General Information

SCOPE OF THE CONFERENCE

The 11th Joint MMM/Intermag Conference is sponsored jointly by the American Institute of Physics (PCI) and the Magnetics Society of the IEEE, in cooperation with The American Physical Society. Members of the international scientific and engineering communities interested in recent developments in fundamental and applied magnetism are invited to attend the Conference and contribute to its technical sessions. Sessions will include invited and contributed papers, oral and poster presentations and invited symposia. This Conference provides an outstanding opportunity for participants to meet their colleagues and discuss new, advanced and controversial developments.

WASHINGTON, DC

The 2010 Joint Conference will be held in the nation's capital. The city welcomes 15 million visitors each year of which 1.2 million are international. There are more than 100 restaurants located in the downtown area alone, and the city has been called "one of the most exciting restaurant cities on the East Coast" by Travel & Leisure. To obtain an in-depth and current view of what to see and do while you are here, visit the official website at: *http://www.washington.org*. Here you will find information on how to travel to the Marriott Washington Wardman Park from any of the three local airports; you can check on the weather in mid-January, and can request a free Visitors Guide prior to making your trip.

VISA REQUIREMENTS

The US has updated its visa policies to increase security, so it may take you 3-6 months to apply for and receive your visa. For details that apply specifically to your country please go **immediately** to your nearest US Consulate or Embassy. Review your visa status now to determine if you need a US visa or visa renewal and to find out how to schedule an interview appointment, pay fees, and receive other vital instructions. If you need a personal letter of invitation to attend the Conference, contact the Conference Coordinators by Email at: *2010JointConf@widerkehr.com*. Please provide the following information: Complete name, mailing address, and any other details that your country of residence requires for your visa application. If you need a hard copy of the invitation to be mailed to you, please indicate this in your request. Otherwise the invitation will be sent to you by reply email. **The Joint Conference cannot contact or intervene with any U.S. Embassy or Consulate office abroad on your behalf, so please begin your visa application process as soon as you determine that you want to attend the 2010 Joint Conference.**

NEW VISA WAIVER PROGRAM TRAVEL: Beginning 12 January 2009, all nationals and citizens of Visa Waiver Program (VWP) countries (*http://www.travel.state.gov/visa/temp/without/without_1990.html#countries*) who plan to travel to the U.S. for temporary business or pleasure for 90 days or less will be required by law to obtain travel authorization prior to initiating travel to the United States. This authorization can be obtained online through the Electronic System for Travel Authorization (*http://www.cbp.gov/xp/cgov/travel/id_visa/esta/*) (ESTA), a free Internet application administered by the U.S. Department of Homeland security (*http://www.dhs.gov/index.shtm*). For additional information about the ESTA please visit *http://www.cbp.gov/esta*. Travelers from countries not in the VWP are still required to obtain a Visa prior to entry into the United States.

The site *http://www.nationalacademies.org/visas/*, maintained by The National Academies, also provides guidance on obtaining the necessary documents.

NOTE: The Conference CANNOT contact or intervene with any U.S. Embassy or Consulate office abroad on your behalf.

HOTEL

The Marriott Washington Wardman Park offers a downtown location surrounded by 16 acres of gardens. Numerous food and beverage outlets are located inside the hotel itself, and the surrounding area offers restaurants and cuisines of all types within easy walking distance. The DC Metro system has a stop located very nearby (Woodley Park stop on the Red Line). The hotel's web site (*http://www.marriott.com/hotels/travel/wasdt-washington-marriott-wardman-park/*) will provide you with more detailed transportation instructions and nearby locations of interest to visitors.

The special hotel room rates for 2010 Joint Conference attendees are $189/single or double plus applicable taxes. **The Hotel Room Reservation Form and a direct link to the Marriott's reservation system can be found on the 2010 Joint Conference homepage at:** *www.magnetism.org/*. Making a hotel room reservation via the web site is the fastest way to book the room you want, and will provide you with an immediate confirmation. You may also book your room by going directly to the Wardman Park reservations web site link at: *http://cwp.marriott.com/wasdt/ieee/*. If you choose to make your reservation by telephone (202-328-2983) or by fax (202-387-5397) be sure to ask for the "MMM-INTERMAG" room block and special rate.

The hotel can serve all special needs, so please make your requests when you reserve your room. **You will receive confirmation of your hotel reservation by email** as long as you enter your correct email address on the reservation form. If you do not receive your confirmation within two weeks, please call the hotel to confirm your reservation, and ask for your confirmation number so that you can carry it with you when you come. Each Conference participant is responsible for making his/her own hotel reservation and for paying all personal bills upon checkout.

HELP KEEP YOUR CONFERENCE FEES DOWN: Costs for the Joint Conference meeting space are minimized by meeting pre-established targets for room occupancy at the Joint Conference hotel. Please support the Steering Committee and Advisory Committee in their attempt to keep your conference registration fees as low as possible by booking your room at the Marriott Hotel for the 2010 Joint MMM/Intermag Conference **before the cutoff date of Monday, December 28th.**

Your hotel room reservation must be received by the Washington Marriott Wardman Park no later than Monday, December 28th, in order for you to receive the special Joint Conference rates.

CONFERENCE REGISTRATION

You can register in advance at a reduced rate prior to Monday, December 28, 2009. You are encouraged to register via the secure web site. If you prefer, you may also register by downloading and completely filling out the Advance Registration Form posted on the web site at : *http://www.magnetism.org/*. Payment in **U.S. dollars** must be made by personal or corporate check (**drawn on a U.S. bank only**), or by MasterCard, Visa or American Express credit card. **Make checks payable to "2010 IEEE Joint Intermag-MMM." All 2010 Joint Conference attendees, including speakers, must pay registration fees.**

REMEMBER: All "Advance Registration" forms must be accompanied by full payment and must be received by December 28, 2009.

Onsite registration during the Conference will be at the higher rates listed below. After December 28th, only the higher registration fees will be accepted, and only at the Onsite Registration Desks at the Conference. **Forms not accompanied by payment or with incomplete or incorrect credit card information will be considered "late" and the higher rates will be collected onsite at the Conference.**

Registration Fees:	**Prior to December 28th**	**After December 28th**
Full Registrant **Member**	$575	$675
Full Registrant **Non-Member**	$690	$810
Student **Member or IEEE Life Member**	$150	$200
Student **Non-Member**	$180	$240
Member Retiree	$250	$300
Non-Member Retiree	$300	$360

You are eligible to register at the Member rate **ONLY** if you belong to (at least) one of the extensive list of Professional Societies shown on the web site *http://www.magnetism.org/*. If you are not a member of any of these societies, you must pay the Non-Member registration fee. Proof of society membership will be checked at the Registration Desk.

Registration Cancellation Policy: Cancellations of advance registrations must be submitted in writing and received no later than Monday, December 28, 2010. Refunds of the original payment, less a $75 service fee, will be mailed following the Conference. Substitutions may be made at any time, including onsite, for a registrant who cannot attend but has paid the registration fee in advance. Onsite substitutes must bring authorization in writing from the original registrant.

The Conference Registration Desks, located at the "Convention Registration Desk" on the Lobby Level of the hotel, will be open during the following hours:

Monday, January 18th	4:00 PM – 8:00 PM
Tuesday, January 19th	6:30 AM – 4:00 PM
Wednesday, January 20th	7:00 AM – 4:00 PM
Thursday, January 21st	7:00 AM – 2:30 PM

All attendees will be required to wear 2010 Joint Conference name badges to enter the Technical Sessions and Exhibits. **The use of cameras, videotaping and/or recording devices in the technical sessions is strictly prohibited.**

CONFERENCE SYMPOSIA

During the Conference there will symposia on the topics:

?• Spin torque devices for CMOS-integrated applications

?• Large scale facilities for magnetic research

?• Spin injection into nonmagnetic media

?• Advanced motor and actuator technologies

?• Spin-Calorics

?• Recent advances in microscopy of magnetic materials

?• Magnetic medical imaging technology

?• Magnetism on the international technology roadmap for semiconductors

?• Emergent phenomena in magnetic complex oxides in reduced dimensionality

?• Competitive memory and storage technologies

There will also be a tutorial on Monday evening:

?• Magnetization switching below the Stoner-Wohlfarth limit

IEEE MAGNETICS SOCIETY GENERAL MEETING

This meeting is open to all 2010 Joint Conference participants and will be held during the Tuesday evening Bierstube. Please come to learn more about what the IEEE Magnetics Society is doing for you and/or the benefits of joining the Society. The meeting will be held beginning at 5:00 PM immediately following the close of that afternoon's sessions. The location will be Washington Room 3 on the exhibition level of the hotel. Bring your beverage with you from the Bierstube and join us.

PLENARY SESSION

Presentation of the IEEE Awards will be done at the Plenary Session on Wednesday, January 20th beginning at 4:00 PM in the Ballroom Salons 2/3. The Finalists for the Best Student Presentation Award will also be acknowledged during this session. The keynote speaker is Dr. Akira Tonomura, Hitachi Ltd., RIKEN, and OIST. His talk is titled: "Observation of Microscopic Distributions of Magnetic Fields by Using Electron Waves."

Abstract: Bright beam sources such as lasers and synchrotron radiation play a decisive role in opening up new windows for investigating the microscopic structures of materials. We have repeatedly developed brighter electron beams since 1968 to utilize the phase information in an electron beam. Every time we developed a brighter beam, the precision of the phase measurements increased, thus opening up new applications. It has become possible to carry out fundamental experiments in quantum mechanics that were once regarded as "thought experiments", such as single-electron build-up of an interference pattern, and conclusive experiments on the Aharonov-Bohm effect. Additionally, visualizing magnetic lines of force in h/e flux units by interference microscopy has become possible. Concrete examples include the observation of magnetic lines of force inside and outside tiny magnetic heads for perpendicular recording.

Dr. Tonomura received a Bachelor's degree from Tokyo University and joined the Central Research Laboratory of Hitachi, Ltd. in 1965. He has been engaged in research on and development of electron microscopes and their application throughout his career. Since 1968, when he reconstructed clear images from electron holograms, he has been developing bright and coherent field-emission electron beams to deepen and widen the possibilities of electron holography. Use of electron phase information enabled quantitative observation of microscopic distributions of electromagnetic fields, which has never been directly observed. He used electron holography to experimentally verify the Aharonov-Bohm effect, thus ending a long-standing dispute on vector potentials. He further developed a method for observing magnetic lines of force by holographic interference microscopy. He was awarded the Japan Academy Prize and Imperial Prize in 1991, and elected Foreign Associate of the National Academy of Sciences in the United States of America in 2000 and member of the Japan Academy in 2007.

WOMEN'S NETWORKING RECEPTION

The IEEE Magnetics Society will be sponsoring a Networking Reception for women in the magnetism community on Thursday, January 21st beginning at 5:30 PM in the private dining room attached to the "Stone's Throw Restaurant" located on the Lobby Level of the hotel. This is an opportunity to get to know other women in the profession and to discuss a range of topics including leadership, work-life balance, and professional development. At the reception, there will also be the opportunity to form dinner groups in order to build new friendships and expand your professional network. All graduate students, researchers and retirees are encouraged to attend. For questions, contact Patricia Sparks of Harvey Mudd College (sparks@HMC.edu).

BIERSTUBE AND COFFEE

Coffee service will be available on Tuesday through Friday mornings from 7:00 AM – 9:00 AM in Exhibit Hall C among the Exhibits and Poster Sessions.

On Monday evening the **Bierstube** will be held adjacent to the Convention Registration Desk from 5:00 PM–7:00 PM. On Tuesday through Thursday evenings, the **Bierstube** will be held in the **Exhibit Hall C** adjacent to the Exhibits and Posters immediately following each day's afternoon sessions.

WIRELESS ACCESS

The "cyber lounge" will again be sponsored by the IEEE Magnetics Society, and will be located in the Atrium outside Exhibit Hall C. Complimentary wireless internet service will be available there on Tuesday through Friday on a first-come-first-served basis. The Access Code and relevant instructions will be posted on signs in the area.

PUBLICATIONS ROOM

The Publications Rooms for both the AIP and the IEEE, where authors can check the status of their manuscripts, will be located in the Park Tower Suite #8219 located on the Lobby Level behind the Delaware and Virginia Rooms. This room will be open and staffed as follows:

Tuesday, January 19th – Thursday, January 21st	9:00 AM – 5:00 PM
Friday, January 22nd	9:00 AM – Noon

SPEAKER PRACTICE ROOM

Speakers are reminded that the Joint Conference is planning an all-electronic presentation format. Prior to making their oral presentation, authors will attach their own laptop computers to digital projection equipment supplied by the Joint Conference. You should come prepared with your presentation in Microsoft PowerPoint format for a PC, or else on a MAC. Please take the time to test your computer with the in-house equipment provided in the Speaker Practice Room well before the day and time of your individual presentation. **Speakers may use the Park Tower Suite #8222, located on the Lobby Level of the hotel next to the Publications Office, to practice their presentations.** Audiovisual equipment (LCD projector and screen) will be available there for authors to use from 2:00 PM–6:00 PM on Monday; from 8:00 AM until 5:00 PM on Tuesday through Thursday; and until 12:00 Noon on Friday. Speakers are urged to use this facility to practice their presentation, either alone or with colleagues.

LCD PROJECTORS

Authors are expected to bring their presentations on their own laptop computer, and to have it powered up and ready to connect to the projector. Only standard PC-style VGA connections to the LCD projector will be supplied, therefore you must supply any required adaptor to connect up your computer. **Macintosh users must make sure that "mirroring" is activated.**

There will also be a switchbox so that a speaker can set up his/her laptop prior to their presentation, at the very latest during the question period of the previous speaker. Instructions regarding the use of the switchbox will be provided by the Session Chair at the beginning of the session. **Each speaker will be solely responsible for promptly connecting to the projector.** The presentation timer will begin immediately after the introduction by the Session Chair, and there will not be time to reboot your computer.

You are therefore STRONGLY ENCOURAGED to test your laptop connections and screen resolution settings with the projectors in the Speaker Practice Room. **There will be no technical support provided. In case of laptop failure, it would be prudent to bring a copy of your presentation on flash memory.**

POSTER SESSIONS

The Poster Sessions will be held in Exhibit Hall C from 8:00 AM–12:00 Noon and 1:00 PM–5:00 PM on Tuesday through Thursday (except during the Plenary Session on Wednesday afternoon) and on Friday morning until 12:00 Noon. Authors should set up their materials at least half-an-hour before session start times. Authors are encouraged to stay by their posters to answer questions and **must be by their posters for the first and last hour of their session.** During these times, if the Session Chair finds a poster that is not represented by an author, the poster will be designated as a "No Show" and the conference paper will not be considered for publication.

The surface area available for posters is approximately 6' long by 4' high. Authors are reminded to remove all of their materials, excluding the pushpins that have been provided by the Conference, promptly at the end of their session. The Conference staff will discard materials that are not removed promptly, in order to prepare for the next session.

INVITED POSTERS

The Conference will feature invited posters this year, as in recent Intermag conferences. These invited posters carry the same status as invited oral presentations and have been selected by the Program Committee from outstanding submitted digests where interactive discussions and additional poster space may be particularly beneficial. These invited posters will be placed in prominent locations in the exhibit hall, provided with extra poster space, and are given the extended format for invited proceedings. Four such posters will appear per full day of the conference.

EXHIBITS

Suppliers of instrumentation, materials, process tools, and other products and services will exhibit their latest offerings for professionals in magnetism and associated technologies in Exhibit Hall C (on the Exhibition Level) during the Conference. The Exhibit Hall will also be the site of the Poster Sessions, coffee service and the Bierstubes.

Companies interested in purchasing booth space should contract Wendy Walker, Exhibits Coordinator (*wendyw@widerkehr.com*). The 2010 Joint MMM-Intermag Conference places your company in direct contact with the scientific, physics and engineering community that needs your products and services to stay at the forefront of research and technology. This conference will provide direct access to nearly 1,300 professional attendees consisting of engineers and researchers with wide ranging interests in magnetism and magnetic materials, from magnetic recording phenomena to biomagnetism. Additional details are available on our web site: *www.magnetism.org*.

BEST POSTER PRESENTATIONS

There is also a competition for the best poster in each poster session at the Joint Conference. These awards will be given to recognize excellence in research and presentation. There will be one award made for each morning and each afternoon session. Only "contributed" posters will be considered for these awards

Nature of the Award: This award consists of a $50 certificate. The awards will be made in the last hour of each poster session. A ribbon will also be attached to the successful posters. Winning posters will be prominently displayed through the remainder of the Joint Conference.

Eligibility: All "contributed" posters will be eligible for nomination for this award providing they meet the requirements and guidelines for the Joint Conference poster presentations and sessions, as described on the website. The presentations should consist of well-prepared visual materials about the work, posted on a designated board. It is required that an author be registered for the conference and in attendance to present details and answer questions during the designated session time. Since the award will be made at the session, it is recommended that the authors be present for the majority of the session. All posters must include a full contact mailing address in the case that the authors are not present when the award is made.

Selection Process: A Poster Award Committee will review all of the posters at the beginning of each session. Nominations will be made by the individual Session Chairs which will then be given to the Award Committee. Selections will be based on the level of the research, quality of the poster, and clarity of the presentation.

BEST STUDENT PRESENTATION AWARD

This year, there is a competition for the best student presentation at the 11th Joint MMM- Intermag Conference to recognize and encourage excellence in graduate studies in the field of magnetism. This award is available to any full time graduate student who is expected to graduate within one year of the Conference. The student's area of research may either be theoretical or experimental in any of the general technical and scientific areas normally presented as part of the Conference. This award consists of a one-year fellowship of $1000 for the award winner and a one-year fellowship of $250 to each of the remaining finalists. The students listed below are the finalists for the 11th Joint Conference:

AB-09

Xi Chen, "Accelerated formation of Bose-Einstein condensates in magnetic thin films,"

BA-07

Stefano Bonetti, "Power and linewidth characteristics of localized and propagating spin wave modes in nanocontact spin torque oscillators,"

CA-12

Eric Evarts, "Spin transfer torque switching of magnetic tunnel junctions using a conductive atomic force microscope,"

EC-03

Igor Barsukov, "Tailoring spin relaxation in thin films,"

GC-07

Lei Huang, "Direct observation of current-driven magnetic vortex precession with unprecedented spatial resolution."

Their extended abstracts will be posted during the conference.

The Best Student Presentation at the 53rd MMM Conference was

Sara Jean Gamble
(Stanford University)
for her presentation:

"Modification of the electronic structure of a ferromagnet in extreme TeraHertz fields"

CONGRATULATIONS!

Finalists: The student finalists for the 53rd MMM Conference were: BE-05, Lihui Zhou, "Oscillatory magnetic exchange coupling at the atomic level: a direct real-space study by a sub-Kelvin spin-polarized STM", HE-14, Joanna S. Bettinger, "Room Temperature Photo-Induced Magnetization of Spinel (Mn,Zn,Fe)3O4 Thin Films", AB-08, Ioan Mihai Miron, "The domain wall spin torque-meter", GF-04, Chunsheng Liu, "Calculation of intrinsic damping in half metals", and GB-09, Li Gao, "Spin transfer induced microwave emission in MgO based magnetic tunnel junctions".

BEST STUDENT PRESENTATION AWARD GUIDELINES

Eligibility: The nominee must be a full time graduate student expecting to graduate within one year of the 11th Joint MMM\Intermag Conference. The student's area of research may either be theoretical or experimental in any of the general technical and scientific areas normally presented as part of the 11th Joint MMM\Intermag Conference. The student's regularly submitted digest must have been accepted for presentation through the normal digest review process by the 11th Joint MMM\Intermag Conference Program Committee as an oral presentation.

Nature of Award: This award consists of a one-year fellowship of $1000 for the winner and a one-year fellowship of $250 to each of the remaining finalists. The names of all finalists competing for the award will be announced in the 11th Joint MMM\Intermag Conference Program Booklet and Digest CD. The name of the winner will be published in the Program Booklet of the following MMM Meeting.

Selection Process: Up to eight finalists will be selected by a Student Award sub-committee of the 11th Joint MMM\Intermag Conference Program Committee. Because almost all digests have multiple authors, selections will be made based on the regularly submitted digest plus a brief explanation of the student's contribution. Notification to the finalists will be made by e-mail in early October 2009. The presentations, which must be made by the finalist, will be evaluated at the Conference by the Student Award sub-committee and the winner will be announced shortly after the conclusion of 11th Joint MMM\Intermag Conference. The decision of the Student Award Committee is final.

FUTURE CONFERENCES

55th Conference on Magnetism and Magnetic Materials
November 14–18, 2010, Atlanta, Georgia

2011 INTERMAG Conference
April 25–29, 2011, Taipei, Taiwan

56th Conference on Magnetism and Magnetic Materials
October 30–November 3, 2011, Scottsdale, Arizona

2013 Joint MMM/Intermag Conference
January 14–18, 2013, Chicago, Illinois

ADDITIONAL INFORMATION

If you would like to receive more information about the Joint Conference, to be placed on the Conference Mailing List, or to update your mailing address, please contact Janis Bennett at: *magnet@aip.org*; Telephone: 516-576-2403; Fax: 516-576-2223. The latest information on the Joint Conference can be found on the Web at the Conference homepage at: *http://www.magnetism.org*.

IEEE MAGNETICS SOCIETY

President. . . . . Randall Victora
Vice President . . . . Takao Suzuki
Secretary/Treasurer . . . . Liesl Folks
Past President. . . . . Carl Patton
Executive Director . . . . Diane S. Melton

ELECTED IEEE MAGNETICS SOCIETY ADMINISTRATIVE COMMITTEE MEMBERS

Terms expiring December 31, 2009
C.-R. Chang; R. Chantrell; B. Dieny; R. Fontana; P. Freitas; D. Jiles; J.-U. Thiele; S. Ueno

Terms expiring December 31, 2010
J. Chapman; O. Heinonen; B. Hillebrands; D. Litvinov; H. Muraoka; M. Pardavi-Horvath; B. Terris; U. Varshney

Terms expiring December 31, 2011
R. Dee; J. Fidler; P. Fischer; V. Harris; S. Majetich; K. O'Grady; M. Pasquale; J. Snyder

Appointed Committee Chairs: P. Dhagat; K. Gao; M. Pasquale; B. Gurney; A. Jander; J. Katine; C.-H. Lai; D. Lavers; C. Patton; J.-U. Thiele

Council Representatives: A. Edelstein (Sensors); D. Litvinov and R. Rannow (Nanotechnology); R. Goldfarb and A. Zeller (Superconductivity); J. Nibarger (IEEE GOLD)

ELECTED MMM ADMINISTRATIVE COMMITTEE MEMBERS

Advisory Committee for the 11th Joint MMM/Intermag Conference

Chairman . . . . D. Reich
Vice Chair . . . . K. O'Grady
Chair Elect . . . . J. Childress
Executive Secretary/Treasurer . . . . J. Childress
Recording Secretary. . . . . D. Melton
Term Expires February 2010 . . . . . P. Crowell, L. Folks, B. Gurney, V. Harris, C. Leighton, K. Liu, S. Majetich, C. Patton, T. Suzuki, R. Victora
Term Expires December 2010 . . . . P. Andrei, J. Borchers, E. Fullerton, R. McMichael, D. Reich, J. Rhyne, M. Stiles, N. Tabat, B. Terris, J-U. Thiele
Term Expires December 2011 . . . . C-L. Chien, B. Hillebrands, A. Hoffmann, Y. Idzerda, Y. Ijiri, M. McHenry, H. Muraoka, C. Ross, R. Stamps, M. Willard
American Institute of Physics . . . . M. Burke
IEEE Magnetics Society . . . . D. Lavers

CONFERENCE ORGANIZATION

Steering Committee 11th Joint MMM-Intermag Conference

Chair	K. O'Grady
Chairman Elect	J. Childress
Past Chair	D. Reich
Treasurer	J.-U. Thiele
Program Co-Chairs	B. Dieny, C. Leighton, H. Muraoka
Members	S. Araki, W.E. Bailey, A. Bhattacharya, M. Bode, K. Buchanan, H. Chiriac, J.H. Choi, F. Dawson, P. Eames, C. Felser, S. J. Greaves, O. Gutfleisch, G. C. Hadjipanayis, R. Hasegawa, A. Hirohata, A. Hoffmann, M. Inoue, K. Ishiyama, D-H Koo, C.Lacroix, J. Lau, D. Lavers, K-J. Lee, J. Lee, K. Liu, B. Liu, S. Maat, B. Maple, R. W. McCallum, M.E. McHenry, R. D. McMichael, J. Mitchell, M. del P. Morales, S. Nakagawa, Y. Otani, J. Paulides, N. Samarth, R. Shull, M.Stiles, J. Sun, S.G.E. te Velthuis, T. Thomson, C. Tiusan, E.V. Tsymbal, M-J. Tung, W. Van Roy, M. Varela, J-P. Wang, X. Wu, S. Z. Wu, S. Zhang, J. Zhu
Publication Co-chairs	M. McHenry, T. Thomson
Publication Editors	A. Deac, O. Gutfleisch, C-H. Lai, O. Mryasov, J. Paulides, H. Srikanth, M. Willard, M. Yamaguti
Exhibits Chair	N. Tabat
Exhibit Coordinator	W. Walker
Student Support Coordinators	M. J. Carey, Y. Ijiri
IEEE Representative	D. Lavers
PCI Representative	M. Burke
Editor J. Appl. Phys.	J. Viccaro
Editor IEEE Trans Mag	R. Goldfarb
Conference Management	D. Melton
PCI Coordinators	J. Bennett, L. Boniello, C. Urso

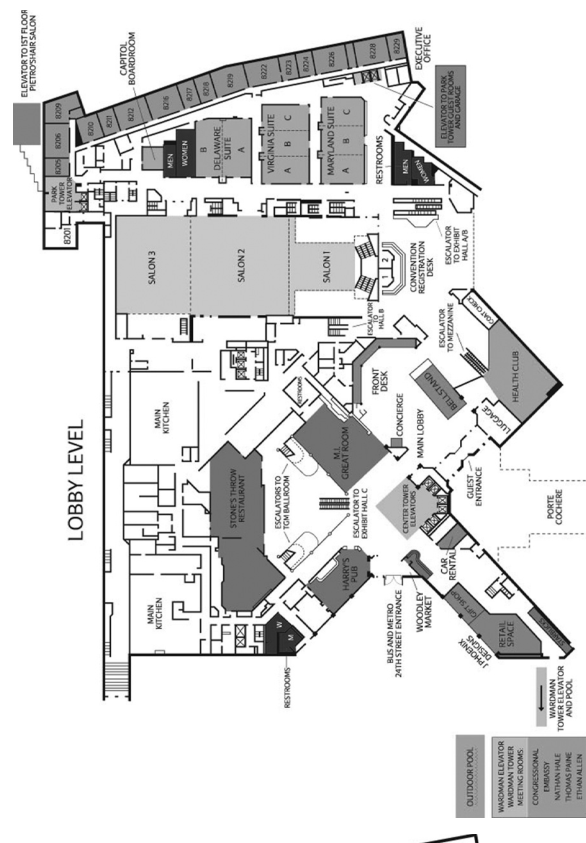
CONFERENCE PROGRAM

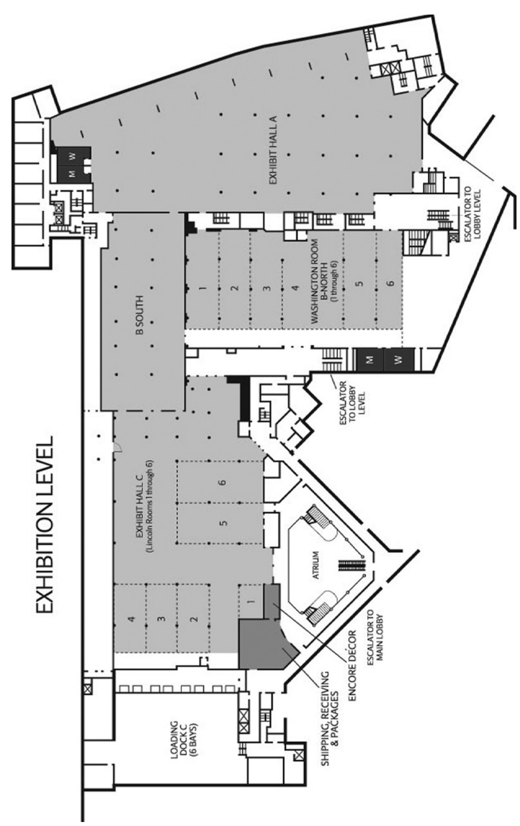
Mon eve 7:00 p.m.	XA	Magnetization switching below the Stoner-Wohlfarth limit	Salon 2
Tuesday 9:00 a.m.	AA	Symposium: Spin torque devices for CMOS-integrated applications	Salon 2
	AB	Magnetization dynamics and damping I	Salon 3
	AC	Giant magnetoresistance I	Delaware
	AD	Recording physics and measurements	Virginia
	AE	Superconductivity I	Washington 1
	AF	Magnetoresistive oxides: Phase behavior and ordering	Washington 2
	AG	Magnetic sensors I (Not magnetic recording)	Washington 3
	AH	Biosensing and MRI	Washington 5
8:00 a.m.	AP	Bulk magnetoresistive oxides	Exhibit Hall C
	AQ	Magnetoresistive oxide thin films	Exhibit Hall C
	AR	Spin current and spin Hall effect	Exhibit Hall C
	AS	Amorphous and nanocrystalline soft magnets I	Exhibit Hall C
	AT	Magnetocaloric materials I	Exhibit Hall C
	AU	Magnetocaloric materials II	Exhibit Hall C
	AV	Hard magnets: RTM5 and Co-based magnets	Exhibit Hall C
	AW	Hard magnets: FePt	Exhibit Hall C
	AX	Nanoparticles and nanowires	Exhibit Hall C
	AY	Nanoparticles I	Exhibit Hall C
2:00 p.m.	BA	Spin-torque devices: Dynamics and advanced materials	Salon 2
	BB	Energy assisted magnetic recording	Salon 3
	BC	Magnetic microscopy I	Delaware
	BD	Exchange bias I	Virginia
	BE	Spin injection in semiconductors	Washington 1
	BF	Multiferroics: Novel materials	Washington 2
	BG	Magnetoelastic materials I	Washington 3
	BH	Hard magnets: R1TM5 and FePt	Washington 5
1:00 p.m.	BP	Multiferroics: Thin films and composites	Exhibit Hall C
	BQ	Multiferroics: Bulk and nanomaterials	Exhibit Hall C
	BR	Ultrathin films and surface effects I	Exhibit Hall C
	BS	New magnetic materials I	Exhibit Hall C
	BT	Magnetoelastic materials II	Exhibit Hall C
	BU	Magnneto-optic microwave and molecular magnet materials	Exhibit Hall C
	BV	Ferrite magnets I	Exhibit Hall C
	BW	Ferrite magnets II	Exhibit Hall C
	BX	Crystalline soft magnets and domains I	Exhibit Hall C
	BY	New applications	Exhibit Hall C
7:00 p.m.	BZ	Symposium: Large scale facilities for magnetism research	Salon 2

Wednesday 9:00 a.m.	CA	Spin-torque devices: Perpendicular	Salon 2
	CB	Multiferroics: Thin films and tunnel junctions	Salon 3
	CC	CPP-GMR reader technology	Delaware
	CD	Symposium: Spin injection into nonmagnetic media	Virginia
	CE	Ferrite magnets III	Washington 1
	CF	Micromagnetics and hysteresis modeling I	Washington 2
	CG	Patterned films I	Washington 3
	CH	Hyperthermia and other applications of nanoparticles	Washington 5
8:00 a.m.	CP	Electrical machines and levitation	Exhibit Hall C
	CQ	Special machines and actuators	Exhibit Hall C
	CR	Linear machines and actuators	Exhibit Hall C
	CS	PM machines I	Exhibit Hall C
	CT	PM machines II	Exhibit Hall C
	CU	Reluctance machines	Exhibit Hall C
	CV	Head-disk interface and integration	Exhibit Hall C
	CW	Magnetic recording - FePt media	Exhibit Hall C
	CX	Magnetic recording: Continuous granular media	Exhibit Hall C
	CY	Bit patterned media I	Exhibit Hall C
1:30 p.m.	DA	MRAM and Spin-Torque Switches	Salon 2
	DB	Ultrafast Dynamics	Salon 3
	DC	Symposium: Advanced motor and actuator technologies	Delaware
	DD	Symposium: Spin-Calorics	Virginia
	DE	Correlated Electron Materials I	Washington 1
	DF	Magneto-Optic and Microwave Materials	Washington 2
	DG	Inductive Write Heads	Washington 3
	DH	Nanoparticles II	Washington 5
1:00 p.m.	DP	Micromagnetics and Hysteresis Modeling II	Exhibit Hall C
	DQ	Hard Magnets: Theory and Oxides	Exhibit Hall C
	DR	Giant Magnetoresistance II	Exhibit Hall C
	DS	Spin Injection in Semiconductors: Organic and Granular Spin-Valves	Exhibit Hall C
	DT	MRAM and Giant Magnetoresistance	Exhibit Hall C
	DU	Magnetic Multilayers	Exhibit Hall C
	DV	Patterned Films II	Exhibit Hall C
	DW	Exchange bias II	Exhibit Hall C
	DX	Exchange bias III	Exhibit Hall C
4:00pm	DZ	Plenary session: Electronic Holography Imaging	Salon 2 and 3

Thursday 9:00 a.m	EA	Spin-torque Devices: Oscillators Dynamics	Salon 2
	EB	Symposium: Recent Advances in Microscopy of Magnetyic Materials	Salon 3
	EC	Magnetization Dynamics & Damping II	Delaware
	ED	Magnetic Recording: Continuous Granular Media	Virginia
	EE	Electronic Structure and Low Dimensionality Systems I	Washington 1
	EF	Spin Currents, Spin Hall Effects and Tunnel Magnetoresistance	Washington 2
	EG	MEMS, High Frequency Devices and Shielding	Washington 3
	EH	Nanoparticle Composites	Washington 5
8:00 a.m.	EP	Other Half Metals I	Exhibit Hall C
	EQ	Magnetoelectronic Materials and Effects	Exhibit Hall C
	ER	Magnetic Semiconductors: Oxides and Other Materials	Exhibit Hall C
	ES	Magnetic Semiconductors: ZnO	Exhibit Hall C
	ET	Tunnel Magnetoresistance I	Exhibit Hall C
	EU	Tunnel Magnetoresistance II	Exhibit Hall C
	EV	Tunnel Magnetoresistance III	Exhibit Hall C
	EW	Domain Wall Devices and Spin Transfer Torque	Exhibit Hall C
	EX	Domain Wall Devices I	Exhibit Hall C
	EY	Spin-torque Devices: Oscillators and Dynamics	Exhibit Hall C
2:00 p.m.	FA	Domain Wall Dynamics	Salon 2
	FB	Tunnel Magnetoresistance IV	Salon 3
	FC	Symposium: Magnetic Medical Imaging Technology	Delaware
	FD	Bit-Patterned Media II	Virginia
	FE	Amorphous and Nanocrystalline Soft Magnets II	Washington 1
	FF	Magnetic Semiconductors: III-V	Washington 2
	FG	New Magnetic Materials II	Washington 3
	FH	Critical phenomena, Spin Glasses and Frustration I	Washington 5
1:00 p.m.	FP	Superconductivity II	Exhibit Hall C
	FQ	Correlated Electron Materials II	Exhibit Hall C
	FR	Electronic Structure and Low Dimensionality Systems II	Exhibit Hall C
	FS	Domain Wall Dynamics & Ultrafast Switching	Exhibit Hall C
	FT	Magnetization Dynamics and Damping III	Exhibit Hall C
	FU	Dynamics in Microstructures	Exhibit Hall C
	FV	Spin-Torque Junctions and Materials	Exhibit Hall C
	FW	Magnetic Sensors II (not Magnetic Recording)	Exhibit Hall C
	FX	MEMS and High frequency Devices	Exhibit Hall C
7:00 p.m.	FZ	Symposium: Magnetism on the International Technology Roadmap for Semiconductors	Salon 2

Friday 9:00 a.m.	GA	Domain Wall Devices II	Salon 2
	GB	Symposium: Emergent phenomena in magnetic complex oxides in reduced dimensionality	Salon 3
	GC	Magnetic Microscopy II	Delaware
	GD	Vortex Dynamics	Virginia
	GE	Unltra Thin Films and Surface Effects II	Washington 1
	GF	Magnetic Semiconductors: Oxides	Washington 2
	GG	Motors and Actuators	Washington 3
	GH	Channel and Signal Processing	Washington 5
8:00 a.m.	GP	Hard Magnets I: R2Fe14B	Exhibit Hall C
	GQ	Critical Phenomena, Spin glasses and Frustration	Exhibit Hall C
	GR	Nanoparticles for biomedicine	Exhibit Hall C
	GS	Biomedical Applications	Exhibit Hall C
	GT	Magnetic Fluids and Separation	Exhibit Hall C
	GU	Instrumentation and Measurement techniques	Exhibit Hall C
	GV	Machine Modelling and Analysis	Exhibit Hall C
	GW	Power and Control Magnetics	Exhibit Hall C
	GX	EMI and Computational Electromagnetics	Exhibit Hall C
	GY	Magnetic Microscopy III	Exhibit Hall C
2:00 p.m.	HA	Symposium: Competitive Memory and Storage Technologies	Salon 2
	HB	Spin Injection in Metals: Spin-Torque	Salon 3
	HC	Magnetic multilayers and thin films	Delaware
	HD	Transformers and Inductors	Virginia
	HE	Crystalline Soft Magnets and Domains II	Washington 1
	HF	Hard Magnets II: R2Fe14	Washington 2
	HG	Magnetocaloric materials III	Washington 3
	HH	Other half metals II	Washington 4





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MONDAY
AFTERNOON
7:00

SALON 2

Session XA

MAGNETIZATION SWITCHING BELOW THE STONER-WOHLFARTH LIMIT

Albrecht Jander, Chair

7:00

XA-01. Magnetic twister: Coherent control strategies for reducing the switching energy of a nanomagnet. ***(Invited)*** *T.M. Crawford*[1] *1. Dept of Physics and Astronomy, University of South Carolina, Columbia, SC*

7:36

XA-02. Breaking it up: How domain walls and coupled moments affect magnetic reversal. ***(Invited)*** *D. Suess*[1] *1. Institut of Solid State Physics, Vienna, Austria*

8:12

XA-03. If you can't beat it, heat it! On the role of temperature in magnetization reversal. ***(Invited)*** *J. Thiele*[1] *1. Seagate Technology, Fremont, CA*

TUESDAY
MORNING
9:00

SALON 2

Session AA

SYMPOSIUM: SPIN TORQUE DEVICES FOR CMOS-INTEGRATED APPLICATIONS

Jonathan Sun, Chair

9:00

AA-01. Material Science and Physics of Large TMR and Spin-transfer Switching in MgO-based MTJs for CMOS logic integration. ***(Invited)*** *H. Ohno*[1] *1. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

9:36

AA-02. High Efficient Spin Torque Transfer Writing on Perpendicular Magnetic Tunnel Junctions For High Density MRAMs. ***(Invited)*** *H. Yoda*[1], T. Kishi[1], T. Nagase[1], M. Yoshikawa[1], K. Nishiyama[1], E. Kitagawa[1], T. Daibou[1], M. Amano[1], N. Shimomura[1], S. Takahashi[1], T. Kai[1], M. Nakayama[1], H. Aikawa[1], S. Ikegawa[1], M. Nagamine[1], J. Ozeki[3], S. Mizukami[2], M. Oogane[2], K. Yakushiji[4], Y. Ando[3], S. Uasa[4], Y. Suzuki[5], Y. Nakatani[6], T. Miyazaki[2] and K. Ando[4] *1. Corporate Research & Development Center, Toshiba, Kawasaki, Japan; 2. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Department of Applied Physics, Tohoku University, Sendai, Japan; 4. Nanoelectronics Research Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan; 5. Department of Materials Engineering Science, Osaka University, Osaka, Japan; 6. Department of Computer Science, The University of Electro-Communications, Tokyo, Japan*

10:12

AA-03. Current-induced domain wall motion MRAM. ***(Invited)*** *N. Ishiwata*[1], S. Fukami[1], T. Suzuki[1], K. Nagahara[1], N. Ohshima[1], Y. Ozaki[2], S. Saito[1], R. Nebashi[1], N. Sakimura[1], H. Honjo[1], K. Mori[1], C. Igarashi[1], H. Tanigawa[1], S. Miura[1] and T. Sugibayashi[1] *1. Device Platforms Research Labs., NEC, Sagamihara, Kanagawa, Japan; 2. Advanced Device Development Division, NEC Electronics, Sagamihara, Kanagawa, Japan*

10:48

AA-04. MRAM: from Thermally Assisted to Spin Transfer Torque and beyond. ***(Invited)*** *J. Nozières*[1], Y. Conraux[1], C. Ducruet[1], E. Gapihan[1,2], L. Lombard[1,2], K. Mackay[1], C. Portemont[1], I. Prejbeanu[1], S. Auffret[2], M. Delaye[2], J. Hérault[2], C. Papusoi[2], B. Rodmacq[2], R.C. Sousa[2] and M.M. Sousa[2] *1. Crocus Technology, 4, Place Robert Schuman 38025 Grenoble, France; 2. Spintec, UMR8191 CEA/CNRS/UJF,17,Rue des Martyrs, Grenoble, France*

11:24

AA-05. A Study of Write Margin of Spin Torque Transfer MRAM Integrated with CMOS Technology. ***(Invited)*** *T. Min*[1], Q. Chen[1], R. Beach[1], G. Jan[1], C. Horng[1], W. Kula[1], T. Torng[1], R. Tong[1], T. Zhong[1], D. Tang[1], P. Wang[1], M. Chen[1], J.Z. Sun[2], J.K. DeBrosse[2], D.C. Worledge[2], T.M. Maffitt[2] and W.J. Gallagher[2] *1. MagIC Technologies, Milpitas, CA; 2. IBM T. J. Watson Research Center, P. O. Box 218, Yorktown Heights, NY*

TUESDAY MORNING 9:00

SALON 3

Session AB
MAGNETIZATION DYNAMICS AND DAMPING I

Volodymyr V Kruglyak, Chair

9:00

AB-01. Experimental determination of effective magnetic damping parameters in nanoscale CPP spin valves. ***(Invited)*** *N. Smith*[1], M.J. Carey[1], J.R. Childress[1] and S. Maat[1] *1. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

9:36

AB-02. Temperature and angular dependence of ferromagnetic resonance linewidth in $La_{0.67}Sr_{0.33}MnO_3$ alloy and superlattice thin films. *S.S. Kalarickal*[1], M. Betz[1], A. Bhattacharya[2,3] and K. Buchanan[1] *1. Department of Physics, Colorado State University, Fort Collins, CO, CO; 2. Material Sciences Division, Argonne National Laboratory, Argonne, IL; 3. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

9:48

AB-03. Quantized spin wave modes in magnetic tunnel junction nanopillars. *A. Helmer*[1,2], S. Cornelissen[3,4], J. Kim[1,2], T. Devolder[1,2], W. Van Roy[3], L. Lagae[3,5] and C. Chappert[1,2] *1. Institut d'Electronique Fondamentale, CNRS UMR 8622, Orsay, France; 2. Université Paris-Sud 11, Orsay, France; 3. IMEC, Leuven, Belgium; 4. ESAT, KU Leuven, Leuven, Belgium; 5. Natuurkunde en Sterrenkunde, KU Leuven, Leuven, Belgium*

10:00

AB-04. Edge mode dynamics of plasma-oxidized $Ni_{80}Fe_{20}$ thin film edges. *M. Zhu*[1,2] and R.D. McMichael[1] *1. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 2. Maryland Nanocenter, University of Maryland, College Park, MD*

10:12

AB-05. The effect of the spin dependent effective electric field induced by magnetization motion. *S. Zhang*[1] and S. Zhang[1] *1. Department of Physics, University of Arizona, Tucson, AZ*

10:24

AB-06. Relation between non-adiabaticity and damping probed by domain wall velocity measurements in doped Permalloy nanowires. T.A. Moore[1,3], *P. Möhrke*[1], M. Klaeui[1], L. Heyne[1], D. Backes[1,2], J. Rhensius[1,2], L.J. Heyderman[2] and U. Rüdiger[1] *1. Department of Physics, University of Konstanz, Konstanz, Germany; 2. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, Villigen, Switzerland; 3. SPINTEC, CEA Grenoble, Grenoble, France*

10:36

AB-07. Accumulation and diffusion of spin momentum density in GaAs/Fe/Ag(001) and GaAs/Fe/Ag/Fe(001) structures: Ferromagnetic resonance studies. *B. Kardasz*[1] and B. Heinrich[1] *1. Physics, Simon Fraser University, Burnaby, BC, Canada*

10:48

AB-08. Kinetics and Bose-Einstein condensation of magnon gas driven by parametric pumping. *(Invited)* *S.O. Demokritov*[1], O. Dzyapko[1], V.E. Demidov[1] and G.A. Melkov[2] *1. Institute of Applied Physics, University of Muenster, Muenster, Germany; 2. Department of Radiophysics, National Taras Schevchenko University, Kiev, Ukraine*

11:24

AB-09. Accelerated formation of Bose-Einstein condensates in magnetic thin films. *X. Chen*[1] and R.H. Victora[2] *1. Department of Physics, University of Minnesota, Minneapolis, MN; 2. Department of Electrical Engineering, University of Minnesota, Minneapolis, MN*

11:36

AB-10. Precise Probing Spin Excitations of Vortex-state Magnetic Dots Applying In-plane Bias Field. *F.G. Aliev*[1], A.A. Awad[1], J.F. Sierra[1], G.N. Kakazei[2], V. Metlushko[3] and K.Y. Guslienko[4,5] *1. Dpto. Fisica de la Materia Condensada, CIII, Universidad Autonoma de Madrid, Madrid, Spain; 2. Departamento de Fisica, IFIMUP-IN, Universidade do Porto, Porto, Portugal; 3. University of Illinois at Chicago, Chicago, IL; 4. Dpto. Fisica de Materiales, Universidad del Pais Vasco, Donostia-San Sebastian, Spain; 5. IKERBASQUE, the Basque Foundation for Science, Bilbao, Spain*

11:48

AB-11. Magnetostatic Spin Wave Scattering In the Ferromagnetic Cross. *A. Kozhanov*[1], D.W. Lee[2], S.X. Wang[2], A.P. Jacob[3] and S. Allen[1] *1. University of California at Santa Barbara, Santa Barbara, CA; 2. Stanford University, Stanford, CA; 3. Technology and Manufacturing Group, Intel Corporation, Santa Clara, CA*

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TUESDAY
MORNING
9:00

DELAWARE

Session AC
GIANT MAGNETORESISTANCE I
Alain Schuhl, Chair

9:00

AC-01. Large magnetoresistance in half-metallic Heusler alloy Co_2MnSi–based CPP-GMR devices. *Y. Sakuraba*[1], K. Izumi[1], T. Iwase[1], S. Bosu[1], K. Saito[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

9:12

AC-02. Effect of B_2 ordering on the dominating 90° exchange coupling in full-Heusler alloy based epitaxial trilayer structures. *S. Bosu*[1], Y. Sakuraba[1], K. Saito[1], H. Wang[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

9:24

AC-03. Interfacial roughening in all-Heusler GMR structures.S. Granroth[1], *O. Karis*[1], R. Knut[1] and O. Mryasov[2] *1. Department of Physics, Uppsala University, Uppsala, Sweden; 2. MINT Center, University of Alabama, Tuscaloosa, AL*

9:36

AC-04. Charge transport in Alq_3 spin valves: implications for spin transport. ***(Invited)*** *J.S. Jiang*[1], J.E. Pearson[1] and S.D. Bader[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL*

10:12

AC-05. Electrically driven magnetoresistance switching in Alq3-based organic spin valves. *M. Prezioso*[1], A. Riminucci[1], P. Graziosi[1], D. Brunel[1], I. Bergenti[1] and V.A. Dediu[1] *1. CNR-ISMN, Bologna, Italy*

10:24

AC-06. Interface magnetism study on organic semiconductor/ferromagnet systems and its influence on spin injection properties. *K.V. Raman*[1], S.M. Watson[2], D. Heiman[3], J. Borchers[2] and J.S. Moodera[1] *1. MIT, Cambridge, MA; 2. National Institute of Standards and Technology, Gaithersburg, MD; 3. Department of Physics, Northeastern University, Boston, MA*

10:36

AC-07. Structural, magnetic and magnetoresistive properties of PTCTE based organic spin valves. *J. Bobo*[1], B. Warot[1] and I. Seguy[2] *1. NMH CEMES, CNRS, Toulouse, France; 2. LAAS, CNRS, Toulouse, France*

10:48

AC-08. Perfect transmission of spin-polarized electrons through graphite nanostructures. *T. Banerjee*[1,2], W.G. van der Wiel[2] and R. Jansen[2] *1. Physics of Nanodevices Group,, University of Groningen, Groningen, Netherlands; 2. MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

11:00

AC-09. Graphene magnetic field sensors. *S. Pisana*[1], P.M. Braganca[1], E.E. Marinero[1] and B.A. Gurney[1] *1. Hitachi GST, San Jose, CA*

11:12

AC-10. Localized spin-torque effect in a CPP-GMR sensor with a current-screen layer. *Y. Sato*[1], K. Hoshino[1], S. Okamura[1], K. Kato[1] and H. Hoshiya[1] *1. Central Research Laboratory, Hitachi, Ltd., 2880, Kozu, Odawara, Kanagawa, Japan*

11:24

AC-11. Modeling and measurement of transport properties in Current Confined Path GMR structures.S. Amara[1], *C. Baraduc*[1], N. Strelkov[2], A. Vedyayev[2], L. Buda-Prejbeanu[1,3], M. Chshiev[1], Y. Liu[4], M. Li[4], K. Zhang[4] and B. Diény[1] *1. SPINTEC, CEA/CNRS, Grenoble, France; 2. Dpt of Physics, Lomonosov University, Moscow, Russian Federation; 3. Grenoble INP, Grenoble, France; 4. Headway Technologies, Milpitas, CA*

11:36

AC-12. Spin-flipping associated with the antiferromagnet IrMn, including some unexpected behavior. *R. Acharyya*[1], H.T. Nguyen[1], W.P. Pratt Jr.[1] and J. Bass[1] *1. Physics, Michigan State University, East Lansing, MI*

11:48

AC-13. Effect of different seed layers on magnetic and transport properties of perpendicular anisotropy spin valves.T. Tahmasebi[1,2], R. Law[1], S. Piramanayagam[1], *R. Sbiaa*[1] and T. Chong[1,2] *1. (A*STAR) Agency for Science, Technology and Research, Data Storage Institute, Singapore, Singapore; 2. Electrical and Computer Engineering Department (ECE), National University of Singapore (NUS), Singapore, Singapore*

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TUESDAY MORNING 9:00

VIRGINIA

Session AD
RECORDING PHYSICS AND MEASUREMENTS
Tiejun Zhou, Chair

9:00

AD-01. Correlation lengths in perpendicular media: The effect of dispersion of the exchange field. *R. Chantrell*[1], Y. Peng[2], X. Wu[2] and W. Scholz[3] *1. Physics, York University, York, United Kingdom; 2. Seagate Technology, Fremont, CA; 3. Seagate Technology, Minneapolis, CA*

9:12

AD-02. Understanding noise mechanism in small grain size perpendicular thin film media. *Y. Wang*[1] and J. Zhu[1] *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

9:24

AD-03. Jitter in a Voronoi pattern media - effect of grain size variation and reader width. *B. Valcu*[1] and N. Yeh[1] *1. Seagate Technology, Fremont, CA*

9:36

AD-04. Analysis of relation between magnetic cluster size distribution and signal quality for high density recording. *M. Hashimoto*[1], N. Ito[1], H. Kashiwase[1], T. Ichihara[1], H. Nakagawa[1] and K. Nakamoto[1] *1. Central Research Laboratory, Hitachi Ltd., Odawara-shi, Japan*

9:48

AD-05. Effects of transition curvature and track edge fluctuation on track edge noise for narrow track recording. *M. Shiimoto*[1], H. Katada[1], Y. Urakami[1], M. Hashimoto[1], M. Sugiyama[1], T. Nakagawa[1], T. Ichihara[1] and K. Nakamoto[1] *1. Central research laboratory, Hitachi, Ltd., Odawara-shi, Kanagawa-ken, Japan*

10:00

AD-06. Reverse overwrite process in shingle write process at ultra-high track density. *S. Li*[1], F. Liu[1], L. Zhong[1], Y. Guo[1], A. Torabi[1] and S. Mao[1] *1. Western digital Inc, Fremont, CA*

10:12

AD-07. Spin-stand measurement on high track density recording using shingled writing. *K. Miura*[1], E. Yamamoto[1], H. Aoi[1] and H. Muraoka[1] *1. RIEC, Tohoku University, Sendai, Miyagi, Japan*

10:24

AD-08. Effective write field for Microwave Assisted Magnetic Recording. *M. Igarashi*[1], Y. Suzuki[1], H. Miyamoto[1] and Y. Shiroishi[1] *1. Hitachi, Ltd., Kokubunji, Tokyo, Japan*

10:36

AD-09. Analysis of Shingle-write Readback Using Magnetic-force Microscopy. *F. Lim*[1], B. Wilson[2] and R. Wood[2] *1. University of Hawaii, Honolulu, HI; 2. Hitachi Global Storage Technologies, San Jose, HI*

10:48

AD-10. 2D energy landscapes for domain-wall switching. *R. Zhu*[1] and P.B. Visscher[1] *1. Physics and MINT Center, University of Alabama, Tuscaloosa, AL*

11:00

AD-11. 3D Sensitivity Function of Shielded Reader by Reciprocity Principle. *Z. Yuan*[1], C. Ong[1], S. Leong[1], T. Zhou[1] and B. Liu[1] *1. Data Storage Institute, Singapore, Singapore*

11:12

AD-12. Electron holography observation of magnetization distribution in the pseudo soft underlayer of perpendicular magnetic recording media. *K. Hirata*[1,2], Y. Ishida[2], K. Yanagisawa[1], H. Kasai[1,4], D. Shindo[3] and A. Tonomura[1,4] *1. Okinawa Institute of Science and Technology, Onna, Okinawa, Japan; 2. Head Business Group, TDK Corporation, Saku, Nagano, Japan; 3. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Miyagi, Japan; 4. Advanced Research Laboratory, Hitachi Ltd., Hatoyama, Saitama, Japan*

11:24

AD-13. Ultrafast Visualization of All-Optical Magnetization Reversal in GdFeCo-films. *K. Vahaplar*[1], A.M. Kalashnikova[1,5], A.V. Kimel[1], D. Hinzke[2], U. Nowak[2], R. Chantrell[3], A. Tsukamoto[4,6], A. Itoh[4], A. Kirilyuk[1] and T. Rasing[1] *1. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands; 2. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 3. Department of Physics, University of York, York, United Kingdom; 4. College of Science and Technology, Nihon University, Chiba, Japan; 5. Russian Academy of Sciences, Ioffe Physical-Technical Institute, St. Petersburg, Russian Federation; 6. PRESTO, Japan Science and Technology Agency, Saitama, Japan*

11:36

AD-14. Barium Ferrite Particulate Media for High-Recording-Density Tape Storage Systems. *T. Harasawa*[1], R. Suzuki[1], O. Shimizu[1], S. Oelcer[2] and E. Eleftheriou[2] *1. Recording Media Laboratories, FUJIFILM Corporation, Odawara, Kanagawa, Japan; 2. IBM Research - Zurich, Rueschlikon, Switzerland*

11:48

AD-15. Particle Orientation Effects of Barium-Ferrite Particulate Media. *O. Shimizu*[1], T. Harasawa[1] and M. Oyanagi[1] *1. Recording Media Research Laboratories, FUJIFILM Corporation, Odawara, Kanagawa, Japan*

TUESDAY MORNING 9:00 — WASHINGTON 1

Session AE
SUPERCONDUCTIVITY I
William Ratcliff, Chair

9:00

AE-01. Pressure-Induced Superconductivity in Europium Metal. ***(Invited)*** *J.S. Schilling*[1], M. Debessai[1,2], T. Matsuoka[1,3], J.J. Hamlin[1,4], W. Bi[1], K. Shimizu[3], Y. Meng[5], R.S. Kumar[6] and A.L. Cornelius[6] *1. Department of Physics, Washington University, St. Louis, MO; 2. Institute for Shock Physics, Washington State University, Pullman, WA; 3. Center for Quantum Science and Technology under Extreme Conditions, Osaka University, Osaka, Japan; 4. Department of Physics and Institute for Pure and Applied Physical Sciences, University of California, San Diego, La Jolla, CA; 5. HPCAT, Carnegie Institution of Washington, Argonne, IL; 6. Department of Physics, University of Nevada, Las Vegas, NV*

9:36

AE-02. Absence of Pseudogap in the Parent Compound of $SmFeAs(O_{1-x}F_x)$ Superconductors. *T. Chen*[1], S.X. Huang[1], R.H. Liu[2], X.H. Chen[2] and C.L. Chien[1] *1. Physics and Astronomy, the Johns Hopkins University, Baltimore, MD; 2. Hefei National Laboratory for Physical Science at Microscale and Department of Physics, University of Science and Technology of China, Hefei, Anhui, China*

9:48

AE-03. Magnetic Quantum Critical Point and Scaling in the Iron Pnictide Superconductor $K_xSr_{1-x}Fe_2As_2$ *M. Gooch*[1], B. Lv[2], B. Lorenz[1], A.M. Guloy[2] and C. Chu[1,3] *1. Physics and TcSUH, Univeristy of Houston, Houston, TX; 2. Chemistry and TcSUH, University of Houston, Houston, TX; 3. Hong Kong University of Science and Technology, Kowloon, Hong Kong, China*

10:00

AE-04. Topological confinement and superconductivity. *K.A. Al-Hassanieh*[1], C. Batista[1], P. Sengupta[1] and A. Feiguin[2] *1. Los Alamos National Laboratory, Los Alamos, NM; 2. The University of Wyoming, Laramie, WY*

10:12

AE-05. Realizing superconducting FeSe1-xTex thin films on various substrates. *S. Huang*[1] and C. Chien[1] *1. Physics & Astronomy, The Johns Hopkins Univeristy, Baltimore, MD*

10:24

AE-06. Superconductivity in Sulfur substituted FeTe. *S. Pandya*[1], S. Sherif[2,1], L. Sharath Chandra[1,3] and G. Vedachalaiyer[1] *1. Low Temperature Lab, UGC-DAE CSR, Indore, Indore, Madhya Pradesh, India; 2. Department of Studies in Physics, University of Mysore, Mysore, Karnataka, India; 3. Presently at Materials,Advanced Accelerator Science Division, Raja Ramanna Centre for Advanced Technology, Indore, Madhya Pradesh, India*

10:36

AE-07. Quest for loop currents, and muon probing in GdBCO.H. Sio[1], *C. Boekema*[2], T. Songatikamas[2], H. Ngo[2] and R. Norris[2] *1. Physics, Harvey Mudd College, Claremont, CA; 2. Physics & Astronomy, San Jose State University, San Jose, CA*

10:48

AE-08. NMR study of some Ce-based superconductors with non-centrosymmetric crystal structure.K. Ueda[1], T. Koyama[1] and *T. Kohara*[1] *1. Graduate School of Material Science, University of Hyogo, Kamigori-cho, Hyogo, Japan*

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11:00

AE-09. Polarised Neutron Reflectivity Measurements on Magnetic-Superconducting Thin Films. *S. Lee*[1], S.J. Ray[1], L.J. Lister[1], C.H. Marrows[2], J. Morgan[2], S. Lagridge[3], R. Dalgliesh[3] and T. Charlton[3] *1. School of Physics and Astronomy, University of St Andrews, St Andrews, Fife, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, Yorkshire, United Kingdom; 3. The ISIS Facility, Rutherford Appleton Laboratory, Didcot, Oxon, United Kingdom*

11:12

AE-10. Exchange-Spring magnet for Superconductor/Ferromagnet Hybrid System. *J. Gu*[1], J. Kusnadi[1] and C. You[2] *1. Dept. of Physics and Astronomy, California State University Long Beach, Long Beach, CA; 2. Dept. of Physics, Inha University, Incheon, Korea, Republic of*

11:24

AE-11. Tunable nucleation of superconductivity in ferromagnet-superconductor bilayer. *L. Zhu*[1], M.Z. Cieplak[1,2] and C. Chien[1] *1. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 2. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland*

11:36

AE-12. Transmittance spectra in one-dimensional superconductor-dielectric photonic crystals. *H. Lee*[1], C. Kuo[1] and J. Wu[1] *1. Department of Physics, National Changhua University of Education, Changhua, Taiwan*

11:48

AE-13. Study of the superconducting properties of rare earth oxide and carbon co-doped MgB2. N. Ojha[1], V.K. Malik[2], R. Singla[1], H.K. Singh[3], C. Bernhard[2] and *G.D. Varma*[1] *1. Physics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India; 2. Department of Physics and Fribourg Centre for Nanomaterials-FriMat, University of Fribourg, Chemin du Musee, CH-1700 Fribourg, Switzerland; 3. National Physical Laboratory, New Delhi, India*

TUESDAY MORNING 9:00 WASHINGTON 2

Session AF
MAGNETORESISTIVE OXIDES: PHASE BEHAVIOR AND ORDERING
John Freeland, Chair

9:00

AF-01. Metal-insulator transitions in magnetic oxides: new insights from magneto-optical characterization. *G. Herranz*[1], J. Caicedo[1], D. Hrabovsky[1], F. Sanchez[1], I.C. Infante[1], R. Ramos[2], S. Arora[2], I.V. Shvets[2] and J. Fontcuberta[1] *1. Institut de Ciencia de Materials de Barcelona ICMAB-CSIC, Bellaterra, Spain; 2. Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), School of Physics, Trinity College, Dublin, Ireland*

9:12

AF-02. Thermodynamics of para-ferromagnetic phase transition in $La_{0.7}Ca_{0.3}MnO_3$ manganite: 'Griffiths' singularity versus chemical disorder effect. *E. Rozenberg*[1], M. Auslender[2], I. Felner[3], M.I. Tsindlekht[3], G. Gorodetsky[1] and Y.M. Mukovskii[4] *1. Dept. of Physics, BGU of the Negev, Beer-Sheva, -, Israel; 2. Electrical and Computer Engineering, BGU of the Negev, Beer-Sheva, -, Israel; 3. The Racah Institute of Physics, Hebrew University, Jerusalem, -, Israel; 4. Dept. of Physics, Moscow Steel and Alloys Institute, Moscow, -, Russian Federation*

9:24

AF-03. The observation of Griffiths phase in $La_{1-x}Ca_xMnO_3$ even for x lower than 0.20 ($0.19\le x\le 0.21$). H. Zhang[1], *Q. Li*[1], H. Liu[1], L. Chen[1], Y. Chen[1] and Y. Li[1] *1. Department of Physics, Southeast University, Nanjing, China*

9:36

AF-04. Probing magnetic anisotropy and phase transitions in $Pr_{0.5}Sr_{0.5}MO_3$ (M = Mn, Co) using RF transverse susceptibility. M.H. Phan[1], N.S. Bingham[1], N.A. Frey[1,2], M.A. Torija[3], C. Leighton[3] and *H. Srikanth*[1] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Department of Chemistry, Brown University, Providence, RI; 3. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

9:48

AF-05. Scanning tunneling microscopy and spectroscopy (STM/STS) studies across a unit cell step in epitaxial thin film of CMR manganite. *A. Rana*[1,2], K.A. Bogle[3], S.I. Patil[2], N. Valanoor[3] and S.B. Ogale[1] *1. Physical and Materials Chemistry Division, National Chemical Laboratory (NCL), Pune, Maharastra, India; 2. Department of Physics, University of Pune (UOP), Pune, Maharastra, India; 3. School of Materials Science and Engineering, University of New South Wales, Sydney, NSW, Australia*

10:00

AF-06. Effect of electrical current on magnetic and transport properties of single-crystalline La0.82Ca0.18MnO3.X. Wu[1,2], *K. Suzuki*[1], J. Cochrane[3], V. Markovich[2] and G. Gorodetsky[2] *1. Materials Engineering, Monash University, Clayton, VIC, Australia; 2. Physics, Ben Gurion University, Beer Sheva, Israel; 3. Physics, New South Wales University, Sydney, NSW, Australia*

10:12

AF-07. Self-assembly of an exchange-spring composite via magnetic phase separation in Pr1-xCaxCoO3. *S. El-Khatib*[1,2], S. Bose[1], C. He[1], J. Kuplic[1], Q. Huang[2], J. Lynn[2], J.F. Mitchell[3] and C. Leighton[1] *1. Materials Science, University of Minnesota, Minneapolis, MN; 2. NIST Center for Neutron Research, NIST, Gaithersburg, MD; 3. Materials Science Division, Argonne National Lab, Argonne, IL*

10:24

AF-08. Direct observation of nanoscale phase separation in $La_{1-x}Ca_xMnO_3$ *J. Tao*[2,1], D. Niebieskikwiat[3], M. Varela[2], W. Luo[5,2], M. Schofield[1], Y. Zhu[1], M. Salamon[3,4], J. Zuo[6], S. Pantelides[5,2] and S. Pennycook[2,5] *1. Condensed Matter Physics and Materials Science, Brookhaven National Laboratory, Upton, NY; 2. Materials Science & Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN; 3. Physics, University of Illinois at Urbana-Champaign, Urbana, IL; 4. Physics, University of Texas at Dallas, Richardson, TX; 5. Physics and Astronomy, Vanderbilt University, Nashville, TN; 6. Materials Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL*

10:36

AF-09. Collapse of charge order and enhancement of magnetocaloric effect in nanostructured $(La,Pr,Ca)MnO_3$. *M.H. Phan*[1], M.B. Morales[1], S. Chandra[1], N.S. Bingham[1], C.L. Zhang[2], S.W. Cheong[2], T.H. Hoang[3], H.D. Chinh[3] and H. Srikanth[1] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Department of Physics, Rutgers University, Piscataway, NJ; 3. Department of Inorganic Chemistry, University of Technology, Hanoi, Viet Nam*

10:48

AF-10. Charge, spin, orbital and lattice degrees of freedom in manganites: The CE phase. *P.U. Schlottmann*[1] *1. Department of Physics, Florida State University, Tallahassee, FL*

11:00

AF-11. Effect of Ru doping on magnetocaloric effect in charge ordered $Pr_{0.5}Ca_{0.5}MnO_3$ *M. Ramanathan*[1], S. Vandrangi[2] and B. Raveau[3] *1. Department of Physics, National University of Singapore, Singapore, Singapore; 2. Department of Physics, National university of Singapore, Singapore, Singapore; 3. Laboratoire CRISMAT, ISMRA, Universite de Caen, Caen, France*

11:12

AF-12. Structural and Magnetic Properties of $La_{0.7}Sr_{0.3}Mn_{1-x}Cr_xO_3$ (x=0.05, 0.1, 0.2, 0.3, 0.4, 0.5). *T.F. Creel*[1], O.A. Pringle[1], W.J. James[2], W.B. Yelon[2], S.K. Malik[3], S.A. Quezado[3], J.B. Yang[4], J. Lamsal[5] and M. Kahveci[5] *1. Department of Physics, Missouri University of Science and Technology, Rolla, MO; 2. Department of Chemistry, Missouri University of Science and Technology, Rolla, MO; 3. International Center for Condensed Matter Physics (ICCMP), University of Brasilia, Brasilia DF, Brazil; 4. State Key Laboratory for Artificial Microstructure and Mesoscopic Physics and School of Physics, Peking University, Beijing, China; 5. Department of Physics and Astronomy, University of Missouri Columbia, Columbia, MO*

11:24

AF-13. Out-of-plane anisotropy magnetoresistance in compressive strained and polycrystalline thin film of $Nd_{0.51}Sr_{0.49}MnO_3$ *R. Prasad*[1,2], A. Kaur[2] and H.K. Singh[1] *1. National Physical Laboratory (CSIR), New Delhi, India; 2. Department of Physics and Astrophysics, University of Delhi, New Delhi, India*

11:36

AF-14. Termination dependence of Schottky barrier height for $La_{0.6}Sr_{0.4}MnO_3$/Nb:$SrTiO_3$ heterojunctions. *M. Minohara*[1], R. Yasuhara[1], H. Kumigashira[1,2] and M. Oshima[1,2] *1. Department of Applied Chemistry, The University of Tokyo, Tokyo, Japan; 2. Core Research for Evolutional Science and Technology (CREST), Japan Science and Technology Agency, Tokyo, Japan*

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TUESDAY MORNING 9:00 **WASHINGTON 3**

Session AG
MAGNETIC SENSORS I (NOT MAGNETIC RECORDING)
Nobuyasu Adachi, Chair

9:00

AG-01. Reducing 1/*f* noise in large magnetic sensors. *A. Edelstein*[1], P.S. Cremona-Simmons[1], J. Fine[1] and W. Egelhoff[2] *1. US Army Research Laboratory, Adelphi, MD; 2. National Institute of Standards and Technology, Gaithersburg, MD*

9:12

AG-02. Wheatstone bridge sensor composed of MgO magnetic tunnel junctions.J. Cao[1] and *P.P. Freitas*[1,2] *1. INESC Microsistemas e Nanotecnologias (INESC MN) and IN-Institute of Nanoscience and Nanotechnology, Lisbon, Portugal; 2. Physics Department, Instituto Superior Técnico—Universidade Técnica de Lisboa, Lisbon, Portugal*

