

Conference Agenda

8th Interpore UK Chapter Conference
1–2 September 2025
Loughborough University, Loughborough, UK

Session Overview

Date: Monday, 1/Sept/2025

	Opening Session 1 Session Chair: Professor Graham Sander		
9:30am - 10:15am	Arrival and Registration Location: Stewart Miller Building 'Penrose Atrium'		
	Opening Ceremony		
10:15am - 10:30am	10:15am - 10:20am Welcome to 8th Interpore UK Chapter Conference Dr Diganta B Das (Chair, UK-Interpore Chapter)	10:20am - 10:25am Welcome to the University Professor Dan Parsons (PVC – R&I, Loughborough University)	10:25am - 10:30am Welcome to the School of AACME Professor Moataz Attallah (Incoming Dean, School of AACME, Loughborough University)
10:30am - 11:15am	From the Brain to Water Uptake of Roots to Fuel Cells: - Porous Media are "Almost" Everywhere Kimberly-Clarke Distinguished Lecture Professor Rainer Helmig (Stuttgart University, Germany)		
11:15am - 11:45am	Break with Poster Display		
11:45am - 01:30pm	Session 2 Porous Media in Environmental and Water Engineering Session Chair: Dr Jagannath Biswakarma		
11:45am - 12:05pm	Degradation of PFAS During Thermal Reactivation of Granular Activated Carbon for Water Treatment. Invited Lecture: Professor Jan Hofman (University of Bath, UK)		
12:05pm - 12:20pm	Transcending Diffusional Limits: Microchannel Structured Substrates for Intensified Catalysis and Separation Oral Presentation: Dr Zhentao Wu (Aston University)		
12:20pm - 12:35pm	Multiscale Modelling of Reverse Osmosis Membranes: Asymptotic Derivation and Numerical Validation Oral presentation: Dr Matteo Icardi (University of Nottingham)		
12:35pm - 12:45pm	Urban mining at Loughborough - a summary of activities using biochar to extract metal ions from solution. Oral presentation: Dr Mark Leaper (Loughborough University)		
12:45pm - 12:55pm	Oxygen Dynamics in Smouldering Combustion: Impacts on Reaction Zones and Biochar Production Oral presentation: Ms Fatemeh Khodaparastan (The Open University)		
12:55pm - 01:05pm	Numerical Frameworks for Leaching and Competitive Sorption-Desorption in Subsurface Environments under Intense Rainfall Using Maximum Likelihood-Optimised Kinetic and Equilibrium Approaches Oral presentation: Mr Hamid Moghimi (University of Warwick)		
01:05pm - 01:15pm	Applied Smouldering to Treat PFAS from Sewage Sludge Oral presentation: Dr Tarek Rashwan (The Open University / University of Nottingham)		
01:15pm - 01:25pm	4D Study of Groundwater Remediation using Nanotechnology, a Pore-scale Study Oral presentation: Mr Pavel Kazakovtsev (Teesside University)		
01:25pm - 01:30pm	Heavy Metal Bioaccumulation and Remediation within Aquatic Ecosystems		
01:30pm - 02:30pm	Flash presentation: Dr Basmah Bushra (Loughborough University) Lunch Break and Poster Display		

