

Science and Technologies in High Magnetic Fields
Wolfson College, University of Oxford, Oxford
6 December 2023

09.00 - 09.30 Coffee and registration (Buttery)

09:30 - 09:40 Welcome and introduction (Leonard Wolfson Auditorium)
Amalia Patanè, University of Nottingham,
EPSRC-EMFL National Research Facility

A. SCIENCE IN HIGH MAGNETIC FIELDS
(CHAIR: Amalia Patanè, University of Nottingham)

09.40 - 10.00 **Antony Carrington**, University of Bristol
High-magnetic fields for fundamental Science

10.00 - 10.20 **Richard Hill**, University of Nottingham
Diamagnetic levitation and related techniques in fluid and granular dynamics

10.20 - 10.40 **Shuqiu Wang**, University of Oxford/Bristol
STM Visualisation of unconventional superconductors at high-magnetic fields

10.40 - 11.10 Coffee break and Poster session (Buttery)

B. SCIENCE IN HIGH MAGNETIC FIELDS
(CHAIR: Paul Goddard, University of Warwick)

11.10 - 11.30 **Steven P. Brown**, University of Warwick,
EPSRC solid-state NMR National Research Facility
Solid-State NMR at High Magnetic Fields

11.30 - 11.50 **David Collison**, University of Manchester, EPSRC EPR National Research
Facility
*Electron Paramagnetic Resonance (EPR) Spectroscopy at High-Fields and
High-Frequencies*

11.50 - 12.20 **Flash Talks**

12.20 - 13.00 **Discussion on Science in High Magnetic Fields**

13.00 - 14.00 Lunch (Buttery)/ Poster session / Group Photo

C. TECHNOLOGIES IN HIGH MAGNETIC FIELDS
(CHAIR: M'hamed Lakrimi, Siemens Healthineers Magnet Technology)

14.00 - 14.20 **Xavier Chaud**, European Magnetic Field Laboratory, CNRS/LNCMI
Towards High field magnets using HTS inserts at EMFL

14.20 - 14.40 **Oleg Kirichek**, ISIS Neutron and Muon Source,
Rutherford Appleton Laboratory
High-Magnetic Field Sample Environment at ISIS Neutron and Muon Source

14:40 - 15.00 **Stephen Blundell**, University of Oxford
High-magnetic fields and muons

15.00 - 15.30 Coffee break and poster session (Buttery)

D. TECHNOLOGIES IN HIGH MAGNETIC FIELDS
(CHAIR: Ben Bryant, Oxford Instruments)

15.30 - 15.50 **John Burgoyne**, Oxford Instruments
State of the art in commercial superconducting magnets for high field

15.50 - 16.10 **Colin John Humphreys**, Paragraf /Queen Mary University of London
Measuring High Magnetic Fields using a Graphene Hall-effect Sensor

16.10 - 16.30 **Roland Gyuraki**, Tokamak Energy
HTS magnet technology applications beyond fusion at Tokamak Energy

16.30 - 17.00 **Discussion on Technologies in High Magnetic Fields**

17.00 Closing down of the meeting – Collection of posters

FLASH TALKS (4+1 min each – 2 slides) (CHAIRING: John Pearce & Ioana Paulescu, University of Oxford)		
11.50 - 11.55	Fengyu Zhang University of Nottingham	<i>Advancements in Cryogenic Technologies: Harnessing Magnetic Fields for Transportation Innovation</i>
11.55 - 12.00	Jan Knapp University of Oxford	<i>High Magnetic Fields for Quantum Gravity</i>
12.00 – 12.05	Nathan Cottam , University of Nottingham	<i>Functionalised graphene in high magnetic fields</i>
12.05 – 12.10	Yannik Dieudonne , UK Atomic Energy Agency (UKAEA)	<i>Ultrasonic Additive Manufacturing for REBCO Tape Assemblies</i>
12.10 – 12.15	Jeremy Good , Cryogenic Ltd.	<i>NMR at high field without liquid helium</i>
12.15 – 12.20	Lev Levitin , Royal Holloway, University of London	<i>Hyperfine interactions and antiferroquadrupolar order: their role in PrOs₄Sb₁₂</i>

POSTERS		
1.	Ioana Paulescu University of Oxford	<i>Quantum Oscillations of a candidate bulk Dirac system</i>
2.	Weixin Song University of Oxford	<i>Atomic-scale structure characterisation of battery materials</i>
3.	James Tufnail University of Oxford	<i>Understanding Irradiation Damage Mechanisms in High Temperature Superconductors for Fusion</i>
4.	William Iliffe UK Atomic Energy Agency (UKAEA)	<i>STEP's plan for understanding REBCO coated conductors in the Fusion Environment</i>
5.	John Pearce University of Oxford	<i>Torque Magnetometry in a Stripe-Ordered Triangular Antiferromagnet</i>
6.	Shroya Vaidya University of Warwick,	<i>Uncovering magnetic and electronic properties in two-dimensional van der Waals magnet Fe₃GeTe₂ using high magnetic fields</i>
7.	Andrew Varney Oxford Instruments NanoScience	<i>Quench modelling of high field magnets</i>
8.	Petr Zagura University of Oxford	<i>Ultra-low resistance joints in high temperature superconductors</i>
9.	Kirk Adams University of Oxford	<i>In situ measurements of REBCO coated conductor performance under ion irradiation</i>
10.	Muslum Guven University of Oxford	<i>Persistent MgB₂ Joints for React and Wind Magnet</i>
11.	Jan Plechacek CAN Superconductors	<i>New Generation of HTS Bulks for High-Field Applications</i>
12.	Dirk Honecker ISIS Pulsed Neutron and Muon Source	<i>Investigating mesoscopic vortex matter with neutrons</i>

Practical Information

Location: Wolfson College, Linton Road, Oxford, OX2 6UD (<https://www.wolfson.ox.ac.uk/>)
The Lodge Reception: +44 (0) 1865 274 100

Nearby public transport

Buses to and from the city centre are numerous and frequent, and leave from the end of Linton Road. All buses from the College into town stop on St Giles' and most buses from the centre to Summertown along Banbury Road stop at the end of Linton Road. For timetables and fares, visit The Oxford Bus Company or Stagecoach websites.