

12th RIEC International Workshop on Spintronics

June 25 (Wednesday) - 27 (Friday), 2014
 Conference Room, Laboratory for Nanoelectronics and Spintronics, RIEC, Tohoku University

Time table

June 25 (Wednesday)		June 26 (Thursday)		June 27 (Friday)			
		9:00 - 9:40	T-1	Lee	9:00 - 9:40	F-1	Iwasa
		9:40 - 10:20	T-2	Xiao	9:40 - 10:10	F-2	Kanai
		Break		Break			
		10:40 - 11:20	T-3	Garello	10:30 - 11:10	F-3	Hu
		11:20 - 12:00	T-4	Ferguson	11:10 - 11:50	F-4	Åkerman
				11:50 - Closing			
12:30 - 13:30	Registration	Lunch					
13:30 -	Opening						
13:40 - 14:20	W-1	Fukami	13:40 - 14:20	T-5	Coey		
14:20 - 15:00	W-2	Marrows	14:20 - 15:00	T-6	Jungwirth		
15:00 - 15:40	W-3	Beach	15:00 - 15:30	T-7	Chen		
	Break						
16:00 - 16:40	W-4	Hayashi	15:30 - 17:20	P-1 ~ P-27	Poster session		
16:40 - 17:20	W-5	Thiaville					
17:20 - 18:00	W-6	Yang	Transfer				
			18:00 - 19:30	Banquet			

June 25th (Wednesday)

			page
12:30-13:30		Registration	
13:30-13:40		Opening Hideo Ohno (<i>Organizer, Tohoku University</i>)	
13:40-14:20	W-1	Shunsuke Fukami and Hideo Ohno (<i>Tohoku University</i>) Current induced domain wall motion in Co/Ni wires for nonvolatile memories and logic circuits	1
14:20-15:00	W-2	Aleš Hrabec,¹ Serban Lepadatu,¹ Nicholas A. Porter,¹ Adam Wells,¹ Maria Jose Benitez Romero,² Robert Beacham,² Damien McGrouther,² Stephen McVitie,² Henri Saarikoski,³ Gen Tatara,³ Gavin Burnell,¹ Thomas A. Moore,¹ and <u>Christopher H. Marrows¹</u>, (¹<i>University of Leeds</i>, ²<i>University of Glasgow</i>, ³<i>RIKEN</i>) Domain wall motion in multilayer films	2
15:00-15:40	W-3	Geoffrey S. D. Beach (<i>MIT</i>) Current driven dynamics of chiral domain walls	3
15:40-16:00		Break	
16:00-16:40	W-4	Masamitsu Hayashi,¹ Jacob Torrejon,¹ Junyeon Kim,¹ Jaivardhan Sinha,¹ Seiji Mitani,¹ Saburo Takahashi,² Sadamichi Maekawa³, Michihiko Yamanouchi,² and Hideo Ohno² (¹ <i>National Institute for Materials Science</i> , ² <i>Tohoku University</i> , ³ <i>Japan Atomic Energy Agency</i>) Current induced spin orbit torques and chiral magnetic texture in magnetic heterostructures	4
16:40-17:20	W-5	André Thiaville (<i>Université Paris-Sud</i>) Role of chiral micromagnetic structures in ultrathin films	5
17:20-18:00	W-6	Hyunsoo Yang (<i>National University of Singapore</i>) Spin-orbit torque engineering in magnetic multilayers	6