9:24

AG-03. Wide range and tunable linear TMR sensor including two exchange pinned electrodes.B. Negulescu[1], *D. Lacour*[1], F. Montaigne[1], A. Gerken[2], J. Paul[2], V. Spetter[2], J. Marien[2], C. Duret[3] and M. Hehn[1] *1. Institut Jean Lamour, UMR 7198, Nancy-University, CNRS, Vandoeuvre lès Nancy, France; 2. Sensitec GmbH, Mainz, Germany; 3. SNR Roulements, Annecy, France*

9:36

AG-04. Reversibility and Coercivity of Fe-Alloy/Fe:SiO_2 Multilayers. *R. Zhang*[1,2], R. Skomski[1,2], S. Liou[1,2] and D.J. Sellmyer[1,2] *1. Physics & Astronomy, Univ. of Nebraska-Lincoln, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, Lincoln, NE*

9:48

AG-05. High sensitivity GMR magnetic sensor using oscillatory domain wall displacement. *G. Wang*[1], S. Nakashima[1], S. Arai[1], T. Kato[1] and S. Iwata[1] *1. Dept. of Quantum Engineering, Nagoya University, Nagoya, Aichi, Japan*

10:00

AG-06. Quantitative study of signal response of InAs quantum well μ-Hall sensors on magnetic bead position. *K. Aledealat*[1], G. Mihajlović[2], K. Chen[1], . Field[3], G.J. Sullivan[3], P. Xiong[1,4], P. Chase[4,5] and S. von Molnár[1,4] *1. Department of Physics and MARTECH, Florida State University, Tallahassee, FL; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Teledyne Scientific Company LLC, Thousand Oaks, CA; 4. Integrative NanoScience Institute, Florida State University, Tallahassee, FL; 5. Biological Sciience, Florida State University, Tallahassee, FL*

10:12

AG-07. Ultra-small particle detection using a nano-sized Hall sensor. *O. Kazakova*[1], V. Panchal[1], J. Gallop[1,5], P. See[1,2], D. Cox[1,3], M. Spasova[4] and L. Cohen[5] *1. NPL, Teddington, United Kingdom; 2. University of Cambridge, Cambridge, United Kingdom; 3. University of Surrey, Guildford, United Kingdom; 4. Universität Duisburg-Essen, Duisburg, Germany; 5. Imperial College London, London, United Kingdom*

10:24

AG-08. Orthogonal fluxgate employing discontinuous excitation. *E. Weiss*[2,1] and E. Paperno[1] *1. Electrical and Computer Engineering, Ben-Gurion University of the Negev, Beer-Sheva 84105, Israel; 2. Propulsion Physics Laboratory, Soreq NRC, Yavne, Israel*

10:36

AG-09. Optimal operation frequency and sensitivity of the orthogonal fluxgate sensor fabricated with a Co-based amorphous wire and a pickup coil. H. Kim[2], Y. Kim[2], C. Yang[3], H. Jeong[3] and *K. Shin*[1] *1. Dept. of Multimedia Communication Engn., Kyungsung University, Pusan, Korea, Republic of; 2. Pukyong National University, Pusan, Korea, Republic of; 3. Agency for Defense Development, Jinhae, Korea, Republic of*

10:48

AG-10. Experimental and Modeling Studies of the Magnetomechanical Effect in Substituted Cobalt Ferrites for Magnetoelastic Stress Sensors. *C. Lo*[1] *1. Center for NDE, Iowa State University, Ames, IA*

11:00

AG-11. A Magnetoelastic Force Transducer Based on Bending a Circumferentially Magnetized Tube. I.J. Garshelis[1] and *S.P. Tollens*[2] *1. Magnova, Inc., Pittsfield, MA; 2. MagCanica, Inc., San Diego, CA*

11:12

AG-12. FEM-simulation-based characterization of a magnetostrictive gyro sensor.F. Graham[2], C. Mudivarthi[2], J. Yoo[2], *U. Marschner*[1], H. Neubert[1] and A.B. Flatau[2] *1. Institute for Semiconductor and Microsystems Technology, Technische Universität Dresden, Dresden, Germany; 2. Aerospace Engineering, University of Maryland, College Park, MD*

11:24

AG-13. Eddy current imaging of conductive pieces through a thick conductive over layer by using a Dahle-type probe. *I. Sasada*[1] and K. Kodama[1] *1. Applied Science for Electronics and Materials, Kyushu University, Kasuga, Japan*

11:36

AG-14. Induction sensor using a High-Tc superconductor coil. *I. Sasada*[1] *1. Applied Science for Electronics and Materials, Kyushu University, Kasuga, Japan*

11:48

AG-15. A magnetic hand motion tracking system for human-machine interaction.Y. Ma[1,2], W. Jia[2], C. Li[3], Z. Mao[3], J. Yang[1] and *M. Sun*[2,3] *1. Communication Engineering, Xidian University, Xi'an, Shaanxi, China; 2. Neurosurgery, University of Pittsburgh, Pittsburgh, PA; 3. Electrical and Computer Engineering, University of Pittsburgh, Pittsburgh, PA*

TUESDAY MORNING 9:00 — WASHINGTON 5

Session AH
BIOSENSING AND MRI
Shan Wang, Chair

9:00

AH-01. On-chip manipulation of single nano-scale magnetic particles in solution via domain walls conduits. ***(Invited)*** *P. Vavassori*[1,2], V. Metlushko[3], B. Ilic[4], M. Gobbi[5], M. Donolato[5], M. Cantoni[5] and R. Bertacco[5] *1. CIC nanoGUNE Consolider, San Sebastian, Spain; 2. CNR-INFM S3, CNISM and Università di Ferrara, Ferrara, Italy; 3. University of Illinois at Chicago, Chicago, IL; 4. Cornell University, Ithaca, NY; 5. LNESS-Politecnico di Milano, Como, Italy*

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9:36

AH-02. Inductive sensing for magnetically labeled biomolecules. *P. Dhagat*[1], E. Chatterjee[3], A. Jander[1], V. Remcho[3], J. Akse[2] and T. Williams[2] *1. Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR; 2. Umpqua Research Co, Roseburg, OR; 3. Chemistry, Oregon State University, Corvallis, OR*

9:48

AH-03. Tagging suspension-based biochemical assays using digital magnetic microtags. *T. Mitrelias*[1,2], T. Trypiniotis[1,2], K. Vyas[1], B. Hong[1], J. Palfreyman[1], J. Llandro[1], P.A. Robertson[3], T.J. Hayward[1] and C.H. Barnes[1] *1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 2. Cambridge BioMagnetics Ltd, Cambridge, United Kingdom; 3. Engineering, University of Cambridge, Cambridge, United Kingdom*

10:00

AH-04. Biomarker quantification based on giant-magnetoresistive biosensor and high-moment magntic nanoparticle. *Y. Li*[1], Y. Jing[1], B. Srinivasan[2], X. Yao[1], C. Xing[2] and J. Wang[1] *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Medicinal Chemistry, University of Minnesota, Minneapolis, MN*

10:12

AH-05. Optimization of Magnetic Tunnel Junction for detection of magnetic particles. *F.A. Cardoso*[1,2], R. Ferreira[1], S. Cardoso[1,2], V.C. Martins[1] and P.P. Freitas[1,2] *1. INESC-MN, Lisboa, Portugal; 2. Instituto Superior Técnico, Lisbon, Portugal*

10:24

AH-06. MAGNETIC NANOPARTICLES: NOVEL METHODS OF IMMUNOASSAY AND INVESTIGATIONS IN VIVO. *P. Nikitin*[1], M. Nikitin[2], P. Vetoshko[3], T. Ksenevich[1] and T. Brusentsova[1] *1. General Physics Institute, Russian Academy of Sciences, Moscow, Russian Federation; 2. Molecular & Biological Physics, Moscow Institute of Physics & Technology, Dolgoprudniy, Moscow Region, Russian Federation; 3. Institute of Radioengineering and Electronics, Russian Academy of Sciences, Moscow, Russian Federation*

10:36

AH-07. Magneto-dynamics of nano-ferrofluids for bio-molecular detection utilizing resonant cavity method. *C. Fu*[1], M. Chuang[1], C. Hwang[1], C. Yu[1] and C. Han[2] *1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan*

10:48

AH-08. Magnetic Switching Characteristics of Spin-Valve designed for Bead Trapping and Manipulation. *W.R. Krauser*[1,2], J. Moreland[2], S. Russek[2] and V.M. Bright[1] *1. Mechanical Engineering, University of Colorado at Boulder, Boulder, CO; 2. Electromagnetics, NIST, Boulder, CO*

11:00

AH-09. Magneto-optical properties of bio-functionalized magnetic chains for developing label-free immunoassays. *S. Park*[1,2], P. Ko[3], H. Handa[2] and A. Sandhu[1] *1. Quantum Nanoelectronics Research Center, Tokyo Institute of Technology, Tokyo, Japan; 2. Tokyo Tech Global COE Program on Evolving Education and Research Center For Spatio-Temporal Biological Network, Tokyo Institute of Technology, Tokyo, Japan; 3. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Tokyo, Japan*

11:12

AH-10. Compact electro-magnetically operated microfluidic system for detection of sub-200 nm magnetic labels for biosensing without external pumps. *Y. Morimoto*[1], T. Takamura[1], S. Park[1,2] and A. Sandhu[1,2] *1. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Tokyo, Japan; 2. Quantum Nanoelectronics Research Center, Tokyo Institute of Technology, Tokyo, Japan*

11:24

AH-11. Reduction of artifact of metallic implant in magnetic resonance imaging by combining paramagnetic and diamagnetic materials. *Y. Gao*[1], K. Muramatsu[1], A. Kushibe[2], K. Yamazaki[2], A. Chiba[3] and T. Yamamoto[4] *1. Dept. of Electrical and Electronic Engineering, Saga University, Saga, Saga, Japan; 2. Research and Development Inst., Takenaka Co., Ohtsuka, Inzai, Japan; 3. Inst. for Materials Research, Tohoku Univ., Katahira, Aoba-ku, Sendai, Japan; 4. Graduate School of Health Sciences, Hokkaido Univ., Kitaku, Sapporo, Japan*

11:36

AH-12. Proton NMR and spin relaxation in viscous systems with magnetic nanoparticles. *N. Noginova*[1], A. Andreyev[2,1], J. Noginova[3,1] and V.A. Atsarkin[4] *1. NSU, Norfolk, VA; 2. Virginia Tech, Blacksburg, VA; 3. PAHS, Virginia Beach, VA; 4. IRE, Moscow, Russian Federation*

11:48

AH-13. Magnetic link design for a robotic laparoscopic camera.M. Simi[1], G. Ciuti[1], S. Tognarelli[1], *P. Valdastri*[1], A. Menciassi[1,2] and P. Dario[1,2] *1. CRIM, Scuola Superiore Sant'Anna, Pontedera, Pisa, Italy; 2. Italian Institute of Technology Network, Genova, Italy*

TUESDAY MORNING 8:00 — EXHIBIT HALL C

Session AP
BULK MAGNETORESISTIVE OXIDES (POSTER SESSION)
Jing Tao, Chair

AP-01. Magnetoimpedance and structural anomaly in $La_{0.67}Ba_{0.23}Ca_{0.1}MnO_3$ *M. Ramanathan*[1], V.B. Naik[1] and M.C. Lam[1] *1. Departmetn of Physics, National University of Singapore, Singapore, Singapore*

AP-02. Exchange bias effect and ferromagnetic nanodomains in phase-separated Pr5/8Ca3/8MnO3 single crystal. *Y. Gao*[1], G. Cao[2], X. Fu[2], J. Zhang[2] and X. Shen[2] *1. ShangCheng Technology Co. Ltd., ShangHai, Germany; 2. Shanghai University, Shanghai, China*

AP-03. Electron spin resonance studies of Bi0.6Ca(0.4-x)SrxMnO3.J. Kurian[1] and *R. Singh*[1] *1. School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

AP-04. Neutron Powder Diffraction Study and magnetic properties in LaMn1-xCuxO3 (x=0.05 - 0.15).B. Samantaray[1], S.K. Srivastava[2], S. Mohanty[2], *S. Ravi*[1], I. Dhiman[2] and A. Das[1] *1. Physics, IIT Guwahati, Guwahati, Assam, India; 2. Solid State Physics Division, Bahaba Atomic Research Centre, Mumbai, Moharastra, India*

AP-05. Impact of size mismatch induced quenched disorder on phase fluctuation and low field magnetotransport in polycrystalline $Nd_{0.58-x}Gd_xSr_{0.42}MnO_3$ *M.K. Srivastava*[1], R. Prasad[1], P.K. Siwach[1] and H.K. Singh[1] *1. National Physical Laboratory (CSIR), New Delhi, India*

AP-06. Magnetotransport of La0.70Ca0.3-xSrxMnO3 (Ag): A potential room temperature bolometer and magnetic sensor. *V.P. Awana*[1], R. Tripathi[1], H.K. Singh[1], L.S. Sharath Chandra[2], V. Ganesan[2], G.L. Bhalla[3] and H. Kishan[1] *1. Superconductivity and Cryogenics, National Physical Laboratory, New Delhi, India; 2. UGC-DAE-CSR, IUC, Indore, India; 3. Physics Department, Delhi University, Delhi, India*

AP-07. Phase formation and magnetotransport properties of alkali metal doped Na0.75CoO2 thermoelectric oxide. *P. Jood*[1], G. Peleckis[1], H. Yamauchi[2] and M. Karppinen[3] *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan; 3. Laboratory of Inorganic and Analytical Chemistry, Helsinki University of Technology, Helsinki, Finland*

AP-08. Band structures, magnetic and transport properties of Gd and Nd doped two dimensional Sr_2CoO_4Q. Yao[1], *X. Wang*[1], Z. Cheng[1] and S. Dou[1] *1. The Institute for Superconducting and Electronic Materials (ISEM), Wollongong, NSW, Australia*

AP-09. AC-susceptibility and Electrical Behavior of $LaMn_{1-x}Co_xO_3$ *A. Mariño Camargo*[1], R. Jiménez Narváez[1,2] and J.A. Olarte Torres[1,3] *1. Departamento de Física, Universidad Nacional, Bogotá, Colombia; 2. Departamento de Física y Electrónica, Universidad de Córdoba, Montería, Colombia; 3. Facultad Tecnológica, Universidad Distrital FJC., Bogotá, Colombia*

AP-10. Temperature-dependent Magnetic Circular Dichroism Study of Ferromagnetic Double Perovskite La_2MnNiO_6 *J. Kang*[1], S.M. Lee[1], J.H. Lee[1], D.H. Kim[1], S. Kolesnik[2], B. Dabrowski[2], B.G. Park[3], J.Y. Kim[3], J. Lee[4], B. Kim[4] and B.I. Min[4] *1. Physics, The Catholic University of Korea, Bucheon, Korea, Republic of; 2. Physics, Northern Illinois University, DeKalb, IL; 3. Pohang Accelerator Laboratory, Pohang, Korea, Republic of; 4. Physics, POSTECH, Pohang, Korea, Republic of*

AP-11. Colossal magnetoresistance in the double perovskite oxide La_2CoMnO_6 *R.N. Mahato*[1], K. Sethupathi[1], V. Sankaranarayanan[1] and R. Nirmala[1] *1. Physics, Indian Institute of Technology, Chennai, Tamil Nadu, India*

AP-12. Coexistence of Colossal Magnetoresistance, a Griffiths-Like Phase, and a Ferromagnetic Insulating Ground State in Single Crystal La0.73Ba0.27MnO3. *W. Jiang*[1], X. Zhou[1], G. Williams[1], Y. Mukovskii[2] and R. Privezentsev[2] *1. University of Manitoba, Winnipeg, MB, Canada; 2. State Technological University, Moscow, Russian Federation*

AP-13. Neutron diffraction study on magnetic structure in $La_{2-2x}Sr_{1+2x}Mn_2O_7$ (x=0.307). *H. Sonomura*[1], T. Terai[1], T. Kakeshita[1], T. Osakabe[2], K. Kakurai[2], Y. Kuroiwa[3], C. Moriyoshi[3], T. Okubo[3], J. Kim[4], K. Kato[4] and M. Takata[4] *1. Materials Science and Engineering, Graduate School of Engineering, Osaka university, Osaka, Japan; 2. Quantum Beam Science Directorate, Japan Atomic Energy Agency, Ibaraki, Japan; 3. Physical Science, Graduate School of Science, Hiroshima University, Hiroshima, Japan; 4. RIKEN/SPring-8, Hyogo, Japan*

AP-14. Electron magnetic resonance study of size and non-stoichiometry effects on magnetic ordering in half-doped $La_{0.5}Ca_{0.5}MnO_3$ manganite. *M. Auslender*[1], A.I. Shames[2], E. Rozenberg[2], E. Sominski[3], A. Gedanken[3] and Y.M. Mukovskii[4] *1. Electrical and Computer Engineering, Ben-Gurion University, Beer Sheva, Israel; 2. Physics, Ben-Gurion University, Beer Sheva, Israel; 3. Chemistry, Bar-Ilan University, Ramat Gan, Israel; 4. New Materials Synthesis Laboratory, Steel and Alloys Institute, Moscow, Russian Federation*

AP-15. Ca3(Ru1-xCrx)2O7: A new paradigm for spin valves. *G. Cao*[1], L. DeLong[1], S. Chikara[1] and P. Schlottmann[2] *1. Dept of Physics and Astronomy, University of Kentucky, Lexington, KY; 2. Dept of Physics, Florida State University, Tallahassee, FL*

TUESDAY MORNING 8:00 — EXHIBIT HALL C

Session AQ

MAGNETORESISTIVE OXIDE THIN FILMS (POSTER SESSION)

Gervasi Herranz, Chair

AQ-01. CrO_2(110) surface stability under exposure to e-beam radiation. *P.G. Ivanov*[1] and K.M. Bussmann[1] *1. US Naval Research Laboratory, Washington, DC*

AQ-02. Magnetic and transport properties of Pr0.7Ca0.3MnO3/ La0.5Ca0.5MnO3/Pr0.7Ca0.3MnO3 trilayers. H. Wang[1], J. Ge[2], W. Tan[1], H. Wu[1], J. Du[2], X. Wu[2], Q. Jia[3], Y. Chen[3], *L. Wang*[4] and J. Gao[4] *1. Department of Applied Physics, Nanjing University of Science and Technology, Nanjing, Jiangsu, China; 2. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 3. Institute of High Energy Physics, the Chinese Academy of Sciences, Beijing, Beijing, China; 4. Department of Physics, HongKong University, Hong Kong, China*

AQ-03. Resistance switching and asymmetric conduction induced by current in $La_{0.8}Ca_{0.2}MnO_3$ films. J. Wang[1], J. Gao[1] and *L. Wang*[1] *1. Department of Physics, The University of Hong Kong, Hong Kong, Hong Kong, China*

AQ-04. Microwave electromagnetic property of FeCoB-SiO2 films deposited on flexible substrate. *L. Zhang*[1], W.Z. Zhu[1], P.L. Hai[1], H.P. Zhou[1] and J.L. Deng[1] *1. Engineering Research Center of Electromagnetic Wave Absorbing Materials, Ministry of Education, University of Electronic Science and Technology of China, Chengdu, China*

AQ-05. Temperature-assisted transport properties in $Co_{40}Fe_{40}B_{20}/Al_2O_3/La_{0.7}Sr_{0.3}MnO_3$ magnetic tunnel junction. *H.S. Rizwan*[1], S.M. Guo[2], Y. Wang[3], Z.C. Wen[1], Y.G. Zhao[2], J. Zou[3] and X.F. Han[1] *1. State Key Laboratory of Magnetism, Institute of Physics,, Chinese Academy of Sciences, Beijing 100080, China; 2. Department of Physics, Tsinghua University, Beijing 100084, China; 3. Materials Engineering and Center for Microscopy and Microanalysis, The University of Queensland, St. Lucia QLD 4072, Queensland, QLD, Australia*

AQ-06. Impact of thickness on magnetic phase coexistence and electrical transport in epitaxial $Nd_{0.51}Sr_{0.49}MnO_3$ films. *R. Prasad*[1,3], M.P. Singh[2], P.K. Siwach[1], A. Kaur[3], P. Fournier[2] and H.K. Singh[1] *1. National Physical Laboratory (CSIR), New Delhi, India; 2. Département de Physique and RQMP, Université de Sherbrooke, Sherbrooke-J1K 2R1, QC, Canada; 3. Department of Physics and Astrophysics, University of Delhi, Delhi, India*

AQ-07. Direct observation of magnetic ripple domain structures developed in $La_{0.6}Sr_{0.4}MnO_3$ thin films. *M. Konoto*[1], H. Yamada[1] and A. Sawa[1] *1. Nanoelectronics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

AQ-08. Strain effects on the electric and magnetic properties of the magnetoresistive La0.7Ba0.3MnO3 films. *D. Jung*[1], S. Ki[1] and J. Dho[1] *1. Physics, Kyungpook National University, Daegu, Korea, Republic of*

AQ-09. Rectifying characteristics and photovoltaic properties of a $La_{0.9}Hf_{0.1}MnO_3$/Nb-doped $SrTiO_3$ heterojunction. *L. Wang*[1] and J. Gao[1] *1. physics, HongKong, China*

AQ-10. An Unusual Transition from Negative to Positive Magnetoresistance in n-n Heterojunctions Composed of $La_{0.9}Hf_{0.1}MnO_3$ and Nb-0.7 wt%-doped $SrTiO_3$ *L. Wang*[1] and J. Gao[1] *1. physics, HongKong, China*

AQ-11. The influence of tensile strain on magnetic and transport properties in (001)-$La_{7/8}Sr_{1/8}MnO_3$ film. *J. Wang*[1], F. Hu[1], J. Shen[2], J. Sun[1] and B. Shen[1] *1. State Key Lab. for Magnetism, Institute of Physics,CAS, Beijing, China; 2. Technical Institute of Physics and Chemistry,CAS, Beijing, China*

AQ-12. Strain effect on structure and transport properties of (La,Y)2/3(Ca,Sr)1/3MnO3 films. A. Zhang[1,2], H. Cai[1], X. Wu[1], Z. Wang[1], *L. Wang*[3] and J. Gao[3] *1. Nanjing University, Nanjing, China; 2. Hohai University, Nanjing, China; 3. Hong Kong, Hong Kong, China*

AQ-13. Magnetoresistance in highly rectifyng $Nd_{0.7}Sr_{0.3}MnO_3$/Nb:$SrTiO_3$ heterojunctions. J. Wang[1], J. Gao[1] and *L. Wang*[1] *1. Department of Physics, The University of Hong Kong, Hong Kong, Hong Kong, China*

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AQ-14. Tensile strain induced two-dimensional metallic behavior in Nd0.45Sr0.55MnO3 films. *Y. Zhang*[1], Q. Zhang[1] and Z. Zhang[1] *1. Insititute of Metal Research,CAS, Shenyang, China*

AQ-15. Dramatic modification of the angular dependent magnetoresistance with the melting of charge/orbital ordering in manganite films. Y. Chen[1,2], J. Sun[1], *J. Shen*[1,3], J. Wang[1], B. Shen[1] and N. Pryds[2] *1. State Key Laboratory of Magnetism, Institute of Physics,Chinese Academy of Sciences, Beijing, China; 2. Fuel cells and Solid State Chemistry Department, Risø National Laboratory for Sustainable Energy, Technical University of Denmark, Roskilde, Denmark; 3. Cryogenic and Refrigeration Engineering Research Centre, Technical Institute of Physics and Chemistry,Chinese Academy of Sciences, Beijing, China*

TUESDAY MORNING 8:00 — EXHIBIT HALL C

Session AR

SPIN CURRENT AND SPIN HALL EFFECT (POSTER SESSION)

Yoshichika Otani, Chair

AR-01. Achieving highly localized effective magnetic fields with non-uniform Rashba spin-orbit coupling for tunable spin current in metal/semiconductor/metal structures. T. Fujita[1,2], *M. Jalil*[1] and S. Tan[2] *1. National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

AR-02. Gate control of spin precession in a semiconductor channel. *H. Koo*[1], J. Kwon[1], J. Eom[2], J. Chang[1], S. Han[1], H. Kim[3] and M. Johnson[4] *1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, Republic of; 2. Department of Physics, Sejong University, Seoul, Korea, Republic of; 3. Education & International Cooperation Division, Korea Institute of Science and Technology, Seoul, Korea, Republic of; 4. Naval Research Laboratory, Washington, DC*

AR-03. Observation of spin-orbit interaction parameter over a wide temperature range using potentiometric measurement. *Y. Park*[1,2], H. Koo[1], K. Kim[1], H. Kim[1], J. Chang[1], S. Han[1] and H. Kim[3] *1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, Republic of; 2. Department of Nano Electronics, University of Science Technology, Daejeon, Korea, Republic of; 3. Education & International Cooperation Division, Education & International Cooperation Division, Seoul, Korea, Republic of*

AR-04. Enhancement of gate controlled spin-orbit interaction via potential asymmetry of InAs quantum well. K. Kim[1], *H. Kim*[1], H. Koo[1], J. Chang[1] and S. Han[1] *1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, Republic of*

AR-05. Controlled modulation of spin transport through an asymmetric ring with spin-orbit interaction. *M. Xing*[1,2], M. Jalil[2], S. Tan[3] and Y. Jiang[1] *1. Material Physics and Chemistry, University of Science and Technology Beijing, Beijing, China; 2. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 3. Data Storage Institute, Singapore, Singapore*

AR-06. Direct and Inverse spin-Hall effect in Pt thin films. *H. Nakayama*[1,2], K. Ando[1,2], K. Harii[1,2], Y. Kajiwara[1,2], T. Yoshino[1,2] and E. Saitoh[1,3] *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Department of Applied Physics and Physico-Informatics, Keio University, Yokohama, Japan; 3. PRESTO, Japan Science and Technology Agency, Sanbancho, Tokyo, Japan*

AR-07. Inverse spin-Hall effect induced by magnetization dynamics in metallic systems. *K. Ando*[1,2], S. Takahashi[2], J. Ieda[2], S. Maekawa[2] and E. Saitoh[1,2] *1. Department of Applied Physics and Physico-Informatics, Keio University, Yokohama, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

AR-08. Study on spin current modulation with alternative electric field by using spin Hall effect measurement. *J. Kim*[1], J. Suh[1], S. Pak[1] and E. Kim[1] *1. Department of Physics, Hanyang University, Seoul, Korea, Republic of*

AR-09. An all-electrical spin monochromator based on persistent spin helical states.Z. Siu[1,3], *M. Jalil*[2,3], S. Tan[3] and J. Wang[1] *1. Department of Physics, National University of Singapore, Singapore, Singapore; 2. Department of Electrical and Computer Engineering, Natonal University of Singapore, Singapore, Singapore; 3. Data Storage Institute, Singapore, Singapore*

AR-10. Experimental Demonstration of a Persistent Current. *A. Hirohata*[1], I. Sugai[2], M. Mizuguchi[2], K. Takanashi[2] and S.N. Holmes[3] *1. Department of Electronics, University of York, York, United Kingdom; 2. Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Cambridge Research Laboratory, Toshiba Research Europe, Cambridge, United Kingdom*

AR-11. Coupling asymmetry effect on the coherent spin current through a ferromagnetic lead/ quantum dot/ ferromagnetic lead system. *M. Ma*[2,1], M. Jalil[1] and S. Tan[2] *1. Department of Electrical & Computer Engineering, Information Storage Materials Laboratory, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

AR-12. Generalized Spin Electro-motive Force in Systems with a Spatial Spin Texture. *M.B. Jalil*[1] and S. Tan[2] *1. Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, A*STAR (Agency for Science, Technology and Research), Singapore, Singapore*

AR-13. Spin Coulomb drag in a spin-polarized Luttinger liquid. *P.U. Schlottmann*[1] *1. Department of Physics, Florida State University, Tallahassee, FL*

TUESDAY MORNING 8:00 — EXHIBIT HALL C

Session AS
AMORPHOUS AND NANOCRYSTALLINE SOFT MAGNETS I (POSTER SESSION)

Arkhady Zhukov, Co-Chair
Manuel Vazquez, Co-Chair

AS-01. Effect of Cu Addition on Crystallization and Properties of Hafnium containing HITPERM Alloys. ***(Invited)*** *Z. Turgut*[1,2], L. Christy[1], M. Huang[1,2] and J.C. Horwath[1] *1. AFRL, Wright-Patterson AFB, OH; 2. UES Inc., Dayton, OH*

AS-02. Synthesis and magnetic properties of iron sulfide nanosheets with a NiAs-like structure. *C. Lin*[1] and S. Lu[1] *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University, Yung-Kang, Taiwan*

AS-03. Synthesis and characterization of FeNi-polymer nanocomposite particles. S. Karna[1], *S.R. Mishra*[1], I. Dubenko[3], N. Ali[3], E. Gunapala[2] and G. Marasinghe[2] *1. Physics, The University of Memphis, Memphis, TN; 2. Physics, University of North Dakota, Grand Forks, ND; 3. Physics, Southern Illinois University, Carbondale, IL*

AS-04. Fabrication and magnetic properties of Fe nanostructures in anodic alumina membrane. J. Lim[1], W. Chae[2], H. Lee[2], S. Ham[3], L. Malkinski[1], S. Min[1], J.B. Wiley[1], J. Jun[4] and *J. Jung*[3] *1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA; 2. Korea Basic Science Institute, Gangneung, Korea, Republic of; 3. Chemistry, Kangnung National University, Gangneung, Gangwondo, Korea, Republic of; 4. Applied Chemistry, Kunkuk University, Chungju, Korea, Republic of*

AS-05. Magnetic properties and high frequency characteristics of sputtered FeAl and FeAlB thin films. *C. Hsieh*[1], M. Jian[1], H. Chang[2], X. Zhao[1] and W. Chang[1] *1. Department of Physics, National Chung-Cheng University, Chia-Yi, Taiwan; 2. Department of Physics, Tunghai University, Taichung, Taiwan*

AS-06. Soft Magnetic Thin Films FeCoHfO Using For High-Frequency Noise Suppression. *G. Lu*[1], H. Zhang[1], X. Tang[1] and L. Wang[1] *1. State Key Laboratory of Electronic Thin films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

AS-07. Control of quality factor and linewidth of imaginary permeability in CoFeB-MgO heterogeneous films by post-annealing. *S. Liao*[1], R. Jiang[1] and C. Lai[1] *1. Materials Science & Engineering, National Tsing Hua University, Hsinchu, Taiwan*

AS-08. Observations of resonance modes on nanocrystalline ferromagnetic flake composite. *X. Wang*[1], L. Deng[1] and P. Zhou[1] *1. University of Electronic Science and Technology of China, Chengdu, sichuan, China*

AS-09. Giant Magnetoimpedance Effect in Nanocrystalline Ribbons for Sensitive Magnetic Field Sensors. *S. Dwevedi*[1] and G. Markandeyulu[1] *1. Physics, Indian Institute of Technology, CHENNAI, India*

AS-10. Magnetic behavior of rapidly quenched submicron amorphous wires. *H. Chiriac*[1], S. Corodeanu[1], M. Lostun[1], G. Ababei[1] and T. Óvári[1] *1. Magnetic Materials and Devices Dept., National Institute of Research and Development for Technical Physics, Iasi, Romania*

AS-11. Magnetoresistance effect in soft magnetic amorphous microwires. *H. Chiriac*[1], M. Grigoras[1] and T. Óvári[1] *1. Magnetic Materials and Devices Dept., National Institute of Research and Development for Technical Physics, Iasi, Romania*

AS-12. Magnetostriction and effective magnetic anisotropy of Co-contained Finemet nanocrystalline alloys. *Z. Wang*[1], J. Yang[1], Y. Han[1] and D. Zhang[1] *1. School of Science, Tianjin University, Tianjin, China*

AS-13. Annealing Effects of Amorphous Fe_xCo_{1-x} Nanoparticles Synthesized by Modified Aqueous Reduction Using $NaBH_4$ *K.J. Carroll*[1], D.M. Hudgins[1], L.W. Brown[1] and E.E. Carpenter[1,2] *1. Chemistry, Virginia Commonwealth University, Richmond, VA; 2. Chemical and Life Science Engineering, Virginia Commonwealth University, Richmond, VA*

AS-14. Non-aqueous derived sub-micron sized $Fe_{20}Ni_{80}$ particles and their magnetic properties. *D. Kodama*[1], K. Shinoda[1], R. Kasuya[1], K. Tohji[1] and J. Balachandran[1] *1. Tohoku Univ., Sendai, Japan*

AS-15. The coeffect of induced and structural anisotropy on nanocrystalline alloys. *P. Zhou*[1] and L. Deng[1] *1. State Key Laboratory of Electronic Thin Films & Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

AS-16. Non-Classical Crystallization of Amorphous Iron Nanoparticles by Radio Frequency Methods. *K.J. Carroll*[1], J. Pitts[1] and E.E. Carpenter[1] *1. Chemistry, Virginia Commonwealth University, Richmond, VA*

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TUESDAY
MORNING
8:00

EXHIBIT HALL C

Session AT
MAGNETO-CALORIC MATERIALS I (POSTER SESSION)

Hariharan Srikanth, Co-Chair
Lawrence Bennett, Co-Chair

AT-01. Interstitial effect of nitrogen on phase transition and magnetocaloric effect in Mn(As, Si) alloys. ***(Invited)*** W. Cui[1], X. Lv[1], F. Yang[1], *Y. Yu*[2], R. Skomski[2], W. Liu[1,2] and Z. Zhang[1] *1. Shenyang National Laboratory for Materials Science, Institute of Metal Research and International Center for Materials Physics, Chinese Academy of Sciences, Shenyang, Liaoning, China; 2. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, Univeristy of Nebraska-Lincoln, Lincoln, NE*

AT-02. Magnetic hysteresis and refrigeration capacity of Ni-Mn-Ga alloys Near Martensitic transformation. D. Jing Fang[1], *L. Yi*[1], W. Chao Lun[1], F. Bin[1], Y. Rong Chang[1], C. Yong Qin[1] and W. Guang Heng[2] *1. School of materials science and engineering, University of Science and Technology Beijing, Beijing, China; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

AT-03. Magnetoresistance and magnetocaloric effect in metamagnetic alloy $Ni_{45}Co_5Mn_{36.5}In_{13.5}$ L. Chen[1,3], *F. Hu*[1], J. Wang[1], J. Shen[2], J. Sun[1], B. Shen[1], J. Zhang[1], J. Yin[3] and L. Pan[3] *1. State Key Lab. for Magnetism, Institute of Physics, CAS, Beijing, China; 2. Technical Institute of Physics and Chemistry, CAS, Beijing, China; 3. Department of Physics, University of Science and Technology Beijing, Beijing, China*

AT-04. Magnetism and magnetocaloric effect in $Ni_{50}Mn_{35-x}Co_xIn_{15}$ Heusler alloys. *A.K. Pathak*[1], I. Dubenko[1], C. Pueblo[1], S. Stadler[2] and N. Ali[1] *1. Department of Physics, Southern Illinois University Carbondale, Carbondale, IL; 2. Department of Physics and Astronomy, Louisiana State University, Baton Rouge, Baton Rouge, LA*

AT-05. Effect of annealing on the structure and magnetic properties of Mn1.1Fe0.9P0.8Ge0.2 compound. Z. Li[1], *M. Yue*[1], D. Liu[1], Q. Huang[2], X. Liu[3] and J. Zhang[1] *1. Beijing University of Technology, Beijing, China; 2. National Institute of Standards and Technology, Gaithersburg, MD; 3. McGill University, Montreal, QC, Canada*

AT-06. Evaluating hysteretic magnetocaloric effect using new Anhysteretic Curves Method. *Y. Jin*[1], L.H. Bennett[1] and E. Della Torre[1] *1. George Washington University, Washington, DC*

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AT-07. Field dependence of the magnetocaloric effect in core-shell nanoparticles. *V. Franco*[1,2], A. Conde[2], P. Poddar[3], S. Srinath[4], M.H. Phan[2] and H. Srikanth[2] *1. Department of Condensed Matter Physics, Sevilla University, Sevilla, Spain; 2. Department of Physics, University of South Florida, Tampa, FL; 3. Materials Chemistry Division, National Chemical Laboratory, Pune, India; 4. School of Physics, University of Hyderabad, Hyderabad, India*

AT-08. Thermal stability and magnetocaloric effect of the $Gd_{65}Fe_{20}Al_{15-x}B_x$ glassy ribbons. *Y. Fang*[1,2], C. Lai[1], C. Hsieh[1], W. Chang[1] and W. Li[2] *1. Department of Physics, National Chung Cheng University, Ming Hsiung, Chia-Yi, Taiwan; 2. Division of Functional Materials Research, Central Iron and Steel Research Institute, Beijing, China*

AT-09. The magnetic entropy change in La0.8Ce0.2Fe11.4Si1.6Bx compounds prepared by copper mould casting. Z. Lin[1], *S. Li*[1,2], J. Duh[3], Z. Tian[4], S. Tsai[5] and J. Liu[6] *1. Department of Physics, Fujian Normal University, Fuzhou, Fujian, China; 2. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China; 3. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 4. College of Mechanical and Electrical Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China; 5. Precision Instrument Center, EPMA Lab, National Tsing Hua University, Hsinchu, Taiwan; 6. Department of Physics, University of Texas at Arlington, Arlington, TX*

AT-10. Magnetocaloric effect in NaZn13-type La1-xPrxFe11.44Si1.56 melt-spun ribbons. *Z.M. Ding*[1], J.D. Zou[1], Z. Liu[1], R.J. Chen[1], S. Guo[1] and A. Yan[1] *1. Zhejiang province Key Laboratory of Magnetic Materials and Application Technology; Key Laboratory of Magnetic materials and Devices, Ningbo Institute of Material technology & Engineering, Chinese Academy of Science, Ningbo, Zhejiang, China*

AT-11. $La(Fe,Co,Si)_{13}$ bulk alloys and ribbons with high temperature magnetocaloric effect. *M. Jasinski*[1], J. Liu[1], S. Jacobs[2] and C. Zimm[2] *1. Electron Energy Corp., Landisville, PA; 2. Astronautics Corporation of America, Milwaukee, WI*

AT-12. The study on the microstructure and the magnetocaloric effects in LaFe10.8Co0.7Si1.5C0.2 compound at different annealing time. B. Bao[1], Y. Long[1], C. Wang[1], *B. Fu*[1], R. Ye[1], Y. Chang[1], J. Zhao[2] and J. Shen[2] *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, Beijing, China; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, Beijing, China*

AT-13. Magnetocaloric effect in W/Gd multilayers. *D.V. Williams*[1], N. Bingham[1] and C.W. Miller[1] *1. Physics, University of South Florida, Tampa, FL*

AT-14. Magnetocaloric properties of $Er_{1-x}Tb_xA_2$ Laves Phase Alloys. *M.U. Khan*[1], K.A. Gschneidner, Jr.[1,2] and V.K. Pecharsky[1,2] *1. Ames Laboratory U.S. department of Energy, Iowa State University, Ames, IA; 2. Materials science and Engineering, Iowa State University, Ames, IA*

AT-15. Magnetic structure and Magnetic entropy change in the intermetallic compound DyCoAl. J. Chelvane[2], *T. Das*[1], R. Mahato[1], A.V. Morozkin[3], J. Lamsal[4], W.B. Yelon[4], R. Nirmala[1] and S.K. Malik[5] *1. Physics, Indian Institute of Technology Madras, Chennai, India; 2. Defence Metallurgical Research Laboratory, Hyderabad 500 058, India; 3. Department of Chemistry, Moscow State University, Moscow, Russian Federation; 4. Department of Physics and Astronomy, University of Missouri-Columbia, Columbia, MO; 5. International Center for Condensed Matter Physics (ICCMP), Brasilia, Brazil*

TUESDAY MORNING 8:00 — EXHIBIT HALL C

Session AU
MAGNETO-CALORIC MATERIALS II (POSTER SESSION)
Ralph Skomski, Chair

AU-01. Magnetic Properties and Magnetocaloric Effect in Ho6-xErxMnBi2 Compounds. F. Wang[1], *J. Shen*[2], J. Sun[3], F. Yuan[1] and B. Shen[3] *1. Tian Jin University Science and Technology, Tian Jin, China; 2. Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China; 3. State Key Laboratory of Magnetism, Institute of Physics and Centre for Condensed Matter Physics, Chinese Academy of Sciences, Beijing, China*

AU-02. Influence of synthesis conditions on magneto caloric effect in lanthanum manganites. *I. Park*[1], I. Shim[1] and C. Kim[1] *1. physics, kookmin university, Seoul, Korea, Republic of*

AU-03. Isothermal Entropy Change in YbInCu4 valence transition: Is Reversibility Possible? *A. Lima Sharma*[1], A.M. Gomes[2], C. Salazar Mejia[2] and F.R. Drymiotis[3] *1. Physics and Astronomy, San Jose State University, San Jose, CA; 2. Instituto de Fisica, Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 3. Department of Physics, Clemson University, Clemson, SC*

AU-04. Giant magnetic-entropy change in colossal magnetoresistance La0.7Ca 0.3MnO3 material in low field. *J. Debnath*[1], R. Zeng[1], J. Kim[1] and S.X. Dou[1] *1. Institute for Superconducting and Electronic Materials, Wollongong, NSW, Australia*

AU-05. Large Magnetic Entropy Change in the Nanocrystalline $Pr_{0.7}Sr_{0.3}MnO_3$ R.N. Mahato[1], K. Sethupathi[1], *V. Sankaranarayanan*[1] and R. Nirmala[1] *1. Physics, Indian Institute of Technology, Chennai, Tamil Nadu, India*

AU-06. Field-induced first order phase transition and giant reversible magnetocaloric effect in magnesium hydroxide nanosheets. *R. Zeng*[1], J. Wang[1], W. Li[1], C. Wang[1] and S. Dou[1] *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia*

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AU-07. Magnetic properties and magnetocaloric effect in Nd_5Si_3
G. Tian[1], H. Du[1], Y. Xia[1], J. Han[1], C. Wang[1], S. Liu[1] and J. Yang[1,2]
1. School of physics, Peking University, Beijing, China; 2. Laboratory for Mesoscopic Physics, Department of Physics, Peking University, Beijing, China

AU-08. Magnetocaloric effect in HoGa compound.J. Chen[1], B. Shen[1], Q. Dong[1], *J. Shen*[1,2], F. Hu[1] and J. Sun[1] *1. State Key Laboratory of Magnetism, Beijing National Laboratory for Condensed Matter Physics and Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China*

AU-09. Cooling performance test of a room-temperature magnetic refrigeration prototype.H. Zhang[1], *J. Shen*[1], M. Gong[1] and J. Wu[1] *1. Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China*

TUESDAY MORNING 8:00 — EXHIBIT HALL C

Session AV

HARD MAGNETS: RTM5 AND CO BASED MAGNETS (POSTER SESSION)

Jiaoming Qiu, Co-Chair
T.V. Jayaraman, Co-Chair

AV-01. Morphology and magnetic properties of Sm-Co nanoparticles prepared by surfactant-assisted ball milling. *N. Poudyal*[1], C. Rong[1] and J. Liu[1] *1. Physics, University of Texas at Arlington, Arlington, TX*

AV-02. Mechanical milling of Co-rich, melt spun Sm-Co alloys.
F.R. Golkar-Fard[1], P. Rogge[1] and J.E. Shield[1,2] *1. Mechanical Engineering, University of Nebraska, Lincoln, NE; 2. Nebraska Center of Materials and Nanoscience, University of Nebraska, Lincoln, NE*

AV-03. Phase structures and magnetization behavior of $Sm(Co,Zr)_7/\alpha$-(Fe-Co) nanocomposites made by mechanical alloying. *Z. Liu*[1,2], R.J. Chen[1], Y. Ding[1], M.Z. Ding[1], A.R. Yan[1] and D. Lee[1] *1. Zhejiang province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ning Bo, Zhejiang, China; 2. Institute of Solid State Physics, Chinese Academy of Sciences, HeFei, AnHui, China*

AV-04. Hot-deformed Sm-Co / Co composite magnets fabricated from powder blends. *A. Gabay*[1], M. Marinescu[2], J. Liu[2] and G.C. Hadjipanayis[1] *1. University of Delaware, Newark, DE; 2. Electron Energy Corporation, Landisville, PA*

AV-05. Structure and magnetic properties of Tm2(Co0.7Fe0.3)17 bulk nanocrystalline permanent magnet. J. Yang[1], D. Zhang[1], S. Cao[1], W. Liu[1], *M. Yue*[1] and J. Zhang[1] *1. School of Materials Science and Engineering, Beijing, China*

AV-06. Nanocrystalline SmCo5 Magnet Synthesized by Spark Plasma Sintering. D. Zhang[1,2], J. Yang[1], *M. Yue*[1], G. Xu[1], W. Liu[1], J. Zhang[1] and Y. Qiang[2] *1. School of Material Science and Engineering, Beijing University of Technology, Beijing, China; 2. Physics Department, University of Idaho, Moscow, ID*

AV-07. Crystal structure and magnetic properties of melt spun $SmCo_{7-x}M_x$ (M = Ta, Cr, and Mo; x = 0-0.6) ribbons. *C. Hsieh*[1], H. Chang[2], Z. Guo[1], C. Chang[1], X. Zhao[1] and W. Chang[1] *1. Department of Physics, National Chung-Cheng University, Chia-Yi, Taiwan; 2. Department of Physics, Tunghai University, Taichung, Taiwan*

AV-08. Enhancement of coercivity for melt-spun SmCo7-xTax ribbons with Ta addition. Z. Guo[1], W. Li[1], C. Hsieh[2], H. Chang[3], W. Pan[1], *A. Li*[1], M. Zhu[1] and W. Chang[2] *1. Division of Functional Materials, Central Iron & Steel Research Institute, Beijing, China; 2. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 3. Department of Physics, Tunghai University, Taichung, Taiwan*

AV-09. Magnetic properties, phase evolution, and microstructure of melt spun Sm(Co, M) $_xC_y$ (M = Hf and Zr; x=5-9; y=0-0.15) ribbons. *H.W. Chang*[1], C.S. Guo[2], C.C. Hsieh[2], Z.H. Guo[2], X.G. Zhao[2] and W.C. Chang[2] *1. Department of Physics, Tunghai University, Taichung, Taiwan; 2. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan*

AV-10. The magnetization behavior and magnetic viscosity of $Sm(Co,Fe,Cu,Zr)_z$ ribbons with different temperature dependence of coercivity. J. Wang[1], *R. Chen*[2], C. Rong[3], H. Zhang[4], B. Shen[4] and A. Yan[2] *1. Ningbo University of Technology, Ningbo 315211, Zhejiang, China; 2. Zhejiang province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo 315201, Zhejiang, China; 3. Department of Physics, University of Texas at Arlington, Arlington 76019, TX; 4. State Key Laboratory of Magnetism, Institute of Physics and Centre for Condensed Matter Physics, Chinese Academy of Sciences, Beijing 100080, Beijing, China*

AV-11. Investigation of basal plane anisotropy in epitaxial $NdCo_5$ thin films. *M. Seifert*[1], L. Schultz[1] and V. Neu[1] *1. Magnetic Microstructures, IFW Dresden, Dresden, Germany*

AV-12. Preparation of $SmNi_5$ and $Sm(Ni,T)_5$ [*T*=Co,Fe] ordered alloy thin films on Cu(111) underlayers. *M. Ohtake*[1], O. Yabuhara[1], Y. Nukaga[1], F. Kirino[2] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan*

AV-13. Effects of substrate temperature and Cu underlayer thickness on the formation of $SmCo_5$(0001) epitaxial thin films. *M. Ohtake*[1], Y. Nukaga[1], F. Kirino[2] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan*

AV-14. High temperature magnetization studies on $SmCo_5$ films & $SmCo_5$/Fe bilayers. *D. Banerjee*[1], S.E. Lofland[2], J.P. Liu[3], L. Bendersky[4], D. Josell[4] and I. Takeuchi[5] *1. Department of Physics & Center for Nanophysics & Advanced Materials, University of Maryland, College Park, MD; 2. Department of Physics, Rowan University, Glassboro, NJ; 3. Department of Physics, University of Texas at Arlington, Arlington, TX; 4. National Institute of Standards & Technology, Gaithersburg, MD; 5. Department of Materials Science & Engineering & Center for Superconductivity Research, University of Maryland, College Park, MD*

AV-15. Morphology and Magnetic Properties of Electroplated Co-rich Co-Zn Thin Films. *T. Yang*[1], N. Wang[1,2] and D.P. Arnold[1] *1. Interdisciplinary Microsystems Group, Department of Electrical and Computer Engineering, University of Florida, Gainesville, FL; 2. Department of Materials Science and Engineering, University of Florida, Gainesville, FL*

TUESDAY MORNING 8:00 — **EXHIBIT HALL C**

Session AW
HARD MAGNETS: FePt (POSTER SESSION)
George Hadjipananis, Chair

AW-01. Ab initio calculations of band filling effects on magnetocrystalline anisotropy energy of FePt alloy. *M.B. Low*[1], L. Wang[1], T. Zhou[1], C. Cheong[1], Z. Yuan[1], B. Liu[1] and Y. Feng[2] *1. Data Storage Institute, Singapore, Singapore; 2. Physics Department, National University of Singapore, Singapore, Singapore*

AW-02. Structure and Magnetism of Pseudo-binary $L1_0$ Alloy FePtM(M=Ir,Au). *K. Uebayashi*[1] and A. Narita[2] *1. Division Of Physics, Akita National College Of Technology, Akita, Akita, Japan; 2. Dvision of Applied Mathmatics, Akita National College Of Technology, Akita, Akita, Japan*

AW-03. Effect of multilayer configuration of [Fe/Pt] multilayer to attain (001) oriented FePt ordered alloy thin films. *Y. Ogata*[1], Y. Imai[1] and S. Nakagawa[1] *1. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*

AW-04. Magnetization behavior of FePt/Cu/FePt trilayer films. *S. Matsumoto*[1], H. Ishioka[1], K. Sato[1], I. Hiroki[1] and T. Shima[1] *1. Faculty of Engineering, Tohoku Gakuin University, Tagajo, Japan*

AW-05. Perpendicular magnetic anisotropy and ordering temperature of $L1_0$-Fe(Pd,Pt) thin films for high performance magnetic recording devices. *S. Yoshimura*[1], S. Omiya[1], G. Egawa[1] and H. Saito[1] *1. Center for Geo-environmental Science, Akita University, Akita, Akita, Japan*

AW-06. Effects of Os spacer layers on the thermal stability, microstructures and magnetic properties of FePt films fabricated on Si(100). *S. Chen*[1], Y. Yao[2], J. Wu[1], H. Huang[3] and C. Yu[4] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Physics and Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan; 3. Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan; 4. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

AW-07. Microstructure and magnetic properties of the FePt film on a membrane of anodized aluminium oxide.S. Chen[1], C. Yu[2], *C. Huang*[2], J. Wu[1] and Y. Yao[3] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 3. Department of Physics and Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan*

AW-08. Fabrication and characterization of $L1_0$-FeNi thin films onto optimized binary buffer layers. *M. Mizuguchi*[1], T. Kojima[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

AW-09. Effect of initial stress/strain state on order-disorder transformation of FePt thin films. *S. Hsiao*[1], F. Yuan[2], H. Chang[3], H. Huang[1], S. Chen[1] and H. Lee[4] *1. Materials Science and Engineering, Feng Chia University, Taichung, Taiwan; 2. Physics, Academia Sinica, Taipei, Taiwan; 3. Physics, Tunghai University, Taichung, Taiwan; 4. National Synchrotron Radiation Research Center, Hsinchiu, Taiwan*

AW-10. Temperature-driven microstructural, compositional and magnetic changes in electrodeposited Fe-Pd thin films. *K. Zuzek Rozman*[1], D. Pečko[2,1], P.J. McGuiness[1], B. Pihlar[2] and S. Kobe[1] *1. Department for Nanostructured Materials, Jozef Stefan Institute, Ljubljana, Slovenia; 2. Faculty of Chemistry and Chemical Technology, University of Ljubljana, Ljubljana, Slovenia*

AW-11. Enhancing anisotropy of FePt NPs by He+ irradiation. *A. Delattre*[1], P. Reiss[1] and Y. Samson[1] *1. INAC, CEA, Grenoble, France*

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AW-12. Synthesis of high performance magnetic nanoparticles in the Mn-Al system by plasma arc-discharge method. P. Li[1,2], J. Lee[2], X. Dong[1], S. Bae[3], Y. Hong[3] and *C. Choi*[2] *1. School of Material Science and Engineering, Dalian University of Technology, Dalian, China; 2. Functional Materials Division, Korea Institute of Materials Science, Changwon, Korea, Republic of; 3. Department of Electrical and Computer Engineering and MINT Center, University of Alabama, Tuscaloosa, AL*

AW-13. Magnetic properties and microstructure of FePt/Ag2Te nanoparticles. *J. Tsai*[1], H. Tzeng[1] and G. Lin[1] *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

AW-14. Influence of annealing on structure and magnetic properties of Fe80Pt20 films. *J. Bai*[1], F. Wei[1] and X. Liu[2] *1. Institute of Magnetic Materials, School of Physical Science & Technology, LanZhou University, LanZhou, GanSu, China; 2. Department of Information Engineering, Faculty of Engineering, ShinShu University, Nagano, Nagano, Japan*

AW-15. Magnetic moment and crystalline anisotropy calculations for MnAl permanent magnet. *J. Park*[1], Y. Hong[1], S. Bae[1], J. Lee[1], J. Jalli[1], G.S. Abo[1], N. Neveu[1], C. Choi[2] and J. Lee[2] *1. Department of Electrical and Computer Engineering and MINT Center, University of Alabama, Tuscaloosa, AL; 2. Korea Institute of Materials Science, Changwon, Korea, Republic of*

TUESDAY MORNING 8:00 **EXHIBIT HALL C**

Session AX

NANOPARTICLES AND NANOWIRES (POSTER SESSION)

Xiaowei Wu, Co-Chair
David Sellmyer, Co-Chair

AX-01. Control of Macroscopic Ordering in Self-Assembly of Nanosphere Arrays for Patterned Magnetic Materials. E. Sirotkin[1], J.D. Apweiler[1] and *F.Y. Ogrin*[1] *1. School of Physics, The University of Exeter, Exeter, Devon, United Kingdom*

AX-02. Self-Assembly of Superparamagnetic Cobalt Ferrite Nanocrystal Clusters. *N. Bao*[1], L. Shen[1], Y.A. Wang[1], J. Ma[1], D. Mazumdar[1] and A. Gupta[1] *1. The MINT Center, The University of Alabama, Tuscaloosa, AL*

AX-03. Impact of bit size uniformity in bit-patterned media generated from self-assembled block copolymer films. *J.K. Bosworth*[1], O. Hellwig[1], E.A. Dobisz[1] and R. Ruiz[1] *1. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

AX-04. Magnetic and magnetotransport properties of arrays of nanosctructured antidots obtained by self-assembling polystyrene nanosphere litography. *P. Tiberto*[1], L. Boarino[1], F. Celegato[1], M. Coisson[1], N. De Leo[1], F. Vinai[1] and P. Allia[2] *1. Electromagnetism, INRIM, Torino, Italy; 2. DISMIC, Politecnico di Torino, Torino, Italy*

AX-05. Mechanochemical synthesis of Co_3O_4-CuO antiferromagnetic nanocomposite powder and its magnetic properties.S. Karna[1], *S.R. Mishra*[1], R. Gupta[2], E. Gunapala[3], K. Ghosh[2], V. Malagaraddy[1] and G. Marasinghe[3] *1. Department of Physics, The University of Memphis, Memphis, TN; 2. Physics, Astronomy, and Materials Science, Missouri State University, Springfield, MO; 3. Physics, University of North Dakota, Grand Rapids, ND*

AX-06. Collective magnetic behaviours in Fe_xAg_{100-x} granular thin films. *J. Alonso*[1], M. Fdez-Gubieda[1], V. Palomares[3], J. Barandiaran[1], D. Alba Venero[4], L. Fernández Barquín[4], I. De Pedro[4], A. Svalov[1] and I. Orue[2] *1. Electricidad y Electrónica, UPV/EHU, Leioa, Vizcaya, Spain; 2. SGIKER, UPV/EHU, Leioa, Vizcaya, Spain; 3. Química Inorgánica, UPV/EHU, Leioa, Vizcaya, Spain; 4. CITIMAC, Univ. Cantabria, Santander, Cantabria, Spain*

AX-07. Coupling of blocking and melting in cobalt ferrofluids. *T. Wen*[1] and K.M. Krishnan[1] *1. Department of Materials Science and Engineering, University of Washington, Seattle, WA*

AX-08. Magnetic Characterization of Complex Magnetic Nanowire Systems.J. Lim[1], A. Diaconu[2], H. Pham[2], P. Postolache[3], D. Cimpoesu[3], A. Stancu[3], J. Wiley[1] and *L. Spinu*[2] *1. Chemistry and AMRI, University of New Orleans, New Orleans, LA; 2. Department of Physics & Advanced Materials Research Institute, University of New Orleans, New Orleans, LA; 3. Faculty of Physics, Iasi University, Iasi, Romania*

AX-09. Electron magnetic resonance studies on nanowire and nanoparticle arrays. *O. Amponsah*[1], Q. Williams[1], Y. Barnakov[1], R.R. Rakhimov[1], R.A. Lukaszew[2], J.C. Owrutsky[3] and N. Noginova[1] *1. NSU, Norfolk, VA; 2. College of William and Mary, Williamsburg, VA; 3. Naval Research Lab, Washington, DC*

AX-10. Two different nanoscale magnetism in Cu_2O and CuO nanowires. *K. Lee*[1], H. Cha[2], Y. Kang[2], S. Lee[1] and M. Jung[1] *1. Department of Physics, Sogang University, Seoul, Korea, Republic of; 2. Department of Chemistry, Sognag University, Seoul, Korea, Republic of*

AX-11. Temperature and angle dependent magnetic switiching properties of template-assisted ferromagnetic nanotubes. *R. Sharif*[1,2], M. Ming[2,1], S. Shehzadi[2,1], K.u. Rehman[1,2], X.F. Han[1,2], N. Ahmad[1,2] and J.Y. Chen[1,2] *1. Chinese Academy, Physics, Beijing, China; 2. Physics, UET Lahore, Lahore, Punjab, Pakistan*

AX-12. Magnetic properties of arrays of nanowires: anisotropy, interactions and reversal modes. *R. Lavín*[1,2], J.C. Denardin[1,3], . Espejo[1], A. Cortés[4] and H. Gómez[5] *1. Departamento de Física, Universidad de Santiago (USACH), Santiago, Chile; 2. Facultad de Ingeniería, Universidad Diego Portales (UDP), Santiago, Chile; 3. CEDENNA, Universidad de Santiago, Santiago, Chile; 4. Departamento de Física, Universidad Técnica Federico Santa María, Valparaíso, Chile; 5. Instituto de Química, Universidad Católica de Valparaíso, Valparaíso, Chile*

AX-13. Spin-wave resonances affected by skin-effect in conducting magnetic nanowire arrays at THz frequencies. *M. Pardavi-Horvath*[1], G.S. Makeeva[2] and O.A. Golovanov[2] *1. ECE, The George Washington University, WASHINGTON, DC; 2. Penza State University, Penza, Russian Federation*

AX-14. Dynamics of rotating chains of magnetic nanoparticles by optical transmittance. *P. Ko*[1,3], S. Park[2,3], Y. Morimoto[1] and A. Sandhu[2,3] *1. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Tokyo, Japan; 2. Quantum Nanoelectronics Research Center, Tokyo Institute of Technology, Tokyo, Japan; 3. Tokyo Tech Global COE Program on Evolving Education and Research Center Spatio-Temporal Biological Network, Tokyo Institute of Technology, Tokyo, Japan*

AX-15. Cation distribution and magnetic properties of $Zn_xMg_{1-x}Fe_2O_4$ mixed ferrites monitored by Raman and Mössbauer spectroscopies. *A.F. Júnior*[2], F. Nakagomi[1], S.W. da Silva[1], V.K. Garg[1], A.C. de Oliveira[1], M.S. Santos[2] and P.C. de Morais[1] *1. Physics, UnB, Brasilia, Distrito Federal, Brazil; 2. Physics, UFG, Goiânia, Goiás, Brazil*

AX-16. Synthesis and Characterization of Iron Nanoparticles Using Non-Ionic Surfactants. *J.R. Marin*[1], N. Perez[2], M. Rodriguez[2], J.M. Laza[2], M.D. Shultz[2], S. Calvin[4], E.E. Carpenter[3] and J.L. Vilas[2] *1. Gaiker Technology Centre, Zamudio, Biscay, Spain; 2. UPV/EHU, B° Sarriena s/n, Leioa, Biscay, Spain; 3. Chemistry, Virginia Commonwealth University, Richmond, VA; 4. Physics, Sarah Lawrence College, Bronxville, NY*

AX-17. Rhodium clusters: multiferroic that should be metal. *A. Kirilyuk*[1], J. Bowlan[2], A. Liang[2], R. Moro[2] and W.A. de Heer[2] *1. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands; 2. School of Physics, Georgia Institute of Technology, Atlanta, GA*

AX-18. Magnetism of the heavy rare-earth clusters. *J.M. Bowlan*[1], C.N. van Dijk[2], A. Kirilyuk[2], A. Liang[1], S. Yin[1], T. Rasing[2] and W.A. de Heer[1] *1. School of Physics, Georgia Institute of Technology, Atlanta, GA; 2. Spectroscopy of Solids and Interfaces, Institute for Molecules and Materials, Nijmegen, Netherlands*

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TUESDAY MORNING 8:00

EXHIBIT HALL C

Session AY
NANOPARTICLES I (POSTER SESSION)

Véronique Dupuis, Co-Chair
Karl Unruh, Co-Chair

AY-01. Synthesis of Monodisperse Iron Nanoparticle with High Saturation Magnetization using $Fe(CO)_x$-Oleylamine Reacted Precursor. *H. Kura*[1], M. Takahashi[1] and T. Ogawa[1] *1. Department of Electronic Engineering,, Graduated School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

AY-02. Comparison of the nature of magnetism in α–$Ni(OH)_2$ and β–$Ni(OH)_2$ *J. Rall*[1], M.S. Seehra[1], N. Shah[2] and G.P. Huffman[2] *1. Department of Physics, West Virginia University, Morgantown, WV; 2. Department of Chemical Engineering, University of Kentucky, Lexington, KY*

AY-03. Synthesis and characterization of polymer nanocomposites containing magnetic nanoparticles. *E. De La Cruz-Montoya*[1] and C. Rinaldi[2] *1. Chemistry, University of Puerto Rico, Mayaguez, Mayaguez; 2. Chemical Engineering, University of Puerto Rico, Mayaguez, Mayaguez*

AY-04. Synthesis of hollow NiFe2O4 nanoparticles based on Kirkendal effect and chemical transformation; Enhanced surface spin disorder. *G.H. Jaffari*[1], A. Ceylan[2], C. Ni[3] and S. Shah[1,3] *1. Department of Physics, University of Delaware, Newark, DE; 2. Physics Engineering, Hacettepe University, Ankara, Turkey; 3. Material Science and Engineering, University of Delaware, Newark, DE*

AY-05. One-pot synthesis and analysis of CoPt hollow nanoparticles. *J. Min*[1], J. Wu[2], A. Song[1], R. Tan[1], J. Lee[1] and Y. Kim[1] *1. Department of Materials Science and Engineering, Korea University, Seoul, Seoul, Korea, Republic of; 2. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Seoul, Korea, Republic of*

AY-06. Suppression of blocking behavior in a macroscopic FCC nanoparticle crystal. R.D. Desautels[1], O. Kasyutich[2] and *J. van Lierop*[1] *1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. H. H. Wills Physics Laboratory, University of Bristol, Bristol, United Kingdom*

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AY-07. Structural and Magnetic Properties of W - Capped Co Nanoparticles. A.I. Figueroa[1], *L.M. García*[1], J. Bartolomé[1], F. Bartolomé[1], C. Magén[2], F. Petroff[3], C. Deranlot[3] and S. Pascarelli[4] *1. Condensed Matter Physics Department, Instituto de Ciencia de los Materiales de Aragón, CSIC - Universidad de Zaragoza, Zaragoza, Zaragoza, Spain; 2. Instituto de Nanociencia de Aragón-ARAID. Universidad de Zaragoza., Zaragoza, Zaragoza, Spain; 3. Unité Mixte de Physique CNRS/Thales and Université Paris-Sud, Orsay, France; 4. European Synchrotron Radiation Facility, B.P. 220, F38043, Grenoble, France*

AY-08. La Substitution Effect on Magnetic Property and Electron Configuration of $NdCrO_3$ *Y. Du*[1], Z.X. Cheng[1], X.L. Wang[1] and S.X. Dou[1] *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia*

AY-09. Magnetic properties of nickel hydroxide nanoparticles. X. Liu[1], W. Liu[1,2], X. Lv[1], W. Cui[1], F. Yang[1], *X. Wei*[2], Z. Zhang[1] and D.J. Sellmyer[2] *1. Shenyang National Laboratory for Materials Science, Institute of Metal Research and International Center for Materials Physics, Chinese Academy of Sciences, Shenyang, Liaoning, China; 2. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, Univeristy of Nebraska-Lincoln, Lincoln, NE*

AY-10. Ferromagnetic resonance on metal nanosrystals in Fe and Ni implanted ZnO. A.O. Ankiewicz[1,2], J.S. Martins[1], S. Zhou[3], H. Schmidt[3], M.C. Carmo[1], M. Grundmann[2] and *N.A. Sobolev*[1] *1. Departamento de Fisica and I3N, Universidade de Aveiro, Aveiro, Portugal; 2. Institut für Experimentelle Physik II, Universität Leipzig, Leipzig, Germany; 3. Institut für Ionenstrahlphysik und Materialforschung, Forschungszentrum Dresden-Rossendorf, Dresden, Germany*

AY-11. Magnetic behavior of nearly monodisperse $CuCr_2Se_4$ nanoparticles. *C. Lin*[1], C. Yeh[1] and S. Lu[1] *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University, Yung-Kang, Taiwan*

AY-12. Structural and magnetic studies on Ho doped ZnO nanoparticles. S. Singh[1,2], J. Deepthi[1,2], *M. Rao*[1,2] and M. Rao[1,2] *1. Department of Physics, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India; 2. NFMTC, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India*

AY-13. Magnetic and optical properties of multiferroic $GdMnO_3$ nanoparticles. X.L. Wang[1], D. Li[1], T.Y. Cui[1], *P. Kharel*[2], W. Liu[1,2] and Z.D. Zhang[1] *1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, and International Centre for Materials Physics, Chinese Academy of Sciences, Shenyang, China; 2. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE*

AY-14. Synthesis Controlled Magnetic Anisotropy in Protein Encapsulated FePt Nanoparticles. *V.L. Pool*[1,4], M.T. Klem[2,4], S. Kang[2,4], T. Douglas[2,4], M. Young[3,4] and Y.U. Idzerda[1,4] *1. Physics, Montana State University, Bozeman, MT; 2. Chemistry and Biochemistry, Montana State University, Bozeman, MT; 3. Plant Sciences and Pathology, Montana State University, Bozeman, MT; 4. Center for Bio-inspired Nanomaterials, Montana State University, Bozeman, MT*

AY-15. Thermomagnetic measurement of magnetic nanoparticle size distribution.B.D. Plouffe[1], R.S. DiPietro[2], D.K. Nagesha[2], S.K. Murthy[1], L.H. Lewis[1] and *D. Heiman*[2] *1. Chemical Engineering, Northeastern University, Boston, MA; 2. Physics, Northeastern University, Boston, MA*

AY-16. Superparamagnetism and spin-glass transition in synthetic 2.5 nm ferrihydrite nanoparticles. *V. Singh*[1], M. Seehra[1], S. Bali[2] and E.M. Eyring[2] *1. Physics, West Virginia University, Morgantown, WV; 2. Chemistry, University of Utah, Salt Lake City, UT*

AY-17. Clustered Bimetallic Nanoparticles of Co with Au and Fe Fabricated by Femtosecond Laser Fragmentation in Acetone. *P. Boyer*[1], M. Meunier[1] and M. David[1] *1. Engineering Physics, Ecole Polytechnique de Montreal, Montreal, QC, Canada*

TUESDAY AFTERNOON 2:00 — SALON 2

Session BA
SPIN-TORQUE DEVICES: DYNAMICS AND ADVANCED MATERIALS
Daniel Bedau, Chair

2:00

BA-01. Spin current induced magnetization dynamics investigated in the time domain.D. Houssameddine[1], M. Quinsat[2], J.F. Sierra[1], J. Michel[2], K. Garello[2], B. Delaet[2], B. Viala[2], *U. Ebels*[1], M. Cyrille[2], B. Dieny[1], D. Mauri[3] and J.A. Katine[3] *1. SPINTEC, Grenoble, France; 2. CEA-LETI, MINATEC, Grenoble, France; 3. Hitachi Global Storage Technologies, San Jose, CA*

2:12

BA-02. Influence of spin transfer torque on thermally activated ferromagnetic resonance excitations in magnetic tunnel junctions.N. de Mestier[1], *C. Baraduc*[1], C. Thirion[1], Y. Liu[2], M. Li[2], P. Wang[2] and B. Diény[1] *1. SPINTEC, CEA/CNRS, Grenoble, France; 2. Headway Technologies, Milpitas, CA*

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BA-03. High Frequency Characterization of MgO magnetic tunnel junctions designed for spin transfer torque RAM applications. *R. Heindl*[1], W.H. Rippard[1], M. Pufall[1], S. Russek[1], M. Schneider[2], E. Chen[3] and J. Langer[4] *1. NIST, Boulder, CO; 2. Dept of Physics and Astronomy, Univ of Montana, Missoula, MT; 3. Grandis, Milpitas, CA; 4. Singulus Nano Deposition Technologies, Kahl am Main, Germany*

