

Programme for the 1st Symposium on “Research network on spintronic materials and devices for the sustainable society (SpinMaD)”

27-28 November 2025

Seminar Rooms 1&2 at Max Planck Institute for Chemical Physics of Solids

<https://www.cpfs.mpg.de/en>

Thursday, 27 November

08:30 Registration

09:00-09:10 Opening remark (Claudia Felser)

09:10-11:10 Session 1: Spintronics x topology

Chair: Atsufumi Hirohata (*Tohoku Univ.*)

3 invited talks (30 min.) + 2 contributed talks (15 min.)

09:10-09:40 Claudia Felser (*Max Planck Inst. for Chem. Phys. of Solids*)

“Chirality and topology”

09:40-10:10 Le Duc Anh (*Univ. of Tokyo*)

“Epitaxial growth and topological transport properties of Sn-based quantum heterostructures”

10:10-10:25 Rikako Yamamoto (*Max Planck Inst. for Chem. Phys. of Solids*)

“Spectromicroscopic insights into bulk altermagnetism in α -MnTe”

10:25-10:40 Masayuki Ishida (*Univ. of Tokyo*)

“Highly efficient spin-charge conversion in ferromagnetic metal Fe / topological Dirac semimetal α -Sn heterostructures”

10:40-11:10 Bryan Hickey (*Univ. of Leeds*)

“Giant Rashba effect in topological surfaces states with metal overlayers”

11:10-11:30 Coffee/Tea

11:30-12:45 Session 2: Spintronics x Characterisation & Fabrication

Chair: Bryan Hickey (*Univ. of Leeds*)

2 invited talk (30 min.) + 1 contributed talk (15 min.)

11:30-12:00 Rudi Schäfer (*IFW Dresden*)

“Magneto-optics, revisited”

12:00-12:30 Atsufumi Hirohata (*Tohoku Univ.*)

“Control of a compensation temperature in a ferrimagnetic Heusler alloy”

12:30-12:45 Olha Bezsmertna (*Helmholtz-Zentrum Dresden-Rossendorf*)

“Transfer of magnetic nanomembranes: from fundamental curvilinear nanomagnetism to flexible electronic applications”

12:50-13:00 Symposium photo (main entrance of the Institute)

13:00-14:00 Lunch (canteen)

14:00-15:30 Session 3: Spin x Energy

Chair: Hiroki Koizumi (*Tohoku Univ.*)

2 invited talks (30 min.) + 2 contributed talks (15 min.)

14:00-14:30 Julius Hohlfeld (*Inst. Jean Lamour*)

“Spin and heat accumulation induced magnetization reversal (SAAHIR)”

14:30-14:45 Shutaro Karube (*Kyoto Univ.*)

“Observation of anisotropic orbital Hall effect”

14:45-15:00 Heda Zhang (*Max Planck Inst. for Chem. Phys. of Solids*)

“Magnetoelectric coupling effect in a non-centrosymmetric superconductor”

15:00-15:30 Masaki Mizuguchi (*Nagoya Univ.*)

“Spin caloritronic materials and devices”

15:30-17:00 Poster Session (foyer)

01 Cheng Xu (*Max Planck Inst. for Chem. Phys. of Solids*), “Chiral superconductivity from spin polarized Chern band in twisted MoTe₂”

02 Yuki Higuchi (*Univ. of Osaka*), “Determination of the actual valence band of a topological insulator Bi₂Se₃”

03 Erjian Cheng (*Max Planck Inst. for Chem. Phys. of Solids*), “Interwoven magnetic kagome metal overcoming geometric frustration”

04 Gen Zu (*Max Planck Inst. for Chem. Phys. of Solids*), “Interpretation of crystal energy landscapes with Kolmogorov–Arnold networks”

05 Yuchen Zhao (*Max Planck Inst. for Chem. Phys. of Solids*), “Scanning magnetometry of van der Waals magnets under *in-situ* controlled strain”

06 Zaizhou Jin (*Tohoku Univ.*), “Low Gilbert damping of the frustrated kagome semimetal Fe₃Sn₂”

07 Esita Pandey (*Max Planck Inst. for Chem. Phys. of Solids*), “Realization of broadly tunable compensation in ferrimagnetic MnFeVAl Heusler alloy”

08 Shogo Yamashita (*Max Planck Inst. for Chem. Phys. of Solids*), “Magnetic and transport properties of compensated ferrimagnetic Heusler alloys at finite-temperatures: *ab*

initio spin fluctuation theory”

