

## OVERVIEW PROGRAMME

Monday 7 July 2025

11:30	Refreshments & registration							
12:00	Lunch							
12:45	Lennox 3 Welcome & Introductions							
13:00	PL01	Lennox 3 PL01: The Role of Organic Photovoltaics in Transition to Renewable Energy Thuc-Quyen Nguyen University of California, USA						
14:00	Time for delegates to move between theatres							
	Lowther Functional inorganic materials		Lennox 3 Materials for energy and sustainability		Lannermuir Suite Nano and porous materials		Menteith Soft matter and biomaterials	
	Session chair:		Session chair:		Session chair:		Session chair:	
14:10	K01	Practical Functional Oxide Thin Films for Electronic Devices Judith Driscoll University of Cambridge, UK	K02	Light-Responsive Materials for a Sustainable Future: Exploring Optically-Controlled Functional Organic Systems Grace Han Brandeis University, USA	K03	Probing Physical Properties and Functionality in Metal-Organic Frameworks by Diffraction Across Length Scales Ross Forgan University of Glasgow, UK	K04	Hybrid Materials for Biomedical Applications Luisa de Cola University of Milan, Italy
14:40	F01	Operando XRDCT experiments using magnetic induction heating for CO2 conversion Lucy Costley-Wood University College London, UK	E01	Fluorescent protein chemical modification for bio-hybrid light-emitting diodes David Gutiérrez-Armayor TUM, Germany	N01	Nanoscale Flexing Mechanisms of Metal-Organic Framework Ga-MIL 53 Revealed by Atomic Force Microscopy Martin Attfield University of Manchester, UK	S01	Locomotion driven by actin polymerization-powered motors Miguel A Ramos Docampo Aarhus University, Denmark
15:00	F02	Hybrid Solvothermal-Molten Salt mediated synthesis of M-N-H materials: A novel approach towards Lithium Nanostructurisation Fatima Abi Ghaida University of Birmingham, UK	E02	Rational design of organic conjugated polymers for efficient photocatalysis Xiong Chen Fuzhou University, China	N02	Probing porous molecular materials with 3D electron diffraction Gavin Craig University of Strathclyde, UK	S02	Designing of vaterite CaCO3-based drug delivery vectors Mariam Mammen Nottingham Trent University, UK
15:20	F03	New photocatalytic building material additives based on layered double hydroxides to combat nitrogen oxides air pollution under visible light Antonio Manuel Ruz-Luna University of Cordoba, Spain	E03	Chiral Organic Semiconductors - Lending a Hand in Water Splitting Aisha Mumtaz University College London, UK	N03	Crystal structure prediction of porous isostructural non-metal organic frameworks Joe Glover University of Southampton, UK	S03	Mapping variation in strontium incorporation in coccolithophore biominerals using nanofocus synchrotron X-ray techniques Jessica Walker Diamond Light Source, UK
15:40	Refreshments							
	Session chair:		Session chair:		Session chair:		Session chair:	
16:20	F04	Supported Ternary Ni-Cu-Ga Nanoalloy as Selective and Durable Heterogeneous Catalyst for CO2 Utilisation Irene Collina BasCat - UniCat BASF JointLab, TU Berlin, Germany	K05	Machine Learning Accelerated Materials Discovery for Energy Conversion and Storage Karsten Reuter Fritz-Haber-Institut der MPG, Germany	N04	Scaling up the manufacture of MOFs to industrial scale Ed Lester The University of Nottingham, UK	S04	Polymerisation mechanism of dopamine resolved: A story of strong pi-stacking Sophie Crouch Monash University, Australia
16:40	F05	High pressure synthesis as a reliable route to novel Rh based magnetic and quantum materials Sean Injac University of Edinburgh, UK	E05 (16:50)	Templated synthesis of single-site electrocatalysts with microporous materials Jesus Barrio Imperial College London, UK	N05	2.5-dimensional covalent organic frameworks: their structure and superior properties for CO2 capture Yoichi Murakami Institute of Science Tokyo, Japan	S05	Direct laser writing for 4D micro-actuators integrated with pH-responsive sensor Yekaterina Tskhe Trinity College Dublin, Ireland
