

Programme: Wednesday 25 June 2025

9:00 AM - 10:00 AM	<p>Plenary Speaker: Philip King, University of St Andrews, UK (sponsored by M4QN) Session Chair: Olga Kazakova (Room: B.H05. Sponsored by Kiutra) Probing and controlling collective states of 2D quantum materials</p>
10:00 AM - 10:30 AM	Morning Break
10:30 AM - 12:50 PM	<p>M4QN I Session Chair: Olga Kazakova (Room: B.H05. Sponsored by Kiutra)</p> <p>10:30 AM - 11:00 AM Neil Curson (Invited Speaker): Fabrication of atomic-scale devices in silicon for quantum computing 11:00 AM - 11:30 AM Frank Schindler (Invited Speaker): Topological excitons in 1D 11:30 AM - 12:00 PM Chiara Ciccarelli (Invited Speaker): Extracting spin from compensated magnets at picosecond timescales 12:00 PM - 12:20 PM Demininggus Pekei: High Sensitivity Broadband Fibre-Integrated Waveguide Magnetometry in Diamond 12:20 PM - 12:40 PM Ella Mann-andrews: An emerging security technology: using quantum dots to produce Optical Physically Unclonable Functions</p> <p>Statistical and Nonlinear Session Chair: Nigel Wilding (Room: LT2)</p> <p>10:30 AM - 11:00 AM Alice Thorneywork (Invited Speaker): As simple as one, two three? Probing self and collective dynamics by counting colloids 11:00 AM - 11:20 AM Michael Faulkner: Breaking symmetry to save symmetry with rejection-free Monte Carlo 11:20 AM - 11:40 AM Hubert Naguszewski: Optimal parallelisation strategies for flat histogram Monte Carlo sampling 11:40 AM - 12:00 PM David Martin: Semiclassical Trace Formula for Lieb-Liniger Model 12:00 PM - 12:20 PM Alexis Darras: Competing aggregation and iso-density equilibrium lead to band patterns in density gradients 12:20 PM - 12:50 PM Dwaipayan Chakrabarti (Invited Speaker): Programming Self-Assembly for Colloidal Photonic Crystals</p>

	<p>Computational Physics Session Chair: James Annett (Room: G.H01)</p> <p>10:30 AM - 11:00 AM Gesa-Roxanne Siemann (Invited Speaker): Understanding the ultrafast electron dynamics and CDW transition in LaTe3 using machine learning</p> <p>11:00 AM - 11:20 AM Christopher Woodgate: Crystallographic orderings in the AlTiVNb and AlTiCrMo refractory high-entropy superalloys: first-principles theory and atomistic simulations</p> <p>11:20 AM - 11:40 AM Sam Harley: Variational Autoencoder Representation Learning for Break-Junction Data Analysis</p> <p>11:40 AM - 12:00 PM Adam Fisher: What a drag: computational investigation of highly sluggish diffusion in Fe-Ni alloys</p> <p>12:00 PM - 12:30 PM Laura Ratcliff (Invited Speaker): Exploring Disorder using Density Functional Theory and X-ray Photoelectron Spectroscopy</p>
12:50 PM - 2:15 PM	Lunch
	<p>M4QN II Session Chair: Neil Curzon (Room: B.H05. Sponsored by Kiutra)</p> <p>2:15 PM - 2:45 PM Christoforos Moutafis (Invited Speaker): Towards Skymionic Artificial Synapses for Neural Network Hardware</p> <p>2:45 PM - 3:15 PM Christina Psaroudaki (Invited Speaker): Harnessing Chirality: Skyrmions as a New Frontier for Quantum Computing</p> <p>3:15 PM - 3:45 PM Leon Ross (Invited Speaker): Silicon qubits fabricated using industrial 300mm wafer processes</p> <p>3:45 PM - 4:05 PM Joseph Prentice: Understanding environmental effects on crystalline defects for quantum technology</p>
2:15 PM - 4:05 PM	<p>2D Materials Session Chair: Amalia Patane (Room: LT2)</p> <p>2:15 PM - 2:45 PM Pengcheng Dai (Invited Speaker): Room temperature spin nematic phase and anomalous Hall effect in tetragonal lattice AMnBi2 (A = Ca, Yb)</p> <p>2:45 PM - 3:05 PM Bruno Saika: Electronic structure and charge-density wave modulation in monolayer TiSe2</p> <p>3:05 PM - 3:25 PM Luke Rhodes: Probing moiré electronic structures through quasiparticle interference</p> <p>3:25 PM - 3:45 PM David Perkins: Topological Singularities in Twisted Kagome Bilayers</p> <p>3:45 PM - 4:05 PM James Wilson: Investigation of magnetic field-induced quantum transport phenomena in tungsten ditelluride</p>

	<p>Thin-Films Session Chair: Chiara Ciccarelli (Room: G.H01)</p> <p>2:15 PM - 2:45 PM Rhea Stewart (Invited Speaker): Characterising superconducting proximity effects using low energy muon spin spectroscopy</p> <p>2:45 PM - 3:05 PM Charlie Wells: Changing the Seebeck Coefficient Polarity of a Self-Assembled Monolayer by Surface Interaction</p> <p>3:05 PM - 3:25 PM Richa Arjariya: Improving the stability of thin films for molecular electronics through on-surface cross-linking</p> <p>3:25 PM - 3:45 PM James Newson: Enhancing the thermoelectric performance of molecular layers via π-π stacking</p> <p>3:45 PM - 4:05 PM Nilanthy Balakrishnan: A comprehensive study on the multi-band emission of zinc sulfide thin film grown by aerosol-assisted chemical vapour deposition</p>
4:05 PM - 4:30 PM	<p>Afternoon Break</p> <p>Healthy snacks provided and sponsored by M4QN</p>
4:30 PM - 5:30 PM	<p>Plenary Speaker: Juan P Garrahan, University of Nottingham, UK</p> <p>Session Chair: Francesco Turci (Room: B.H05. Sponsored by Kiutra)</p> <p>Circuits as a simple platform for the emergence of hydrodynamics in many-body systems</p>
5:30 PM - 7:00 PM	<p>Evening Lecture: Steve Simon, University of Oxford, UK</p> <p>Anyons: New Types of Particles in Quantum Physics</p> <p>Powell Lecture Theatre, School of Physics Building, Tyndall Avenue, Bristol, BS8 1TL</p>