June 26th (Thursday)

			page
9:00-9:40	T-1	Kyung-Jin Lee (<i>Korea University</i>) Theoretical studies on magnetic interfaces subject to spin-orbit coupling	7
9:40-10:20	T-2	X. Fan,¹ H. Celik,¹ K.-J Lee,² J. Wu,¹ T. V. O. Lorenz,¹ and <u>John Q. Xiao¹</u> (¹ <i>University of Delaware, </i> ² <i>Korea University</i>) Quantifying interface and bulk contributions to spin-orbit torque in magnetic bilayers	8
10:20-10:40		Break	
10:40-11:20	T-3	Kevin Garello,¹ Can Onur Avci,¹ Ioan Mihai Miron,² Olivier Boulle,² Stéphane Auffret,² Abhijit Ghosh,¹ Manuel Baumgartner,¹ Gilles Gaudin², and Pietro Gambardella¹ (¹ <i>ETH Zurich, </i> ² <i>SPINTEC</i>) Ultrafast magnetization switching by spin-orbit torques	9
11:20-12:00	T-4	Andrew J. Ferguson (<i>University of Cambridge</i>) An Anti-damping spin-orbit torque originating from the Berry curvature	10
12:00-13:40		Lunch	
13:40-14:20	T-5	J. M. D. Coey (<i>Trinity College, Dublin</i>) Progress with d^0 magnetism; collective magnetic response of CeO₂ nanoparticles	11
14:20-15:00	T-6	Tomas Jungwirth (<i>ASCR and University of Nottingham</i>) Current induced spin-orbit torques in ferromagnets and antiferromagnets	12
15:00-15:30	T-7	Lin Chen,¹ Fumihiko Matsukura,¹ Tomasz Dietl,^{1,2} and Hideo Ohno¹ (¹ <i>Tohoku University, </i> ² <i>Polish Academy of Sciences and University of Warsaw</i>) Electrical detection and control of magnetization dynamics in (Ga,Mn)As	13
15:30-17:20		Poster session (Room A401)	

June 27th (Friday)

			page
9:00-9:40	F-1	Yoshihiro Iwasa (<i>University of Tokyo, RIKEN</i>) Two-dimensional crystals for spin-valley functions	14
9:40-10:10	F-2	Shun Kanai,¹ Y. Nakatani,² M. Yamanouchi,¹ S. Ikeda,¹ H. Sato,¹ F. Matsukura,¹ and H. Ohno¹ (¹ <i>Tohoku University, </i> ² <i>University of Electro-comminucations</i>) Magnetization switching induced by electric field	15
10:10-10:30		Break	
10:30-11:10	F-3	P. Hyde,¹ Lihui Bai,¹ D. M. J. Kumar,¹ B. W. Southern,¹ S. Y. Huang,² B. F. Miao,² C. L. Chien,² and <u>Can-Ming Hu</u>¹ (¹ <i>University of Manitoba, </i> ² <i>Johns Hopkins University</i>) Electrical detection of dynamically generated dc and ac spin currents	16
11:10-11:50	F-4	Johan Åkerman (<i>University of Gothenburg</i>) Recent advances in nano-contact spin torque oscillators	17
11:50-		Closing	

Poster Session, June 26th (Thursday) 15:30-17:20 (Room A401)