17:00	F06	Controlling metal morphology through application-specific materials design with density functional theory Cara-Lena Nies Tyndall National Institute, Ireland	E06 (17:10)	Structural investigation of novel Fe/MgAl2O4 catalysts for turquoise hydrogen production via CH4 pyrolysis Antonia Diana Bobitan University College London, UK	N06	Emerging synthesis methods and applications of porous photocatalytic conjugated polymer nanoparticles Calum Ferguson University of Birmingham, UK	S06	Self-assembly of 2D Layered Materials with Controllable Dimensionality and Conductivity Tetsuhiko Teshima Technical University of Munich, Germany
17:20	F07	Structural regulation and dynamic responsiveness in single-molecule magnets and spin crossover materials Mengmeng Wang Université catholique de Louvain, Belgium	E07 (17:30)	Surface Strains Dictate Local Photoluminescence Properties in Halide Perovskites as Revealed by 3D Multimodal Imaging Kieran Orr Stanford University, USA	N07	Exploring the hydrophobicity/hydrophilicity of hierarchically porous ZIFs Eder Amayuelas CIC energiGUNE, Spain	S07	Copolymers of Gelatin-graft-poly(3-hexylthiophene) for Transient Electronics Xin Sun The University of Auckland, New Zealand
17:40	ECR session							
18:30	Poster session							
20:00	Close							

Tuesday 8 July 2025

09:00	Lennox 3 PL02 - Title TBC Serena DeBeer Max Planck Institute for Chemical Energy Conversion, Germany Time for delegates to move between theatres							
10:00								
	Lowther Functional inorganic materials		Lennox 3 Materials for energy and sustainability		Lannermuir Suite Nano and porous materials		Menteith Soft matter and biomaterials	
	Session chair:		Session chair:		Session chair:		Session chair:	
10:10	K06	Tuning high energy density cathodes for electrochemical energy storage Serena Cussen University College Dublin, Ireland	K07	Metal Nitride Functional Materials: from Synthesis to Applications Minghui Yang Dalian University of Technology, China	K08	Title TBC Felice Torrisi Imperial College London, UK	K09	Biomaterials to bank, store and deliver frozen biologics Matthew Gibson University of Manchester, UK
10:40	F08	Understanding the Phase Transitions in Fluoride Perovskites Catriona Crawford University of Warwick, UK	E08	Mechanochemical Innovations for Sustainable Synthesis of Framework Materials and Industrial ScaleUp Franziska Emmerling Federal Institute for Materials Research and Testing, Germany	N08	2D Siloxene and Silane-Functionalised Graphene Oxide Nanosheets to Reduce Fouling in Biomedical Membrane Ultrafiltration Benjamin Moore University of Manchester, UK	S08	Polymers for Ratiometric and Selective Detection of Oxidative Stress Andrea Carlini University of California Santa Barbara, USA
11:00	F09	Structural studies on cation-disordered LiNiO2 Li-ion battery electrode Javier Castells-Gil Universtiy of Birmingham, UK	E09	Tunable Porous Framework Materials for Energy and Environmental Applications Dinesh Shetty Khalifa University, United Arab Emirates	N09	Structure of Water and Ice Under Nanoconfinement in Periodic Mesoporous Organosilicas (PMOs) Michael Froeba University of Hamburg, Germany	S09	Responsive all aqueous multi-phase systems Bernhard V K J Schmidt University of Glasgow, UK
11:20	Refreshments							
	Session chair:		Session chair:		Session chair:		Session chair:	
12:00	F10	The symmetry of structural distortions as control parameter for the optimized design of multiferroic and Mott materials: the case of quadruple perovskites Andrea Gauzzi Sorbonne University, France	K10	Nitrogen species electroreduction for sustainable ammonia production: a materials perspective Federico Bella Politecnico di Torino, Italy	N10	Hierarchical pore formation in iron nitride foils investigated at nano-scale by phase-contrast tomography Sandra Benter European Synchrotron Radiation Facility, France	S10	Engineering viscoelastic hydrogels for bone marrow models and cancer therapy screening Rebecca Ginesi University of Glasgow, UK