02:30pm - 04:00pm	<p style="text-align: center;">Session 3</p> <p style="text-align: center;">Flow, transport and reactive processes across multi-scales in porous media – I</p> <p style="text-align: center;">Session Chair: Professor Graham Sander</p>
02:30pm - 02:45pm	<p>The UK subsurface microbial limits database: a screening tool for safe geological storage</p> <p>Oral Presentation: Dr Simon Gregory (British Geological Survey)</p>
02:45pm - 03:05pm	<p>It's the Stickiness: How Winnowing, Substrate Structure and Pore Space Dynamics Limit Estuarine and Coastal Morphodynamics</p> <p>Invited Lecture: Professor Dan Parsons (Pro-Vice-Chancellor for Research and Innovation, Loughborough University)</p>
03:05pm - 03:20pm	<p>Porous Microscale Current Collectors for Next-Generation On-Chip Energy Storage</p> <p>Oral Presentation: Dr Buddha Deka Boruah (University College London)</p>
03:20pm - 03:30pm	<p>Mixing in Underground Hydrogen Storage: The Role of Mechanical Dispersion and It's Influence On Site Selection</p> <p>Oral Presentation: Ms Samantha Marchbank (University of Edinburgh)</p>
03:30pm - 03:40pm	<p>Exploring The Effect of Hysteresis and Heterogeneity on Hydrogen Storage Efficiency in Saline Aquifers</p> <p>Oral presentation: Mr Abdolali Mosallanezhad (Heriot-Watt University)</p>
03:40pm - 03:50pm	<p>A staged investment and development approach for cost reduction in underground hydrogen storage: The Long Clawson Field, UK.</p> <p>Oral presentation: Mr Harri Williams (The Open University)</p>
03:50pm - 04:00pm	<p>Extending Vertical Equilibrium Modelling for Three-Phase CO₂-CH₄-Brine Flow</p> <p>Oral presentation: Mr Saeid Telvari (Heriot-Watt University)</p>
04:00pm - 04:30pm	Break with Poster Display
04:30pm - 05:35pm	<p style="text-align: center;">Session 4</p> <p style="text-align: center;">Porous Media in Health Care</p> <p style="text-align: center;">Session Chair: Dr Raman Maiti</p>
04:30pm - 04:50pm	<p>Minimally Invasive Technologies for Transdermal Delivery and Diagnostics</p> <p>Invited Presentation: Dr Conor O'Mahony (Tyndall National Institute)</p>
04:50pm - 05:00pm	<p>Assessment of the safety of repeated microarray patch applications in a minipig model</p> <p>Oral Presentation: Dr Qonita Kurnia Anjani (Queen's University Belfast)</p>
05:00pm - 05:10pm	<p>Smart PowderInjector microneedles: A next-generation platform for porous material delivery into the skin</p> <p>Oral Presentation: Dr Abraham M. Abraham (Queen's University Belfast)</p>
05:10pm - 05:20pm	<p>Molecular Dynamics Based Modelling for Design of Dissolving Microneedle</p> <p>Oral Presentation: Ms Pangkhi Medhi (Loughborough University)</p>
05:20pm - 05:25pm	<p>Numerical Investigation of Shear-Induced Cell Injury Using a Novel SPH-Based Biomechanical Model</p> <p>Flash Presentation: Mr Sarjeel Rashid (Loughborough University)</p>
05:25pm - 05:30pm	<p>Quality by design guided development of hydrogel-forming microneedles for transdermal delivery of enfuvirtide</p> <p>Flash Presentation: Dr Huanhuan Li (Queen's University Belfast)</p>
05:30pm - 05:35pm	<p>Numerical Simulation of Hollow Microneedle Patches for Targeted Drug Delivery using a Coupled Free and Porous Flow Approach</p> <p>Flash Presentation: Dr Ravi Prakash (Loughborough University)</p>
05:35pm - 05:40pm	<p>Incorporating Fluid-Structure Interactions for Modelling of Pyramidal Hollow Microneedles for Transdermal Drug Delivery</p> <p>Flash Presentation: Dr Rahul Nadda (Loughborough University)</p>
05:40pm - 07:00pm	Drinks Reception with Poster Display