2:36

BA-04. Spin transfer induced vortex oscillations in MgO based magnetic tunnel junctions. *A. Dussaux*[1], B. Goerges[1], J. Grollier[1], V. Cros[1], A.V. Khvalkovskiy[1,2], A. Fukushima[3], H. Kubota[3], K. Yakushijin[3], S. Yuasa[3], K.A. Zvedin[2,4], K. Ando[3] and A. Fert[1] *1. Unité Mixte de Physique CNRS/Thales and Université Paris-Sud 11, Palaiseau, France; 2. A.M. Prokhorov General Physics Institute of RAS, Moscow, Russian Federation; 3. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 4. Istituto P.M. s.r.l., Torino, Italy*

2:48

BA-05. Intermodulation in single and double nano-contact spin-torque oscillators. *Y. Pogoryelov*[1], Y. Zhou[1], N. de Vreede[1], P.K. Muduli[1], F. Mancoff[2] and J. Åkerman[1,3] *1. Material Physics, Royal Institute of Technology, Kista, Sweden; 2. Everspin Technologies, Inc., Chandler, AZ; 3. Physics Department, University of Gothenburg, Gothenburg, Sweden*

3:00

BA-06. Theory of thermally induced phase noise in spin torque oscillators for a high symmetry case. *T. Silva*[1] and M.W. Keller[1] *1. Div. 818.03, NIST, Boulder, CO*

3:12

BA-07. Power and linewidth characteristics of localized and propagating spin wave modes in nanocontact spin torque oscillators. ***S. Bonetti***[1], F. Mancoff[2] and J. Åkerman[1,3] *1. Material Physics, Royal Institute of Technology (KTH), Kista-Stockholm, Sweden; 2. Everspin Technologies, Inc., Chandler, AZ; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

3:24

BA-08. Non-Adlerian ringing in RF phase-locked spin torque oscillators. *Y. Zhou*[1], E. Iacocca[1], J. Åkerman[1,2], A. Slavin[3] and V. Tiberkevich[3] *1. Materials Physics, Royal Institute of Technology, Kista, Sweden; 2. Physics Department, University of Gothenburg, Göteborg, Sweden; 3. Department of Physics, Oakland University, Rochester, MI*

3:36

BA-09. Inverse current induced magnetization switching in MgO based magnetic tunnel junctions with Fe_4N electrode. *S. Isogami*[1], Y. Komasaki[1], M. Tsunoda[1] and M. Takahashi[1] *1. Electronic Engineering, Tohoku University, Graduate School of Engineering, SENDAI, Japan*

3:48

BA-10. Current-induced reorientation of exchange bias on a nanoscale. J. Basset[1,2], Z. Wei[1] and *M. Tsoi*[1] *1. The University of Texas at Austin, Austin, TX; 2. University Joseph Fourier, Grenoble, France*

4:00

BA-11. A large tunnel magnetoresistance at room temperature in epitaxial Co_2FeAl/MgO/CoFe magnetic tunnel junctions. *W. Wang*[1], H. Sukegawa[1], S. Mitani[1] and K. Inomata[1] *1. National Institute for Materials Science, Tsukuba, Japan*

4:12

BA-12. Low ordering temperature and high tunnel magnetoresistance in Co2FeAl/MgO/Co-Fe magnetic tunnel junctions. *D. Ebke*[1], P. Thomas[1], O. Schebaum[1], M. Schäfers[1], D. Nissen[1], C. Albon[1], A. Hütten[1] and A. Thomas[1] *1. Department of Physics, Bielefeld University, Bielefeld, Germany*

4:24

BA-13. Interface states in the full-oxide Fe3O4/MgO/Fe3O4 magnetic tunnel junction. *L. Calmels*[1], R. Arras[1] and B. Warot-Fonrose[1] *1. CEMES-CNRS, Toulouse, France*

4:36

BA-14. Anisotropic, giant,and tunnel magnetoresistace effects of Fe_4N film. Y. Komasaki[1], *M. Tsunoda*[1], S. Isogami[1] and M. Takahashi[1] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan*

4:48

BA-15. Spin-dependent properties of three-terminal ferromagnetic semiconductor heterostructures with a GaMnAs quantum well and double barriers: Control of quantum levels and TMR. *I. Muneta*[1], S. Ohya[1,2] and M. Tanaka[1] *1. Dept. of Electrical Engineering and Information Systems, The Univ. of Tokyo, Tokyo, Japan; 2. Japan Science and Technology Agency, Kawaguchi, Japan*

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TUESDAY AFTERNOON 2:00 — SALON 3

Session BB
ENERGY ASSISTED MAGNETIC RECORDING
Jinshan Li, Chair

2:00

BB-01. Thermally Assisted Magnetic Recording Experiments at Greater than 250 Gb/in^2 using a Plasmonic Near-Field Transducer with Integrated Waveguide and Write Pole. ***(Invited)*** *B.C. Stipe*[1], T. Strand[1], C. Poon[1], J. Katine[1], H. Balamane[1], V. Rawat[1], N. Robertson[1], B. Terris[1], H. Nemoto[2] and A. Hirotsune[2] *1. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA; 2. Central Research Laboratory, Hitachi Ltd., Tokyo, Japan*

2:36

BB-02. Integrated head design for thermally assisted magnetic recording—Toward 2.5-Tb/in^2-class recording. *T. Matsumoto*[1], M. Mochizuki[1], F. Akagi[1], Y. Iwanabe[1], I. Naniwa[2], H. Takei[1], H. Nemoto[1] and H. Miyamoto[1] *1. Central Research Laboratory, Hitachi Ltd., Kokubunji, Tokyo, Japan; 2. Mechanical Research Laboratory, Hitachi Ltd., Fujisawa, Tokyo, Japan*

2:48

BB-03. HAMR Adjacent Track Stability in the Presence of a Medium Curie Temperature Distribution.B.R. Knight[1], *J.A. Bain*[1] and T.E. Schlesinger[1] *1. Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

3:00

BB-04. Grating coupler design of an integrated HAMR head light delevery system using topology optimization.H. Soh[2] and *J. Yoo*[1] *1. Mechanical Engineering, Yonsei University, Seoul, Korea, Republic of; 2. Graduate School of Mechanical Engineering, Yonsei University, Seoul, Korea, Republic of*

3:12

BB-05. Improved Grain Isolation in [Co/Pd]n Multilayer Media for Thermally Assisted Magnetic Recording. *A. Hirotsune*[1], H. Nemoto[1], K. Nakamura[1], T. Ichihara[1] and B. Stipe[2] *1. Central Research Laboratory, Hitachi, Ltd., Odawara-shi, Kanagawa, Japan; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

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3:24

BB-06. Gold bow-tie aperutre shaped nanoantenna: wide band near-field resonance and far-field radiation. *Y. Wu*[1], L. Li[1] and B. Liu[2] *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Agency for Science, Technology and Research, Singapore, Singapore*

3:36

BB-07. Experimental study on optimum frequency for microwave-assisted magnetization reversal in perpendicularly magnetized Co/Pd multilayer. *Y. Nozaki*[1], N. Narita[1], T. Tanaka[1] and K. Matsuyama[1] *1. Dept. of Electronics, Kyushu University, Fukuoka, Japan*

3:48

BB-08. Microwave-Assisted Magnetization Reversal in Large-Damping Magnetic Films: Competition between Pumping and Damping. *Z. Wang*[1], K. Sun[1,2], W. Tong[1], M. Wu[1], M. Liu[3] and N. Sun[3] *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China; 3. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA*

4:00

BB-09. Microwave-assisted magnetization switching in a perpendicularly magnetized film. *T. Yoshioka*[1], T. Nozaki[1], T. Seki[1], M. Shiraishi[1], T. Shinjo[1], Y. Suzuki[1] and Y. Uehara[2] *1. Osaka University, Toyonaka, Japan; 2. Fujitsu ltd, Kawasaki, Japan*

4:12

BB-10. Oscillation Feature of FGL with Planar Magnet for MAMR. *M. Igarashi*[1], Y. Suzuki[1] and Y. Sato[1] *1. Hitachi, Ltd., Kokubunji, Tokyo, Japan*

4:24

BB-11. Spin torque oscillator with negative magnetic anisotropy materials for MAMR. *K. Yoshida*[1], M. Yokoe[1], Y. Ishikawa[1] and Y. Kanai[2] *1. Information and Communications Engineering, Kogakuin University, Tokyo, Japan; 2. Information and Electronics Engineering, Niigata Institute of Technology, Kashiwazaki, Niigata, Japan*

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4:36

BB-12. Microwave-assisted magnetic recording using multi-level exchange-coupled composite bit patterned media design. *A. Kovacs*[1], S. Li[2], B. Livshitz[2], T. Schrefl[1,3] and V. Lomakin[2] *1. St Poelten University of Applied Sciences, St. Poelten, Austria; 2. Center for Magnetic Recording Research, University of California, San Diego, CA; 3. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom*

TUESDAY AFTERNOON 2:00 — DELAWARE

Session BC
MAGNETIC MICROSCOPY I
Markus Bolte, Chair

2:00

BC-01. Visualization of magnetic domains and magnetization processes in bulk materials by neutron dark-field imaging. ***(Invited)*** *C. Gruenzweig*[1], C. David[1], O. Bunk[1], G. Frei[1], E. Lehmann[1], J. Kohlbrecher[1], R. Schaefer[2], P. Lejcek[3], H. Ronnow[4] and F. Pfeiffer[5] *1. Paul Scherrer Institut, CH-5232 Villigen, Switzerland; 2. IFW Dresden, Institute for Metallic Materials, D-01069 Dresden, Germany; 3. Institute of Physics, AS CR, CZ-182 21 Praha 8, Czech Republic; 4. Ecole Polytechnique Fédérale de Lausanne, CH-1015-Lausanne, Switzerland; 5. Department of Physics, Technical University of Munich, D-85747 Garching, Germany*

2:36

BC-02. Magnetic Antiphase Domains in Co/Ru/Co Trilayers. *Z. Li*[1], R. Skomski[1], S. Michalski[1], L. Yue[1] and R.D. Kirby[1] *1. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE*

2:48

BC-03. Quantitative analysis of the magnetic moments of individual magnetic nanoparticles by magnetic force microscopy. *S. Sievers*[1], K. Braun[1], D. Eberbeck[1] and H.W. Schumacher[1] *1. Physikalisch-Technische Bundesanstalt, Braunschweig and Berlin, Germany*

3:00

BC-04. Probing intrinsic energy barrier distribution of CoNi/Pd magnetic multilayers using magnetic force microscopy. *O. Ozatay*[1,2], T. Hauet[2], S.H. Florez[2], J.A. Katine[2], A. Moser[2], J. Thiele[2], L. Folks[2] and B.D. Terris[2] *1. Physics Department, Bogazici University, Istanbul, Turkey; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

3:12

BC-05. Localizing Ferromagnetic Resonance modes for Ferromagnetic Resonance Imaging. *P. Hammel*[1], I. Lee[1], Y. Oboukhov[1], D. Pelekhov[1], E. Nazaretski[2] and R. Movshovich[2] *1. Physics, Ohio State University, Columbus, OH; 2. Los Alamos National Laboratory, Los Alamos, NM*

3:24

BC-06. Ferromagnetic Resonance Imaging using a Submicron Localized Spin Wave Mode. *I. Lee*[1], Y. Obukhov[1], G. Xiang[1], A. Hauser[1], F. Yang[1], D. Pelekhov[1] and P. Hammel[1] *1. Physics, The Ohio State University, Columbus, OH*

3:36

BC-07. High frequency magnetic field imaging by frequency modulated magnetic force microscopy (FM-MFM). *H. Saito*[1], K. Hatakeyama[1], W. Lu[1], G. Egawa[1] and S. Yoshimura[1] *1. Center for Geo-environmental Science, Faculty of Engineering and Resource Science, Akita, Akita, Japan*

3:48

BC-08. Ferro-magnetic resonance force imaging of nano-magnets. *O. Klein*[1], G. de Loubens[1], B. Pigeau[1] and V.V. Naletov[1] *1. Service de Physique de l'État Condensé, Gif-Sur-Yvette, France*

4:00

BC-09. Development of a scanning near-field microwave microscope for localized magnetic resonance measurements. *C.J. Long*[1], J. Lee[2], S. Kitt[2], S. Lofland[3] and I. Takeuchi[2] *1. Physics, University of Maryland, College Park, MD; 2. Materials Science and Engineering, University of Maryland, College Park, MD; 3. Physics, Rowan University, Glassboro, NJ*

4:12

BC-10. A novel method to measure 3 components of magnetic field vector with nanometer resolution using Scanning Hall Probe Microscopy/Gradiometry (3D-SHPM). M. Dede[1], R. Akram[2] and *A. Oral*[3,1] *1. NanoMagnetics Instruments, Oxford, United Kingdom; 2. Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Topi, Pakistan; 3. Sabanci University, Istanbul, Turkey*

4:24

BC-11. Layered Antiferromagnetic Spin Structure of Epitaxial Expanded fct-Mn(001) studied by Spin-Polarized Scanning Tunneling Microscopy and Spectroscopy. *P.J. Hsu*[1], C.I. Lu[1], L.J. Chen[1], B.Y. Wang[1,2], S.S. Wong[1], S.W. Chen[1], W.J. Hsueh[1] and M.T. Lin[1,3] *1. Physics, National Taiwan University, Taipei, Taiwan; 2. TIGP, Academia Sinica, Taipei, Taiwan; 3. Institute of Atomic Molecular Science, Academia Sinica, Taipei, Taiwan*

4:36

BC-12. Mapping the magnetic anisotropy in (Ga,Mn)As nanostructures. *F. Hoffmann*[1], G. Woltersdorf[1], W. Wegscheider[1], A. Einwanger[1], D. Weiss[1] and C.H. Back[1] *1. Physics, University of Regensburg, Regensburg, Germany*

4:48

BC-13. Magnetooptical gradient effect in exchange-biased thin film: Experimental evidence for the diffraction theory. C. Hamann[1], *R. Schaefer*[1], J. McCord[1], L. Schultz[1] and V. Kamberský[2] *1. Leibniz Institute for Solid State and Materials Science (IFW Dresden), Dresden, Germany; 2. Institute of Physics, Academy of Sciences, Prague, Czech Republic*

TUESDAY AFTERNOON 2:00 — VIRGINIA

Session BD
EXCHANGE BIAS I
Gonzalo Vallejo-Fernandez, Chair

2:00

BD-01. Dynamic exchange anisotropy for exchange bias structures: Fe/KNiF3, Fe/MnF2 and Fe/FeF2. S. Widuch[1,2], N. Yan[1,3], K. Balin[1,2], *R.L. Stamps*[4] and Z.J. Celinski[1] *1. Physics, UCCS, Colorado Springs, CO; 2. Institute of Physics, University of Silesia, Katowice, Poland; 3. Department of Microelectronic Science and Technology, Huazhong University of Science and Technology, Wuhan, China; 4. School of Physics (M013), University of Western Australia, Perth, WA, Australia*

2:12

BD-02. Exchange bias enhancement by Cr addition to CoO in a CoO-Co/Pt multilayer system. S. Romer[1], P. Kappenberger[1,3], M.A. Marioni[1], N. Joshi[2], S. Oezer[2] and *H.J. Hug*[1,2] *1. Nanoscale Materials Science, Empa, Duebendorf, Switzerland; 2. Institute of Physics, University of Basel, Basel, Switzerland; 3. Inficon Ltd., Balzers, Liechtenstein*

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2:24

BD-03. Thickness dependence of x-ray linear dichroism in NiO thin film grown on Fe(001) surface. *Y. Wu*[1], B. Sinkovic[2], E. Arenholz[3] and Z. Qiu[4] *1. Physics department, Fudan university, Shanghai, China; 2. Department of Physics, University of Connecticut, Storrs, CT; 3. Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, CA; 4. Department of Physics, University of California Berkeley, Berkeley, CA*

2:36

BD-04. Angular dependence of magnetization reversal process in exchange biased epitaxial Fe/MnPd bilayers. *Q. Zhan*[1] and K.M. Krishnan[1] *1. materials Science, University of Washington, Seattle, WA*

2:48

BD-05. IrMn and FeMn blocking temperature dependence on heating pulse width. *L. Lombard*[1,2], E. Gapihan[1,2], R.C. Sousa[2], Y. Dahmane[2], C. Portemont[1], Y. Conraux[1], C. Papusoi[2], I.L. Prejbeanu[1], J. Nozières[1], B. Dieny[2] and A. Schuhl[2] *1. Crocus-Technology, 4 place Robert Schuman 38000 Grenoble, France; 2. Spintec (UMR 8191 CEA/CNRS/UJF), INAC/CEA 17 rue des Martyrs 38054 Grenoble, France*

3:00

BD-06. Competing anisotropies and temperature dependence of exchange bias in Co/IrMn metallic wires fabricated by nanoimprint lithography. *W. Zhang*[1], D.N. Weiss[2] and K.M. Krishnan[1] *1. Materials Science and Engineering, University of Washington, Seattle, WA; 2. Washington Technology Center, Seattle, WA*

3:12

BD-07. The effect of shell thickness on the magnetic behavior of MnO/Mn_3O_4 epitaxial core-shell nanoparticles. *R.A. Booth*[1] and S.A. Majetich[1] *1. Physics, Carnegie Mellon University, Pittsburgh, PA*

3:24

BD-08. Thermal Stability of Exchange Bias Square Nanoelements. *G. Vallejo-Fernandez*[1] and J.N. Chapman[1] *1. Physics & Astronomy, University of Glasgow, Glasgow, United Kingdom*

3:36

BD-09. Mechanism of exchange bias in $DyFe_2/YFe_2$ exchange-coupled superlattices. M.R. Fitzsimmons[1], *K. Dumesnil*[2], C. Dufour[2], J. Dou[3] and M. Pechan[3] *1. Los Alamos National Laboratory, Los Alamos, NM; 2. P2M, Institut Jean Lamomur, Vandoeuvre les Nancy, France; 3. Physics, Miami University, Oxford, OH*

3:48

BD-10. Evolution of ferromagnetic domains over a distribution of uncompensated antiferromagnetic spins. I. Schmid[3,1], *M.A. Marioni*[1], P. Kappenberger[4,1], S. Romer[1], M. Parlinska-Wojtan[1], H.J. Hug[1,2], O. Hellwig[5], M.J. Carey[5] and E.E. Fullerton[6] *1. Nanoscale Materials Science, Empa, Duebendorf, Switzerland; 2. Institute of Physics, University of Basel, Basel, Switzerland; 3. Paul Scherrer Institut, Villigen, Switzerland; 4. Inficon Ltd, Balzers, Liechtenstein; 5. Hitachi Global Storage Technologies, San Jose, CA; 6. University of California - San Diego, La Jolla, CA*

4:00

BD-11. Micromagnetic simulations of exchange bias systems. *J. Dean*[1], G. Hrkac[1], M.A. Bashir[1], A. Goncharov[1], T. Schrefl[1,3], A. Kovac[2] and A. Kohn[2] *1. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 2. Department of Materials, University of Oxford, Oxford, United Kingdom; 3. St. Poelten University of Applied Science, St. Poelten, Austria*

4:12

BD-12. Atomistic modelling of hysteresis properties of exchange biased core-shell nanoparticles. *R.F. Evans*[1], D. Bate[1], R. Yanes[2], O. Chubykalo-Fesenko[2] and R.W. Chantrell[1] *1. Physics, The University Of York, York, England, United Kingdom; 2. ICMM, CSIC, Madrid, Spain*

4:24

BD-13. Spins and Twins: Correlation between Crystallographic and Magnetic Domains at Co/NiO(001) Interfaces. *H. Ohldag*[1], G. van der Laan[3] and E. Arenholz[2] *1. SSRL, Stanford University, Menlo Park, CA; 2. Advanced Light Source, LBNL, Berkeley, CA; 3. Diamond L:ight Source, Chilton, United Kingdom*

4:36

BD-14. Enhanced thermal stability in STT-RAM bits with exchange coupling. *S. Wang*[1], X. Tang[1], D. Druist[1], D. Lottis[1], Z. Diao[1], A. Driskill-Smith[1] and E. Chen[1] *1. Grandis Inc, Milpitas, CA*

4:48

BD-15. Bimodal distribution of blocking temperature in exchange biased ferromagnetic/antiferromagnetic bilayers. V. Baltz[1], P. Somani[1], B. Rodmacq[1], A. Zarefy[2], L. Lechevallier[2] and *B. Dieny*[1] *1. SPINTEC, UMR 8191 CNRS/CEA/UJF, Grenoble, France; 2. GPM (UMR CNRS 6634), Université de Rouen, Rouen, France*

TUESDAY AFTERNOON 2:00 — WASHINGTON 1

Session BE
SPIN INJECTION IN SEMICONDUCTORS
Tamalika Banerjee, Chair

2:00

BE-01. Silicon spintronics at room temperature. *(Invited)* *R. Jansen*[1] *1. MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

2:36

BE-02. Evidence of electrical spin injection into silicon using MgO tunnel barrier. *T. Sasaki*[1], T. Oikawa[1], T. Suzuki[2], M. Shiraishi[3], Y. Suzuki[3] and K. Noguchi[1] *1. SQ Research Center, TDK corporation, Saku, Nagano, Japan; 2. Akita Research Institute of Advanced Technology, Akita, Akita, Japan; 3. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan*

2:48

BE-03. Nonlocal voltage detection of spin transport in silicon using Fe_3Si/Si Schottky tunnel contacts. *Y. Ando*[1], K. Kasahara[1], Y. Enomoto[1], K. Yamane[1], K. Hamaya[1,2], K. Sawano[3], T. Kimura[4] and M. Miyao[1] *1. Department of Electronics, Kyushu University, Fukuoka, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan; 3. Department of Electrical and Electronic Engineering, Tokyo City University, Tokyo, Japan; 4. INAMORI FRC, Kyushu University, Fukuoka, Japan*

3:00

BE-04. Electrical injection and detection of spin polarized holes in p-type silicon at room temperature. *S. Dash*[1], S. Sharma[1] and R. Jansen[1] *1. MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

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3:12

BE-05. Silicon Spintronics: Generation, Manipulation and Electrical Detection of Pure Spin Currents in Lateral Devices. *(Invited)* *B.T. Jonker*[1], O. van 't Erve[1,2], G. Kioseoglou[1,2], A.T. Hanbicki[1], C.H. Li[1], M. Holub[1,3], C. Awo-Affouda[1,3] and P.E. Thompson[1] *1. Naval Research Laboratory, Washington, DC; 2. Research Associate, George Washington University, Washington, DC; 3. Postdoctoral Associate, National Research Council, Washington, DC*

3:48

BE-06. Systematic Study on a Large Magnetoresistance in Si. *B. Park*[1], S. Ogawa[1], J. Wunderlich[1] and D. Williams[1] *1. Hitachi Cambridge Laboratory, Cambridge, United Kingdom*

4:00

BE-07. Triggering phase-coherent spin packets by pulsed electrical spin injection across an Fe/GaAs Schottky barrier. *B. Beschoten*[1,2], C. Schwark[1,2], I. Burkart[1,2], L. Schreiber[1,2], G. Güntherodt[1,2], C. Adelmann[3], C. Palmstrøm[3,4] and P.A. Crowell[5] *1. II. Physikalisches Institut and JARA-Fundamentals of Future Information Technology, RWTH Aachen University, Aachen, Germany; 2. Virtual Institute for Spin Electronics (ViSel), Aachen – Jülich – Göttingen, Germany; 3. Department of Chemical Engineering and Material Science, University of Minnesota, Minneapolis, MN; 4. Departments of Electrical and Computer Engineering and Materials, University of California, Santa Barbara, CA; 5. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN*

4:12

BE-08. Bias Dependence of Spin Injection into GaAs. *B. Endres*[1], F. Hoffmann[1], D. Schuh[1], G. Woltersdorf[1], C. Back[1] and G. Bayreuther[1] *1. Inst. f. Experimentelle Physik, Universitaet Regensburg, Regensburg, Germany*

4:24

BE-09. Interference diffusion and Schottky barrier height in Fe/GaAs films.L.R. Fleet[1], K. Yoshida[2,3], *A. Hirohata*[4], H. Kurebayashi[5], J. Kim[5], C.H. Barnes[5], H. Kobayashi[6] and Y. Ohno[6] *1. Department of Physics, The University of York, York, United Kingdom; 2. Department of Chemistry, The University of York, York, United Kingdom; 3. Nanostructures Research Laboratory, Japan Fine Ceramics Center, Nagoya, Japan; 4. Department of Electronics, The University of York, York, United Kingdom; 5. Cavendish Laboratory, The University of Cambridge, Cambridge, United Kingdom; 6. Research Institute for Electrical Communication, Tohoku University, Sendai, Japan*

4:36

BE-10. Spin lifetimes at Fe/GaAs and Fe/AlOx/GaAs interfaces. *C. Awo-Affouda*[1], O. van 't Erve[1], M. Holub[1], C. Li[1], A. Hanbicki[1], G. Kioseoglou[1] and B. Jonker[1] *1. Naval Research Laboratory, Washington, DC*

4:48

BE-11. Efficient spin injection into semiconductor from a Fe/GaO$_x$ tunnel injector. *H. Saito*[1], J.C. LeBreton[1], V. Zayets[1], Y. Mineno[1], S. Yuasa[1] and K. Ando[1] *1. Nanoelectronics, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan*

TUESDAY AFTERNOON 2:00 WASHINGTON 2

Session BF
MULTIFERROICS: NOVEL MATERIALS
Jeff Lynn, Chair

2:00

BF-01. Ferroelectrically-induced weak-ferromagnetism by design. ***(Invited)*** *C.J. Fennie*[1] *1. AEP, Cornell University, Ithaca, NY*

2:36

BF-02. A crystal-field mechanism of multiferroic interactions. *R. Skomski*[1] and A. Enders[1] *1. Physics and Astronomy, University of Nebraska, Lincoln, NE*

2:48

BF-03. Magnetoelectric Effect in Oxohalide Tellurites: a New Family of Multiferroics Emerging from the Amplitude Modulated Magnetic Structure. *D. Arcon*[1,2], M. Pregelj[1], O. Zaharko[3], A. Zorko[1], Z. Kutnjak[1], J. Brown[4] and H. Berger[5] *1. Solid State Physics Department, Institute Jozef Stefan, Ljubljana, Slovenia; 2. Faculty of mathematics and physics, University of Ljubljana, Ljubljana, Slovenia; 3. Laboratory for Neutron Scattering, ETHZ & PSI, Villigen, Switzerland; 4. Institut Laue-Langevin, Grenoble, France; 5. Institute of Physics of Complex Matter, EPFL, Lausanne, Switzerland*

3:00

BF-04. X-ray absorption spectroscopy studies of thin films of Y-doped HoMnO3.K. Chung[1], X. Marti[2], J. Fontcuberta[2], M.D. Ulrich[1,3], *R. Vasić*[1], G. Lucovsky[1], H.D. Zhou[4] and C.R. Wiebe[4] *1. Physics Department, North Carolina State University, Raleigh, NC; 2. Departament de Materials Magnètics i Òxids Funcionals, Institut de Ciència de Materials de Barcelona, Bellaterra, Catalunya, Spain; 3. Condensed Matter Physics, Army Research Office, Research Triangle Park, NC; 4. Condensed Matter Group/ Experimental, Florida State University NHMFL, Tallahassee, FL*

3:12

BF-05. Magnetic structures and origin of ferroelectricity in RMn2O5 compounds (R=rare-earth). ***(Invited)*** *L. Chapon*[1] *1. ISIS Facility, STFC, Chilton, Didcot, United Kingdom*

3:48

BF-06. Magnetic and structural transitions in the new multiferroic $GdFe_3(BO_3)_4$ studied by the ^{57}Fe-Mössbauer spectroscopy. *K.V. Frolov*[1], I.S. Lyubutin[1], A.G. Gavriliuk[1] and S.A. Kharlamova[2] *1. A.V. Shubnikov Institute of Crystallography RAS, Moscow, Russian Federation; 2. Geophysical Laboratory, Carnegie Institution of Washington, Washington, DC*

4:00

BF-07. Magnetoelectric properties of Ho0.25Nd0.75Fe3(BO3)4. *R.P. Chaudhury*[1], B. Lorenz[1], Y.Y. Sun[1], L. Bezmaternykh[2], V. Temerov[2] and C.W. Chu[1,3] *1. PHYSICS, UNIVERSITY OF HOUSTON, Houston, TX; 2. Institute of Physics, Siberian Division, Russian Academy of Sciences, Krasnoyarsk, Russian Federation; 3. Physics, LBNL, california USA and HKUST China, NA, China*

4:12

BF-08. Giant Magneto-electric Effect in the Jeff = ½ Mott Insulator, Sr2IrO4.G. Cao[1], S. Chikara[1], O. Korneta[1], P. Schlottmann[2] and *L. DeLong*[1] *1. Dept of Physics and Astronomy, University of Kentucky, Lexington, KY; 2. Dept of Physics, Florida State University, Tallahassee, FL*

4:24

BF-09. Hysteresis and multiferroism in cobalt substituted Ni50Mn40Sn10. *V.K. Srivastava*[1], X. Chen[1] and R.D. James[1] *1. Aerospace Engg and Mechanics, University of Minnesota, Minneapolis, MN*

4:36

BF-10. Fluoride Multiferroics: Magnetic Properties of the K3Fe5F15 Family. *Z. Trontelj*[1,2], Z. Jagličić[1], M. Jagodič[1], A. Potočnik[3], P. Cevc[3], A. Levstik[3], C. Filipič[3], D. Hanzel[3], M. Perović[4], G. Tav čar[3], B. Zemva[3] and R. Blinc[3,2] *1. IMFM, Ljubljana, Slovenia; 2. IJS Postgraduate School, Ljubljana, Slovenia; 3. IJS, Ljubljana, Slovenia; 4. INN Vinča, Beograd, Serbia*

4:48

BF-11. Pyroelectricity and magnetism in YBaCuFeO5 perovskite. *N. Biskup*[1], S. Yañez[2], M. Sanchez Andujar[2], J. Mira[3], J. Rivas[3] and A. Señaris[2] *1. ICMM/CSIC, Madrid, Spain; 2. Departamento Quimica Fundamental, Facultad de Ciencias Universidade da Coruña, La Coruña, Spain; 3. Dpto. Física Aplicada, Universidade de Santiago de Compostela, Santiago de Compostela, Spain*

TUESDAY AFTERNOON 2:00 — WASHINGTON 3

Session BG
MAGNETO-ELASTIC MATERIALS I
Mike Gibbs, Co-Chair
Marilyn Wun-Fogle, Co-Chair

2:00

BG-01. The effect of partial substitution of Ge for Ga on the elastic and magnetoelastic properties of Fe-Ga alloys. *G. Petculescu*[1], A.O. Mandru[1], W.M. Yuhasz[2], T.A. Lograsso[2], M. Wun-Fogle[3], J.B. Restorff[3], A.E. Clark[4] and K.B. Hathaway[5] *1. Physics, University of Louisiana at Lafayette, Lafayette, LA; 2. Ames Laboratory, Ames, IA; 3. Naval Surface Warfare Center, Carderock Division, W. Bethesda, MD; 4. Clark Associates, Adelphi, MD; 5. G/J Associates, Annapolis, MD*

2:12

BG-02. Thickness dependence of magnetic and structural properties in Fe80Ga20 thin films. *A. Javed*[1], N.A. Morley[1] and M.R. Gibbs[1] *1. Engineering Materials, University of Sheffield, Sheffield, United Kingdom*

2:24

BG-03. An investigation on the addition of Boron to Iron-Gallium magnetostrictive alloys. H. Basumatary[1], M. Palit[1], *J. Chelvane*[1], M. Raja[1], S. Pandian[1] and V. Chandrasekaran[1] *1. Defence Metallurgical Research Laboratory, Hyderabad, Andhra Pradesh, India*

2:36

BG-04. Surface and interface magnetization processes in Fe-Ga alloy samples. *N. Lupu*[1], M. Lostun[1,2], G. Ababei[1] and H. Chiriac[1] *1. Magnetic Materials and Devices Department, National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. Faculty of Physics, "Alexandru Ioan Cuza" University, Iasi, Romania*

2:48

BG-05. The intrinsic magnetostriction of Galfenol and Terfenol-D single crystal alloys.M.P. Ruffoni[1], *S. Pascarelli*[1], C. Azimonte-Bottan[1], Q. Xing[2] and T. Lograsso[2] *1. European Synchrotron Radiation Facility, Grenoble, France; 2. Ames Laboratory, University of Iowa, Ames, IA*

3:00

BG-06. Investigation of magnetostriction in Fe-Ga-Zn and Co-Fe thin films. *D.D. Hunter*[1], R. Takahashi[1], R. Suchoski[1], E. Din[1], J.R. Hattrick-Simpers[2], L. Bendersky[2], S.E. Lofland[3], M. Wuttig[1] and I. Takeuchi[1] *1. Materials Science and Engineering, University of Maryland, College Park, MD; 2. National Institute of Standards and Technology, Gaithersburg, MD; 3. Department of Physics and Astronomy, Rowan University, Glassboro, NJ*

3:12

BG-07. Characterization of the magnetic properties of multilayer magnetostrictive Iron-Gallium nanowires. *J. Park*[1], C. Mudivarthi[1], P.R. Downey[1], A.B. Flatau[1], P.D. McGary[2], M. Reddy[2] and B.J. Stadler[2] *1. Aerospace Engineering, University of Maryland, College park, MD; 2. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

3:24

BG-08. Magnetostrictive Effect in Single Crystal $Fe_{1-x}Ga_x$ Thin Films. *A. McClure*[1], J. Cao[2], R. Wu[2], E. Arenholz[3] and Y. Idzerda[1] *1. Physics, Montana State University, Bozeman, MT; 2. Physics and Astronomy, UC Irvine, Irvine, CA; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

3:36

BG-09. Magnetic Characterization of Electrodeposited Magnetostrictive Galfenol/Cu Multilayered Nanowires. *K. Reddy*[1] and B.H. Stadler[2] *1. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 2. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

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3:48

BG-10. The Role of Misorientation and Coincidence Site Lattice (CSL) Boundaries in Goss-Textured Galfenol Rolled Sheet. *H. Chun*[1,2], S. Na[2,1] and A. Flatau[2,1] *1. Materials Science and Engineering, University of Maryland, College Park, MD; 2. Aerospace Engineering, University of maryland, College Park, MD*

4:00

BG-11. Origin of Magnetostriction in FeGa. *C. Mudivarthi*[1], M. Laver[3,1], J. Cullen[1], A.B. Flatau[2,1] and M. Wuttig[1] *1. Materials Science and Engineering, University of Maryland, College Park, MD; 2. Aerospace Engineering, Univerisity of Maryland, College Park, MD; 3. Paul Scherrer Institut, Villigen, Switzerland*

4:00

BG-12. Microstructure, texture and magnetostrictive properties of directionally solidified $Tb_{0.3}Dy_{0.7}Fe_{1.95-x}Ti_x$ [x = 0, 0.025, 0.05 and 0.075]. *J. Chelvane*[1], M. Palit[1], H. Basumatary[1], S. Banumathy[1], A.K. Singh[1], S. Pandian[1] and V. Chandrasekaran[1] *1. Defence Metallurgical Research Laboratory, Hyderabad, Andhra Pradesh, India*

4:12

BG-13. Magnetoelasticity of Fe-Si single crystals. *Q. Xing*[1], D. Wu[1] and T.A. Lograsso[1] *1. Division of Materials Sciences and Engineering, Ames Laboratory, Ames, IA*

4:24

BG-14. Magnetostrictive and elastic properties of $Fe_{100-x}Mo_x$ ($2 < x < 9$) single crystals. *M. Huang*[1], A.O. Mandru[2], G. Petculescub[2], A.E. Clark[3], M. Wun-Fogle[4] and T.A. Lograsso[1] *1. Institute for Physical Research and Technology, Iowa State University, Ames, IA; 2. University of Louisiana at Lafayette, Lafayette, LA; 3. Naval Surface Warfare Center, Carderock Division, W. Bethesda, MD; 4. Clark Associates, Adelphi, MD*

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TUESDAY AFTERNOON 2:00

WASHINGTON 5

Session BH
HARD MAGNETS: R1TM5 AND FePt
Jeff Shield, Chair

2:00

BH-01. Facile Synthesis of SmCo5 Nanomagnets from Core/Shell Co/Sm2O3 Nanoparticles. *(Invited)*Y. Hou[1], H. Zhang[1], C. Rong[2], P. Liu[2] and *S. Sun*[1] *1. Department of Chemistry, Brown University, Providence, RI; 2. Department of Physics, University of Texas at Arlington, Arlington, TX*

2:36

BH-02. Anisotropic $SmCo_5$ Nanoflakes by Surfactant-assisted Ball Milling. *B. Cui*[1], A. Gabay[1], W. Li[1], M. Marinescu[2], J. Liu[2] and G. Hadjipanayis[1] *1. Department of Physics and Astronomy, University of Delaware, Newark, DE; 2. Electron Energy Corporation, Landisville, PA*

2:48

BH-03. Nanostructured anisotropic particles and bulk magnets by magnetic-field-assisted processing. *C. Rong*[1], V. Nguyen[1] and J. Liu[1] *1. Department of Physics, University of Texas at Arlington, Arlington, TX*

3:00

BH-04. Preparation of $PrCo_5$ bulk magnets using nanopowders made by surfactant-assisted high energy milling. *Y. Shen*[1,3], M. Huang[2], A. Higgins[1], S. Liu[1,3] and C. Chen[1] *1. University of Dayton, Dayton, OH; 2. Air Force Research Laboratory/UES Inc., Dayton, OH; 3. FutureTek Corp., Dayton, OH*

3:12

BH-05. Directional annealing induced texture in rapidly solidified Sm-Co based alloys.P. Rogge[1], *T.V. Jayaraman*[1,2] and J.E. Shield[1,2] *1. Mechanical Engineering, University of Nebraska, Lincoln, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, Lincoln, NE*

3:24

BH-06. Effect of the M/Co substitution on magneto crystalline anisotropy and magnetization in RCo5-xMx compounds R (Sm; Ho) (M=Ga; Al; Ge).C.V. Colin[1,2], O. Isnard[1,2] and *M. Guillot*[1,3] *1. 1 CNRS - Institut Néel - Département MCMF, CNRS - Institut Néel, GRENOBLE, France; 2. CNRS - Institut Néel, GRENOBLE, France; 3. CNRS, Grenoble, France*

3:36

BH-07. Aligned FePt-based high-energy-product films. *Y. Liu*[1], D.J. Sellmyer[1] and R. Skomski[1] *1. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE*

3:48

BH-08. Microstructure evolution of FePt films by rapid thermal processing. *L. Wang*[1], Y. Wu[1] and C. Lai[1] *1. National Tsing Hua University, Hsinchu, Taiwan*

4:00

BH-09. High coercivity $D0_{22}$ MnGa nanoparticulate films. *C. Zha*[1,2], S. Mohseni[1], J. Nogués[1,3], S. Sani[1], J. Persson[1] and J. Åkerman[1,4] *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology (KTH), Kista, Stockholm, Sweden; 2. Department of Physics, Norwegian University of Science and Technology (NTNU), Trondheim, Norway; 3. ICREA and Centre d'Investigació en Nanociència i Nanotecnologia (ICN-CSIC), Campus Universitat Autònoma de Barcelona, Bellaterra, Spain; 4. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

4:12

BH-10. Permanent magnetism of dense-packed nanostructures. *R. Skomski*[1], Y. Liu[1], J.E. Shield[3], G.C. Hadjipanayis[2] and D.J. Sellmyer[1] *1. Department of Physics and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE 68508, NE; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, DE; 3. Department of Mechanical Engineering and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincon, NE 68508, NE*

4:24

BH-11. Effect of magnetostatic interaction on magnetization reversal process of Nd-Fe-B sintered magnets – computer simulation.H. Fukunaga[1], *K. Kirino*[1], T. Yanai[1] and M. Nakano[1] *1. Faculty of Engineering, Nagasaki University, Nagasaki, Japan*

4:36

BH-12. Local anisotropies from molecular dynamics calculations for NdFeB sintered magnets. *G. Hrkac*[1], C. Freeman[1], A. Goncharov[1], J. Dean[1], T. Schrefl[1,2], T.G. Woodcock[3] and O. Gutfleisch[3] *1. Department of Engineering Materials, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; 2. St. Pölten University of applied science, St. Pölten, Austria; 3. IFW Dresden, Institute for Metallic Materials, Dresden, Germany*

4:48

BH-13. Effect of increasing oxidation time of $SmCo_5$ layer on the exchange coupling behavior of $SmCo_5$/Fe bilayers. *D. Banerjee*[1], Y. Zhang[2], M.J. Kramer[2], J.P. Liu[3], L. Bendersky[4], D. Josell[4] and I. Takeuchi[5] *1. Department of Physics & Center for Nanophysics & Advanced Materials, University of Maryland, College Park, MD; 2. Ames Laboratory, Department of Materials Science & Engineering, Iowa State University, Ames, IA; 3. Department of Physics, University of Texas at Arlington, Arlington, TX; 4. National Institute of Standards & Technology, Gaithersburg, MD; 5. Department of Materials Science & Engineering & Center for Superconductivity Research, University of Maryland, College Park, MD*

TUESDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session BP

MULTIFERROICS: THIN FILMS AND COMPOSITES (POSTER SESSION)

Steve May, Chair

BP-01. Exchange bias and multiferrocity on Co-BiFeO3 composite films. *S. Kim*[1], K. Kim[2] and S. Shin[1] *1. Department of Physics, Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of; 2. Neutron Science Division, Korea Atomic Energy Research Institude, Daejeon, Korea, Republic of*

BP-02. Effect of Rapid Thermal Annealing on microstructural, magnetic, and microwave properties of FeGaB films. *L.R. Shah*[1], J. Lou[2], W. Wang[3], X. Fan[1], X. Kou[1], Y. Zhang[1], N.X. Sun[2] and J.Q. Xiao[1] *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Center for Microwave Magnetic Materials and Integrated Circuits (CM3IC), Department of Electrical and and Computer Engineering, Northeastern University, Boston, MA; 3. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD*

BP-03. Anomalous enhancement in magnetization in (001), (101) and (111) oriented textured BiFeO3 (BFO) - CoFe2O4(CFO) multilayer. *M.K. Singh*[1], S. Dussan[1] and R.S. Katiyar[1] *1. Physics, University of Puerto Rico, San Juan, Puerto Rico, San Juan*

BP-04. Phonon anomalies near the magnetic phase transitions in BiFeO3 thin films. *M.K. Singh*[1] and R.S. Katiyar[1] *1. Physics, University of Puerto Rico, San Juan, Puerto Rico, San Juan*

BP-05. Enhancement on Electricity and Change of Structure of Pb and La doped BiFeO3. *Y. Tai*[1], C. Pao[1], C. Chang[1], Y. Cheng[1], C. Peng[1], Y. Lin[1], H. Yeh[1], C. Wu[1] and H. Chou[1] *1. National Sun Yat-sen University, Kaohsiung, Taiwan*

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BP-06. Zero field biased converse magnetoelectric effect in Metglas® /PMN-PT heterostructure. *Y. Chen*[1,2], A.L. Geiler[1,2], T. Fitchorov[1,2], C. Vittoria[1,2] and V.G. Harris[1,2] *1. Center for Microwave Magnetic Materials and Integrated Circuits, Northeastern University, Boston, MA; 2. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA*

BP-07. Wide-bandwidth vortex electric current sensor based on ring-shaped magnetoelectric laminate of epoxy-bonded Terfenol-D short-fiber magnetostrictive composite and PZT piezoelectric ceramic. *C. Leung*[1], S. Or[1] and S. Ho[1] *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

BP-08. Magnetoelectric behavior in PbZrTiO-NiFeO composite. *J. Chen*[1], J. Li[2], T. Lin[1], G. Chern[2] and Y. Yao[3,2] *1. Chemical Engineering, National Chung Cheng University, Chiayi, Taiwan; 2. Physics, National Chung Cheng University, Chiayi, Taiwan; 3. Applied Science and Engineering, Fu Jen University, Taipei, Taiwan*

BP-09. Structural, Magnetic and Magnetoelectric properties of NiO.Fe_2O_3 and NiO.$Fe_{1.925}Sm_{0.075}O_3$ thin films. K. Kamala Bharathi[1], *S. Dwevedi*[1], S. Venkatesh[2] and G. Markandeyulu[1] *1. Physics, Indian Institute of Technology, CHENNAI, India; 2. Department of Condensed Matter Physics and Material Sciences, Tata Institute of Fundamental Research, Mumbai, India*

BP-10. Direct and converse magnetoelectric responses in Ni43Mn41Co5Sn11/piezoelectric laminate. S. Chen[1,2], Q. Ye[2], D. Wang[1], Y. Du[1], Z. Huang[2] and *S. Zhou*[3] *1. National Laboratory of Solid State Microstructures and Key Laboratory of Nanomaterials for Jiang Su Province,Department of Physics, Nanjing University, Nanjing, China; 2. Department of physics, Fujian Normal University, Fuzhou, China; 3. Institut für Ionenstrahlphysik und Materialforschung, Forschungszentrum Dresden-Rossendorf e.V., Dresden, Germany*

BP-11. Phase formation, phonon behavior, and magnetic properties of a new ferromagnetic La3BAlMnO9 (B = Co or Ni) triple perovskites. *M.P. Singh*[1], K.D. Truong[1], S. Jandl[1] and P. Fournier[1] *1. Département de physique, Université de Sherbrooke, Sherbrooke, QC, Canada*

BP-12. Permittivity modulation of SiO2/Co/SiO2 and Ta2O5/Co/Ta2O5 films. *Y. Ding*[1,2], Y. Yao[1], K. Wu[3], J. Hsu[3], D. Hung[4] and D. Wei[5] *1. Graduate Institute of Applied Science and Engineering, Fu Jen Catholic University, Taipei, Taiwan; 2. The Teaching Center of Natural Sciences, Minghsin University of Science and Technology, Hsinchu, Taiwan; 3. Department of Physics, Fu Jen Catholic University, Taipei, Taiwan; 4. Department of Information and Tele. Engin., Ming Chuan University, Taipei, Taiwan; 5. Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan*

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TUESDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session BQ
MULTIFERROICS: BULK AND NANOMATERIALS (POSTER SESSION)
R. Ramesh, Chair

BQ-01. Local Structure Distortion Effect on La doped La0.2Ho0.8Mn2O5. *H. Chou*[1], C. Yu[1], C. Wu[1] and J. Lee[2] *1. Physics, National Sun Yat-sen University, Kaohsiung, Taiwan; 2. National Synchrotron Radiation Research Center, HsinChu, Taiwan*

BQ-02. A novel multiferroic system: Rare earth chromates. *Z. Cheng*[1], X. Wang[1], S. Dou[1] and H. Kimura[2] *1. University of Wollongong, Institute for Superconducting and Electronic Materials, Fairy Meadow, NSW, Australia; 2. National Institute for Materials Science, Sengen 1-2-1, Tsukuba, Ibaraki, Japan*

BQ-03. Structural and magnetic studies on bulk $LaCrO_3$ compound. T. Brajesh[1,2], D. Ambesh[3], N. Ratna[3], L. Gavin[3] and *M. Rao*[1,2] *1. Departement of Physics, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India; 2. Nano Functional Materials Technology Centre and Materials Science Researc h Centre, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India; 3. Department of Physics and Astronomy, Wayne State University, Detroit, MI*

BQ-04. Withdrawn

BQ-05. Magnetoelectric behavior of carbonyl iron mixed Mn-coated ferrite nanoparticles. *F.B. Abdul Ahad*[1,2], S. Lee[1], D. Hung[1,3], Y. Yao[4], R. Yang[5], C. Lin[6] and C. Tsay[6] *1. Institute of Physics and Nano Science and Technology Program, Taiwan International Graduate Program, Academia Sinica, Taipei 115, Taiwan; 2. Department of Engineering and System Science, National Tsing Hua University, Hsinchu 300, Taiwan; 3. Department of Information and Telecommunication Engineering, Ming Chuan University, Taipei 111, Taiwan; 4. Institute of Applied Science and Engineering, Fu Jen University, Taipei 242, Taiwan; 5. Department of Aerospace and Systems Engineering, Feng Chia University, Taichung 407, Taiwan; 6. Department of Materials Science and Engineering, Feng Chia University, Taichung 407, Taiwan*

BQ-06. Long range ferromagnetic ordering in nano crystallite (BiFeO3)1-x (PbTiO3)x multiferroic systems at room temperature. *K. Singh*[1], A. Gautam[1], K. Sen[1], R. Kotnala[2] and M. Singh[1] *1. Deptt. Of Physics, Himachal Pradesh University, Shimla, Himachal Pradesh, India; 2. N.P.L., New Delhi, India*

BQ-07. Enhancement of both Magnetic and Ferroelectric Properties in La doped multiferroic $DyFeO_3$ *Y. Du*[1], Z.X. Cheng[1], S.X. Dou[1] and X.L. Wang[1] *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia*

BQ-08. Electronic excitations and band structure of $BiFeO_3$ ceramics. *R. Balakrishnan*[1], A. Dixit[2], R. Naik[2], G. Lawes[2] and M. Rao[1] *1. Nano Functional Materials Technology Centre, Material Science Research Centre and Department of Physics, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India; 2. Department of Physics and Astronomy, Wayne State University, Detroit, MI*

BQ-09. Correlation of magnetic ordering and electric polarization in multiferroic $LuFe_xMn_{1-x}O_3$ ($0 \le x \le 0.2$). J. Lin[1], Y. Chen[1,2] and *T. Han*[3] *1. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 2. Department of Mechanical Engineering, National Taiwan University, Taipei, Taiwan; 3. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

BQ-10. Effect of B2O3-Bi2O3-SiO2-ZnO glass on the dielectric and magnetic properties of ferroelectric/ferromagnetic composite for low temperature cofired ceramic technology. *W. Ling*[1], H. Zhang[1], Y. Li[1] and D. Chen[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

BQ-11. A large enhancement of magnetoelectric effect in multiferroic BiFe0.5Cr0.5O3-NiFe2O4 composites. S. Babu[1], *J. Hsu*[1], Y. Chen[2] and J. Lin[2] *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Center for Condensed Matter Science, National Taiwan University, Tapei, Taiwan*

BQ-12. LEED IV analysis of surface structure of Y-doped HoMnO3. M.D. Ulrich[1,2], J.T. Sadowski[3], *R. Vasić*[1], J.E. Rowe[1], S. Cheong[4], Y. Choi[4], H.D. Zhou[5], C.R. Wiebe[5], T. Chien[6], V. Nascimento[7] and W. Plummer[7] *1. Physics Department, North Carolina State University, Raleigh, NC; 2. Condensed Matter Physics, Army Research Office, Research Triangle Park, NC; 3. Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY; 4. Department of Physics and Astronomy Rutgers,, The State University of New Jersey, Piscataway, NJ; 5. Condensed Matter Group/ Experimental, Florida State University NHMFL, Tallahassee, FL; 6. Physics Department, Argonne National Laboratory, Argonne, IL; 7. Department of Physics & Astronomy, Louisiana State University, Baton Rouge, LA*

BQ-13. Modifications in magnetic properties of BiMn2O5 multiferroic using swift heavy ion irradiation. *D.K. Shukla*[2,1], R. Kumar[3], S. Mollah[2], R. Choudhary[4], P. Thakur[5], S. Sharma[6], N. Brookes[5] and M. Knobel[6] *1. Resonant x-ray scattering beam line, Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; 2. Department of Physics, Aligarh Muslim University, Aligarh, 202002, India; 3. Materials science division, Inter University Accelerator Centre, Aruna Asaf Ali Marg, New Delhi, 110067, India; 4. UGC-DAE Consortium for Scientific Research, Indore, 452001, India; 5. European Synchrotron Radiation Facility, BP220,, Grenoble Cedex, 38043, France; 6. Instituto de Fisica Gleb Wataghin, Universidade Estadual de Campinas (UNICAMP), Campinas, SP, 13.083-970, Brazil*

TUESDAY AFTERNOON 1:00

EXHIBIT HALL C

Session BR
ULTRATHIN FILMS AND SURFACE EFFECTS (POSTER SESSION)
Casey Miller, Chair

BR-01. Oscillatory magnetic anisotropy originating from quantum well states in fe films. ***(Invited)*** *J. Li*[1,2], M. Przybylski[1,3], F. Yildiz[1], X. Ma[1] and Y. Wu[2] *1. Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany; 2. Physics department, Department of Physics, Shanghai, China; 3. Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Kraków, Poland*

BR-02. Effects of Substrate and Seed Layer on the Perpendicular Magnetic Anisotropy of Pd/CoFeB Multilayers. *J. Jung*[1], B. Jung[1], S. Lim[1] and S. Lee[1] *1. Department of Materials Science and Enginerring, Korea University, Seoul, Korea, Republic of*

BR-03. Uniaxial anisotropy of domain wall motion in ultrathin Co films on vicinal Si substrates. *A. Stupakiewicz*[1], E. Vedmedenko[2], T. Maroutian[3], P. Beauvillain[3], A. Maziewski[1] and R. Wiesendanger[2] *1. Laboratory of Magnetism, University of Bialystok, Bialystok, Poland; 2. Institut for Applied Physics, University of Hamburg, Hamburg, Germany; 3. Institut d'Electronique Fondamentale, Universite Paris-Sud, Orsay, France*

BR-04. Interface magnetism of Au/Co/α-Cr_2O_3(0001) epitaxial film with perpendicular magnetic anisotropy and perpendicular exchange bias. *Y. Shiratsuchi*[1], S. Kawahara[1], H. Noutomi[1] and R. Nakatani[1] *1. Osaka University, Osaka, Japan*

BR-05. The effect of an Sb surfactant on the magnetic and structural properties of Co/InP. *Y. Park*[1], J. Jeong[2], J. Jeong[3], K. Lee[4], J. Lee[4], C. Hwang[1] and S. Shin[5] *1. Center for Advanced Instrumentation, Division of Industrial Metrology, Korea Research Institute of Standards and Science, Daejeon, Korea, Republic of; 2. School of Nanoscience and Engineering, Chungnam National University, Daejeon, Korea, Republic of; 3. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan; 4. Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of; 5. Department of Physics and Center for Nanospinics of Spintronic Materials, Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of*

BR-06. Domain patterns and magnetization reversal behaviors in oxide/Co/Pt films. *J. Lee*[1,2], K. Lee[1], C. Cho[1], K. Moon[1], K. Shin[2] and S. Choe[1] *1. physics, Seoul National University, Seoul, Korea, Republic of; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, Republic of*

BR-07. Correlation between magnetic anisotropy and coercivity on Co/Fe/Co double-wedge system. *Y. Ding*[1], J. Lee[1] and E. Vescovo[1] *1. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY*

BR-08. Effects of fcc noble metal underlayer and substrate temperature on the formation of Ni(111) epitaxial thin film. *T. Nishiyama*[1], M. Ohtake[1], F. Kirino[2] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan*

BR-09. A Study of Ni and $Ni_{78}Fe_{22}$ Thin Films on Polyethylene Naphthalate Organic Substrates for Spin Quantum Cross Devices. *H. Kaiju*[1], N. Basheer[1], K. Kondo[1] and A. Ishibashi[1] *1. Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan*

BR-10. Electrical and magnetic properties of $Sr(Ru,Cr)O_3$ thin films. *E. Ramana*[1], H. Park[1,2] and C. Jung[1] *1. Department of Physics, Hankuk University of Foreign Studies, Yongin, Kyugki-do, Korea, Republic of; 2. School of Materials Science and Engineering, Seoul National University, Seoul, Kyugki-do, Korea, Republic of*

BR-11. Depression of coercive force by oxygen exposure for ultrathin Fe/Pt(111) films. *J. Tsay*[1], H. Huei-Yin[2] and Y. Lee[1] *1. Department of Physics, National Taiwan Normal University, Taipei, Taiwan; 2. Department of Science Education, National Taipei University of Education, Taipei, Taiwan*

BR-12. The effect of the NiO spin orientation on the exchange coupling in Fe/NiO(001) system. *L. Ma*[1], G. Chen[1], J. Li[1], J. Zhu[1] and Y. Wu[1] *1. Physics department, Fudan university, Shanghai, China*

TUESDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session BS
NEW MAGNETIC MATERIALS I (POSTER SESSION)

Masaki Nakano, Co-Chair
Yasushi Takemura, Co-Chair

BS-01. Correlation between saturation magnetization, bandgap and lattice volume of transition metal (M = Cr, Mn, Fe, Co or Ni) doped $Zn_{1-x}M_xO$ nanoparticles for x = 0.02 and 0.05. *J. Anghel*[1], A. Thurber[1], D. Tenne[1], C. Hanna[1] and A. Punnoose[1] *1. Physics, Boise State University, Boise, ID*

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BS-02. Phase transformation of FeO/Fe3O4 core/shell nanocubes and facile synthesis of Fe3O4 nanocubes. *H.T. Hai*[1], H. Kura[1], T. Ogawa[1] and M. Takahashi[1] *1. Department of Electronic Engineering, Tohoku University, Sendai, Japan*

BS-03. Synthesis and properties of the double layer perovskite $\mathbf{CeBaFe_2O_{5+y}}$R.L. de Almeida[1,3], *O.F. de Lima*[1], J.A. Coaquira[2], S. Quezado[2,3] and S.K. Malik[3] *1. Instituto de Física, Universidade Estadual de Campinas - UNICAMP, Campinas, SP, Brazil; 2. Instituto de Física, Universidade de Brasília - UnB, Brasília, DF, Brazil; 3. Int. Center for Cond. Matter Phys. - ICCMP, Universidade de Brasília - UnB, Brasília, DF, Brazil*

BS-04. Magneto-transport and Structural Investigations of the Orthorhombic Perovskite $\mathbf{Pr_2MnFeO_6}$C. Ganeshraj[1], D. Divyaa[2] and *N. Santhosh P.*[1] *1. Physics, Indian Institute of Technology Madras, Chennai, Tamilnadu, India; 2. Department of Physics, Anna University, Chennai, Tamilnadu, India*

BS-05. Control of magnetic state using energetic ion irradiation for FeRh thin films deposited on MgO single crystal substrates. *N. Fujita*[1], S. Kosugi[1], T. Matui[1], Y. Saito[2], Y. Okamoto[3], S. Seki[4], Y. Kaneta[5], T. Batchuluun[6], K. Kume[6], T. Kamiya[2], N. Ishikawa[3] and A. Iwase[1] *1. Department of Materials Science, Osaka Prefecture University, Sakai, Osaka, Japan; 2. Japan Atomic Energy Agency(JAEA-Takasaki), Takasaki, Gumma, Japan; 3. Japan Atomic Energy Agency(JAEA-Tokai), Tokai, Ibaraki, Japan; 4. Department of Applied Chemistry, Osaka University, Suita, Osaka, Japan; 5. Department of Systems Innovation, The University of Tokyo, Bunkyo-ku, Tokyo, Japan; 6. The Wakasa Wan Energy Research Center, Tsuruga, Fukui, Japan*

BS-06. Magnetic and structural characterization of thiol-capped ferromagnetic Ag nanoparticle.E. Goikolea[1], J.S. Garitaonandia[1], M. Insausti[1], I. Gil de Muro[1], M. Suzuki[2], T. Uruga[2], H. Tanida[2], *K. Suzuki*[3], D. Ortega[4], F. Plazaola[1] and T. Rojo[1] *1. Fisika Aplikatua II, University of the Basque Country, Bilbao, Spain; 2. SPring-8 / Japan Synchrotron Radiation Research Institute, Kouto, Hyogo, Japan; 3. Materials Engineering, Monash University, Melbourne, VIC, Australia; 4. The Davy-Faraday Research Laboratory, The Royal Institution of Great Britain, London, United Kingdom*

BS-07. Magnetodielectric Effect in Tri-layered PVDF/CoFeHfN Composite Materials. Prediction and Measurement for Tunable Microwave Applications. *F. Rasoanoavy*[1,2], V. Laur[1,2], S. De Blasi[1,2], J. Lezaca[1,2], P. Queffelec[1,2], K. Garello[3] and B. Viala[3] *1. Universite Europeenne de Bretagne, Bretagne, France; 2. University de Brest, Brest, France; 3. Spintec-cea/cnrs ura, Grenoble, France*

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BS-08. Magnetic transition in the rare earth intermetallic compound Ce_5Ge_4: Heat capacity and Neutron Diffraction Studies.R. Nirmala[2], A.V. Morozkin[3], *J. Lamsal*[4], W.B. Yelon[5] and S.K. Malik[1] *1. International Center for Condensed Matter Physics (ICCMP), Brasilia, Brazil; 2. Department of Physics, Indian Institute of Technology Madras, Chennai 600 036, India; 3. Department of Chemistry, Moscow Lomonosov State University, Moscow, Romania; 4. Department of Physics and Astronomy, University of Missouri-Columbia, Columbia, MO; 5. Materials Research Center and Department of Chemistry, Missouri University of Science and Technology, Rolla, MO*

BS-09. Control the direction of magnetic anisotropies in core/shell nanostructures. *T.V. Luu*[2,1] and T.H. Johansen[2] *1. engineering material, university, Gung Dong, science, Korea, Republic of; 2. Physics Departement, Oslo University, Oslo, Capital, Norway*

BS-10. Epitaxial Growth and Magnetic Properties of Mn Film on GaSb(100). *W. Feng*[1], D. Dung[1], J. Choi[2], Y. Shin[1] and S. Cho[1] *1. Department of Physics, University of Ulsan, Ulsan, Korea, Republic of; 2. IT Convergence Technology Research Laboratory, Electronics and Telecommunications Research Institute, Daejeon, Korea, Republic of*

BS-11. Thickness dependence of magnetic and transport properties in CoFe/organic discontinuous multilayers. *W. Wang*[1], Y. Wang[1], Y. Wang[2], J. Zou[2] and X. Han[1] *1. Beijing National Laboratory of Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, Beijing, China; 2. Materials Engineering and Center for Microscopy and Microanalysis, University of Queensland, St. Lucia 4072, QLD, Australia*

BS-12. Origin of Unusual Intermolecular Magnetic Interaction Observed in All-Organic Nitroxide Radical Liquid Crystals. *Y. Uchida*[1,2], N. Ikuma[1], R. Tamura[1], K. Suzuki[1], S. Shimono[1], Y. Noda[1] and J. Yamauchi[1] *1. Graduate School of Human and Environmental Studies, Kyoto University, Kyoto, Japan; 2. School of Engineering and Applied Sciences, Harvard University, Cambridge, MA*

BS-13. Influence of isoelectronic substitutions on magnetic ordering in rare earth-cobalt phosphides. *C.M. Thompson*[1], K. Kovnir[1] and M. Shatruk[1] *1. Department of Chemistry and Biochemistry, Florida State University, Tallahassee, FL*

BS-14. Increasing ferromagnetic ordering temperature of $LaCo_2P_2$ by doping into the La sublattice. *K. Kovnir*[1], C.M. Thompson[1], A. Arico[1] and M. Shatruk[1] *1. Department of Chemistry and Biochemistry, Florida State University, Tallahassee, FL*

BS-15. Perpendicularizing the Magnetic Anisotropy of Heusler Alloy Co2FeAl with the Mixture of Terbium.X. Li[1], X. Xu[1], D. Zhang[1], *Y. Jiang*[1] and M. Jalil[2] *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China; 2. Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore*

TUESDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session BT
MAGNETO-ELASTIC MATERIALS II (POSTER SESSION)
Kwang-Ho Shin, Chair

BT-01. Magnetic anisotropy in patterned $REFe_2$ magnetostrictive films (RE=Rare Earth). ***(Invited)*** N. Gonzalez[1], *K. Dumesnil*[1], C. Dufour[1], F. Montaigne[1], D. Pierre[1] and G. Lengaigne[1] *1. P2M, Institut Jean Lamomur, Vandoeuvre les Nancy, France*

BT-02. Magnetostriction and Magnetization of Tension Annealed Rods of $Fe_{82}Ga_{18}$ *N.J. Jones*[1], J.B. Restorff[2], M. Wun-Fogle[2] and A.E. Clark[3] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Naval Surface Warfare Center, West Bethesda, MD; 3. Clark Associates, Adelphi, MD*

BT-03. Temperature Dependence of the Magnetostriction of Stress Annealed Galfenol Measured Under Tension. *J. Restorff*[1] and M. Wun-Fogle[1] *1. Naval Surface Warfare Center, West Bethesda, MD*

BT-04. Magnetic force microscopy of magnetically annealed Tb0.36Dy0.64(Fe0.85Co0.15)2 polycrystals. *T. Ma*[1], M. Yan[1] and C. Zhang[1] *1. Department of Materials Science and Engineering, State Key Laboratory for Silicon Materials, Zhejiang University, Hangzhou, China*

BT-05. Magnetic anisotropy of non-modulated Ni-Mn-Ga martensite revisited. *O. Heczko*[1], L. Straka[2], V. Novak[1] and S. Fähler[3] *1. Institute of Physics of ASCR, Praha, Czech Republic; 2. AdaptaMat Ltd, Helsinki, Finland; 3. IFW Dresden, Dresden, Germany*

BT-06. DC- and AC-magnetic field-induced strain effects in ferromagnetic shape memory composites of Ni-Mn-Ga single crystal and polyurethane polymer. *M. Zeng*[1,2], S. Or[1] and H. Chan[2] *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China; 2. Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong, China*

BT-07. Epitaxial growth and structural properties in magnetic shape memory films of non-stoichiometric Ni2MnGa compounds. *Y. Luo*[1], P. Leicht[2], M. Fonin[2], U. Rüdiger[2] and K. Samwer[1] *1. I. Physikalisches Institut, Universität Göttingen, Göttingen, Germany; 2. Fachbereich Physik, Universität Konstanz, Konstanz, Germany*

BT-08. Kinetic arrest of direct and reverse martensitic transformation and exchange bias effect in $Mn_{49.5}Ni_{40.4}In_{10.1}$ melt spun ribbons. *J.L. Sanchez Llamazares*[1], B. Hernando[1], C. García[2] and C.A. Ross[2] *1. Departamento de Fisica, Universidad de Oviedo, Oviedo, Asturias, Spain; 2. Dept. Material Science and Engineering, Massachusetts Institute of Technology (MIT), Cambridge, MA*

BT-09. Effect of Temperature Variation on the Magnetoelastic Properties of $CoAl_xFe_{2-x}O_4$ *I. Nlebedim*[1], N. Ranvah[1], Y. Melikhov[1], P.I. Williams[1], J.E. Snyder[1], A.J. Moses[1] and D.C. Jiles[1] *1. Wolfson Centre for Magnetics, School of Engineering, Cardiff University, Cardiff, United Kingdom*

BT-10. Flexomagnetic effect in Mn-based antiperovskites. P. Lukashev[1] and *R. Sabirianov*[1] *1. Physics, University of Nebraska at Omaha, Omaha, NE*

BT-11. First principles investigation of large magnetostriction in the cubic $L1_2$-Fe_3Pt. *O. Dorj*[1] and S. Hong[1] *1. Department of Physics, University of Ulsan, Ulsan, Korea, Republic of*

BT-12. Experimental tests of a magnetostrictive energy harvesting device and its modeling. A. Adly[1], *D. Davino*[2], A. Giustiniani[3] and C. Visone[2] *1. Elect. Power and Machines Dept, Cairo University, Giza, Egypt; 2. Engineering Dept, University of Sannio, Benevento, Italy; 3. DIIIE, University of Salerno, Salerno, Italy*

TUESDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session BU

MAGNETO-OPTIC, MICROWAVE, AND MOLECULAR MAGNET MATERIALS (POSTER SESSION)

Shin Yabukami, Co-Chair
Takayuki Ishibashi, Co-Chair

BU-01. Faraday Rotation of Magnetophotonic Crystals with Dual-Cavity Structure. *T. Goto*[1], K. Tobinaga[1], A.V. Baryshev[1] and M. Inoue[1] *1. Toyohashi University of Technology, Toyohashi, Aichi, Japan*

BU-02. Magnetophotonic crystals: new approaches to greatly modify magneto-optical spectra. *S. Baek*[1], T. Goto[1], A. Merzlikin[2], K. Yayoi[3], A. Baryshev[1] and M. Inoue[1] *1. Toyohashi University of Technology, Toyohashi, Japan; 2. Institute for Theoretical and Applied Electromagnetics, Moscow, Russian Federation; 3. Ibaraki National College of Technology, Ibaraki, Japan*

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BU-03. Magnetic property of polycrystalline magnetic garnet for voltage driven type magneto-optic spatial light phase modulator. *S. Mito*[1], J. Kim[1], K. Chung[1], K. Yamada[1], T. Kato[1], H. Takagi[2] and M. Inoue[1] *1. Toyohashi University of Technology, Toyohashi, Aichi, Japan; 2. Toyota National College of Technology, Toyota, Aichi, Japan*

BU-04. Fabrication and Characteristics of one-dimensional Magneto photonic crystals for Magneto optic spatial light phase modulators. *K. Chung*[1], T. Kato[1], S. Mito[1], H. Takagi[2] and M. Inoue[1] *1. Electrical and Electronic Engineering, Toyohashi University of Technology, Toyohashi, Japan; 2. Electrical Engineering, Toyota National College of Technology, Toyota, Japan*

BU-05. Fabrication of two-dimensional magneto-optical waveguide integrated into anodized porous alumina. *K. Yayoi*[1], K. Tobinaga[2], Y. Kaneko[2], J. Kim[2], A. Baryshev[2] and M. Inoue[2] *1. Ibaraki National College of Technology, Hitachinaka, Japan; 2. Toyohashi University of Technology, Toyohashi, Japan*

