

PLENARY SPEAKERS



PROFESSOR HIDEO OHNO

received his Ph.D. from the University of Tokyo in 1982. At Tohoku University Prof. Ohno is the Director and Professor of the Laboratory for Nano-electronics & Spintronics at the Research Institute of Electrical Communication and Director of the Center for Spintronics Integrated Systems. He is also Principal Investigator and Professor of WPI Advanced Institute for Materials Research at Tohoku University. His current research interests include physics and applications

of spin-related phenomena in semiconductor and in metal-based nanostructures. Professor Ohno received the IBM Japan Science Award (1998), the IUPAP Magnetism Prize (2003), Japan Academy Prize (2005), Presidential Prize for Research Excellence, Tohoku University (2005) and the 2005 Agilent Technologies Europhysics Prize. He has been a fellow of the Institute of Physics (IOP) since 2004, an honorary professor of Institute of Semiconductors, Chinese Academy of Sciences since 2006 and a fellow of the Japan Society of Applied Physics (JSAP) since 2007. Tohoku University appointed him as a distinguished professor. IEEE Magnetics Society named him for the Distinguished Lecturer for 2009. He was awarded the Thomson Reuters Citation Laureate (2011), the JSAP Outstanding Achievement Award and IEEE David Sarnoff Award (2012).

DOCTOR STUART PARKIN is an IBM Fellow (IBM's highest technical honor), Manager of the Magnetoelectronics group at the IBM Almaden Research Center, San Jose, CA and a Consulting Professor in the Dept. of Applied Physics at Stanford University. He is also Director of the IBM–Stanford Spintronic Science and Applications Center. Dr. Parkin's research interests include oxide thin films and heterostructures, high-temperature superconductors, and, magnetic thin film structures and spintronic materials and devices for advanced sensor, memory, and logic applications. Parkin's discoveries in magneto-resistive thin film structures enable a 1000 fold increased in the storage capacity of magnetic disk drives in little more than a decade. Most recently, Parkin is working on a novel storage class memory device, "Racetrack Memory", which could replace both hard disk drives and many forms of conventional solid state memory. Parkin is an elected Member of the National Academy of Sciences, the National Academy of Engineering, a Fellow of the American Academy of Arts and Sciences and a Fellow of the Royal Society (London). Parkin is also a Fellow of the American Physical Society (APS), the Materials Research Society, the Institute of Physics (London), the IEEE, and the AAAS. Parkin is the recipient of numerous awards and honors including, the American Physical Society International Prize for New Materials (1994), the Europhysics Prize for Outstanding Achievement in Solid State Physics (1997), and the 1999-2000 American Institute of Physics (AIP) Prize for Industrial Application of Physics. Parkin has received Honorary Doctorates from the RWTH Aachen, Germany, the Eindhoven University of Science and Technology, The Netherlands, and the University of Regensburg,



Germany and has been appointed a Distinguished Visiting Professor at seven universities in Europe, Singapore, Taiwan and Korea. Most recently Parkin received the 2008 IEEE Daniel E. Noble Award for his work on MRAM, the 2008 IEEE Distinguished Lecturer Award, the 2009 IUPAP Magnetism Prize and Neel Medal for outstanding contributions to the science of magnetism, the 2008 Guttenberg Research Award, the 2009 Dresden Barkhausen Award and the 2012 David Adler Lectureship Award from the APS. In January 2012, Parkin was elected an Honorary Fellow of the Indian Academy of Sciences. Parkin has authored approximately 400 papers and has approximately 90 issued patents.

