

# Magnetism 2023 Programme

Monday 3<sup>rd</sup> April

	Theatre A	Theatre 2.19/2.20
09:00	<i>Registration and Refreshments</i>	
	<b>Thin Films (Chair: Dirk Backes)</b>	<b>Correlated Electron Systems (Chair: Kelly Morrison)</b>
10:00	(IIEEE Distinguished Lecturer) <b>Cylindrical Micro- and Nanowires: From Curvature Effects on Magnetization to Sensing Applications</b> Manuel Vázquez, Spanish Council for Research (CSIC)	(Invited) <b>Topological magnons driven by the Dzyaloshinskii-Moriya interaction in the centrosymmetric ferromagnet Mn<sub>5</sub>Ge<sub>3</sub></b> Manuel Dos Santos Dias - STFC Daresbury Laboratory
10:30		<b>Demonstration of a Thickness-Step Skyrmion Injector in FeGe</b> Matthew Littlehales, Durham University
10:45	<b>In-situ strain control of antiferromagnetic domain morphologies</b> Jack Harrison, University of Oxford	<b>Zn<sub>2</sub>-averievite: a new quantum spin liquid candidate</b> David Boldrin
11:00	<b>Domain walls in the presence of in-plane anisotropies: structure tuning and domain imprinting</b> Christopher Marrows, University of Leeds	<b>Studying substitutional disorder in Pr<sub>2</sub>Zr<sub>20</sub>7 family of spin-liquid candidate materials with structural diffuse scattering and density functional theory</b> Thomas Hicken, Royal Holloway, University of London
11:15	<i>Break and Coffee (Location: The Drum)</i>	
	<b>Spintronics (Chair: Liam O'Brien)</b>	<b>Thin Films II (Chair: Wenjing Yan)</b>
11:45	(IEEE Distinguished Lecturer) <b>Tailoring sensor performance in magnetoresistive devices</b> Susana Cardoso De Freitas, INESC-MN	<b>Co-existence of antiferromagnetic and ferromagnetic magnetic textures in a chiral SAF observed and quantified with Lorentz TEM</b> Kayla Fallon, University of Glasgow
12:00		<b>Temperature Dependence of Magnetic Anisotropy and Domain Tuning in BaTiO<sub>3</sub>(111)/CoFeB Multiferroic Heterostructures</b> Robbie Hunt, University of Leeds
12:15		<b>Atomistic simulations of spin-orbit torque switching of Pt/MnPt bilayers</b> Carenza Cronshaw

12:30	<b>Separation of heating and magneto-elastic coupling effects in surface acoustic wave-enhanced magnetic domain wall creep motion</b> Jintao Shuai, University of Leeds	<b>Investigating the Temperature Dependence of Terahertz Emission from Spintronic Heterostructures</b> Ruidong Ji
12:45	<b>Room temperature weak collinear ferrimagnet with symmetry driven, large intrinsic magneto-optic signatures</b> Freya Johnson, Imperial College London	<b>Ultrafast switching of ferromagnetic system by a single pair of optical pulses</b> Sergiu Ruta, Sheffield Hallam University
13:00	<i>Lunch, Poster Session 1 and Exhibition (Location: Market Restaurant and The Drum)</i>	
14:00	<b>IEEE UK and Ireland Magnetic Chapter AGM (Location: Theatre A)</b> (Chair: Liam O'Brien)	
14:30	<b>(Plenary Speaker) Current-induced magnetization switching of ferrimagnets and noncollinear antiferromagnets</b> Pietro Gambardella, ETH Zurich, Switzerland (Location: Theatre A) (Chair: Christoforos Moutafis)	
	<b>High Frequency Spin Dynamics</b> (Chair: Paul Keatley)	<b>Computation &amp; Theory</b> (Chair: Julie Staunton)
15:30	<b>(Invited) Spin-currents crossing interfaces</b> Aidan Hindmarch, Durham University	<b>(Invited) Ultrafast spin currents at insulator-metal interfaces</b> Joseph Barker, University of Leeds
16:00	<b>Ultrafast terahertz emission spectroscopy of FeRh</b> Rajasekhar Medapalli, Lancaster University	<b>Reconstructing Free Energy Landscapes of Magnetic Skyrmions Using Metadynamics</b> Ioannis Charalampidis, University of Leeds
16:15	<b>Creation of nonlinear magnon polaritons</b> Hidekazu Kurebayashi, University College London	<b>A Quasiparticle Picture of Attempt Frequency and Magnetocrystalline Anisotropy</b> Robert Lawrence, University of York
16:30	<b>Dynamic magnetization behaviour of magnetostatically coupled linear chains of thick Permalloy nanomagnets</b> Jay Scott, Durham University	<b>Frustrated spin-<math>\frac{1}{2}</math> <math>J_1</math>-<math>J_2</math>-<math>J_1'</math> Heisenberg magnet on a honeycomb bilayer: A high-order coupled cluster study of its quantum phase diagram</b> Raymond Bishop, University of Manchester
16:45	<b>Ultrafast Nonlinear Conversion of Magnons in an Antiferromagnet</b> Ruben Leenders, Lancaster University	<b>Generalised Form of the Magnetic Anisotropy Field in Micromagnetic and Atomistic Spin Models</b> Jack Collings, University of York
17:00	<i>Poster Session 2 and Drinks Reception (Location: The Drum)</i>	
18:30	<i>Depart to walk to Conference Dinner</i>	
19:00	<i>Conference Dinner (Location: The Edwardian Manchester)</i>	