BU-06. MO Permittivity Tensor in Sputtered $CuFe_2O_4$ Thin Films at Photon Energies Between 2-5 eV. *M. Veis*[1], S. Visnovsky[1], P.D. Kulkarni[2], M. Desai[2], N. Venkataramani[2], S. Prasad[2], J. Mistrik[3,4], T. Yamaguchi[3] and R. Krishnan[5] *1. Institute of Physics, Charles University of Prague, Prague, Czech Republic; 2. Indian Institute of Technology, Bombay, Mumbai, India; 3. Research Institute of Electronics, Shizuoka University, Hamamatsu, Japan; 4. Department of Physics, University of Pardubice, Pardubice, Czech Republic; 5. Laboratoire de Magnetisme et d'Optique de Versailles, Versailles, France*

BU-07. Magneto-optical properties and magnetic anisotropy of Sr(Ti1-xCox)O3 and Sr(Ti1-xFex)O3 films. *L. Bi*[1], H. Kim[1], G.F. Dionne[1] and C.A. Ross[1] *1. DMSE, MIT, Cambridge, MA*

BU-08. Size dependent magnetic and magneto-optical studies of $CoFe_2O_4$ nanoparticles.K. Muvvala[1,2] and *M. Rao*[1,2] *1. Departement of Physics, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India; 2. Nano Functional Materials Technology Center, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India*

BU-09. Probing magneto-optical properties of non-magnetic metals in Kretschmann configuration. *S. Saito*[1], M. Suzuki[1], G. Du[1] and M. Takahashi[1] *1. Electronic engineering, Tohoku university, Sendai, Miyagi, Japan*

BU-10. Effect of shape of Fe particles on their microwave permeability dispersion behaviors. *M. Han*[1], L. Deng[1] and W. Tang[2] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichan Province, China; 2. Ames Laboratory of US Department of Energy, Iowa State University, Ames, IA*

BU-11. Permittivity and permeability of Fe(Tb) nanoparticles and their micro-wave absorption in the 2-18 GHz range.Z. Han[1], D. Li[1], M. Tong[1], *X. Wei*[2], R. Skomski[2], W. Liu[1,2] and Z. Zhang[1] *1. Shenyang National Laboratory for Materials Science, Institute of Metal Research and International Center for Materials Physics, Chinese Academy of Sciences, Shenyang, China; 2. Department of Physics and Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE*

BU-12. The strontium-doped lanthanum manganite with perovskite structure as left-handed microwave material.M. Khodzitsky[2], T. Kalmykova[2], S. Tarapov[2], D. Belozorov[3], *A. Pogorily*[1], A. Tovstolytkin[1], A. Belous[4] and S. Solopan[4] *1. Physics of Films, Institute of Magnetism NASU, Kiev, Ukraine; 2. Institute of Radiophysics and Electronics NASU, Kharkov, Ukraine; 3. Institute for Theoretical Physics NSC "Kharkov Institute of Physics& Technology" NASU, Kharkov, Ukraine; 4. Institute of General and Inorganic Chemistry NASU, Kiev, Ukraine*

BU-13. Electronic structure of a molecular magnet from salicylate based copper complex.N. Hoang[1] and *M. Phan*[2] *1. Center for Materials Science, Vietnam National University, Hanoi, Vietnam, Viet Nam; 2. Functional Materials Laboratory, Department of Physics, University of South Florida, Tampa, FL*

BU-14. Model for elastic relaxation phenomena in 2D hexagonal molecular magnets.C. Enachescu[1], L. Stoleriu[1] and *A. Stancu*[1] *1. Department of Physics, Al. I. Cuza University Iasi, Iasi, Romania*

BU-15. Withdrawn

BU-16. Excited metastables electronic spin states in spin crossover compounds studies by atom-phonon coupling model.A. Gindulescu[1,2], A. Rotaru[1,3], *J. LINARES*[1], M. Dimian[2] and J. Nasser[4] *1. GEMAC, Université de Versailles, Versailles, France; 2. Department of Electrical Engineering and Computer Science, "Stefan cel Mare" University, Suceava, Romania; 3. Department of Physics, "Alexandru Ioan Cuza" University, Iasi, Romania; 4. LISV, University of Versailles, Versailles, France*

BU-17. Mn_{12} single molecule magnets on surfaces: recent advances and future perspectives. *M. Fonin*[1], S. Voss[1], M. Burgert[2], M. Sicot[1], Y.S. Dedkov[3], U. Groth[2] and U. Rüdiger[3] *1. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 2. Fachbereich Chemie, Universität Konstanz, Konstanz, Germany; 3. Fritz-Haber Institut der Max-Planck Gesellschaft, Berlin, Germany*

TUESDAY AFTERNOON 1:00 **EXHIBIT HALL C**

Session BV
FERRITE MAGNETS I (POSTER SESSION)
John Snyder, Chair

BV-01. Microwave Absorbing Properties of La0.7Sr0.3MnO3 Composites with Negative Magnetic Susceptibility. *R. Yang*[1], C. Tsay[2], S. Hsu[1], Y. Huang[2] and C. Lin[2] *1. Department of Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 2. Department of Materials Science and Engineering, Feng Chia University, Taichung, Taiwan*

BV-02. Investigation on Electromagnetic and Microwave Absorbing Properties of La0.7Sr0.3MnO3-δ/Carbon Nanotubes Composites. *C. Tsay*[1], R. Yang[2], D. Hung[3], Y. Huang[1], Y. Yao[4] and C. Lin[1] *1. Department of Materials Science and Engineering, Feng Chia University, Taichung, Taiwan; 2. Department of Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 3. Department of Information and Tele. Engineering, Ming Chuan University, Taipei, Taiwan; 4. Graduate Institute of Applied Science and Engineering, Fu Jen Catholic University, Taipei, Taiwan*

BV-03. Magnetic properties of RFeO3 nanocrystalline powders.H. Shen[1,2], A. Wu[2], *J. Xu*[1,2], J. Xu[2], Y. Wang[3], J. Ge[3], S. Yuan[3] and S. Cao[3] *1. Shanghai Institute of Technology, Shanghai, China; 2. Shanghai Institute of Ceramics, CAS, Shanghai, China; 3. Shanghai University, Shanghai, China*

BV-04. Mechanochemical synthesis of nanocrystalline $YFeO_3$ and its magnetic properties.V. Malagareddy[1], *S.R. Mishra*[1], R. Gupta[2], K. Ghosh[2], E. Gunapala[3] and G. Marasinghe[3] *1. Physics, The University of Memphis, Memphis, TN; 2. Physics, Astronomy, and Materials Science, Missouri State University, Springfield, MO; 3. Physics, University of North Dakota, Grand Rapids, ND*

BV-05. Mono-poly domain magnetic phase transitions in $ErFeO_3$ below and above the compensation point. *L.T. Tsymbal*[1], Y.B. Bazaliy[2,3], S.V. Vasiliev[1] and G.N. Kakazei[3,4] *1. O. Galkin Donetsk Physics and Technology Institute, National Academy of Science, Donetsk, Ukraine; 2. Department of Physics and Astronomy, University of South Carolina, Columbia, SC; 3. Institute of Magnetism, National Academy of Science, Kyiv, Ukraine; 4. IFIMUP-IN/Departamento de Fisica, Universidade do Porto, Porto, Portugal*

BV-06. Magnetic properties of the ferrimagnetic $FeCr_{2-x}M_xS_4$ (M = In, Al). *C. Kim*[1], S. Kim[1], B. Son[2] and C. Kim[1] *1. Physics, Kookmin University, Seoul, Korea, Republic of; 2. Korea Atomic Energy Research Institute, Daejeon 305-353, Korea, Republic of*

BV-07. Temperature dependent valence state and magnetic property of lithium delithiated $Li_{0.59}FePO_4$ *I. Lee*[1], I. Shim[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Korea, Republic of*

BV-08. Mini-emulsion fabricated Fe3O4/PMMA composite particles and their magnetorheological characteristics. B. Park[1], K. Song[1], B. Park[1] and *H. Choi*[1] *1. Department of Polymer Science and Engineering, Inha University, Incheon, Korea, Republic of*

BV-09. Novel One-Pot Preparation of Maghemite and Silver Nanoparticles. *M.A. Morales*[1], J.M. Soares[2], D.S. Chaves[2], O.L. Conceição[2], A.L. Gurgel[2], M.M. Xavier Jr[1] and E.M. Baggio-Saitovitch[3] *1. DCEN, UFERSA, Mossoro, Brazil; 2. Physic Department, UERN, Mossoro, RN, Brazil; 3. CBPF, Rio de Janeiro, RJ, Brazil*

BV-10. Spin-Spray Deposited Ferrite/Non-Magnetic Multilayer Films with Reduced Ferromagnetic Resonance Linewidth. *O.I. Obi*[1], M. Liu[1], J. Lou[1], S. Stoute[1], G. Yang[1] and N.X. Sun[1] *1. ECE, Northeastern University, Boston, MA*

BV-11. The Magnetic and Electrical Properties of $Fe_{3-x}Cr_xO_4$ Films Grown on MgO(001) by Molecular Beam Epitaxy. *D. Lee*[1], C. Hwang[2] and G. Chern[2] *1. Electrical Engineering Department, Da-Yeh University, Chang-Hua, Taiwan; 2. Physics Department and SPIN Research Center, National Chung Cheng, Chia-Yi, Taiwan*

BV-12. Rigid and flexible FeZrN magnetic thin films for microwave absorber. *Z. Liu*[1,2], Y. Liu[2,3], D. Zeng[1], R. Ramanujan[3] and C. Ong[2] *1. School of Materials Science and Engineering, South China University of Technology, Guangzhou, Guangdong, China; 2. Department of Physics, National University of Singapore, Singapore, Singapore; 3. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore*

BV-13. Withdrawn

BV-14. Environmentally-benign large-scale fabrication of iron oxide nanoparticles and their effects on the polyvinyl alcohol (PVA) nanocomposite thin films. *Z. Guo*[1], D. Zhang[1], Q. Wang[1], A.B. Karki[2] and D.P. Young[2] *1. Dan F. Smith Department of Chemical Engineering, Lamar University, Beaumont, TX; 2. Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA*

BV-15. Low-temperature Magnetic Properties of spinel oxide FeV2O4. *S. Nishihara*[1], W. Doi[1], H. Ishibashi[1], Y. Hosokoshi[1] and S. Mori[2] *1. Department of Physical Science, Graduate School of Science, Osaka Prefecture University, Sakai, Osaka, Japan; 2. Deparment of Materials Science, Graduate School of Engineering, Osaka Prefecture University, Sakai, Osaka, Japan*

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BV-16. Relaxation behaviour of the bismuth-substituted Yttrium Iron Garnet in the microwave range. *D. Hung*[1,3], Y. Fu[2], S. Lee[3], Y. Yao[3,4] and F. Ahad[3] *1. Information and Telecommunication Engineering, Ming Chuan University, Taipei, Taiwan; 2. Department of Materials Science and Engineering, National Dong Hwa University, Hulien, Taiwan; 3. Institute of Physics, Academia Sinica, Taipei, Taiwan; 4. Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan*

TUESDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session BW

FERRITE MAGNETS II (POSTER SESSION)

Virgil Provenzano, Chair

BW-01. Influence of MgTiO3 on the magnetic and dielectric properties of Ba3Co2Fe24O41 hexaferrite. *C. Mu*[1], Y. Liu[1], H. Zhang[1] and L. Jia[1] *1. University of Electronic Science and Technology of China, Chengdu, China*

BW-02. Microwave properties of Lanthanum (La)-doped Y-Type hexaferrite single crystal. *J. Jalli*[1], Y. Hong[1], S. Bae[1], J. Lee[1], G.S. Abo[1], J. Sur[2], S. Lee[3], I. Nam[4], H. Lee[5] and T. Mewes[5] *1. Department of Electrical and Computer Engineering, MINT Center, University of Alabama, Tuscaloosa, AL; 2. Division of Physics, Wonkwang University, Iksan, Joen-book, Korea, Republic of; 3. Department of Physics, Sogang University, Seoul, Korea, Republic of; 4. Department of Advance Materials Engineering,, Kangwon National University, Chooncheon, Kangwon-do, Korea, Republic of; 5. MINT Center, Department of Physics and Astronomy, University of Alabama, Tuscaloosa, AL*

BW-03. Study on magnetic properties of low temperature sintering M-Barium hexaferrites. *Y. Liu*[1], Y. Li[1], H. Zhang[1], Q. Yang[1] and D. Chen[1] *1. State Key Laboratory of Electronic Thin Film and Integrated Devices, University of Electronic Science and Technology, Chengdu, China*

BW-04. Theoretical formulation of highly anisotropic ferrite devices for high frequency application. *J. Wang*[1], A.L. Geiler[1], V.G. Harris[1] and C. Vittoria[1] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA*

BW-05. The role of matching thickness on the wideband electromagnetic wave suppresser using single layer doped barium ferrite. *R. Shams Alam*[1], E. Hosseinpour[2] and S. Choopani[1] *1. Physics, Shahin Shahr, Iran, Islamic Republic of; 2. science, shiraz, Iran, Islamic Republic of*

BW-06. Synthesis of nanocrystalline Ni-Zn ferrites by combustion method with no post-annealing route. *C. Fu*[1,3], M. Syue[2], F. Wei[2], C. Cheng[3] and C. Chou[2] *1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan; 3. Institute of Applied Physics, National Taiwan University, Taipei, Taiwan*

BW-07. High-density Ni0.5Zn0.5Fe2O4 ferrite ceramics with very fine-grained microstructure produced by spark plasma sintering starting from polyol-made nanoparticles. *S. Ammar*[1], F. Herbst[1], G. Vazquez[2] and R. Valenzuela[2] *1. ITODYS, University Paris Diderot, Paris, France; 2. IIM, Universidad Nacional Autónoma de México, México, Mexico*

BW-08. Effects of Ni^{2+} ion distribution in spinel $NiFe_2O_4$ thin films grown by alternating target-laser ablation deposition of NiO and Fe_2O_3 targets. H. Chang[1], *S. Yoon*[1], Y. Chen[1], A. Yang[1], A. Geiler[1], C. Vittoria[1] and V.G. Harris[1] *1. ECE, Northeastern University, Boston, MA*

BW-09. Ionic Redistribution and Magnetic Structure in $Zn_{1-x}Ni_xFe_2O_4$ Nanoparticles. *Y. Ying*[1], T. Eom[1] and Y. Lee[1] *1. q-Psi and Department of Physics, Hanyang University, Seoul, Korea, Republic of*

BW-10. Magnetic properties of cobalt ferrite thin films deposited by electrophoresis. J.G. Barbosa[1], M.R. Pereira[1], J.A. Mendes[2], M.P. Proença[3], J.P. Araújo[3] and *B.G. Almeida*[1] *1. Departamento de Física, Universidade do Minho, Braga, Portugal; 2. ESEIG, Instituto Politécnico Porto, Vila do Conde, Portugal; 3. Dep. de Física and IFIMUP-IN, Universidade do Porto, Porto, Portugal*

BW-11. Effect Of Dy-Doping On The Magnetic Properties Of Co-Zn Ferrite Nanocrystals For Magnetocaloric Applications. *S. Urcia Romero*[1], O. Perales Perez[2] and G. Gutierrez[3] *1. Physics, University of Puerto Rico, Mayaguez; 2. Engineering Science & Materials, University of Puerto Rico, Mayaguez; 3. Mechanical Engineering, University of Puerto Rico, Mayaguez*

BW-12. Highly Textured Growth of $Mn_{1-x}Zn_xFe_2O_4$ Film on Glass Substrate. H. Waqas[1], *X. Huang*[2], J. Yi[2] and J. Ding[2] *1. Department of Materials and Chemical Engineering, PIEAS, Islamabad, Pakistan; 2. Materials Science and Engineering, National University of Singapore, 119260, Singapore*

BW-13. Synthesis of copper ferrite from the thermolysis of copper ferrimalonate precursor. *J. Singh*[1], H. Kaur[1], M. Kaur[2,1] and B. Randhawa[1] *1. Chemistry, Guru Nanak Dev University, Amritsar, Punjab, India; 2. Chemistry, Lyallpur Khalsa College, Jalandhar, Punjab, India*

BW-14. Ab initio study on artificial copper ferrite. M. Feng[1], *X. Zuo*[1], W. Duan[2], C. Vittoria[3] and V.G. Harris[3] *1. College of Information Technical Science, Nankai University, Tianjin, China; 2. Department of Physics, Tsinghua University, Beijing, China; 3. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA*

BW-15. An external field applied MFe_2O_4 (M=Mn, Mg) nanoparticles with Mössbauer spectroscopy. *S. Hyun*[1], I. Shim[1] and C. Kim[1] *1. Physics, Kookmin University, SEOUL, Korea, Republic of*

TUESDAY AFTERNOON 1:00

EXHIBIT HALL C

Session BX

CRYSTALLINE SOFT MAGNETS AND DOMAINS I (POSTER SESSION)

Hans Gatzen, Chair

BX-01. Non-contact evaluation of surface modified materials by a model-assisted hysteresis measurement technique. *C. Lo*[1] *1. Center for NDE, Iowa State University, Ames, IA*

BX-02. Multiple phase transformation and resultant magnetic properties in Fe_3Pt thin films. *S. Hsiao*[1], S. Chen[1] and H. Lee[2] *1. Materials Science and Engineering, Feng Chia University, Taichung, Taiwan; 2. National Synchrotron Radiation Research Center, Hsinchiu, Taiwan*

BX-03. Preparation and structural characterization of FeCo epitaxial thin films on insulating single-crystal substrates. *T. Nishiyama*[1], M. Ohtake[1], F. Kirino[2] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan*

BX-04. Change of magnetic properties of a Cold Rolled and Thermally Aged Fe-Cu Alloy. *D.G. Park*[1], C.S. Angani[1,4], K.S. Ryu[2], S. Kobayashi[3] and S. Takahashi[3] *1. Nuclear Materials Research Division, Korea Atomic Energy Research Institue (KAERI), Daejeon, Korea, Republic of; 2. Korea Research Institute of Standard Science (KRISS), Daejeon, Korea, Republic of; 3. NDE and Science Research Center, Iwate University, Morioka, Japan; 4. Department of Materials science Engineering, Chungnam National University(CNU), Daejeon, Korea, Republic of*

BX-05. Comparison of soft magnetic properties of permalloy and conetic thin films depending on Ta buffer layer. *S. Lee*[1,2], J. Choi[1,2], D. Hwang[1,2] and J. Rhee[3] *1. Oriental Biomedical Engineering, Sangji University, Wonju, Gangwon-do, Korea, Republic of; 2. Eastern-western Biomedical Engineering, Sangji University, Wonju, Gangwondo, Korea, Republic of; 3. Physics, Sookmyung Women' University, Seoul, Seoul, Korea, Republic of*

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BX-06. The effect of precipitate size on magnetic domain behaviour in grain-oriented electrical steels. *S. Turner*[1], A.J. Moses[1], J. Hall[1] and K. Jenkins[2] *1. Wolfson Centre for Magnetics, Cardiff University, Cardiff, United Kingdom; 2. Development and Market Research, Cogent Power Ltd, Newport, United Kingdom*

BX-07. Effect of reactive gas (oxygen/chlorine/fluorine) etching on high moment writer pole materials magnetic properties. *J. Zhang*[1], F. Liu[1], L. Chen[1] and L. Miloslavsky[1] *1. Western Digital Corporation, Fremont, CA*

BX-08. Investigation of microstructure and soft magnetic properties of $Fe_{65}Co_{35}$ thin films deposited on different under-layers. Y. Li[1], Z. Li[1], X. Liu[1], Y. Fu[1], F. Wei[1], A.S. Kamzin[2] and *D. Wei*[3] *1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Research Institute of Magnetic Materials, Lanzhou University, Lanzhou, Gansu, China; 2. Ioffe Physical-Technical Institute of Russian Academy of Sciences, St. Petersburg, Russian Federation; 3. Lab of Advanced Materials, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China*

BX-09. Study of magnetization reversal of uniaxial Ni nanodots by magnetic force microscopy and VSM. *S. Ramaswamy*[1], C. Gopalakrishnan[1], G.K. Rajan[1] and M. Ponnavaikko[2] *1. Nanotechnology Research Center, SRM University, Chennai, Tamil Nadu, India; 2. Center for Nanoscience and Nanotechnology, Bharathidasan University, Thiruchinapalli, Tamil Nadu, India*

BX-10. Metastable γ-FeNi Nanostructures with Tunable Curie Temperatures. *K.J. Miller*[1], M. Sofman[1], K. McNerny[1] and M.E. McHenry[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

BX-11. Observations of Oxidation Mechanisms and Kinetics in Facetted FeCo Magnetic Nanoparticles. *N.J. Jones*[1], K.L. McNerny[1], A.T. Wise[2,3], M. Sorescu[4], D.E. Laughlin[1,2] and M.E. McHenry[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 4. Physics, Duquesne University, Pittsburgh, PA*

BX-12. Controllable Magnetic Bead Motion on Patterned NiFe Channels for Biosensing Applications. *A.K. Sarella*[1], S. Vishnubhotla[1], S. Oh[1], J. Jeong[1] and C. Kim[1] *1. Chungnam National University, Daejeon, Korea, Republic of*

BX-13. Assessment of the effect of lift-off on a magnetic flux injection technique for detection of residual curvature in electrical steel. *J. Hall*[1] *1. Wolfson Centre for Magnetics, School of Engineering, Cardiff University, Cardiff, United Kingdom*

BX-14. Structural and magnetic properties of Fe50Mn50 nanocrystalline alloys.K. Tarigan[1], Y. Dong Seok[2], . Kwang-Kwyun[1], . Suhk Kun[1] and . *Seong Cho*[1] *1. Physics, Chungbuk National University, Cheongju, Chungbuk, Korea, Republic of; 2. Physics Division, School of Science Education, Chungbuk National University, Cheongju, Chungbuk, Korea, Republic of*

BX-15. Improvement of high-frequency characteristics by pinning effect of thin Cr interlayers in FeCoTa films. *S. Li*[1,2], J. Duh[3], S. Tsai[4], Z. Tian[5] and J. Liu[6] *1. Department of Physics, Fujian Normal University, Fuzhou, China; 2. National Laboratory of Solid State Microstructure, Nanjing University, Nanjing, China; 3. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 4. EPMA Lab, Precision Instrument Center, National Tsing Hua University, Hsinchu, Taiwan; 5. College of Mechanical and Electrical Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China; 6. Department of Physics, University of Texas at Arlington, Arlington, TX*

BX-16. Crystalline analysis of Permalloy narrow wires subject to current pulses. *Y. Togawa*[1,2], T. Kimura[2,3], K. Harada[2,4], T. Akashi[5], A. Tonomura[2,4], S. Mori[1] and Y. Otani[2,3] *1. Nanoscience and Nanotechnology Research Center, Osaka Prefecture University, Sakai, Osaka, Japan; 2. Advanced Science Institute, Institute of Physical and Chemical Research (RIKEN), Wako, Saitama, Japan; 3. Institute for Solid State Physics, University of Tokyo, Kashiwa, Chiba, Japan; 4. Advanced Research Laboratory, Hitachi, Ltd., Hatoyama, Saitama, Japan; 5. Hitachi High-Technologies Co., Hitachinaka, Ibaraki, Japan*

TUESDAY AFTERNOON 1:00 **EXHIBIT HALL C**

Session BY
NEW APPLICATIONS (POSTER SESSION)
Jin-Wei Tioh, Chair

BY-01. Current-controlled, high-speed magneto-optic switching. *S. Kemmet*[1], M. Mina[1] and R.J. Weber[1] *1. Electrical and Computer Engineering, Iowa State University, Ames, IA*

BY-02. All-optical Integrated Switch Utilizing Faraday Rotation. *J. Tioh*[1], M. Mina[1] and R.J. Weber[1] *1. Iowa State University, Ames, IA*

BY-03. Withdrawn

BY-04. Novel solder-magnetic particle composites, their reflow using AC magnetic fields. *A.H. Habib*[1], M.G. Ondeck[1], K.J. Miller[1], R. Swaminathan[2] and M.E. McHenry[1] *1. Materials Sc. and Engg., Carnegie Mellon University, Pittsburgh, PA; 2. Intel Corp., Chandler, AZ*

BY-05. Electromagnetic wave absorption characteristics adjustment method of powder-type magnetic wood for use as a building material. *H. Oka*[1], M. Terui[1], H. Osada[1], N. Sekino[2], Y. Namizaki[3] and F.P. Dawson[4] *1. Department of Electric and Electronic Engineering, Iwate University, Morioka, Japan; 2. Faculty of Agriculture Environmental Sciences, Iwate University, Morioka, Japan; 3. Iwate Industrial Research Institute, Morioka, Japan; 4. Faculty of Applied Science and Engineering, University of Toronto, Toronto, ON, Canada*

BY-06. Effect of inclination angle on magneto-convection inside a tilted enclosure. *M. Pirmohammadi*[1,2], M. Ghassemi[2] and G. Sheikhzadeh[3] *1. Mapna Group, Tehran, Iran, Islamic Republic of; 2. K.N.TOOSI UNIVERSITY OF TECHNOLOGY, TEHRAN, Iran, Islamic Republic of; 3. UNIVERSITY OF KASHAN, KASHAN, Iran, Islamic Republic of*

BY-07. Linking porosity and tortuosity parameters to performance of a magnetorheological damper employing a valve filled with porous media. *R.M. Robinson*[1], W. Hu[1] and N.M. Wereley[1] *1. University of Maryland, College Park, MD*

BY-08. Stiffness and damping in Fe, Co, and Ni nanowire-based magnetorheological elastomeric composites. O. Padalka[1], H.K. Song[1], *N.M. Wereley*[1], J.A. Filer II[2] and R.C. Bell[2] *1. Aerospace Engineering, University of Maryland, College Park, MD; 2. Dept. of Chemistry, Pennsylvania State University, Altoona, PA*

BY-09. High Magnetic Field Generation Using Gd-Ba-Cu-O Magnetic Field Amplifier. *S. Choi*[1] and T. Kiyoshi[1] *1. Magnet development group, National Institute for Materials Science, Tsukuba, Ibaraki, Japan*

BY-10. Using displacement of microcantilever to exhibit reverse of magnetic membrane. *Y.P. Hsieh*[1], Y.J. Li[1], Z.H. Wei[1] and M.F. Lai[1,2] *1. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Hsinchu, Taiwan*

BY-11. Nonlinear Eddy Current Technique for Characterizing Case Hardening Profiles. *S.C. Chan*[1], J. Hejase[1], Z. Zeng[2], P. Lekeakatakunju[1], L. Udpa[1] and S.S. Udpa[1] *1. Electrical and Computer Engineering, Michigan State University, East Lansing, MI; 2. Department of Aeronautics, Xiamen University, Xiamen, Fujian, China*

BY-12. Magnetic Cellular Automata Coplanar Cross Wire Systems. *J.F. Pulecio*[1] and S. Bhanja[1] *1. Electrical Engineering, University of South Florida, Tampa, FL*

TUESDAY AFTERNOON 7:00 SALON 2

Session BZ
SYMPOSIUM: LARGE SCALE FACILITIES FOR MAGNETISM RESEARCH
Chris Leighton, Chair

7:00

BZ-01. The Versatility of High Magnetic Fields. ***(Invited)*** *G. Boebinger*[1] *1. National High Magnetic Field Lab, Tallahassee, FL*

7:30

BZ-02. Neutron Scattering: An Exceptional Tool for Understanding Magnetic Materials. ***(Invited)*** *D. Neumann*[1] *1. NIST Center for Neutron Research, Gaithersburg, MD*

8:00

BZ-03. Large Scale Facilities for Research in Magnetic Materials: Synchrotron Research. ***(Invited)*** *N.B. Brookes*[1] *1. European Synchrotron Research Facility, Grenoble, France*

WEDNESDAY MORNING 9:00 SALON 2

Session CA
SPIN TORQUE DEVICES: PERPENDICULAR ANISOTROPY AND OTHER ADVANCED MATERIALS
Eric Fullerton, Chair

9:00

CA-01. Spin-torque reversal of nanopillars with perpendicular magnetic anisotropy. ***(Invited)*** *S. Mangin*[1], J. Cucchiara[2], S. Moyerman[2], I. Tudosa[2], E.E. Fullerton[2], Y. Henry[3], D. Bedau[4], H. Liu[4], J. Bouzaglou[4], A.D. Kent[4] and J.A. Katine[5] *1. IJL-Dept1, Nancy Université, Vandoeuvre, France; 2. CMRR, UCSD, San Diego, CA; 3. IPCMS CNRS, Strasbourg, France; 4. NYU, New York, NY; 5. Hitachi, San Jose, CA*

9:36

CA-02. Stochastic domain wall motion and spin transfer effect in nanopillars with perpendicular magnetic anisotropy. *J. Cucchiara*[1], J.A. Katine[2], J.Z. Sun[3], E.E. Fullerton[4] and S. Mangin[1] *1. Institut Jean Lamour, Vandoeuvre lès Nancy, France; 2. Hitachi Global Storage Technologies, San Jose, CA; 3. IBM T.J. Watson Research Center, New York, NY; 4. Center of Magnetic Recording Research, San Diego, CA*

9:48

CA-03. Ultra-fast current-induced switching in a spin-valve device with a perpendicular polarizer. *H. Liu*[1], D. Bedau[1], J. Beaujour[1], M. Rogosky[2] and A.D. Kent[1] *1. Physics, New York University, New York, NY; 2. Spin Transfer Technologies, Quincy, MA*

10:00

CA-04. Spin-transfer effects in metallic multilayers with in-plane reference and out-of-plane free layer: An analytical model. *A. Deac*[1,2], G. Bauer[3], W.H. Rippard[2], S.E. Russek[2], M.R. Pufall[2] and H.T. Nembach[2] *1. Institut fuer Festkoerperforschung, Forschungszentrum Juelich, Juelich, Germany; 2. Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO; 3. Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands*

10:12

CA-05. Current induced switching of hard layer in perpendicular magnetic nanopillars. *I. Tudosa*[1], J.A. Katine[2], S. Mangin[3] and E.E. Fullerton[1] *1. Center for Magnetic Recording Research, UC San Diego, La Jolla, CA; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA; 3. Institut Jean Lamour, Nancy-Université, Nancy, Vandœuvre lès Nancy, France*

10:24

CA-06. Spin-transfer switching with short current pulses in all perpendicular magnetized spin valve nanopillars*. *D. Bedau*[1], H. Liu[1], J. Bouzaglou[1,4], A.D. Kent[1], J.A. Katine[2], S. Moyerman[3], E.E. Fullerton[3] and S. Mangin[4] *1. Department of Physics, New York University, New York, NY; 2. HGST, San Jose, CA; 3. CMMR, UCSD, La Jolla, CA; 4. Institut Jean Lamour, Nancy Université, Vandoeuvre, France*

10:36

CA-07. Single-shot time-domain studies of spin-torque-driven switching in magnetic tunnel junctions. *Y. Cui*[1], G. Finocchio[2], C. Wang[1], J.A. Katine[3], R.A. Buhrman[1] and D.C. Ralph[1] *1. Cornell University, Ithaca, NY; 2. University of Messina, Messina, Italy; 3. Hitachi Global Storage Technologies, San Jose, CA*

10:48

CA-08. Reproducible trajectory in sub ns spin transfer switching for MgO based magnetic tunnel junctions under zero biasing field. *T. Aoki*[1], Y. Ando[1], M. Oogane[1] and H. Naganuma[1] *1. Department of Applied Physics, Tohoku University, Sendai, Japan*

11:00

CA-09. A Study of DC-Driven Microwave Dynamics in Magnetic Tunnel Junctions. *P. Gowtham*[1] *1. Cornell University, Ithaca, NY*

11:12

CA-10. Spin-transfer magnetization switching in full-Heusler $Co_2FeAl_{0.5}Si_{0.5}$/Ag/$Co_2FeAl_{0.5}Si_{0.5}$ epitaxial nanopillars. *H. Sukegawa*[1], S. Kasai[1], T. Furubayashi[1], S. Mitani[1] and K. Inomata[1] *1. Magnetic Material Center, National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan*

11:24

CA-11. Bias and angular dependence of spin-transfer torque in magnetic tunnel junctions. *C. Wang*[1], Y. Cui[2], J.A. Katine[3], R.A. Buhrman[2] and D.C. Ralph[1] *1. Physics, Cornell University, Ithaca, NY; 2. Applied and Engeering Physics, Cornell University, Ithaca, NY; 3. Hitachi Global Storage Technologies, San Jose Res. Ctr., San Jose, CA*

11:36

CA-12. Spin transfer torque switching of magnetic tunnel junctions using a conductive atomic force microscope. ***E.R. Evarts***[1], L. Cao[2], D.S. Ricketts[2], N.D. Rizzo[3], J.A. Bain[2] and S.A. Majetich[1] *1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Everspin Technologies, Chandler, AZ*

11:48

CA-13. Spin Transfer Torque Switching in 1.85 Terabit/SqIn Nanowire Arrays Measured with Conductive Atomic Force Microscopy. *X. Huang*[1], M. Maqableh[1] and B. Stadler[1] *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

WEDNESDAY
MORNING
9:00

SALON 3

Session CB
MULTIFERROICS: THIN FILMS AND TUNNEL JUNCTIONS
Steven May, Chair

9:00

CB-01. Multiferroic tunnel junction: adding new functionality to magnetic tunnel junction. ***(Invited)*** *Q. Li*[1] *1. Physics, Pennsylvania State University, University Park, PA*

9:36

CB-02. Magnetic tunnel junctions with a ferroelectric barrier: prediction of four resistance states for a $SrRuO_3/BaTiO_3/SrRuO_3$ tunnel junction. J.P. Velev[1], C. Duan[2], *J.D. Burton*[3], A. Smogunov[4,5], M.K. Niranjan[3], E. Tosatti[4,5], S.S. Jaswal[3] and E.Y. Tsymbal[3] *1. Deptartment of Physics and Institute for Functional Nanomaterials, University of Puerto Rico, San Juan; 2. Key Laboratory of Polarized Materials and Devices, East China Normal University, Shanghai, China; 3. Physics and Astronomy, University of Nebraska, Lincoln, NE; 4. International Centre for Theoretical Physics (ICTP), Trieste, Italy; 5. International School for Advanced Studies (SISSA) and CNR/DEMOCRITOS National Simulation Center, Trieste, Italy*

9:48

CB-03. Interface-engineered La0.7Ca0.3MnO3/BaTiO3 superlattices: two monolayers of LaMnO3 change the structure and magnetotransport. *K. Samwer*[1], K. Gehrke[1], V. Moshnyaga[1], O.I. Lebedev[2], D. Kirilenko[2] and G. Van Tendeloo[2] *1. I.Physik. Institut, Univerity Goettingen, Goettingen, Germany; 2. EMAT, University of Antwerpen, Antwerpen, Belgium*

10:00

CB-04. Surface magnetostriction effect induced strong magnetoelectric coupling in $Ni_{80}Fe_{20}$/PZN-PT heterostructures. *M. Liu*[1], J. Lou[1], O. Obi[1], G. Yang[1] and N.X. Sun[1] *1. Electrical and Computer engineering, Northeastern University, Bosotn, MA*

10:12

CB-05. Signal enhancement in all-thin-film Pb(Zr,Ti)O3/FeGa magnetoelectric ac magnetic field sensors. *P. Zhao*[1], Z. Zhao[2], R. Suchoski[1], E. Din[1], C. Gao[2], S. Mathews[3], M. Wuttig[1] and I. Takeuchi[1] *1. Department of Materials Science and Engineering, University of Maryland, College Park, MD; 2. National Synchrotron Radiation Laboratory, University of Science and Technology of China, Hefei, Anhui, China; 3. Department of Electrical Engineering and Computer Science, Catholic University of America, District of Columbia, DC*

10:24

CB-06. Direct real-time imaging of electric-field-induced magnetic domain wall motion by Lorentz microscopy. *J. Cumings*[1], T. Brintlinger[1,2], S. Lim[1], P. Alexander[1], K.H. Baloch[1,3], Y. Qi[1], L. Salamanca-Riba[1] and I. Takeuchi[1] *1. Department of Materials Science and Engineering, University of Maryland, College Park, MD; 2. Naval Research Laboratory, Washington, DC; 3. Institute for Physical Science and Technology, University of Maryland, College Park, MD*

10:36

CB-07. Transverse magnetic correlations affect electric polarization in multiferroic materials: shifted transition temperatures and thermal hysteresis. *K. Livesey*[1] and R.L. Stamps[1] *1. University of Western Australia, Crawley, WA, Australia*

10:48

CB-08. Structural and multiferrioc properties of Fe-doped Ba Sr TiO solids.Z. Guo[1], J. Yin[1], C. Bi[1], F. Zheng[1], *L. Pan*[1] and H. Qiu[1] *1. Department of Physics, University of Science and Technology Beijing, Beijing, China*

11:00

CB-09. Electric filed-tunable ferromagnetic resonance responses in barium ferrite-barium strontium titanate monolithic structures. *Y. Song*[1], J. Das[1], P. Krivosik[1] and M. Wu[1] *1. Department of Physics, Colorado State University, Fort Collins, CO*

11:12

CB-10. Low Temperature Synthesis, Structure and Magnetism of Manganese Sillenites Nanoparticles. *J. Sinnecker*[1], L. Sousa de Oliveira[2], M.D. Vieira[3] and A. Pentón-Madrigal[4] *1. Departamento de Físicas Experimental de Baixas Energias, Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, RJ, Brazil; 2. Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 3. Instituto de Química, Universidade Federal Fluminense, Rio de Janeiro, RJ, Brazil; 4. Facultad de Fisicas, Universidad de la Habana, La Habana, Cuba*

11:24

CB-11. Influence of mechanical load bias on converse magnetoelectric laminate composites. *T. Wu*[1], M. Emmons[1], T. Chung[1], J. Sorge[1] and G.P. Carman[1] *1. University of California, Los Angeles, Los Angeles, CA*

11:36

CB-12. Modeling of the magneto-electric effect in finite-size three-layer laminates under closed-circuit conditions. *E. Liverts*[2,1], M. Auslender[1], A. Grosz[1], B. Zadov[1], M.I. Bichurin[3] and E. Paperno[1] *1. Department of Electrical and Computer Engineering, Ben-Gurion University of the Negev, Beer Sheva 84105, Israel; 2. Department of Mechanical Engineering, Ben-Gurion University of the Negev, Beer Sheva 84105, Israel; 3. Department of Design and Tecnology of Radioequipment, Novgorod State University, Veliky Novgorod 173003, Russian Federation*

11:48

CB-13. Multiferroic double perovskites: Opportunities, Issues, and Challenges. *M.P. Singh*[1], K.D. Truong[1], S. Jandl[1] and P. Fournier[1] *1. Département de physique, Université de Sherbrooke, Sherbrooke, QC, Canada*

WEDNESDAY MORNING 9:00 — DELAWARE

Session CC
CPP-GMR AND OTHER NOVEL READER TECHNOLOGY
Claudia Felser, Chair

9:00

CC-01. All metal CPP-GMR read sensor characterization for ultra-high density recording. *(Invited)* *X. Liu*[1], C. Tsang[1], N. Smith[1], M. Carey[1], S. Maat[1], J. Katine[1], J. Childress[1] and P. VanDerHeijden[1] *1. Hitach Global Storage Technologies, San Jose, CA*

9:36

CC-02. MR Enhancement of CPP-SV with FeCo nanocontacts for 2Tb/in^2 *(Invited)* *H.N. Fuke*[1], S. Hashimoto[1], M. Takagishi[1] and H. Iwasaki[1] *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

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10:12

CC-03. CPP GMR with Heusler Co2MnGe and Co2MnSi magnetic layers. *M.J. Carey*[1], S. Maat[1], N. Smith[1], X. Liu[1], P. van der Heijden[1] and J.R. Childress[1] *1. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

10:24

CC-04. CPP-GMR Film with ZnO Based Novel Spacer For Future High Density Magnetic Recording. *K. Shimazawa*[1], Y. Tsuchiya[1], T. Mizuno[1], S. Hara[1], T. Chou[1], D. Miyauchi[1], T. Machita[1], T. Ayukawa[1], T. Ichiki[1] and K. Noguchi[1] *1. Technology Group, TDK Corporation, Saku, Nagano, Japan*

10:36

CC-05. MR ratio and RA design of CPP-MR film for over 2Tb/in^2 read sensors. *M. Takagishi*[1], H. Iwasaki[1], S. Hashimoto[1] and H.N. Fuke[1] *1. Corporate R&D Center, TOSHIBA Corporation, Kawasaki, Japan*

10:48

CC-06. MR enhancement of CCP-NOL CPP-GMR by hydrogen ion reduction. *H. Yuasa*[1], M. Hara[1], S. Murakami[1], Y. Fuji[1], H. Fukuzawa[1], K. Zhang[2], M. Li[2], E. Schreck[2], P. Wang[2] and M. Chen[2] *1. R&D Center, Toshiba, Kawasaki, Japan; 2. Headway technologies, Milpitas, CA*

11:00

CC-07. Thermomigration-induced magnetic degradation of CPP and CCP GMR spin-valve read sensors operating at high current density. *D. Zeng*[1], S. Bae[1] and K. Chung[2] *1. Electrical and Computer Engineering, Biomagnetics Laboratory, National University of Singapore, Singapore, Singapore; 2. R&D Core center, Daion Co. Ltd, Incheon, Korea, Republic of*

11:12

CC-08. CPP spin-valves with all B2 $Co_2FeAl_{0.6}Si_{0.4}$/NiAl/$Co_2FeAl_{0.6}Si_{0.4}$ trilayer. *T.M. Nakatani*[1,2], T. Furubayashi[2], S. Kasai[2], H. Sukegawa[2], Y.K. Takahashi[2] and K. Hono[2,1] *1. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; 2. National Institute for Materials Science, Tsukuba, Japan*

11:24

CC-09. Readback Resolution of Differential Dual CPP Spin Valve Reader. *Z. Yuan*[1], G. Han[1], L. Wang[1] and B. Liu[1] *1. DSI, Singapore, Singapore*

11:36

CC-10. Feasibility of differential dual spin valve for 10 Tb/in2. *G. Han[1] 1. Nano Spin-Electronics, Data Storage Institute, Singapore, Singapore*

11:48

CC-11. Magnetization reversal process of tri-layer readers for ultrahigh density data storage. *J. Wang*[1], Y. Lua[1] and G. Han[1] *1. Data Storage Institute, Singapore, Singapore*

WEDNESDAY MORNING 9:00 — VIRGINIA

Session CD

SYMPOSIUM: SPIN INJECTION INTO NON-MAGNETIC MEDIA

Atsufumi Hirohata, Chair

9:00

CD-01. Spin Transport in Ferromagnet-Semiconductor Heterostructures. ***(Invited)*** M.K. Chan[1], Q.O. Hu[2,1], E.S. Garlid[1], S.A. Crooker[3], A.N. Chantis[3], D.L. Smith[3], C.J. Palmstrøm[2] and *P. Crowell*[1] *1. Physics and Astronomy, University of Minnesota, Minneapolis, MN; 2. Electrical Engineering, University of California, Santa Barbara, CA; 3. Los Alamos National Laboratory, Los Alamos, NM*

9:36

CD-02. Spin injection into organic molecules. ***(Invited)*** *M. Shiraishi[1,2] 1. Osaka Univ., Toyonaka, Japan; 2. JST-PRESTO, Kawaguchi, Japan*

10:12

CD-03. SPIN INJECTION AND DETECTION USING MAGNETIC SEMICONDUCTORS. ***(Invited)*** *L.W. Molenkamp[1] 1. Physikalisches Institut (EP3), Universitaet Wuerzburg, Wuerzburg, Germany*

10:48

CD-04. Theoretical studies on spin injection. ***(Invited)*** *J. Inoue*[1], S. Honda[1] and H. Itoh[2] *1. Department of Applied Physics, Nagoya University, Nagoya, Japan; 2. Department of Pure and Applied Physics, Kansai University, Suita, Japan*

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11:24

CD-05. Electronic Spin Transport and Spin Precession in Single Graphene Layers at Room Temperature. ***(Invited)*** *B. van Wees*[1] *1. University of Groningen, Groningen, Netherlands*

WEDNESDAY MORNING 9:00

WASHINGTON 1

Session CE
FERRITE MAGNETS III
Raja Swaminathan, Chair

9:00

CE-01. Epitaxial Growth of Barium Hexaferrite Films on Wide Band Gap Semiconductor Substrates Towards Microwave Integrated Circuits. ***(Invited)*** *Z. Chen*[1], A. Yang[1], J. Gao[1,2], S.D. Yoon[1], C. Vittoria[1,2] and V.G. Harris[1,2] *1. Center for Microwave Magnetics Materials and Integrated Circuits, Northeastern University, Boston, MA; 2. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA*

9:36

CE-02. Growth of Crystalline Cobalt ferrite Thin Films at Lower Temperatures using Pulsed-laser Deposition Technique. *A. Raghunathan*[1], I. Nlebedim[1], D. Jiles[1] and J. Snyder[1] *1. Wolfson Centre for Magnetics, Cardiff University, Cardiff, United Kingdom*

9:48

CE-03. Magnetic characterization of hexagonal ferrite thin films grown by metallo-organic decomposition on a Pt template. *I.R. Harward*[1], Y. Nie[1,2], K. Balin[1,3], A. Beaubien[1] and Z.J. Celinski[1] *1. Physics, UCCS, Colorado Springs, CO; 2. Microelectronics Science and Technology, Huazhong University of Science and Technology, Wuhan, Hubei, China; 3. Solid State Physics, Institute of Physics, University of Silesia, Katowice, Silesia, Poland*

10:00

CE-04. Crystal structure and magnetic properties of rf-sputtered Cu-Zn ferrite thin films. M. Sultan[1] and *R. Singh*[1] *1. School of Physics, University of Hyderabad, Hyderabad 500046, Andhra Pradesh, India*

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10:12

CE-05. Structural and Size dependent Magnetic Properties of Gadolinium- Iron- Garnet (GdIG) Nanoparticles under High Magnetic Field of 32 Tesla. C. Chins[1], *M. Guillot*[1,2], J. Greneche[2,3], B. Latha[1], T. Sakai[1], C. Vittoria[1] and V. Harris[1] *1. NortheasternUniversity, Boston, MA; 2. CNRS, Grenoble, France; 3. UMR CNRS 6087, Le Mans, France*

10:24

CE-06. Size dependent magnetic properties of CoFe2O4 nanoparticles. *N. Poudyal*[1], C. Rong[1] and J. Liu[1] *1. Physics, University of Texas at Arlington, Arlington, TX*

10:36

CE-07. Magnetic properties, biocompatibility, and AC magnetically-induced heating characteristics of superparamagnetic $Ni_xZn_{1-x}Fe_2O_4$ nanoparticles for bioapplications. *S. Moon*[1], Y. Tan[1], M. Jeun[1], U. Koji[2], A. Tomitaka[2], Y. Kim[3], H. Shin[4], Y. Takemura[2], K. Park[3], K. Chung[5], S. Paek[4] and S. Bae[1] *1. Department of electrical and computer engineering, National university of singapore, Singapore, Singapore; 2. Department of Electrical and Computer Engineering, Yokohama National University, Yokohama, Japan; 3. Department of Ophthalmology, Seoul National University College of Medicine, Seoul, Korea, Republic of; 4. Department of Neurosurgery, Seoul National University College of Medicine, Seoul, Korea, Republic of; 5. Daion Co. Ltd, Incheon, Korea, Republic of*

10:48

CE-08. Influential parameters on magnetic properties of Nickel Zinc ferrites for antenna miniaturisation. *D. Souriou*[1], P. Queffelec[1] and J. Mattei[1] *1. Université de Bretagne Occidentale, Brest, France*

11:00

CE-09. Enhancement of conducted noise suppression on flexible magnetic thick film EMI filters with high-frequency permeability on data signal cable. K. Lee[1], I. Byun[1], I. Jeong[2] and *S. Kim*[3] *1. R&D Center,, Donghyun Electronics Corporation, Seoul, Korea, Republic of; 2. R&D Center,, Chang Sung Corporation, Seoul, Korea, Republic of; 3. Center for Energy-Materials research, KIST, Seoul, Korea, Republic of*

11:12

CE-10. Determination of Negative Permeability and Permittivity of Metal Strip Coated Ferrite Disks Using the Transmission and Reflection (TR) Technique. *N. Rahman*[1], M. Obol[1], A. Sharma[1] and M.N. Afsar[1] *1. Tufts University, Medford, MA*

11:24

CE-11. An algorithm to extract effective materials parameters of thin ferromagnetic film with in-plane uniaxial magnetic anisotropy. *C. Neo*[1] and J. Ding[1] *1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

11:36

CE-12. Accurate modeling of voltage and current waveforms with saturation and power losses in a ferrite core via 2D Finite Elements and a circuit simulator. *R. Salas*[1] and J. Pleite[1] *1. Tecnología Electrónica, Universidad Carlos III de Madrid, Leganés (Madrid), Spain*

11:48

CE-13. Improvement of Absorber Properties of Co2Z-type Hexaferrite Doped with P2O5. *H. Zhang*[1], J. Luo[1], L. Jia[1], F. Bai[1] and J.Q. Xiao[2] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE*

WEDNESDAY WASHINGTON 2
MORNING
9:00

Session CF
MICROMAGNETICS AND HYSTERESIS MODELING I
Sang-Koog Kim, Chair

9:00

CF-01. Computational study of current-induced vortex excitations in single and multiple point contact devices. *E. Jaromirska*[1], L. Lopez-Diaz[1], L. Torres[1] and D. Aurelio[1] *1. Fisica Aplicada, University of Salamanca, Salamanca, Spain*

9:12

CF-02. Effect of the calculation precision in micromagnetic simulation. *T. Sato*[1] and Y. Nakatani[1] *1. University of Electro-communications, Tokyo, Japan*

9:24

CF-03. Accurate computation of the demagnetization tensor for finite difference micromagnetics. *M.J. Donahue*[1] *1. Mathematical & Computational Sciences Division, NIST, Gaithersburg, MD*

9:36

CF-04. Hierarchical field computation on graphics processing units (GPUs) for Micromagnetics. *S. Li*[1], B. Livshitz[1] and V. Lomakin[1] *1. Department of Electrical and Computer Engineering and CMRR, University of California, San Diego, La Jolla, CA*

9:48

CF-05. Direct calculation of the attempt frequency of magnetic nanostructures using FEM.D. Suess[1], *G. Fiedler*[1], M. Janisch[1], J. Lee[1], M. Fuger[1], J. Fidler[1] and T. Schrefl[2] *1. Institut of Solid State Physics, Vienna, Austria; 2. University of Applied Science, St. Poelten, Austria*

10:00

CF-06. Theoretical Model of Temperature Dependence of Hysteresis based on Mean Field Theory. *A. Raghunathan*[1], Y. Melikhov[1], J. Snyder[1] and D. Jiles[1] *1. Wolfson Centre for Magnetics, Cardiff University, Cardiff, United Kingdom*

10:12

CF-07. Imaging the telegraphic noise in single Pt/Co(0.5 nm)/Pt nanodisks and magnetisation reversal at the blocking temperature. *J. Adam*[1,2], S. Rohart[1], J. Jamet[1], A. Mougin[1], J. Ferré[1], H. Bernas[3], G. Faini[4] and J. Fassbender[5] *1. Laboratoire de Physique des Solides, Université Paris-Sud, Orsay, France; 2. GEMAC, Université de Versailles Saint Quentin, Versailles, France; 3. CSNSM, Université Paris-Sud, Orsay, France; 4. Laboratoire de Photonique et de Nanostructures, CNRS, Marcoussis, France; 5. 5Institute of Ion Beam Physics and Material Research, Forschungszentrum Dresden- Rossendorf, Dresden, Germany*

10:24

CF-08. Stability of 2π domain walls in ferromagnetic nanorings. *G.D. Chaves-O'Flynn*[1], D. Bedau[1], E. Vanden-Eijnden[1,2], A.D. Kent[1] and D.L. Stein[1,2] *1. Department of Physics, New York University, New York, NY; 2. New York University, Courant Institute of Mathematical Sciences, New York, NY*

10:36

CF-09. High Stability Magnetic Flux-closure in Sub-100 nm Asymmetric Rings. *X. Wang*[1], W. Wang[1] and W. Lew[1] *1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore 637371, Singapore*

10:48

CF-10. Static and dynamic micromagnetic simulations of nanotubule arrays.R. Gaur[1], S. Singh[1], S. Pathak[1] and *M. Sharma*[1] *1. Centre for Applied Research in Electronics, Indian Institute of Technology Delhi, New Delhi, Delhi, India*

11:00

CF-11. Macrospin behaviour and superparamagnetism in GaMnAs nanodots. *J. Adam*[1,2], S. Rohart[1], J. Ferré[1], A. Mougin[1], N. Vernier[1,4], L. Thevenard[3], A. Lemaître[3], G. Faini[3] and F. Glas[3] *1. Laboratoire de Physique des Solides, Université Paris-Sud, Orsay, France; 2. GEMAC, Université de Versailles Saint Quentin, Versailles, France; 3. Laboratoire de Photonique et de Nanostructures, CNRS, Marcoussis, France; 4. IEF, Université Paris-Sud, Orsay, France*

11:12

CF-12. Micromagnetic modeling of barium ferrite particulate medium for tape recording.D. Qiu[1], B. Biskeborn[1], *P. Jubert*[1], O. Shimizu[2] and H. Noguchi[2] *1. IBM Almaden Research Center, San Jose, CA; 2. Recording Media Laboratories, FUJIFILM Corporation, Odawara, Kanagawa, Japan*

11:24

CF-13. Hysteretic system response to arbitrary colored noise. *M. Dimian*[1,2], O. Manu[2] and P. Andrei[3] *1. Electrical and Computer Engineering, Howard University, Washington, DC; 2. Electrical Engineering and Computer Science, Stefan cel Mare University, Suceava, Romania; 3. Electrical and Computer Engineering, Florida State University, Tallahassee, FL*

11:36

CF-14. Realistic reversible magnetization component in Preisach-type model.L. Stoleriu[1], *A. Stancu*[1] and I. Bodale[1] *1. Department of Physics, Al. I. Cuza University, Iasi, Romania*

11:48

CF-15. Enhancing the Reweighting Technique for Magnetization Reversal Process with Rare Event Algorithm. *X. Cheng*[1] and M. Jalil[1] *1. Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore*

WEDNESDAY MORNING 9:00

WASHINGTON 3

Session CG
PATTERNED FILMS I
Oleg Petracic, Chair

9:00

CG-01. Coercivity tuning in Co/Pd multilayer based bit patterned media. *O. Hellwig*[1], T. Hauet[1], T. Thomson[1,2], E.A. Dobisz[1], J.D. Risner-Jamtgaard[1], D. Yaney[1], B.D. Terris[1] and E.E. Fullerton[1,3] *1. San Jose Research Center, Hitachi GST, San Jose, CA; 2. School of Computer Science, University of Manchester, Manchester, United Kingdom; 3. Center for Magnetic Recording Research, University of California at San Diego, La Jolla, CA*

9:12

CG-02. Temperature dependent nucleation and annihilation of magnetic vortices in individual submicrometer permalloy disks. *G. Mihajlovic*[1], M.S. Patrick[1], J.E. Pearson[1], S.D. Bader[1,2], A. Hoffmann[1,2], M. Field[3] and G.J. Sullivan[3] *1. Materials Science Division, Argone National Laboratory, Argonne, IL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 3. Teledyne Scientific Company LLC, Thousand Oaks, CA*

9:24

CG-03. Chirality control and vortex manipulation in asymmetric Co dots. *R.K. Dumas*[1], D.A. Gilbert[1], N. Eibagi[1] and K. Liu[1] *1. University of California, Davis, CA*

9:36

CG-04. Thickness-dependent ferromagnetic resonance and magnetization structure of thin film ellipses. *M. Pardavi-Horvath*[1], A. Sakhalkar[1], B.G. Ng[2], F.J. Castaño[2], H.S. Körner[2], C. Garcia[2] and C. Ross[2] *1. School of Engineering and Applied Science, The George Washington University, Washington, DC; 2. Dept. Materials Science and Engineering, MIT, Cambridge, MA*

9:48

CG-05. FePt island arrays formed by RTA on spherical particle templates. *M. Albrecht*[1], C. Brombacher[1], C. Schubert[1], K. Neupert[1], M. Kehr[1] and S. Romer[2] *1. Institute of Physics, Chemnitz University of Technology, Chemnitz, Germany; 2. Nanoscale Materials Science, Empa, Duebendorf, Switzerland*

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10:00

CG-06. Dipolar energy states in clusters of perpendicular magnetic nanoislands. *L. Heyderman*[1], E. Mengotti[1], A. Bisig[1], A. Fraile Rodríguez[1], L. Le Guyader[1], F. Nolting[1] and H. Braun[2] *1. Paul Scherrer Institut, Villigen-PSI, Switzerland; 2. University College Dublin, Dublin, Ireland*

10:12

CG-07. Electrochemical Fabrication and Characterization of CoPt Bit Patterned Media: a Wetchemical Approaches towards the Large Scale Fabrication of Terabit/in2 Media. *T. Ouchi*[1], Y. Arikawa[1], T. Kuno[1], J. Mizuno[2], S. Shoji[1,2] and T. Homma[1,2] *1. Faculty of Advanced Science and Engineering, Waseda University, Tokyo, Japan; 2. Nanothechnology Research Center, Waseda University, Tokyo, Japan*

10:24

CG-08. Tailoring magnetism in ultra-dense patterned media by light ion irradiation. *S. Park*[1], T. Hauet[2], C. Beigné[3], O. Hellwig[2], B.D. Terris[2] and D. Ravelosona[1] *1. Institut d'Electronique Fondamentale, UMR CNRS 8622, Université Paris Sud 11, ORSAY cedex, France; 2. San Jose Research Center, 3403 Yerba Buena, Hitachi Global Storage Technologies, San Jose, CA; 3. DRFMC / SP2M, 17 avenue des Martyrs, CEA Grenoble, Grenoble, France*

10:36

CG-09. Positioning magnetic domain walls in a rhombic Co ring. *C. Nam*[1], M. Mascaro[1], H. Körner[1] and C. Ross[1] *1. Materials Science and Engineering, MIT, Cambridge, MA*

10:48

CG-10. Magnetotransport signatures on systems of nanohole arrays. *D.C. Leitão*[1,2], C.T. Sousa[1], A. Apolinario[1], J. Ventura[1], J.B. Sousa[1], K.R. Pirota[2], M. Vazquez[2] and J.P. Araujo[1] *1. IFIMUP - Nanoscience and Nanotechnology Institute, Porto, Portugal; 2. Instituto de Ciencia de Materiales de Madrid - CSIC, Madrid, Spain*

11:00

CG-11. Angular dependence of magnetic normal modes in NiFe antidot lattices with different lattice symmetry. G. Gubbiotti[1], *S. Tacchi*[1], M. Madami[1], G. Carlotti[2], A. Adeyeye[3], B. Botters[4], S. Neusser[4] and D. Grundler[4] *1. Dipartimento di Fisica, CNISM, Unità di Perugia, Perugia, PG, Italy; 2. Dipartimento di Fisica and Università di Perugia, CNISM, Unità di Perugia, Perugia, PG, Italy; 3. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 4. Lehrstuhl für Physik funktionaler Schichtsysteme,Physik Department, Technische Universität München, Munich, Germany*

11:12

CG-12. Magnetic domain configurations in perpendicular anisotropy CoCrPt lines and rings. *D. Navas*[1,2], C. Nam[1], F. Castaño[2] and C. Ross[1] *1. Dept. Materials Science and Engineering, MIT, Cambridge, MA; 2. Departamento de Quimica Fisica, Universidad del Pais Vasco, 48940 Lejona, Vizkaya, Spain*

11:24

CG-13. Effects of Exchange Coupling and Spacing in Elongated Ni80Fe20/Au/Co Nanorings. *Y. Ren*[1,2], A. Adeyeye[1], C. Nam[3] and C. Ross[3] *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Singapore-MIT Alliance, National University of Singapore, Singapore, Singapore; 3. Department of Materials Science & Engineering, Massachusetts Institute of Technology, Cambridge, MA*

11:36

CG-14. Flux-closure Control and Domain Wall Trapping in Asymmetric Nanorings. *X. Wang*[1], W. Wang[1] and W. Lew[1] *1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore 637371, Singapore*

11:48

CG-15. Periodic Magnetic Composites: An Experimental Platform for Magnonics. *A.O. Adeyeye*[1], S. Jain[1] and Y. Ren[1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

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WEDNESDAY MORNING 9:00 — WASHINGTON 5

Session CH
HYPERTHERMIA AND OTHER APPLICATIONS OF NANOPARTICLES
Pallavi Dhagat, Chair

9:00

CH-01. Polyol-based Synthesis of Hydrophilic Magnetite Nanoparticles for Hyperthermia Application. *D. Maity*[1], P. Chandrasekharan[2], S. Feng[2], J. Xue[1] and J. Ding[1] *1. Materials Science and Engineeering, National University of Singapore, Singapore, Singapore; 2. Chemical and BiomolecularEngineering, National University of Singapore, Singapore, Singapore*

9:12

CH-02. Magnetic characterization and heat dissipation of surface coated and uncoated magnetite nanoparticles. *A. Tomitaka*[1], T. Koshi[1], S. Hatsugai[1], K. Ueda[1], T. Yamada[1] and Y. Takemura[1] *1. Yokohama National University, Yokohama, Japan*

9:24

CH-03. Heating characteristics of ferromagnetic iron oxide nanoparticles for magnetic hyperthermia. *E. Kita*[1], S. Hashimoto[2], T. Kayano[1], M. Minagawa[1], H. Yanagihara[1], M. Kishimoto[1], K. Yamada[2], T. Oda[2], N. Ohkohchi[2], T. Takagi[3], T. Kanamori[3], Y. Ikehata[4] and I. Nagano[4] *1. Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan; 2. Institute of Clinical Medicine, University of Tsukuba, Tsukuba, Ibaraki, Japan; 3. AIST, Tsukuba, Ibaraki, Japan; 4. Faculty of Engineering, Kanazawa Univarsity, Kanazawa, Ishikawa, Japan*

9:36

CH-04. RF Field Heating of Magnetic Nanoparticles for Remote Control of Ion Channels. *H. Zeng*[1], S. Delikanli[1], H. Huang[1] and A. Pralle[1] *1. Department of Physics, University at Buffalo, SUNY, Buffalo, NY*

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9:48

CH-05. AC Magnetically Induced Heating Characteristics and Bio-Compatibility of $Mn_xZn_{1-x}Fe_2O_4$ Superparamagnetic Nanoparticles for Hyperthermia Applications. *M. Jeun*[1], S. Kalyan[1], S. Moon[1], H. Kobayashi[2], A. Tomitaka[2], Y. Kim[3], H. Shin[4], Y. Takemura[2], K. Park[3], S. Paek[4], K. Chung[5] and S. Bae[1] *1. Biomagnetics laboratory (BML), Department of Electrical and Computer Engineering, National University of Singapore, Singapore 117576, Singapore; 2. Department of Electrical and Computer Engineering, Yokohama National University, Yokohama 240-8501, Japan; 3. Department of Ophthalmology, Seoul National University College of Medicine, Seoul, 110-744, Korea, Republic of; 4. Department of Neurosurgery, Seoul National University College of Medicine, Seoul, 110-744, Korea, Republic of; 5. Daion Co. Ltd, Incheon 405-846, Korea, Republic of*

10:00

CH-06. Optimization of Magnetic Anisotropy and Applied Fields for Hyperthermia Applications Hweerin Sohn and R.H. Victora Dept. of Electrical & Computer Engineering and The Center for Micromagnetics and Information Technologies (MINT), University of Minnesota, Minneapolis, MN, USA. *H. Sohn*[1] and R.H. Victora[1] *1. Electrical Engineering, University of Minnesota, Minneapolis, MN*

10:12

CH-07. Air-stable Fe-Au magnetic nanoparticles for application in hyperthermia treatment of cancer. *s.n. ahmad*[1], E. Lochner[1] and S.A. Shaheen[1] *1. Physics, Florida state university, Tallahassee, FL*

10:24

CH-08. Surface plasmon resonance enhanced magneto-optical activity in core-shell Ag-Fe nanoparticles. *K. Yang*[1], L. Wang[2], C. Clavero[1], K. Carroll[3], E. Carpenter[3] and R.A. Lukaszew[1,2] *1. Applied Science, College of William and Mary, Williamsburg, VA; 2. Department of Physics, College of William and Mary, Williamsburg, VA; 3. Department of Chemistry, Virginia Commonwealth University, Richmond, VA*

10:36

CH-09. Studies of Pt attachment onto Iron Oxide Nanoparticle Surfaces. S. Palchoudhury[1], Y. Xu[1] and *Y. Bao*[1] *1. Chemical and Biological Engineering, University of Alabama, Tuscaloosa, AL*

10:48

CH-10. Spectrally-Tunable Magnetic Nanoparticles for Distribution-Recollection. *G.P. Glaspell*[1] and J.D. Nelson[1] *1. AGC, USACE, Alexandria, VA*

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11:00

CH-11. Darkfield optical microscopy observation of nanoparticle magnetophoresis.J. Lim[2,4], C. Lanni[1], F. Lanni[3], R. Tilton[2] and *S. Majetich*[1] *1. Physics Department, Carnegie Mellon University, Pittsburgh, PA; 2. Chemical Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Biological Sciences, Carnegie Mellon University, Pittsburgh, PA; 4. Chemical Engineering, Universiti Sains Malaysia, Penang, Malaysia*

11:12

CH-12. Silane-based functionalization of synthetic antiferromagnetic nanopaticles for biomedical applications. *M. Zhang*[1], W. Hu[1], C. Earhart[1], M. Tang[2], R. Wilson[1] and S. Wang[1,2] *1. Materials Science and Engineering, Stanford University, Stanford, CA; 2. Electrical Engineering, Stanford University, Stanford, CA*

11:24

CH-13. A novel route in bone tissue engineering: magnetic biomimetic scaffolds. *A. Riminucci*[1], N. Bock[1], C. Dionigi[1], E. Landi[3], A. Russo[2], C. Pernechele[4], M. Solzi[3], A. Tampieri[3], M. Marcacci[2] and V. Dediu[1] *1. ISMN, CNR, Bologna, Italy; 2. Laboratorio di Biomeccanica, Istituti Ortopedici Rizzoli, Bologna, Italy; 3. ISTEC, CNR, Faenza, Italy; 4. Dept. of Physics, University of Parma, Parma, Italy*

11:36

CH-14. Engineered Multifunctional Magnetic Micelles. *D. Kim*[1], E.A. Rozhkova[2], S.D. Bader[1,2] and V. Novosad[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

11:48

CH-15. Dependence of magnetosomes magnetic properties on genetic modifications. *M. Liberati*[1], D. Murat[2], A. Komeili[2] and E. Arenholz[1] *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Department of Plant and Microbial Biology, UC Berkeley, Berkeley, CA*

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WEDNESDAY
MORNING
8:00

EXHIBIT HALL C

Session CP
ELECTRICAL MACHINES AND LEVITATION (POSTER SESSION)
Amr Adly, Chair

CP-01. Design and Comparison between IM and PMSM for Hybrid Electrical Vehicles. ***(Invited)*** *J. Bae*[1], S. Ham[1], J. Im[1], W. Kim[1] and J. Lee[1] *1. Department of electrical engineering, Hanyang University, Seoul, Korea, Republic of*

CP-02. The characteristics analysis of IPM with the inductance profile considering the slot-harmonics. *S. Won*[1] *1. Electrical Eng., Dongyang Technical College, Seoul, Korea, Republic of*

CP-03. Dynamic Characteristics Analysis in A Pole Changing Memory Motor Using Coupled FEM & Preisach Modeling. *Y. Cho*[1], J. Lee[1] and I. Lee[1] *1. Hanbat national university, Daejeon, Korea, Republic of*

CP-04. Passive magnetic levitation for small motor applications. *C. Wang*[1], Y. Yao[1,2], K. Liang[3], Y. Chang[3] and D.A. Lowther[4] *1. Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan; 2. Department of Physics and Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan; 3. Energy and Environment Research Laboratories, Technology Research Institute, Hsinchu, Taiwan; 4. Department of Electrical & Computer Engineering, McGill University, Montreal, QC, Canada*

CP-05. Design and performance assessment of active magnetic bearing for flywheel energy storage system. *J. Lee*[1], S. Han[1], Y. Han[1], B. Park[1] and T. Sung[1] *1. Korea Electric Power Research Institute, Daejeon, Korea, Republic of*

CP-06. Withdrawn

CP-07. A Study on shape of copper die-casting rotor bar of single phase induction motor for high starting torque and high efficiency. *K. Kim*[1], J. Im[1], S. Kim[1], W. Kim[1], S. Lim[2] and J. Lee[1] *1. Hanyang University, Seoul, Korea, Republic of; 2. Intelligent Mechatronics Resarch Center, Korea Electronics Technology Institute, Bucheon, Yakdae-dong, Wonmi-gu, Korea, Republic of*

CP-08. The Characteristic Analysis Considering Parameter Variation according to the slip in Induction Motor. *S. Lee*[1], S. Kim[1], J. Lee[1] and J. Hong[1] *1. Hanyang University, Seoul, Korea, Republic of*

CP-09. Optimum Design For Premium Efficiency of 250 kW Traction Induction Motor Using Response Surface Methodology & FEM. *T. Yun*[1], J. Lee[1] and S. Mun[1] *1. Hanbat National University, Daejeon, Korea, Republic of*

CP-10. Analysis of Steady State Operation of an Induction Generator. *C. Nascimento*[1] and . Flores Filho[1] *1. Federal University of Rio Grande do Sul, Porto Alegre, Brazil*

CP-11. A Study on the Performance of Three Phase Induction Motor with Rectangle Stator Core. *K. Kim*[1] *1. Dept. of Electrical Engineering, Hanbat National University, Daejeon, Korea, Republic of*

CP-12. Extension of the concept of windings in magnetic field – electric circuit coupled finite – element method. *W. Fu*[1] and S. Ho[1] *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