PROGRAM

MONDAY 23 JULY		
08:30	REGISTRATION	
09:00	OPENING CEREMONY CHAIR: SIMON RINGER	
09:25	Auditorium 101 PLENARY SESSION 1 Chair: Rongkun Zheng	Ferromagnetism in Semiconductors Hideo Ohno
10:20	MORNING TEA	
10:40	Auditorium 101 SESSION A: MAGNETIC SEMICONDUCTORS Chair: Hideo Ohno	Lecture Theatre 024 SESSION B: SPIN DYNAMICS & TRANSPORT Chair: Alex Hamilton
10:45	A1 (Invited) Understanding the origin of ferromagnetism in (Ga,Mn)N Maciej Sawicki	B1 (Invited) Spin phase coherent electronic processes in organic semiconductors - control and applications Dane McCamey
11:10	A2 (Invited) Electromotive forces induced by magnetization dynamics in (Ga,Mn)As Fumihiko Matsukura	B2 (Invited) Terahertz radiation from spin excitation in diluted magnetic semiconductors Jerome Tignon
11:35	A3 Structure-Dependent Ferromagnetism in Mn-Doped III-V Nanowires Perla Kacman	B3 Surface Roughness Induced Spin Scattering and Relaxation in Silicon SOI MOSFETs Alexander Makarov
11:50	A4 Spin-polarized neutron reflectometry as a tool in the search for the perfect ferromagnetic semiconductor David Cortie	B4 Spin-Dependent Scattering in a Phosphorus Doped Silicon MOSFET Operated in the Pinch-Off Regime Laurens Willems van Beveren
12:05	A5 Theoretical studies of half-metallicity in transition metals substituted III-V semiconductors Iftikhar Ahmad	B5 Carrier and Exciton Spin Dynamics in Cu-doped ZnO Nanowires Guozhong Xing
12:20	A6 Room temperature ferromagnetism in Ca and Mg stabilized cubic zirconia bulk samples and their thin films Mukesh Chandra	B6 Spin phase decoherence of polaron pairs in organic electronic devices at room temperature Thomas Keevers
12:35	LUNCH	

Oral Presentation Guidelines: Please allow time for discussion at the end of your presentation, keeping within the scheduled time. We request presenters to load their presentation files onto the lectern computer at least one break-time before the presentation and check compatibility with Windows Powerpoint in advance.

Meals and teas scheduled in the program are served in Law Level 1 Foyer (except the Conference Dinner Cruise). The Law Lounge on Level 1 (behind the water feature) is also available to delegates for meetings and breakouts.

13:45	Auditorium 101 SESSION C: MAGNETIC SEMICONDUCTORS <i>Chair: Maciej Sawicki</i>	Lecture Theatre 024 SESSION D: SPIN DYNAMICS & TRANSPORT <i>Chair: Jerome Tignon</i>
13:50	C1 (Invited) Structural-magnetic related properties of Fe and Mn doped GaN diluted magnetic semiconductors grown by MOCVD <i>Rong Zhang</i>	D1 (Invited) Unusual spin properties of holes in GaAs nanostructures <i>Alex Hamilton</i>
14:15	C2 (Invited) Structural Characteristics of Ge-based Diluted Magnetic Semiconductors Grown by Molecular Beam Epitaxy <i>Jin Zou</i>	D2 (Invited) Optical Spin Pumping and Millisecond Spin Memory of Silicon Vacancy Qubits in Silicon Carbide <i>Georgy Astakhov</i>
14:40	C3 (Invited) The role of Cu codoping on the ferromagnetic origin in Fe-doped In ₂ O ₃ films <i>Xiaohong Xu</i>	D3 (invited) Anisotropy of Current Induced Nuclear Spin Polarization around the $\nu=2/3$ Quantum Hall State in Tilted Magnetic Field <i>Kazuki Iwata</i>
15:05	C4 Cr-doped Dilute Magnetic Semiconducting Quantum Dots for Spintronics <i>Kedar Singh</i>	D4 Spin filtering properties of paramagnetic centers in semiconductors <i>Vitaly Berdinskiy</i>
15:20	C5 Influence of Annealing Environment on the Ferromagnetic Properties of Ni Implanted ZnO/Sapphire Thin Films deposited by Pulsed Laser Deposition <i>Bhawana Joshi</i>	D5 Cavity-Modulated Emission Polarization of Exciton in Quantum Dot-Embedded Micropillar Structure <i>Yi-Shan Lee</i>
15:35	AFTERNOON TEA	
16:00	Auditorium 101 SESSION E: MAGNETIC SEMICONDUCTORS <i>Chair: Ashutosh Tiwari</i>	Lecture Theatre 024 SESSION F: SPIN DYNAMICS & TRANSPORT <i>Chair: Georgy Astakhov</i>
16:05	E1 (Invited) Tailoring of Physical Properties in ZnO-based Diluted Magnetic Semiconductor Nanoparticle <i>Anup K. Ghosh</i>	F1 (Invited) Room temperature magnetoresistance from phase-change memory <i>Junji Tominaga</i>
16:30	E2 (Invited) Ferromagnetism origin of Cu-doped ZnO <i>Jun Ding</i>	F2 (Invited) Giant anisotropic magnetoresistance effects in ultrathin (Ga,Mn)As <i>Rashid Gareev</i>
16:55	E3 Hydrogenated ZnO-based Dilute Magnetic Semiconducting Epitaxial Films <i>Yuebin Zhang</i>	F3 Temperature Dependences of the Magnetoresistance in Heterogeneous Co-Cu Alloy Films <i>Dmitriy Khalyapin</i>
17:10	E4 The role of hydrogen in ZnO doped Co, a comparison between experiments and various density functional schemes <i>Hussein Assadi</i>	F4 Magnetoresistance in Thin Films based on Organic Donor/Acceptor Blends <i>Thomas Reichert</i>

