

Molecular and ion flows through angstrom-scale channels

13 - 15 April 2026 | Manchester, UK



Faraday Discussions

Monday 13 April 2026 (all timings are BST)

11:30	Registration and refreshments Lunch available from 12:00
12:45	Welcome and introductions Radha Boya (Chair of Scientific Committee) <i>University of Manchester, UK</i>
12:55	Outline of Discussion format Robin Brabham and Charley James, <i>Royal Society of Chemistry Publishing Editors</i>
13:00	Introductory lecture – Spiers Memorial lecture (Session chair: Radha Boya) Lydéric Bocquet CNRS and Ecole Normale Supérieure, France
14:00	Comfort break (water available)
	Session 1: Structure and dynamics of molecules in angstrom-scale confinement (Session chair: Susan Perkin)
14:15	Ambient stability and surface adhesion of 2D polyaramid nano-film Michael S. Strano <i>Massachusetts Institute of Technology, USA</i>
14:20	Operando x-ray mapping of ion transport and arrangement in a carbon-based supercapacitor electrode Malina Seyffertitz <i>University of Cambridge, UK</i>
14:25	Ionophilicity and transport dynamics of concentrated electrolytes in sub-nanometre graphite confinement Paola Carbone <i>The University of Manchester, UK</i>
14:30	Discussion
15:45	Refreshments
	Session 1 continued: Structure and dynamics of molecules in angstrom-scale confinement (Session chair: Marie-Laure Bocquet)
16:15	When is nanoconfined water different from interfacial water? Angelos Michaelides <i>University of Cambridge, UK</i>
16:20	2D nanoconfinement distorts the solvation structure of hydroxide but not of hydronium Margaret Berrens <i>Lawrence Livermore National Laboratory, USA</i>
16:25	Electrostatic screening in nanotubes: A tubular response function framework Nikita Kavokine <i>EPFL, Switzerland</i>
16:30	Discussion
17:45	Lightning presentations (by invitation of the Scientific Committee)
18:15	Poster session and wine reception
19:30	Close of sessions

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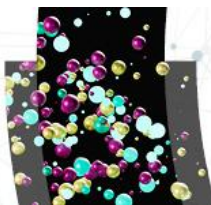
Faraday Discussions

Tuesday 14 April 2026 (all timings are BST)

	Session 1 continued: Structure and dynamics of molecules in angstrom-scale confinement (Session chair: Zuzanna Siwy)
09:30	Charging dynamics of angstrom-scale pores of MXene electrode with ionic liquid electrolytes Alexei Kornyshev <i>Imperial College London, UK</i>
09:35	Decoding ultrafast water transport in graphene oxide Manu Jaiswal <i>Indian Institute of Technology Madras, India</i>
09:40	Discussion
10:30	Refreshments
	Session 2: Stimuli responsive flows in angstrom-channels (Session chair: Robert Dryfe)
11:00	Photo-modulation of proton / water transmembrane transport through bis(imidazole-amide)-tetrafluoroazobenzene switch Mihail Barboiu <i>University of Montpellier, France</i>
11:05	Photo modulated fluidic channels for precise delivery of ions and molecules Kalyan Raidongia <i>Indian Institute of Technology Guwahati, India</i>
11:10	Modulating multivalent ion interaction in angstrom-scale confinement through solvent environment Chong Liu <i>University of Chicago, USA</i>
11:15	Discussion
12:30	Lunch
	Session 2 continued: Stimuli responsive flows in angstrom-channels (Session chair: Lydéric Bocquet)
13:30	Speciation and hydration forces in sodium carbonate/bicarbonate aqueous solutions nanoconfined between mica sheets Susan Perkin <i>University of Oxford, UK</i>
13:35	Flexoelectric effect in flexible 2D nanofluidic channels Yujia Zhang <i>Laboratory for Bio-Iontronics, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland</i>
13:40	Charge localization, rectification, and transport in electrolyte patchy nanochannels Ignacio Pagonabarraga <i>University of Barcelona, Spain</i>
13:45	Discussion
15:00	Refreshments

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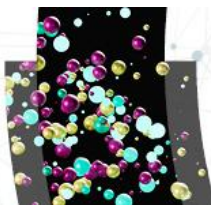


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	Session 3: Molecular and ion sieving with angstrom-channels (Session chair: Zuzanna Siwy)
15:30	Rare earth ion transport under intermediate confinement in large diameter nanotube porins Aleksandr Noy <i>Lawrence Livermore National Laboratory, USA</i>
15:35	From entrance pairing, interfacial clustering to collective diffusion: Structural origins of ion transport in angstrom-scale graphene slits Zhe Liu <i>University of Melbourne, Australia</i>
15:40	Effect of solvent structure on the Wien effect and ionic correlations at the nanoscale Hélène Berthoumieux <i>CNRS, France</i>
15:45	Nanopores with dynamic pore opening diameter Savannah Silva <i>University of California, Irvine, USA</i>
15:50	Discussion
17:30	Close of sessions
18:30	Pre-dinner drinks
19:00	Conference dinner

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Faraday Discussions

Wednesday 15 April 2026 (all timings are BST)

	Session 4: Iontronics and emergent neuromorphic effects under angstrom-confinement (Session chair: Robert Dryfe)
09:00	Energy-efficient time series processing in real-time with fluidic iontronic memristor circuits Tim Kamsma <i>Universiteit Utrecht, Netherlands</i>
09:05	Inducing nonlinear conductance and emergent memristance in open pores using blockers Raman Dhiman <i>The University of Texas at Austin, USA</i>
09:10	When does nanofluidic memory disappear? Understanding and reinstating memristive behaviour in two-dimensional nanochannels Abdulghani Ismail <i>University Paris Saclay, France</i>
09:15	Discussion
10:30	Refreshments
	Session 4 continued: Iontronics and emergent neuromorphic effects under angstrom-confinement (Session chair: Radha Boya)
11:00	Nonlinear ion transport in a 2D Janus membrane with an angstrom pore: Memristive and negative differential resistance phenomena Narayan Aluru <i>The University of Texas at Austin, USA</i>
11:05	Iontronic memristor in funnel-shaped Angstrom channels Yanbo Xie <i>Northwestern Polytechnical University, China</i>
11:10	Ionic memory or electrode artefacts? A systematic assessment of nanofluidic memristors Siddhi Vinayak Pandey <i>The University of Manchester, UK</i>
11:15	Discussion
12:30	Concluding remarks lecture (Session chair: Radha Boya) Aleksandra Radenovic <i>École Polytechnique Fédérale de Lausanne, Switzerland</i>
13:00	Acknowledgements
13:15	Close of meeting and lunch