CP-13. The loss characteristics of amorphous core for PMSM in flywheel energy storage system. *J. Lee*[1], S. Han[1], Y. Han[1], B. Park[1], B. Park[1], S. Jung[1] and T. Sung[1] *1. Korea Electric Power Research Institute, Daejeon, Korea, Republic of*

WEDNESDAY MORNING 8:00 — EXHIBIT HALL C

Session CQ
SPECIAL MACHINES AND ACTUATORS (POSTER SESSION)

Daisuke Miyagi, Co-Chair
Doug Lavers, Co-Chair

CQ-01. Design and analysis of microspeakers to improve sound characteristics in a low frequency range. *J. Park*[1], C. Lee[1], J. Kwon[1] and S. Hwang[1] *1. Pusan National University, Busan, Geumjeong-gu, Korea, Republic of*

CQ-02. Development of Mobile Speaker with Magnetostrictive Vibrator.H. Choi[1], *Y. Park*[1], K. Ji[1] and M. Noh[1] *1. Mechatronics Engineering, Chungnal National Uninversity, Daejeon, Daejeon, Korea, Republic of*

CQ-03. Fundamental Study of Smooth Impact Drive Mechanism (SIDM) Using Magnetostrictive Actuation. *Z. Zhang*[1], T. Ueno[2], T. Yamazaki[3] and T. Higuchi[3] *1. Department of Mechanical Engineering, Faculty of Science and Technology, Tokyo University of Science, Noda, Chiba, Japan; 2. Division of Electrical Engineering and Computer Science, Kanazawa University, Kanazawa, Ishikawa, Japan; 3. Department of Precision Engineering, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan*

CQ-04. Globular Magnetic Actuator Capable of Freely Movement in a Complex Pipe. ***(Invited)*** *H. Yaguchi*[1] and N. Sato[1] *1. Tohoku gakuin university, Tagajo, Japan*

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CQ-05. Modeling and Simulation of Magnetostrictive Drop-on-Demand Inkjet Head. *J. Yoo*[1], Y. Park[1] and B. Kim[1] *1. Mechatronics Engineering, Chungnal National Uninversity, Daejeon, Daejeon, Korea, Republic of*

CQ-06. Maximization of the performances of a thermomagnetic Curie motor. *M. Trapanese*[1] *1. Dipartimento di Ingegneria Elettrica, Elettronica e delle Telecomunicazioni, Università di Palermo, Palermo, Italy*

CQ-07. Magnetic Navigation System with Gradient and Uniform Saddle Coils for the Wireless Manipulation of a Micro-robot in Human Blood Vessel. *S. Jeon*[1], G. Jang[1], H. Choi[2] and S. Park[2] *1. Dept. of Mechanical Engineering, PREM Lab., Hanyang University, Seoul, Korea, Republic of; 2. Dept. of Mechanical Engineering, Chonnam National University, Gwangju, Korea, Republic of*

CQ-08. A Lumped Parameter Magnetic Circuit Model for Rapid Prediction of Dynamic Performance of Permanent Magnet Contactor.P. Jin[1], *H. Lin*[1], Z. Zhu[2], S. Fang[1] and X. Wang[1] *1. School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China; 2. Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, United Kingdom*

CQ-09. Using Magneto-optical Measurements for the Evaluation of a Hybrid Magnetic Shape Memory (MSM) Based Microactuator. *B. Spasova*[1], M.C. Wurz[1], J. Norpoth[2], C. Jooss[2] and H.H. Gatzen[1] *1. Leibniz Universitaet Hannover, Center for Production Technology, Institut for Microtechnology, Garbsen, Germany; 2. Georg-August-Universitaet Goettingen, Institute for Materials Physics, Goettingen, Germany*

CQ-10. Multi layer planar concentrated windings. *T. Cox*[1] and F. Eastham[2] *1. Force Engineering Ltd, Shepshed, United Kingdom; 2. The University of Bath, Bath, United Kingdom*

CQ-11. Analytical model of the interaction force between a rectangular coil and a cuboidal permanent magnet. *H. Rovers*[1], J.W. Jansen[1], E. Lomonova[1] and J. Achterberg[1] *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

CQ-12. Dipolar coupling as an optimization of the magnetic actuation in MCs. *A. Chiolerio*[1], G. Canavese[2], I. Ferrante[2], S. Marasso[2], P. Pandolfi[2], R. Castagna[2], A. Ricci[2], C. Ricciardi[2] and P. Allia[2] *1. Physics, Politecnico di Torino, Turin, Italy; 2. Materials Science and Chemical Engineering, Politecnico di Torino, Turin, TO, Italy*

CQ-13. Preparation of multi-polarly micro rotor using shape-magnetic-anisotropy.F. Yamashita[1], *S. Nishimura*[1], N. Menjo[1], O. Kobayashi[1], M. Nakano[2], H. Fukunaga[2] and K. Ishiyama[3] *1. Rotary Component Technology Development Division, Minebea Co. Ltd., Fukuroi, Shizuoka, Japan; 2. Faculty of Engineering, Nagasaki Univ., Nagasaki, Japan; 3. Research Institute of Electrical Communication, Tohoku Univ., Sendai, Japan*

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CQ-14. Composite bonded magnets with self-recoverability for miniaturized rotor.F. Yamashita[1], *O. Yamada*[1], S. Ohya[1], O. Kobayashi[1], M. Nakano[2] and H. Fukunaga[2] *1. Rotary Component Technology Development Division, Minebea Co,. Ltd., Fukuroi, Shizuoka, Japan; 2. Faculty of Engineering, Nagasaki Univ., Nagasaki, Japan*

CQ-15. Design of a Two-Degree-Of-Freedom Seeking controller for Low Acoustics of Hard Disk Drives.J. Wang[1], *Q. Jia*[2] and Y. Wang[1] *1. Nanyang Technological University, SG, Singapore; 2. Hitachi Singapore, Singapore, Singapore*

WEDNESDAY
MORNING
8:00

EXHIBIT HALL C

Session CR
LINEAR MACHINES AND ACTUATORS (POSTER SESSION)
Kazushi Ishiyama, Chair

CR-01. Analysis on dynamic electro-magnetic propulsion force and goodness factor of linear induction motor considering overhang conditions.S. Jang[1], *Y. Park*[1], J. Park[1], K. Ko[1], H. Kim[1] and J. Choi[1] *1. Chungnam National University, Daejeon, Korea, Republic of*

CR-02. A linear magnetic-geared machine system for direct-drive wave power generation. *W. Li*[1], K. Chau[1], J. Jiang[2,1] and C. Liu[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China; 2. Department of Automation, Shanghai University, Shanghai, China*

CR-03. A feasibility study on a new doubly salient permanent magnet linear synchronous machine. *S. Chung*[1,2], B. Woo[1], J. Kim[1], J. Lee[1], S. Moon[1] and S. Hwang[2] *1. Electric Motor Research Center, KERI, Changwon, Korea, Republic of; 2. School of Mechanical Engineering, Pusan National University, Busan, Korea, Republic of*

CR-04. A Novel Permanent Magnet Actuator for Low Voltage Controlled Vacuum ac Contactor.S. Fang[1], H. Lin[1], *S. Ho*[2], X. Wang[1] and P. Jin[1] *1. School of Electrical Engineering, Southeast University, Nanjing, China; 2. Department of Electrical Engineering, Hong Kong Polytechnic University, Kowloon, China*

CR-05. Influence of design parameters and dc link voltage on dynamic performance of slotless double-sided permanent magnet linear synchronous motor.S. Jang[1], *J. Choi*[1], J. Park[1], K. Ko[1], U. Lee[1] and D. You[2] *1. Electrical engineering, Chungnam national University, Daejoen, Korea, Republic of; 2. Cheongyang College, Chungnam, Korea, Republic of*

CR-06. Design and realisation of a linear magnetic gear.
R. Holehouse[1], K. Atallah[1] and J. Wang[1] *1. University of Sheffield, Sheffield, United Kingdom*

CR-07. Analysis of Dynamic Characteristics of Permanent Magnet Contactor with Sensorless Displacement Profile Control. X. Wang[1], H. Lin[1], *S. Ho*[2], S. Fang[1] and P. Jin[1] *1. School of Electrical Engineering, Southeast University, Nanjing, China; 2. Department of Electrical Engineering, Hong Kong Polytechnic University, Kowloon, China*

CR-08. Comparison of Cogging Force Reduction Effects of Phase Set Shift in Multi-Pole Structure of Linear Synchronous motor.
J. Lim[1], Y. Kim[2] and H. Jung[1] *1. School of Electrical Engineering and Computer Science, Seoul National University, Seoul, Korea, Republic of; 2. Department of Electrical Engineering, Chosun University, Gwangju, Korea, Republic of*

CR-09. Characteristics analysis of cylindrical LOA with halbach magnet Array for minimizing electric power considering mechanical resonance frequency. S. Jang[1], *H. Kim*[1], J. Choi[1], J. Choi[1], S. Sung[2] and Y. Park[3] *1. Chungnam National University, Daejeon, Korea, Republic of; 2. Korea Ocean Research & Development Institute, Daejeon, Korea, Republic of; 3. Korea Research Institute of Standards and Science, Daejeon, Korea, Republic of*

CR-10. Analysis and comparison on eddy current losses for cylindrical linear oscillatory actuator with halbach mover according to voltage source waveform. S. Jang[1], *H. Kim*[1], J. Park[1], K. Ko[1], Y. Park[1] and J. Choi[1] *1. Chungnam National University, Daejeon, Korea, Republic of*

CR-11. Design and Analysis of a Linear Synchronous Motor with HTS Bulk Magnets. *Y. Guo*[1], J. Jin[2], J. Zhu[1] and H. Lu[1] *1. Faculty of Engineering and IT, University of Technology, Sydney, Sydney, NSW, Australia; 2. Center of Applied Superconductivity, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

CR-12. Optimization for Reduction of Cogging Force in a Permanent Magnet Linear Synchronous Motor. P. Li[1], *C. Hwang*[2] and C. Liu[3] *1. PhD Program in ECE, Feng Chia University, Taichung, Taiwan; 2. Electrical Engineering, Feng Chia University, Taichung, Taiwan; 3. Electrical Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan*

CR-13. Control system of the spherical PM motor for humanoid robot. *S. Go*[1], W. Kim[1], S. Kim[1], D. Kang[1], J. Ahn[2] and J. Lee[1] *1. Hanyang University, Seoul, Korea, Republic of; 2. Osan College, Osan, Keongkido, Korea, Republic of*

CR-14. Analysis of the Magnetic Field and the Force in a XY-Induction Actuator. *N.F. Baggio Filho*[1] and . Flores Filho[1] *1. Federal University of Rio Grande do Sul, Porto Alegre, Brazil*

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CR-15. Optimal Design of Permanent Magnet Thrust Bearing for Weight Compensation of Flywheel Energy Storage Systems. *S. Yoo*[1], W. Kim[2], S. Kim[2], Y. Bae[3] and M. Noh[1] *1. Mechatronics Engineering, Chungnam National University, Daejeon, Korea, Republic of; 2. Korea Institute of Science and Technology, Seoul, Korea, Republic of; 3. Korea Electric Power Research Institute, Daejeon, Korea, Republic of*

WEDNESDAY MORNING 8:00 — EXHIBIT HALL C

Session CS
PM MACHINES I (POSTER SESSION)
Z. Zhu, Chair

CS-01. Comparison of the electromagnetic forces of BLDC motors with different numbers of slots. *C. Lee*[1] and S. Hwang[1] *1. Mechanical Engineering, Pusan National Univ., Busan, Busan, Korea, Republic of*

CS-02. Experimental verification and design of synchronous machine with full-ring type permanent magnet by means of analytical solution. *J. Park*[1], S. Jang[1], Y. Park[1], S. Lee[2] and S. Han[3] *1. Electrical Engineering, Chungnam National University, Daejeon, Korea, Republic of; 2. Korea Institute Industrial Technology Gwangju Research Center, Gwangju, Korea, Republic of; 3. Korea Electric Power Research Institute, Daejeon, Korea, Republic of*

CS-03. Electromagnetic performance evaluation of 1.5kW class synchronous generator with outer permanent magnet rotor for small-scale wind power system based on analytical solutions. *K. Ko*[1], S. Jang[1], J. Kim[1], J. Choi[1], S. Lee[2] and G. Yoon[3] *1. Electrical Engineering, Chungnam National University, Daejeon, Korea, Republic of; 2. Korea Institute of Industrial Technology Gwangju Research Center, Gwangju, Korea, Republic of; 3. Korea Electric Power Research Institute, Daejeon, Korea, Republic of*

CS-04. Novel hybrid-excited flux-switching permanent-magnet machines with iron bridges. R. Owen[1], *Z. Zhu*[1] and G. Jewell[1] *1. Dept. of Electronic and Electrical Engineering, University of Sheffield, Sheffield, United Kingdom*

CS-05. A Study on the Rotor Designing Algorithm using Torque Separation Method and the Characteristics of the Optimal Materials for LSPM. *W. Kim*[1], K. Kim[1], S. Ham[1], J. Im[1], S. Im[2] and J. Lee[1] *1. Electrical Engineering, HanYang Univ., Seoul, Korea, Republic of; 2. Intelligent Mechatronics Research Center, Korea Electronics Technology Institute (KETI), Bucheon-si, Korea, Republic of*

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CS-06. Comparison of Fault-tolerant Operations for Permanent-magnet Hybrid Brushless Motor Drive. *C. Liu*[1] and K. Chau[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China*

CS-07. The Development for Slotless Permanent Magnet Brushless DC Motor with 4 Poles Isotropic/anisotropic Magnet.G. Yan[1], *J. Wang*[1], L. Hsu[2] and M. Tsai[2] *1. Metal Industries Research & Development Centre, Kaohsiung, Taiwan; 2. Electric Motor Technology Research Center, National Cheng Kung University, Tainan, Taiwan*

CS-08. Torque ripple suppression in flux-switching PM motor by harmonic current injection based on voltage space-vector modulation. *H. Jia*[1], M. Cheng[1], W. Hua[1] and W. Zhao[1] *1. School of Electrical Engineering, Southeast University, Nanjing, China*

CS-09. Magnetic Coupling Investigation of Compound-Structure Permanent-Magnet Synchronous Machine Used for HEV. *J. Zhao*[1], P. Zheng[1], Q. Wu[1] and Z. Wu[2] *1. Dept. of Electrical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China; 2. Dept. of Electrical Engineering, Fuzhou University, Fuzhou, Fujian, China*

CS-10. A New Anisotropic Bonded NdFeB Permanent Magnet and Its Application to a Small DC Motor. *H. Kim*[1,2] and C. Koh[2] *1. Research & Development, Jahwa Electronics, Cheongwon-gun, Chungbuk, Korea, Republic of; 2. College of ECE, Chungbuk National Univ., Cheongju, Chungbuk, Korea, Republic of*

CS-11. A new double-stator PM brushless machine for torque boosting of downsized ICE vehicles. *S. Niu*[1] and K. Chau[1] *1. Department of Electrical and Electronic Engineering, the University of Hong Kong, Hong Kong, China*

CS-12. Transient analysis of a magnetic gear integrated brushless permanent magnet machine using circuit-field-motion coupled time-stepping finite element method.S. Ho[1], *S. Niu*[1] and W. Fu[1] *1. The Hong Kong Polytechnic University, Hong Kong, China*

CS-13. Design Optimization for Cogging Torque Minimization and Average Torque Maximization in an IPM Motor. *C. Hwang*[1], C. Chang[2], C. Liu[3] and J. Jiang[1] *1. Electrical Engineering, Feng Chia University, Taichung, Taiwan; 2. PhD Program in ECE, Feng Chia University, Taichung, Taiwan; 3. Electrical Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan*

CS-14. Optimal Current Control according to Parameters of IPMSM for HEV. *J. Im*[1], S. Kim[1], S. Go[1], J. Bae[1], K. Kim[1], W. Kim[1] and J. Lee[1] *1. Electrical Engineering, Hanyang University, Seoul, Korea, Republic of*

CS-15. Efficiency Evaluation of PMASynRM Vs. SynRM Using Coupling FEM & Preisach Modeling. *I. Lee*[1], J. Lee[1] and Y. Kim[1] *1. Hanbat National University, Daejeon, Korea, Republic of*

WEDNESDAY MORNING 8:00

EXHIBIT HALL C

Session CT
PM MACHINES II (POSTER SESSION)
Johannes Paulides, Chair

CT-01. Genetic Algorithm Based Cost-Optimized Design of an Axial-Flux PM BLDC Motor for an Electric Two-Wheeler. *K.R. Rajagopal*[1] and A. Venkanna[1] *1. Department of Electrical Engineering, Indian Institute of Technology Delhi, New Delhi, India*

CT-02. Cogging Torque Reduction of Brushless Permanent Magnet Motor using Optimization of Magnetizer. *S. Lim*[1], S. Rhy[1], Y. Kim[1] and I. Jung[1] *1. Intelligent Mechatronics Resarch Center, Korea Electronics Technology Institute (KETI), Bucheon-si, Korea, Republic of*

CT-03. A Research on Method to Discriminate the fitness of Phase Coil Arrangement in the Permanent Magnet Motor. *D. Kim*[1], S. Lee[1], G. Park[1] and H. Choi[2] *1. Electronic & Electrical Engineering, Pusan National University, Busan, Korea, Republic of; 2. School of electronic & Electrical Engineering, Kyungpook National University, Gyeongbuk, Korea, Republic of*

CT-04. Design for Cogging Torque Reduction of IPMSM by Using Quasi-Global Optimization Technique. *Y. Kim*[1] and I. Jung[1] *1. Korea Electronics Technology Institute, Seongnam-Si, Korea, Republic of*

CT-05. A Nonlinear Inductance Model for Performance Analysis of a Permanent Magnet Claw Pole SMC Motor. *Y. Guo*[1], J. Zhu[1], Y. Wang[1], H. Lu[1] and J. Jin[2] *1. Faculty of Engineering and IT, University of Technology, Sydney, Sydney, NSW, Australia; 2. Center of Applied Superconductivity, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

CT-06. Rotor Design Approach of IPMSM with Wide-Speed Range Considering Mechanical Stress. *J. Seo*[1] and H. Jung[1] *1. School of Electrical Engineering and Computer Science, Seoul National University, Seoul, Korea, Republic of*

CT-07. Thermal Analysis of Permanent Magnet Motor for the Electric Vehicle Application Considering Driving Duty Cycle. *J. Fan*[1] and C. Zhang[1] *1. Beijing Institute of Technology, Beijing, China*

CT-08. Performance Improvement of the Single-Phase Outer Rotor Type Brushless DC Motor for Pump. *D. Hong*[1], B. Woo[1] and J. Kim[1] *1. Korea Electrotechnology Research Institute, Changwon, Korea, Republic of*

CT-09. Novel Double-barrier Rotor Designs in Interior-PM Motor For Reducing Torque Pulsation. *L. Fang*[1], S. Kim[1] and J. Hong[1] *1. Department of Automotive Engineering, Hanyang University, Seoul, Korea, Republic of*

CT-10. Investigation and Comparison of System Efficiency in Ferrite and NdFeB Magnet Synchronous Motors Driven by PWM Inverter. *T. Sun*[1], S. Kwon[1], Y. Kim[2] and J. Hong[1] *1. Department of Automotive Engineering, Hanyang University, Seoul, Korea, Republic of; 2. Korea Electronics Technology Institute, Bucheon, Gyeonggi, Korea, Republic of*

CT-11. The Design of high power permanent magnet motor with segment rectangular copper wire and closed slot opening on electric vehicle. *J. Choi*[1], Y. Chun[1], M. Kim[1], D. Koo[1] and C. Chun[2] *1. Electric Motor Research Center, Korea Electrotechnology Research Institute, Changwon Si, Gyeongsangnam-Do, Korea, Republic of; 2. TSA Co., Ltd, Bucheon-si, Gyeonggi-do, Korea, Republic of*

CT-12. The Magnetic Circuit Design for a Improvement of Vibration and EMI Characteristics in IPM Type BLDC Motor.J. Hur[1], *K. Lee*[1], J. Reu[1] and G. Kang[2] *1. School of Electrical Engineering, University of Ulsan, Ulsan, Korea, Republic of; 2. Research Division of Electric and Electronics, Korea Marine Equipment Research Institute, BUSAN, Korea, Republic of*

CT-13. Theoretical and Experimental Analysis of Cogging Force for PM Synchronous Motors. *J. Choi*[1] and Y. Baek[1] *1. School of Mechanical Engineering, Yonsei University, Seoul, Korea, Republic of*

CT-14. A Normalization of inductance parameters affected by Rotor shape in the IPMSM. *I. Jang*[1], W. Kim[1], J. Bae[1], C. Jin[1] and L. Ju[1] *1. Hanyang Univ., Seoul, Korea, Republic of*

CT-15. A novel direct-drive dual-structure permanent magnet machine. *S. Niu*[1], S. Ho[1] and W. Fu[1] *1. The Hong Kong Polytechnic University, Hong Kong, China*

WEDNESDAY MORNING 8:00 — EXHIBIT HALL C

Session CU
RELUCTANCE MACHINES (POSTER SESSION)
Heath Hofmann, Chair

CU-01. Design Considerations of Permanent Magnet Transverse Flux Machines. *K.Y. Lu*[1], P. Rasmussen[1] and E. Ritchie[1] *1. Aalborg Univsersity, Aalborg, Denmark*

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CU-02. Development of a Permanent Magnet Vernier Motor. *L. Wang*[1,2], J. Shen[1], S. Ho[2] and W. Fu[2] *1. College of Electrical Engineering, Zhejiang University, Hangzhou, Zhejiang, China; 2. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

CU-03. Modeling of a linear switched reluctance machine and drive for wave energy conversion using matrix and tensor approach. *J. Du*[1,2], D. Liang[1], L. Xu[2] and Q. Li[1] *1. Electrical Engineering, Xi'an Jiaotong University, Xi'an, Shannxi, China; 2. Electrical & Computer Engineering, Ohio State University, Columbus, OH*

CU-04. Optimization of a Switched Reluctance Motor Made of Permendur. *Y. Hasegawa*[1], K. Nakamura[1] and O. Ichinokura[1] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan*

CU-05. Robust Torque Control of DC Link Voltage Fluctuation for SynRM considering Inductances with Magnetic Saturation. *S. Kim*[1], J. Im[1], S. Go[1], J. Bae[1], W. Kim[1], K. Kim[1] and J. Lee[1] *1. Electrical Engineering, Hanyang University, Seoul, Korea, Republic of*

CU-06. DC winding excited 3-phase flux-switching brushless ac machines for low cost applications.J. Chen[1], *Z. Zhu*[1], S. Iwasaki[2] and R. Deodhar[2] *1. Dept. of Electronic and Electrical Engineering, University of Sheffield, Sheffield, United Kingdom; 2. U.K. Research Centre, IMRA Europe S.A.S., Brighton, United Kingdom*

CU-07. Detent Torque of Parking Magnet Starting Device Installed in the Single-Phase Switched Reluctance Motor. *K. Jun-Ho*[1], L. Eun-Woong[2], J. Seok-Myeong[2], K. Il-Jung[3] and L. Seung-Min[2] *1. Design Department of Low Voltage Electric Equipment, LS Industrial Systems, CheongJu, Korea, Republic of; 2. Department of Electrical Engineering, ChungNam Nat'l University, DaeJeon, Korea, Republic of; 3. Department of Mechanical Engineering, HoSeo University, ASan, Korea, Republic of*

CU-08. Optimum Design Criteria for Maximum Torque Density & Minimum Torque Ripple of Flux Switching Motor using Response Surface Methodology. *Y. Kim*[1], J. Lee[1] and T. Lee[1] *1. Hanbat national university, Daejeon, Korea, Republic of*

CU-09. A virtual air gap with equal permeance for the performance analysis of hybrid stepping motor with two phases based on 3-D finite element analysis.J. Chen[1], S. Ho[2], *W. Fu*[2], Y. Guo[3] and J. Zhu[3] *1. Electromechanical Engineering, Donghua University, Shanghai, China; 2. Electrical Engineering, Hong Kong Polytechnic University, Hongkong, China; 3. Faculty of Engineering, University of Technology, Sydney, Sydney, NSW, Australia*

CU-10. Analysis of variable reluctance resolver according to output signal widning methods. *C. Jin*[1], W. Kim[1], S. Go[1], S. Lim[2] and J. Lee[1] *1. Electrical Engineering, Hanyang University, Seoul, Korea, Republic of; 2. Intelligent Mechatronics Research Center, Korea Electronics, Bucheon, Korea, Republic of*

CU-11. Modeling of Flux Switching Permanent Magnet Machines with Fourier Analysis. *B.L. Gysen*[1], E. Ilhan[1], K. Meessen[1], J. Paulides[1] and E. Lomonova[1] *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

CU-12. Characterization and torque estimation of running SR motor using Fourier series. *F. Kucuk*[1], H. Goto[1], H.J. Guo[2] and O. Ichinokura[1] *1. Electrical and Communication Engineering, Tohoku University, Sendai, Japan; 2. Electrical and Information Engineering, Tohoku Gakuin University, Sendai, Japan*

CU-13. Loss Analysis and Efficiency Evaluations of Synchronous Reluctance Motor Using Coupled FEM & Preisach Modelling. *I. Lee*[1], J. Lee[1] and Y. Cho[1] *1. Hanbat National University, Daejeon, Korea, Republic of*

CU-14. Analysis of Permanent Magnet Re-magnetizing Physics of a Variable Flux Memory Motor. H. Liu[1], *H. Lin*[1], Z. Zhu[2], Y. Huang[1], J. Yan[1] and P. Jin[1] *1. School of Electrical Engineering, Southeast University, Nanjing, China; 2. Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, United Kingdom*

CU-15. A New Efficient Permanent-Magnet Vernier Machine for Wind Power Generation and The Corresponding FEM Analysis. *J. Li*[1], K. Chau[1], J. Jiang[2] and C. Liu[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China; 2. Department of Automation, Shanghai University, Shanghai, China*

WEDNESDAY MORNING 8:00 — EXHIBIT HALL C

Session CV

HEAD-DISK INTERFACE AND INTEGRATION (POSTER SESSION)

Zhimin Yuan, Chair

CV-01. Dynamics of a Thermal Fly-height Control Slider in Lubricant-Contact. *S. Vangipuram Canchi*[1] and D.B. Bogy[1] *1. Mechanical Engineering, University of California at Berkeley, Berkeley, CA*

CV-02. Slider design optimization for lube-surfing head disk interface scheme. *L.V. Gonzaga*[1], B. Liu[1], S. Yu[1], W. Hua[1] and W. Zhou[1] *1. Data Storage Institute, A*STAR, Singapore, Singapore*

CV-03. Simulation of Flying Height and Response Time of Thermal Flying Height Control Sliders with Thermal Insulators. *H. Li*[1], H. Zheng[2], J. Fritzsche[2], K. Amemiya[1] and F.E. Talke[2] *1. Storage Mechanics Laboratory, Hitachi Asia Ltd., Singpapore, Singapore; 2. Center for magnetic recording research, University of California, San Diego, La Jolla, CA*

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CV-04. System Integration Challenges for a Slider with an Integrated Microactuator. D. Hoheisel[1], S. Cvetkovic[1], W. Kurniawan[2], E. Obermeier[2] and *H.H. Gatzen*[1] *1. Leibniz Universitaet Hannover, Institute for Microtechnology, Garbsen, Germany; 2. Technical University of Berlin, Microsensor & Actuator Technology Center, Berlin, Germany*

CV-05. Slider-Disk Interaction and Flyability Study with Atomically Smooth Disk. B. Liu[1], *K. Ng*[1], M. Yang[1], M. Zhang[1], H. Ng[1] and Y. Ma[1] *1. SMI, Data Storage Institute, Singapore, Singapore*

CV-06. Durability against contact wear of non-lubricated disk in head-disk-interface. *S. Kim*[1], X. Guo[1], R. Waltman[1], H. Tu[1], T. Shatz[1] and D. Pocker[1] *1. Hitachi GST, San Jose, CA*

CV-07. Modeling Disk Lubricant Dynamics under TFC Actuation. *B. Marchon*[1] and S. Kirpekar[2] *1. San Jose Research Center, Hitachi, San Jose, CA; 2. Hitachi GST, San Jose, CA*

CV-08. Multiscale modeling of head disk interface. *D. Kim*[1], P. Chung[1] and M.S. Jhon[1] *1. Depart of Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*

CV-09. Study of Molecular Conformation of PFPE Lubricant with Multidentate Function on Magnetic Disk Surface by Experiments and Molecular Dynamics Simulations. *H. Tani*[1], T. Shimizu[2], N. Kobayashi[2], Y. Taniike[3], K. Mori[3] and N. Tagawa[1] *1. Mechanical engineering dept. High technology research center, Kansai University, Suita-shi, Osaka, Japan; 2. Matsumura oil research Co., Kobe-shi, Hyogo, Japan; 3. Mechanical engineering dept., Kansai university, Suita-shi, Osaka, Japan*

CV-10. Surface characterization and lubricant performance on amorphous carbon films irradiated with gas cluster ion beams. *N. Toyoda*[1], I. Yamada[1], H. Tani[2] and Y. Sakane[3] *1. Graduate school of engineering, University of Hyogo, Himeji, Hyogo, Japan; 2. High Technology Research Center, Department of Mechanical Engineering, Kansai University, Suita, Osaka, Japan; 3. Western Digital Media Operations, San Jose, CA*

CV-11. Molecular Spreading of Pure and Binary Mixture PFPE Nano Films over Carbon-Overcoated Disks. *P. Chung*[1] and M.S. Jhon[1,2] *1. Department of Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Korea, Republic of*

CV-12. Effects of Gas Physical Properties on Flying Performance of Air Bearing Sliders. *W. Zhou*[1], B. Liu[1], S. Yu[1], W. Hua[1] and L. Gonzaga[1] *1. Data Storage Institute, (A*STAR) Agency for Science, Technology and Research, Singapore, Singapore*

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CV-13. Effects of Thermal Radiation on Air Bearing Cooling and Thermal Flying Height Control. *H. Zheng*[1,2], S. Zhang[2], W. Yan[2], L. Pust[2], D. Fowler[2] and F.E. Talke[1] *1. Mechanical and Aerospace Engineering, University of California, San Diego, La Jolla, CA; 2. Western Digital Corporation, 44100 Osgood Rd., Fremont, CA*

CV-14. A novel method for slider dynamic response characterization. *B. Xu*[1], H. Yuan[1], J. Zhang[1], J. Yang[1], R. Ji[1], Q. Zhang[1] and T. Chong[1] *1. Data Storage Institute, Agency for Science, Technology and Research (A-STAR), Singapore, Singapore*

CV-15. The strategy of designing an optimal seek profile to reduce acoustic noise and residual vibrations. *J. Zhang*[1], F. Hong[1] and S. Ge[2] *1. Mechatronics & Recording Channel Division, Data Storage Institute, Singapore, Singapore; 2. Department of Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore*

WEDNESDAY MORNING 8:00 — EXHIBIT HALL C

Session CW

MAGNETIC RECORDING: FePt MEDIA (POSTER SESSION)

Li Tang, Chair

CW-01. Magnetization reversal process in exchange-coupled Fe/FePt bilayer with perpendicular magnetization. *J. Tsai*[1], H. Tzeng[1] and B. Liu[1] *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

CW-02. Effect of annealing in magnetic field on microstructure and magnetic properties of FePt films. Y. Li[1], B. Ma[2], Y. Lou[1], L. Zhang[1], J. Bai[1] and *F. Wei*[1] *1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Research Institute of Magnetic Materials, Lanzhou University, Lanzhou, Gansu, China; 2. State Key Laboratory for Advanced Photonic Materials and Devices, and Department of Optical Science and Engineering, Fudan University, Shanghai, China*

CW-03. Magnetic and Microstructural Properties of Cu-doped FePt-Zr/MgO Multilayer Films. *J. Jung*[1], K. Kim[1], W. Jeung[2] and S. Lee[1] *1. Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Materials Science and Engineering, Korea Institute of Science and Technology, Seoul, Korea, Republic of*

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CW-04. Enhanced *L*1$_0$ ordering and (001) orientation in FePt: Ag nanocomposite films by monatomic layer deposition. *Y. Yu*[1,2], T.A. George[1], W.L. Li[2], L.P. Yue[1], W.D. Fei[2], H. Li[3] and D.J. Sellmyer[1] *1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. School of Materials Science and Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China; 3. College of Physics, Jilin Normal University, Siping, Jilin, China*

CW-05. A core-shell L10 FePt/Fe exchange coupled composite structure on MgO substrate.B. Ma[1,2], *H. Wang*[1], H. Zhao[1] and J. Wang[1] *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Opitical Science and Engineering, Fudan University, Shanghai, Shanghai, China*

CW-06. Magnetic properties of isolated FePt-C nanocomposited films. *C. Jiang*[1], J. Chen[1], G. Chow[1] and G. Ju[2] *1. National University of Singapore, Singapore, Singapore; 2. Seagate Technology, Fremont, CA*

CW-07. Influence of Intermedia Layer on The Magnetic Properties of *L1*$_0$ Ordered FePt Perpendicular Recording Media.X. Li[1], Z. Li[1], X. Liu[1], J. Bai[1], *F. Wei*[1] and D. Wei[2] *1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Research Institute of Magnetic Materials, Lanzhou University, Lanzhou, Gansu, China; 2. Magnetic Physics Laboratory, School of Materials Science and Engineering, Beijing, China*

CW-08. The effect of NiAl nucleation layer on the microstructure of *L*1$_0$ FePt-C films. *B. Lim*[1], J. Hu[1], K. Cher[1], P. Lwin[1], T. Zhou[1], B. Liu[1] and J. Chen[2] *1. Spintronics, Media and Interface, Data Storage Institute, Singapore, Singapore; 2. Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

CW-09. Gradient ordered *L*1$_0$ FePtCu films with graded anisotropy. *C. Zha*[1,2], J. Nogués[1,3] and J. Åkerman[1,4] *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology (KTH), Kista, Stockholm, Sweden; 2. Department of Physics, Norwegian University of Science and Technology (NTNU), Trondheim, Norway; 3. ICREA and Centre d'Investigació en Nanociència i Nanotecnologia (ICN-CSIC), Campus Universitat Autònoma de Barcelona, Bellaterra, Spain; 4. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

CW-10. The A1 to L1$_0$ transformation in FePt films with ternary alloying additions of Ag, Au and B. *B. Wang*[1] and K. Barmak[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

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CW-11. Crystalline Structure and Magnetic Properties of FePt-Ta/FeRh Thin Films. *J. Sung-Uk*[1,2], H. Seungmin[2], L. Hwan Soo[3], K. Soon-Ju[1] and L. Hak-Joo[2] *1. Material Science and Engineering, Pohang University of Science and Technology, Pohang, Korea, Republic of; 2. Division of Nano-Mechanical Systems Research, Korea Institute of Machinery and Materials, Daejeon, Korea, Republic of; 3. eMD Center, Samsung Electro-Mechanics Co., Ltd.,, Suwon, Korea, Republic of*

WEDNESDAY MORNING 8:00 — EXHIBIT HALL C

Session CX
MAGNETIC RECORDING: CONTINUOUS GRANULAR MEDIA (POSTER SESSION)
Chun Wang, Chair

CX-01. Incoherent switching characterization in exchange spring media by initial minor loop slope measurement. *Y. Ikeda*[1], G. Choe[2], S. Florez[1], B. Lengsfield[1] and K. Takano[1] *1. San Jose Research Center, Hitachi GST, San Jose, CA; 2. Disk development, Hitachi GST, San Jose, CA*

CX-02. The Effect of the Pd-TiN seed layer on the magnetic properties of Co/Pd multilayered media. *S. Kim*[1,2], D. Chun[1], J. Lee[2] and W. Jeung[1] *1. Division of Materials Research, KIST, Seoul, Korea, Republic of; 2. Department of Materials Science and Engineering, Seoul National Univ., Seoul, Korea, Republic of*

CX-03. Comparison of experiment and simulation results of interlayer thickness effect in perpendicular recording media. *H. Jung*[1], G. Choe[1], K. Zhang[1], A. Ghaderi[1], T. Olson[2] and B. Lengsfield[2] *1. Media Development, Hitachi GST, San Jose, CA; 2. Research Center, Hitachi GST, San Jose, CA*

CX-04. New-designed crystalline high-B_s soft underlayer in epitaxial perpendicular recording media toward recording density of 2 Tbit/in^2. *K. Shintaku*[1] *1. Akita Research Institute of Advanced Technology, Akita Research and Development Center, Akita, Japan*

CX-05. Fabrication of $SmCo_5$-CrTa granular films. *A. Sugiyama*[1], I. Koizumi[2], Y. Egawa[2], M. Yoshino[2], J. Hokkyo[2], T. Asahi[2] and T. Osaka[2] *1. Waseda Institute for Advanced Study, Waseda University, Tokyo, Japan; 2. Faculty of Advanded Science and Engineering, Waseda University, Tokyo, Japan*

CX-06. The effects of CrV underlayer on the structure and magnetic properties of FePt thin film. *D. Chun*[1], S. Kim[1], G. Kim[1] and W. Jeung[1] *1. Division of Materials Research, KIST, Seoul, 39-1 Haweolgok-dong, Seongbuk-, Korea, Republic of*

CX-07. SmCo5 with perpendicular anisotropy induced by a (211) textured Ni4W underlayer. *L. Zhang*[1], J. Hu[2], C. Jingsheng[1] and J. Ding[1] *1. National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

CX-08. Growth mechanism of granular-type magnetic layer on Ru intermediate layer in perpendicular recording media. N. Itagaki[1], *S. Saito*[1] and M. Takahashi[1] *1. Department of Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan*

CX-09. Effect of Ion-Implantation on Perpendicular Anisotropy of Recording Media. *N. Gaur*[1,2], S. Maurer[3], R. Nunes[3], S. Piramanayagam[2] and C. Singh Bhatia[1,4] *1. Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore; 2. (A*STAR) Agency for science Technology and Research, Data Storage Institute, Singapore, Singapore; 3. IBM Thomas J. Watson Research Centre, Yorktown Heights, NY; 4. Institute of Materials Research and Engineering, Singapore, Singapore*

CX-10. A simulation model for two dimensional recording on continuous granular media. *Z. Liu*[1], B. Chen[1] and H. Wang[1] *1. Data Storage Institute, Singapore, Singapore*

CX-11. Tailored magnetic properties of granular CoCrPt-SiO_2 films by Co^+-irradiation. S. Tibus[1,3], T. Strache[2], F. Springer[1], *D. Makarov*[3], J. Fassbender[2] and M. Albrecht[3] *1. Department of Physics, University of Konstanz, Konstanz, Germany; 2. Institute for Ion-Beam Physics and Materials Research, Forschungszentrum Dresden-Rossendorf, Dresden, Germany; 3. Institut of Physics, Chemnitz University of Technology, Chemnitz, Germany*

WEDNESDAY MORNING 8:00 — **EXHIBIT HALL C**

Session CY
BIT PATTERNED MEDIA I (POSTER SESSION)
Hongying Wang, Chair

CY-01. Shingled magnetic recording in bit patterned media. *S. Greaves*[1], Y. Kanai[2] and H. Muraoka[1] *1. RIEC, Tohoku University, Sendai, Japan; 2. IEE, Niigata Institute of Technology, Kashiwazaki, Japan*

CY-02. Effect of read head scaling on servo and data signal characteristics of interleaved two-row-per-track bit-patterned-media recording. *S. Zhang*[1], B. Chen[1], W. Wong[1], M. Lin-Yu[1] and Z. Liu[1] *1. Data Storage Institute, Singapore, Singapore*

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CY-03. Relationship between applied field gradient and magnetization switching in ECC structured dots. *Y. Ikeda*[1], S. Greaves[1], H. Aoi[1] and H. Muraoka[1] *1. RIEC, Tohoku University, Sendai, Japan*

CY-04. Simulation Study of Bit Patterned Media with Weakly Inclined Anisotropy. *N. Honda*[1], K. Yamakawa[2] and K. Ouchi[2] *1. Faculty of Engineering, Tohoku Institute of Technology, Sendai, Miyagi, Japan; 2. Research Institute of Advanced Technology, Akita Prefectural R & D Center, Akita, Akita, Japan*

CY-05. Dependence of Write-window on Write Error Rates in Bit Patterned Media. *J. Kalezhi*[1,2], B.D. Belle[1] and J.J. Miles[1] *1. School of Computer Science, The University of Manchester, Manchester, Lancashire, United Kingdom; 2. Department of Computer Science, Copperbelt University, Kitwe, Copperbelt, Zambia*

CY-06. Fabrication of discrete track media by Cr ion implantation. *T. Hinoue*[1], T. Ono[1], H. Inaba[2], T. Iwane[1], H. Yakushiji[1] and A. Chayahara[3] *1. CRL, Hitachi Ltd., Odawara, Japan; 2. PERL, Hitachi Ltd., Yokohama, Japan; 3. AIST, Ikeda, Japan*

CY-07. Curvature induced magnetic properties and microstructure in FePt nano-domes by rapid thermal annealing. *K. Huang*[1], P. Kuo[1], S. Chen[2] and Y. Yao[3] *1. Institute of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan; 2. Department of Materials Engineering, MingChi University of Technology, Taipei, Taiwan; 3. Institute of Applied Science and Engineering, and Department of Physics, Fu Jen University, Taipei, Taiwan*

CY-08. Magnetization reversal process of hard/soft nano-composite structures formed by ion irradiation. *M. Aniya*[1], A. Shimada[1], Y. Sonobe[1], K. Sato[2], T. Shima[2], K. Takanashi[3], S.J. Greaves[4], T. Ouchi[5] and T. Homma[5] *1. MD division, HOYA corporation, Akishima, Tokyo, Japan; 2. Faculty of Engineering, Tohoku Gakuin University, Tagajo, Miyagi, Japan; 3. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan; 4. RIEC, Tohoku University, Sendai, Miyagi, Japan; 5. Department of Applied Chemistry, Waseda University, Shinjuku, Tokyo, Japan*

CY-09. Write failure analysis for bit patterned media recording and its impact on read channel modeling. *S. Zhang*[1], K. Chai[1], K. Cai[1], B. Chen[1], Z. Qin[1] and S. Foo[1] *1. Data Storage Institute, Singapore, Singapore*

CY-10. Simple preparation method for bit patterned media with anisotropic exchange coupling between dots. *Y. Kondo*[1], J. Ariake[1], T. Chiba[1], K. Taguchi[1] and N. Honda[2] *1. Reseach Institute of Advanced Technology, Akita Research and Development Center, Akita, Japan; 2. Department of Electronics and Intelligent Systems, Tohoku Institute of Technology, Sendai, Japan*

CY-11. Effect of dot shape on magnetic and recording properties in Bit Patterned Media. *J. Ariake*[1], Y. Kondo[1] and N. Honda[2] *1. Akita R&D Center, Akita, Japan; 2. Tohoku Institute of Technology, Sendai, Japan*

CY-12. Magnetic properties of patterned TbFeCo dot arrays with perpendicular magnetic anisotropy. *X. Liu*[1], I. Yutaro[1] and A. Morisako[1] *1. Department of Information Engineering, Shinshu University, Nagano, Japan*

CY-13. Fabrication of $L1_2$-$CrPt_3$ alloy films using rapid thermal annealing for planar bit patterned media. *T. Kato*[1], D. Oshima[1], Y. Yamauchi[2], S. Iwata[1] and S. Tsunashima[2] *1. Department of Quantum Engineering, Nagoya University, Nagoya, Aichi, Japan; 2. Department of Electrical Engineering and Computer Science, Nagoya University, Nagoya, Aichi, Japan*

CY-14. Multilevel Three-Dimensional Bit Patterned Media for Next Generation Magnetic Recording Devices. *N. Amos*[1], B. Lee[1], M.H. Shachar[1], R.M. Ikkawi[1], B. Hu[1], J. Hong[1], R. Fernandez[1], C. Zang[1], S. Chen[1], M. Hudgins[1], Y. Tian[1], D. Litvinov[2] and S. Khizroev[1] *1. Electrical Engineering, University of California-Riverside, Riverside, CA; 2. Electrical Engineering, University of Houston, Houston, TX*

CY-15. Investigation of PicketShift Codes for Bit-Patterned Media with Insertion/Deletion Errors. *Y. Ng*[1,2], B. Kumar[1], K. Cai[2], S. Nabavi[1] and T. Chong[2] *1. ECE, Carnegie Mellon University, Pittsburgh, PA; 2. Data Storage Institute, Singapore, Singapore*

WEDNESDAY AFTERNOON 1:30 — SALON 2

Session DA
MRAM AND SPIN-TORQUE SWITCHES
Daniel Worledge, Chair

1:30

DA-01. Comparison of thermal stability and switching currents between ferromagnetically and antiferromagnetically coupled synthetic free layers in MgO-based magnetic tunnel junctions. *H. Kubota*[1], S. Yakata[1], T. Seki[1], K. Yakushiji[1], A. Fukushima[1], S. Yuasa[1] and K. Ando[1] *1. National Institute of Advance Industrial Science and Technology (AIST), Tsukuba, Japan*

1:42

DA-02. Effect of the interlayer coupling of the synthetic ferrimagnetic free layer on current induced magnetization switching in MTJs. *R. Sugano*[1,3], M. Ichimura[1,3], S. Takahashi[2,3] and S. Maekawa[2,3] *1. Advanced Research Laboratory, Hitachi., Ltd., Kokubunji-shi, Tokyo, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan; 3. JST, CREST, Chiyoda-ku, Tokyo, Japan*

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1:54

DA-03. FeMn Exchange biased storage layer for Thermally Assisted MRAM. *E. Gapihan*[1,2], R.C. Sousa[1], J. Hérault[1], I.L. Prejbeanu[2], C. Ducruet[2], C. Portemont[2], K. Mackay[2], J. Nozières[2] and B. Dieny[1] *1. Spintec (UMR 8191 CEA/CNRS/UJF), Grenoble, France; 2. Crocus Technology, Grenoble, France*

2:06

DA-04. Fabrication of a Three-Terminal Spin-Torque-Based Magnetic Memory Element. *M.C. Gaidis*[1], J.Z. Sun[1], E.J. O'Sullivan[1], D.W. Abraham[1], J.J. Nowak[1], G. Hu[1] and W.J. Gallagher[1] *1. IBM T.J. Watson Research Center, Yorktown Heights, NY*

2:18

DA-05. HSPICE model of spin-torque-transfer operated magnetic tunnel junctions with realistic critical switching time in transient simulations. *J.D. Harms*[1], F. Ebrahimi[1], X. Yao[1] and J. Wang[1] *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

2:30

DA-06. Design Consideration of Magnetic Tunnel Junctions for Reliable High-Temperature Operation of STT-MRAM. *K. Lee*[1] and S.H. Kang[1] *1. Advanced Technology, Qualcomm Incorporated, San Diego, CA*

2:42

DA-07. Comparison of scaling of in-plane and perpendicular spin transfer switching technologies by micromagnetic simulation. *D. Apalkov*[1], S. Watts[1], A. Driskill-Smith[1], E. Chen[1], Z. Diao[1] and V. Nikitin[1] *1. Grandis Inc, Milpitas, CA*

2:54

DA-08. Spin transfer torque switching in perpendicular magnetic tunnel junctions using $L1_0$-ordered FePd electrodes. *T. Daibou*[1], M. Yoshikawa[1], E. Kitagawa[1], T. Nagase[1], K. Nishiyama[1], M. Nagamine[1], M. Amano[1], M. Nakayama[1], T. Kai[1], T. Kishi[1] and H. Yoda[1] *1. Corporate Research & Development Center, Toshiba Corporation, Yokohama, Japan*

3:06

DA-09. Effect of synthetic ferrimagnetic free layer structure on the thermal stability in MgO-barrier magnetic tunnel junctions. *H. Yamamoto*[1,2], J. Hayakawa[1], S. Ikeda[2], K. Miura[1,2], H. Hasegawa[2], M. Yamanouchi[1], K. Ito[1], H. Takahashi[1], H. Matsuoka[1] and H. Ohno[2] *1. Advanced Research Laboratory, Hitachi, Ltd., Tokyo, Japan; 2. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi-ken, Japan*

3:18

DA-10. Phase diagram for spin-torque switching in perpendicular anisotropy magnetic nanopillars. *I. Tudosa*[1], J.A. Katine[2], S. Mangin[3] and E.E. Fullerton[1] *1. Center for Magnetic Recording Research, UC San Diego, La Jolla, CA; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA; 3. Institut Jean Lamour, Nancy Université, Nancy, Vandœuvre lès Nancy, France*

WEDNESDAY AFTERNOON 1:30 — SALON 3

Session DB
ULTRAFAST DYNAMICS
Sug-Bong Choe, Chair

1:30

DB-01. Theory of laser-induced demagnetization. *A. Manchon*[1] and S. Zhang[1] *1. Physics, University of Arizona, Tucson, AZ*

1:42

DB-02. Atomistic simulations of reversal times in high anisotropy materials. *J. Barker*[1], R.F. Evans[1], N. Kazantseva[1], R.W. Chantrell[1], D. Hinzke[2] and U. Nowak[2] *1. Physics, University of York, York, United Kingdom; 2. Physics, University of Konstanz, Konstanz, Germany*

1:54

DB-03. Coherent and incoherent femtosecond magnetization dynamics in ferromagnets. *J. Bigot*[1] and M. Vomir[1] *1. IPCMS, UMR7504, CNRS - Université de Strasbourg, Strasbourg, France*

2:06

DB-04. Inertia-Driven Spin Switching in Antiferromagnets. ***(Invited)*** *A.V. Kimel*[1] *1. Radboud University Nijmegen, Nijmegen, Netherlands*

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2:42

DB-05. Variation of the precession damping with electron-temperature in Co films using ultrafast magneto-optics. *L.H. Andrade*[1], M. Vomir[3], A.D. Santos[2], R.E. Samad[1], N.D. Vieira Jr.[1] and J. Bigot[3] *1. Centro de Lasers e Aplicações, IPEN-CNEN, SP, São Paulo, Brazil; 2. Depto. Física dos Materiais e Mecânica, IF-USP, SP, Brazil; 3. IPCMS, UMR 7504, CNRS-Université de Strasbourg, Strasbourg, France*

2:54

DB-06. Magnonic structures studied using femtosecond optics. B. Lenk[1], H. Ulrichs[1], G. Eilers[1] and *M.G. Muenzenberg*[1] *1. I. Phys. Institute, Goettingen University, Goettingen, Germany*

3:06

DB-07. Optically induced full demagnetization and reflectance oscillations in CoNi/Pt films and nano-elements. *L. Shelford*[1], Y. Liu[1], E. Sirotkin[1], F. Ogrin[1], R.J. Hicken[1], G. Burnell[2], M. Ali[2] and B.J. Hickey[2] *1. School of Physics, University of Exeter, Exeter, Devon, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

3:18

DB-08. Laser-induced quenching of the spin polarization in 3d-ferromagnets studied by time and spin resolved photoemission. *C. Back*[1] and A. Weber[1] *1. Universität Regensburg, Regensburg, Germany*

WEDNESDAY AFTERNOON 1:30 — DELAWARE

Session DC
SYMPOSIUM: ADVANCED MOTOR AND ACTUATOR TECHNOLOGIES
Johannes Paulides, Chair

1:30

DC-01. Advanced flux-switching permanent magnet brushless machines for new and emerging applications. *(Invited)* *Z. Zhu*[1] *1. Dept. of Electronic and Electrical Engineering, University of Sheffield, Sheffield, United Kingdom*

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2:06

DC-02. Demanding Actuator systems for high precision applications. ***(Invited)*** *E.A. Lomonova*[1], L. Encica[1], J.W. Jansen[1] and J.J. Paulides[1] *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

2:42

DC-03. Toward 4D Design Tools for Electromechanical Devices. ***(Invited)*** *P.T. Krein*[1] *1. Dept. of ECE, University of Illinois, Urbana, IL*

WEDNESDAY AFTERNOON 1:30 — VIRGINIA

Session DD
SYMPOSIUM: SPINCALORICS
Claudia Felser, Chair

1:30

DD-01. Coupled Heat and Spin Currents in Magnetic Nanostructures. ***(Invited)*** *G.E. Bauer*[1] *1. Kavli Institute of NanoScience, Delft University of Technology, Delft, ZH, Netherlands*

2:06

DD-02. Femtosecond Laser-Induced Demagnetization from a Thermodynamic Perspective. ***(Invited)*** *B. Koopmans*[1] *1. Dept. of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

2:42

DD-03. Spin Seebeck effects in metallic systems. ***(Invited)*** *K. Uchida*[1] and E. Saitoh[1,2] *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. PRESTO, Japan Science and Technology Agency, Sanbancho, Chiyoda-ku, Tokyo, Japan*

WEDNESDAY AFTERNOON 1:30 — WASHINGTON 1

Session DE
CORRELATED ELECTRON MATERIALS I
James J. Rhyne, Chair

1:30

DE-01. Magnetization Dependent Hall Coefficient in EuB_6: a Signature of Electronic Phase Separation. *L. Yu*[1], X. Zhang[1], S. von Molnár[1], Z. Fisk[2] and P. Xiong[1] *1. Department of Physics & MARTECH, Florida State University, Tallahassee, FL; 2. Department of Physics, University of California, Irvine, CA*

1:42

DE-02. Electronic structure, crystallographic, magnetic and transport characterization of EuMn2 films. K. Balin[1,2], J. Szade[1], A.J. Hutchison[1], A. Nowak[2,3], P. Ruello[3] and *Z.J. Celinski*[1] *1. Center for Magnetism and Magnetic Nanostructures, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Solid State Physics Division, University of Silesia, Katowice, Silesia, Poland; 3. Laboratoire de Physique de l'Etat Condensé, University du Maine, Le Mans Cedex, France*

1:54

DE-03. Physical properties of β-$TmAlB_4$; an AlB_2-type analogous "tiling" compound. *T. Mori*[1], T. Shishido[2], K. Yubuta[2], Y. Kawazoe[2], K. Nakajima[2], A. Leithe-Jasper[3], W. Schnelle[3], H. Borrmann[3] and Y. Grin[3] *1. International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

2:06

DE-04. Gapped Spin-Wave Excitations in the Frustrated Antiferromagnet SmB_4 single crystal. *J. Kim*[1], N. Sung[1] and B. Cho[1] *1. Dept. of Nanobio Materials and Electronics, and Dept. of Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju, Korea, Republic of*

2:18

DE-05. Electronic and magnetic phase diagram and thermoelectric properties of Cr1-xVxN. C.X. Quintela[1], F. Rivadulla[1], V. Salgueiriño[2], S. Cardoso[3], P.P. Freitas[3] and *J. Rivas*[1] *1. University of Santiago de Compostela, Santiago de Compostela, Spain; 2. Applied Physics Department, Universidad de Vigo, Vigo, Spain; 3. INESC, Rua Alves Redol 9-1, Lisbon, Portugal*

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2:30

DE-06. Magnetostructural transition in Ce(Fe0.975Ga0.025)2 compound. *A. Haldar*[1], N.K. Singh[2], Y. Mudryk[2], K.G. Suresh[1], A.K. Nigam[3] and V.K. Pecharsky[2,4] *1. Physics, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India; 2. The Ames Laboratory, Iowa State University, Ames, IA; 3. Tata Institute of Fundamental Research, Mumbai, Maharashtra, India; 4. Department of Materials Science and Engineering, Iowa State University, Ames, IA*

2:42

DE-07. Strongly correlated electron behavior in $R_2Ru_3Ga_9$ (R = Ce and U).N. Kumar[1], K.V. Shah[1], R. Nagalakshmi[1] and *S.K. Dhar*[1] *1. Condensed Matter Physics & Materials Science, Tata Institute of Fundamental Research, Mumbai, India*

2:54

DE-08. Current-controlled dynamic magnonic crystal. *A.V. Chumak*[1], T. Neumann[1], A.A. Serga[1], M.P. Kostylev[2] and B. Hillebrands[1] *1. Fachbereich Physik, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. School of Physics, University of Western Australia, Crawley, WA, Australia*

3:06

DE-09. Interplay between lattice clamping and helical magnetic ordering in (110) Eu epitaxial films. *A.M. Bataille*[1], C. Dufour[2], K. Dumesnil[2], P. Mangin[1,2] and A. Gukasov[1] *1. Laboratoire Léon Brillouin, commissariat à l'énergie atomique, Gif sur Yvette, France; 2. P2M, Institut Jean Lamour, Vandoeuvre-lès-Nancy, France*

3:18

DE-10. Spin transition induced metallization at high pressures: A new mechanism of the insulator-metal transition in Mott-Hubbard insulators. *I.S. Lyubutin*[1], S.G. Ovchinnikov[2,3], A.G. Gavriliuk[1,4] and V. Struzhkin[5] *1. A.V. Shubnikov Institute of Crystallography RAS, Moscow, Russian Federation; 2. Institute of Physics, Siberian Division of RAS, Krasnoyarsk, Russian Federation; 3. Siberian Federal University, Krasnoyarsk, Russian Federation; 4. Institute for High Pressure Physics RAS, Troitsk, Moscow region, Russian Federation; 5. Geophysical Laboratory, Carnegie Institution of Washington, Washington, DC*

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WEDNESDAY AFTERNOON 1:30

WASHINGTON 2

Session DF
MAGNETO-OPTIC AND MICROWAVE MATERIALS

Alexandru Stancu, Co-Chair
Katsuji Nakagawa, Co-Chair

1:30

DF-01. Enhanced magneto-optical Faraday effect in GaP epilayers containing MnP magnetic nanoclusters. *G. Monette*[1], S. Lambert-Milot[1], C. Lacroix[1], D. Ménard[1] and S. Francoeur[1] *1. Physics Engineering, Polytechnique School of Montréal, Montréal, QC, Canada*

1:42

DF-02. Nano-Scale Particle Size Effects on the Properties of Magnetic Photonic Crystals. *M. Fang*[1], T. Volotinen[1], L. Belova[1] and K.V. Rao[1] *1. Materials Science, Royal Institute of Tecknology, Stockholm, Sweden*

1:54

DF-03. Enhanced Kerr Effect in CoFe-MgO dielectric nanocomposites. A.F. Kravets[1], V.G. Kravets[2] and *V. Korenivski*[3] *1. Institute of Magnetism, NASU, Kiev, Ukraine; 2. Institute for Information Recording, NASU, Kiev, Ukraine; 3. Nanostructure Physics, Stockholm, Sweden*

2:06

DF-04. Magneto-optic effect in nano sandwich array with plasmonic structure of Au/[Co/Pt]n/Au. *G. Du*[1], T. Mori[2], M. Suzuki[1], S. Saito[1], H. Fukuda[2] and M. Takahashi[1] *1. Tohoku University, Sendai, Japan; 2. Ricoh Company, Ltd., Yohokama, Japan*

2:18

DF-05. Plasmon resonance enhancement of magneto-optical effects in garnets. *I.D. Mayergoyz*[1], G. Lang[1], L. Hung[1], S. Tkachuk[1], C. Krafft[2], R. Phaneuf[1,2] and T. Corrigan[2] *1. University of Maryland, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD*

2:30

DF-06. Material Parameters Characterization for Three-Dimensional Pyramidal Cloak. *Q. Wu*[1], K. Zhang[1], F. Meng[1], G. Yang[1] and L. Li[2] *1. Dept.of Electronic & Communications Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China; 2. Department of Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore*

2:42

DF-07. A Millimeter Wave Absorption of Aluminum-substituted ε-Fe_2O_3 nanomagnets. *A. Namai*[1], S. Sakurai[1], M. Nakajima[2], T. Suemoto[2], K. Matsumoto[3], M. Goto[3], S. Sasaki[3] and S. Ohkoshi[1] *1. Department of Chemistry, The University of Tokyo, Tokyo, Japan; 2. Institute for Solid State Physics, The University of Tokyo, Chiba, Japan; 3. DOWA Electronics Materials Co., Ltd., Okayama, Japan*

2:54

DF-08. The research of equivalent circuit of left-handed coplanar waveguide transmission-line element. *J. Fu*[1], Q. Wu[1], W. Pan[1] and F. Meng[1] *1. harbin institute of technology, Harbin, China*

3:06

DF-09. Dynamic magnetoelectric coupling in multiferroic thin film composites. *K. Livesey*[1], V. Gunawan[1] and R.L. Stamps[1] *1. University of Western Australia, Crawley, WA, Australia*

3:18

DF-10. Magnetic properties of Prussian Blue analogs M3[Cr(CN)6]2.xH2O (M=Mn, Fe, Co). *S. Adak*[1,2], H. Nakotte[1,2], L.L. Daemen[2], V. Zapf[3] and D. Williams[4] *1. Department of Physics, New Mexico State University, Las Cruces, NM; 2. Los Alamos Neutron Science Center (LANSCE), Los Alamos National Laboratory, Los Alamos, NM; 3. National High Magnetic Field Laboratory (NHMFL), Los Alamos National Laboratory, Los Alamos, NM; 4. Center for Integrated Nanotechnologies (CINT), Los Alamos National Laboratory, Los Alamos, NM*

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WEDNESDAY
AFTERNOON
1:30

WASHINGTON 3

Session DG
INDUCTIVE WRITE HEADS
Mark Kief, Chair

1:30

DG-01. Tensor Grids for Fast Field Computation for Magnetic Writer Design. ***(Invited)*** *A. Goncharov*[1] *1. The University of Sheffield, Sheffield, United Kingdom*

2:06

DG-02. Domain walls induced wide area track erasure in perpendicular magnetic recording. *F. Liu*[1], S. Li[1], Y. Guo[1], J. Rantschler[1], T. Pan[1] and S. Mao[1] *1. Western Digital Corporation, Fremont, CA*

2:18

DG-03. Irradiation damage in Fe-Co thin films with low energy ion-beam. *Y. Ohsawa*[1,2], K. Yamakawa[2] and H. Muraoka[2] *1. CR&D center, Toshiba corp, Kawasaki, Japan; 2. RIEC, Tohoku Univ., Sendai, Japan*

2:30

DG-04. Ultrathin conformal magnetic plated layer on a magnetic pole. *J. Lille*[1], C. Bonhote[1], A. Pentek[2], P.A. van der Heijden[1], Q. Le[2] and S. Puga[2] *1. Hitachi San Jose Research Center, San Jose, CA; 2. Hitachi GST, San Jose, CA*

2:42

DG-05. Slanted and conical electroplated structures created using photoresist deformation. *J. Lille*[1], C. Bonhote[1], S.A. MacDonald[1] and A. Ver[2] *1. Hitachi San Jose Research Center, San Jose, CA; 2. Hitachi GST, San Jose, CA*

2:54

DG-06. Characterization of magnetic field distribution in a trailing-edge shielded recording head by frequency-modulated magnetic force microscopy. *W. Lu*[1], K. Hatakeyama[1], G. Egawa[1], S. Yoshimura[1] and H. Saito[1] *1. Center for Geo-environment Science, Faculty of Engineering and Resource Science,, Akita University, Akita, Akita, Japan*

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3:06

DG-07. Real-time direct measurement of the dynamic field from a perpendicular writer with nanometer spatial resolution. *P. Czoschke*[1], S. Kaka[1], N. Gokemeijer[1] and S. Franzen[1] *1. Recording Heads Operation, Seagate Technology, Bloomington, MN*

3:18

DG-08. Initial Permeability and Dynamic Response of FeCo Write Pole. *S. Wang*[1], D. Wei[1] and K. Gao[2] *1. Lab of Advanced Materials, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China; 2. Research and Technology Development, Seagate Technology, Bloomington, MN*

WEDNESDAY AFTERNOON 1:30 | WASHINGTON 5

Session DH
NANOPARTICLES II
Everett Carpenter, Chair

1:30

DH-01. Visualizing Core-Shell Magnetic Behavior of Nanoparticles with Polarized SANS. *K. Krycka*[1], R. Booth[2], C. Hogg[2], Y. Ijiri[3], J. Borchers[1], W. Chen[1], S. Watson[1], M. Laver[4,1], T. Gentile[1], S. Harris[3], L. Dedon[3], J. Rhyne[5] and S. Majetich[2] *1. NIST Center for Neutron Research, Gaithersburg, MD; 2. Carnegie Mellon University, Pittsburgh, PA; 3. Oberlin College, Oberlin, OH; 4. Paul Scherrer Institut, Villigen, Switzerland; 5. Los Alamos National Laboratory, Los Alamos, NM*

1:42

DH-02. Magnetization reversal dynamics in clusters of single domain Ni nanoparticles.B. Rana[1], M. Agrawal[1] and *A. Barman*[1] *1. S. N. Bose National Centre for Basic Sciences, Kolkata, India*

1:54

DH-03. Structural and Magnetic Characterization of High Moment Synthetic Antiferromagnetic Nanoparticles Fabricated Using Self-Assembled Stamps. *A. Koh*[1,2], W. Hu[1], R.J. Wilson[1], C.M. Earhart[1], S.X. Wang[1,3] and R. Sinclair[1] *1. Department of Materials Science and Engineering, Stanford University, Stanford, CA; 2. Materials, Imperial College London, London, United Kingdom; 3. Department of Electrical Engineering, Stanford University, Stanford, CA*

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2:06

DH-04. Dual Mode Nanoparticles: CdS Coated Iron Nanoparticles. *F.N. Radwan*[1] and E.E. Carpenter[1] *1. Chemistry, Virginia Commonwealth University, Richmond, VA*

2:18

DH-05. High aspect-ratio magnetic nanotubes. *S. Pal*[1], S. Chandra[1], K. Stojak[1], M. Phan[1], P. Mukherjee[1] and H. Srikanth[1] *1. Department of Physics, University of South Florida, Tampa, FL*

2:30

DH-06. Alignment control and spin resonant phenomena of self-assembled epitaxial Fe nano-dots. *M. Mizuguchi*[1], K. Oka[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

2:42

DH-07. Assembling of nanowires by precision transport onto patterned nanomagnets. *D. Fan*[1,2], F.Q. Zhu[1,3], S. Lee[1], N. Markovic[1], R.C. Cammarata[4] and C. Chien[1] *1. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 2. Department of Mechanical Engineering, University of Texas at Austin, Austin, TX; 3. Current address: Hitachi Global Storage Technology, San Jose, CA; 4. Department of Materials Science and Engineering, Johns Hopkins University, Baltimore, MD*

2:54

DH-08. Templated self-assembly of FexOy nanoparticles in lithographically prepatterned tracks. *O. Petracic*[1], M.J. Benitez[1,2], D. Mishra[1], P. Szary[1], M. Feyen[2], A.H. Lu[2], F. Schüth[2] and H. Zabel[1] *1. Experimentalphysik IV, Ruhr-Universitaet Bochum, Bochum, Germany; 2. Max-Planck Institut für Kohlenforschung, Muelheim, Germany*

3:06

DH-09. Exchange-coupling modified spin wave spectra in the perpendicularly magnetized permalloy nano-dot chain arrays. *J. Dou*[1], S. Hernandez[1], C. Yu[1], M.J. Pechan[1], L. Folks[2], J.A. Katine[2] and M.J. Carey[2] *1. Department of Physics, Miami University, Oxford, OH; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

3:18

DH-10. Fallacy of the Conventional Method for Determination of the Blocking Temperature of Magnetic Nanoparticle Systems. *C. Dennis*[1], C. Gruettner[2], F. Westphal[2] and R.D. Shull[1] *1. NIST, Gaithersburg, MD; 2. Micromod Partikeltechnologie, GmbH, Rostock-Warnemuende, Germany*

WEDNESDAY AFTERNOON 1:00

EXHIBIT HALL C

Session DP
MICROMAGNETICS AND HYSTERESIS MODELING II (POSTER SESSION)

Andrew Kunz, Chair

DP-01. Speedup of FEM Micromagnetic Simulations with Graphical Processing Units. A. Kakay[1], *E. Westphal*[2] and R. Hertel[1] *1. IFF-IEE-9, Forschungszentrum Juelich, Juelich, Germany; 2. IFF, Forschungszentrum Juelich, Juelich, Germany*

DP-02. Parallelizing micromagnetic computations using FFT in compute unified device architecture (CUDA). *L. Torres*[1], J. Gomez[1], D. Aurelio[1], E. Jaromirska[1], L. Lopez-Diaz[1], E. Martinez[1], O. Alejos[2], M. Hernandez-Lopez[1], G. Finocchio[3], M. Carpentieri[4] and G. Consolo[3] *1. Dept. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain; 2. Departamento de Electricidad y Electronica, Universidad de Valladolid, Valladolid, Spain; 3. Dipartimento di Fisica della Materia e Tecnologie Fisiche Avanzate, University of Messina, Messina, Italy; 4. Dipartimento di Elettronica, Informatica e Sistemistica, University of Calabria, Rende, Italy*

DP-03. Nonlinear programming method for the estimation of particle size distribution of magnetic nanoparticles. G. Lei[1], K. Shao[1], *Y. Guo*[2], J. Zhu[2] and J. Lavers[3] *1. College of Electrical and Electronic Engineering, Huazhong University of Science and Technology, China, Wuhan, China; 2. Faculty of Engineering, University of Technology, Sydney, Sydney, NSW, Australia; 3. Department of Electrical and Computer Engineering, University of Toronto, Toronto, ON, Canada*

DP-04. A parallel and distributed open source full micromagnetic code. *C. Ragusa*[1], B. Montrucchio[2], V. Giovara[2] and M. Repetto[1] *1. Electrical Engineering Department, Politecnico di Torino, Torino, Italy; 2. Control and Computer Engineering Department, Politecnico di Torino, Torino, Italy*

DP-05. Identifying hysteresis losses in isotropic media. *E. Della Torre*[1], E. Cardelli[2] and L.H. Bennett[1] *1. George Washington University, Washington, DC; 2. University of Perugia, Perugia, Italy*