17:30	<p>(Law Lounge Foyer)</p> <p>SESSION G: POSTER SESSION & RECEPTION</p> <p><i>Chair: Xiaohong Xu, Xiangyuan Cui</i></p>	
	<p>G1 Low temperature electrical transport and percolation-type metal insulator transition in 2D p-GaAs high mobility <i>Abdelhamid El kaouachi</i></p> <p>G2 Observation of percolation-induced metal-insulator transition in high mobility two dimensional n-AlAs <i>Abdelhamid El kaouachi</i></p> <p>G3 Linear temperature dependence of the conductivity in high mobility 2D Si-MOFSETs near the apparent metal-to-insulator transition <i>Abdelhamid El kaouachi</i></p> <p>G4 Study of linear temperature dependence of the conductivity in the vicinity of the metal-insulator transition in high mobility 2D Si-MOFSETs <i>Abdelhamid El kaouachi</i></p> <p>G5 Dipole-Dipole Stabilization of Skyrmions in Multiferroics <i>Alexander Polyakov</i></p> <p>G6 Suppression in Neel temperature of $\text{Bi}_{0.9}\text{Y}_{0.1}\text{Fe}_{1-x}\text{Mn}_x\text{O}_3$ ($0 \leq x \leq 0.07$) ceramics <i>Anurag Gaur</i></p> <p>G7 Effect of Yb Doping on the Structural, Optical and Electrical Properties of PbSe Thin Films <i>Arshad Hmood</i></p> <p>G8 Ferromagnetic resonance of a magnetic nanostripe array using a micron-sized coplanar probe <i>Crosby Chang</i></p> <p>G9 Magnetic training effects in exchange-biased bilayers simulated with a Heisenberg Monte Carlo model and compared with experimental data <i>David Cortie</i></p> <p>G10 Magnetic and dielectric studies of multiferroic Y type hexaferrites <i>Himani Khanduri</i></p> <p>G11 First-principles study on the magnetoelectric coupling in orthorhombic rare-earth manganites have a cycloidal spin structure <i>Jung-Hoon Lee</i></p> <p>G12 Thermal annealing effect on the magnetic properties of $(\text{Zn,Mn,Sn})\text{As}_2$ thin films epitaxially grown on InP substrates <i>Naotaka Uchitomi</i></p>	<p>G13 Large room temperature magnetoresistance in Fe surface nanoclusters on SiO_2 produced by ion implantation <i>Peter Murmu</i></p> <p>G14 Room temperature magnetoresistance in epitaxial thin films of $\text{La}_{0.85}\text{Ag}_{0.15}\text{MnO}_3$ produced by Polymer Assisted Deposition <i>Raiden Andres Cobas Acosta</i></p> <p>G15 Conductance of single molecules measured on magnetic Nickel electrodes <i>Richard Brooke</i></p> <p>G16 Planar ferromagnetic junction defined by atomic force microscopy <i>Seung-Hyun Chun</i></p> <p>G17 Orbital hybridization as the origin of ferroelectricity in multiferroic LuMnO_3 <i>Seungwoo Song</i></p> <p>G18 Temperature dependence of dynamic rotatable anisotropy characterization of NiFe/IrMn bilayer <i>Shang-Fan Lee</i></p> <p>G19 Magnetoresistance in Organic Field-Effect Transistors <i>Thomas Reichert</i></p> <p>G20 Heat Assisted Magnetization Dynamics in GdFeCo <i>Tuyuan Cheng</i></p> <p>G21 In-situ time-resolved magnetization dynamics on single crystal Fe thin film <i>Tuyuan Cheng</i></p> <p>G22 Electronic Transport Properties of Reactive Sputtered $\gamma\text{-Fe}_4\text{N}$ Films <i>Wenbo Mi</i></p> <p>G23 Growth and Properties of Fe-doped In_2O_3 Magnetic Semiconductor films <i>Yanxue Chen</i></p> <p>G24 Microstructural Investigation on Substrate Effect of the ZnO:Co <i>Li Li</i></p> <p>G25 Probing for the microscopic origin of laser-induced ultrafast spin dynamics using time-resolved photoemission <i>Cong Lu</i></p>
19:00	END OF DAY 1 SESSIONS	

