

# **Re-thinking Spintronics: From Unconventional Materials to Novel Technologies**

**776. WE-Heraeus-Seminar**

**04 – 06 January 2023**

**hybrid**

**at the Physikzentrum Bad Honnef, Germany**

**WILHELM UND ELSE  
HERAEUS-STIFTUNG**



# Program

**Tuesday, 03 January 2023**

17:00 – 20:00 Registration

18:00 *BUFFET SUPPER and informal get-together*

**Wednesday, 04 January 2023**

08:00 *BREAKFAST*

09:00 Scientific organizers **Welcome words**

09:15 – 10:00 Nicola Spaldin **Concepts from multiferroics that might be useful for spintronics**

10:00 – 10:45 Caroline Ross **Magnetic garnets for spintronics**

10:45 – 11:15 *COFFEE BREAK*

11:15 – 12:00 Katsuya Inoue **Chiral material sciences**

12:00 – 12:45 Yossi Paltiel **Efficient spintronics utilizing the chiral induced spin selectivity(CISS) effect**

12:45 – 13:00 David Janas **Enhancing electron correlation at a 3d ferromagnetic surface: a pathway to access novel material properties?**

13:00 *LUNCH*

# Program

**Wednesday, 04 January 2023**

14:30 – 15:30	<b>Poster session</b>	
15:30 – 16:00	<i>COFFEE BREAK</i>	
16:00 – 16:45	Philipp Pirro	<b>Nonlinear magnonics for unconventional computing</b>
16:45 – 17:30	Angelo Di Bernardo	<b>Superconducting spintronics: open challenges and new materials platforms</b>
17:30 – 17:45	Jonathan Kipp	<b>Interaction parameters in magnetic 2D systems from symmetric invariants</b>
17:45 – 18:00	William Legrand	<b>Nanomagnets for electric dipole spin resonance and spin–photon coupling</b>
18:00	<i>DINNER</i>	
19:30	Petra Rudolf	<b>Evening talk: Unconscious bias: how it impacts careers in science and how to mitigate this influence</b>

# Program

Thursday, 05 January 2023

08:00	<i>BREAKFAST</i>	
09:00 – 09:45	Libor Šmejkal	<b>Altermagnetism: spin symmetry foundations and unconventional spintronics effects</b>
09:45 – 10:30	Helena Reichlova	<b>Magneto-thermal transport in compensated magnets</b>
10:30 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:45	Olena Gomonay	<b>Gradient magnetoelasticity: Tailoring and manipulation of antiferromagnetic textures</b>
11:45 – 12:30	Stavros Komineas	<b>Dynamics of solitons in antiferromagnets</b>
12:30 – 12:45	Sumit Ghosh	<b>Manipulating topology of massive Dirac Fermion with scalar potential</b>
12:45 – 12:55	<b>Conference Photo</b> (in the front of the lecture hall)	
12:55	<i>LUNCH</i>	

# Program

Thursday, 05 January 2023

14:30 – 15:15	Lucas Caretta	<b>Manipulating excitations in magnetic complex oxides</b>
15:15 – 16:00	Jörg Wunderlich	<b>Non-volatile spin-orbit torque driven antiferromagnetic memristor</b>
16:00 – 16:30	<i>COFFEE BREAK</i>	
16:30 – 17:15	Christian Degen	<b>Quantum imaging of antiferromagnetic and ferroelectric textures</b>
17:15 – 18:00	Alina Deac	<b>Tunable Vortex dynamics in ion-implanted disks</b>
18:00 – 18:15	Lisa-Marie Kern	<b>Imaging nanometer-scale skyrmion (de)formation dynamics</b>
18:15 – 18:30	Alla Bezvershenko	<b>Walking skyrmions</b>
18:30	<i>HERAEUS DINNER (social event with cold &amp; warm buffet with complimentary drinks)</i>	
20:00	<i>Posters Informal get-together (open end)</i>	

# Program

Friday, 06 January 2023

08:00	<i>BREAKFAST</i>	
09:00 – 09:45	Michael Huth	<b>Direct-write nanofabrication with focused electron beams for 3D nanomagnetism</b>
09:45 – 10:30	Claas Abert	<b>Recent advances in micromagnetic simulation</b>
10:30 – 11:00	<i>COFFEE BREAK</i>	
11:00 – 11:45	Claudia Felser	<b>Topology for energy efficient spintronics and energy conversion</b>
11:45 – 12:00	Scientific organizers	<b>Awards &amp; closing remarks</b>
12:00	<i>LUNCH</i>	

***End of the seminar and departure***

***NO DINNER for participants leaving on Saturday; however, a self-service breakfast will be provided on Saturday morning***