12:20	F11	Urchin-like TiO2 nanostructure with controlled crystalline phase obtained using Cellulose nanocrystals as bio-template for Oxygen Evolution Reaction Dongmin Wu Paris-Saclay University, France	E11 (12:30)	Advanced Plasmonic Catalysis Utilizing Superlattice-Based Designs and Functional Three-Phase Interfaces for Efficient Nitrogen-to-Ammonia Photofixation Hiang Kwee Lee Nanyang Technological University, Singapore	N11	Layered gadolinium/terbium hydroxide theranostic probes for in vivo CT imaging Margarita Strimaite University College London, UK	S11	Highly entangled hydrogels by controlled/'living' radical photopolymerisation Maciek Kopec University of Bath, UK
12:40	F12	Redox Chemistry of Transition Metal Nitrides at High-Pressures Simon Kloss LMU Munich, Germany	E12 (12:50)	Surface-Functionalized Nanomaterials to Produce Solar Fuels and Chemical Feedstocks Xavier Sala Autonomous University of Barcelona, Spain	N12	Fabrication of flexible 3D-SERS substrates via thermal evaporation on PDMS transferred from BD for environmental pollution detection. Shih-Hsien Yeh Department of Materials Engineering, Ming Chi University of Technology, Chinese Taipei	S12	Flexible Bioelectronics Based on Soft Natural Materials Hai-Dong Yu Northwestern Polytechnical University, China
13:00	Lunch							
	ECR session							
	Session chair:		Session chair:		Session chair:		Session chair:	
14:30	K11	Multi-dimensional Modelling of Functional Oxides: Answering Industry Relevant Research Questions. Pooja Goddard Loughborough University, UK	K12	Title TBC Nicola Gasparini Imperial College London, UK	K13	Tailoring Zeolites and Metal Organic Frameworks for Applications in Carbon Capture Paul Wright University of St Andrews, UK	K14	Vinyl Polymer Engineering for the Development of New Materials for Biomedical Applications Julien Nicolas CNRS, France
15:00	F13	Structural insights into high entropy oxide formation via hydrothermal-assisted synthesis Adrian Sanz Arjona University of Copenhagen, Denmark	E13	Evaporable Fullerene Derivatives and Single-walled Carbon Nanotube Transparent Electrodes for Organic and Perovskite Solar Cells Yutaka Matsuo Nagoya University, Japan	N13	Computational Exploration of Zeolite Properties Using Neural Networks Potentials Indranil Saha Charles University, Czech Republic	S13	Exploring Polysarcosine-Based Telodendrimer Micelles: A Novel Platform for Advanced Drug Delivery Jessica Yu AstraZeneca, UK
15:20	F14	New Approaches to the Synthesis of Low-valent Early Transition Metal Oxides and Oxyfluorides: Structure and Properties Arnold Guloy University of Houston, USA	E14	Effect of Host Oxygen Permeability on the Efficiency of Solid-State Photon Upconverters for Photovoltaics Georgina Burgoyne Morris University of Cambridge, UK	N14	Sustainable synthesis of zeolites through Na-Cs tandem templating Lubomira Tosheva Manchester Metropolitan University, UK	S14	Supramolecular Benzophenone-Based Photoinitiator for Spatially-Resolved Polymerization Alex Loch University of Glasgow, UK
15:40	F15	Metal Halide Perovskites: Compositional and Morphological Engineering for Enhanced Gas Sensing Applications Athanasia Kostopoulou Institute of Electronic Structure and Laser (IESL) / Foundation for Research & Technology - Hellas (FORTH), Greece	E15	Antimony Chalcogenides as Next-Generation Semiconductors: From Self Healing to SWIR Photovoltaics Eran Edri Ben-Gurion University of the Negev, Israel	N15	Dynamic separation of CO2 from N2 in humid streams using nanosized zeolites Sajjad Ghajavand LCS/CNRS, France	S15	Design of Hierarchical Block-Copolymer Brushes for siRNA Delivery Carlos Neri Queen Mary University of London, UK
