School of Chemical and Process Engineering PGR–Industry Days

Tuesday 13 – Wednesday 14 January 2026

Programme

Tuesday 13 January 2026		
10:00 – 10:30	**Registration for lab tour at 10:30** SCAPE Foyer Lab tour to visit: Digital Manufacturing and Products, Energy Transition and Net Zero, Materials for Sustainable Future, Bragg Centre and Institute for Process Research and Development	
11:00 – 11:30	**Registration for lab tour at 11:30** SCAPE Foyer Lab tour to visit: Digital Manufacturing and Products and Energy Transition and Net Zero	
12:00 – 13:00	***Registration (SCAPE Foyer) and lunch (Room 4.06)***	
13:00 – 13:10	**Welcome and introduction** Professor Rik Drummond Brydson, Director of Research and Innovation SCAPE Lecture Theatre B	
13:10 – 13:35	**Introduction to Digital Manufacturing and Products** Professor Sven Schroeder Theme lead SCAPE Lecture Theatre B	
	Flash Presentations:	
digiMan01	Use of Deep Learning for the prediction of Triboelectrification in Powders	*Louis Buxton*
digiMan02	Integrated Self-Optimisation of Active Pharmaceutical Ingredient Synthesis and Crystallisation using Machine Learning	*Rohan Shetty*
digiMan03	Using carbonate-based nanofluids in an integrated heat pump-thermal energy storage system for providing sustainable domestic heating	*Aashir Zaheer*
digiMan04	Machine Learning Driven Transfer Learning for Reaction Screening and Optimisation in Continuous Flow	*Schaumiya Suresh*
digiMan05	Efflorescence of sodium chloride-mucin systems: A step towards understanding crystallization in respiratory aerosols	*Faizan Ahmad*
digiMan06	The Impact of Particle Surface Chemistry on Product Manufacturability	*Andrew Britton*
13:35 – 14:00	**Introduction to Energy Transition and Net Zero** Associate Professor Andrew Ross, Theme lead SCAPE Lecture Theatre B	
	Flash Presentations	
ETNZ01	Valorisation of asphaltenes for carbon-based electrocatalysis	*Bader Alarbeed*
ETNZ03	Screening Polymer Conformation in High-Salinity Fluids Using QCM-D	*Amir Alhajri*
ETNZ04	Effects of Hydrogen Substitution on Emission Formation in an NH_3/Diesel Dual-Fuel Engine	*Zhaolin Li*
ETNZ05	Functional Thin Film Coatings Design and Optimisation Based on the Wear and Corrosion Mechanisms for the Next Generation of Nuclear Reactors	*Joshua Feast*
ETNZ06	Techno-Economic and Environmental Assessment of Green Ammonia Synthesis Under Varying Pressure and Temperature	*Salem Alsaedi*
ETNZ07	Sewage sludge treatment re-imagined	*Paul Heierman-Rix*
ETNZ08	Carbon Phosphonation as a way to cheaply and easily adsorb Sr	*Michael Wahnon*
ETNZ09	A Comparison of the Baseline Thermal Characteristics and Composition of Hydrochar and Pyrochar from Faecal Sludge and Water Hyacinth.	*Flora Chitalu*
ETNZ10	A comparison of pre-treatment approaches for enhancing the biogas yield from water hyacinth	*Betul Esen*

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Tuesday 13 January 2026 continued		
14:00 -14:25	**Introduction of Materials for Sustainable Future** Professor Gin Jose theme lead SCAPE Lecture Theatre B	
	Flash Presentations:	
M4SF01	Investigating Semiconductor Materials using 4D Scanning Transmission Electron Microscopy (4DSTEM)	*Tiantian Chai*
M4SF02	Hybrid Foams for EOR Applications in high Temperature and Pressure Environments	*Abrar Albahri*
M4SF03	Saponin-Stabilised Interfaces for CO_2 Foam Applications	*Abrar Albahri*
M4SF04	Modular intensified ion exchange utilising agitated tubular reactors	*Stephen Donegan*
M4SF05	Arc Welder based Synthesis of Graphene for Polymer Nanocomposite Applications As a Cost-Effective Alternative to the Flash Joule Heating Method	*Armin Gholizadeh*
M4SF06	Phase and Orientation Mapping of Topological Thin Film Heterostructure using 4D-STEM	*Ben Muggleton*
M4SF07	Understanding the Effects of Protein Hydration Kinetics on Their Functional Properties and Product Performance	*Connor Kirk*
M4SF08	Timing is Everything: Induction Time in Cerium Oxalate Precipitation	*Dragan Matijevic*
M4SF09	Upgrading of Biogas using Ex-situ Biochar Immobilised Bioreactor Approaches	*Munira Alateeqi*
M4SF10	Influence of HMDSO/O2 Ratio on SiOx Films: Composition and Property Insights from ERDA	*Atreya Danturthi*
14:25 – 15:00	**digiMP Research Presentations, Chair: TBA** SCAPE Lecture Theatre B	
	Mechanistic Modelling of Drying Processes	*Nicholas McCarthy*
	Smart continuous polymeric nanoparticle manufacturing	*Kudakwashe Chingono*
	Development of a New Particle Charge Classifying Chamber	*Wei Goh*
15:00 - 15:35	Refreshments, networking and posters Room 4.06 and 4.07	
15:35 – 16:10	**ETNZ Research Presentations** Parallel Session – Lecture Theatre B Chair: Alastair Baker	**M4SF Research Presentations** Parallel Session – Lecture Theatre C Chair: TBA
	Effect of High Temperature and Oxidation on the Stability and Deposition Behaviour of Asphaltene Particles *Mustapha Garba*	TBA *Natalia Koniuch*
	Development of a three-phase chemical extraction system for advanced hydrometallurgical and nuclear applications *Thomas Robshaw*	Reinventing Coatings for Sustainable Flexible Packaging. *Matthew Creswick*
	Low Carbon Fuels and Emissions Control for Compression Ignition Engines *Scott Wiseman*	Miniaturising Emulsion System Analysis *Matthew Simmons*
16:10 – 17:00	Round table: The PGR to industry transition Lecture Theatre B	
17:00 - 19:00	Networking buffet and posters Room 4.06 and 4.07	
19:00	*Drinks in The Library (optional)*	