DP-06. Modeling of hysteresis loops for spherical barium ferrite (S-BaFe) particles with uniaxial anisotropy. *G.S. Abo*[1], Y. Hong[1], J. Jalli[1], S. Bae[1], J. Lee[1], J. Park[1], N. Neveu[1], S. Kim[2] and J. Sur[1] *1. Department of Electrical and Computer Engineering and MINT Center, University of Alabama, Tuscaloosa, AL; 2. Department of Physics and Astronomy, Mississippi State University, Mississippi State, MS*

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DP-07. Spin-flop behavior in manmade ferrimagnet of TbFeCo/Ni layers with perpendicular magnetic anisotropy. *X. Liu*[1], T. Kanazawa[1], H. Nakamura[1] and A. Morisako[1] *1. Department of Information Engineering, Shinshu University, Nagano, Japan*

DP-08. Collective magnonic modes in 2D arrays of magnetic nano-elements: Micromagnetic simulations. M.A. Dvornik[1] and *V.V. Kruglyak*[1] *1. School of Physics, University of Exeter, Exeter, United Kingdom*

DP-09. Effect of Enhanced Damping due to Spin-Motive Force on Field-Driven Domain Wall Motion. *J. Moon*[1] and K. Lee[1] *1. Korea University, Seoul, Korea, Republic of*

DP-10. Modeling Neutron Scattering Off of Magnetic Nanoscale Elements. *N. Wright*[1,2] and B. Maranville[1] *1. NCNR, NIST, Gaithersburg, MD; 2. University of Maryland, College Park, MD*

DP-11. Multiple state switching for magnetic bit patterned media through the use of microwave assisted magnetic reversal. *T.J. Fal*[1] and R.E. Camley[1] *1. Physics, University of Colorado at Colorado Springs, Colorado Springs, CO*

DP-12. Hysteresis driven by spin-polarized-current in spin-torque oscillator as function of the field angle. G. Finocchio[1], *A. Prattella*[1], G. Consolo[1], L. Torres[3], E. Cardelli[2], A. Faba[2] and B. Azzerboni[1] *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Ingegneria Industriale, University of Perugia, Perugia, Italy; 3. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain*

DP-13. Micromagnetic study of particulate media reversal for tape recording. *M. Fuger*[1], J. Lee[1], J. Fidler[1], D. Suess[1] and T. Schrefl[2] *1. Solid State Physics, Vienna, Austria; 2. University of Applied Sciences, St. Pölten, Austria*

DP-14. Modeling of intergrain exchange coupling for quantitative predictions of δm-plots. *V. Neu*[1,2], R. Biele[1,2], A. Singh[1] and L. Schultz[1,2] *1. Institute for Metallic Materials, IFW Dresden, Dresden, Germany; 2. Dresden University of Technology, Dresden, Germany*

DP-15. Study of excess loss term in ferromagnetic laminations using Cauer circuits. *D. Ribbenfjärd*[1] and G. Engdahl[1] *1. School of Electrical Engineering, Royal Institute of Technology, Stockholm, Sweden*

WEDNESDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session DQ
HARD MAGNETS: THEORY AND OXIDES (POSTER SESSION)
J. Ping Liu, Chair

DQ-01. Size Selected Synthesis of $CoFe_2O_4$ Nanoparticles Prepared in Chitosan Matrix. *M.A. Morales*[1], J.M. Soares[2], A.L. Gurgel[2], D.S. Chaves[2], F.C. Sousa[2], M.M. Xavier Jr[1] and E.M. Baggio-Saitovitch[3] *1. DCEN, UFERSA, Mossoro, RN, Brazil; 2. Physics Department, UERN, Mossoro, RN, Brazil; 3. CBPF, Rio de Janeiro, RJ, Brazil*

DQ-02. Large coercive field in oriented ε-Fe_2O_3 nanorods/ SiO_2 matrix. *H. Hachiya*[1], S. Sakurai[1] and S. Ohkoshi[1] *1. The University of Tokyo, Tokyo, Japan*

DQ-03. Colossal room-temperature coercivity in size-selected cobalt ferrite nanocrystals. *Y. Cedeño-Mattei*[1], O.J. Perales-Perez[1,2] and Y. Xin[3] *1. Chemistry, UPR - Mayaguez, Mayaguez; 2. Engineering Science & Materials, UPR - Mayaguez, Mayaguez; 3. Magnet Science & Technology Division, National High Magnetic Field Laboratory, Tallahassee, FL*

DQ-04. The role of cations distribution on magnetic and reflection loss properties of ferrimagnetic SrFe12-x(Sn0.5Zn0.5)xO19. *A. Ghasemi*[1], V. Sepelak[1], X. Liu[1] and A. Morisako[1] *1. Shinshu University, Nagano, Japan*

DQ-05. Mössbauer spectroscopy and magnetic susceptibility studies of Cr-Al substituted strontium ferrite particles. *A. Ghasemi*[1], V. Sepelak[1], X. Liu[1] and A. Morisako[1] *1. Shinshu University, Nagano, Japan*

DQ-06. Néel- and single-ion anisotropies in itinerant magnets. *R. Skomski*[1], A. Kashyap[2], A. Solanki[3], A. Enders[1] and D.J. Sellmyer[1] *1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. LNM Institute of Information Technology, Jaipur 302031, Rajasthan, India; 3. Malviya National Institute of Technology, Jaipur 302031, Rajasthan, India*

DQ-07. Effect of Fe partial substitution for Co on the magnetic properties of $Y(Co,Fe)_5$ from first principles. *X. Liu*[1], Z. Altounian[1] and M. Yue[2] *1. physics department, McGill University, Montreal, QC, Canada; 2. Material Science, Beijing University of Technology, Beijing, China*

DQ-08. Nucleation field, its formula and paradox in two-phased magnetic nanosystem. *G. Zhao*[1,2], H. Zhang[1], L. Chen[3] and Y. Feng[4] *1. College of Physics and Electronic Engineerin, Sichuan Normal University, Chengdu, Sichuan, China; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China; 3. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore; 4. Department of Physics, National University of singapore, Singapore, Singapore*

DQ-09. Magnetic properties of $Er_{1-x}Dy_xAl_2$ ($0 \leq x \leq 1$) compounds in low applied fields.R. Nirmala[2,1], *D. Paudyal*[2], V.K. Pecharsky[2,3] and K.A. Gschneidner Jr.[2,3] *1. Physics, Indian Institute of Technology Madras, Chennai, India; 2. The Ames Laboratory U. S. Department of Energy, Iowa State University, Ames, Iowa 50011-3020, IA; 3. Department of Materials Science and Engineering, Iowa State University, Ames, Iowa 50011-3020, IA*

DQ-10. Systematic study on prediction method of flux loss in anisotropic bonded magnets.H. Fukunaga[1], *H. Murata*[1], F. Yamashita[2], T. Yanai[1] and M. Nakano[1] *1. Faculty of Engineering, Nagasaki University, Nagasaki, Japan; 2. Rotary Component Technology Development Division, Minebea Co,. Ltd., Fukuroi, Shizuoka, Japan*

DQ-11. Reduced exchange coupling and hysteresis loops in two-phased magnetic nanosystems.Y. Deng[1] and *G. Zhao*[1] *1. College of Physics and Electronic Engineering, Sichuan Normal University, Chengdu, Sichuan, China*

DQ-12. Theoretical Analysis of Ferromagnetism in ε-Fe_2O_3 and ε-$Ga_xFe_{2-x}O_3$ Nanomagnets. *S. Ohkoshi*[1], A. Namai[1] and S. Sakurai[1] *1. Department of Chemistry, The University of Tokyo, Tokyo, Japan*

WEDNESDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session DR
GIANT MAGNETORESISTANCE II (POSTER SESSION)
David Abraham, Chair

DR-01. A General-purpose Phenomenological Micromagnetic Model for Modern Giant Magnetoresistive Devices. *J. Oti*[1] *1. MagOasis LLC, Sioux Falls, SD*

DR-02. Observation of stress assisted magnetization reversal in a spin valve structure using giant magnetoresistive multilayer. *K. Jimbo*[1], S. Nakagawa[1] and N. Saito[1] *1. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*

DR-03. Thermoelectrically controlled spin-switch. *S. Andersson*[1] and V. Korenivski[1] *1. Applied Physics, Royal Institute of Technology (KTH), Stockholm, Sweden*

DR-04. FMR and CESR in (Py/Cu) bimetallic films. *H.J. Hurdequint*[1], J. Ben Youssef[2], C. Le Graët[2], J. Grollier[3], V. Cros[3] and C. Deranlot[3] *1. Laboratoire de Physique des Solides, CNRS-Universite Paris-Sud, Orsay, France; 2. Laboratoire de Magnetisme de Bretagne, CNRS-UBO, Brest, France; 3. Unité mixte de Physique, CNRS-Thales and Universite Paris-Sud, Palaiseau, France*

DR-05. Perpendicularly magnetized pseudo spin valves with synthetic antiferromagnetic reference layers.H. He[1], *Z. Zhang*[1], B. Ma[1] and Q. Jin[1] *1. Fudan University, Shanghai, China*

DR-06. Unusual current perpendicular-to-plane (CPP) magnetoresistance (MR) for thick Co layers—-difference in MR for fcc and hcp Co.B. Dassonneville[1], *H.T. Nguyen*[1], R. Acharyya[1], R. Loloee[1], W.P. Pratt Jr.[1] and J. Bass[1] *1. Physics, Michigan State University, East Lansing, MI*

DR-07. CPP transport properties of Ni/Ru and Co(90)Fe(10)/Cu interfaces. *D.K. Kim*[1,3], Y.S. Lee[1,3], H.T. Nguyen[2], R. Acharyya[2], R. Loloee[2], B.C. Min[1], Y.K. Kim[3], K.H. Shin[1], W.P. Pratt Jr.[2] and J. Bass[2] *1. Center for Spintronics Research, Korean Institute of Science and Technology, Seoul, Korea, Republic of; 2. Physics, Michigan State University, East Lansing, MI; 3. Materials Science and Engineering, Korea University, Seoul, Korea, Republic of*

DR-08. Magnetotransport and Magnetic Properties of Co(tCo)/Cu Multilayer and Alloy Films. *C. Rizal*[1] and Y. Ueda[2] *1. Electrical and Computer Engineering, University of British Columbia, Vancouver, BC, Canada; 2. Electrical and Electronic Engineering, Muroran Institute of Technology, Muroran, Hokkaido, Japan*

DR-09. Spin accumulation in Cr nanoparticles in single electron tunneling regime.T. Koda[1], *S. Mitani*[2], M. Mizuguchi[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan; 2. National Institute for Materials Science, Tsukuba, Ibaraki, Japan*

DR-10. Core-Shell Structured Nanowire Spin Valves. *K. Chan*[1], C. Doran[1], E. Shipton[1] and E.E. Fullerton[1] *1. University of California-San Diego, La Jolla, CA*

DR-11. Synthetic antiferromagnet with Heusler alloy Co2FeAl ferromagnetic layers.X. Xu[1], D. Zhang[1], X. Li[1], J. Bao[1], *Y. Jiang*[1] and M. Jalil[2] *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China; 2. Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore*

DR-12. The Effect of Partial Substitution of Ni by Co on the Magnetic and electrical properties of $Ni_{50}Mn_{35}In_{15}$ Heusler Alloy. *I. Dubenko*[1], A.K. Pathak[1], C. Pueblo[1], S. Stadler[2] and N. Ali[1] *1. Department of Physics, Southern Illinois University Carbondale, Carbondale, IL; 2. Department of Physics and Astronomy, Louisiana State University, Baton Rouge, Baton Rouge, LA*

DR-13. Epitaxial film growth, Structural and Magnetic properties of Co_2FeSi full-Heusler alloy. *V. Mutta*[1] and S. Sung Chul[1] *1. Physics and Centre for nanospinics of spintronic materials, Korea Advanced Institute of Science and Technology, Deajeon, Korea, Republic of*

DR-14. CPP-GMR Spin-valves Using $Co_2Cr_{0.1}Fe_{0.9}Si$ Heusler Alloy. *H.S. Goripati*[1,2], T. Furubayashi[1], K.V. Sankar[1], K.K. Takahashi[1] and K. Hono[1,2] *1. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Ibaraki, Japan; 2. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Ibaraki, Japan*

DR-15. Tilted magnetization spin valves based on $D0_{22}$ (112) MnGa fixed layers. *J. Persson*[1], C. Zha[1,2], S. Mohseni[1], J. Nogués[1,3] and J. Åkerman[1,4] *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology(KTH), Kista-Stockholm, Sweden; 2. Department of Physics, Norwegian University of Science and Technology (NTNU), Trondheim, Norway; 3. ICREA and Centre d'Investigació en Nanociència i Nanotecnologia (ICN-CSIC), Campus Universitat Autònoma de Barcelona, Barcelona, Spain; 4. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

DR-16. Anisotropy of electronic transport in MnAs: Ab initio calculations. *M. Czerner*[1] and C. Heiliger[1] *1. I. Physikalisches Institut, Justus Liebig University, Giessen, Germany*

WEDNESDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session DS

SPIN INJECTION IN SEMICONDUCTORS: ORGANIC AND GRANULAR SPIN VALVES (POSTER SESSION)

Paul Crowell, Chair

DS-01. Electrical spin injection into Si(001) through a SiO_2 tunnel barrier. *C.H. Li*[1], G. Kioseoglou[1], O. van 't Erve[1], P.E. Thompson[1] and B.T. Jonker[1] *1. Code 6361, Naval Research Laboratory, Washington, DC*

DS-02. Spin Transport in Silicon: Influence of the Nonlocal Spin Valve Parameters. *O. van 't Erve*[1], C. Awo-Affouda[1], A.T. Hanbicki[1], C.H. Li[1], P.E. Thompson[1] and B.T. Jonker[1] *1. Naval Research Laboratory, Washington, DC*

DS-03. Electrical spin injection from Fe into ZnSe. *A.T. Hanbicki*[1], G. Kioseoglou[1,2], M.A. Holub[1], C.A. Awo-Affouda[1], O.J. van 't Erve[1] and B.T. Jonker[1] *1. Naval Research Laboratory, Washington, DC; 2. University of Crete, Heraklion, Greece*

DS-04. The effect of doping concentration of Si on the nature of barrier of Co_2MnSi/MgO/n-Si junctions. *A.I. Nahid*[1,2], M. Oogane[1], H. Naganuma[1] and Y. Ando[1] *1. Applied Physics, Tohoku University, Sendai 980-8579, Japan; 2. Applied Physics & Electronic Enginneering, Rajshahi University, Rajshahi, Bangladesh*

DS-05. TEM study on the diffusion process of Si/NiFe Schottky barrier and Si/MgO/NiFe tunneling diode. *J. Lee*[1], T. Uhrmann[2], J. Fidler[1], T. Dimopoulos[2] and H. Brückl[2] *1. Institute of Solid State Physics, Vienna Univ. of Tech., Wien, Austria; 2. Health and Environment Department, Nano-Systems, Austrian Institute of Technology GmbH, Wien, Austria*

DS-06. Investigation of electrical spin injection and extraction in Si-membranes using Schottky contacts. *M.K. Husain*[1], X.V. Li[1] and C.H. de Groot[1] *1. Electronics and Computer Science, The Nano Research Group, Southampton, Hampshire, United Kingdom*

DS-07. Spin injection and detection in Ge using ferromagnet/tunnel barrier electrodes. *Y. Saito*[1], H. Sugiyama[1], T. Inokuchi[1], T. Marukame[1] and M. Ishikawa[1] *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Japan*

DS-08. Fe_3Si/Ge(111) Schottky contacts for spin injection into a Ge channel. *K. Kasahara*[1], Y. Ando[1], K. Yamane[1], Y. Enomoto[1], K. Sawano[2], K. Hamaya[1,3] and M. Miyao[1] *1. Department of Electronics, Kyushu university, Fukuoka, Japan; 2. Department of Electrical and Electronic Engineering, Tokyo City University, Tokyo, Japan; 3. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan*

DS-09. MgO or Alumina for graphene spintronics. *B. Dlubak*[1,3], P. Seneor[1,3], A. Anane[1,3], C. Deranlot[1,3], B. Servet[2], S. Xavier[2], S. Fusil[1,3], K. Bouzehouane[1,3], S. Enouz-Vedrenne[2], R. Mattana[1,3], F. Petroff[1,3] and A. Fert[1,3] *1. unite mixte de physique CNRS/Thales, Palaiseau, France; 2. Thales Research and Technology, palaiseau, France; 3. Université de Paris-Sud 11, orsay, France*

DS-10. Determining the bandtail shape of Si-doped $Al_{0.3}Ga_{0.7}As$, a spin transport medium with tunable carrier density. *J. Misuraca*[1], S. von Molnár[1], P. Xiong[1], J. Trbovic[2], J. Lu[3], J. Zhao[3] and H. Ohno[4] *1. MARTECH, Florida State University, Tallahassee, FL; 2. Institute of Physics, University of Basel, Basel, Switzerland; 3. Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China; 4. Tohoku University, Sendai, Japan*

DS-11. Light-induced spin accumulation in epitaxial Fe/GaAs heterostructures probed by FMR. *T. Trypiniotis*[1], K. Ando[2], M. Morikawa[2], H. Kurebayashi[1], D. Tse[1], J. Bland[1], C. Barnes[1] and E. Saitoh[3,2] *1. Department of Physics, University of Cambridge, Cambridge, United Kingdom; 2. Department of Applied Physics and Physico-Informatics, Keio University, Yokohama, Japan; 3. Institute for Materials Research, Tohoku University, Sendai, Japan*

DS-12. Optically/electrically generated spin-polarised carriers and its transport in bulk p-GaAs. *K. Lee*[1], T. Trypiniotis[1], J. Kim[1], S.N. Holmes[2], K. Shin[3] and C.H. Barnes[1] *1. Cavendish Laboratory, Univ. of Cambridge, Cambridge, United Kingdom; 2. Toshiba Research Europe Limited, Cambridge Research Laboratory, Cambrdige, United Kingdom; 3. Nano Device Research Centre, Korea Institute of Science and Technology, Seoul, Korea, Republic of*

DS-13. The effect of injection layers on a room temperature organic spin-valve.D. Dhandapani[1], N.A. Morley[1], *M. Gibbs*[1], T. Kreouzis[2], P. Shakya[2], P. Desai[2] and W.P. Gillin[2] *1. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 2. Department of Physics, Queen Mary, University of London, London, United Kingdom*

DS-14. Role of Interfacial States in Alq3-based Organic Spin Valves. *I. Bergenti*[1], A. Riminucci[1], V. Dediu[1], M. Prezioso[1], P. Graziosi[1], F. Borgatti[1], F. Casoli[2], J. Chapman[3] and D. MacLaren[3] *1. ISMN, CNR, Bologna, Bologna, Italy; 2. IMEM, CNR, Parma, Parma, Italy; 3. Dept. of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

DS-15. Magnetoresistance effects in phthalocyanine based magnetic tunnel junctions. *C. Barraud*[1], R. Mattana[1], P. Seneor[1], S. Fusil[1], K. Bouzehouane[1], C. Deranlot[1], F. Petroff[1], A. Fert[1], J. Beaufrand[2], D. Kim[2], J. Arabski[2], S. Boukari[2], M. Bowen[2] and E. Beaurepaire[2] *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Institut de Physique et Chimie des Materiaux de Strasbourg, Strasbourg, France*

DS-16. Magnetic properties of C_{60}-Co compound in granular C_{60}-Co films with giant TMR effect. *Y. Matsumoto*[1], S. Sakai[1], S. Entani[1], Y. Takagi[2], T. Nakagawa[2], S. Nagamatsu[2], T. Shimada[3], H. Naramoto[1], T. Yokoyama[2] and Y. Maeda[1,4] *1. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai-mura, Naka-gun, Ibaraki, Japan; 2. Department of Materials Molecular Science, Institute for Molecular Science, Okazaki, Aichi, Japan; 3. Department of Chemistry, The University of Tokyo, Bunkyo-ku, Tokyo, Japan; 4. Department of Energy Science and Technology, Kyoto University, Sakyo-ku, Kyoto, Japan*

DS-17. Study of Spin Accumulation in Non-local Geometry Device with a Small Resistivity Cu strip. *M. Yamada*[1,2], H. Takahashi[1,2], K. Sagae[2] and H. Aoi[2] *1. Advanced Research Laboratory, Hitachi, ltd., Tokyo, Japan; 2. Research Institute of Electrical Communication, Tohoku Univ., Sendai, Japan*

WEDNESDAY AFTERNOON 1:00

EXHIBIT HALL C

Session DT

MRAM AND GIANT MAGNETORESISTANCE (POSTER SESSION)

Claire Baraduc, Chair

DT-01. MRAM based Magnetic Content Addressable Memory Cell Design. *W. Wang*[1] *1. Electrical Engineering, University of Wisconsin - Milwaukee, Milwaukee, WI*

DT-02. Operating analysis of nonvolatile SRAM using pseudo-spin-MOSFETs. *Y. Shuto*[1,3], S. Yamamoto[2,3] and S. Sugahara[1,3] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan; 2. Department of Information Processing, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan; 3. CREST, Japan Science and Technology Agency, Kawaguchi, Saitama, Japan*

DT-03. Nonvolatile delay flip-flop using pseudo-spin-MOSFETs and its power-gating applications. *S. Yamamoto*[1,3] and S. Sugahara[2,3] *1. Department of Information Processing, Tokyo Institute of Technology, Yokohama, Japan; 2. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 3. CREST, Japan Science and Technology Agency, Kawaguchi, Japan*

DT-04. COMMUNICATION BETWEEN MAGNETIC TUNNEL JUNCTIONS USING SPIN-POLARIZED CURRENT FOR LOGIC APPLICATIONS. *A. Lyle*[1], X. Yao[1], F. Ebrahimi[1], J. Harms[1] and J. Wang[1] *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

DT-05. Temperature dependence of electrical transport and magnetization reversal in magnetic tunnel junction. *C. Chao*[1], C. Chen[1], C. Kuo[1], C. Wu[1], L. Horng[1], S. Isogami[2], M. Tsunoda[2], M. Takahashi[2] and J. Wu[1] *1. Department of Physics, National Changhua University of Education, Changhua, Taiwan; 2. Department of Electronic Engineering, TOHOKU University, Sendai, Japan*

DT-06. Enhancement of thermal stability using a ferromagnetically coupled synthetic free layer in MgO-based magnetic tunnel junction. *S. Yakata*[1], H. Kubota[1], T. Seki[1], K. Yakushiji[1], A. Fukushima[1], S. Yuasa[1] and K. Ando[1] *1. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

DT-07. High magnetic and thermal stability of nano-patterned [Co/Pd] based pseudo spin-valves with perpendicular anisotropy for 1Gb MRAM. *N. Thiyagarajah*[1,2], H. Joo[1] and S. Bae[1,2] *1. Biomagnetics Laboratory (BML), Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Information Storage Materials Laboratory (ISML), Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

DT-08. Analysis of magnetization of a current perpendicular to plane giant magnetoresistance junction with current screen layer by micromagnetic simulation. *K. Horikiri*[1], S. Ono[1], R. Nakao[1] and K. Shiiki[1] *1. Department of Applied Physics and Physico-Informatics, Keio university, Yokohama, Japan*

DT-09. Current spectrum of current-perpendicular-to-plane giant magnetoresistive device. *S. Ono*[1], K. Horikiri[1] and R. Nakao[1] *1. Applied Physics and Physico-Informatics, Keio University, Yokohama, Japan*

DT-10. Study of Noise in Current-Perpendicular-to-Plane Giant Magnetoresistance with current screen layer. *R. Nakao*[1], K. Horikiri[1], S. Ono[1] and K. Shiiki[1] *1. Applied Physics and Physico-Informatics, Keio University, Yokohama, Japan*

DT-11. Effect of CoFe concentration and annealing temperature on the Giant Magnetoresistance in CoFe/Cu Granular Films. *D. Tripathy*[1], A. Wong[1] and A. Adeyeye[1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

DT-12. Py/Cr/Fe3O4 spin valves. *P.B. Jayathilaka*[1] and C.W. Miller[1] *1. Physics, University of South Florida, Tampa, FL*

DT-13. Nano-Spiral Inductors for Low Power Digital Spintronic Circuits. *J.P. Kulkarni*[1], C. Augustine[2], B. Jung[2] and K. Roy[2] *1. Circuit Research Lab, Intel Corporation, Hillsboro, OR; 2. School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN*

DT-14. Self-consistent spin and moment dynamics during spin transfer switching of magnetic multilayers. *J. Guo*[1], M. Jalil[1] and S. Tan[2] *1. Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

DT-15. Exact Solution for the Critical Curve of a Synthetic Antiferromagnet.A. Plamada[1], *D. Cimpoesu*[1] and A. Stancu[1] *1. Department of Physics, Alexandru Ioan Cuza University, Iasi, Iasi, Romania*

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WEDNESDAY AFTERNOON 1:00

EXHIBIT HALL C

Session DU
MAGNETIC MULTILAYERS (POSTER SESSION)
Randy Dumas, Chair

DU-01. Tailoring magnetization reversal in exchange-biased [Co/Pt]n multilayer with perpendicular magnetic anisotropy. *(Invited)* *J. Chen*[1,2], J. Feng[2], Z. Diao[2], G. Feng[2], X. Han[1] and M. Coey[2] *1. Beijing National Laboratory of Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China; 2. CRANN and School of Physics, Trinity College, Dublin 2, Ireland*

DU-02. Magnetic structure of a Cr/Fe/Cr/Co superlattice. *(Invited)* *F. Brüssing*[1], B. Toperverg[1], K. Zhernenkov[1], M. Wolff[1], H. Zabel[1], K. Theis-Bröhl[3], C. Wiemann[2], A. Kaiser[2] and C. Schneider[2] *1. Experimentalphysik 4, Ruhr-Universität Bochum, Bochum, Germany; 2. Forschungszentrum Jülich, Jülich, Germany; 3. University of Applied Sciences Bremerhaven, Bremerhaven, Germany*

DU-03. Manipulate the magnetization reversal of Co/Pt multilayer by capping layers and rapid annealing process. *K. Huang*[1], L. Wang[1], J. Liao[1] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

DU-04. Fabrication and characterization of $(Co_3/Pd_{8.7})_{8-n}(Co_8/Pd_{8.7})_n$ exchanged coupled composite multilayer. *J. Shi*[1], Y. Chen[1], Y. Kay[1], T. Huang[1], C. Au[1] and B. Liu[1] *1. Data Storage Institute, A*STAR (Agency for Science, Technology and Research), singapore, Singapore*

DU-05. Field-induced chirality of the spin structures in Dy/Y multilayer system. *D. Lott*[1], S.V. Grigoriev[2], Y.O. Chetverikov[2], R. Ward[3] and A. Schreyer[1] *1. GKSS research center, Geesthacht, Germany; 2. Petersburg Nuclear Physics Institute, Gatchina, Russian Federation; 3. University of Oxford, Oxford, United Kingdom*

DU-06. Thermal stability and exchange biasing property of CoFe-Tb multilayer with perpendicular magnetic anisotropy. *S. Lee*[1], Y. Jang[1], K. Lee[1], S. Yoon[1] and B. Cho[1,2] *1. Department of Materials Science and Engineering, Gwangju Institute of Science and Technology, 1 Oryong-dong, Buk-gu, Gwangju 500-712, Korea, Republic of; 2. Department of Nanobio materials and Electronics, Gwangju Institute of Science and Technology, 1 Oryong-dong, Buk-gu, Gwangju 500-712, Korea, Republic of*

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DU-07. Magnetic studies in nanostructured Gd/Cr multi-layers. *G.Z. Gadioli*[1], F. Rouxinol[2], R.V. Gelamo[2], L.P. Cardoso[1] and M.A. Bica de Moraes[1] *1. Applied Physics, UNICAMP, Campinas, Sao Paulo, Brazil; 2. CCS, UNICAMP, Campinas, Sao Paulo, Brazil*

DU-08. Magnetic properties of epitaxial Ni/Co(111) single crystal superlattices. *J. Beaujour*[1], B. Krishnatrya[1], A.A. Kent[1], M. Gottwald[2], S. Andrieu[2], S. Mangin[2], J. McCord[3] and E.E. Fullerton[4] *1. NYU, New york, NY; 2. IJL-Dept1, Nancy Université, Vandoeuvre, France; 3. IFW, Dresden, Germany; 4. UCSD, San Diego, CA*

DU-09. Magnetic properties of multilayer [(FePt)x/Os]n films.S. Chen[1], *Y. Yao*[2], S. Huang[3], J. Wu[1] and C. Yu[4] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan; 3. Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan; 4. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

DU-10. Novel Magnetic Noise from Maze Domains. *Z. Diao*[1], E.R. Nowak[2], G. Feng[1] and M. Coey[1] *1. School of Physics and CRANN, Trinity College, Dublin 2, Ireland; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE*

DU-11. Coupled Dipolar Spin Waves of Magnetic Multilayer Systems with Cylindrical Geometries.T.K. Das[1] and *M. Cottam*[1] *1. Department of Physics & Astronomy, University of Western Ontario, London, ON, Canada*

DU-12. The angular dependence of the magnetoresistance of the $SrTiO_3/LaAlO_3$ interface. *S. Seri*[1] and L. Klein[1] *1. Physics, Bar-Ilan University, Ramat-Gan, Israel*

DU-13. Microstructural Analysis of Ni-Au Core-shell Nanowires by FIB/TEM. *I. Jeon*[1], M. Cho[1,2], J. Cho[1,3], J. Wu[4] and Y. Kim[1] *1. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Lotte Aluminum Co. Ltd., Seoul, Korea, Republic of; 3. Korea Electronic Technology Institute, Gyeonggi, Korea, Republic of; 4. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Korea, Republic of*

DU-14. Magnetic properties of amorphous ferromagnetic CoSiB/Pt multilayers with perpendicular magnetic anisotropy. *J. Hwang*[2], J. Park[1], H. Yim[1], T. Kim[3] and S.B. Lee[2] *1. Department of Physics, Sookmyung Women's University, Seoul, Korea, Republic of; 2. Division of Electronics and Communication Engineering, Hanyang University, Seoul, Korea, Republic of; 3. Department of Advanced Materials Engineering, Sejong University, Seoul, Korea, Republic of*

WEDNESDAY AFTERNOON 1:00

EXHIBIT HALL C

Session DV
PATTERNED FILMS II (POSTER SESSION)

Crispin Barnes, Co-Chair
Manfred Albrecht, Co-Chair

DV-01. Anisotropic Coupling in Hexagonal Arrays of Asymmetric Nickel Rings.E. Sirotkin[1] and *F.Y. Ogrin*[1] *1. School of Physics, The University of Exeter, Exeter, Devon, United Kingdom*

DV-02. Controlling the vortex formation in individual multilayer triangular rings. *S. Jain*[1], D. Tripathy[1] and A.O. Adeyeye[1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

DV-03. Vortex state characteristic in NiFe elliptical ring arrays. *S. Lee*[1,3], L. Chang[1,2], K. Chen[1,3], L. Lin[1] and Y. Yao[1,4] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Department of Materials Science & Engineering, National Chiao Tung University, Hsinchu, Taiwan; 3. Institute of Optoelectronic Sciences, National Taiwan Ocean University, Keelung, Taiwan; 4. Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan*

DV-04. Influence of different notches positions on magnetization processes in permally rings. *Y. Chen*[1], M. Lai[1], C. Hsu[1], Y. Chiu[2] and Z. Wei[2] *1. Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*

DV-05. Study of one-side-flat edge on vortex in submicro-scaled Permalloy disks. *C. Huang*[1], C. Yang[1], J. Wu[1] and L. Horng[1] *1. Department of Physics and Taiwan SPIN Research Center, National Changhua University of Education, Changhua, Taiwan*

DV-06. Change in the switching behavior of Ni-Fe elliptical dot arrays with the distance between adjacent dot. *Y. Endo*[1], H. Fujimoto[2], R. Nakatani[2], M. Yamamoto[2] and M. Yamaguchi[1] *1. Department of Electrical and Communication Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Department of Materials Science and Manufacturing Engineering, Graduate School of Engineering, Osaka University, Suita, Osaka, Japan*

DV-07. Ground State and Magnetization Reversal Of Spin Ice Patterns. *A. Schumann*[1], P. Szary[1] and H. Zabel[1] *1. Experimentalphysik 4, Ruhr-Universität Bochum, Bochum, Nordrhein-Westfalen, Germany*

DV-08. An ensemble of frustrated artificial magnetic square ice arrays studied via off-specular XRMS. *J.P. Morgan*[1], C.H. Marrows[1], A. Stein[2], S. Langridge[3], C.J. Kinane[3], C. Sanchez-Hanke[4] and D. Arena[4] *1. Physics and Astronomy, University of Leeds, Leeds, Yorkshire, United Kingdom; 2. Center For Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY; 3. ISIS, Rutherford Appleton Laboratory, Didcot, Oxfordshire, United Kingdom; 4. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY*

DV-09. Influence of Antiferromagnetic Coupling on the switching field distribution of patterned nanostructures.M. Ranjbar[1,2], D. Suzi[1,3], k. Aung[1], *S. Piramanayagam*[1], R. Sbiaa[1] and T. Chong[1,2] *1. Data Storage Institute, (A*STAR) Agency for Science, Technology and Research, Singapore 117608, Singapore, Singapore; 2. Electrical and computer engineering department, National University of Singapore, Singapore 117576, Singapore, Singapore; 3. Chemistry department, National University of Singapore, Singapore 117543, Singapore, Singapore*

DV-10. Effects of low magnetic anisotropy inclusions on switching field distribution in patterned magnetic arrays. *L. Chang*[1,3], M. Green[1,3], V. Kalatsky[1,3], P. Ruchhoeft[1,3], S. Khizroev[4] and D. Litvinov[1,2] *1. Electrical & Computer Engineering, University of Houston, Houston, TX; 2. Chemical & Biomolecular Engineering, University of Houston, Houston, TX; 3. Center for Integrated Nanosystems, University of Houston, Houston, TX; 4. Electrical Engineering, University of California - Riverside, Riverside, CA*

DV-11. Measuring broadband mag-noise of patterned Permalloy thin-films with the Y-factor method. *H. Zhang*[1], C. Li[1], R. Divan[2], A. Hoffmann[2,3] and P. Wang[1] *1. ECE Department, Clemson University, Clemson, SC; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 3. Material Science Division, Argonne National Laboratory, Argonne, IL*

DV-12. Effect of nano-patterned Si (100) substrate on the magnetic properties of ultra thin Co film. *S. Koyiloth Vayalil*[1], A. Gupta[1] and D. Kumar[1] *1. UGC-DAE Consortium for Scientific Research, Indore, Madhya Pradesh, India*

DV-13. Fabrication and Magnetic Force microscopy imaging of two dimensional ferromagnetic composite nanostructures. *S. Jain*[1] and A.O. Adeyeye[1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

DV-14. Magnetization reversal and magnetic interactions in patterned spin valve structures. *F. Brüssing*[1], H. Zabel[1] and K. Theis-Bröhl[2] *1. Experimentalphysik 4, Ruhr-Universität Bochum, Bochum, Germany; 2. University of Applied Sciences Bremerhaven, Bremerhaven, Germany*

DV-15. Magnetostatic fields from domain walls in Ni-Fe nanowires. *D.A. Allwood*[1], M.A. Bashir[1], M.T. Bryan[1], T. Schrefl[2], G. Burnell[3] and C.H. Marrows[3] *1. University of Sheffield, Sheffield, United Kingdom; 2. St. Poelten University of Applied Sciences, St. Poelten, Austria; 3. University of Leeds, Leeds, United Kingdom*

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DV-16. Optical magnetism in Ag/SiO2 multilayered nanoplates.D. Li[1,2], D. Qi[1], *R. Peng*[1], F. Gao[1], J. Zou[2], Q. Wang[1] and M. Wang[1] *1. National Laboratory of Solid State Microstructures, Nanjing, China; 2. School of Engineering and Centre for Microscopy and Microanalysis, Brisbane, QLD, Australia*

DV-17. A study of composition and microstructure modulation in multilayer mesostructures by electrodeposition. *J.F. Cooper*[1], J.J. Palfreyman[1] and C.H. Barnes[1] *1. Department of Physics, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom*

DV-18. Magnetic properties of Fe nanowires grown by focused-electron-beam-induced deposition. *R. Lavrijsen*[1], F. Schoenaker[1], B. Barcones-Campo[1], J. Kohlhepp[1], H. Swagten[1], B. Koopmans[1], J. De Teresa[3,4], R. Córdoba[2,4], M. Ibarra[2,3], H. Mulders[5] and P. Trompenaars[5] *1. Applied Physics, Technical University Eindhoven TU/e, Eindhoven, Netherlands; 2. Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza, Spain; 3. Facultad de Ciencias, Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza-CSIC, Zaragoza, Spain; 4. Departamento de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain; 5. FEI Company, Eindhoven, Netherlands*

WEDNESDAY AFTERNOON 1:00 **EXHIBIT HALL C**

Session DW

EXCHANGE BIAS II (POSTER SESSION)

Jurgen Fassbender, Chair

DW-01. Tuning the exchange bias in large area Co/CoO nanowire arrays. *D. Tripathy*[1], A. Adeyeye[1], K. Chakrabarti[1] and N. Singh[2] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Institute of Microelectronics, Singapore, Singapore*

DW-02. Synthesis and tuning the exchange bias in Ni-NiO nanoparticulate systems. *J.M. Vargas*[1], S. Sharma[1], F. Beron[1], K. Pirota[1], M. Knobel[1], P. Pagliuso[1] and C. Rettori[1] *1. Instituto de Fisica Gleb Wataghin, Universidade Estadual de Campinas, Campinas, SP, Brazil*

DW-03. Measurement of the Antiferromagnetic Activity in Exchange Bias Systems. *G. Vallejo-Fernandez**[1], T. Deakin[1], K. O'Grady[1], S. Oh[2], Q. Leng[2] and M. Pakala[2] *1. Department of Physics, The University of York, York, United Kingdom; 2. Western Digital Fremont Inc, Fremont, CA*

DW-04. ELECTRON charge and spin distributions, and magneto-electronic properties of small exchange-biased Co-O quantum wires. *L.A. Pozhar*[1] *1. Physics, University of Idaho, Moscow, ID*

DW-05. Direct Observation of Magnetization Reversal Behaviors in Exchange-Coupled NiO/Fe Films. *H. Lee*[1], K. Ryu[1] and S. Shin[1] *1. Department of Physics, KAIST (Korea Advanced Institute of Science and Technology), Daejeon, Korea, Republic of*

DW-06. Interfacial Spin Order in Polycrystalline Exchange Bias Systems. *B. Kaeswurm*[1] and K. O'Grady[1] *1. The University of York, York, United Kingdom*

DW-07. Exchange bias in NiFe/IrMn antidot arrays. *S. Lo*[1], C. Huang[2], J. Wu[2] and L. Horng[1,2] *1. Institute of photonics, National Changhua University of Education, Changhua, Taiwan; 2. Department of physics and Taiwan SPIN Research Center, National Changhua University of Education, Changhua, Taiwan*

DW-08. Phase transformation and exchange bias in Si-doped Ni-Mn-In ribbons.X.G. Zhao[1,2], *C.C. Hsieh*[1], J.H. Lai[1], W.C. Chang[1], W. Liu[2] and Z.D. Zhang[2] *1. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*

DW-09. Distribution of Exchange Bias Fields in CoFe/IrMn Exchange Bias Square Elements. *G. Vallejo-Fernandez*[1], D. McGrouther[1], J.N. Chapman[1] and K. O'Grady[2] *1. Physics & Astronomy, University of Glasgow, Glasgow, United Kingdom; 2. Physics, The University of York, York, United Kingdom*

DW-10. Properties and behaviour of $IrMn_3$/Co interfaces by ab-initio and atomistic simulation. *J. Jackson*[1], L. Szunyogh[2], L. Udvardi[2], U. Nowak[3] and R. Chantrell[1] *1. Department of Physics, University of York, York, United Kingdom; 2. Department of Theoretical Physics, Budapest University of Technology and Economics, Budapest, Hungary; 3. Department of Physics, University of Konstanz, Konstanz, Germany*

DW-11. Monte Carlo study of a bilayer model for exchange bias using a magnetic glass exhibiting random magnetic anisotropy. *H.M. Nguyen*[1], P. Hsiao[1] and M. Phan[2] *1. Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Physics, University of South Florida, Tampa, FL*

DW-12. A physical model of exchange bias in the $[Pd/Co]_5$/FeMn thin films with perpendicular anisotropy. *L. Lin*[1,2], J. Ho Wan[1] and B. Seongtae[1,2] *1. Biomagnetics Laboratory (BML), Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Information Storage Materials Laboratory (ISML), Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

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DW-13. Partially coherent nucleation modes in ferromagnetic /antiferromagnetic bilayers. *G. Zhao*[1] and Y. Feng[2] *1. College of Physics and Electronic Engineering, Sichuan Normal University, Chengdu, Sichuan, China; 2. Department of Physics, National University of Singapore, Singapore, Singapore*

WEDNESDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session DX
EXCHANGE BIAS III (POSTER SESSION)
Jeffrey McCord, Chair

DX-01. $[Pt/Co]_4$/NiO thin film perpendicular magnetic anisotropy dependence on Co layer thickness. J.Y. Guo[2], S.H. Chung[2], V.V. Volobuev[1], H. Ouyang[3], K.W. Lin[2] and *J. van Lierop*[1] *1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 3. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

DX-02. Texture and Magnetic Properties of Exchange Bias Systems. *R. Kröger*[1], N.P. Aley[1], M. Bowes[1] and K. O'Grady[1] *1. Physics, The University of York, York, United Kingdom*

DX-03. Exchange coupling and magnetoresistance in CoFe/NiCu/CoFe spin-valves near the Curie point of the spacer. *S. Andersson*[1] and V. Korenivski[1] *1. Applied Physics, Royal Institute of Technology (KTH), Stockholm, Sweden*

DX-04. Antiferromagnetic layer thickness dependence of noncollinear magnetic anisotropies in NiFe/FeMn/CoFe trilayers. *H. Choi*[1], K. Kim[2], J. Shim[3], D. Kim[3], J. Lee[2] and C. You[1] *1. Physics, Inha University, Incheon, Korea, Republic of; 2. Neutron Science Division, Korea Atomic Energy Research Institute, Daejeon, Korea, Republic of; 3. Physics, Chungbuk University, Cheongju, Korea, Republic of*

DX-05. Obtaining of large exchange bias in IrMn-based CoFe structures. *A. Canizo-Cabrera*[1], Y. Chang[1,2], V. Garcia-Vazquez[3] and T. Wu[1,4] *1. Taiwan SPIN Research Center, National Yunlin University of Science & Technology, Douliu, Yunlin, Taiwan; 2. Graduate School of Engineering Science and Technology, National Yunlin University of Science and Technology, Douliu, Yunlin, Taiwan; 3. Instituto de Física Luis Rivera Terrazas, Universidad Autónoma de Puebla, Puebla, Puebla, Mexico; 4. Overseas Chinese University, Taichung, Taiwan*

DX-06. Exchange bias and blocking temperature distribution in MnIr/CoFe bilayers. *R. Lusche*[1], J. Teixeira[1], J. Amaral[1], J. Ventura[1], J. Sousa[1], J. Araujo[1], R. Macedo[2], S. Cardoso[2] and P. Freitas[2] *1. IFIMUP, Porto, Portugal; 2. INESC-MN, Lisbon, Portugal*

DX-07. Exchange bias and coercivity of NiFe layer coupled with Fe-doped Cr2O3. *S. Ki*[1], D. Jung[1] and J. Dho[1] *1. Physics, Kyungpook National University, Daegu, Korea, Republic of*

DX-08. Effects of interface alloying in exchange biased Fe/Cr bilayers. *S. Ali*[1], M. Janjua[1], M. Fecioru-Morariu[2], C.J. Smith[3] and G. Guntherodt[1] *1. Physics Institute IIA, RWTH Aachen University, 52074 Aachen, Germany; 2. Oerlikon Solar AG, 9477 Trübbach, Switzerland; 3. OTB Solar, 5657 EB Eindhoven, Netherlands*

DX-09. Anomalous Temperature Dependence of Training Effect in Specular Spin Valve using Ultra-Thin Cr_2O_3-NOL with Magnetoelectric Effect. *K. Sawada*[1], N. Shimomura[1], M. Doi[1] and M. Sahashi[1] *1. Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan*

DX-10. Antiferromagnetic thickness dependence of the CrTe-MnTe exchange-bias system. H. Lu[1,2], *J. Bi*[1,2], K. Teo[1,2], T. Liew[2,1] and T. Chong[2,1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

DX-11. "Villari Reversal" in the Exchange biased $[Pd/Co]_5$/FeMn Multilayered Thin Films with Perpendicular Anisotropy. *M. Jeun*[1], L. Lin[1], H. Joo[1], J. Heo[2], K. Lee[2] and S. Bae[1] *1. Biomagnetics laboratory (BML), Department of Electrical and Computer Engineering, National University of Singapore, Singapore 117576, Singapore; 2. Thin films laboratory, Department of Physics, Dankok University, 330-714, Cheon an, Korea, Republic of*

DX-12. Thickness dependent exchange bias in magnetron sputtered Ni-Mn-Sn thin films. *D. Kaur*[1], R. Vishnoi[1] and D. Teotia[1] *1. Physics, Indian Institute of Technology Roorkee, Roorkee, India*

DX-13. Structural and magnetic characterization of exchange-bias in epitaxial Fe/IrxMn1-x bilayers grown on MgO(001). *A. Kovacs*[1], A. Kohn[1] and R.C. Ward[2] *1. Department of Materials, University of Oxford, Oxford, United Kingdom; 2. Department of Physics, University of Oxford, Oxford, United Kingdom*

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WEDNESDAY AFTERNOON 4:00 — SALON 2/3

Session DZ
PLENARY SESSION
Kevin O'Grady, Chair

4:00

DZ-01. Observation of Microscopic Distributions of Magnetic Fields by Using Electron Waves. ***(Invited)*** *A. Tonomura*[1,2] *1. Hitachi, Hatoyama-machi, Hiki-gun, Saitama, 350-0395, Japan; 2. Riken, Wako, 351-0198, Japan*

THURSDAY MORNING 9:00 — SALON 2

Session EA
SPIN-TORQUE DEVICES: OSCILLATOR DYNAMICS
Ursula Ebels, Chair

9:00

EA-01. Dominating phase noise contribution to the linewidth of point contact vortex oscillators. *T. Devolder*[1], J. Kim[1], P. Crozat[1], C. Chappert[1], M. Manfrini[2], W. Van Roy[2], L. Lagae[2], G. Hrkac[3] and T. Schrefl[3] *1. Institut d'Electronique Fondamentale, ORSAY, France; 2. IMEC, Leuven,, Belgium; 3. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom*

9:12

EA-02. Agility of vortex-based spin torque oscillators using point-contacts. *M. Manfrini*[2], T. Devolder[1], J. Kim[1], P. Crozat[1], C. Chappert[1], W. Van Roy[2], L. Lagae[2], G. Hrkac[3] and T. Schrefl[3] *1. Institut d'Electronique Fondamentale, Orsay, France; 2. IMEC, Leuven, Belgium; 3. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom*

9:24

EA-03. Theory of the power spectrum of current-driven vortex oscillations in magnetic nanocontacts. *J. Kim*[1] *1. Institut d'Electronique Fondamentale, CNRS / Univ. Paris-Sud, Orsay, France*

9:36

EA-04. Spin Torques in Point Contacts to Exchange-Biased Ferromagnetic Films. I.K. Yanson[1], Y.G. Naidiuk[1], O.P. Balkashin[1], V.V. Fisun[1], L.Y. Triputen[1], S. Andersson[2], *V. Korenivski*[2], Y.A. Yanson[3] and H. Zabel[3] *1. B Verkin Institute for Low Temperature Physics and Engineering, NASU, Kharkiv, Ukraine; 2. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden; 3. Lehrstuhl für Experimentalphysik/Festkörperphysik, Ruhr-Universität Bochum, Bochum, Germany*

9:48

EA-05. Narrow linewidths for a spin transfer torque oscillator with two perpendicularly-oriented polarizer layers and two coupled in-plane-oriented free layers. *T. Moriyama*[1], R.A. Buhrman[1] and D.C. Ralph[1] *1. Physics, Cornell University, Ithaca, NY*

10:00

EA-06. A spin-torque oscillator magnetic field sensor for high density magnetic recording. *P.M. Braganca*[1], B.A. Gurney[1], B. Wilson[1], J.A. Katine[1], S. Maat[1] and J.R. Childress[1] *1. Hitachi Global Storage Technologies, San Jose, CA*

10:12

EA-07. Phase locking of localized and propagating spin wave modes in double magnetic nano-contact spin torque oscillators. *N. de Vreede*[1], S. Bonetti[1], F. Mancoff[2] and J. Åkerman[1,3] *1. Material Physics, Royal Institute of Technology, Kista, Sweden; 2. Everspin Technologies, Inc., Chandler, AZ; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

10:24

EA-08. Fractional synchronization of spin torque nano-oscillators to microwave field. *S. Urazhdin*[1], P. Tabor[1], V. Tyberkevych[2] and A. Slavin[2] *1. Physics, West Virginia University, Morgantown, WV; 2. Physics, Oakland University, Rochester, MI*

10:36

EA-09. Linear and non-linear frequency modulation up to 3.2 GHz in nanocontact spin torque oscillators. *P.K. Muduli*[1], Y. Pogoryelov[1], S. Bonetti[1], F. Mancoff[2] and J. Åkerman[1,3] *1. Materials Physics, Royal Institute of Technology, Isafjordsgatan 22, 16440, Kista, Sweden; 2. Everspin Technologies Inc., 1300 N. Alma School Road, Chandler, AZ; 3. Physics Department, University of Gothenburg, Göteborg, 41296, Sweden*

10:48

EA-10. Enhancement of Microwave Oscillation under Angled In-Plane Magnetic Field in Spin Torque Oscillator based on Nano Contact MR. *H. Suzuki*[1], T. Nakamura[1], K. Miyake[1], M. Doi[1], S. Hashimoto[2], F.N. Hiromi[2], I. Hitoshi[2] and M. Sahashi[1] *1. Tohoku University, Sendai, Japan; 2. Toshiba Corporation, Kawasaki, Japan*

11:00

EA-11. Influence of oscillation modes on the line width of RF emissions in MgO based nanopillars. *G. Hrkac*[1], A. Goncharov[1], M. Bashir[1], T. Schrefl[1,3], T. Devolder[2], J. Kim[2], L. Bianchini[2], P. Crozat[2], C. Chappert[2], S. Cornelissen[4] and L. Lagae[4] *1. Department of Engineering Materials, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; 2. Institut d'Electronique Fondamentale, Universite Paris-Sud, Paris, France; 3. St. Pölten University of applied science, St. Pölten, Austria; 4. Imec, Leuven, Belgium*

11:12

EA-12. Spin-torque driven vortex dynamics in nanopillars with in-plane or out-of-plane polarizers. *V. Pribiag*[1,2], J.B. Park[1], G. Finocchio[3], O.J. Lee[1], P.G. Gowtham[1], B. Williams[1], D.C. Ralph[2] and R.A. Buhrman[1] *1. Department of Applied & Engineering Physics, Cornell University, Ithaca, NY; 2. Department of Physics, Cornell University, Ithaca, NY; 3. Dipartimento di Fisica della Materia e Tecnologie Fisiche Avanzate, University of Messina, Messina, Italy*

11:24

EA-13. A high-quality spin torque oscillator excited by a combined out-of-plane and in-plane spin polarized current. *O. Lee*[1], V. Pribiag[1], P. Gowtham[1], T. Moriyama[1], D. Ralph[1] and R. Buhrman[1] *1. Cornell University, Ithaca, NY*

11:36

EA-14. Current-induced oscillations in a nanopillar with dipolar coupling of magnetic layers. O. Dmytriiev[1,2], E. Bankowski[3], T. Meitzler[3], A. Slavin[1] and *V. Tyberkevych*[1] *1. Department of Physics, Oakland University, Rochester, MI; 2. Institute of Magnetism, Kyiv, Ukraine; 3. U.S. Army TARDEC, Warren, MI*

11:48

EA-15. A study of the linewidth of spin-torque induced steady state in MgO-based magnetic tunnel junctions. *L. Bianchini*[1,2], S. Cornelissen[3,4], J. Kim[1,2], T. Devolder[1,2], W. Van Roy[3], L. Lagae[3,5] and C. Chappert[1,2] *1. Institut d'Electronique Fondamentale, CNRS, Orsay, France; 2. Institut d'Electronique Fondamentale, Université Paris Sud, Orsay, France; 3. FNS, IMEC, Leuven, Belgium; 4. Electrical engineering (ESAT), Katolieke Universiteit Leuven, Leuven, Belgium; 5. Physics and Astronomy department, Katolieke Universiteit Leuven, Leuven, Belgium*

THURSDAY MORNING 9:00 — SALON 3

Session EB

SYMPOSIUM: RECENT ADVANCES IN MICROSCOPY OF MAGNETIC MATERIALS

Peter Fischer, Chair

9:00

EB-01. Recent Advances in Electron Microscopy: Insights into Oxide Interfaces. ***(Invited)*** *M. Varela*[1], S.J. Pennycook[1], J. Garcia-Barriocanal[2], A. Rivera-Calzada[2], F.Y. Bruno[2], Z. Sefrioui[2], C. Leon[2] and J. Santamaria[2] *1. Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN; 2. GFMC, Dept. Fisica Aplicada III, Universidad Complutense, Madrid, Spain*

9:36

EB-02. Circular dichroism in the electron microscope: Progress and applications. ***(Invited)*** *P. Schattschneider*[1,2] *1. Institute for Solid State Physics, Vienna Univ. of Technology, Vienna, Austria; 2. Univ. Service Center for Electron Microscopy, Vienna Univ. of Technology, Vienna, Austria*

10:12

EB-03. In-situ electron microscopy studies of nanoscale magnetic heterostructures. ***(Invited)*** *A. Petford-Long*[1,2], A. Chiaramonti[1], Y. Liu[1], M. Tanase[1,4], D. Schreiber[1,2], C. Phatak[3] and M. De Graef[3] *1. Materials Science Division, Argonne National Lab, Lemont, IL; 2. Materials Science and Engineering, Northwestern University, Evanston, IL; 3. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 4. Physics, University of Illinois-Chicago, Chicago, IL*

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10:48

EB-04. Observation of extrinsic and intrinsic doping effect at the surfaces of manganites using atomically resolved scanning tunneling microscopy. ***(Invited)*** *J. Shen*[1] *1. Oak Ridge National Laboratory, Oak Ridge, TN*

11:24

EB-05. Non linear dynamics in the vortex state and vortex core reversal probed by MRFM. ***(Invited)*** *G. de Loubens*[1] *1. Service de Physique de l'Etat Condensé, CEA Saclay, Gif-sur-Yvette, France*

THURSDAY MORNING 9:00 — DELAWARE

Session EC
MAGNETIZATION DYNAMICS AND DAMPING II
Pavel Kabos, Chair

9:00

EC-01. Controlling damping by ion-irradiation in ferromagnetic-antiferromagnetic thin films. *J. McCord*[1], T. Strache[2], R. Mattheis[3] and J. Fassbender[2] *1. IFW Dresden, Dresden, Germany; 2. FZ Dresden-Rossendorf, Dresden, Germany; 3. IPHT Jena, Jena, Germany*

9:12

EC-02. Element resolved precessional motion in FeNi thin films. *S. Buschhorn*[1], F. Brüssing[1], R. Abrudan[1] and H. Zabel[1] *1. Experimentalphysik IV, Ruhr - Universität Bochum, Bochum, Germany*

9:24

EC-03. Tailoring spin relaxation in thin films. ***I. Barsukov***[1], R. Meckenstock[1], J. Lindner[1], C. Hassel[1] and M. Farle[1] *1. Fakultät Physik and Center for Nanointegration, Universität Duisburg-Essen, Duisburg, Germany*

9:36

EC-04. Gilbert damping and its mechanism for Co-based full Heulser alloy thin films. ***(Invited)*** *S. Mizukami*[1], M. Oogane[2], T. Kubota[2], S. Tsunegi[2], H. Naganuma[2], Y. Ando[2] and T. Miyazaki[1] *1. WPI-AIMR, Tohoku University, Sendai, Japan; 2. Department of Applied Physics, Tohoku University, Sendai, Japan*

10:12

EC-05. A first principles approach to low damping in Heusler type alloys. ***(Invited)*** *C.K. Mewes*[1], W.H. Butler[1], T. Mewes[1], T. Xu[1] and C. Liu[1] *1. Center for Materials for Information Technology / Department of Physics & Astronomy, University of Alabama, Tuscaloosa, AL*

10:48

EC-06. Extrinsic damping effect at CoFeB/MgO interface in magnetic tunnel junctions. *D. Wang*[1], J. Song[1], K. Huang[1], J.G. Lin[2], Y. Wang[3], H. Lin[4] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Center for Condensed Matter Science/ Center for Nanostorage Research, National Taiwan University, Taipei, Taiwan; 3. Electronic Research and Service Organization, Industrial Technology Research Institute, Hsinchu, Taiwan; 4. National Synchrotron Radiation Research Center, Hsinchu, Taiwan*

11:00

EC-07. Tunnel barrier thickness dependence of the free layer magnetization dynamics in CoFeB/MgO/CoFeB based magnetic tunnelling junctions. *S. Serrano Guisan*[1], W. Skowronski[2], J. Wrona[2], M. Czapkiewicz[2], T. Stobiecki[2], J. Langer[3], B. Ocker[3], G. Reiss[4] and H.W. Schumacher[1] *1. Physikalisch-Technische Bundesanstalt, Braunschweig, Germany; 2. Department of Electronics, AGH University of Science and Technology, Krakow, Poland; 3. Singulus, Kahl am Main, Germany; 4. Department of Physics, Bielefeld University, Bielefeld, Germany*

11:12

EC-08. Kubo Formula for the Gilbert Ferromagnetic Resonance Damping Tensor Coefficients. *A. Widom*[1], C. Vittoria[2] and S. Yoon[2] *1. Physics, Northeastern University, Boston, MA; 2. ECE, Northeastern University, Boston, MA*

11:24

EC-09. Absolute measurements of the excitation amplitude, ellipticity and spin wave excitation at ferromagnetic resonance. *G. Woltersdorf*[1], P. Majchrak[1], C. Back[1] and H. Dürr[2] *1. Physics, University of Regensburg, Regensburg, Germany; 2. BESSY II, Helmholtz Zentrum Berlin, Berlin, Germany*

11:36

EC-10. Ferromagnetic resonance and linewidth in FeGaB thin films - transition from polycrystalline to amorphous phase. W. Tong[1], *P. Krivosik*[1,2], S.S. Kalarickal[1], R. Meier[1] and C.E. Patton[1] *1. Colorado State University, Fort Collins, CO; 2. University of Colorado at Colorado Springs, Colorado Springs, CO*

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11:48

EC-11. Magnetic damping property near ferrimagnetic compensation points in GdFeCo. *A. Tsukamoto*[1,2], T. Sato[1], T. Shimizu[3], S. Toriumi[1] and A. Itoh[1] *1. Electronics & Computer Science, College of Science and Technology Nihon University, Funabashi, Chiba, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Saitama, Japan; 3. Electronic Engineering, Graduate School of Science and Technology Nihon University, Funabashi, Chiba, Japan*

THURSDAY MORNING 9:00 VIRGINIA

Session ED

MAGNETIC RECORDING: CONTINUOUS GRANULAR MEDIA

Stella Wu, Chair

9:00

ED-01. Experimental Modeling of Intergranular Exchange Coupling for Perpendicular Thin Film Media. *V.M. Sokalski*[1], D.E. Laughlin[1] and J. Zhu[2] *1. Materials Science & Engineering, DSSC, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, DSSC, Carnegie Mellon University, Pittsburgh, PA*

9:12

ED-02. Enhanced grain isolation of CoPtCr-SiO_2 recording media by a MnRu intermediate layer. *J. Liao*[1], R.K. Dumas[2], H. Hou[1], R. Chen[3], J. Lee[3], K. Liu[2] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing Huang University, Hsinchu, Taiwan; 2. Department of Physics, University of California, Davis, CA; 3. China Steel Corporation, Kaohsiung, Taiwan*

9:24

ED-03. Co-7%Ir+SiOx Soft Magnetic Intermediate Layer for Perpendicular Media. *S. Park*[1,2], D.E. Laughlin[1,2] and J. Zhu[1,3] *1. Data Storage System Center, Carnegie Mellon University, Pittsburgh, PA; 2. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Electrical Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

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9:36

ED-04. An Experimental Study of Effects of Interlayer Thickness on Recording Performance under Various Writing and Reading Clearances. *K. Zhang*[1], H. Jung[1] and G. Choe[1] *1. Hitachi Global Storage Technologies, San Jose, CA*

9:48

ED-05. Characterization of Switching Mechanism and Writeability in Perpendicular Magnetic Dual Oxide Media with Capping Layer. *G. Choe*[1], Y. Ikeda[2], A. Ghaderi[1], J. Park[2] and B. Lengsfield[2] *1. Disk Development, Hitachi GST, San Jose, CA; 2. San Jose Research Center, Hitachi GST, San Jose, CA*

10:00

ED-06. Q-band Ferro Magnetic Resonance in stacked perpendicular magnetic media recording media. *S. Hinata*[1], S. Saito[1] and M. Takahashi[1] *1. Department of Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan*

10:12

ED-07. Recording Physics and Media Design for Perpendicular Magnetic Recording and Beyond. *K. Gao*[1] *1. Seagate Technology, Bloomington, MN*

10:24

ED-08. Graded media design for area densities of up to 2.5 Tbit/in^{2}D. Hahn[1], *M.A. Bashir*[2], T. Schrefl[1,2], A. Cazacu[4], M.A. Gubbins[4] and D. Suess[3] *1. St Poelten University of Applied Sciences, St Poelten, Austria; 2. Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 3. Solid State Physics, Vienna University of Technology, Vienna, Austria; 4. Seagate Technology, Derry, United Kingdom*

10:36

ED-09. Buffer layers for highly ordered L10 FePt-Oxide thin film media at reduced processing temperature. *E. Yang*[1,3], D.E. Laughlin[1,3] and J. Zhu[2,3] *1. Materials Science and Engineering Department, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical Computer Engineering Department, Carnegie Mellon University, Pittsburgh, PA; 3. Data Storage System Center, Carnegie Mellon University, Pittsburgh, PA*

10:48

ED-10. FePt-Ag-C PERPENDICULAR magnetic recording medium fabricated on heat resistant glass substrates. *P. Alagarsamy*[1], L. Zhang[1], T. Yukiko K[1] and H. Kazuhiro[1] *1. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, IBARAKI, Japan*

11:00

ED-11. Control of coercivity of exchange-coupled graded (001) FePt:SiO_2 nanocomposite films. *T. George*[1], Y.S. Yu[1,2], L.P. Yue[1], R. Skomski[1] and D.J. Sellmyer[1] *1. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. School of Materials Science and Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China*

11:12

ED-12. Effect of underlayers (Pt, Ru, Au, and Ag) on structural and magnetic properties of sputtered $L1_1$ CoPt thin films on MgO(111) substrate. A. Sun[1,2], F. Yuan[3] and *J. Hsu*[1,4] *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Chemical Engineering and Materials Science, Yuan-Ze University, Taoyuan, Taiwan; 3. Institute of Physics, Academia Sinica, Taipei, Taiwan; 4. Center for Nanostorage Research, National Taiwan University, Taipei, Taiwan*

11:24

ED-13. Magnetic Reversal and Energy Barrier in Exchange-Coupled FePt-TiO2 Nanocomposite Thin Films. *T. Zhou*[1], K. Cher[1], B. Lim[1], W. Phyoe[1], J. Hu[1] and B. Liu[1] *1. Data Storage Institute, Singapore, Singapore*

11:36

ED-14. $L1_0$ phase FePt\CoPt exchange coupled media with small switching field and high thermal stability. *K.K. Pandey*[1], J. Chen[1] and G. Chow[1] *1. National University of Singapore, Singapore, Singapore*

11:48

ED-15. FePt-based exchange coupled composite perpendicular recording media. *C. Sun*[1], D. Stafford[1] and R. Acharya[1] *1. Western Digital, San Jose, CA*

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THURSDAY
MORNING
9:00

WASHINGTON 1

Session EE
ELECTRONIC STRUCTURE AND LOW DIMENSIONAL SYSTEMS I
Renat Sabirianov, Chair

9:00

EE-01. Measuring the magnetic anisotropy and the lifetimes of the excited states of Co and Fe atoms and clusters on Pt(111). *T. Schuh*[1], T. Balashov[1], A.F. Takács[1], A. Ernst[2], S. Ostanin[2], J. Henk[2], I. Mertig[2,4], P. Bruno[2], T. Miyamachi[3], S. Suga[3] and W. Wulfhekel[1] *1. Physikalisches Institut, Karlsruhe Institute of Technology, Karlsruhe, Germany; 2. Max-Plank-Institut für Mikrostrukturphysik, Halle, Germany; 3. Osaka University, Graduate School of Engineering Science, Osaka, Japan; 4. Martin-Luther-Universität Halle-Wittenberg, Institut für Physik, Halle, Germany*

9:12

EE-02. Magnetic susceptibility of nanoscale Kondo systems. *R. Skomski*[1], R. Zhang[1], P. Kharel[1], A. Enders[1] and D.J. Sellmyer[1] *1. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE 68588, NE*

9:24

EE-03. High Speed Single Dopant Spin Manipulation with a Single Electrical Gate. *V. Povilus*[1], J. Tang[2] and M.E. Flatté[1] *1. Physics, University of Iowa, Iowa City, IA; 2. Physics, University of New Hampshire, Durham, NH*

9:36

EE-04. Non-collinear spin structure in ultrathin γ-Fe/Cu(001) observed by soft X-ray resonant magnetic reflectivity. *H.L. Meyerheim*[1], J. Tonnerre[2], L. Sandratskii[1], H.C. Tolentino[2], M. Przybylski[1], F. Yildiz[1], X.L. Fu[1], E. Bontempi[3], A. Ramos[2], S. Grenier[2], U. Staub[4] and J. Kirschner[1] *1. Max-Planck-Institut f. Mikrostrukturphysik, Halle, Germany; 2. Institut Neel, CNRS& Université J. Fourier, Grenoble, France; 3. Universita di Brescia, Brescia, Italy; 4. Swiss Light Source, Paul Scherrer Institut, Villigen, Switzerland*

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9:48

EE-05. Spin-reorientation induced by very high magnetic field in domained structured YFeO3 film. *J. Scola*[1], W. Noun[1], E. Popova[1], A. Fouchet[1], Y. Dumont[1], N. Keller[1], I. Sheikin[2], A. Demuer[2], P. Lejay[3] and A. Pautrat[4] *1. GEMaC (Université de Versailles St-Quentin and CNRS), Versailles, France; 2. Grenoble High Magnetic Field Laboratory (CNRS), Grenoble, France; 3. Institut Néel (CNRS and Université Joseph Fourier), Grenoble, France; 4. CRISMAT (CNRS, ENSICAEN and Université de Caen), Caen, France*

10:00

EE-06. Correlating magnetic anisotropy and electronic structure in complex oxides thin films. *E. Arenholz*[1] and G. van der Laan[2] *1. ALS, LBNL, Berkeley, CA; 2. Diamond Light Source, Didcot, Oxfordshire, United Kingdom*

10:12

EE-07. Pressure-induced valence change and enhancement of orbital moment in Europium oxides. *N.M. Souza-Neto*[1], D. Haskel[1] and G. Lapertot[2] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Institut Nanosciences et Cryogenie, CEA, Grenoble, France*

10:24

EE-08. Spin density in frustrated magnets under mechanical stress: Mn-based antiperovskites. *P. Lukashev*[1] and R. Sabirianov[1] *1. Physics, University of Nebraska at Omaha, Omaha, NE*

10:36

EE-09. Robust magnetism on (110) CrO_2 thin films due to increased co-linearity of Cr spins. *M. Pathak*[1,2], H. Sims[1,2], K. Chetry[1,2], D. Mazumdar[1], P. LeClair[1,2], G. Mankey[1,2], W. Butler[1,2] and A. Gupta[1,3] *1. MINT, The University of Alabama, Tuscaloosa, AL; 2. Department of physics, The University of Alabama, Tuscaloosa, AL; 3. Department of Chemistry, The University of Alabama, Tuscaloosa, AL*

10:48

EE-10. Element vs. band specificity in K-edge XMCD magnetometry on intermetallics. *F. Bartolome*[1], J. Herrero-Albillos[1], L.M. Garcia[2], J. Bartolome[1], M. Bonilla[1], F. Wilhelm[3], A. Rogalev[3] and A.T. Young[4] *1. Física Bajas Temperaturas, UZ - CSIC, Zaragoza, Spain; 2. Dept. of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 3. European Synchrotron Radiation Facility, Grenoble, France; 4. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

11:00

EE-11. Visualization of electronic structures in the two-dimensional Hubbard model - spinons, polarons, and stripes -. *N. Tomita*[1] and S. Watanabe[1] *1. Physics, Yamagata University, Yamagata, Yamagata, Japan*

11:12

EE-12. Designing Fe-Ni based alloys for applications as smart susceptors. *G. Trimarchi*[1], A.J. Freeman[1,2] and M. Matsen[3] *1. Physics and Astronomy, Northwestern University, Evanston, IL; 2. Materials Science and Engineering, Northwestern University, Evanston, IL; 3. Boeimg Research & Technology, The Boeing Company, Seattle, WA*

11:24

EE-13. Magnetic properties of 3d transition metal wires on vicinal Cu(111) at finite temperatures. *W.J. Hergert*[1], H. Hashemi[1], G. Fischer[1] and V.S. Stepanyuk[2] *1. Institute of Physics, Martin Luther University Halle-Wittenberg, Halle, Sachsen-Anhalt, Germany; 2. MPI for Microstructure Physics, Halle, Sachsen-Anhalt, Germany*