Recommended poster format: A0 Portrait (841x1189mm). Your presentation number will be on the poster board. Please put your poster up at least 30 minutes before the Poster Session and remove it at the end of the conference. At least one of the Authors of each poster should remain with their poster during the Poster Session.

TUESDAY 24 JULY

08:30	Auditorium 101 PLENARY SESSION 2 <i>Chair: Yongbing Xu</i>	Interface current driven domain wall motion in perpendicularly magnetized Co/Ni nanowires <i>Stuart Parkin</i>
09:30	Auditorium 101 SESSION H: SPIN DYNAMICS & TRANSPORT <i>Chair: Stuart Parkin</i>	Lecture Theatre 024 SESSION I: HEUSLER COMPOUNDS/ALLOYS <i>Chair: Xiaofeng Jin</i>
09:35	H1 (Invited) All-Magnonic spin-transfer torque and domain wall propagation <i>Xiangrong Wang</i>	I1 (Invited) Tetragonal Heusler compounds for spintronics <i>Claudia Felser</i>
10:00	H2 (Invited) All-Optically Induced Magnetization Switching Approaching 240 fs in TbFeCo Thin Films <i>Jing Wu</i>	I2 (Invited) Origin of magnetoresistance under field-cooled and zero-field cooled state of Ni-Mn-Z (Sn, In) alloys <i>Chhayabrita Biswas</i>
10:25	H3 Micromagnetic Study of Spin Transfer Torque Switching in Magnetic Tunnel Junctions with Synthetic Antiferro- and Ferro-magnetic Free layer <i>Chikako Yoshida</i>	I3 Structural and magnetic properties of $Mn_2Rh_{1-x}Co_xSn$ and $Mn_{2+x}Rh_{1-x}Sn$ Heusler alloys <i>Vajiheh Alijani</i>
10:40	H4 STT-RAM with a Composite Free Layer: High Thermal Stability, Low Switching Barrier and Sharp Switching Time Distribution <i>Alexander Makarov</i>	I4 Investigations of Pulse frequency on Co-Ni-Cu ternary alloys for GMR applications <i>N Rajasekaran</i>
10:55	MORNING TEA	
11:15	Auditorium 101 SESSION J: SPIN DYNAMICS & TRANSPORT <i>Chair: Claudia Felser</i>	Lecture Theatre 024 SESSION K: MAGNETIC SEMICONDUCTORS <i>Chair: Yuqin Zhang</i>
11:20	J1 (Invited) Magnetically Enhanced Memristor <i>Valentin Dediu</i>	K1 (Invited) Oxides for Spintronics <i>Ashutosh Tiwari</i>
11:55	J2 (Invited) Progresses on MRAMs with perpendicular MTJs and Challenges to Realize Normally-Off systems <i>Hiroaki Yoda</i>	K2 (Invited) Some issues in the research of oxide based magnetic semiconductors <i>Jiabao Yi</i>
12:20	J3 Simulations of an Electrical Read-Write Operation of a Magnetic XOR Gate <i>Alexander Makarov</i>	K3 Room temperature ferromagnetism in Zn/ZnO and Cu/Cu ₂ O heterostructures prepared by magnetron sputtering <i>Weihua Wang</i>
12:35	J4 Memory Elements using Multi-Terminal Magnetoresistive Devices <i>Swaroop Ganguly</i>	K4 Inverted core/shell fluorescent magnetic nanoparticles of ZnS/ZnO <i>Santa Chawla</i>
12:50	LUNCH	