- 09 Hiroki Koizumi (*Tohoku Univ.*), “*d*-wave altermagnetism in epitaxial NiCo₂O₄ thin films via easy-cone magnetic anisotropy”
- 10 Paulina Justyna Prusik (*Helmholtz-Zentrum Dresden-Rossendorf*), “Domain walls in a magnetoelectric Cr₂O₃”
- 11 Nikolai Peschcherenko (*Max Planck Inst. for Chem. Phys. of Solids*), “Transport sensing of spin fluctuations: non-saturating resistance and giant negative magnetoresistance”
- 12 Hayato Nakayama (*Keio Univ.*), “Evaluation of spin-current generation in Si-Al nanoalloy films”
- 13 Shingen Miura (*Univ. of Tokyo*), “Epitaxial growth and characterization of superconducting Sn/InSb heterostructure on GaAs substrates”
- 14 Lin Guo (*Helmholtz-Zentrum Dresden-Rossendorf*), “Eco-sustainable printed magnetoresistive sensors”
- 15 Guannan Mu (*Helmholtz-Zentrum Dresden-Rossendorf*), “Flexible and printed spintronic magnetic field sensors”

17:00-21:00 Visit to the Christmas Market (optional)

Friday, 28 November

09:15-11:00 Session 5: Spintronic Devices

Chair: Masaki Mizuguchi (*Nagoya Univ.*)

3 invited talks (30 min.) + 1 contributed talks (15 min.)

09:15-09:45 Christopher Marrows (*Univ. of Leeds*)

“Temperature gradient-driven motion of magnetic domains in a magnetic metal multilayer by entropic forces”

09:45-10:15 Giovanni Finocchio (*Univ. of Messina*)

“Unconventional computing with spintronic devices”

10:15-10:30 Edouard Lesne (*Max Planck Inst. for Chem. Phys. of Solids*)

“Spin-to-charge conversion in epitaxial $\text{Mn}_3\text{Sn}(0001)$ noncollinear antiferromagnetic films”

10:30-11:00 Benjamin Uhlig (*Fraunhofer Inst. for Photon. Microsys.*)

“From novel concepts to reliable devices, research on spintronics in a modern CMOS cleanroom”

11:00-11:20 Coffee/Tea

11:20-12:50 Session 6: Spintronic Materials

Chair: Giovanni Finocchio (*Univ. of Messina*)

3 invited talks (30 min.)

11:20-11:50 Stuart Parkin (*Max Planck Inst. for Microstr.*)

“2D and 3D racetrack memory”

11:50-12:20 Thomas Thomson (*Univ. of Manchester*)

“Spin transport and spin-charge interconversion in graphene and TMDs”

12:20-12:50 Libor Šmejkal (*Max Planck Inst. for Phys. of Complex Sys.*)

“Altermagnetic spintronics and multiferroics”

13:00-14:00 Lunch (canteen)

13:40-14:00 Laboratory Tour upon request (contact Edouard Lesne)

14:00-14:45 Session 7: Spintronics x Dimensions

Chair: Tom Thomson (*Univ. of Manchester*)

1 invited talk (30 min.) + 1 contributed talk (15 min.)

14:00-14:30 Kazuyuki Sakamoto (*Univ. of Osaka*)

“Spin-polarized bands of atomic layer superconductors”

14:30-14:45 Ning Mao (*Max Planck Inst. for Chem. Phys. of Solids*)

“Spin diffusion probe of magnetization frustration”

14:45-15:05 Coffee/Tea

15:05-16:20 Session 8: Magnonics

Chair: Kazuyuki Sakamoto (*Univ. of Osaka*)

2 invited talks (30 min.) + 1 contributed talk (15 min.)

15:05-15:35 Mathias Weiler (*Rheinland-Pfälzische Tech. Univ. Kaiserslautern-Landau*)

“Magnetoacoustics and magnon-polarons in surface acoustic wave devices”

15:35-15:50 Kazuto Yamanoi (*Keio Univ.*)

“Magnon-phonon coupling using the multi-overtones surface acoustic wave device”

15:50-16:20 Helmut Schultheiss (*Helmholtz-Zentrum Dresden-Rossendorf*)

“How a nano-core shatters the collective of an entire vortex”

16:20-16:30 Closing remark

18:00-20:30 Symposium dinner

Restaurant Anna im Schloss (Taschenberg 2, 01067 Dresden)

<https://www.anna-dresden.de/en>