11:36

EE-14. Analysis on the exchange interactions in three metal-organic coordination network systems possessing 1D magnetism. *D. Danilovic*[1], Y. Hamida[1], T. Yuen[1] and J. Li[2] *1. Physics, Temple University, Philadelphia, PA; 2. Chemistry and Chemical Biology, Rutgers University, Piscataway, NJ*

11:48

EE-15. Magnetic properties of a ferrimagnetic mixed (1,3/2) spin chain with unhomogeneous crystal-field anisotropy. *E. Solano-Carrillo*[1], R. Franco[1] and J. Silva-Valencia[1] *1. Departamento de Física, Universidad Nacional de Colombia, Bogotá, Colombia*

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THURSDAY MORNING 9:00 WASHINGTON 2

Session EF

SPIN CURRENTS, SPIN HALL EFFECT AND TUNNEL MAGNETORESISTANCE

Bernd Beschoten, Chair

9:00

EF-01. Pure-spin-current induced switching and interface contribution. ***(Invited)*** *Y. Otani*[1,2], T. Yang[2], Y. Fukuma[2] and L. Wang[2] *1. ISSP, the University of Tokyo, Kashiwa, Japan; 2. ASI, RIKEN, Wako, Japan*

9:36

EF-02. Influence of local laser heating on domain wall propagation. *P. Möhrke*[1], J. Franken[2,1], J. Rhensius[3,1], L.J. Heyderman[3], J. Thiele[4], U.J. Gibson[5] and M. Kläui[1] *1. Department of Physics, University of Konstanz, Konstanz, Germany; 2. Department of Applied Physics, University of Technology, Einhoven, Netherlands; 3. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, Villigen, Switzerland; 4. Hitachi Global Storage, San Jose, CA; 5. Thayer School of Engineering, Dartmouth College, Hanover, NH*

9:48

EF-03. Spin transport in Py/Ag lateral spin valves: magnetic field and temperature dependence. *G. Mihajlovic*[1], J.E. Pearson[1], S.D. Bader[1,2] and A. Hoffmann[1,2] *1. Materials Science Division, Argone National Laboratory, Argonne, IL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

10:00

EF-04. Inverse spin Hall effect measurements in patterned $Ni_{80}Fe_{20}$/normal metal bilayers*. *O. Mosendz*[1], J.E. Pearson[1], F.Y. Fradin[1], G.E. Bauer[3], S.D. Bader[1,2] and A. Hoffmann[1,2] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 3. Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands*

10:12

EF-05. Influence of Fe and Pt impurities on spin Hall effect in Au. *K. Takanashi*[1], I. Sugai[1] and S. Mitani[2] *1. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan; 2. National Institute for Materials Science, Tsukuba, Ibaraki, Japan*

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10:24

EF-06. Anomalous Nernst-Ettingshausen effect in epitaxial FePt thin films. *M. Mizuguchi*[1], S. Ohata[1], K. Uchida[1], T. Ota[1], E. Saitoh[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

10:36

EF-07. Large tunnel magnetoresistance of over 200% in MgO-based magnetic tunnel junction with perpendicular magnetic anisotropy. *K. Nishiyama*[1], T. Nagase[1], M. Nakayama[1], M. Yoshikawa[1], E. Kitagawa[1], T. Daibou[1], M. Nagamine[1], T. Kai[1] and H. Yoda[1] *1. Toshiba Corporation, Corporate Research & Development Center, Yokohama, Japan*

10:48

EF-08. Thickness and temperature effects on magnetic properties and roughness of L10-ordered FePt films. *C. Kim*[1], J.J. Sapan[2], S. Moyerman[2], K. Lee[3], E.E. Fullerton[2] and M.H. Kryder[1] *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA; 3. Advanced Technology, Qualcomm Incorporated, San Diego, CA*

11:00

EF-09. Effect of stack structure on the TMR properties and thermal stability for the MgO barrier MTJs with CoFe/Pd multilayers. *K. Mizunuma*[1], S. Ikeda[1], H. Yamamoto[2,1], H. Gan[1], K. Miura[2,1], H. Hasegawa[1], J. Hayakawa[2], K. Ito[2], F. Matsukura[1] and H. Ohno[1] *1. RIEC, Tohoku University, Sendai, Japan; 2. Advanced Research Laboratory, Hitachi, Ltd., Tokyo, Japan*

11:12

EF-10. Correlation between magnetoresistance and perpendicular anisotropy in magnetic tunnel junctions. *L.E. Nistor*[1], B. Rodmacq[1], S. Auffret[1], B. Dieny[1], C. Ducruet[2], C. Portemont[2] and L. Prejbeanu[2] *1. Spintec, CEA-CNRS, Grenoble, France; 2. Crocus Technology, Grenoble, France*

11:24

EF-11. Structural and magnetic properties of perpendicularly magnetized $Mn_{2.5}Ga$ epitaxial films. *F. Wu*[1], S. Mizukami[1], D. Watanabe[1], E. Sajitha[1], H. Naganuma[2], M. Oogane[2], Y. Ando[2] and T. Miyazaki[1] *1. WPI-AIMR, Tohoku Universitity, Sendai,, Japan; 2. Department of Applied Physics. Tohoku University, Sendai, Japan*

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11:36

EF-12. Giant tunneling magnetoresistance of 1056% at RT in double barrier magnetic tunnel junctions with MgO barrier. *L. Jiang*[1], H. Naganuma[1], M. Oogane[1], Y. Ando[1] and T. Morita[2] *1. Department of Applied Physics, Tohoku University, Sendai, Japan; 2. Tsukuba Institute for Super Materials, Ulvac, Inc., Tsukuba, Japan*

11:48

EF-13. Giant tunnel magnetoresistance in organic tunnel junctions. *C. Barraud*[1], P. Seneor[1], R. Mattana[1], S. Fusil[1], K. Bouzehouane[1], C. Deranlot[1], P. Graziosi[2], L. Hueso[2], I. Bergenti[2], V. Dediu[2], F. Petroff[1] and A. Fert[1] *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Istituto per lo Studio dei Materiali Nanostrutturati, Bologna, Italy*

THURSDAY MORNING 9:00 — WASHINGTON 3

Session EG

MEMS, HIGH FREQUENCY DEVICES AND SHIELDING

Marina Diaz-Michelena, Chair

9:00

EG-01. Micro-fabricated Electromagnetic Power Generator to Scavenge Low Ambient Vibration. *(Invited)* *J. Park*[1], D. Bang[1] and J. Park[1] *1. Micro/Nano Devices and Packaging Lab., Department of Electronic Engineering, Kwangwoon University, Seoul, Korea, Republic of*

9:36

EG-02. NiFe2O4 nanoparticle dosing of MEMS structures by evaporation in capillaries. *S.S. Bedair*[1], C.D. Meyer[1,2] and B. Morgan[1] *1. Sensors & Electron Devices Directorate, US Army Research Laboratory, Adelphi, MD; 2. University of Florida, Gainesville, FL*

9:48

EG-03. Fabrication of an electrodynamic microactuator with fully integrated wax-bonded Nd–Fe–B powder magnets. *N. Wang*[1] and D.P. Arnold[1] *1. Interdisciplinary Microsystem Group, University of Florida, Gainesville, FL*

10:00

EG-04. Thin-film patterned permanent magnet membranes for micromechanical susceptometry in planetary exploration. I. Lucas[1], N. Dempsey[2], M. Kustov[2], R.P. del Real[1], J. Plaza[3] and *M. Díaz-Michelena*[1] *1. Space Programs and Space Sciences, INTA, Torrejón de Ardoz, Spain; 2. Institut Néel, CNRS-UJF, Grenoble, France; 3. Instituto de Microelectrónica de Barcelona, CNM - CSIC, Barcelona, Spain*

10:12

EG-05. Dynamic Interactive Effect in Amorphous Microwire Array. *J. Fan*[1], N. Ning[1], J. Wu[1] and X. Li[1] *1. Mechanical Engineering, National University of Singapore, Singapore, Singapore*

10:24

EG-06. Hexagonal barium ferrite-based millimeter wave notch filters. *Y. Song*[1], C.L. Ordóñez Romero[1] and M. Wu[1] *1. Department of Physics, Colorado State University, Fort Collins, CO*

10:36

EG-07. Ferromagnetic Thin Film Noise Suppressor Integrated to On-Chip Transmission Lines. *M. Yamaguchi*[1], S. Muroga[1], Y. Endo[1], M. Suzuki[1], T. Inagaki[1] and Y. Mitsuzuka[1] *1. ECE, Tohoku University, Sendai, Miyagi, Japan*

10:48

EG-08. Modeling and Simulation of Electromagnetic Fields Generated by Depth Brain Stimulation Electrodes: Tissue and Thermal Effects. *W. Chuang*[1], H. Lai[1], L. Liao[1], P. Chao[1,2] and Y. Chen[1] *1. Department of Electrical Engineering, National Chiao Tung University, Hsinchu, Taiwan; 2. Institute of Imaging and Biomedical Photonics, National Chiao Tung University, Tainan, Taiwan*

11:00

EG-09. Method for evaluating shielding factor of magnetically-shielded rooms for uniform magnetic field using exciting coils. *S. Odawara*[1], K. Muramatsu[1], S. Komori[1], K. Kamata[2], K. Yamazaki[3], T. Yamaguchi[4], M. Sakakibara[5], T. Shinnoh[6], M. Shimokawa[7], N. Ishikawa[8] and T. Meguro[9] *1. Saga University, Saga, Japan; 2. KNCT, Kirishima, Japan; 3. Takenaka Corp., Inzai, Japan; 4. Daido Plant Industries Corp., Nagoya, Japan; 5. Ohtama Co., Ltd., Inagi, Japan; 6. Kajima Corp., Chofu, Japan; 7. Giken-kogyo Corp., Tokyo, Japan; 8. Shimizu Corp., Tokyo, Japan; 9. Hitachi Metals, Ltd., Kumagaya, Japan*

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11:12

EG-10. Simple Design Method for Magnetic Shield Room. *K. Fujisaki*[1], M. Fujikura[1] and J. Mino[2] *1. Nippon Steel Corporation, Futtsu-city, Japan; 2. Nippon Steel Engineering Co., Ltd, Tokyo, Japan*

11:24

EG-11. Rolling Motion Control of a Levitated Mover in a Permanent-Magnet-Type Bearingless Linear Motor. W. Kim[1], J. Lee[1] and *S. Kim*[1] *1. Energy mechanics research center, Korear Institute of Science and Technology, Seoul, Korea, Republic of*

11:36

EG-12. Application of a permanent magnet biased e-core reluctance actuator in a magnetically elevated planar ceiling actuator. *T. Overboom*[1], J. Jansen[1] and E. Lomonova[1] *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

11:48

EG-13. Analytical Torque Calculations for Magnetic Bearings And Vibration Isolation. *J. Janssen*[1], J. Paulides[1] and E. Lomonova[1] *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, N-Brabant, Netherlands*

THURSDAY MORNING 9:00 **WASHINGTON 5**

Session EH
NANOPARTICLE COMPOSITES
Dario Arena, Chair

9:00

EH-01. Magnetic configurations of iron nanocubes and Co nanowires studied by electron holography. *C. Gatel*[1], E. Snoeck[1], E. Javon[1], L. Lacroix[2], T. Blon[2], J. Carrey[2], M. Respaud[2], S. Lachaize[2], B. Chaudret[2,3], G. Viau[2], T. Maurer[4], F. Zighem[4] and F. Ott[4] *1. CEMES, CNRS, Toulouse, France; 2. LPCNO, Université Toulouse III - INSA, Toulouse, France; 3. LCC, CNRS, Toulouse, France; 4. IRAMIS - LLB, CEA, Paris, France*

9:12

EH-02. Programmable magnetic nanoparticle assembly and pattern transfer for nanomanufacturing. *S. Shi*[1], J. Henderson[1] and T. Crawford[1] *1. Department of Physics and Astronomy and USC NanoCenter, University of South Carolina, Columbia, SC*

9:24

EH-03. Giant anisotropic magnetoresistance in self-assembled nanometer-scale-distributed NbN-Fe-NbN Josephson-Junctions. *S.K. Bose*[1] and R.C. Budhani[1] *1. Department of Physics, I.I.T. Kanpur, Kanpur, U.P., India*

9:36

EH-04. Growth and magnetism of micron-sized epitaxial self-assembled fcc Co(111) dots. *O. Fruchart*[1], A. Masseboeuf[2], J. Toussaint[1,3], N. Rougemaille[1], F. Cheynis[1], P. Bayle-Guillemaud[2] and A. Marty[4] *1. Institut Néel, CNRS et Université Joseph Fourier, Grenoble, France; 2. INAC/SP2M/LEMMA, CEA-Grenoble, Grenoble, France; 3. Institut National Polytechnique de Grenoble, Grenoble, France; 4. INAC/SP2M/NM, CEA-Grenoble, Grenoble, France*

9:48

EH-05. Magnetic Pr clusters by crystal field breaking. *C. van Dijk*[1], J. Bowlan[2], A. Kirilyuk[1], T. Rasing[1] and W.A. de Heer[2] *1. Spectroscopy of Solids and Interfaces, Radboud University Nijmegen, Nijmegen, Netherlands; 2. School of Physics, Georgia Institute of Technology, Atlanta, GA*

10:00

EH-06. Magnetic Properties of As$_{7}$$^{2-}$ Cluster-Assembled Material from First Principles. *M. Qian*[1] and S.N. Khanna[1] *1. Department of Physics, Virginia Commonwealth University, Richmond, VA*

10:12

EH-07. Magnetic field effect of current-induced resistive switching in MFe_2O_4 (M = Fe, Mn) nanoparticle compacts. *T. Kim*[1], N. Lee[1], J. Ahn[1], E. Hur[1], Y. Bae[1], J. Jang[2], S. Moon[2] and J. Cheon[2] *1. Department of Physics, Ewha Womans University, Seoul, Korea, Republic of; 2. Department of Chemistry, Yonsei University, Seoul 120-749, Korea, Republic of*

10:24

EH-08. Fingerprinting the magnetic behavior of antiferromagnetic nanostructures using remanent magnetization curves.M.J. Benitez[1,2], *O. Petracic*[1], H. Tüysüz[2], F. Schüth[2] and H. Zabel[1] *1. Experimentalphysik IV, Ruhr-Universitaet Bochum, Bochum, Germany; 2. Max-Planck Institut für Kohlenforschung, Muelheim, Germany*

10:36

EH-09. Magnetic softening of CuNi films due to inclusion of Co nanoparticles: an element specific study. *K. Dempsey*[1], A.T. Hindmarch[1], D.A. Arena[2] and C.H. Marrows[1] *1. Physics and Astronomy, Leeds University, Leeds, United Kingdom; 2. Brookhaven Natl Lab, Natl Synchrotron Light Source, Upton, NY*

10:48

EH-10. Linear Magnetoresistance in Nanocomposite MnAs-GaAs Films.H. Johnson[1], A. Bresnahan[1], S. Bennett[2], R. Barua[3], L. Lewis[3] and *D. Heiman*[1] *1. Physics, Northeastern University, Boston, MA; 2. Electrical Engineering, Northeastern University, Boston, MA; 3. Chemical Engineering, Northeastern University, Boston, MA*

11:00

EH-11. FePt grains on self-assembled nano-silica particles. *A. Itoh*[1], A. Tsukamoto[1], Y. Nikkou[2], S. Okame[2] and K. Mizusawa[2] *1. Electronics and Computer Science, College of Science and Technology, Nihon University, Funabashi, Japan; 2. Electronic Engineering, Graduate School of Science and Technology, Nihon University, Funabashi, Japan*

11:12

EH-12. Synthesis of SiO_2 Coated $NiFe_2O_4$ Nanoparticles and the Effect of SiO_2 Shell Thickness on the Magnetic Properties. *M. Coskun*[1], M. Korkmaz[1], T. Firat[1], H.G. Jaffari[2] and I.S. Shah[2,3] *1. Department of Physics Engineering, Hacettepe University, Ankara, Turkey; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE; 3. Department of Materials Science and Engineering, University of Delaware, Newark, DE*

11:24

EH-13. Effect of the magnetic field on the colloidal structure of a magnetic nanoparticle system. *C. Dennis*[1], A.J. Jackson[1], J.A. Borchers[1], C. Gruettner[2] and R. Ivkov[3] *1. NIST, Gaithersburg, MD; 2. Micromod Partikeltechnologie, GmbH, Rostock-Warnemuende, Germany; 3. Department of Radiation Oncology and Molecular Sciences, Johns Hopkins University Medical School, Baltimore, MD*

11:36

EH-14. Site Determination of Mn Doping in Protein Encapsulated γ-Fe_2O_3 Nanoparticles. *V.L. Pool*[1,4], M.T. Klem[2,4], E. Arenholz[5], C. Jolley[2,4], T. Douglas[2,4], M. Young[3,4] and Y.U. Idzerda[1,4] *1. Physics, Montana State University, Bozeman, MT; 2. Chemistry and Biochemistry, Montana State University, Bozeman, MT; 3. Plant Sciences and Pathology, Montana State University, Bozeman, MT; 4. Center for Bio-inspired Nanomaterials, Montana State University, Bozeman, MT; 5. Advanced Light Source, LBNL, Berkeley, CA*

11:48

EH-15. Magnetism of Core-Shell Ti-O Nanoparticles. *X. Wei*[1], R. Skomski[1] and D.J. Sellmyer[1] *1. University of Nebraska, Lincoln, NE*

THURSDAY MORNING 8:00 — EXHIBIT HALL C

Session EP
OTHER HALF METALS I (POSTER SESSION)
Sabine Wurmehl, Chair

EP-01. Giant negative magnetization in half-metallic thin films. *K. Kim*[1], J. Rhee[2], Y.V. Kudryavtsev[3], T. Eom[4], V.G. Prokhorov[3] and Y. Lee[4] *1. Department of Information Display, Sunmoon University, Asan, Korea, Republic of; 2. Department of Physics, Sungkyunkwan University, Suwon, Korea, Republic of; 3. Institute of Metal Physics, National Academy of Sciences of Ukraine, Kiev, Ukraine; 4. q-Psi and Department of Physics, Hanyang University, Seoul, Korea, Republic of*

EP-02. The Thickness Dependence of Magnetic Properties in Ultrathin Monocrystalline Fe_3O_4 Films on GaAs. *Y. Zhai*[1,3], Z. Huang[1], C. Ni[1], Y. Lu[4,2], G. Li[2], Y. Xu[2] and H. Zhai[3] *1. Department of Physics, Southeast University, Nanjing, Jiangsu, China; 2. Department of Electronics, University of UK, York, York, United Kingdom; 3. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, Jiangsu, China; 4. R&D Department, Seagate Technology, N. Ireland, N. Ireland, United Kingdom*

EP-03. Large tunneling magnetoresistance of Fe_3O_4 using polytetrafluoroethylene (Teflon) as insulating tunnel barrier. *W. Wang*[1], X. Wang[2] and J. Tang[2] *1. Institute of Microelectronics of Chinese Academy of Sciences, Beijing, China; 2. Department of Physics & Astronomy, University of Wyoming, Laramie, WY*

EP-04. Hyperfine Magnetic Field on Iron Atoms and Stoichiometry in Thin Films and Bulk Co2FeSi. *V. Ksenofontov*[1], M. Wójcik[2], S. Wurmehl[3], H. Schneider[4], B. Balke[1], G. Jakob[4] and C. Felser[1] *1. Institute of Inorganic and Analytical Chemistry, Johannes Gutenberg-University Mainz, Mainz, Germany; 2. Institute of Physics, Polish Academy of Sciences, Warszawa, Poland; 3. Department of Applied Physics, Physics of Nanostructures, Eindhoven University of Technologyes Gutenberg-University Mainz, Eindhoven, Netherlands; 4. Institute of Physics, Johannes Gutenberg - Universityrg-University Mainz, Mainz, Germany*

EP-05. An extremely long range exchange coupling in fully epitaxial zinc-blende CrTe/MnTe system. *H. Lu*[1,2], J. Bi[1,2], K. Teo[1,2], T. Liew[2,1] and T. Chong[2,1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

EP-06. Half-metallicity in Half-Heusler structures. *T. Xu*[1], N. Charles[2,1], C. Liu[1], C.K. Mewes[1] and W.H. Butler[1] *1. Center for Materials for Information Technology / Department of Physics & Astronomy, University of Alabama, Tuscaloosa, AL; 2. Department of Physics, Grambling State University, Grambling, LA*

EP-07. Influence of miscut direction on magnetic anisotropy of epitaxial magnetite films grown on vicinal MgO (100).V. Golub[2], V.V. Dzyublyuk[2], A. Tovstolytkin[2], *S.K. Arora*[1], R.G. Sofin[1], R. Ramos[1] and I.V. Shvets[1] *1. Centre for Adaptive Nanostructures and Nanodevices (CRANN), School of Physics, Trinity College Dublin, Dublin, Dublin, Ireland; 2. Institute of Magnetism, 36b Vernadsky Blvd., Kyiv 03142, Ukraine*

EP-08. Effects of strains on half metallicity of the bulk MnGe and MnSi in zinc blende structure. *M. Qian*[1,2] and C.Y. Fong[2] *1. Department of Physics, Virginia Commonwealth University, Richmond, VA; 2. Department of Physics, University of California, Davis, CA*

EP-09. Highly epitaxial growth and its ferromagnetic properties of Heusler-alloy $Co_{3-x}Fe_xSi$/Ge(111) layers with an atomically flat heterointerface. *K. Kasahara*[1], K. Yamamoto[1], S. Yamada[1], T. Murakami[1], K. Hamaya[1,2] and M. Miyao[1] *1. Department of Electronics, Kyushu University, Fukuoka, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan*

EP-10. Transport studies of CoFe2O4 nanostructures. *B. Paterson*[1,2], S. Kang[2], B. Jugdersuren[1,2], J. Longtchi[3], I.L. Pegg[1,2] and J. Philip[1,2] *1. The Catholic University of America, Washington DC, DC; 2. The Vitreous State Laboratory, Washington DC, DC; 3. Bladensburg High School, Bladensburg, MD*

EP-11. CMR mechanism in doped manganites based on the canted ferromagnetic phase. *K. Khutsishvili*[1] and N.P. Fokina[2] *1. Department of Physics, Tbilisi State University, Tbilisi, Georgia; 2. Department of Physics, Tbilisi State University, Tbilisi, Georgia*

THURSDAY
MORNING
8:00

EXHIBIT HALL C

Session EQ

MAGNETO-ELECTRONIC MATERIALS AND EFFECTS (POSTER SESSION)

Tim Mewes, Co-Chair
V. Ksenofontov, Co-Chair

EQ-01. Magnetoresistive Effects in Co/Pd Multilayers on Self-assembled Nanospheres. ***(Invited)*** *J. Moser*[1,2], V. Kunej[2], H. Pernau[2], G. Schatz[2], E. Scheer[2] and M. Albrecht[3,2] *1. Institute of Applied Physics and Microstructure Research Center, University of Hamburg, Hamburg, Germany; 2. Department of Physics, University of Konstanz, Konstanz, Germany; 3. Institute of Physics, Chemnitz University of Technology, Chemnitz, Germany*

EQ-02. FeNi-based magnetic layered nanostruictures: magnetic properties and giant magnetoimpedance. *G.V. Kurlyandskaya*[1], A.V. Svalov[1], E. Fernandez[1], A. Garcia-Arribas[1] and J. Barandiaran[1] *1. Dept.Electricity and Electronics, University of the Basque Country UPV-EHU, 48940 Leioa, Vizcaya, Spain*

EQ-03. Study of shape effect in sandwich giant magneto-impedance. *C. Coillot*[1], J. Moutoussamy[1], R. Ikhlef[1], G. Chanteur[1] and F. Alves[2] *1. LPP/CNRS, Velizy, France; 2. LGEP, Palaiseau, France*

EQ-04. Irrecoverable and Recoverable Resistivity in $Gd_5(Si_xGe_{1-x})_4$ *R.L. Hadimani*[1] and D.C. Jiles[1] *1. Wolfson Centre for Magnetics, Cardiff University, Cardiff, Wales, United Kingdom*

EQ-05. Magneto-impedance and magneto-dielectric properties of single phase 45PMN-20PFW-35PT ceramics. *R. Balakrishanan*[1], S. Narayanan[1] and M. Rao[1] *1. Nano Functional Materials Technology Centre, Material Science Research Centre and Department of Physics, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India*

EQ-06. Asymmetrical Giant Magnetoimpedance in Py/IrMn thin films. *C. Garcia*[1], C. Ross[1], J. Florez[2] and P. Vargas[2] *1. Material Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. Departamento de Fisica, Universidad Tecnica Federico Santa Maria, Valparaiso, Chile*

EQ-07. Magnetic Field Dependence of the Magnetic Anisotropy in $Fe_{0.8}Ga_{0.2}$ Thin Films. *D.A. Resnick*[1], A. McClure[2], Y.U. Idzerda[1], S. Albert[2,3], T. Jaeger[2,3], P. Rugheimer[2] and J.A. Schaefer[3] *1. Physics, Carroll University, Waukesha, WI; 2. Physics, Montana State University, Bozeman, MT; 3. Technische Universitat Ilmenau, Ilmenau, Germany*

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EQ-08. Observation of cubic component in angular dependence of MR of Fe3O4/MgO(001) films measured along <110> direction. *R. Ramos*[1], S.K. Arora[1] and I.V. Shvets[1] *1. CRANN, School of Physics, Trinity College, Dublin, Ireland*

EQ-09. Anisotropy of quantum Hall phases at filling factor 9/2. *O. Ciftja*[1,2] *1. Physics, Prairie View A@M University, Prairie View, TX; 2. Kavli Institute for Theoretical Physics, Santa Barbara, CA*

EQ-10. High magnetoresistive effect in armchair graphene nanoribbon utilizing n=0 Landau Level. *S. Kumar*[1], G. Liang[1], M. Jalil[1] and S. Tan[2] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. SMI, Data Storage Institute, Singapore, Singapore*

EQ-11. Low frequency noise measurements of exchange-biased planar Hall effect sensors. *M. Mansour*[1,2], C. Coillot[1], H. Jaffrès[2], F. Nguyen Van Dau[2] and A. Roux[1] *1. Laboratoire de Physique des Plasmas, Velizy, France; 2. Thales Research and Technology, Palaiseau, France*

EQ-12. Transition behavior of magnetization in ferromagnetic material with biaxial easy axis. *H. Lee*[1], S. Chung[1], T. Yoo[1], S. Lee[1], X. Liu[2] and J. Furdyna[2] *1. physics, Korea Univ., Seoul, Korea, Republic of; 2. Physics, University of Notre Dame, Notre Dame, IN*

EQ-13. Electrical transport properties in amorphous $(In_{0.23}Co_{0.77})_2O_{3-v}$ magnetic semiconductor film on the metallic side of the metal-insulator transition. *S. Yan*[1], R. Qiao[1], T. Xu[1], Y. Tian[1], Y. Dai[1], Y. Chen[1], G. Liu[1] and L. Mei[1] *1. School of Physics, Shandong University, Jinan, Shandong, China*

EQ-14. Magnetic properties of heavily Mn-doped (Ga,Mn)As films.L. Chen[1], J. Deng[1], W. Wang[1] and *J. Zhao*[1] *1. State Key Laboratory For Superlattices And Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China*

EQ-15. Anomalous Hall effect in highly oriented Ni ultrathin films. *S. Mitani*[1], S. Kasai[1], M. Mizuguchi[2] and K. Takanashi[2] *1. National Institute for Materials Science, Tsukuba, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

EQ-16. Asymmetry in the planar Hall resistance of Fe films grown on vicinal GaAs substrates. *T. Yoo*[1], S. Khym[1], H. Lee[1], S. Chung[1], S. Lee[1], X. Liu[2] and J. Furdyna[2] *1. Department of Physics, Korea University, Seoul, Korea, Republic of; 2. Department of Physics, University of Notre Dame, Notre Dame, IN*

THURSDAY MORNING 8:00

EXHIBIT HALL C

Session ER

MAGNETIC SEMICONDUCTORS: OXIDES AND OTHER MATERIALS (POSTER SESSION)

Aubrey T. Hanbicki, Co-Chair
George Kioseoglou, Co-Chair

ER-01. Effects of Fe Doping and the Dielectric Constant on the Room Temperature Ferromagnetism of Polycrystalline CeO2 Oxides. *Q. Wen*[1], H. Zhang[1], Q. Yang[1], Y. Song[1] and J. Xiao[2,1] *1. University of Electronic Science and Technology of China, State Key Laboratory of Electronic Films and Integrated Devices, Chengdu, China; 2. University of Electronic Science and Technology of China, Chengdu, DE*

ER-02. Effects of the additional nonmagnetic donor doping on the magnetic anisotropy of $Ga_{1-x}Mn_xAs$ films. *H. Kim*[1], S. Khym[1], T. Yoo[1], H. Lee[1], S. Lee[1], X. Liu[2] and J. Furdyna[2] *1. Physics, Korea University, Seoul, Korea, Republic of; 2. Physics, University of Notre Dame, Notre Dame, IN*

ER-03. Magnetic properties of gapless semiconductors: $PbPdO_2$ and $PbPd_{0.9}Co_{0.1}O_2$ *K. Lee*[1], S. Choo[1], J. Yoon[2], K. Song[2], Y. Saiga[3], C. You[2], N. Hur[2], S. Lee[1], T. Takabatake[3] and M. Jung[1] *1. Department of Physics, Sogang University, Seoul, Korea, Republic of; 2. Department of Physics, Inha University, Incheon, Korea, Republic of; 3. ADSM, Hiroshima University, Higashi-Hiroshima, Japan*

ER-04. Asymmetry in the reorientation process of magnetization for crossing the [110] and the [1-10] directions in $Ga_{1-x}Mn_xAs$ epilayers. *Y. Kim*[1], T. Yoo[1], H. Lee[1], S. Chung[1], S. Khym[1], S. Lee[1], X. Liu[2] and J. Furdyna[2] *1. Department of Physics, Korea University, Seoul, Korea, Republic of; 2. Department of Physics, University of Notre Dame, Notre Dame, IN*

ER-05. Enhanced magnetic and electrical properties of hydrogenated amorphous Si(Mn) thin films by post-annealing treatment. *J. Yao*[1], M. Chen[2], J. Tsai[2] and T. Chin[1,3] *1. Department of Materials science and engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 3. Department of Materials Science and Engineering, Feng Chia University, Taichung, Taiwan*

ER-06. Magnetism study of Co-CeO2 thin films on Al2O3 (0001) substrates with controllable preferred orientation. *Y. Song*[1] *1. State Key Laboratory of Electronic Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu 610054, People's Republic of China, Chengdu, China*

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ER-07. The effects of aluminum doping for the magneto-transport property of Si:Ce thin films. *D. Shindo*[1], K. Fujii[1], T. Terao[1], S. Sakurai[1] and N. Fujimura[1] *1. Graduate School of Engineering, Osaka Prefecture University, Sakai, Japan*

ER-08. Room temperature ferromagnetism in Fe doped CeO2 thin films grown on LaAlO3(001). *S.K. Sharma*[1], S. Kumar[2], P. Thakur[3], N.B. Brookes[3], D.K. Shukla[4], J.M. Vargas[1], C.T. Meneses[5], C.G. Lee[2], K.R. Pirota[1] and M. Knobel[1] *1. Instituto de Fisica Gleb Wataghin, Universidade Estadual de Campinas (UNICAMP) Campinas, Campinas, Sao Paulo, Brazil; 2. School of Nano & Advanced Materials Engineering, Changwon National University, 9 Sarim dong, Changwon, Korea, Republic of; 3. European Synchrotron Radiation facility, CBP 220, 38043, Grenoble Cedex, France; 4. Department of Physics, Aligarh Muslim University, Aligarh, India; 5. Universidade Federal de Sergipe, Campus de Itabaiana - Núcleo de Física, Itabaiana/SE, Brazil*

ER-09. Fe/(Ga,Mn)As Heterostructures : a Study of the Magnetic Character of Ferromagnetic Interfacial Mn. *M. Soda*[1], F. Maccherozzi[2], M. Utz[1], M. Kiessling[1], A. Verna[3], G. Panaccione[3], W. Wegscheider[1,5], F. Yakhou[4], J. Zweck[1] and C. Back[1] *1. Department of Physics, University of Regensburg, Regensburg, Germany; 2. Soleil Synchrotron, Gif-sur-Yvette, France; 3. Laboratorio TASC, INFM-CNR, Trieste, Italy; 4. European Synchrotron Radiation Facility, Grenoble, France; 5. Solid State Physics Laboratory, ETH Zurich, Zurich, Switzerland*

ER-10. All-optical 90-deg. switching of magnetization in a ferromagnetic $Ga_{0.98}Mn_{0.02}As$ microbar. *J. Aoyama*[1], S. Kobayashi[1] and H. Munekata[1] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

ER-11. Annealing-dependent magnetization in MnGe as probed with neutron reflectometry. *B.J. Kirby*[1], M. Commisso-Dolph[2], B. Maranville[1], J. Lu[2], W. Yin[2], J. Floro[3], C. Kell[3] and S. Wolf[2] *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Physics, University of Virginia, Charlottesville, VA; 3. Materials Science, University of Virginia, Charlottesville, VA*

ER-12. Study of structural, magnetic and transport behavior of Co doped CeO2 and role of oxygen vacancies. *L.R. Shah*[1], B. Ali[2], Z. Hao[1], W. Wang[1], Y. Song[3], H. Zhang[3], S. Shah[1,2] and J.Q. Xiao[1] *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Materials Science and Engineering, University of Delaware, Newark, DE; 3. School of Microelectronic and Solid-state Electronic, University of Electronic Science and Technology of China, Chengdu, China*

ER-13. Carrier mediated Mn and B co doped Si diluted magnetic semiconductor. *Y. Zhang*[1,2], H. Zhu[1], W. Wang[1], L.R. Shah[1], X. Fan[1], L. Pan[2] and J.Q. Xiao[1] *1. Department of Physics and Astronomy, University of Delaware, Newark, DE; 2. Department of Physics, University of Science and Technology Beijing, Beijing, China*

ER-14. The magnetic phase changing for titanium oxide with proton irradiation. *S. Hyun*[1], K. Choi[2], S. Kim[2] and C. Kim[1] *1. Physics, Kookmin University, SEOUL, Korea, Republic of; 2. Laboratory of Pohang Emergent Materials and Department of Physics, Pohang University of Science and Technology, Pohang, Korea, Republic of*

ER-15. Impact of substrate heating during growth on transport and magnetization response of Eu-rich EuO thin films. *M. Eblen-Zayas*[1], T. Brenner[1], C. Carter[1], B. Colwell[1], S. Schlotter[1] and B. Schuster[1] *1. Physics & Astronomy, Carleton College, Northfield, MN*

THURSDAY MORNING 8:00 — EXHIBIT HALL C

Session ES
MAGNETIC SEMICONDUCTORS: ZnO (POSTER SESSION)
Chao-Ming Fu, Chair

ES-01. Room temperature ferromagnetism in nanostructured ZnO-Al system. *S. Chen*[1], K. Suzuki[1] and J. Garitaonandia[2] *1. Department of Materials Engineering, Monash University, Melbourne, VIC, Australia; 2. Zientzia eta Teknologia Fakultatea, Euskal Herriko Unibertsitatea, Bilbao, Spain*

ES-02. Room temperature ferromagnetism and fast ultraviolet photoresponse of Mn-ZnO thin films deposited by inkjet printing*. *Y. Wu*[1], K.V. Rao[1], W. Voit[1], T. Tamaki[1], O.D. Jayakumar[2], L. Belova[1], J. Guo[3] and P.A. Glans[3] *1. department of Materials Science and Engineering, the Royal Institute of Technology, Sweden, Stockholm, Sweden; 2. Chemical Division, Bhabha Atomic Research Center, Mumbai, India; 3. Advanced Photon Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

ES-03. Room temperature ferromagnetism in Al2O3/ZnO and MgO/ZnO films. *Y. Ma*[1], J. Ding[1], J. Yi[1], L. Chan[2] and C. Ng[2] *1. Department of Materials Science and Engineering, National university of Singapore, Singapore, Singapore; 2. Chartered Semiconductor Manufacturing Ltd, Singapore, Singapore*

ES-04. Search for room temperature ferromagnetism in low-concentration transition metal doped ZnO nanocrystalline powders by an atomic scale characterization. R. Dogra[1], *A.W. Carbonari*[1], M.E. Mercurio[1], M.R. Cordeiro[1] and R.N. Saxena[1] *1. CRPq, IPEN-CNEN/SP, Sao Paulo, Sao Paulo, Brazil*

ES-05. Zn1-xCoxO Diluted Magnetic Semiconductors for Spintronic Application. *M.M. Can*[1,2], T. Firat[2] and S. Ozcan[2] *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Physics Engineering, Hacettepe University, Ankara, Turkey*

ES-06. On Using Magnetic and optical methods to determine the size and characteristics of nanoparticles embedded in oxide semiconductors. *G. Gehring*[1], H.J. Blythe[1], Q. Feng[1], D.S. Score[1], M. Alshammari[1], M. Al Qahtani[1] and M. Fox[1] *1. Physics and Astronomy, University of Sheffield, Sheffield, United Kingdom*

ES-07. Magnetic properties of Co, Al and Mn, Al co-doped ZnO films.A.O. Ankiewicz[1,3], Q. Xu[2], H. Schmidt[2], M. Lorenz[3], M. Grundmann[3], N. Franco[4], E. Alves[4], M.C. Carmo[1] and *N.A. Sobolev*[1] *1. Departamento de Fisica and I3N, Universidade de Aveiro, Aveiro, Portugal; 2. Institut für Ionenstrahlphysik und Materialforschung, Forschungszentrum Dresden-Rossendorf, Dresden, Germany; 3. Institut für Experimentelle Physik II, Universität Leipzig, Leipzig, Germany; 4. Ion Beam Laboratory, Instituto Tecnológico e Nuclear, Sacavém, Portugal*

ES-08. Local electronic structure of carbon-implanted ZnO thin films, probed by x-ray absorption and emission spectroscopy.S. Choudhury[1], E.Z. Kurmaev[2], S. Zhou[3], Y. Lee[4], K. Kim[5], Y. Lee[4] and *G. Chang*[1] *1. Department of Physics and Engineering Physics, University of Saskatchewan, Saskatoon, SK, Canada; 2. Institute of Metal Physics, Russian Academy of Sciences-Ural Division, Yekaterinburg, Russian Federation; 3. Institut für Ionenstrahlphysik und Materialforschungszentrum Dresden-Rossendorf e.V., Dresden, Germany; 4. q-Psi and Department of Physics, Hanyang University, Seoul, Korea, Republic of; 5. Department of Information Display, Sunmoon University, Asan, Korea, Republic of*

ES-09. An Fe^{3+} EPR Study of Nanoparticles of Magnetic Semiconductor $Zn_{1-x}Fe_xO$. *S.K. Misra*[1], S.I. Andronenko[1], L. Johnson[2], A. Thurber[2] and A. Punnoose[2] *1. Department of Physics, Concordia University, Montreal, QC, Canada; 2. Department of Physics, Boise State University, Boise, ID*

ES-10. The influence of magneto-electrical properties of Mn-doped ZnO films deposited under various gas ambience states. *C. Fu*[1], M. Kuo[2], Y. Hu[3], Y. Tsai[4], C. Chang[2] and C. Chou[2] *1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan; 3. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 4. Department of MicroElectronics Engineering, Chung Hua University, Hsinchu, Taiwan*

ES-11. Deposition of amorphous aluminum-doped zinc oxide thin films by RF sputtering at liquid Nitrogen temperature.M. Yang[1], B. Chen[1], Y. Tsao[1] and *H. Chou*[1] *1. Physics, National Sun Yat-sen University, Kaohsiung, Taiwan*

ES-12. Ferromagnetic properties of Cu-doped ZnO thin films according to the substrate temperature. *Y. Lee*[1], T. Eom[1], V.T. Thuy[1], K. Kim[2], J. Kang[3] and Y. Lee[1] *1. q-Psi and Department of Physics, Hanyang University, Seoul, Korea, Republic of; 2. Department of Information Display, Sunmoon University, Asan, Korea, Republic of; 3. Department of Physics, Kookmin University, Seoul, Korea, Republic of*

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ES-13. Microstructure and Magnetism of Fe- and Na- Codoped ZnO Nanoparticles. *H. Gu*[1] and M. Yan[1] *1. State Key Laboratory of Silicon Materials, Department of Materials Science and Engineering, Zhejiang University, Hangzhou, China*

ES-14. Influence of annealing temperature on spin dynamics of Mn^{2+} in metal oxides: electron spin resonance study. *K. You*[1], T. Phan[1], S. Oh[1], S. Yu[1] and N. Dan[2] *1. Chungbuk National University, Cheongju, Korea, Republic of; 2. Vietnam Academy of Science and Technology, Hanoi, Viet Nam*

ES-15. Structural, Magnetic and Semiconducting properties of Fe doped $SrSnO_3$ *G. Prathiba*[1], S. Venkatesh[2] and H. Narayanan[1] *1. Physics, IIT Madras, Chennai, Tamilnadu, India; 2. Department of Condensed Matter Physics and Material Sciences, Tata Institute of Fundamental Research, Mumbai, India*

ES-16. Excellent rectifying behavior and strong photovoltaic effect in heterojunctions composed of $La_{0.7}Sr_{0.3}MnO_3$ and $SrTiO_3$-Nb(0.05wt% Nb).J. Shen[1,2], *F. Hu*[1], J. Wang[1], J. Sun[1], B. Shen[1], L. Wang[3] and J. Gao[3] *1. State Key Lab. for Magnetism, Institute of Physics, CAS, Beijing, China; 2. Technical Institute of Physics and Chemistry, CAS, Beijing, China; 3. Department of Physics, The University of Hong Kong, Hong Kong, China*

ES-17. Effects of N-doping on magnetic properties of ZnCoO diluted magnetic semiconductor thin film. *J. Lee*[1] and Y. Lee[1] *1. Physics, National Cheng Kung University, Tainan, Taiwan*

THURSDAY MORNING 8:00 | EXHIBIT HALL C

Session ET
TUNNEL MAGNETORESISTANCE I (POSTER SESSION)
Kyung Ho Shin, Chair

ET-01. Fabrication and characterization of magnetic tunnel junctions with perpendicularly magnetized Co_2MnSi half-metal electrode.T. Hiratsuka[1], *Y. Sakuraba*[2], G. Kim[1], T. Kubota[1], N. Inami[1], H. Naganuma[1], M. Oogane[1], K. Takanashi[2] and Y. Ando[1] *1. Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

ET-02. Direct measurement of the spin polarization of the Heusler compound Co_2FeAl. *O. Schebaum*[1], D. Ebke[1], A. Niemeyer[1], G. Reiss[1], J.S. Moodera[2] and A. Thomas[1] *1. Thin Films and Physics of Nanostructures, Bielefeld University, Bielefeld, Germany; 2. Francis Bitter Magnet Laboratory, MIT, Cambridge, MA*

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ET-03. Spin-dependent tunneling characteristics of $Co_2MnGe/MgO/Co_2MnGe$ magnetic tunnel junctions. *T. Taira*[1], S. Hirata[1], T. Ishikawa[1], K. Matsuda[1], T. Uemura[1] and M. Yamamoto[1] *1. Division of Electronics for Informatics, Hokkaido University, Sapporo, Japan*

ET-04. Magnetoresistance in Composition Including Magnetic Particles with Different Sign of Spin Polarity. *M. Miura*[1], M. Hiratsuka[1], K. Suzuki[1], K. Miura[2], M. Watanabe[3] and T. Yuzawa[3] *1. Dpt. of Production System Engineering, Miyagi National College of Technology, Natori, Miyagi, Japan; 2. Miura Sensor Laboratory Inc., Sendai, Miyagi, Japan; 3. G. E. S. Corporation, Rifu, Miyagi, Japan*

ET-05. Detection of a spin filtering effect using Co-ferrite MTJ. *Y.K. Takahashi*[1], S. Kasai[1], T. Furubayashi[1], S. Mitani[1], K. Inomata[1] and K. Hono[1] *1. NIMS, Tsukuba, Japan*

ET-06. Magnetically Tunable Properties Related with Carriers Density in Self-doped $La_{1-x}MnO_3$/y wt%Nb-$SrTiO_3$ Heteroepitaxial Junctions. *Z. Wang*[1], G. Yu[1], G. Tang[1], L. Qiu[1], X. Wu[1], L. Wang[2] and J. Gao[2] *1. Department of Physics, Nanjing University, Nanjing, China; 2. Department of Physics, The University of Hong Kong, Hong Kong, China*

ET-07. Anomalous Magnetoresistance in Double Spin Filter Tunnel Junction with Metallic Spacer Layers under internal exchange fields. *G. Miao*[1] and J. Moodera[1] *1. Francis Bitter Magnetic Laboratory, MIT, Cambridge, MA*

ET-08. Impact of Roughness on Spin Filter Tunneling. *D.D. Belyea*[1] and C.W. Miller[1] *1. Physics, University of South Florida, Tampa, FL*

ET-09. Electrical characterization of spin filter tunnel contacts to silicon. *M. Müller*[1,2], M.J. van Veenhuizen[2], C.M. Schneider[1] and J.S. Moodera[2] *1. Institute of Solid State Research, Research Center Jülich, Jülich, Germany; 2. Francis Bitter Magnet Laboratory, Massachusetts Institute of Technology, Cambridge, MA*

ET-10. New symmetry-based spin-filter materials, MnAl and MnGa. *W.H. Butler*[1,2], C.K. Mewes[1,2], A. Wang[1,3] and T. Xu[1,2] *1. MINT Center, University of Alabama, Tuscaloosa, AL; 2. Department of Physics, University of Alabama, Tuscaloosa, AL; 3. Department of Chemistry, University of Alabama, Tuscaloosa, AL*

ET-11. A 1.2-nm-thick ultrathin CoPt layer for a magnetic tunnel junction with perpendicular anisotropy. *K. Yakushiji*[1], H. Kubota[1], A. Fukushima[1], T. Nagahama[1], S. Yuasa[1] and K. Ando[1] *1. Nanoelectronics Research Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan*

ET-12. Antiferromagnetically exchange-coupled reference layer in perpendicular magnetic tunnel junctions. *G. Choi*[1], I. Shin[1], B. Min[1] and K. Shin[1] *1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, Republic of*

ET-13. Characterization of Perpendicularly Magnetized Magnetic Tunnel Junction with *L*1$_0$-ordered FePt and CoPt electrodes. *N. Inami*[1], G. Kim[1], T. Hiratsuka[1], H. Naganuma[1], M. Oogane[1] and Y. Ando[1] *1. Dept. Applied Physics, Tohoku University, Sendai, Japan*

ET-14. Enhanced coercivity of L1$_0$-FePt by L1$_0$-PtMn buffer layer for applications of spin-valve-type MgO-based magnetic tunnel junctions with perpendicular anisotropy. *W. Tsai*[1], C. Lai[1] and Y. Wang[2] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Electronics and Optoelectronics Research Lab., Industrial Technology Research Institute, Hsinchu, Taiwan*

ET-15. Effect of annealing on the magnetic tunnel junction with CoPt- perpendicular anisotropy ferromagnetic layer. *Y. Wang*[1], W.X. Wang[1], Q.L. Ma[1], H.X. Wei[1] and X.F. Han[1] *1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Science, Beijing, China*

ET-16. Perpendicular magnetic tunnel junctions using Co-based multilayers and alloys. *S. Gupta*[1,2], Z.R. Tadisina[1,2] and A. Natarajarathinam[1,3] *1. Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL; 2. Metallurgical/Materials Engineering, University of Alabama, Tuscaloosa, AL; 3. Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL*

ET-17. Effect of Crystalline Orientation and Lattice Distortion of FeCo Spin Polarization Enhancement Layer in perpendicular MTJ with RE-TM Alloy Films. *N. Miyamoto*[1], H. Ohmori[1] and S. Nakagawa[1] *1. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*

ET-18. Magnetic properties of TbFeCo-based perpendicular magnetic tunnel junctions. *C. Lee*[1,2], L. Ye[1], T. Hsieh[2], D. Yang[3], M. Kuo[2], C. Huang[1,4] and T. Wu[2,5] *1. Taiwan SPIN Research Center, National Yunlin University of Science and Technology, Douliou, Taiwan; 2. Graduate School of Materials Science, National Yunlin University of Science and Technology, Douliou, Taiwan; 3. Graduate School of Optoelectronics, National Yunlin University of Science and Technology, Douliou, Taiwan; 4. Department of Physics, National Taiwan Normal University, Taipei, Taiwan; 5. Graduate School of Engineering Science and Technology, Overseas Chinese University, Taichung, Taiwan*

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THURSDAY
MORNING
8:00

EXHIBIT HALL C

Session EU
TUNNEL MAGNETORESISTANCE II (POSTER SESSION)
Sining Mao, Chair

EU-01. Temperature dependence of magnetoresistance oscillations due to Coulomb staircases in a nanometer vertical ferromagnetic tunnel junction. *S. Haraichi*[1] *1. Nanoelectronics Research Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan*

EU-02. Tunable tunneling magnetoresistance in a ferromagnet-metal-insulator-ferromagnet tunneling junction. *S. Chen*[1] *1. Department of Applied Physics, National Chiayi University, Chia Yi, Taiwan*

EU-03. Theory of oscillatory tunneling magnetoresistance. *B.C. Lee*[1] *1. Department of Physics, Inha University, Incheon, Korea, Republic of*

EU-04. Density of States Effects in Nickel Based Magnetic Tunnel Junctions Greg McKusky Dan Dahlberg University of Minnesota Department of Physics. *G. McKusky*[1] and D. Dahlberg[1] *1. Physics, University of Minnesota, Minneapolis, MN*

EU-05. Off-axis Al deposition for low resistivity tunnel barriers. *S. Bandiera*[1], R. Sousa[1], C. Ducruet[2], C. Portemont[2], S. Auffret[1], L. Prejbeanu[2] and B. Dieny[1] *1. Spintec (UMR 8191 CEA/CNRS/UJF), Grenoble, France; 2. Crocus Technology, Grenoble, France*

EU-06. Tunnel coupling between antiferromagnetic thin films. *A.M. Bataille*[1], C. Tiusan[2], F. Porcher[1], A. Barbier[3], C. Gatel[4], V.L. Jacques[5], Y. Lu[2], S. Ravy[5], B. Dkhil[6] and A. Gukasov[1] *1. Laboratoire Léon Brillouin, Commissariat à l'énergie atomique, Gif sur Yvette, France; 2. P2M, Institut Jean Lamour, Vandoeuvre-lès-Nancy, France; 3. Service de Physique et Chimie des Surfaces et Interfaces, Commissariat à l'énergie atomique, Gif sur Yvette, France; 4. CEMES, CNRS, Toulouse, France; 5. Synchrotron Soleil, Gif sur Yvette, France; 6. SPMS, Ecole Centrale Paris, Chatenay-Malabry, France*

EU-07. Creation, stabilization and annihilation of single 360° domain wall in the soft layer of magnetic tunnel junctions.M. Hehn[1], *D. Lacour*[1], F. Montaigne[1], N. Rougemaille[2], F. Maccherozzi[3], S. El Moussaoui[3], J. Raabe[3] and R. Belkhou[4] *1. Institut Jean Lamour, UMR 7198, Nancy-University, CNRS, Vandoeuvre lès Nancy, France; 2. Institut Néel, CNRS & Université Joseph Fourier, Grenoble, France; 3. Synchrotron SOLEIL, Gif-sur-Yvette, France; 4. Paul Scherrer Institut, Villigen PSI, Switzerland*

EU-08. Theoretical Modeling of Spin Quantum Cross Structure Devices with Noncollinear Ferromagnetic Electrodes. *K. Kondo*[1] *1. Laboratory of Quantum Electronics, Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan*

EU-09. Low Frequency Noise in Magnetic Tunnel Junctions. *F. Guo*[1], G. McKusky[1] and E. Dahlberg[1] *1. Physics, University of Minnesota, Minneapolis, MN*

EU-10. Magnetic field dependence of low frequency noise in TMR heads. *G. Han*[1] *1. Nano Spin-Electronics, Data Storage Institute, Singapore, Singapore*

EU-11. Origin of non-magnetic noise in current-perpendicular-to-plane magnetic tunnel junctions. *F. Liu*[1] and J. Shen[1] *1. Western Digital Corporation, Fremont, CA*

EU-12. Shot noise in MgO-barrier magnetic tunnel junctions. *W. Zhang*[1], B.D. Schrag[2], W. Shen[2], M.J. Carter[2] and G. Xiao[1,2] *1. Department of Physics, Brown University, Providence, RI; 2. Micro Magnetics, Fall River, MA*

EU-13. Influence of Resistance Area Product on the Noise in a Tunneling Magnetoresistive Read Head. *T. Abe*[1], Y. Endo[1] and M. Yamaguchi[1] *1. Department of Electrical and Communication Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

EU-14. Fabrication of 5 – 300 nm Magnetic Multilayer Patterns and Sensors with High Quality Profiles. *B. Zong*[1], G. Han[1], Z. Guo[1], J. Qiu[1], L. An[1], P. Luo[1], C. Wang[1], H. Meng[1], L. Wang[1] and B. Liu[1] *1. SMI, Data Storage Institute, Singapore, Singapore*

EU-15. Investigation of the interface properties of rare-earth doped tunnelling anisotropic magnetoresistance junctions with a Schottky barrier using polarized neutron reflectometry. *N. Steinke*[1], J. Llandro[1], B.Y. Hong[1], I. Farrer[1], D.A. Ritchie[1], C.J. Kinane[2], S. Langridge[2] and C.H. Barnes[1] *1. Department of Physics, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; 2. ISIS, Harwell Science and Innovation Campus, STFC, Didcot, Oxfordshire, United Kingdom*

EU-16. Effect of interface properties on performance of tunnelling anisotropic magnetoresistance devices. *J. Llandro*[1], N.J. Steinke[1], B. Hong[1], C. Barnes[1], I. Farrer[2], D.A. Ritchie[2], C.J. Kinane[3], S. Langridge[3], S. Auffret[4], B. Rodmacq[4] and A. Schuhl[4] *1. Thin Film Magnetism Group, University of Cambridge, Cambridge, United Kingdom; 2. Semiconductor Physics Group, University of Cambridge, Cambridge, United Kingdom; 3. ISIS, Harwell Science & Innovation Campus, STFC, Didcot, United Kingdom; 4. SPINTEC, Grenoble, France*

EU-17. Strong bias-voltage dependence of tunneling anisotropic magneto-resistance in epitaxial ferromagnet/n-GaAs junctions. *T. Uemura*[1], M. Harada[1], K. Matsuda[1] and M. Yamamoto[1] *1. Div. of Electronics for Informatics, Hokkaido Universtiy, Sapporo, Japan*

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EU-18. Magnetization-Controlled Conductance in (Ga,Mn)As-based Resonant Tunneling Devices. M. Tran[1], J. Peiro[1], H. Jaffrès[1], *J. George*[1], O. Mauguin[2], L. Largeau[2] and A. Lemaître[2] *1. Unité Mixte de Physique CNRS/THALES, Palaiseau, France; 2. Laboratoire de Photonique et de Nanostructures, Marcoussis, France*

THURSDAY MORNING 8:00 — EXHIBIT HALL C

Session EV

TUNNEL MAGNETORESISTANCE III (POSTER SESSION)

Masakiyo Tsunoda, Chair

EV-01. Voltage induced magnetic anisotropy change in ultrathin Fe80Co20 / MgO junctions. *Y. Shiota*[1], T. Nozaki[1,2], T. Shinjo[1], M. Shiraishi[1], Y. Suzuki[1], S. Ha[3] and C. You[3] *1. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 2. PREST, JST, Saitama, Japan; 3. Department of Physics, Inha University, Incheon, Korea, Republic of*

EV-02. Transport properties of double MgO barrier MTJs with thin middle CoFeB layer. *H. Gan*[1], S. Ikeda[1], J. Hayakawa[2], K. Miura[2,1], H. Hasegawa[1], H. Yamamoto[1], F. Matsukura[1] and H. Ohno[1] *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Advanced Research Laboratory, Hitachi, Ltd., Tokyo, Tokyo, Japan*

EV-03. Intrinsic effects of MgO barrier on the crystallization of CoFeB/MgO multilayer magnetic tunnel junctions. *F. Bai*[1,2], S.S. Mukherjee[2], H. Zhang[1], S.K. Gupta[2] and S.K. Kurinec[2] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 2. Microelectronic Engineering, Rochester Institute of Technology, Rochester, NY*

EV-04. Tuning of crystal texture for Fe/MgO/Fe magnetic tunnel junctions. H. Zhang[1], Y. Li[1], *X. Liu*[2], A. Morisako[2] and F. Wei[1] *1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Research Institute of Magnetic Materials, Lanzhou University, Lanzhou, Gansu, China; 2. Department of Information Engineering, Shinshu University, Nganano, Japan*

EV-05. Calculated magnetoresistance in MgO-based tunnel junctions with ordered bcc CoFe alloy electrodes. *J. Zhang*[1], Y. Wang[1], X.G. Zhang[2] and X.F. Han[1] *1. Beijing National Laboratory of Condensed Matter Physics, The Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Center for Nanophase Materials Sciences and Computer Science and Mathematics Division, Oak Ridge National Laboratory, Oak Ridge, TN*

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EV-06. Verification of Δ1 band effect of MgO tunneling barrier with an insertion of metallic amorphous layer. *K. Jung*[1,2], J. Kim[1], S. Han[1], D. Kim[1], K. Shin[2] and K. Rhie[1] *1. Display and Semiconductor Physics Department, Korea Univ., Chochiwon, Korea, Republic of; 2. Center for Spin tronics Research, KIST, Seoul, Korea, Republic of*

EV-07. Mechanism of magnetotransport properties modulation via interfacial electronic structure in single crystal Fe-MgO-Fe tunnel junctions. *C. Tiusan*[1], H. Yang[2], M. Chshiev[2], F. Greullet[1], C. Bellouard[1], Y. Lu[1], F. Montaigne[1] and M. Hehn[1] *1. CNRS-Nancy Université, Institute Jean Lamour, Departement P2M, Vandoeuvre les Nancy, France; 2. UMR 8191 CEA/CNRS/UJF, SPINTEC, Grenoble, France*

EV-08. Modification of the Δ1 and Δ5 electron states induced by alloying effects in Fe-based alloys for magnetic tunnel junctions. *B. Belhadji*[1] and L. Calmels[1] *1. CEMES/CNRS, Toulouse, France*

EV-09. Perpendicular magnetic anisotropy at Fe/MgO interfaces. *J. Lee*[1], K. Shin[1], M. Chshiev[2], A. Manchon[2], B. Rodmacq[2] and B. Dieny[2] *1. Center for Spintronics, KIST, Seoul, Korea, Republic of; 2. SPINTEC, Grenoble, France*

EV-10. Magnetic Tunnel Junctions with e-beam evaporated MgO. *H. Kurt*[1], T. Niizeki[1], K. Oguz[1] and M. Coey[1] *1. School of Physics and CRANN, Trinity College Dublin, Dublin 2, Ireland*

EV-11. Barrier Thickness Dependence of Tunneling Magnetoresistance in CoFeB / MgO / CoFeB Junctions During Thermal Annealing. *W. Wang*[1,2], S. Huang[1], L. Zhu[1], L. Shah[2], X. Kou[2], X. Fan[2], J.Q. Xiao[2] and C. Chien[1] *1. Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 2. Physics and Astronomy, University of Delaware, Newark, DE*

EV-12. Effect of the oxidation of plasma on the magnetic properties of MgO-based magnetic tunnel junctions. *Y. Chang*[1,2], A. Canizo-Cabrera[2], V. Garcia-Vazquez[3], Y. Chang[4] and T. Wu[5,6] *1. Graduate School of Engineering Science and Technology, National Yunlin University of Science and Technology, Douliou, Yunlin, Taiwan; 2. Taiwan SPIN Research Center, National Yunlin University of Science and Technology, Douliou, Yunlin, Taiwan; 3. Instituto de Física Luis Rivera Terrazas, Universidad Autónoma de Puebla, Puebla, Pue, Mexico; 4. Department of Electronic Engineering, National Yunlin University of Science and Technology, Douliou, Yunlin, Taiwan; 5. Graduate School of Materials Science, National Yunlin University of Science and Technology, Douliou, Yunlin, Taiwan; 6. Graduate School of Information Technology, Overseas Chinese University, Taichung, Taiwan*

EV-13. Magnetic Behavior of High Magnetoresistance Mg-B-O Tunnel Junctions with Ni-Fe-B and Fe-Co-B Free Electrodes. *J. Read*[1,2], W.F. Egelhoff, Jr.[1], H. Tseng[2], P.Y. Huang[2], Y. Li[2] and R.A. Buhrman[2] *1. NIST, Gaithersburg, MD; 2. Cornell University, Ithaca, NY*

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EV-14. Thermal effect on spin-torque-driven high-TMR magnetic tunnel junctions. *D. Aurelio*[1], L. Torres[1] and G. Finocchio[2] *1. Dept. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain; 2. Dipartimento di Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy*

EV-15. Current-in-plane tunneling measurement through patterned contacts on top surfaces of magnetic tunnel junctions. C. Lee[1,2], L. Ye[1], J. Lee[1,3], Y. Lin[1,2], C. Huang[1,4], J. Wu[5], M. Tsunoda[6], M. Takahashi[6] and *T. Wu*[2,7] *1. Taiwan SPIN Research Center, National Yunlin University of Science and Technology, Douliou, Taiwan; 2. Graduate School of Materials Science, National Yunlin University of Science and Technology, Douliou, Taiwan; 3. Graduate School of Engineering Science and Technology, National Yunlin University of Science and Technology, Douliou, Taiwan; 4. Department of Physics, National Taiwan Normal University, Taipei, Taiwan; 5. Taiwan SPIN Research Center, National Changhua University of Education, Changhua, Taiwan; 6. Department of Electronic Engineering, Tohoku University, Sendai, Japan; 7. Graduate School of Engineering Science and Technology, Overseas Chinese University, Taichung, Taiwan*

EV-16. The effect of hydration of tunnel barrier on the tunneling magnetoresistance and breakdown characteristics in MgO magnetic tunnel junctions. *K. Kim*[1], K. Kim[1], S. Lee[2], B. Cho[2] and S. Seo[1] *1. Semiconductor Lab., Samsung Advanced Institute of Technology, Yongin-Si, Gyenggi-Do, Korea, Republic of; 2. Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju-Si, Korea, Republic of*

THURSDAY MORNING 8:00 — **EXHIBIT HALL C**

Session EW

DOMAIN WALL DEVICES AND SPIN TRANSFER TORQUE (POSTER SESSION)

Atsufumi Hirohata, Chair

EW-01. Current-Induced Domain Wall Motion in TbFeCo Nanowires with Perpendicular Magnetic Anisotropy. S. Li[1], H. Nakamura[1], T. Kanazawa[1], *X. Liu*[1] and A. Morisako[1] *1. information engineering, Shinshu University, Nagano, Japan*

EW-02. Dissipative droplet solitons. *M. Hoefer*[1,2], T.J. Silva[2] and M.W. Keller[2] *1. Mathematics, North Carolina State University, Raleigh, NC; 2. National Institute of Standards and Technology, Boulder, CO*

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EW-03. Current-induced vortex core displacements and vortex wall motion in Permalloy structures. *L. Heyne*[1], J. Rhensius[1,2], A. Bisig[1], S. Krzyk[1], L.J. Heyderman[2], L. Le Guyader[2], F. Nolting[2], F. Kronast[3] and M. Kläui[1] *1. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 2. Paul Scherrer Institute, Villigen, Switzerland; 3. Speicherring BESSY II, Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany*

EW-04. The role of 360 degree domain walls in the reversal of rhombic NiFe/Cu/Co thin film rings. *M. Mascaro*[1], H.S. Körner[1,2], C. Nam[1] and C.A. Ross[1] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. Fachbereich Physik, Universität Konstanz, Konstanz, Germany*

EW-05. Current-driven unidirectional domain wall motion in a nano-wire, consisting a circular nano-ring. *S. Yoon*[1], Y. Jang[1], K. Lee[1], S. Lee[1] and B. Cho[1] *1. Material Science and Engineering, Gwangju Institute of Science and Technology, Gwangju, Korea, Republic of*

EW-06. Aligned alternating head-to-head and tail-to-tail domain walls in ferromagnetic concentric rings. *S. Jain*[1] and A.O. Adeyeye[1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

EW-07. Spin-Motive Force caused by Vortex Gyration in Circular Nanodisk with Holes. *J. Moon*[1] and K. Lee[1] *1. Dept. of Mater. Sci. & Eng., Korea University, Seoul, Korea, Republic of*

EW-08. Time-resolved detection of spin-wave Doppler shift. *K. Sekiguchi*[1], K. Yamada[1], S. Seo[2], K. Lee[2], D. Chiba[1], K. Kobayashi[1] and T. Ono[1] *1. ICR, Kyoto University, Uji 611-0011, Kyoto, Japan; 2. Department of Materials Science and Engineering, Korea University, Seoul 136-701, Korea, Republic of*

EW-09. Frequency domain studies of current-induced magnetization dynamics in single magnetic-layer nanopillars. *N. Müsgens*[1], S. Fahrendorf[1], A. Heiss[2], J. Mayer[2], B. Beschoten[1] and G. Güntherodt[1] *1. II. Physikalisches Institut and JARA-Fundamentals of Future Information Technology, RWTH Aachen, Aachen, Germany; 2. Central Facility for Electron Microscopy and JARA-Fundamentals of Future Information Technology, RWTH Aachen University, Aachen, Germany*

EW-10. Low frequency current susceptibility of electrodeposited magnetic nanostructures. *S. Granville*[1], H. Yu[1,2], J. Dubois[1,3], D. Yu[2] and J. Ansermet[1] *1. Institut de Physique de la Matière Condensée, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland; 2. State Key Laboratory for Mesoscopic Physics, School of Physics, Peking University, Beijing, China; 3. Ecole de Corps des Mines, Paris, France*

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EW-11. Current-Induced Control of Spin-Wave Attenuation. *S. Seo*[1], H. Yang[2], T. Ono[3] and K. Lee[1] *1. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 3. Institute for Chemical Research, Kyoto University, Kyoto, Japan*

EW-12. Temperature dependence of current polarization in $Ni_{80}Fe_{20}$ by spin wave Doppler measurements. M. Zhu[1,2], C.L. Dennis[3] and *R.D. McMichael*[1] *1. Center for Nanoscale Science and Technology, NIST, Gaithersburg, MD; 2. Maryland Nanocenter, University of Maryland, College Park, MD; 3. Metallurgy Division, NIST, Gaithersburg, MD*

EW-13. Hole-Mask Colloidal Lithography for Spin Torque Oscillators. *S. Redjai Sani*[1], J. Persson[1], A. Dmitriev[2], M. Käll[2] and J. Åkerman[1,3] *1. Department Microelectronics and Applied Physics, Royal Institute of Technology (KTH), Stockholm, Sweden; 2. Applied Physics, University of Technology, Göteborg, Sweden; 3. Physics Department, Göteborg University, Göteborg, Sweden*

EW-14. Magnetoresistance and Optical Magneto-Refractance Effects in CoFe-MgO Nanocomposite Films. A.F. Kravets[1], V.G. Kravets[2] and *V. Korenivski*[3] *1. Institute of Magnetism, NASU, Kiev, Ukraine; 2. Institute for Information Recording, NASU, Kiev, Ukraine; 3. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden*

EW-15. Magneto-transport and magnetic properties of Co-C granular films. *R. Tang*[1,2], H. Wang[1], M. Mizuguchi[1], R. Yu[2] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Department of Materials Science and Engineering, Tsinghua University, Beijing, China*

EW-16. Crossover from giant negative to positive magnetoresistance in granular Co-C film. *H. Hsu*[1], P. Juang[1], J. Zhang[1], H. Chou[2], J. Huang[3], S. Chen[4] and C. Liu[4] *1. Applied Physics, National Pingtung University of Education, Pingtung, Taiwan; 2. Physics, National Sun yat-sen University, Kaohsiung, Taiwan; 3. Physcis, National Cheng Kung University, Tainan, Taiwan; 4. Material Science, National Cheng Kung University, Tainan, Taiwan*

EW-17. Giant magnetoresistance and photoconductivity of spintronic material Fe_x-C_{1-x}/Si nanostructure. *X. Zhang*[1,2], L. Wu[1,2], C. Wan[1,2] and X. Gao[1,2] *1. Key Laboratory of Advanced Materials, Dept Materials Science and Engineering, Tsinghua University, Beijing, China; 2. National Center for Electron Microscopy, Beijing, China*

THURSDAY MORNING 8:00

EXHIBIT HALL C

Session EX
DOMAIN WALL DEVICES I (POSTER SESSION)
Dafine Ravelosona, Chair

EX-01. Control of domain wall depinning by current-induced Oersted field in a magnetic nanowire. *C. Nam*[1] and B. Cho[1] *1. Materials Science and Engineering, GIST, Gwang-Ju, Chunnam, Korea, Republic of*

EX-02. Rapid domain wall motion in permalloy nanowires excited by spin-polarized current applied perpendicular to the nanowire. *C.T. Boone*[1], X. Cheng[1], J.A. Katine[2], J.R. Childress[2], M. Carey[2] and I.N. Krivorotov[1] *1. Physics, University of California, Irvine, Irvine, CA; 2. Hitachi Global Storage Technologies, San Jose, CA*

EX-03. Controlling transverse domain wall chirality using nucleation pad structure. *M.T. Bryan*[1], J.S. Claydon[2], S. Basu[1], T. Schrefl[1,3] and D.A. Allwood[1] *1. Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 3. St. Poelten University of Applied Sciences, St. Poelten, Austria*