13:55	Auditorium 101 SESSION L: SPIN DYNAMICS & TRANSPORT <i>Chair: Subhadra Gupta</i>	Lecture Theatre 024 SESSION M: MAGNETIC SEMICONDUCTORS <i>Chair: Kees de Groot</i>
14:00	L1 (Invited) Efficient generation of pure spin current in lateral spin valves <i>Yasuhiro Fukuma</i>	M1 (Invited) Electronic and Magnetic Properties of Magnetic Ion Doped Semiconductor Quantum Dots <i>Shun-Jen Cheng</i>
14:25	L2 (Invited) The Magnetoresistance effect in antiferromagnetic(AF) spin valves <i>Ke Xia</i>	M2 (Invited) Concentrated magnetic semiconductor and spin battery <i>Shishen Yan</i>
14:50	L3 (Invited) Improving the spin-transport by disorder <i>Stanislav Chadov</i>	M3 (invited) Artificial structures and their applications <i>Dao Hua Zhang</i>
15:15	L4 Temperature dependent spin injection properties of the Ni nanodots embedded metallic TiN matrix and p-Si heterojunction <i>Jaganandha Panda</i>	M4 Magnetotransport, Electronic and Magnetic Properties of Rare-Earth Doped Zinc Oxide <i>Peter Murmu</i>
15:30	L5 Preparation and Characterization of pulsed laser deposited epitaxial heterostructures of Fe ₃ O ₄ and ZnO <i>Ridhi Master</i>	M5 Intrinsic phase separations in (Cd,Mn)Te heterostructures around metal-insulator transition <i>Jan Jaroszynski</i>
15:45	AFTERNOON TEA	
16:05	Auditorium 101 SESSION N: SPIN DYNAMICS & TRANSPORT <i>Chair: Valentin Dediu</i>	Lecture Theatre 024 SESSION O: SUPERCONDUCTORS, MAJORANA FERMIONS <i>Chair: Xiaolin Wang</i>
16:10	N1 (Invited) Influence of Rapid Thermal Annealing on Tunneling Magnetoresistance of Perpendicular Magnetic Tunnel Junctions <i>Subhadra Gupta</i>	O1 (Invited) Specular Andreev reflection at an interface of Rashba spin-orbit system and superconductors <i>Chao Zhang</i>
16:35	N2 (Invited) Large Spin Asymmetric Scattering and Interfacial specific resistance in AML [Fe/Co]/Ag/AML [Fe/Co] Magnetoresistive Devices <i>Masashi Sashiki</i>	O2 (Invited) Majorana States in Spin-Orbit Coupling Topological Superconductor and their Novel Applications <i>Xiao Hu</i>
17:00	N3 Investigation on La _{0.7} Ca _{0.3} MnO ₃ /SiO ₂ /n-Si and La _{0.7} Sr _{0.3} MnO ₃ /SiO ₂ /p-Si MOS like heterostructures for Spintronics <i>Tapan Kumar Nath</i>	O3 (Invited) Transport, magnetic and thermal properties of PrFeAsO oxypnictide <i>Prabhat Mandal</i>
17:15	N4 Bias-and strain-controlled TAMR in (Ga,Mn) (As,P) tunneling devices <i>Sankara Ruttala</i>	

