

## Programme

Please note all times are displayed in BST - British Summer Time

### Monday 21 June 2021

08:45	<b>Welcome</b> Sven Friedemann, University of Bristol, UK		
<b>Plenary Session 1</b>			
09:00	<b>(Plenary) Title TBC</b> Michelle Simmons, University of New South Wales, Australia		
09:45	<b>Poster Session 1</b>		
10:30	Break		
<b>Parallel Session 1</b>			
	<b>Superconductivity I</b>	<b>Topological Materials I</b>	<b>Surface and Thin Film</b>
10:45	<b>(IOP Prize Talk) Electronic nematic states competing with superconductivity in iron-chalcogenides FeSe<sub>1-x</sub>S<sub>x</sub></b> Amalia Coldea, University of Oxford, UK	<b>(Invited) Topological semimetals: Interactions, disorder and lattice defects</b> Vladimir Juricic, Nordic Institute for Theoretical Physics, Sweden	<b>(Invited) Modelling energy dissipation for molecules at metal surfaces: Dissociative chemisorption of H<sub>2</sub> and N<sub>2</sub></b> Jörg Meyer, Leiden University, Netherlands
11:05	<b>Vortex-resolved imaging of the hybrid magnetic-Superconductor RbEuFe<sub>4</sub>As<sub>4</sub></b> David Collomb, University of Bath, UK	<b>Observation of planar Hall effect in the ferromagnetic Weyl semimetal Co<sub>3</sub>Sn<sub>2</sub>S<sub>2</sub></b> Shama Monga, IISER, India	<b>Uranium Oxide Thin Films with Tailored Stoichiometries</b> Jarrod Lewis, University of Bristol, UK
11:20	<b>Probing the gap structure of unconventional superconductors using the nonlinear Meissner effect</b> Morgan Grant, University of Bristol, UK	<b>Energy-gap driven low-temperature magnetic and transport properties in Cr<sub>1/3</sub>MS<sub>2</sub> (M = Nb or Ta)</b> Thomas Hicken, University of Durham, UK	<b>Synthesis of monolayer n-doped WSe<sub>2</sub> from solid state inorganic precursors</b> Mauro Och, Imperial College London, UK
11:35	<b>LaNiC<sub>2</sub> and LaNiGa<sub>2</sub>: The Compelling Case for Non-unitary Triplet Pairing</b> Jorge Quintanilla, University of Kent, UK	<b>Commensurate, noncoplanar chirality crystals and their emergent electromagnetic response</b> Max Hirschberger, University of Tokyo, Japan	<b>Origin of two-step photon absorption in GaAs by first-principles spin-orbit calculations and STM/STS measurements</b> Mary Clare Escaño, University of Fukui, Japan
11:50	<b>Exploring superconductivity using muon spin spectroscopy in hexagonal noncentrosymmetric superconductors</b> Daniel Mayoh, University of Warwick, UK	<b>Topological phonons in oxide perovskites controlled by light</b> Bo Peng, University of Cambridge, UK	<b>Developing Experimental Viewpoint Onto 2D Materials Using Exclusively Surface Sensitive Probes</b> Nadav Avidor, University of Cambridge, UK
12:05	<b>Social Session - Gatherly</b>		
12:45	Lunch break		

Parallel Session 2			
	SCES I	2D Materials I	Nano Physics
13:30	<b>(Invited) Magnetic monopole density and antiferromagnetic domain control in spin-ice iridates</b> Matthew Pearce, University of Warwick, UK	<b>(Invited) Emergent and inherited properties of twisted bilayer graphene</b> Johannes Lischner, Imperial college London, UK	<b>(Invited) Domain supercrystals in epitaxial metal-ferroelectric oxide heterostructures</b> Pavlo Zubko, University College London, UK
13:50	<b>Principal Component Analysis of Quantum Materials Data: a Study in Augmented Intelligence</b> Jorge Quintanilla, University of Kent, UK	<b>Band alignments and moiré effects in twisted 2D semiconductor heterobilayers</b> Abi graham, University of Warwick, UK	<b>The nanophysics of confined H<sub>2</sub> - manipulation of the phase diagram and nuclear magnetism</b> Lui terry, University of Bristol, UK
14:05	<b>Observing separate spin and charge Fermi seas in a strongly correlated one-dimensional conductor.</b> Pedro Vianez, University of Cambridge, UK	<b>Tunable correlated states, topological flat bands and anomalous Hall effect in twisted monolayer-bilayer graphene</b> Julien Barrier, University of Manchester, UK	<b>Energy dissipation and charge sensing in the electrostatically driven nanoelectromechanical systems with a two-dimensional electron gas</b> Andrey Shevyrin, Rzhanov Institute of Semiconductor Physics, Russia
14:20	<b>Nonequilibrium spin-resolved transport through correlated quantum dots: An accurate treatment by renormalization group methods</b> Anand Manaparambil, University of Poznan, Poland	<b>Flat bands, strains, and charge distribution in twisted-bilayer hBN</b> Niels Walet, University of Manchester, UK	<b>Decoupled heat and charge rectification in interacting quantum wires</b> Bernd Braunecker, University of St Andrews, UK
14:35	<b>The impact of quantum correlations on spin relaxation</b> Tobias Boorman, University of St Andrews, UK	<b>Coexisting charge-ordered states with distinct driving mechanisms in monolayer VSe<sub>2</sub></b> Jasper van Wezel, University of Amsterdam, The Netherlands	<b>Multichannel quantum transport and spin polarization in suspended quantum point contacts with in-plane side gates</b> Dmitriy Pokhobov, Novosibirsk State University, Russia
14:50	<b>Social Session - Gatherly</b>		
15:15	Break		
Plenary Session 2			
15:30	<b>Poster Session 1</b>		
16:15	<b>(Plenary) Title TBC</b> Zhi-Xun Shen, Stanford University, USA		
17:00	Close		

