**EPSRC International Network for Spintronics Kick-Off Meeting**

***From Material Development to Novel Energy Efficient Technologies***

**~ Times shown are in BST (+1h for CEST, +8h for JST and –5h for EDT) ~**

***Zoom link to be provided by e-mail to registered participants***

*Invited talks: 25 min. presentation + 5 min. discussion*

*Contributed talks: 18 min. presentation + 2 min. discussion*

**Monday, 7 June**

|  |  |
| --- | --- |
| 07:50~08:00 | Welcome |
| 08:00~10:00 | Session 1: Antiferromagnetic Spintronics*Chair: Atsufumi Hirohata* |
| 08:00~08:30 | Vincent Baltz (*Spintec*) “Spin and charge transport in antiferromagnets” |
| 08:30~09:00 | Thomas Moore (*Univ. of Leeds*) “Pt/Co/*X* multilayers with antiferromagnets and strain” |
| 09:00~09:30 | Gonzalo Vallejo-Fernandez (*Univ. of York*) “Anisotropy in antiferromagnets” |
| 09:30~10:00 | Joseph Barker (*Univ. of Leeds*) “Atomistic modelling of antiferromagnets” |
| 10:00~10:10 | Break |
| 10:10~13:10 | Session 2: Magnetic Memories and Sensors*Chair: Vincent Baltz* |
| 10:10~10:40 | Shigemi Mizukami (*Tohoku Univ.*) “Laser-induced magnetization dynamics in synthetic antiferromagnets” |
| 10:40~11:10 | Kévin Garello (*Spintec*) “Spin-orbit torque MRAM: Fundamentals, technology integration and perspectives” |
| 11:10~11:40 | Shunsuke Fukami (*Tohoku Univ.*) “Nanosecond probabilistic bit with stochastic magnetic tunnel junction” |
| 11:40~12:10 | Robert Carpenter (*imec*) “Approaches to overcome the challenge of low power MRAM” |
| 12:10~12:40 | Sara Majetich (*Carnegie Mellon Univ.*) “Superparamagnetic tunnel junctions” |
|  | Photograph – Screenshot |
| 13:10~14:10 | Session 3: Funding Opportunities*Chair: Atsufumi Hirohata* |
| 13:10~13:40 | Sarah Newman (*EPSRC UKRI*) “Overview of UKRI EPSRC programmes” |
| 13:40~14:10 | Yu Hirayama & Tomoka Miyoshi (*JSPS London*) “Overview of JSPS International Programmes” |
| 14:10~14:40 | Networking |

**Tuesday, 8 June**

|  |  |
| --- | --- |
| 08:00~10:20 | Session 4: Spintronic Device Concepts*Chair: Tom Thomson* |
| 08:00~08:30 | Paul Nutter (*Univ. of Manchester*) “THz spintronic emitters” |
| 08:30~09:00 | Andrii Chumak (*Univ. of Vienna*) “Inverse-design magnonics” |
| 09:00~09:20 | Nathan Satchell (*Univ. of Leeds*) “Superconducting spintronics” |
| 09:20~09:50 | Naoyuki Narita (*Toshiba*) “Microwave-assisted magnetic recording technologies” |
| 09:50~10:20 | Yukiko Takahashi (*NIMS*) “Current status and future prospects in heat-assisted magnetic recording media” |
| 10:20~10:30 | Break |
| 10:30~13:30 | Session 5: Low-Dimensional Spintronics*Chair: Chris Marrows* |
| 10:30~11:00 | Oscar Cèspedes (*Univ. of Leeds*) “A hybrid metal oxide-molecular magneto-optic memory” |
| 11:00~11:20 | Takemi Kato (*Tohoku Univ.*) “Dirac electronic states of topological insulator/ ferromagnet heterostructure studied by ARPES” |
| 11:20~11:50 | Benjamin Stadtmüller (*TU Kaiserslautern*) “Imaging the ultrafast spin carrier dynamics of low dimensional hybrid structures in energy, momentum space and time” |
| 11:50~12:10 | Ivan vera Marun (*Univ. of Manchester*) “From spin-orbitronic effects to transistors” |
| 12:10~12:30 | Badala Viswanatha (*TU Kaiserslautern*) “Spin-filtering effects at chiral metal-organic interfaces” |
| 12:30~13:00 | Tom Thomson (*Univ. of Manchester*) “Spintronics research at Manchester” |
| 13:00~13:30 | Caroline Ross (*MIT*) “Magnetic insulators for spintronic and photonic devices” |
| 13:30~14:00 | Networking |

