

CONFERENCE AGENDA

International Conference and School on Spintronics & Quantum Information Technology
(SPINTECH 6)

Sunday, 31 July

17:00 – 19:00 Registration for School and Conference at the registration desk

Spintech 6 School

Monday, 1 August

07:30 – 9:00 Registration for School and Conference at the registration desk

09:00 – 10:30 Dieter Weiss (University of Regensburg, Germany)
"Fundamentals of magnetism"

10:30 – 10:45 Short Break

10:45 – 12:15 Hideo Ohno (Tohoku University, Japan)
"Dilute magnetic semiconductors"

12:15 – 13:15 Lunch

13:15 – 14:15 Yuichiro Kato (University of Tokyo, Japan)
"Spins in non-magnetic semiconductors"

14:15 – 14:30 Short Break

14:30 – 16:00 Gen Tatara (Tokyo Metropolitan University, Japan)
"Spin current"

16:00 – 16:15 Short Break

16:15 – 17:15 Andrew Wray (Lawrence Berkeley National Lab, USA)
"Topological insulators: a new state of matter with three dimensional topological electronic order"

Tuesday, 2 August

09:00 – 09:45 Ron Jansen (Advanced Industrial Science and Technology, Japan)
"Spin injection: concept and technology"

09:45 – 10:00 Short Break

10:00 – 11:30 Bill Coish (McGill University, Canada)
"Quantum information processing with spins"

11:30 – 11:45 Short Break

11:45 – 12:30 Paola Cappellaro (MIT, USA)
"Magnetic resonance"

12:30 – 13:30 Lunch

13:30 – 14:30 Mikio Eto (Keio University, Japan)
"Semiconductor quantum dots"

- 14:30 – 15:30 Paul Koenraad (Technical University Eindhoven, The Netherlands)
"Artificial atoms in semiconductors"
- 15:30 – 16:00 Break
- 16:00 – 17:00 Yoshiro Takahashi (Kyoto University, Japan)
"Quantum simulation with atoms in vacuum"
- 17:00 – 18:00 Franco Nori (Riken, Japan, and University of Michigan, USA)
"Quantum information processing with pseudo-spins in superconducting circuits"
- 18:00 – 20:00 Welcome reception (Multipurpose Hall in Kunibiki Messe)

Spintech 6 Conference

Wednesday, 3 August

- 08:50 – 09:00 Opening, Kohei M. Itoh and Yuzo Ohno
- 09:00 – 09:45 Plenary: Yoshinori Tokura (University of Tokyo, Japan)
"Multiferroic spintronics" (P-1)
- 09:45 – 10:30 Plenary: David Awschalom (University of California, Santa Barbara, USA)
"Single spins in semiconductors for quantum information processing" (P-2)
- 10:30 – 11:00 Break
- 11:00 – 11:20 Gregory Fuchs (University of California, Santa Barbara, USA)
"A quantum memory intrinsic to single NV centers in diamond" (O-1)
- 11:20 – 11:50 Invited: Joerg Wrachtrup (University of Stuttgart, Germany)
"NV centers in diamonds" (I-1)
- 11:50 – 12:10 Norikazu Mizuochi (Osaka University, Japan)
"Single spins, photons, and charges in diamond semiconductor" (O-2)
- 12:10 – 13:30 Lunch
- 13:30 – 14:00 Invited: Shuichi Murakami (Tokyo Institute of Technology, Japan)
"Spin Hall effect" (I-2)
- 14:00 – 14:20 Akihito Takeuchi (Tokyo Metropolitan University, Japan)
"Theory of spin damping monopole" (O-3)
- 14:20 – 14:40 Paul Crowell (University of Minnesota, USA)
"Spin Hall effects in Fe/In_xGa^{1-x}As heterostructures" (O-4)
- 14:40 – 15:00 Joerg Wunderlich (Hitachi Cambridge Laboratory, UK)
"Spin Hall effect for detection of spin-currents – Realization of a Spin transistor" (O-5)
- 15:00 – 15:15 Short Break
- 15:15 – 15:35 Yasuhiro Niimi (ISSP, University of Tokyo, Japan)
"Extrinsic SHE induced by Ir impurities in copper" (O-6)

- 15:35 – 16:05 Invited: M. Zahid Hasan (Princeton University, USA)
"Spins in topological insulators" (I-3)
- 16:05 – 16:25 Lewis Wray (Lawrence Berkeley National Lab, USA)
"Beyond the Dirac cone: new band structures on a perturbed topological insulator surface" (O-7)
- 16:25 – 16:45 Wonhee Ko (Stanford University, USA)
"Imaging spins of Dirac fermions" (O-8)
- 16:45 – 17:05 Christoph Brüne (University Wuerzburg, Germany)
"Strained bulk HgTe: A 3-D topological insulator" (O-9)
- 17:05 – 18:30 Poster Session I (WP series)
at Large Exhibition Hall (1F)
- 18:30 – 19:30 Dinner
- 19:30 – 20:00 Invited: Maciek Sawicki (Institute of Physics, PAS, Warsaw)
"Interplay of ferromagnetism and localization in (Ga, Mn)As" (I-4)
- 20:00 – 20:30 Invited: Masaaki Tanaka (University of Tokyo, Japan)
"Valence-band picture of GaMnAs obtained by resonant tunneling spectroscopy" (I-5)
- 20:30 – 20:50 Shinobu Ohya (The University of Tokyo, Japan)
"Valence-band structure of (III,Mn)As ferromagnetic semiconductors" (O-10)
- 20:50 – 21:20 Invited: Tomas Jungwirth (Institute of Physics ASCR, Prague; Nottingham University, UK)
"Antiferromagnetic spintronics" (I-6)