## Tuesday 4<sup>th</sup> April

	Theatre A	Theatre 2.19/2.20
09:00	(Wohlfarth Lecture) Chiara Ciccarelli, University of Cambridge, UK (Location: Theatre A) (Chair: Tom Moore)	
10:00	<i>Coffee Break (Location: The Drum)</i>	
	<b>Spintronics and 2D Materials</b> (Chair: Elton Santos)	<b>Intelligent Computing</b> (Chair: Will Branford)
10:30	(Invited Speaker) Local magnetic structure in 2D ferromagnets Kostya Novoselov, National University of Singapore (NUS) and The University of Manchester, UK	(Invited) Multilayer 'beyond-2D' nanomagnetic arrays for magnonic processing Jack Gartside, Imperial College London
11:00	All-optical toggle switching in a 2D van der Waals magnet Maciej Dąbrowski, University of Exeter	Adaptive programmable networks for in-materia neuromorphic computing Kilian Stenning, University College London
11:15	Investigating ballistic charge transport and spin injection via 1D graphene/FM junctions Daniel Burrow	Towards smart sensing with a spintronic reservoir computer Guru Venkat, University of Sheffield
11:30	Unveiling the magnetic landscape of sodium intercalated Cr <sub>2</sub> Ge <sub>2</sub> Te <sub>6</sub> vdWs system: from canonical spin glassiness at low temperatures to small damping in ferromagnetic resonance at high temperatures Hidekazu Kurebayashi, University College London	Nonlinear Chiral Magnonic Resonators: Towards Magnonic Neurons Kevin Fripp, University of Exeter
11:45	Mechanism of magnetization reversal – the key for high-performance room temperature spintronic devices Wenjing Yan, University of Nottingham	Task-adaptive physical reservoir computing using magnetic skyrmions Oscar Lee, University College London
12:00	Short and long range magnetic correlations in the 2-dimensional van der Waals magnet CrI <sub>3</sub> Nina-Juliane Steinke	Magnetic binary stochastic synapses for machine learning applications Matthew Ellis, University of Sheffield
12:15	<i>Lunch, Poster Session 3 and Exhibition (Location: Market Restaurant and The Drum)</i>	
13:30	EPSRC (James Dennis) and UK MagSoc (Matthew Swallow) (Location: Theatre A)	<i>Poster Session 3 and Exhibition Cont. (Location: The Drum)</i>

14:00	<b>Poster Awards (Ivan Vera-Marun) and IOP Magnetism Group AGM (Tom Moore)</b> (Location: Theatre A)	
14:30	<i>Poster Session 4 and Coffee Break (Location: The Drum)</i>	
	<b>Low-dimensional Magnetism</b> (Chair: Richard Evans)	<b>General</b> (Chair: Oscar Cespedes)
15:00	<b>(IEEE Distinguished Lecturer) Magnetic data storage technology; from the invention of perpendicular magnetic recording (PMR) to the social integration</b> Yoichiro Tanaka, Tohoku University	<b>Helicity-Dependent THz Emission from a Magnetic Weyl Semimetal Mn<sub>3</sub>Sn</b> Dominik Hamara, University of Cambridge
15:15		<b>Probing the AC magnetic properties of nanoparticles inside biological cells using the magneto-optical Faraday effect</b> Xuyiling Wang, Keele University
15:30		<b>Nanomagnetic force in action: towards magnetically guided nerve regeneration</b> Neil Telling, Keele University
15:45	<b>Pt-Transition Metal Synthetic Ferrimagnets for All Optical Switching</b> Jade Scott, Queen's University Belfast	<b>Controlling <math>\pi</math>-anisotropy with organic multilayers</b> Timothy Moorsom, University of Leeds
16:00	<b>Direct visualization of the effect of annealing and thermal stability of <math>\sim 20</math> nm perpendicular shape anisotropy STT-MRAM devices</b> Trevor Almeida	<b>Magneto-structural effects and skyrmions phase field stability in the 4d multiferroic compound GaMo<sub>4</sub>Se<sub>8</sub></b> Jonathan Alaria, University of Liverpool,
16:15	<b>Manipulation of magnetic skyrmions in confined nanostructures with tilted in-plane fields</b> Yuzhe Zang	<b>Measuring Hysteresis Curves with Polarised Soft X-ray Reflectivity</b> Kiranjot Dhaliwal, Diamond Light Source
16:30	<b>Tuning spin-wave dynamics by interlayer coupling within the nanomagnets of an artificial spin-ice</b> Julius de Rojas, Durham University	<b>Magnetoelectric Coupling of Terbium Tantalate</b> Xiaotian Zhang, University of Cambridge
16:45	<b>Development of a Magnetic Sensor Using Co:MgO Antidots</b> Atsufumi Hirohata, University of York	<b>Exploring the phases of 3D artificial spin ice: From Coulomb phase to magnetic monopole crystal</b> Arjen van den Berg, Cardiff University
17:00	<i>Conference Close and Depart</i>	