

# Condensed Matter and Quantum Materials 2024

## Programme

Thursday 4 July 2024

Time	Room	Programme
9:00 am to 10:00 am	Booth Lecture Theatre, Medical Sciences Building	<b>Plenary Speaker: Ataç İmamoğlu</b> Strongly correlated electrons in moire materials: an optical investigation
10.00 am to 10:30 am	Physics and Astronomy Building and Medical Sciences Building	<b>Morning Break</b>
10:30 am to 12:30 pm	Theatre A, Physics and Astronomy Building	<b>Superconductivity 3</b> 10:30 am - 11:05 am <b>Amalia Coldea</b> : Quantum oscillations of superconducting iron-chalcogenides FeSe <sub>1-x</sub> S <sub>x</sub> 11:05 am - 11:25 am <b>Freek Massee</b> : Majorana or not? A story of Fe(Se,Te) 11:25 am - 11:45 pm <b>Rebecca Bisset</b> : Determination of the superconducting order parameter of Sr <sub>2</sub> RuO <sub>4</sub> by use of phase-referenced Bogoliubov quasi-particle interference 11:45 am - 12:05 pm <b>Matteo Dürrnagel</b> : Universality of intra-unit-cell Cooper-pair modulation 12:05 pm - 12:40 pm <b>Shuqiu Wang</b> : Topological Surface State in a Spin-triplet Superconductor
	Theatre B, Physics and Astronomy Building	<b>Materials for Quantum Technologies 2</b> 10:30 am - 11:05 am <b>Hannah Stern</b> : A new 2D platform for quantum technology: A quantum coherent spin in hexagonal boron nitride that operates at ambient conditions 11:05 am - 11:25 am <b>Pablo Burset</b> : Electron quantum optics with superconducting devices 11:25 am - 11:45 pm <b>Giorgos Georgiou</b> : Quantum nanoelectronics at ultrafast time scales 11:45 am - 12:05 pm <b>Matthew Green</b> : Spin Coherence of the Clock Molecule 15N@C <sub>60</sub>
	Theatre C, Physics and Astronomy Building	<b>Electronic Structure 2</b> 10:30 am - 11:05 am <b>Adrian Kantian</b> : Recent advances on quantitative theory for near-1D correlated systems in 2D and 3D 11:05 am - 11:25 am <b>Harry Mullineauxsanders</b> : Topological Classification of Dimensionally Embedded Chains of Magnetic Impurities on Superconductors 11:25 am - 11:45 pm <b>Edward McCann</b> : One-dimensional Z <sub>4</sub> topological superconductor 11:45 pm - 12:20 pm <b>Sophie Weber</b> : An alternative bulk-boundary correspondence: ferromagnetism at the surfaces of antiferromagnets
	Booth Lecture Theatre, Medical Sciences Building	<b>Spintronics</b> 10:30 am - 11:05 am <b>Hidekazu Kurebayashi</b> : Spin dynamics of van der Waals magnets probed by superconducting resonators and electron doping in Cr <sub>2</sub> Ge <sub>2</sub> Te <sub>6</sub> 11:05 am - 11:25 am <b>Rostislav Mikhaylovskiy</b> : Terahertz coherent magnonics in canted antiferromagnets 11:25 am - 11:45 pm <b>Yuri Pashkin</b> : Suppression of back-tunnelling events in hybrid single-electron turnstiles by using AC bias drive 11:45 am - 12:05 pm <b>Habib Rostami</b> : Third-Order Thermoelectric and Spin Photocurrents in 2D Topological Electronic Systems 12:05 pm - 12:40 pm <b>Anne Anthore</b> : Observation of a Kondo impurity state and universal screening using a charge pseudospin

12:30 pm to 2:00 pm	Physics and Astronomy Building and Medical Sciences Building	Lunch (Allergen Menu Served In MSB)
2:00 pm - 4:00 pm	Theatre A	<p><b>Tuning many-body interactions</b></p> <p><b>2:00 pm - 2:35 pm Julien Barrier:</b> Superconductivity in graphene bilayers - New directions from proximity effect to unconventional pairing</p> <p><b>2:35 pm - 3:10 pm Luke Rhodes:</b> The magic angle of Sr<sub>2</sub>RuO<sub>4</sub>: Optimising correlation-driven superconductivity</p> <p><b>3:10 pm - 3:30 pm John Saunders:</b> Evidence for odd-parity superconductivity in YbRh<sub>2</sub>Si<sub>2</sub>, and its enhancement by the onset of electro-nuclear antiferromagnetic</p> <p><b>3:30 pm - 4:05 pm Felix Baumberger:</b> Interfacial electron-phonon coupling in 2D materials</p>
	Theatre B	<p><b>Materials for Quantum Technologies 3</b></p> <p><b>2:00 pm - 2:35 pm Helena Knowles:</b> Spins in diamond for exploring quantum dynamics of interacting spin systems and for quantum sensing applied to life sciences</p> <p><b>2:35 pm - 2:55 pm Viv Kendon:</b> Quantum walk algorithms for finding spin glass ground states</p> <p><b>2:55 pm - 3:15 pm Aleksey Kozikov:</b> Deterministically induced single-photon light emitting diodes</p> <p><b>3:15 pm - 3:50 pm Richard Warburton:</b> Adding spin control to a quantum dot-based single-photon source</p>
	Booth Lecture Theatre	<p><b>2D materials 2</b></p> <p><b>2:00 pm - 2:35 pm Alexey Chernikov:</b> Manipulation and transport of excitons in monolayer semiconductors and 2D antiferromagnets</p> <p><b>2:35 pm - 2:55 pm Jakub Schusser:</b> Assessing Nontrivial Topology in Weyl Semimetals by Dichroic Photoemission</p> <p><b>2:55 pm - 3:15 pm Jack Engdahl:</b> Driving Viscous Hydrodynamics in Bulk Electron Flow in Graphene Using Micromagnets</p> <p><b>3:15 pm - 3:35 pm Johannes Hofmann:</b> Hydrodynamics and long-lived modes in two-dimensional Fermi liquids</p> <p><b>3:35 pm - 3:55 pm Alessandro Principi:</b> Non-conservation of the valley density and its implications for the observation of the valley Hall effect</p> <p><b>3:55 pm - 4:15 pm Joe Winter:</b> Topological Textures in Momentum Space and Their Entanglement Properties</p>
4:00 pm - 4:30 pm	Physics and Astronomy Building and Medical Sciences Building	Afternoon Break - Physics and Astronomy Building and Medical Sciences Building
4:30 pm - 5:30 pm	Booth Lecture Theatre	<p><b>Plenary Speaker: Sarah Haigh</b></p> <p>Exploring the Atomic Structure and Dynamics of 2D Heterostructures with Advanced Electron Microscopy</p>
7:00 pm - 10:30 pm	Lower and Upper Hall	Drinks Reception and Conference Dinner