16:00	F16	Mixed-Phase MoS2 Nanostructures for Wastewater Treatment and Disinfection Applications Rupal Kaushik IIT kharagpur, India	E16	Advancing Intercalation Strategies in Layered Hybrid Perovskites by Bringing Together Synthesis and Simulations Julia Payne University of St Andrews, UK	N16	New ultra-flexible boron oxide frameworks and boron-based zeolites Neil Allan University of Bristol, UK	S16	Memristive properties of nanometric layers of ordered polymethacrylate brushes grafted from surfaces Michał Szwarczyński AGH University of Krakow, Poland
16:20	Refreshments							
17:00	Lennox 3 PL03 - Tailoring Crystal Size and Defects for Enhanced Zeolite Performance Svetlana Mintova CNRS, ENSICAEN, Normandy University, France							
18:00	Poster session							
19:30	Close							

Wednesday 9 July 2025

Wednesday 9 July 2025		Lennox 3 PL04 - Title TBC Tao Zhang Chinese Academy of Sciences, China							
09:00		Time for delegates to move between theatres							
10:00		Time for delegates to move between theatres							
		Lowther Functional inorganic materials		Lennox 3 Materials for energy and sustainability		Lannermuir Suite Nano and porous materials		Menteith Soft matter and biomaterials	
		Session chair:		Session chair:		Session chair:		Session chair:	
10:10		K15	Roll-model materials: first-principles driven design of multifunctional hybrid nanotubes from 2-D material precursors Krishna Muralidharan The University of Arizona, USA	K16	Spin Probes and Materials Design Rules for Li- and Na-ion cathodes Raphaële Clément University of California, Santa Barbara, USA	K17	Heterogeneity in MOFs for Sustainable Catalytic Transformation Jun Huang University of Sydney, Australia	K18	Title TBC Kalpana Katti North Dakota State University, USA
10:40		F17	Charge Trapping in a-Si3N4: Hydrogen as Savior and Saboteur Lukas Hückmann Leiden University, Netherlands	E17	Advanced materials for enhancing battery safety: interfacial chemistries, electrolytes and current collectors. Rui Tan Swansea University, UK	N17	Unveiling New Product Formations Beyond Conventional Pathways in De-Halogenation of Halo-acetic Acids Using Ni-Encapsulated Sol-Gel Catalysts Kavya Vidyadharan Ariel University, Israel	S17	Growing Sustainability: Mycelium-Driven Innovations in Biocomposites and Advanced Materials Amparo Jimenez Quero Chalmers University of Technology, Sweden
11:00		F18	Mapping the controlled hydrothermal synthesis of materials with Principal Component Analysis Peter Dunne Trinity College Dublin, Ireland	E18	Non-Equilibrium Transformation Mechanisms in a Prussian Blue Analogue Electrode John Cattermull Stanford University, USA	N18	Permeating Porous Nanoarchitectures: Insights from Surface Analysis Mark Isaacs University College London, UK	S18	3D printable inorganic/organic hybrids for cartilage and bone regeneration Julian Jones Imperial College London, UK
11:20		Refreshments							
		Session chair:		Session chair:		Session chair:		Session chair:	
12:00		F19	Local Order Hidden in Structural Disorder of Solid Ionics Uncovered through Multiscale Structure Solution Xiaojun Kuang Guilin University of Technology, China	E19	High-valent Iron Redox in Layered Oxide Cathodes Hari Ramachandran Stanford University, USA	N19	Exploring Novel Approaches to Acetone Gas Sensing with Innovative Metal Oxide-Based Composite Materials Eleonora Pargoletti University of Milan, Italy	S19	Use of various Bioglass 3D macroporous scaffolds in the production of biodegradable composites for tissue engineering Marie-Hélène Thibault Université de Moncton, Canada