**Wednesday, 9 June**

|  |  |
| --- | --- |
| 08:00~10:10 | Session 6: Spintronic Materials and Dynamics*Chair: Mathias Weiler* |
| 08:00~08:30 | Philipp Pirro (*TU Kaiserslautern*) “Exchange spin waves as probe and tool” |
| 08:30~09:00 | Daria Gusakova (*Spintec*) “Three-dimensional magnetization textures” |
| 09:00~09:20 | Kévin Franke (*Univ. of Leeds*) “Switching between magnetic Bloch and Néel domain walls with anisotropy modulations” |
| 09:20~09:40 | Will Griggs (*Univ. of Manchester*) “Depth selective magnetic phase coexistence in FeRh thin films probed using polarized neutron reflectivity (PNR)” |
| 09:40~10:10 | Satoshi Okamoto (*Tohoku Univ.*) “Spin dynamics of magnetic devices” |
| 10:10~10:20 | Break |
| 10:20~13:10 | Session 7: Interfaces and Topology*Chair: Satoshi Okamoto* |
| 10:20~10:50 | Sandrine Heutz (*Imperial College London*) “Structure-dependent photoinduced spin couplings in molecular semiconductors” |
| 10:50~11:10 | Ye Du (*Tohoku Univ.*) “Disentangling the spin-orbit torques in platinum/cobalt bilayers in the presence of spin Hall effect and Rashba-Edelstein effect” |
| 11:10~11:30 | Michael Wißmann (*IFW-Dresden*) “Intrinsic magnetic topological insulators” |
| 11:30~12:00 | Christoforos Moutafis (*Univ. of Manchester*) “Magnetic skyrmions for neuro-morphic computing” |
| 12:00~12:20 | Luis Flacke (*Walther-Meißner Inst.*) “Robust formation of nanoscale magnetic skyrmions in easy-plane thin film multilayers with low damping” |
| 12:20~12:40 | Fatima Ibrahim (*Spintec*) “Tailoring spin-orbit phenomena at interfaces: first-principles calculations and beyond” |
| 12:40~13:10 | Keith McKenna (*Univ. of York*) “Spintronics research at York” |
| 13:10~13:40 | Networking |

**Presenters’ E-mail addresses**

|  |  |
| --- | --- |
| Vincent Baltz | vincent.baltz@cea.fr |
| Thomas Moore | T.A.Moore@leeds.ac.uk |
| Gonzalo Vallejo-Fernandez | gonzalo.vallejofernandez@york.ac.uk |
| Joseph Barker | J.Barker@leeds.ac.uk |
| Shigemi Mizukami | shigemi.mizukami.a7@tohoku.ac.jp |
| Kévin Garello | kevin.garello@cea.fr |
| Shunsuke Fukami | s-fukami@riec.tohoku.ac.jp |
| Robert Carpenter | Robert.Carpenter@imec.be |
| Sara Majetich | sara@cmu.edu |
| Daniel Smith (*EPSRC UKRI*) | Daniel.Smith@epsrc.ukri.org |
| Yu Hirayama (*JSPS London*) | hirayama-yu@overseas.jsps.go.jp |
| Tomoka Miyoshi (*JSPS London*) |  |
| Paul Nutter | P.Nutter@manchester.ac.uk |
| Andrii Chumak | andrii.chumak@univie.ac.at |
| Nathan Satchell | N.D.Satchell@leeds.ac.uk |
| Naoyuki Narita | naoyuki.narita@toshiba.co.jp |
| Yukiko Takahashi | TAKAHASHI.Yukiko@nims.go.jp |
| Oscar Cèspedes | O.Cespedes@leeds.ac.uk |
| Benjamin Stadtmüller | bstadtmueller@physik.uni-kl.de |
| Ivan vera Marun | ivan.veramarun@manchester.ac.uk |
| Takemi Kato | t.kato@arpes.phys.tohoku.ac.jp |
| Badala Viswanatha | viswanat@rhrk.uni-kl.de |
| Tom Thomson | thomas.thomson@manchester.ac.uk |
| Caroline Ross | caross@mit.edu |
| Philipp Pirro | ppirro@physik.uni-kl.de |
| Daria Gusakova | daria.gusakova@cea.fr |
| Kévin Franke | K.J.A.Franke@leeds.ac.uk |
| Will Griggs | william.griggs@postgrad.manchester.ac.uk |
| Satoshi Okamoto | satoshi.okamoto.c1@tohoku.ac.jp |
| Sandrine Heutz | s.heutz@imperial.ac.uk |
| Christoforos Moutafis | christoforos.moutafis@manchester.ac.uk |
| Fatima Ibrahim | fatima.ibrahim@cea.fr |
| Ye Du | ye.du.b8@tohoku.ac.jp |
| Michael Wißmann | m.wissmann@ifw-dresden.de |
| Luis Flacke | luis.flacke@tum.de |
| Keith McKenna | keith.mckenna@york.ac.uk |