Thursday, 4 August

- 09:00 – 09:30 Invited: Gerrit E. W. Bauer (TU Delft, The Netherlands)
"Spin currents in magnetic insulators" (I-7)
- 09:30 – 09:50 Hiroto Adachi (Japan Atomic Energy Agency, Japan)
"Phonon-drag contribution to the spin Seebeck effect" (O-11)
- 09:50 – 10:10 Roberto Myers (Ohio State University, USA)
"Phonon-driven spin distribution in GaMnAs: spin-Seebeck effect" (O-12)
- 10:10 – 10:30 Short Break
- 10:30 – 10:50 Kazuya Ando (Tohoku University, Japan)
"Generation of spin current from metal and insulator" (O-13)
- 10:50 – 11:20 Invited: Andrew Dzurak (University of New South Wales, Australia)
"Magnetic resonance and measurement of an electron spin in silicon" (I-8)
- 11:20 – 11:50 Invited: Mike Thewalt (Simon Fraser University, Canada)
"Optical control and measurement of donor electronic and nuclear spins in highly enriched ^{28}Si " (I-9)
- 11:50 – 12:10 Stephanie Simmons (Oxford University, UK)
"Entanglement in a solid state spin ensemble" (O-14)

12:10 – 19:00 Excursion (Adachi Museum and Izumo Taisha)

19:00 – 21:00 Banquet Dinner (Matsue Vogel Park)

Friday, 5 August

09:00 – 09:30 Invited: Jaroslav Fabian (University of Regensburg, Germany)

“Spin-orbit coupling in graphene” (I-10)

09:30 – 09:50 Roland Kawakami (University of California, Riverside, USA)

“Enhanced Spin Injection and Extended Spin Lifetimes in Graphene” (O-15)

09:50 – 10:10 Jun Ishihara (Tohoku University, Japan)

“Strong spin relaxation anisotropy of electrons in modulation-doped GaAs/AlGaAs wires” (O-16)

10:10 – 10:30 Short Break

10:30 – 10:50 Sun-Woo Kim (University of Tokyo, Japan)

“Spin-filtering in quantum point contacts with spin-orbit interaction” (O-17)

10:50 – 11:10 Makoto Kohda (Tohoku university, Japan)

“Electrical spin generation by Rashba spin orbit interaction in InGaAs quantum point contacts” (O-18)

11:10 – 11:40 Invited: Richard Warburton (University of Basel, Switzerland)

“Spins in a self-assembled quantum dot” (I-11)

11:40 – 12:00 Steffen Varwig (TU Dortmund, Germany)

“Optical control of coherent interactions between quantum dot electron spins” (O-19)

12:00 – 12:30 Lunch

12:30 – 14:30 Poster Session II (FP series)

at Large Exhibition Hall (1F)

14:30 – 15:00 Invited: Sergio Valenzuela (ICREA, Spain)

“Single-electron spin ratchet” (I-12)

15:00 – 15:20 Hideo Kosaka (Tohoku university, Japan)

“Electron spin coherence generated by light time-bin coherence in a semiconductor nanostructure” (O-20)

15:20 – 15:40 Lukas Dreher (Walter Schottky Institut, TU Muenchen, Germany)

“Elastically Driven Ferromagnetic Resonance in a Surface Acoustic Wave/Nickel Thin Film Device” (O-21)

15:40 – 16:00 Koichiro Ienaga (Kyushu University, Japan)

“Magnetoresistance in atomic-scale ferromagnetic metallic contact at 4.2K” (O-22)

16:00 – 16:20 Short Break

16:20 – 16:40 Shun Kanai (Tohoku University, Japan)

“Magnetic anisotropy direction switching in Ta/CoFeB/MgO by electric fields” (O-23)

- 16:40 – 17:00 Sandeep Sharma (AIST, Japan)
"Tunneling anisotropy in Si/Al₂O₃/ferromagnet devices" (O-24)
- 17:00 – 17:20 Stefan Mark (Universtiy of Wuerzburg, Germany)
"Fully Electrical Read-Write Device Out of (Ga,Mn)As" (O-25)
- 17:20 – 17:40 Andrew Balk (Penn State University, USA)
"Measurements of Nanoscale Domain Wall Flexing in a Ferromagnetic Thin Film" (O-26)
- 17:40 – 18:00 Laura Thevenard (Institut des Nanosciences de Paris, CNRS, France)
"Field-induced domain wall propagation: beyond the one dimensional model" (O-27)
- 18:00 Closing