## Tuesday 22 June 2021

Plenary Session 3			
09:00	<b>(Plenary) Title TBC</b> Suchitra Sebastian, University of Cambridge, UK		
09:45	<b>Poster Session 2</b>		
10:30	Break		
Parallel Session 3			
	Superconductivity II	Quantum Magnetism, Spin-Orbit, and Multiferroics	2D Materials II
10:45	<b>(Invited) Superconductivity and Electronic Structure of Infinite Layer Nickelates</b> Danfeng Li, City University of Hong Kong	<b>(Invited) TBC</b> Claire Donnelly, University of Cambridge, UK	<b>(Invited) Probing two-electron interactions in quantum-Hall regime by Hong-Ou-Mandel geometry</b> Masaya Kataoka, National Physical Laboratory, UK
11:05	<b>T-linear resistivity from an isotropic Planckian scattering rate</b> Gael Grissonnanche, Cornell University, USA	<b>Controlling spin without magnetic fields: the Bloch-Rashba rotator</b> Charles Creffield, Complutense University of Madrid, Spain	<b>Band hybridisation at the charge density wave transition in monolayer <math>\text{TiTe}_2</math></b> Tommaso Antonelli, University of St Andrews, UK
11:20	<b>Anomalous local lattice fluctuations in <math>\text{La}_{2-x}\text{Sr}_x\text{CuO}_4</math></b> Lingjia Shen, Lund University, Sweden	<b>Ultrafast spin, charge and nuclear dynamics: ab-initio description</b> Sangeeta Sharma, Max Born Institute, Germany	<b>Isolation of Semiconducting TMD Monolayers via Laser Irradiation</b> William Campbell, University of Bath, UK
11:35	<b>Modelling of vortex core magnetization and Pauli paramagnetic effects.</b> Emma Campillo, Lund University, Sweden	<b>Landau level tunnelling spectroscopy of InSb quantum wells</b> Daisy Shearer, University of Surrey, UK	<b>A potential all-electronic route to the charge-density-wave phase in monolayer vanadium diselenide</b> Matthew Trott, University of St Andrews, UK
11:50	<b>Probing the spin susceptibility in superconducting <math>\text{Sr}_2\text{RuO}_4</math> by polarised neutron scattering</b> Alexander Petsch, University of Bristol, UK	<b>Enhanced magnetocaloric effect in frustrated fcc magnets</b> Eliseanne Koskelo, University of Cambridge, UK	
12:05	<b>Social Session - Gatherly</b>		
12:45	Lunch break		