12:20		F20	Systematic exploration of magnetism in compositionally complex and high entropy perovskite oxides Augusté Stanionytė University of Amsterdam, Netherlands	E20	The development of organic ionic plastic crystals for clean energy applications Jenny Pringle Deakin University, Australia	N20	Porous ZnO-wood hybrids obtained by ALD with piezoelectric and photoconductive properties Maximilian Ritter ETH Zurich, Switzerland	S20	Self-standing biohybrid xerogels based on Halloysite Nanotubes for environmental remediation Lorenzo Lisuzzo University of Palermo, Department of Physics and Chemistry "Emilio Segrè", Italy
12:40		F21	Solid-state nuclear clocks containing the thorium-229 isotope Harry Morgan University of Manchester, UK	E21	The Development of Electrode Materials from Bio-Precipitates Isolde Marsland University of Edinburgh, UK	N21	Thermally Stable Binary Hybrid Organic-Inorganic Perovskite Glasses Arad Lang University of Cambridge, UK	S21	Multifunctional Smart Gel Based on Biopolymers: Psyllium and Alginate with Cerium oxide Nanoparticles Burcu Orhan Istanbul Technical University, Turkey
13:00		Lunch							
		ECR session							
		Session chair:		Session chair:		Session chair:		Session chair:	
14:30		K19	Advancements in High-Pressure/High-Temperature Chemistry and Luminescent Properties of Oxonitridoborates Hubert Huppertz University of Innsbruck, Austria	K20	Title TBC Manish Chhowalla University of Cambridge, UK	K21	Design of functional nanostructures for energy and biomedical applications Ashok Kumar Ganguli IISER Berhampur, India	K22	Title TBC Sebastien Leccomandoux University of Bordeaux, France
15:00		F22	Alternative route for the preparation of Al2O3, AlON and AlN NPs for optical applications Maria Alejandra Rojas Ruiz Queen Mary University of London, UK	E22	Near-frictionless ion transport within triazine framework membranes Chunchun Ye The University of Edinburgh, UK	N22	Artificial Intelligence-Controlled Microfluidic Synthesis of Nanoparticles Dale Huber Sandia National Laboratories, USA	S22	PAMAM dendritic nanoparticle-loaded hydrogels: dual approach to enhance immune response and induce immunogenic cell death in cancer Endris Yibru Hanurry University of Messina, Italy
15:20		F23	Exploratory Synthesis of Novel (Oxy)nitride Phosphors Xiaoming Wang Shaanxi Normal University, China	E23	In situ quantitative single-molecule study of site-specific photocatalytic activity and dynamics on ultrathin g-C3N4 nanosheets Zhengyang Zhang Nanyang Technological University, Singapore	N23	Design of smart hybrid porous materials for controlled drug delivery Virginie Hornebecq Aix-Marseille University - CNRS, France	S23	Surfactant-free enzymatic polymerization of a biorenewable butyrolactone monomer via a green approach: Synthesis of sustainable biobased latexes Khaled Sebakh Ghent University, Belgium
15:40		F24	Survey of the defect chemistry and electrical properties of NaNbO3 Derek Sinclair University of Sheffield, UK	E24	Lignin-Based Photonic Glasses with Tunable Colors and High Yields Unnimaya Thalakkale Veetil Stockholm University, Sweden	N24	Biosynthesised zinc oxide nanoparticles impregnated into ceramic (clay) filters for water purification and toxicological testing using periwinkle Doris Ogeleka Federal University of Petroleum Resources, Effurun, Nigeria	S24	Dual-responsive carbon quantum dots for the simultaneous detection of cytosine and 5-methylcytosine interpreted by a machine learning-assisted smartphone Theerapong Puangmali Khon Kaen University, Thailand
16:00		F25	Enhanced luminescence of samarium and europium-doped niobate-based phosphors for WLED applications Kanishk Poria Panjab University, Chandigarh, India	E25	Exploring multicomponent crystals of amino acids as potential piezo-materials Suman Bhattacharya University of Limerick, Ireland	N25	Development of polyphosphate grafted CuS nanoparticles for NIR responsive chemo-photothermal therapy Sonali Gupta Homi Bhabha National Institute, India	S25	Drug-Cocktail Nanocarriers Combining Lipophilic and Hydrophilic Drugs with High Payload Claus Feldmann Karlsruhe Institute of Technology (KIT), Germany
