. Sharma** Indian Institute of Technology (IIT), Hyderabad, India
04:50-05:15 PM	Novel material for Li ion batteries **Dr. Amoghavarsha Mahadevgowda** University of Cambridge, UK
05:15-05:40 PM	Metrology Needs for Carbon Dioxide Removal and Carbon Capture Use and Storage (On-line) **Dr. Pamela Chu** Programme Director, Carbon Capture and Carbon Sequestration, National Institute of Standards and Technology (NIST), USA
05:40-06:00 PM	**Panel Discussion**

Day 2: Agenda 10th October 2023	
Technical Session 4: Materials for Energy Generation and Recycling	
10:00-10:25 AM	Role of green hydrogen in India's atmanirbhar clean energy transition **Dr. Ashish Lele** Director, National Chemical Laboratory (NCL), Pune, India
10:25-10:50 AM	Powering the Future: A Comprehensive Update on the Development Status of CSIR Battery Technologies **Dr. A S. Prakash** CECRI Madras Center, Chennai,
10:50-11:15 AM	Enhanced Atomic Ordering Leads to Ultra-High Thermo-electric Performance **Prof. Kanishka Biswas** Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore, India
11:15-11:30 AM	**Tea Break**

Technical Session 5: Harmonization of measurements, Standards and Policies	
11:30-11:55 AM	The EU Materials Innovation Initiative on Safe and sustainable materials. Needs for testing harmonization and standardization **Dr. Amaya Igartua** European Materials Platform (EUMAT), Spain
11:55-12:20 PM	Metal-organic frameworks as potential precursors for deriving highly efficient energy storage and conversion materials **Dr. ThangjamIbomcha Singh** Manipur University, India
12:20-12:45 PM	Sustainable steel making to achieve net zero CO2 emission **Dr. Santanu Sarkar** Environmental Research Group, R&D and Scientific Department, Tata Steel Limited, Jamshedpur, India
12:45-01:10 PM	Government policies on renewable energy **Dr. Arun Kumar Tripathi** Adviser, Ministry of New and Renewable Energy (MNRE), New Delhi, India
01:10-01:20 PM	About Ants Ceramics **Mr. Ashwani Jain** Ants Ceramics (P) Limited, Thane, India
01:20-02:10 PM	**Lunch Break**
02:10-03.10 PM	**Poster session**
Technical Session 6: Standardization and Materials for Circular Economy	
03:10-03:35 PM	USA Critical minerals **Dr. Nicholas Barbosa** National Institute of Standards and Technology (NIST), USA
03:35-04:00 PM	Challenges and opportunities within a circular economy approach for waste photovoltaic modules **Dr. Sushil Kumar** CSIR National Physical Laboratory (NPL), India
04:00-04:25 PM	Standardization challenges for passive radiative cooling materials (On-line) **Dr. Lorenzo Pattelli** National Metrology Research Institute (INRIM), Italy
04:25-04:50 PM	Research and development of magnetic refrigeration materials for highly efficient hydrogen liquefaction **Dr. Hideaki Kitazawa** National Institute of Materials and Standardization (NIMS), Japan
04:50-05:20 PM	**Panel discussion** Announcement of awards for Poster Presentations Concluding Remarks