Date: Tuesday, 2/Sept/2025

09:30am - 10:00am	Arrivals and Registration
10:00am - 11:00am	<p style="text-align: center;">Session 5</p> <p style="text-align: center;">Manufacturing Technologies for Porous Media</p> <p style="text-align: center;">Session Chair: Dr Finian McCann</p>
10:00am - 10:20am	<p>3D Printing of Metallic Lattices</p> <p>Invited Lecture: Professor Moataz Attallah (Incoming Dean, School of AACME, Loughborough University)</p>
10:20am - 10:40am	<p>Inkjet Printing of ZIF-67 based-polymer composite membranes</p> <p>Invited Lecture: Professor Begum Tokay (University of Nottingham, UK)</p>
10:40am - 10:50am	<p>Industrial Scale Production of Metal-Organic Frameworks for Carbon Capture</p> <p>Oral Presentation: Mr Andrew Jones (Promethean Particles)</p>
10:50am - 11:00am	<p>Compressive response of aluminium foams under high strain rates</p> <p>Oral Presentation: Dr Finian McCann (Loughborough University)</p>
11:00am - 11:30am	Break with Poster Display
11:30am - 11:55am	<p style="text-align: center;">Session 6</p> <p style="text-align: center;">Applications of Particle and Porous Media in Varied Applications</p> <p style="text-align: center;">Session Chair: Dr Mark Leaper</p>
11:30am - 11:35am	<p>Driving Sustainability in Electrochemical Water Treatment: A Life Cycle Lens on Electrode Material and Coating Selection for degradation of p-aminosalicylic acid in water.</p> <p>Flash Presentation (online): Ms Aarti Puri (Indian Institute of Technology, Roorkee)</p>
11:35am - 11:40am	<p>Sustainable Synthesis of Nanocellulose via Fenton Oxidation Using Iron Oxide Nanocomposites: A Green Approach for Biomass Valorization and Environmental Impact</p> <p>Flash Presentation (online): Ms Dharna Bhardwaj (Indian Institute of Technology, Roorkee)</p>
11:40am - 11:45am	<p>Predicting Core Exposure in Stimuli-Responsive Polymer Particles: Combination of Experimental and Simulation Insights</p> <p>Flash Presentation: Dr Nilanjan Mukherjee (Loughborough University)</p>
11:45am - 11:50am	<p>Spontaneous imbibition in underground hydrogen storage in saline aquifers.</p> <p>Flash presentation: Dr Waleed Dokhon (Imperial College London)</p>
11:50am - 11:55am	<p>Activated Porous Carbon extracted from Lignocellulose-based Bio-waste Materials working as a Superior Electrode Material for High-Performance Supercapacitor</p> <p>Flash Presentation: Dr Monojit Mondal (University College London)</p>
12:00pm - 12:40pm	<p style="text-align: center;">Session 7</p> <p style="text-align: center;">Porous Media in NetZero and Energy Applications</p> <p style="text-align: center;">Session Chair: Dr Monojit Mondal</p>
12:00pm - 12:10pm	<p>The Architect in the Pores: Water's Role in Aminosilane grafting for Carbon Capture</p> <p>Oral Presentation: Mr Briggs Ogunedo (Cranfield University)</p>
12:10pm - 12:20pm	<p>Monitoring CO2 Sequestration in Basalt and Silicate Porous Media Using Low-Cost Electrical Sensors</p> <p>Oral Presentation: Dr Kazeem Rabi (Loughborough University)</p>
12:20pm - 12:30pm	<p>From Biomass to Biochar: X-ray micro-CT Comparison of 3D Pore Structures in Brown Algae</p> <p>Oral Presentation: Ms Esther Odiki (Teesside University)</p>
12:30pm - 12:40pm	<p>Porous Gold-PANI Microelectrodes for Advanced On-Chip Micro-Supercapacitors</p> <p>Oral Presentation: Dr Nibagani Naresh (University College London)</p>
12:40pm - 01:30pm	Lunch Break with Poster Display

01:30pm - 03:30pm	<p style="text-align: center;">Session 8</p> <p style="text-align: center;">Flow, transport and reactive processes across multi-scales in porous media - II</p> <p style="text-align: center;">Session Chair: Dr Marco Discacciati</p>
01:30pm - 01:45pm	<p>Compact, Fully Analytical Solution to the Non-equilibrium Richards Equation for 1D Horizontal Flow</p> <p>Oral Presentation: Professor Graham Sander (Loughborough University)</p>
01:45pm - 02:00pm	<p>Arsenic oxidation by Fe-rich minerals and field evidence from Assam, India</p> <p>Oral Presentation: Dr Jagannath Biswakarma (University of Bristol)</p>
02:00pm - 02:15pm	<p>Hierarchical Flow and Mechanical Performance in Termite Nests: A Micro-CT-Based Multiscale Study</p> <p>Oral Presentation: Dr Sajjad Foroughi (Imperial College London)</p>
02:15pm - 02:30pm	<p>Impact of capillary pressure heterogeneity on CO₂-brine flow through porous media at core scale</p> <p>Oral Presentation: Dr Petr Nikolaev (Imperial College London)</p>
02:30pm - 02:40pm	<p>Computational modelling of an incompressible fluid at the interface with a porous medium</p> <p>Oral Presentation: Dr Marco Discacciati (Loughborough University)</p>
02:40pm - 02:50pm	<p>Pore network modeling of drying-induced salt precipitation</p> <p>Oral Presentation: Mr Nihal Muhammed Habeeb (Coventry University)</p>
02:50pm - 03:00pm	<p>Two-phase flow in a model of rough fracture: A novel computational method for interface dynamics</p> <p>Oral Presentation: Dr Mykyta V. Chubynsky (Coventry University)</p>
03:00pm - 03:10pm	<p>A continuum viscoporoelastic approach to modelling hydromechanical peatland development</p> <p>Oral Presentation: Mr Joshua Finn (University of Nottingham)</p>
03:10pm - 03:30pm	<p>Closing Remarks, Discussion and Future Direction –</p> <p>Current Status and Invitation to get involved with Interpore UK Chapter activities</p> <p>Dr Diganta B Das, Chair, Interpore UK Chapter</p>