16:20		Refreshments							
17:00		Lennox 3 PL05 - Title TBC Kristi Anseth University of Colorado Boulder, USA							
18:00		Poster prize winners announced							
18:15		Close							
19:15		Conference banquet							

Thursday 10 July 2025

		Lowther Functional inorganic materials	Lennox 3 Materials for energy and sustainability	Lannermuir Suite Nano and porous materials	Menteith Soft matter and biomaterials
		Session chair:	Session chair:	Session chair:	Session chair:
09:00	K23	Unusual charge transitions in transition metal oxides lead to novel functional properties Yuichi Shimakawa Kyoto University, Japan	K24 Title TBC Ludmilla Steier University of Oxford, UK	K25 Light-Driven Micromotors: From Material Design to Programmable Self-Assembly Katherine Villa Institute of Chemical Research of Catalonia (ICIQ), Spain	K26 Title TBC Julien Gautrot Queen Mary, University of London, UK
09:30	F26	Integrating machine learning and artificial intelligence with classical simulations for automating materials discovery. Chris Collins University of Liverpool, UK	E26 Efficient CO <sub>2</sub> cycloaddition reactions at ambient pressure and mild temperature using a Zn single-atom catalyst Nicolo Allasia Politecnico di Milano, Italy	N26 Design of Novel Metallic-Nanobiohybrids as Artificial Metalloenzymes Jose M. Palomo CSIC, Spain	S26 Rational Design of Multifunctional Hydrogels from Fundamentals to Applications Jie Zheng University of Akron, USA
09:50	Time for delegates to move between theatres				
10:00	ECR session				
11:00	Refreshments				
		Session chair:	Session chair:	Session chair:	Session chair:
11:40	F27	Surface and Photocatalytic Properties of Self-Cleaning Spin-Coated Ag/TiO <sub>2</sub> Films Samah Al Sidran Cardiff University, UK	E27 Chemical Recycling of Mixed Poly(ethylene terephthalate) and Poly(vinyl chloride) via Dual Lewis Acid/Base Catalysis Yuya Watanabe University of Birmingham, U K	K27 KEYNOTE: Leveraging Polymer Chemistry and Pickering Emulsions for Energy Applications Emily Pentzer Texas A&M University, USA	S27 Electroactive hyaluronic acid-based click-hydrogels for skin wound healing Maria M. Pérez-Madrigal Universitat Politècnica de Catalunya, Spain
12:00	F28	Radiation effects in metal-cyanide frameworks Hanna Boström Stockholm University, Sweden	E28 Removing carbon dioxide from the air using a humidity-driven membrane Greg A. Mutch Newcastle University, UK	N28 (12:10) Investigating the interactions between a poloxamer and TEMPO-oxidised cellulose nanocrystals Alessandra Lavoratti University of Bristol, UK	S28 Aggregation-induced-active Polymeric Nano-objects for Wastewater Treatment Application Parvaneh Eskandari University of Birmingham, UK
12:20	F29	Chemical doping-triggered property alteration in Mn <sub>2</sub> -xCo <sub>x</sub> Sc <sub>2</sub> B <sub>6</sub> Kunlang Ji Kyoto University, Japan	E29 Active, Selective, *and* Stable COPROX + WGS Catalysts Based on Ceria Aerogel-Supports Austin Herzog U.S. Naval Research Laboratory, USA	N29 (12:30) Selective Ion Transport through Hydrated Micropores in Polymer Membranes for redox flow batteries Anqi Wang King Abdullah University of Science and Technology (KAUST), Saudi Arabia	S29 Unraveling Transition Metal-Driven Self-Assembly in Hydrogels: A Molecular and Macroscopic Investigation of Fe <sup>3+</sup> -Cellulose Interactions Valeria Gabrielli INSA, France
12:40	Time for delegates to move between theatres				
12:50	Lennox 3 PL06 - Discovery synthesis of inorganic functional materials in the digital age Matthew Rosseinsky University of Liverpool, UK				
13:50	Chairs' summary				
14:00	Close of conference				