17:30	N5 Investigation of junction magnetoresistance in $\text{Co}_{0.65}\text{Zn}_{0.35}\text{Fe}_2\text{O}_4$ / p-Si heterostructures for Spintronics <i>Jagannandha Panda</i>	O4 Rectification effect in Majorana fermion SQUID <i>Zhi Wang</i>
17:45	END OF DAY 2 SESSIONS	
18:00	Bus Departs Sydney University (Eastern Avenue, outside Law Building) for Conference Dinner Cruise	
19:00	SYDNEY HARBOUR DINNER CRUISE (BOARDING 18:45)	
		
WEDNESDAY 25 JULY		
08:30	Auditorium 101 SESSION P: MAGNETICS <i>Chair: Run-Wei Li</i>	Lecture Theatre 024 SESSION Q: MAGNETOELECTRIC EFFECT <i>Chair: Markus Muenzenberg</i>
08:35	P1 (Invited) Ferromagnetic Resonance Studies on Interfacial Magnetic Anisotropy of Fe_3O_4 Films on III-V Semiconductors <i>Ya Zhai</i>	Q1 (Invited) Multi-Ferroic Functions Developed by Magnetic Field Effects of Excited States in Organic Semiconductors <i>Bin Hu</i>
09:00	P2 (Invited) Multifunctional $\text{L10-Mn}_{1.5}\text{Ga}$ films with ultrahigh coercivity, giant perpendicular magnetic anisotropy and large magnetic energy product <i>Jianhua Zhao</i>	Q2 (Invited) Spin reorientation, dielectric relaxation and magnetodielectric effect in novel magnetoelectric systems <i>Zhenxiang Cheng</i>
09:25	P3 Surface spin induced magnetism in nanostructured transition metal oxides <i>Wenxian Li</i>	Q3 (Invited) Effect of Holes and Electric Field on Spin Injection and Transport Through Ferromagnet/Semiconductor Junction <i>Swaroop Ganguly</i>
09:40	P4 A theoretical model of spin waves in edges and surfaces of 3D face centered cubic structure with type I antiferromagnetic order <i>Chengbo Zhu</i>	
09:55	P5 Physical Properties of Polycrystalline $\text{Fe}_{3-x}\text{Pt}_x\text{O}_4$ films <i>Yahui Cheng</i>	Q4 (Invited) Magnetoelectric coupling at metal surfaces electrical control of iron nano-magnets <i>Toyokazu Yamada</i>
10:10	P6 Magnetization Plateaus of Spin-1 One-dimensional Heisenberg Antiferromagnets with Alternating Interactions <i>Md Mahmudur Rahman</i>	
10:25	MORNING TEA	