	Poster List
1	Dynamics of insertion and extraction of hollow pyramidal microneedles: experiments and numerical modelling Presenter's Name - Dr Diganta Das
2	Multi-scale Characterization of H ₂ Storage in Carbonate Reservoirs Presenter's Name - Mr Mohammed Al Mandhari
3	Activated Porous Carbon extracted from Lignocellulose based Bio-waste Materials working as a Superior Electrode Materials for High-Performance Supercapacitor Presenter's Name - Dr Monojit Mondal
4	Applied Smouldering to Treat PFAS from Sewage Sludge Presenter's Name - Dr Tarek Rashwan
5	A Vertical Equilibrium Model For CO ₂ Storage In Depleted Gas Fields Presenter's Name - Mr Saeid Telvari
6	From Bench to Bedside: Assessing the Mechanical Integrity of Additive Manufactured Polymers under simulated in vivo conditions Presenter's Name - Dr Raman Maiti (Jake Didd)
7	Oxygen Dynamics in Smouldering Combustion: Impacts on Reaction Zones and Biochar Production Presenter's Name - Ms Fatemeh Khodaparastan
8	Impact of Modified Rice Husk Biochar on the Physicochemical Properties of Wastewater-Irrigated Soil and Functional Traits of Beetroot Presenter's Name - Mr Kaushik Gautam
9	Incorporating Fluid-Structure Interactions for Modelling of Pyramidal Hollow Microneedles for Transdermal Drug Delivery Presenter's Name - Dr Rahul Nadda
10	Photo Electrochemical Swing Carbon Capture and Removal Presenter's Name - Mr Fayez Qureshi
11	Exploring The Effect of Hysteresis and Heterogeneity on Hydrogen Storage Efficiency in Saline Aquifers Presenter's Name - Mr Abdolali Mosallanezhad
12	Hierarchical Flow and Mechanical Performance in Termite Nests: A Micro-CT-Based Multiscale Study Presenter's Name - Dr Sajjad Foroughi
13	Heavy Metal Bioaccumulation and Remediation within Aquatic Ecosystems Presenter's Name - Dr Basmah Bushra
14	Decentralised water leak detection using the LSTM autoencoder and decision fusion Presenter's Name - Mr. Mohammad Wael/ Mohammad Bakar
15	Stimulating natural microbial communities in beach sand to aid coastal defence Presenter's Name - Dr Simon Gregory
16	The UK subsurface microbial limits database: a screening tool for safe geological storage. Presenter's Name - Dr Simon Gregory
17	Compressive response of aluminium foams under various strain rates Presenter's Name - Dr Finian McCann
18	The Architect in the Pores: Water's Role in Aminosilane grafting for Carbon Capture Presenter's Name - Mr Briggs Ogunedo
19	From Biomass to Biochar: X-ray micro-CT Comparison of 3D Pore Structures in Brown Algae Presenter's Name - Mr Esther Odiki
20	On optimisation of a PEM fuel cell's porous-component-layer thicknesses Presenter's Name - Dr Jun Xia