	page
P-1 Chaoliang Zhang, M. Yamanouchi, H. Sato, S. Fukami, S. Ikeda, F. Matsukura, and H. Ohno (<i>Tohoku University</i>) In-plane current-induced effective fields and magnetization switching in Ta/CoFeB/MgO structures	18
P-2 Samik DuttaGuputa, S. Fukami, M. Yamanouchi, C. Zhang, H. Sato, S. Ikeda, F. Matsukura, and H. Ohno (<i>Tohoku University</i>) Current and field induced domain wall creep in Ta/CoFeB/MgO wire	19
P-3 Aya Obinata,¹ Yuki Hibino,¹ Tomohiro Koyama,¹ Kazumoto Miwa,² Shimpei Ono,² and Daichi Chiba¹ (¹ <i>The University of Tokyo</i> , ² <i>Central Research Institute of Electric Power Industry</i>) Co thickness dependence of magnetic properties and electric field control of magnetism in a Pd(Pt)/Co/Pt system	20
P-4 Yuki Hibino,¹ Aya Obinata,¹ Tomohiro Koyama,¹ Kazumoto Miwa,² Shimpei Ono,² and Daichi Chiba¹ (¹ <i>The University of Tokyo</i> , ² <i>Central Research Institute of Electric Power Industry</i>) Pd thickness dependence of magnetic properties and electric field control of magnetism in a Pd/Co/Pt system	21
P-5 Tomohiro Koyama, Aya Obinata, Yuki Hibino, and Daichi Chiba (<i>The University of Tokyo</i>) Sign reversal of electric field modulation of coercivity in Co ultra-thin films	22
P-6 Muftah Al-Mahdawi, Yohei Shiokawa, and Masashi Sahashi (<i>Tohoku University</i>) Bias dependence of anomaly temperature in Co/Pt nano-contacts through AlO_x barrier	23
P-7 Yutaro Takeuchi, S. Ishikawa, H. Sato, S. Ikeda, M. Yamanouchi, S. Fukami, F. Matsukura, and H. Ohno (<i>Tohoku University</i>) Temperature dependence of thermal stability factor in CoFeB-MgO magnetic tunnel junction	24
P-8 Yoshihisa Horikawa, S. Ishikawa, S. Ikeda, H. Sato, S. Fukami, M. Yamanouchi, F. Matsukura, and H. Ohno (<i>Tohoku University</i>) MgO cap thickness dependence of interfacial anisotropy of MgO/FeB/MgO structure	25
P-9 Takafumi Nakano, Mikihiko Oogane, Hiroshi Naganuma, and Yasuo Ando (<i>Tohoku University</i>) Magnetic sensor properties with various CoFeB sensing layer thicknesses and annealing temperatures in MgO-based magnetic tunnel junctions	26

P-10	Koki Mukaiyama, Hiroshi Naganuma, Mikihiro Oogane, and Yasuo Ando (<i>Tohoku University</i>) Fabrication of magnetic tunnel junctions using perpendicularly magnetized [Co₇₅Fe₂₅/Pd] multilayer	27
P-11	Shinya Ishikawa, H. Sato, M. Yamanouchi, S. Ikeda, S. Fukami, F. Matsukura, and H. Ohno (<i>Tohoku University</i>) High thermal stability of magnetic tunnel junction with CoFeB/Ta/[Co/Pt] multilayer ferromagnetic electrode	28
P-12	Atsuo Ono, Mikihiro Oogane, Hiroshi Naganuma, and Yasuo Ando (<i>Tohoku University</i>) Fabrication of magnetic tunnel junctions with Heusler alloy electrode for TMR sensor devices	29
P-13	Y. Sasaki, S. Mizukami, S. Iihama, H. Naganuma, M. Oogane, and Y. Ando (<i>Tohoku University</i>) Laser-induced ultrafast demagnetization in L1₀-FePt films	30
P-14	Satoshi Iihama, Shigemi Mizukami, Hiroshi Naganuma, Terunobu Miyazaki, Mikihiro Oogane, and Yasuo Ando (<i>Tohoku University</i>) Low Gilbert damping observed in L1₀-FePd thin films with large perpendicular magnetic anisotropy	31
P-15	Takahiro Chiba,¹ G. E. W. Bauer,^{1,2} and S. Takahashi¹ (¹ <i>Tohoku University</i> , ² <i>Delft University of Technology</i>) Current-driven effective damping modulation of magnetic insulators	32
P-16	Eriko Hirayama, S. Kanai, K. Sato, M. Yamanouchi, H. Sato, S. Ikeda, F. Matsukura, and H. Ohno (<i>Tohoku University</i>) In-plane anisotropy in a CoFeB magnetic tunnel junction	33
P-17	Jun-ichiro Ohe,¹ Ryuichi Shindou,² Ryo Matsumoto,³ and Shuichi Murakami³ (¹ <i>Toho University</i> , ² <i>Peking University</i> , ³ <i>Tokyo Institute of Technology</i>) Topologically protected chiral edge spin-wave in a magnonic crystal	34
P-18	Thomas Meyer,¹ T. Brächer,^{1,2} T. Sebastian,^{1,3} P. Pirro,¹ T. Fischer,¹ A. A. Serga,¹ H. Naganuma,⁴ K. Mukaiyama,⁴ M. Oogane,⁴ Y. Ando,⁴ and B. Hillebrands¹ (¹ <i>Technische Universität Kaiserslautern</i> , ² <i>Graduate School Materials Science in Mainz</i> , ³ <i>Helmholtz-Zentrum Dresden-Rossendorf</i> , ⁴ <i>Tohoku University</i>) Control of parametric amplification via spin-transfer torque of a pure spin current in Heusler/Pt bilayers	35
P-19	Motoki Endo,¹ S. Mizukami,¹ K. Fujiwara,¹ T. Nishikawa,² M. Oogane,¹ H. Nagamuma,¹ and Y. Ando¹ (¹ <i>Tohoku University</i> , ² <i>Konica Minolta, Inc.</i>) Detectivity of weak magnetic field with magnetic tunnel junctions for observing ultra-low-field nuclear magnetic resonance	36