10:45	Auditorium 101 SESSION R: TOPOLOGICAL INSULATORS, SPIN HALL EFFECT <i>Chair: Xiao Hu</i>	Lecture Theatre 024 SESSION S: SPIN DYNAMICS & TRANSPORT <i>Chair: Chhayabrita Biswas</i>
10:50	R1 (Invited) Topological insulators: A new platform for novel spintronics <i>Xiaolin Wang</i>	S1 (Invited) Magneto-Seebeck effect in magnetic tunnel junctions <i>Markus Muenzenberg</i>
11:15	R2 (invited) Realization and manipulation of nanometric vortex-like magnetic domain <i>Xiuzhen Yu</i>	S2 (Invited) Spin Caloritronics in Magnetic Tunnel Junction Nanodevices <i>Santiago Serrano-Guisan</i>
11:40	R3 Activated behavior and quantum Hall effect for the surface states of topological insulators <i>Muhammad Tahir</i>	S3 Observation of Giant Junction Magnetoresistance in epitaxial Fe_3O_4 / MgO / n-Si heterostructures <i>Progna Banerjee</i>
11:55	R4 Equilibrium spin Hall effect in triplet Josephson junction with spin-orbit coupling <i>Huan Zhang</i>	S4 Multi-domain State induced Exchange Bias Effect in the Single Crystal ErFeO_3 <i>Fang Hong</i>
12:10	R5 Topologically-related properties in presence of disorder. First-principle study <i>Stanislav Chadov</i>	S5 Enhanced spin valve signal through electrodeposited Fe/GaAs <i>Sarmita Majumder</i>
12:25	R6 Giant and anisotropic interlayer magnetoresistances of p-type Sb_2Te_3 bulk single crystals <i>Zhengji Yue</i>	S6 Silicon with Magnetic Nanoclusters of Manganese Atoms <i>Sobirjon Isamov</i>
12:40	LUNCH	
13:55	Auditorium 101 SESSION T: GRAPHENE, MOLECULE, ORGANIC SPINTRONICS <i>Chair: Gengchiao Liang</i>	Lecture Theatre 024 SESSION U: SPIN DYNAMICS & TRANSPORT <i>Chair: Jianhua Zhao</i>
14:00	T1 (Invited) Quantum Molecular Spintronics Based on Single-Molecule Quantum Magnets <i>Masahiro Yamashita</i>	U1 (Invited) Spin and charge pumping in multilayer structures: A nonequilibrium Green function approach <i>Ching-Ray Chang</i>
14:25	T2 (Invited) Giant magnetoresistance through a single molecule <i>Toyokazu Yamada</i>	U2 (Invited) Structure, Magnetic and Spintronic Properties of Sandwiched Metal-Organic Clusters and Infinite Wires <i>Jinlan Wang</i>
14.50	T3 (Invited) High interface spin polarization and its mechanism in fullerene-magnetic metal systems <i>Seiji Sakai</i>	U3 (Invited) Constrained domain-wall spin valves <i>Kees de Groot</i>

15:15	T4 Angular-dependence Longitudinal and Transverse Magnetotransport in Large-area Multi-layer Graphene <i>Peite Bao</i>	U4 Electrical switching of the magnetic phase in Mn-doped ZnO <i>Antonio Ruotolo</i>
15:30	T5 The effect of the gate voltage on tunnel magnetoresistance of a two dimensional polymers <i>Seyed Ahmad Ketabi</i>	U5 The Role of Spin in Triplet-Triplet Annihilation Upconversion <i>Andrew Danos</i>
15:45	AFTERNOON TEA	
16:05	Auditorium 101 SESSION V: GRAPHENE, MOLECULE, ORGANIC SPINTRONICS <i>Chair: Toyokazu Yamada</i>	Lecture Theatre 024 SESSION W: SPIN DYNAMICS & TRANSPORT <i>Chair: Ching-Ray Chang</i>
16:10	V1 (Invited) Magnetism and Spintronics arising from Graphene Edges <i>Junji Haruyama</i>	W1 (Invited) Unveiling Intrinsic Mechanism of Anomalous Hall Effect <i>Xiaofeng Jin</i>
16:35	V2 (Invited) Large magnetoresistance effects and spin caloritronics in graphene nanoribbons <i>Gengchiao Liang</i>	W2 (Invited) Superconducting-spintronics devices based on ferromagnetic insulators <i>Shiro Kawabata</i>
17:00	V3 Graphane based core/shell quantum dots from first principles <i>Xiangyuan Cui</i>	W3 Anomalous anisotropic magnetoresistance effects in perovskite manganites <i>Run-Wei Li</i>
17:15	V4 Stretchable Transparent Free-standing Power Generators with Modified Graphene Electrodes <i>Ju-Hyuck Lee</i>	W4 Anisotropy magnetoresistance in the antiferromagnetic $\text{Pr}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$ film and $\text{Nd}_{0.4}\text{Sr}_{0.55}\text{MnO}_3$ film <i>Yuqin Zhang</i>
17:30	END OF DAY 3 SESSIONS	
17:35	Auditorium 101 CLOSING CEREMONY <i>Chair: Simon Ringer</i> Level 1 Foyer FAREWELL DRINKS	