Participants list

Sr. No.	Title	Name	Affiliation
1	Dr	Diganta B Das	Loughborough University, UK
2	Professor	Dan Parson	Loughborough University, UK
3	Professor	Moataz Attallah	Loughborough University, UK
4	Professor	Rainer Helmig	Stuttgart University, Germany
5	Professor	Jan Hofman	University of Bath, UK
6	Dr	Zhentao Wu	Aston University, UK
7	Dr	Matteo Icardi	University of Nottingham, UK
8	Dr	Mark Leaper	Loughborough University, UK
9	Ms	Fatemeh Khodaparastan	The Open University, UK
10	Mr	Hamid Moghimi	University of Warwick, UK
11	Dr	Tarek Rashwan	The Open University, UK / University of Nottingham, UK
12	Mr	Pavel Kazakovtsev	Teesside University, UK
13	Dr	Basmah Bushra	Loughborough University, UK
14	Dr	Buddha Deka Boruah	University College London, UK
15	Dr	Simon Gregory	British Geological Survey, UK
16	Mr	Abdolali Mosallanezhad	Heriot-Watt University, UK
17	Mr	Harri Williams	The Open University, UK
18	Mr	Saeid Telvari	Heriot-Watt University, UK
19	Dr	Conor O'Mahony	Tyndall National Institute, Ireland
20	Dr	Qonita Kurnia Anjani	Queen's University Belfast, Northern Ireland
21	Dr	Abraham M. Abraham	Queen's University Belfast, Northern Ireland
22	Ms	Pangkhi Medhi	Loughborough University, UK
23	Mr	Sarjeel Rashid	Loughborough University, UK
24	Dr	Huanhuan Li	Queen's University Belfast, Northern Ireland
25	Dr	Ravi Prakash	Loughborough University, UK
26	Dr	Rahul Nadda	Loughborough University, UK
27	Professor	Begum Tokay	University of Nottingham, UK
28	Mr	Andrew Jones	Promethean Particles
29	Dr	Finian McCann	Loughborough University, UK
30	Dr	Nilanjan Mukherjee	Loughborough University, UK
31	Dr	Waleed Dokhon	Imperial College London, UK
32	Dr	Monojit Mondal	University College London, UK
33	Mr	Briggs Ogunedo	Cranfield University, UK
34	Dr	Kazeem Rabi	Loughborough University, UK
35	Dr	Nibagani Naresh	University College London, UK
36	Professor	Graham Sander	Loughborough University, UK
37	Dr	Jagannath Biswakarma	University of Bristol, UK
38	Dr	Sajjad Foroughi	Imperial College London, UK
39	Dr	Petr Nikolaev	Imperial College London, UK
40	Dr	Marco Discacciati	Loughborough University, UK
41	Mr	Nihal Muhammed Habeeb	Coventry University, UK
42	Dr	Mykyta V. Chubynsky	Coventry University, UK
43	Mr	Joshua Finn	University of Nottingham, UK
44	Mr	Kaushik Gautam	Department Of Botany, Banaras Hindu University, Varanasi, U.P., India

45	Mr	MV Chinnamani	Tyndall National Institute, Ireland
46	Mr	Mohammed Al Mandhari	Institute of GeoEnergy Engineering, UK
47	Mr	CJ Jones	Institute of GeoEnergy Engineering, UK
48	Mr	Fayez Qureshi	Cranfield University, UK
49	Mr	Oli Cherrington	Loughborough University, UK
50	Mr	Sunera Athauda	Cranfield University, UK
51	Mr	Bengang Chen	University of Manchester, UK
52	Dr	Maryam Zarghamidehaghani	University of Edinburgh, UK
53	Ms	Sahraoui	Nottingham Trent University, UK
54	Mr	Ding	Manchester University, UK
55	Mr	Sam Marchbank	University of Edinburgh, UK
56	Dr	Bruno V uillod	Nottingham University, UK
57	Mr	Esther Odiki	Teesside University UK
58	Mr	Mohammad Bakar	De Montfort University, UK
59	Dr	Raman Maiti	Loughborough University, UK
60	Dr	Jun Xia	Brunel University of London, UK
61	Ms	Jess Mackie	British Geological survey
62	Dr	Izzy Cooley	Loughborough University, UK
63	Ms	Khadijeh Zare	Coventry University, UK
64	Dr	Dirk Visser	Loughborough University, UK