- P-20 **Shota Shirai,¹ T. Tomimatsu,^{1,2} K. Hashimoto,^{1,2} K. Sato,¹ K. Nagase,^{1,2} and Y. Hirayama^{1,2}** 37
(¹Tohoku University, ²ERATO-JST)
Nuclear spin resonance mediated by oscillating electric field in a wide range of filling factors
- P-21 **Akashdeep Kamra,^{1,2} Friedrich Witek,¹ Sibylle Meyer,¹ Hans Huebl,^{1,3} Stephan Geprägs,¹ Rudolf Gross,^{1,3,4} Gerrit E. W. Bauer,^{5,2} and Sebastian T. B. Goennenwein^{1,3}** 38
(¹Bayerische Akademie der Wissenschaften, ²Delft University of Technology, ³Nanosystems Initiative Munich, ⁴Technische Universität München, ⁵Tohoku University)
Thermal voltage noise in ferromagnetic insulator|normal metal hybrids
- P-22 **Adam B. Cahaya,¹ O. A. Tretiakov,¹ and G. E. W. Bauer^{1,2}** 39
(¹Tohoku University, ²Delft University of Technology)
Spin Seebeck power conversion
- P-23 **Hayato Yoshizawa, T. Kato, H. Toyota, and N. Uchitomi** 40
(Nagaoka University of Technology)
Room-temperature ferromagnetic InMnAs thin films grown by molecular beam epitaxy on InP substrates
- P-24 **Sophie D'Ambrosio,¹ Lin Chen,¹ Hiroyasu Nakayama,¹ Fumihiro Matsukura,¹ Tomasz Dietl,^{1,2} and Hideo Ohno¹** 41
(¹Tohoku University, ²Polish Academy of Sciences and University of Warsaw)
dc voltage measured in Py/ZnO bilayer under ferromagnetic resonance
- P-25 **Chang-Feng Yu¹ and Shih-Jye Sun²** 42
(¹National Chiayi University, ²National University of Kaohsiung)
UV irradiations enhance ferromagnetism in anisotropic crystal growth ZnO nanorods
- P-26 **Reinier van Mourik,^{1,2} Charles Rettner,¹ Brian Hughes,¹ Bert Koopmans,² and Stuart Parkin¹** 43
(¹IBM Almaden Research Center, ²Eindhoven University of Technology)
Domain wall pinning dependent on nanomagnet state
- P-27 **Ashna Bajpai,^{1,2} Z. Aslam,² S. Hampel,³ R. Kingeler,^{3,4} and N. Grobert²** 44
(¹Indian Institute of Science Education and Research, ²University of Oxford, ³Leibniz Institute for Solid State and Material Research, ⁴University of Heidelberg)
Novel interface effects in binary chrome oxides and their encapsulation in carbon nanotubes