PLENARY SESSION 1

Ferromagnetism in Semiconductors

Hideo Ohno

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Carrier-induced ferromagnetism and its manipulation in transition-metal doped III-V semiconductors, such as (In,Mn)As and (Ga,Mn)As, offer a number of opportunities to look into the interplay between magnetism and semiconducting properties. Ferromagnetism in arsenides and antimonides is well explained by the p - d Zener model [1] and is a consequence of exchange interaction between the carrier spin and the transition metal localized spin. It is therefore possible to manipulate Curie temperature (T_C), coercivity and related magnetic properties by applying electric fields that changes the hole concentration p [2-5]. The magnetic properties under electric fields can be probed either by transport through the anomalous Hall effect or by the direct magnetization measurement [6]. The latter relates quantitatively the spontaneous magnetic moment m_s and the applied electric field. The observed field dependence of T_C and m_s [6] together with the $T_C \propto p^{0.2}$ relationship revealed by transport measurements [7] are reproduced by a modified p - d Zener model taking into account the nonuniform charge distribution. The experiment also reveals the interplay between magnetism and localization. The effect has been utilized to define magnetic dots by an electrical means [8]. These studies led magnetism community to investigate electric-field effects on magnetic metals. If time allows, I show that (Ga,Mn)As thin layers with high conductivity (> 200 S/cm) reveal an anomalous reduction of the magnitude of the anomalous Hall effect as temperature is reduced, which in some cases result in the sign reversal of the anomalous Hall coefficient [9]. This sheds light on the origin of the sign reversal of the anomalous Hall coefficient. If time allows I will touch upon the search for high temperature ferromagnetism in this field.

We acknowledge fruitful collaboration with F. Matsukura and T. Dietl. The work was supported in part by the FIRST Program of JSPS.

- [1] T. Dietl, T. Dietl, H. Ohno, F. Matsukura, J. Cibert, and D. Ferrand, *Science*, **287**, 1019 (2000).
- [2] H. Ohno, D. Chiba, F. Matsukura, T. Omiya, E. Abe, T. Dietl, Y. Ohno, and K. Ohtani, *Nature* **408**, 944 (2000).
- [3] D. Chiba, M. Yamanouchi, F. Matsukura, and H. Ohno, *Science* **301**, 943 (2003).
- [4] D. Chiba, F. Matsukura, and H. Ohno, *Appl. Phys. Lett.* **89**, 162505 (2006).
- [5] D. Chiba, M. Sawicki, Y. Nishitani, Y. Nakatani, F. Matsukura, and H. Ohno, *Nature* **455**, 515 (2008).
- [6] M. Sawicki, D. Chiba, A. Korbecka, Y. Nishitani, J. A. Majewski, F. Matsukura, T. Dietl, and H. Ohno, *Nature Phys.* **6**, 22 (2010).
- [7] Y. Nishitani, D. Chiba, M. Endo, M. Sawicki, F. Matsukura, T. Dietl, and H. Ohno, *Phys. Rev. B* **81**, 045208 (2010).
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- [9] D. Chiba, A. Werpachowska, M. Endo, Y. Nishitani, F. Matsukura, T. Dietl, and H. Ohno, *Phys. Rev. Lett.* **104**, 106601 (2010).

PLENARY SESSION 2

Interface current driven domain wall motion in perpendicularly magnetized Co/Ni nanowires

Stuart Parkin

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The current driven motion of domain walls in magnetic nanowires is of considerable interest both from a scientific as well as a technological perspective [1-5]. For example, the Racetrack Memory uses nanosecond long current pulses to shift a series of domain walls to and thro along magnetic nano-wires to enable a high density, and high performance non-volatile storage class memory [1-2]. We demonstrate that in perpendicularly magnetized nanowires formed from ultrathin layers of Co and Ni there are two independent current driving mechanisms: one derived from bulk spin-dependent scattering that drives the domain walls in the direction of electron flow, and a second interfacial mechanism that can drive the domain walls either along or against the electron flow, depending on subtle changes in the nanowire structure. For example, we show that the top and bottom interfaces of ultra thin ferromagnetic perpendicularly magnetized Co layers drive the domain walls in the direction of current and electron flow, respectively.

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