Wednesday 14 January 2026		
09:15 – 09:30	*Registration for Day 2*	
09:30 – 10:00	**Welcome, and EPS and UoL research perspective,** Professor Cath Noakes. Lecture Theatre B	
	Digital Manufacturing and Products Parallel Session – Lecture Theatre B Chair: TBA	**Energy Transition and Net Zero** Parallel Session – Lecture Theatre C Chair: Christian Michelbach
10:00 – 10:15	Heterogeneous dissolved gas reactions *Sophie Graham*	Sustainable Pathways for Valorising Invasive Sargassum in an Integrated Biorefinery *Ryan Longley*
10:15 – 10:30	A Platform for the Online Characterisation and Self-Optimisation of Lipid Nanoparticles (LNPs) *Roisin O'Connell*	Enhanced production of high value BTEX aromatic hydrocarbons from the pyrolysis/non-thermal plasma/catalysis of waste polypropylene *Gu Jie*
10:30 – 10:45	Supersaturation effect on crystal morphology of iron (II) sulphate heptahydrate *Gabriele Sumanskaite*	Process Design and Sustainability Assessment of Lignocellulosic Biomass Conversion to Biofuel (Ethyl Levulinate Production) *Ali Alazzawi*
10:45 – 11:00	Autonomous kinetic model determination of active pharmaceutical ingredients *Clarissa Wilding*	Modelling of Precipitation Reactors in Reprocessing of Spent Nuclear Fuel *Abdul Rana*
11:00 – 11:15	Coupling RWGS reaction to power generation for a large-scale carbon recycling energy scenario. *Mohamed Suhooli*	Non-thermal plasma/catalysis for upgrading waste-derived pyrolysis oils and gases, and hydrogenation of CO_2 *Maryam Khatibi*
11:15 – 11:30	Multi-objective self-optimisation of heterogenous catalytic reaction. *Soya Dohi*	Shear-Induced Breakage and Reflocculation of Nuclear Waste Simulant Suspensions from Lab to Pilot Scale *Jacob Rumey*
11:30 – 12:00	*Poster break, Room 4.07*	
12:00 – 13:00	*Lunch, Room 4.06*	
	Materials for a Sustainable Future Parallel Session Lecture Theatre B Chair: TBA	**Energy Transition and Net Zero** Parallel Session Lecture Theatre C Chair: Scott Wiseman
13:15 – 13:30	Analysis of lyotropic phase changes of alpha olefin sulfonate in a drying droplet *Robin Winder*	Physicochemical Characterisation of Asphaltenes Partitioned at Oil-Water Interfaces *Gerda Luht*
13:30 – 13:45	Application of ToF-SIMS in a FIB-SEM to Biomaterials *Rebecca Hughes*	Supercritical water liquefaction of mixed plastic waste 'contaminated' with PET (polyethylene terephthalate): Influence on product yield and composition *Maria Mathew*
13:45 – 14:00	Development of an automated reactor platform for the synthesis of functional polymers *Emelia Griffiths*	Development of a kHz resonator for characterizing the rheology of complex fluids *Gao Guohong*
14:00 – 14:15	Aesthetic Dental Materials: Anti-infective Photoactive Fluorapatites *Lydia Dawkins*	Enhanced removal of cesium from clay minerals by capacitive deionization process with surfactants *Jiaxin Hu*
14:15 – 14:30	Structural Evolution in MVD-Grown Al-Doped ZnO Thin Films Using 4D-STEM *Tiantian Chai*	A comparison of pre-treatment approaches for enhancing the biomethane yield from water hyacinth *Betul Esen*
14:30 – 14:45	The internal structure of acrylamide-based microgels depends on monomer reaction rates during synthesis *Silan Shan*	Upgrading Municipal Solid Waste fast pyrolysis oils Via esterification and hydrotreatment *Nkechi Ofoegbu*
14:50 – 15:15	Poster prizes, and Closing of the event, Lecture Theatre B	
15:15 – 16:00	*Refreshments and networking, SCAPE Foyer*	