<b>Parallel Session 4</b>			
	<b>SCES II</b>	<b>Topological Materials II</b>	<b>Quantum Fluids</b>
13:30	<b>(Invited) High-resolution resonant inelastic x-ray scattering: shedding new light on quantum materials</b> Andrew Walters, Diamond Light Source, UK	<b>(Invited) Quantum oscillations in the Dirac semimetal <math>Cd_3As_2</math> and the nodal-line Dirac semimetal ZrSiS</b> Ivan Kokanovic, University of Zagreb, Croatia	<b>(Invited) Superfluidity of Light and its Break-Down in Optical Mesh Lattices</b> Hannah M Price, University of Birmingham
13:50	<b>Scattering Interference Signature of a Pair Density Wave State in the Cuprate Pseudogap Phase</b> Shuqiu Wang, University of Oxford, UK	<b>Supercurrent-enabled Andreev reflection in a chiral quantum Hall edge state</b> Andreas Bock Michelsen, University of St Andrews, UK	<b>Density-Matrix Renormalisation Group for continuous systems</b> Shovan Dutta, University of Cambridge, UK
14:05	<b>Dynamical charge density fluctuations in superconducting cuprate <math>YBa_2Cu_3O_{6+x}</math></b> Mengze Zhu, University of Bristol, UK	<b>Surface-bound excitations in superfluid <math>^3He</math>: A strongly-correlated fermionic system with anomalously high quasiparticle lifetime</b> Dmitry Zmeev, Lancaster University, UK	<b>Chiral superfluidity of helium-3 in quasi-two-dimensional limit</b> Petri Heikkinen, Royal Holloway, University of London, UK
14:20	<b>Intermediate Magnetic Phase of Charge-Stripe Ordered <math>La_2NiO_{4.11}</math> and the Probable Trigger for Static Magnetic Ordering.</b> Paul Freeman, University of Central Lancashire, UK	<b>Theory of topologically protected heat pumping from Majorana braiding in topological superconductors</b> Alessandro Romito, Lancaster University, UK	<b>Realizing discontinuous quantum phase transitions in a strongly-correlated driven optical lattice</b> Bo Song, University of Cambridge, UK
14:35	<b>Electronic Floquet Gyro-Liquid Crystal</b> Iliya Esin, California Institute of Technology, USA		<b>Kibble-Zurek Phase Transition and Phase Ordering Studies in Quantum Gases</b> Nick Proukakis, Newcastle University, UK
14:50	<b>Social Session - Gatherly</b>		
15:15	Break		
<b>Plenary Session 4</b>			
15:30	<b>Poster Session 2</b>		
16:15	<b>(Plenary) Antiferromagnetic spintronics : from electrical control to band topology</b> Peter Wadley, University of Nottingham, UK		
17:00	Close		

## Wednesday 23 June 2021

Plenary Session 5			
09:00	<b>(Plenary) Progress in high-temperature conventional superconductivity</b> Michael Eremets, Max Planck Institute for Chemistry, Germany		
09:45	<b>(Early Career Talk) Equity, Diversity and Inclusion</b> Sarah Bakewell, Institute of Physics		
	<b>(Early Career Talk) Early Career Grants and Fellowships</b> Emma Rowarth, EPSRC Fellowships		
	<b>(Early Career Talk) How to Get Published - A Very Short Introduction</b> Ania Wronski, Institute of Physics Publishing		
10:45	Break		
Parallel Session 5			
	Superconductivity III	SCES III	2D Materials III
11:00	<b>(Invited) The nematicity of FeSe under anisotropic strain</b> Clifford Hicks, University of Birmingham	<b>(Invited) Emergent helical texture of electric dipoles</b> Roger Johnson, University College London, UK	<b>(Invited) Choosing a Direction in Flatland: Anisotropy of Electronic Bands in Few-Layer Rhenium Diselenide</b> Marcin Mucha-Kruczynski, University of Bath, UK
11:20	<b>Tuning ground state of iron base superconductor by uniaxial strain</b> Soumendra Nath Panja, University of St Andrews, UK	<b>Quasiparticle interference of checkerboard charge order and nematic ordering of the surface layer of Sr<sub>2</sub>RuO<sub>4</sub></b> Luke Rhodes, University of St Andrews, UK	<b>A neutron diffraction study of the magnetic structure of the intercalated transition metal dichalcogenide V1/3NbS<sub>2</sub></b> Amelia Hall, University of Warwick, UK
11:35	<b>Chiral singlet superconductivity in the weakly correlated metal LaPt<sub>3</sub>P</b> Sudeep Kumar Ghosh, University of Kent, UK	<b>Direct observation of a uniaxial stress-driven Lifshitz transition in Sr<sub>2</sub>RuO<sub>4</sub></b> Edgar Abarca Morales, Max Planck Institute for Chemistry, Germany	<b>Complex hysteresis and memory effects observed in the charge-density-wave phases of the transition metal dichalcogenide TaS<sub>1.2</sub>Se<sub>0.8</sub></b> Benjamin Smith, University of Bath, UK
11:50	<b>Superconductivity in elemental yttrium and yttrium superhydride bulk and film at high pressures</b> Jonathan Buhot, University of Bristol, UK	<b>Hall effect study of FeSe<sub>1-x</sub>S<sub>x</sub>: signatures of strange metal transport</b> Matija Culo, Radboud University Nijmegen, Netherlands	<b>Theoretical prediction of new CDW order in electron-doped 2H-TaSe<sub>2</sub></b> Will Luckin, University of Bath, UK
12:05	<b>Superconductivity in Distorted LaH<sub>10</sub></b> Israel Osmond, University of Bristol, UK	<b>Characterising the complexity of non-integrable quantum spin chains and the efficiency of their ground-state preparation on quantum computers</b> Gabriel Matos, University of Leeds, UK	<b>Low-frequency Quantum Oscillations from Interactions in Layered Metals</b> Andrew Allocca, University of Cambridge
12:20	<b>Closing remarks and announcement of the next CMQM2022</b> Chris Bell, University of Bristol, UK		