EX-04. Domain wall injection study in spin valve system with different geometry reservoirs. *K. Cheng*[1], C. Yu[2], Y. Yao[3], S. Lee[2], Y. Liou[2] and J. Huang[1] *1. Department of Materials Science and Engineering, National Tsing-Hua University, Hsinchu, Taiwan; 2. Institute of Physics., Academia Sinica., Taipei, Taiwan; 3. Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan*

EX-05. Finite temperature effects for current-induced domain wall motion - analytical results and simulations. *C. Schieback*[1], D. Hinzke[1], M. Kläui[1], U. Nowak[1] and P. Nielaba[1] *1. Physics, University of Konstanz, Konstanz, Germany*

EX-06. Domain-wall pinning and depinning at magnetic soft spots in nanowires. *S. Wintz*[1], A. Vogel[2], J. Moser[2], M. Bolte[2], T. Strache[1], M. Fritzsche[1], M. Im[3], P. Fischer[3], G. Meier[2] and J. Fassbender[1] *1. Institut für Ionenstrahlphysik und Materialforschung, Forschungszentrum Dresden-Rossendorf, Dresden, Germany; 2. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany; 3. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA*

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EX-07. Domain wall pinning and depinning in doped permalloy nanowires. *S. Lepadatu*[1], J.S. Weaver[1], D.C. Rio-Perez[1], C.J. Kinane[2], T.R. Charlton[2], S. Langridge[2], A. Potenza[3], S. Cavill[3], S.S. Dhesi[3], B.J. Hickey[1] and C.H. Marrows[1] *1. School of Physics and Astronomy, The University of Leeds, Leeds, United Kingdom; 2. ISIS, STFC Rutherford Appleton Laboratory, Didcot, United Kingdom; 3. Diamond Light Source, Didcot, United Kingdom*

EX-08. Study on the trapping of domain wall in a Ni-Fe nanowire with a constricted area. *Y. Endo*[1], Y. Mitsuzuka[1] and M. Yamaguchi[1] *1. Department of Electrical and Communication Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

EX-09. Current-induced domain wall motion in perpendicularly magnetized Co/Ni nano-wires. *D. Chiba*[1], T. Koyama[1], G. Yamada[1], K. Ueda[1], H. Tanigawa[1,2], S. Fukami[2], T. Suzuki[2], N. Ohshima[2], N. Ishiwata[2], Y. Nakatani[3] and T. Ono[1] *1. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 2. Device Platforms Research Laboratories, NEC Corporation, Sagamihara, Japan; 3. University of Electro-communications, Chofu, Tokyo, Japan*

EX-10. *In-situ* magneto-optical imaging of magnetic domain wall motion in notched magnetic nanowires with perpendicular magnetic anisotropy. *Y. Miyamoto*[1], M. Kishida[1], M. Kawana[1], M. Okuda[1] and N. Hayashi[1] *1. Science & Technogy Research Labs., NHK (Japan Broadcasting Corporation), Tokyo, Japan*

EX-11. Investigation of spin-dependent transport across a constrained domain wall in a GaMnAs nanowire.S. Cho[1], *T. Kim*[1], H. Choi[1], F.C. DaSilva[2], T. Osminer[1,2], D.P. Pappas[2] and Y.D. Park[1] *1. Department of Physics and Astronomy, seoul national university, Seoul, Korea, Republic of; 2. Natinal Institute of Standards and Technology, Boulder, CO*

EX-12. Fully scalable magnetic domain wall shift register with electrical input and optical readout. *H.T. Zeng*[1], D. Read[1], O. Liam[1], L.R. Emma[1], D. Petit[1], L. Thevenard[1], J. Sampaio[1] and R. Cowburn[1] *1. Physics, Imperial College London, London, United Kingdom*

EX-13. Multiple transitions in half-ring chains with varying linewidth. *K. Cheng*[1,2], L. Lin[1,2], C. Yu[2], Y. Yao[3], S. Lee[2], Y. Liou[2] and J. Huang[1] *1. Materials Science and Engineering, National Tsing-Hua University, Hsinchu, Taiwan; 2. Physics, Academia sinica, Taipei, Taiwan; 3. Applied Science and Engineering, Fu Jen University, Taipei, Taiwan*

EX-14. Oscillatory depinning behavior of domain walls from notches in ferromagnetic nanowires. *S. Ahn*[1], K. Moon[1] and S. Choe[1] *1. Center for Subwavelength Optics and School of Physics, Seoul National University, Seoul, Korea, Republic of*

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EX-15. Remote pinning of domain walls. *L.A. O'Brien*[1], D. Petit[1], E.R. Lewis[1], H.T. Zeng[1], J. Sampaio[1], D.E. Read[1] and R.P. Cowburn[1] *1. Physics, Imperial College, London, United Kingdom*

EX-16. Domain wall propagation by electrical currents. *R.L. Thomas*[1], R. Jumade[1], S. Novak[1] and V. Misra[1] *1. Electrical and Computer Engineering, North Carolina State University, Raleigh, NC*

THURSDAY MORNING 8:00 — EXHIBIT HALL C

Session EY
SPIN-TORQUE DEVICES: OSCILLATORS AND DYNAMICS (POSTER SESSION)
Johan Akerman, Chair

EY-01. Spin-torque oscillator arrays as a solution for line width reduction in RF applications. *D. Ricketts*[1] *1. Carnegie Mellon University, Pittsburgh, PA*

EY-02. Time domain measurement of phase noise in nanocontact spin torque oscillators. *M.W. Keller*[1], A.B. Kos[1], T.J. Silva[1], W.H. Rippard[1] and M.R. Pufall[1] *1. National Institute of Standards and Technology, Boulder, CO*

EY-03. Eigenmodes of nanocontacts made to magnetic nanodisks including Oersted fields. *M. Pufall*[1], W.H. Rippard[1] and H. Qiao[2] *1. NIST, Boulder, CO; 2. Dept. of Physics, University of Denver, Denver, CO*

EY-04. Non-linear frequency and amplitude modulation of MgO based spin torque oscillators. *P.K. Muduli*[1], Y. Pogoryelov[1], G. Consolo[4], O. Heinonen[3] and J. Åkerman[2,1] *1. Material Physics, Royal Institute of Technology, Isafjordsgatan 22, 16440 Kista, Sweden; 2. Physics Department, University of Gothenburg, 41296, Göteborg, Sweden; 3. Seagate Technology, 7801 Computer Avenue South, Bloomington, MN; 4. Department of Physics, University of Ferrara, 44100 Ferrara, Italy*

EY-05. Analytical and micromagnetic characterization of nonlinear amplitude spintronic modulators. *V. Puliafito*[1], G. Consolo[2,1] and B. Azzerboni[1] *1. Dipartimento di Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Dipartimento di Fisica, University of Ferrara, Ferrara, Italy*

EY-06. Temperature dependence of spin-torque driven self-oscillations. *M.L. Schneider*[1], W.H. Rippard[2], M.R. Pufall[2], T. Cecil[2], T.J. Silva[2] and S.E. Russek[2] *1. Physics and Astronomy, University of Montana, Missoula, MT; 2. Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO*

EY-07. Effect of Angular Dependence of Spin-Transfer Torque on Current-Induced Magnetization Dynamics of Perfectly Symmetric Spin-Valves. *S. Lee*[1] and K. Lee[1] *1. Korea University, Seoul, Korea, Republic of*

EY-08. Hysteretic phase-locking of a spin-torque nano-oscillator to an external microwave signal. *P. Tabor*[1], S. Urazhdin[1], V. Tyberkevych[2] and A. Slavin[2] *1. Physics, West Virginia University, Morgantown, WV; 2. Physics, Oakland University, Rochester, MI*

EY-09. Spin-torque nanoscillator linewidths driven by spin-polarized currents: temperature and applied field angle dependence. *M. Carpentieri*[1] and L. Torres[2] *1. Elettronica, Informatica e Sistemistica, University of Calabria, Rende, Cosenza, Italy; 2. Fisica Aplicada, University of Salamanca, Salamanca, Salamanca, Spain*

EY-10. Linewidth evolution of spin torque oscillators in proximity of injection locking. *Y. Pogoryelov*[1], Y. Zhou[1], S. Bonetti[1], P.K. Muduli[1], F. Mancoff[2] and J. Åkerman[1,3] *1. Material Physics, Royal Institute of Technology, Kista, Sweden; 2. Everspin Technologies, Inc., Chandler, AZ; 3. Physics Department, University of Gothenburg, Gothenburg, Sweden*

EY-11. Spin-wave instabilities in spin-transfer-driven magnetization dynamics. *G. Bertotti*[1], R. Bonin[2], M. d'Aquino[3], C. Serpico[4] and I.D. Mayergoyz[5] *1. Divisione Elettromagnetismo, INRiM, Torino, Torino, Italy; 2. Sede di Verres, Politecnico di Torino, Verres, Aosta, Italy; 3. Tecnologie, Università di Napoli "Parthenope", Napoli, Napoli, Italy; 4. Ingegneria Elettrica, Università di Napoli "Federico II", Napoli, Napoli, Italy; 5. Electrical and Computer Engineering Department and UMIACS, University of Maryland, College Park, MD*

EY-12. Dependence of injection locking on oscillation line-width in Nano-Contacts Magnetoresistive Spin-Torque Oscillators (NCMR-STO). *M.K. Al-Mahdawi*[1], H. Endo[1], T. Tanaka[1], H. Suzuki[1], M. Doi[1], S. Hashimoto[2], H.N. Fuke[2] and M. Sahashi[1] *1. Electronic engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Corporate R&D Center, Toshiba Corp., Kawasaki, Kanagawa, Japan*

EY-13. Quantitative analysis of spin transfer dynamics in out-of-plane magnetized CoNi free layer spin valves. ***(Invited)*** *W.H. Rippard*[1], A. Deac[1], M. Pufall[1], J. Shaw[1], M. Keller[1], S. Russek[1], T. Silva[1], C. Serpico[3] and G. Bauer[2] *1. NIST, Boulder, CO; 2. Kavli Institute of Nanosciene, TU Delft, Delft, Netherlands; 3. Dept of Electrica Engineering, Univ of Naples, Naples, Italy*

EY-14. Influence of Magnetization Instability of Polarizer on Microwave Oscillation in NCMR-Spin Torque Oscillator (NCMR-STO). *T. Nakamura*[1], H. Suzuki[1], Y. Okutomi[1], M. Doi[1], S. Hashimoto[2], H.N. Fuke[2], H. Iwasaki[2] and M. Sahashi[1] *1. Tohoku University, Sendai, Japan; 2. Toshiba Corporation, Kawasaki, Japan*

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EY-15. Spin-transfer-torque-induced rf oscillation for antiferromagnetically-coupled Fe/Cr/Fe layers. *T. Seki*[1], H. Tomita[1], M. Shiraishi[1], T. Shinjo[1] and Y. Suzuki[1] *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan*

EY-16. Time domain study of frequency-power correlation in spin-torque oscillator. *G. Finocchio*[1], G. Siracusano[1], V. Tiberkevich[4], I. Krivorotov[3], L. Torres[2] and B. Azzerboni[1] *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain; 3. Physics and Astronomy, University of California, Irvine, CA; 4. of Physics, University Oakland, Rochester, MI*

THURSDAY AFTERNOON 2:00 — SALON 2

Session FA
DOMAIN WALL DYNAMICS
Hyun-Woo Lee, Chair

2:00

FA-01. One-dimensional Criticality of Domain Wall Dynamics in Ferromagentic Nanowires. ***(Invited)***K. Kim[1], J. Lee[1,2], S. Ahn[1], K. Lee[1], C. Lee[3], Y. Cho[3], S. Seo[3], K. Shin[2], *S. Choe*[1] and H. Lee[4] *1. Department of Physics, Seoul National University, Seoul, Korea, Republic of; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, Republic of; 3. Samsung Advanced Institute of Technology, Yongin, Korea, Republic of; 4. Department of Physics, Pohang University of Science and Technology, Pohang, Korea, Republic of*

2:36

FA-02. Current-induced domain wall motion in ultrathin Pt/Co/AlOx wires with perpendicular magnetic anisotropy. *T.A. Moore*[1,2], M. Miron[2,3], H. Szambolics[2], D. Heese[2], H. Ouslimani[2], G. Gaudin[2], S. Auffret[2], B. Rodmacq[2], A. Schuhl[2], S. Pizzini[1] and J. Vogel[1] *1. Institut Neel, Grenoble, France; 2. SPINTEC, CEA/CNRS, Grenoble, France; 3. ICN-CIN2, Universitat Autonoma de Barcelona, Barcelona, Spain*

2:48

FA-03. Effect of spin torque asymmetry on current-induced domain wall dynamics. *C.T. Boone*[1] and I.N. Krivorotov[1] *1. Physics, University of California, Irvine, Irvine, CA*

3:00

FA-04. Non-adiabatic spin-transfer torque in (Ga,Mn)As with perpendicular anisotropy. *V. Jeudy*[1,4], J. Adam[1,2], N. Vernier[1,3], J. Ferre[1], A. Thiaville[1], A. Lemaitre[5], L. Thevenard[5] and G. Faini[5] *1. Laboratoire de Physique des Solides, Univ. Paris Sud, 91405 Orsay, France; 2. GEMAC, Univ. Versailles Saint-Quentin, CNRS, 78035 Versailles, France; 3. IEF, Univ. Paris-Sud, CNRS, 91405 Orsay, France; 4. Univ. Cergy-Pontoise, 95000 Cergy-Pontoise, France; 5. LPN, CNRS, 91460 Marcoussis, France*

3:12

FA-05. Influence of slanted edges on the domain wall dynamics in nanostripes under the action of transverse fields. *S. Glathe*[1], M. Zeisberger[1] and R. Mattheis[1] *1. Institute of Photonic Technology Jena, Jena, Germany*

3:24

FA-06. Pulse-shape dependence of current-induced domain-wall motion. *L. Bocklage*[1], B. Krüger[2], T. Matsuyama[1], M. Bolte[1], U. Merkt[1], D. Pfannkuche[2] and G. Meier[1] *1. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany; 2. I. Institut für Theoretische Physik, Universität Hamburg, Hamburg, Germany*

3:36

FA-07. Field driven domain wall interactions in single magnetic nanowires. *A. Kunz*[1] and E. Rentsch[1] *1. Physics, Marquette University, Milwaukee, WI*

3:48

FA-08. Imaging of field induced domain wall excitation in permalloy nanowires. *J. Rhensius*[1,2], L. Heyne[2], S. Krzyk[2], L.J. Heyderman[1], F. Nolting[1] and M. Kläui[2] *1. Paul Scherrer Institut, Villigen, Switzerland; 2. Fachbereich Physik, University Konstanz, Konstanz, Germany*

4:00

FA-09. Fast domain wall motion by vortex nucleation. *Y. Nakatani*[1], K. Kondou[2] and T. Ono[2] *1. Department of Computer Science, University of Electro-Communications, Tokyo, Japan; 2. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan*

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4:12

FA-10. Modulation of transmission probability of a domain wall through the pinning potential above walker breakdown field. *U.H. Pi*[1], S. Lee[1], K. Lee[2], Y. Cho[1], J. Bae[1] and S. Seo[1] *1. Magnetic Device Group, Samsung Advanced Institute of Technology, Yongin, Korea, Republic of; 2. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of*

4:24

FA-11. Direct Imaging of Domain Wall Interactions in Ni80Fe20 Planar Nanowires. *T.J. Hayward*[1], M.T. Bryan[1], P.W. Fry[2], P.M. Fundi[1], M.J. Gibbs[1], D.A. Allwood[1], M.Y. Im[3] and P. Fischer[3] *1. Department of Engineering Materials, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; 2. Nanoscience and Technology Centre, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; 3. Center for X-ray Optics, Lawrence Berkeley Natl. Lab., Berkeley, CA*

4:36

FA-12. Reduced domain wall mobility due to interaction with a superparamagnetic bead. *M.T. Bryan*[1], J. Dean[1], T. Schrefl[1,2], J.W. Haycock[3] and D.A. Allwood[1] *1. Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 2. St. Poelten University of Applied Sciences, St. Poelten, Austria; 3. The Kroto Research Institute, University of Sheffield, Sheffield, United Kingdom*

4:48

FA-13. Absence of Walker breakdown in current-driven motion of transverse domain walls in cylindrical Permalloy nanowires. *M. Yan*[1], A. Kákay[1], S. Gliga[1] and R. Hertel[1] *1. Institute of Solid State Research, Research Centre Jülich, Jülich, Germany*

THURSDAY AFTERNOON 2:00 — SALON 3

Session FB
TUNNEL MAGNETORESISTANCE IV
William F. Egelhoff, Jr., Chair

2:00

FB-01. Voltage control of perpendicular magnetic anisotropy in epitaxial Au/ultrathin FeCo/MgO/Fe junctions. *(Invited)* *Y. Suzuki*[1], T. Nozaki[1,2], Y. Shiota[1], M. Shiraishi[1], T. Shinjo[1], S. Ha[3] and C. You[3] *1. Engineering Science, Osaka University, Toyonaka, Japan; 2. PRESTO, JST, Kawaguchi, Japan; 3. Department of Physics, Inha University, Incheon, Korea, Republic of*

2:36

FB-02. Enhanced Magnetoelectric Effects at the Fe/MgO(001) Interface from First Principles. *M.K. Niranjan*[1], C.G. Duan[2], S.S. Jaswal[1] and E.Y. Tsymbal[1] *1. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Key Laboratory of Polarized Materials and Devices, East China Normal University, Shanghai, China*

2:48

FB-03. Spectroscopic imaging of nanoscale defects and inclusions in CoFeB/MgO/CoFeB magnetic tunnel junctions by aberration-corrected STEM. *P.Y. Huang*[1], J.J. Cha[2], J.C. Read[3], H. Tseng[1], Y. Li[1], R.A. Buhrman[1] and D.A. Muller[1] *1. Applied and Engineering Physics, Cornell University, Ithaca, NY; 2. Materials Science and Engineering, Stanford University, Stanford, CA; 3. Magnetic Materials Group, National Institute of Standards and Technology, Washington, DC*

3:00

FB-04. Magnetic Dead Layers in Amorpous CoFeB with Various Top and Bottom Structures. *S. Jang*[1], S. Lim[1] and S. Lee[1] *1. Matierial Science and Engineering, Korea University, Seoul, Korea, Republic of*

3:12

FB-05. Metallic Mg insertion in RF deposited MgO barrier. *M.M. Souza*[1], R.C. Sousa[1], C. Ducruet[1], S. Auffret[1], U. Ebels[1] and B. Dieny[1] *1. Spintec (UMR 8191 CEA/CNRS/UJF), Grenoble, France*

3:24

FB-06. Influence of MgO barrier dislocations density on magnetotransport in fully epitaxial tunnel junctions. *S. Andrieu*[1], F. Bonell[1], F. Bertran[2], P. Lefevre[2], A. Taleb[2], E. Snoeck[3], J. Ben Youssef[4], C. Tiusan[1] and F. Montaigne[1] *1. Institut Jean Lamour, Nancy University, Vabndoeuvre, France; 2. SOLEIL, Synchrotron, Gif-sur-Yvette, France; 3. CEMES, CNRS, Toulouse, France; 4. Lab. de Magnétisme de Bretagne, CNRS, Brest, France*

3:36

FB-07. Spin polarized transport in Fe|Cr|(Fe)|MgO|Fe magnetic tunnel junctions using a two-band model.A. Vedyayev[1,2], N. Ryzhanova[1,2], N. Strelkov[1,2], *M. Chshiev*[1] and B. Dieny[1] *1. UMR 8191 CEA/CNRS/UJF, SPINTEC, Grenoble, France; 2. Department of Physics, Moscow Lomonosov State University, Moscow, Russian Federation*

3:48

FB-08. Effect of oxidation conditions on interlayer exchange coupling in Fe|MgO|Fe tunnel junctions from first-principles and tight-binding approaches. *H. Yang*[1], M. Chshiev[1,2], A. Kalitsov[1], A. Schuhl[1] and W.H. Butler[2] *1. SPINTEC, UMR 8191 CEA/CNRS/UJF, Grenoble, France; 2. MINT Center, The University of Alabama, Tuscaloosa, AL*

4:00

FB-09. Study of the chemical states of B in CoFeB/MgO/CoFeB films using synchrotron radiation near B K-edge. *Y. Han*[1], J. Hong[1], J. Han[2], H. Choi[2], M. Jung[3] and H. Shin[3] *1. Materials Science and Engineering, Yonsei University, Seoul, Korea, Republic of; 2. Department of Physics, Yonsei University, Seoul, Korea, Republic of; 3. Pohang Accelerator Laboratory, Pohang, Korea, Republic of*

4:12

FB-10. Magnetic Tunnel Junctions with Large Tunneling Magnetoresistance and Small Saturation Field. *W.F. Egelhoff*[1], V.E. Höink[1], J.W. Lau[1], W. Shen[2,3], B.D. Schrag[2,3] and G. Xiao[2,3] *1. NIST, Gaithersburg, MD; 2. Physics Department, Brown University, Providence, RI; 3. Micro Magnetics, Inc., Fall River, MA*

4:24

FB-11. Perpendicular-field magnetoresistance and thermal-ferromagnetic resonance measurement of easy-plane anisotropy in nanostructured magnetic tunnel junctions. *M. Mascaro*[1] and J.Z. Sun[2] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. IBM MagIC MRAM Alliance, IBM T. J. Watson Research Center, Yorktown Heights, NY*

4:36

FB-12. Memristive switching of MgO based magnetic tunnel junctions. *P. Krzysteczko*[1], A. Thomas[1] and G. Reiss[1] *1. Thin Films & Physics of Nanostructures, Bielefeld University, Bielefeld, Germany*

4:48

FB-13. MgO based magnetic tunnel junctions with NiFeSiB/Ru/CoFeB synthetic free layer. *J. Cho*[1], D. Kim[1], D. Kim[1], R. Tan[1], S. Isogami[2], M. Tsunoda[2], M. Takahashi[2] and Y. Kim[1] *1. Department of Materials Science and Engineering, Korea University, Seoul, Seoul, Korea, Republic of; 2. Department of Electronic Engineering, Tohoku University, Sendai, Japan*

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THURSDAY AFTERNOON 2:00 DELAWARE

Session FC
SYMPOSIUM: MAGNETIC MEDICAL IMAGING TECHNOLOGY
Puerto Morales, Chair

2:00

FC-01. Analytical electron microscopy of ferritin mineral cores in human liver biopsies: an example of nano-particle characterisation. *(Invited)* *A.P. Brown*[1], Y. Pan[1], G. Vaughan[1], G. Lovely[1], R. Brydson[1] and K. Sader[1,2] *1. Institute for Materials Research, SPEME, University of Leeds, Leeds, United Kingdom; 2. SuperSTEM, Daresbury Labs, Warrington, United Kingdom*

2:36

FC-02. Chemical and physical methods used for the synthesis of magnetic nanoparticles. Applications in the synthesis of antibody conjugated magnetic nanoparticles. *(Invited)* *M. Arruebo*[1] and J. Santamaria[1] *1. Aragon Nanoscience Institute, University of Zaragoza, Zaragoza, Spain*

3:12

FC-03. Three-dimensional real-time in vivo magnetic particle imaging. *(Invited)* *J. Rahmer*[1], J. Weizenecker[2], B. Gleich[1] and J. Borgert[1] *1. Philips Research Europe Hamburg, Hamburg, Germany; 2. University of Applied Sciences, Karlsruhe, Germany*

3:48

FC-04. Iron oxide core high-density lipoproteins: a multimodality contrast agent platform. *(Invited)*T. Skajaa[1], D.P. Cormode[1], Z.A. Fayad[1] and *W. Mulder*[1] *1. Mount Sinai School of Medicine, New York, NY*

4:24

FC-05. Magnetovaccination using Superparamagnetic Iron Particles: Quantification of Dendritic Cell Tumor Antigen Capture and Delivery to Lymph Nodes. *(Invited)*C.M. Long[1], H.W. van Laarhoven[1,2], H.I. Levitsky[1] and *J. Bulte*[1] *1. The Johns Hopkins University School of Medicine, Baltimore, MD; 2. Radboud University Nijmegen Medical Center, Nijmegen, Netherlands*

THURSDAY
AFTERNOON
2:00

VIRGINIA

Session FD
BIT PATTERNED MEDIA II
David Kuo, Chair

2:00

FD-01. Antiferromagnetically Coupled Patterned Media: Potential and Challenges. *S. Piramanayagam*[1], M. Ranjbar[1,2], S. Deng[1,3], K. Aung[1], R. Sbiaa[1] and T. Chong[1,2] *1. (A*STAR) Agency for Science, Technology and Research, Data Storage Institute, Singapore, Singapore; 2. ECE Department, National University of Singapore, Singapore, Singapore; 3. Chemistry Department, National University of Singapore, Singapore, Singapore*

2:12

FD-02. Template-directed self-assembled magnetic nanostructures for probe recording. *L. Heyderman*[1], F. Luo[1], P. Kappenberger[2], H. Solak[1], C. Padeste[1], M. Bechelany[3], L. Philippe[3], T. Ashworth[4,5], D. Makarov[6], C. Brombacher[6], H. Hug[5] and M. Albrecht[6] *1. Paul Scherrer Institut, Villigen-PSI, Switzerland; 2. EMPA, Dübendorf, Switzerland; 3. EMPA, Thun, Switzerland; 4. Nanoscan Ltd., Dübendorf, Switzerland; 5. University of Basel, Basel, Switzerland; 6. Chemnitz University of Technology, Chemnitz, Germany*

2:24

FD-03. Planarization of nonmagnetic films on bit patterned substrates by gas cluster ion beams. *H. Hoshino*[1], K. Nagato[1], H. Naito[2], T. Hirota[2], H. Tani[3], Y. Sakane[4], N. Toyoda[2], I. Yamada[2], M. Nakao[1] and T. Hamaguchi[1] *1. Mechanical Engineering, The University of Tokyo, Tokyo, Japan; 2. Incubation Center, University of Hyogo, Hyogo, Japan; 3. Hitachi Global Storage Technologies Japan Ltd., Kanagawa, Japan; 4. Western Digital Media Operations, San Jose, CA*

2:36

FD-04. Fabrication, Magnetic and R/W properties of Nitrogen ion implanted Co/Pd and CoCrPt bit patterned medium. *A. Ajan*[1], K. Sato[1], N. Aoyama[1], T. Tanaka[1], Y. Miyaguchi[2], K. Tsumagari[2], T. Morita[2], T. Nishihashi[2], A. Tanaka[1] and T. Uzumaki[1] *1. Fujitsu Laboratories Ltd., Atsugi, Kanagawa, Japan; 2. ULVAC Ltd., Susano, Shizuoka, Japan*

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2:48

FD-05. Role of reversal incoherency in reducing switching field and switching field distribution of exchange coupled composite bit pattern media. *T. Hauet*[1,2], E. Dobisz[2], S. Florez[2], J. Park[2], B. Lengsfield[2], B.D. Terris[2] and O. Hellwig[2] *1. Nancy University, Nancy, France; 2. Hitachi GST, San Jose, CA*

3:00

FD-06. Fabrication of ridge-and-groove servo pattern consisting of self-assembled dots for high-density bit patterned media. *A. Kikitsu*[1], Y. Kamata[1], N. Kihara[1], S. Morita[1] and K. Yusu[1] *1. Storage Materials & Devices Laboratory, Toshiba Corp., Corporate R&D Center, Kawasaki, Kanagawa, Japan*

3:12

FD-07. Composite capped bit patterned media for ultra-high density recording. *M.V. Lubarda*[1], S. Li[1], B. Livshitz[1], E.E. Fullerton[1] and V. Lomakin[1] *1. CMRR, UCSD, San Diego, CA*

3:24

FD-08. Investigating pattern transfer in the small-gap regime using electron-beam stabilized nanoparticle array etch masks. *C.R. Hogg*[1], S.A. Majetich[1] and J.A. Bain[2] *1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

3:36

FD-09. Fabrication of planarized discrete track media using gas cluster ion beams. *N. Toyoda*[1], T. Hirota[1], I. Yamada[1], H. Yakushiji[2], T. Ono[2] and H. Matsumoto[2] *1. Graduate school of engineering, University of Hyogo, Himeji, Hyogo, Japan; 2. Central Research Lab., Hitachi Ltd., Odawara, Kanagawa, Japan*

3:48

FD-10. Switching probability distribution of bit islands in bit patterned media. *Y. Chen*[1], J. Ding[2], J. Deng[3], T. Huang[1], S. Leong[1], J. Shi[1], B. Zong[1], Y. Hnin[1], C. Au[1], S. Hu[1] and B. Liu[1] *1. SMI, Data Storage Institute (A*STAR), Singapre, Singapore; 2. 2Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 3. Institute of Materials Research and Engineering (A*STAR), Singapore, Singapore*

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4:00

FD-11. The effect of Kr^{+} ion irradiation on magnetic properties and structure of $CrPt_3$ films for planar bit patterned media. T. Kato[1], Y. Yamauchi[2], D. Oshima[1], *S. Iwata*[1] and S. Tsunashima[2] *1. Dept. of Quantum Engineering, Nagoya University, Nagoya, Japan; 2. Department of Electrical Engineering and Computer Science, Nagoya University, Nagoya, Aichi, Japan*

4:12

FD-12. Direct holographic imaging of magnetic stray field from bit-patterned media. *C. Arm*[1], P. Bayle-Guillemaud[1], E. Gautier[1], B. Rodmacq[1] and B. Dieny[1] *1. CEA, Grenoble, France*

4:24

FD-13. Parameters fluctuations in bit-patterned media: analysis of BER and optimal media design by semi-analytical approach. *B. Livshitz*[1,2], H.N. Bertram[1,3] and V. Lomakin[1] *1. CMRR, ECE, UCSD, San Diego, CA; 2. LSI Corporation, Mendota Heights, MN; 3. Western Digital Corporation, San Jose, CA*

4:36

FD-14. Design Considerations and Density Limit of Staggered Bit Patterned Media Imposed by Synchronized Writing and Bit Error Rate. *C. Cheong*[1], Z. Yuan[1], M. Low[1], B. Liu[1] and A. Mamun[2] *1. Spintronics, Media & Interface Division, DATA STORAGE INSTITUTE, Singapore, Singapore; 2. National University of Singapore (NUS), Singapore, Singapore*

4:48

FD-15. Track Format Selections for Discrete Track Media: A Monte Carlo Study. *K. Zhang*[1] and S. Duan[1] *1. Hitachi Global Storage Technologies, San Jose, CA*

THURSDAY AFTERNOON 2:00

WASHINGTON 1

Session FE

AMORPHOUS AND NANOCRYSTALLINE SOFT MAGNETS II

Frank Johnson, Chair

2:00

FE-01. Structure and magnetic properties of soft nanocrystalline Fe-Si-Al-Nb-B-Cu ribbons for low temperature applications. *M. Daniil*[1,2], M. Osofsky[1], R. Goswami[1,3] and M.A. Willard[1] *1. Materials Science and Technology Division, Naval Research Lab, Washington, DC; 2. Physics Department, The George Washington University, Washington, DC; 3. SAIC, Washington, DC*

2:12

FE-02. Soft/soft FeSiBP/FeNi bimagnetic microwires with double large Barkhausen jump. G. Infante[1] and *M. Vázquez*[1] *1. Instituto de Ciencia de Materiales de Madrid (CSIC), Madrid, Spain*

2:24

FE-03. Increased Induction in FeCo-based Nanocomposite Materials with Reduced Early Transition Metal Growth Inhibitors. *K.J. Miller*[1], A. Wise[1], A. Leary[1], D.E. Laughlin[1] and M.E. McHenry[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

2:36

FE-04. Fe-based nanocrystalline soft magnetic alloys for high-temperature applications. *K.E. Knipling*[1], M. Daniil[1] and M.A. Willard[1] *1. Multifunctional Materials Branch, Naval Research Laboratory, Washington, DC*

2:48

FE-05. High temperature, low loss soft magnetic materials for high power density electrical machinery. *A. Leary*[1], K. Miller[1], A. Wise[1] and M. McHenry[1] *1. Carnegie Mellon University, Pittsburgh, PA*

3:00

FE-06. Effects of C addition in $Fe_{65}Co_{35}$ and $Fe_{9.5}Co_{90.5}$ soft magnetic films. *V. Edon*[1], J. Bobo[2] and S. Dubourg[1] *1. CEA, DAM, LE RIPAULT, CEA, Monts, France; 2. NMH-CEMES, CNRS-ONERA, Toulouse, France*

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3:12

FE-07. Structural and magnetic characterization of nanometer size NiFeMo alloy films. *M. Banerjee*[1], A.K. Majumdar[1], R.J. Chowdhury[2], D.M. Phase[2], A. Banerjee[2], S. Rai[3], P. Tiwari[3] and G.S. Lodha[3] *1. Materials Science, S N Bose National Centre for Basic Sciences, Kolkata, West Bengal, India; 2. UGC-DAE Consortium for Scientific Research, Khandwa Road, Indore 452017, Madhya Pradesh, India; 3. Raja Ramanna Centre for Advanced Technology, Indore 452013, Madhya Pradesh, India*

3:24

FE-08. Direct observation of an anisotropic in-plane residual stress induced by B addition as an origin of high magnetic anisotropy field of Ru/FeCoB film. *K. Hirata*[1], S. Gomi[1], Y. Mashiko[1] and S. Nakagawa[1] *1. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*

3:36

FE-09. Magnetic, optical and transport properties of transparent amorphous Fe77B17Nb6 thin films*. *A. Masood*[1], A. Biswas[1], S. Nagar[1], T. Tamaki[1], T. Volotinen[1], L. Belova[1] and K.V. Rao[1] *1. Materials Science and Engineering, Royal Institute of Technology, Stockholm, Sweden*

3:48

FE-10. Novel magnetic microwires-embedded composites for structural health monitoring applications. *F. Qin*[1], N. Pankratov[1], H. Peng[1], M. Phan[2], L. Panina[3], M. Ipatov[4], V. Zhukova[4], A. Zhukov[4] and J. Gonzalez[4] *1. Aerospace Engineering, Uni of Bristol, Bristol, Avon, United Kingdom; 2. Department of Physics, University of South Florida, Tampa, FL; 3. School of computing, Communication and Electronics,, University of Plymouth, Plymouth, United Kingdom; 4. Dpto. de Fisica de Materiales, Universidad del Pais Vasco, Bilbao, Spain*

4:00

FE-11. Manipulation of magnetic nanowires using patterned elliptical magnetic pathways for biosensing applications. *S. Vishnubhotla*[1], A. Sarella[1], S. Yoon[2], J. Jeong[1] and C. Kim[1] *1. Chungnam National University, Yuseong-gu, Korea, Republic of; 2. Department of Physics, Andong National University, Andong, Korea, Republic of*

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4:12

FE-12. Effects of B and Si contents on glass-forming ability and soft-magnetic properties in (Co0.89Fe0.057Nb0.053)100-x(B0.8Si0.2)x glassy alloys. H. Sun[1], Q. Man[1], Y. Dong[1], *B. Shen*[1], A. Makino[2] and A. Inoue[2] *1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

4:24

FE-13. Enhanced glass-forming ability of FeCoBSiNb bulk glassy alloys with good soft-magnetic properties prepared using commercial raw materials through the optimization of Nb content. Y. Fu[1], *B. Shen*[1], A. Makino[2] and A. Inoue[2] *1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

4:36

FE-14. Effect of Ribbon Width on the Magnetic Properties of Fe-Based Amorphous Cores. Y. Chang[1], *C. Hsu*[1,2] and C. Tseng[3] *1. Electrical Engineering, Chang Gung University, Kwei-Shan, Tao-Yuan, Taiwan; 2. Electric Machine, Fortune Electric Ltd, Co., Chung-Li, Taoyuan., Taiwan; 3. Physics, Institute of Nuclear Energy Research, Long-Tan,Tao-Yuan., Taiwan*

4:48

FE-15. Magnetization reversal modes in tubular nanostructures. O. Albrecht[1], S. Allende[2,3], *D. Gorlitz*[1], J. Escrig[3,4] and K. Nielsch[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 2. Departamento de Física, FCFM Universidad de Chile, Santiago, Chile; 3. Centro para el Desarrollo de la Nanociencia y la Nanotecnologia, Santiago, Chile; 4. Departamento de Física, Universidad de Santiago de Chile, USACH, Santiago, Chile*

THURSDAY AFTERNOON 2:00 **WASHINGTON 2**

Session FF

MAGNETIC SEMICONDUCTORS: III-V

Meng Zhu, Chair

2:00

FF-01. Photo-induced precession of magnetization in metal/(Ga,Mn)As systems. ***(Invited)*** *S. Kobayashi*[1] and H. Munekata[1] *1. Imaging Science and Engineering Laboratory, Tokyo Insutitute of Technology, Yokohama, Japan*

2:36

FF-02. Explicit observations of Antiferromagnetic Interlayer exchange couplings in Ga1-xMnxAs/GaAs diluted ferromagnetic semiconductor multilayers. *J. Chung*[1], S. Chung[1], S. Lee[1], B.J. Kirby[2], J.A. Borchers[2], Y. Cho[3], X. Liu[3] and J.K. Furdyna[3] *1. Physics, Korea University, Seoul, Korea, Republic of; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 3. Physics, University of Notre Dame, Notre Dame, IN*

2:48

FF-03. Exchange engineering in MnAs/(Ga,Mn)As and MnAs/GaAs/(Ga,Mn)As heterostructures. *M.J. Wilson*[1], M. Zhu[1], R.C. Myers[2], M.E. Flatté[3], D.D. Awschalom[2], P. Schiffer[1] and N. Samarth[1] *1. Physics Dept., Penn State University, University Park, PA; 2. Physics Dept., University of California, Santa Barbara, CA; 3. Physics Dept., University of Iowa, Iowa City, IA*

3:00

FF-04. Strength of antiferromagnetic interlayer exchange coupling in Fe/GaMnAs. *B.J. Kirby*[1], J. Leiner[2], X. Liu[2], M. Dobrowolska[2] and J. Furdyna[2] *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Physics, University of Notre Dame, Notre Dame, IN*

3:12

FF-05. Tunnel magnetoresistance and current induced magnetization control in mesoscale ferromagnetic semiconductor tunnel junctions.P. Mitra[1], M.J. Wilson[1], L. Xue[2], M. Zhu[1], K.V. Thadani[2], A. Fareed[3], M.E. Flatté[3], P. Schiffer[1], D.C. Ralph[2] and *N. Samarth*[1] *1. Physics Dept., Penn State University, University Park, PA; 2. Physics Dept., Cornell University, Ithaca, NY; 3. Physics Dept., University of Iowa, Iowa City, IA*

3:24

FF-06. Magnetic frustration from alloy disorder scattering in phosphorous-rich $Ga_{1-x}Mn_xP_{1-y}As_y$ *P. Stone*[1,2], J.W. Beeman[2], K.M. Yu[2], M.C. Ridgway[3] and O.D. Dubon[1,2] *1. Department of Materials Science & Engineering, University of California, Berkeley, CA; 2. Lawrence Berkeley National Laboratory, Berkeley, CA; 3. The Australian National University, Canberra, ACT, Australia*

3:36

FF-07. Tayloring the Uniaxial Anisotropy and Conductivity Regimes of Ferromagnetic (Ga,Mn)(As,P) Films. *M. Cubukcu*[1], H. von Bardeleben[1], K. Khazen[1], J. Cantin[1], O. Mauguin[2], L. Largeau[2] and A. Lemaître[2] *1. Institut des NanoSciences de Paris-Université Paris 6, Paris, France; 2. Laboratoire de Photonique et de Nanostructures, CNRS, Marcoussis, France*

3:48

FF-08. Valence-Band Structure of Ferromagnetic-Semiconductor GaMnAs Studied by Spin-Dependent Resonant Tunneling Spectroscopy. *S. Ohya*[1,2], I. Muneta[1], P. Nam Hai[1] and M. Tanaka[1] *1. Dept. of Electrical Eng. and Information Systems, The University of Tokyo, Tokyo, Japan; 2. Japan Science and Technology Agency, Kawaguchi, Japan*

4:00

FF-09. Bistability of Anomalous Hall effect response in GaMnAs micromechanical freestanding Hallbar structures. *C. Yang*[1], H. Choi[1], B. Oh[1] and Y.D. Park[1] *1. Department of Physics and Astronomy, Seoul National University, Seoul, Korea, Republic of*

4:12

FF-10. Photo-induced precession of magnetization in (Ga,Mn)As microbars. *K. Suda*[1], S. Kobayashi[1], J. Aoyama[1] and H. Munekata[1] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

4:24

FF-11. Percolation ferromagnetism in Ge:Mn thin films. *O. Kazakova*[1], R. Morgunov[2] and A. Dmitriev[2] *1. NPL, Teddington, United Kingdom; 2. Institute of Problems of Chemical Physics RAS, Chernogolovka, Russian Federation*

4:36

FF-12. Tunable rectifying property in $Ge_{1-x}Mn_x$/Ge epitaxial heterojunction diodes with $Ge_{1-x}Mn_x$ magnetic semiconductor. *S. Yan*[1], Y. Tian[1], J. Deng[1], Y. Dai[1], Y. Chen[1], G. Liu[1] and L. Mei[1] *1. School of Physics, Shandong University, Jinan, Shandong, China*

4:48

FF-13. Withdrawn

THURSDAY AFTERNOON 2:00

WASHINGTON 3

Session FG
NEW MAGNETIC MATERIALS II

Yoshiaka Kitamoto, Co-Chair
Nicoleta Lupu, Co-Chair

2:00

FG-01. Direct Observation of the Zero Magnetization Ferromagnet $Sm_{1-x}Gd_xAl_2$ in exchange-coupled systems. *K. Dumesnil*[1], M. Ungureanu[1], C. Dufour[1], F. Wilhelm[2] and A. Rogalev[2] *1. P2M, Institut Jean Lamomur, Vandoeuvre les Nancy, France; 2. ESRF, Grenoble, France*

2:12

FG-02. Fabrication and magnetic properties of Fe3Pt/Sm2Fe17Nx/α-Fe composite permanent magnets. *C. Cui*[1], P. Guo[1], J. Sun[1], W. Yang[1] and Z. Zhang[1] *1. School of Materials Science and Engineering, Hebei University of Technology, Tianjin, Tianjin, China*

2:24

FG-03. Controlling Magnetic Phase Transitions in the Rare-Earth Cobalt Phosphides with the $ThCr_2Si_2$ Structure Type.K. Kovnir[1], C.M. Thompson[1] and *M. Shatruk*[1] *1. Department of Chemistry and Biochemistry, Florida State University, Tallahassee, FL*

2:36

FG-04. Structural, magnetic and magneto-transport properties of Pt-alloyed MnBi thin films. *P.R. Kharel*[1], R. Skomski[1] and D.J. Sellmyer[1] *1. Physics and Astronomy, Nebraska Center for Materials and Nanoscience, Lincoln, NE*

2:48

FG-05. Origin of Residual Ferromagnetic moment in Rh-richer [Rh/Fe] multilayer thin films below the Antiferromagnetic-Ferromagnetic Transition temperature. *D. Kande*[1,3], D.E. Laughlin[1,3] and J. Zhu[2,3] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Data Storage Systems Centre, Carnegie Mellon University, Pittsburgh, PA*

3:00

FG-06. The role of hydrogen in room-temperature ferromagnetism at graphite surfaces. *H. Ohldag*[1], E. Arenholz[3], P. Esquinazi[2], D. Spemann[2], M. Rothermel[2], A. Setzer[2] and T. Butz[2] *1. SSRL, Stanford University, Menlo Park, CA; 2. Institut fuer Experimentalphysik, Universitaet Leipzig, Leipzig, Germany; 3. Advanced Light Source, LBNL, Berkeley, CA*

3:12

FG-07. Coexistence of weak ferromagnetism and superconductivity in rutheno-cuprate $RuSr_2Eu_{1.5}Ce_{0.5}Cu_2O_{10}$ N.M. Souza-Neto[1], *D. Haskel*[1], J.C. Lang[1], O. Chmaissem[2,3], B. Dabrowski[2,3] and I. Felner[4] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Department of Physics, Northern Illinois University, De Kalb, IL; 4. Racah Institute of Physics, The Hebrew University, Jerusalem, Israel*

3:24

FG-08. The relationship between structure and enhanced magnetism in tetragonal, magnetically-frustrated spinel thin films. *J.M. Iwata*[1], F.J. Wong[1], B.B. Nelson-Cheeseman[1], E. Arenholz[2], M.F. Toney[3], B. Kirby[4], J. Borchers[4] and Y. Suzuki[1] *1. Materials Science & Engineering, University of California, Berkeley, Berkeley, CA; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory, Menlo Park, CA; 4. Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD*

3:36

FG-09. Effect of film thickness on structural and magnetic properties of single crystalline $Ba(Fe_{0.2}Zr_{0.8})O_{3-\delta}$ thin films on (001) $SrTiO_3$ substrates. *H. Kanatani*[1] and T. Matsui[1] *1. Osaka Prefecture University, Graduate School of Engineering, Sakai, Osaka, Japan*

3:48

FG-10. Structural characterization of metastable hcp-Ni thin films epitaxially grown on Au(100) single-crystal underlayer. *M. Ohtake*[1], T. Tanaka[1], F. Kirino[2] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan*

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4:00

FG-11. Magnetic properties of [Mn(N_3)$_2$(4,4'-bpy)], a metal-organic canted antiferromagnet with sizable saturation moment. *Y. Hamida*[1], D. Danilovic[1], C. Lin[1], T. Yuen[1] and J. Li[2] *1. Physics, Temple University, Philadelphia, PA; 2. Chemistry and Chemical Biology, Rutgers University, Piscataway, NJ*

4:12

FG-12. CVD Growth of Single-Crystal Nickel Nanowires. *K. Chan*[1], L. Ouyang[2], D. Smith[2] and E.E. Fullerton[1] *1. University of California-San Diego, La Jolla, CA; 2. Arizona State University, Tempe, AZ*

4:24

FG-13. Surface magnetization processes in soft magnetic nanowires. *N. Lupu*[1], M. Lostun[1,2] and H. Chiriac[1] *1. Magnetic Materials and Devices Department, National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. Faculty of Physics, "Alexandru Ioan Cuza" University, Iasi, Romania*

4:36

FG-14. Dielectric and magnetic properties of P_2O_5-Co_2O_3 modified 0.4PZT+0.6NiCuZn-ferrite composites. *L. Jia*[1], T. Li[1], H. Zhang[1], Y. Liu[1] and G. Xue[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

THURSDAY AFTERNOON 2:00 — WASHINGTON 5

Session FH

CRITICAL PHENOMENA, SPIN GLASSES, AND FRUSTRATION I

Ralph Skomski, Co-Chair
Jason Gardner, Co-Chair

2:00

FH-01. Quantum Criticality in an Itinerant Antiferromagnet. ***(Invited)*** *R. Jaramillo*[1,2], Y. Feng[1,3], J.C. Lang[3], Z. Islam[3], G. Srajer[3], P.B. Littlewood[4] and T.F. Rosenbaum[1] *1. The James Franck Institute and Department of Physics, The University of Chicago, Chicago, IL; 2. School of Engineering and Applied Sciences, Harvard University, Cambridge, MA; 3. The Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 4. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom*

2:36

FH-02. Landau theory of compressible magnets near a quantum critical point. *G. Gehring*[1] and M.R. Ahmed[2] *1. Physics and Astronomy, University of Sheffield, Sheffield, S. Yorks, United Kingdom; 2. Physics, University of Sohag, Sohag 82534, Egypt*

2:48

FH-03. Abrupt dimensionality crossover in thin-film ferromagnets: quantum size effects. *R.F. Willis*[1] *1. Physics, Pennsylvania State Unversity, University Park, PA*

3:00

FH-04. Magnetic behavior of CrO_2 as a function of temperature via low-T magnon dispersion and Monte Carlo simulation. *S.J. Oset*[1,2], H. Sims[1,2] and W.H. Butler[1,2] *1. Physics, University of Alabama, Tuscaloosa, AL; 2. Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL*

3:12

FH-05. Magnetic resonance in the proximity of an instability: perpendicular resonance in permalloy near the critical field. *M.J. Pechan*[1], K. Bechtel[1], L. Folks[2], J.A. Katine[2] and M.J. Carey[2] *1. Department of Physics, Miami University, Oxford, OH; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

3:24

FH-06. Complex Magnetic Order and Spin Chirality on the Kagome Lattices of $BaMn_{2.49}Ru_{3.51}O_{11}$ and $BaFe_{3.26}Ti_{2.74}O_{11}$ *L. Shlyk*[1], S. Parkin[2] and L.E. De Long[1] *1. Physics, University of Kentucky, Lexington, KY; 2. Chemistry, University of Kentucky, Lexington, KY*

3:36

FH-07. Inducing an entanglement transition by varying confinement geometry in nanostructures. S. Abdullah[1], J.P. Coe[1] and *I. D'Amico*[1] *1. Department of Physics, University of York, York, United Kingdom*

3:48

FH-08. A new criterion to distinguish the order of magnetic transitions by means of magnetic measurements. M. Bonilla[1], *F. Bartolome*[1], L.M. García[1], M. Parra-Borderías[1], J. Herrero-Albillos[2] and V. Franco[3] *1. Instituto de ciencia de Materiales de Aragon. Departamento de Fisica de la Materia Condensada, Universidad de Zaragoza - CSIC, Zaragoza, Spain; 2. Dept. of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 3. Departamento de Fisica de la Materia Condensada - ICMSE, Universidad de Sevilla - CSIC, Sevilla, Spain*

4:00

FH-09. Size-driven magnetic transitions in monodisperse MnO nanocrystals. *Y. Lee*[1] and K.M. Krishnan[1] *1. Materials Science and Engineering, University of Washington, Seattle, WA*

4:12

FH-10. Long range correlations in geometrically frustrated networks of nanomagnets. R. Belkhou[3], A. Bendounan[3], B. Canals[2], A. Duluard[1], S. El Moussaoui[3], O. Fruchart[2], D. Lacour[1], M. Hehn[1], F. Maccherozzi[3], *F. Montaigne*[1] and N. Rougemaille[2] *1. Institut Jean Lamour, Nancy-University, CNRS, Vandoeuvre lès Nancy, France; 2. Institut Néel, CNRS, Grenoble, France; 3. Synchrotron SOLEIL, Saint Aubin, France*

4:24

FH-11. Magnetic Noise of a Frozen Ferrofluid. *K. Komatsu*[1], D. L'Hôte[1], S. Nakamae[1], V. Mosser[2], M. Konczykowski[3], E. Dubois[4], V. Dupuis[4] and R. Perzynski[4] *1. Service de Physique de l'Etat Condensé (CNRS/MIPPU/URA 2464), DSM/IRAMIS/SPEC, CEA Saclay, Gif sur Yvette, France; 2. ITRON SAS, 76 avenue Pierre Brossolette, Malakoff, France; 3. Laboratoire des Solides Irradiés, Ecole Polytechnique, Palaiseau, France; 4. Laboratoire PECSA, UMR 7195 CNRS, Université Pierre et Marie Curie, Paris, France*

4:36

FH-12. Superspin Glass Aging Behavior in Textured and Non-Textured Frozen Ferrofluid. *S. Nakamae*[1], K. Komatsu[1], D. L'Hôte[1], Y. Tahri[1], C. Thibierge[1], E. Vincent[1], E. Dubois[2], V. Dupuis[2] and R. Perzynski[2] *1. Service de Physique de l'Etat Condensé (CNRS URA 2464) DSM/IRAMIS, CEA, Gif sur Yvette, France; 2. Laboratoire des Liquides Ioniques et Interfaces Chargées, Université Pierre et Marie Curie, Paris, France*

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FH-13. Scaling analysis of the non-linear magnetization data and the ac susceptibility data confirm a true spin-glass transition in Ga1-xMnxS*. *T. Pekarek*[1], E. Watson[1], P.M. Shand[3], A.K. Ramdas[2] and I. Miotkowski[2] *1. Physics, Univ. of N. FL, Jacksonville, FL; 2. Physics, Purdue Univ., W. Lafayette, IN; 3. Physics, U. of N. Iowa, Cedar Falls, IA*

THURSDAY AFTERNOON 1:00 | EXHIBIT HALL C

Session FP
SUPERCONDUCTIVITY II (POSTER SESSION)
Pedro Schlottmann, Chair

FP-01. Effect of excess Fe on the Superconducting and Magnetic properties of the FeTe0.70Se0.30 compound. C.S. Yadav[1] and *P.L. Paulose*[1] *1. Condensed Matter Physics, TIFR, Mumbai, India*

FP-02. Tunable resonant spectra through nanometer niobium grating on silicon nitride membrane. *H. Lee*[1], C. Lin[1], L. Horng[1] and J. Wu[1] *1. Department of Physics, National Changhua University of Education, Changhua City, Taiwan*

FP-03. Thickness and field dependent superconductivity in YBa2Cu3O7/La0.7Sr0.3MnO3 bilayers. *J. Lin*[1], D. Hsu[1], M. Song[1,2], C. Chiang[3] and W. Chan[3] *1. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 2. Department of Physics, National Taiwan University, Taipei, Taiwan; 3. Department of Physics, Tamkang University, Taipei Province, Taiwan*

FP-04. Nano-coating of particles for optimal doping and universal enhancement of current-carrying ability in "organic" $MgB_{2-x}C_x$ superconductors. *O.V. Shcherbakova*[1], A.V. Pan[1], R. Nigam[1], S.X. Dou[1] and D. Wexler[2] *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. School of Materials, Mechanical and Mechatronic Engineering, University of Wollongong, Wollongong, NSW, Australia*

FP-05. A novel high-temperature superconducting magnetization: thermally actuated flux pump. *Y. Yan*[1], Q. Li[1], W. Xian[1] and T. Coombs[1] *1. EPEC Superconductivity Group, Engineering Department, University of Cambridge, Cambridge, United Kingdom*

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FP-06. Magnetic Flux Penetration in Polycrystalline SmFeO0.75F0.2As. *Z.W. Lin*[1], J.G. Zhu[1], Y.J. Li[1], Q. Jie[2], J. Zhou[2], G.D. Gu[2], Q. Li[2], X. Shi[3] and J.H. Yang[3] *1. Faculty of Engineering, University of Technology, Sydney, Sydney, NSW, Australia; 2. Department of Condensed Matter Physics and Materials Science, Brookhaven National Laboratory, Upton, NY; 3. Materials and Processes Lab, GM R&D Center, Warren, MI*

FP-07. Synthesis of LiFeAs superconductor by electrochemistry at room temperature.N. Chen[1], R. Zhang[1], *Y. Liu*[1] and Y. Li[2] *1. School of Material Science and Engineering, University of Science and Technology Beijing, Beijing, China; 2. Department of General Engineering, University of Puerto Rico, Mayaguez Campus, Mayaguez, Afghanistan*

FP-08. Magneto-optical Visualization of Magnetic Flux Penetration into Ba(Fe0.93K0.07)2As2. *Z.W. Lin*[1], Y.J. Li[1], J.G. Zhu[1], Q. Jie[2], J. Zhou[2], G.D. Gu[2] and Q. Li[2] *1. Faculty of Engineering, University of Technology, Sydney, Sydney, NSW, Australia; 2. Department of Condensed Matter Physics and Materials Science, Brookhaven National Laboratory, Upton, NY*

FP-09. Superconductivity in SmFe1-xCoxAsO (x = 0.0, 0.05, 0.10, 0.15, 0.20, 0.25 and 0.30). *V.P. Awana*[1], A. Pal[1], R.S. Meena[1], K. Yamaura[2], E.T. Muromachi[2], M. Hussain[3] and H. Kishan[1] *1. Superconductivity and Cryogenics, National Physical Laboratory, New Delhi, India; 2. Superconducting Materials Centre, NIMS, Tsukuba, Japan; 3. Physics, Jamia mIllia Islamia, New Delhi-25, India*

FP-10. Special pinning phenomena in superconductors with regular composite pinning arrays.R. Cao[1], *L. Horng*[1], T. Yang[2], T. Wu[3], J. Wang[1] and J. Wu[1] *1. Physics, National Changhua University of Education, Changhua, Taiwan; 2. Electrical Engineering, Chung Hua University, Hsinchu, Taiwan; 3. Electronic Engineering, National Formosa University, Huwei, Taiwan*

FP-11. Easy route synthesis of FeSe0.5Te0.5 Superconductor and its physical property chracterization. *A. Pal*[1], H.K. Singh[1], H. Kishan[1], M. Hussain[2] and V.P. Awana[1] *1. Superconductivity and Cryogenics, National Physical Laboratory, New Delhi, India; 2. of Physics, Jamia Millia Islamia, New Delhi-25, India*

FP-12. The superconductor FeSe under pressure. *F. Casper*[1], S. Medvedev[1,2], T.M. McQueen[3], I. Trojan[2,4], T. Palasyuk[2,5], M.I. Eremets[2], R.J. Cava[3], S. Naghavi[1], V. Ksenofonotv[1], G. Wortmann[6] and C. Felser[1] *1. Institute of Inorganic and Analytical Chemistry, Johannes Gutenberg University Mainz, Mainz, Germany; 2. Max-Planck-Institute for Chemistry, Mainz, Germany; 3. Department of Chemistry, Princeton University, Princeton, NJ; 4. A.V. Shubnikov Institute of Crystallography, Moscow, Russian Federation; 5. Institute of Physical Chemistry PAS, Warsaw, Poland; 6. Department Physik, Universität Paderborn, Paderborn, Germany*

FP-13. Hall Effect in Nb Thin Films with Artificial Pinning Arrays. *T. Wu*[1], T. Yang[3], L. Horng[2], R. Cao[2] and J. Wu[2] *1. Electronic Engineering, National Formosa University, Huwei, Taiwan; 2. Physics, National Changhua University of Education, Changhua, Taiwan; 3. Electrical Engineering, Chung Hua University, Hsinchu, Taiwan*

FP-14. Crossover from weak to strong coupling in an extended mean-field approach to superconductivity. H.M. Vasquez[1], E.S. Caixeiro[1], F. Dinola-Neto[2], A. Troper[1] and *M.A. Continentino*[1] *1. Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, RJ, Brazil; 2. Instituto de Fisica, Universidade Federal Fluminense, Niteroi, RJ, Brazil*

FP-15. Complete model of modulated pinning by domain walls in ReBCO superconducting films and multilayers. A.V. Pan[1], S.V. Pysarenko[1], *O.V. Shcherbakova*[1], R. Nigam[1] and S. Dou[1] *1. ISEM, University of Wollongong, Wollongong, NSW, Australia*

FP-16. Neutron diffraction study of superconducting ferromagnet $Ru_{0.9}YSr_2Cu_{2.1}O_{7.9}$ and $RuSr_2Y_{1.5}Ce_{0.5}Cu_2O_{10}$ *R. Nigam*[1], A.V. Pan[1], S.J. Kennedy[2], N. Stuesser[3] and S.X. Dou[1] *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. Bragg Institute, Australian Nuclear Science and Technology Organization, Lucas Heights, NSW, Australia; 3. Berlin Neutron Scattering Centre, The Helmholtz Centre Berlin for Materials and Energy, Berlin, Germany*

FP-17. Magneto-resistivity and Anisotropy along c-axis of ErNi2B2C. *W. Lee*[1] *1. Physics, Sookmyung Women's Univ., Seoul, Korea, Republic of*

THURSDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session FQ
CORRELATED ELECTRON MATERIALS II (POSTER SESSION)
John Burton, Chair

FQ-01. Field-Induced Itinerant Metamagnetism in Manganites Caused by the Electronic Nematic Order. T. Gao[1], *S. Cao*[1], S. Yuan[1], C. Jing[1], B. Kang[1], J. Zhang[1], A. Wu[2] and J. Xu[2] *1. Department of Physics, Shanghai University, Shanghai, China; 2. Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China*

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FQ-02. Zero Field Magnetic Phase Transitions and Anomalies in Single Crystalline α-$TmAlB_4$ *N. Sung*[1], H. Kim[2], M.A. Tanatar[2], A. Kreyssig[2], H.H. Nahm[3], M.G. Kim[2], P.C. Canfield[2], R. Prozorov[2], A.I. Goldman[2], C.H. Park[3] and B.K. Cho[1] *1. Dept. of Nanobio Materials and Electronics, and Dept. of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Gwangju, Korea, Republic of; 2. Ames Laboratory, and Department of Physics and Astronomy, Iowa State University, Ames, IA; 3. Research Center for Dielectric and Advanced Matter Physics, Pusan National University, Busan, Korea, Republic of*

FQ-03. Exchange interaction in GdT_2 (T=Fe,Co,Ni) from First-principles. *X. Liu*[1] and Z. Altounian[1] *1. physics department, McGill University, Montreal, QC, Canada*

FQ-04. NMR study of electron fluctuation in $CeCu_3Al_2$ *B. Bandyopadhyay*[1], M. Majumder[1], A. Ghoshray[1] and K. Ghoshray[1] *1. Saha Institute of Nuclear Physics, Kolkata, West Bengal, India*

FQ-05. Sublattice contributions to the magnetism of UFe_6Al_6 and UFe_5Al_7 *A.V. Andreev*[1] *1. Institute of Physics of Academy of Sciences, Prague, Czech Republic*

FQ-06. Hyperfine interaction study of $CeRh_2Si_2$ with PAC spectroscopy using ^{111}Cd and ^{140}Ce probes. *G.A. Cabrera-Pasca*[1], A.W. Carbonari[1], R.N. Saxena[1] and B. Bosch-Santos[1] *1. CRPq, Instituto de Pesquisas Energeticas e Nucleares-IPEN, São Paulo, São Paulo, Brazil*

FQ-07. Thermoelectric power of Gd4(Co1-xCux)3 compounds. *T.M. Seixas*[1], M.A. Salgueiro da Silva[1], H.F. Braun[2] and G. Eska[2] *1. Departamento de Física, Faculdade de Ciências da Universidade do Porto, Porto, Portugal; 2. Physikalisches Institut, Universität Bayreuth, D-95440, Bayreuth, Germany*

FQ-08. Mössbauer study of strong magnetoelectric effect $LiNi_{0.99}{}^{57}Fe_{0.01}PO_4$ compound. *W. Kim*[1], C. Rhee[1], S. Moon[1], T. Kouh[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Korea, Republic of*

FQ-09. Magnetic inhomogeneities in doped materials with spin-state transitions. *K.I. Kugel*[1], A.O. Sboychakov[1], A.L. Rakhmanov[1] and D.I. Khomskii[2] *1. Institute for Theoretical and Applied Electrodynamics, Russian Academy of Sciences, Moscow, Russian Federation; 2. II. Physikalisches Institut, Universität zu Köln, Köln, Germany*

FQ-10. NMR Measurements of Power-Law Behavior in the Spin-Wave and Critical Regions of Ferromagnetic EuO. *N. Bykovetz*[1], B. Birang[2], J. Klein[3] and c. Lin[4] *1. Department of Army, CECOM LCMC, AMSEL-SF-R, Fort Monmouth, NJ; 2. Department of Physics, Brandeis University, Waltham, MA; 3. Department of Physics, University of Pennsylvania, Philadelphia, PA; 4. Department of Physics, Temple University, Philadelphia, PA*

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FQ-11. Parametrical recovery of a spin-wave signal stored in a magnonic crystal. *A.A. Serga*[1], A.V. Chumak[1], V.V. Vasyuchka[1], M.P. Kostylev[2] and B. Hillebrands[1] *1. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. School of Physics, University of Western Australia, Crawley, WA, Australia*

FQ-12. AC Susceptibility of the Quantum Critical Point Mimicking Series Lix[Mn1.96Li0.04]2O4 (x= 0.0, 0.1, 0.2, 0.35, 0.5, 0.6, 0.8, 1.0). *T. Heitmann*[1], J. Gaddy[1,2], J. Lamsal[1,2], M. Petrovic[1,2] and W. Montfrooij[1,2] *1. Missouri Research Reactor, University of Missouri, Columbia, MO; 2. Department of Physics and Astronomy, University of Missouri, Columbia, MO*

THURSDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session FR
ELECTRONIC STRUCTURE AND LOW DIMENSIONAL SYSTEMS II (POSTER SESSION)
Elke Arenholz, Chair

FR-01. Soft x-ray Synchrotron Radiation Spectroscopy study of $SrMn_{1-x}Ru_xO_3$ Perovskites ($0 \le x \le 1$). *D.H. Kim*[1], S.M. Lee[1], S. Kolesnik[2], B. Dabrowski[2], B.G. Park[3], J.Y. Kim[3], J. Lee[4], B.I. Min[4] and J.S. Kang[1] *1. Department of Physics, The Catholic University of Korea, Bucheon, Korea, Republic of; 2. Department of Physics, Northern Illinois University, DeKalb, IL; 3. Pohang Accelerator Laboratory, Pohang, Korea, Republic of; 4. Department of Physics, POSTECH, Pohang, Korea, Republic of*

FR-02. Intra-chain antiferromagnetic interaction and Mott state induced by spin-orbit coupling in Sr_3NiIrO_6G. Zhang[1], X. Zhang[1], T. Jia[1], Z. Zeng[1] and *H. Lin*[2] *1. Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, China; 2. Department of Physics and Institute of Theoretical Physics, The Chinese University of Hong Kong, Shatin, Hong Kong, China*

FR-03. 4*d* electronic and magnetic characteristics in post-perovskite $CaRuO_3$G. Zhong[1], Y. Li[2], Z. Liu[1] and *H. Lin*[1,3] *1. Center for Photovoltaics Solar Cell, Shenzhen Institute of Advance Integration Technology, Chinese Academy of Sciences, Shenzhen, China; 2. Department of physics, Xuzhou Normal University, Xuzhou, China; 3. Department of Physics, Institute of Theoretical Physics, The Chinese University of Hong Kong, Shatin, Hong Kong, P. R. China, Hong Kong, China*

FR-04. REFRACTION indices of strongly spatially non-uniform magnetic materials and nanostructures from the first principles. *L.A. Pozhar*[1] *1. Physics, University of Idaho, Moscow, ID*

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FR-05. Controlling magnetism in epitaxial $SrRuO_3$ thin films through strain orientation. *A. Grutter*[1,2], F. Wong[1], E. Arenholz[3], M. Liberati[3], A. Vailionis[4] and Y. Suzuki[1,2] *1. Materials Science and Engineering, UC Berkeley, Berkeley, CA; 2. Materials Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA*

FR-06. Magnetic moment formation at a dilute ^{140}Ce impurity in RCo_2 *A.L. de Oliveira*[1], C.M. Chaves[2], N.A. de Oliveira[3] and A. Troper[2] *1. IFRJ, Nilópolis, Rio de Janeiro, Brazil; 2. Physics, CBPF, Rio de Janeiro, RJ, Brazil; 3. Physics, UERJ, Rio de Janeiro, RJ, Brazil*

FR-07. Induced magnetism of carbon atoms at the graphene/Ni(111) interface. Y.S. Dedkov[1], K. Horn[1], M. Sicot[2] and *M. Fonin*[2] *1. Fritz-Haber Institut der Max-Planck Gesellschaft, Berlin, Germany; 2. Fachbereich Physik, Universität Konstanz, Konstanz, Germany*

FR-08. The initial growth of ultra-thin Co on Cu(311). *S. Easton*[1], A. Ionescu[1], H. Kurebayashi[1], J. Kim[1] and C. Barnes[1] *1. Physics, University of Cambridge, Cambridge, Cambs, United Kingdom*

FR-09. Direct measurements of magneto-thermoelectric effects in thin films and nanostructures. *A.D. Avery*[1], R. Sultan[1], D. Bassett[1], M.R. Pufall[2] and B.L. Zink[1] *1. Department of Physics, University of Denver, Denver, CO; 2. NIST, Boulder, CO*

FR-10. Theoretical and Experimental Results of a Large Thermoelectric Voltage at Point Contacts of Spin Quantum Cross Structure Devices. *K. Kondo*[1], H. Kaiju[1] and A. Ishibashi[1] *1. Laboratory of Quantum Electronics, Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan*

FR-11. MAGNETIC properties of Y0.7 Er0.3Fe2 D4.2 under very strong continuous magnetic field up to 35 tesla. *M. Guillot*[1], V.P. Boncour[2], T. LeBlond[2] and F. Cuevas[2] *1. CNRS, Grenoble, France; 2. CNRS, Thiais, France*

FR-12. Testing the Hubbard model as an approximation to entanglement in quantum dots. J.P. Coe[1,2], V.V. Franca[3] and *I. D'Amico*[1] *1. Department of Physics, University of York, York, United Kingdom; 2. Department of Mathematics, University of York, York, United Kingdom; 3. Instituto de Fisica de Sao Carlos, Universidade de Sao Paulo, Sao Carlos, Brazil*

THURSDAY AFTERNOON 1:00 EXHIBIT HALL C

Session FS
DOMAIN WALL DYNAMICS AND ULTRAFAST SWITCHING (POSTER SESSION)
Aurelien Manchon, Chair

FS-01. Ultrafast Soft X-Ray Magneto-Optics at the M-edge Using a Tabletop High-Harmonic Source. ***(Invited)*** *C. La-o-vorakiat*[1], S. Mathias[1,3], M. Siemens[1], J.M. Shaw[2], H. Nembach[2], P. Grychtol[4], R. Adam[4], M. Aeschlimann[3], C.M. Schneider[4], T.J. Silva[2], M.M. Murnane[1] and H.C. Kapteyn[1] *1. Physics, JILA/University of Colorado at Boulder, Boulder, CO; 2. Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO; 3. University of Kaiserslautern and Research Center OPTIMAS, Kaiserslautern, Germany; 4. Institute of Solid State Research, IFF-9, Research Center Jülich, Jülich, Germany*

FS-02. Numerical investigation of opto-magnetic magnetization reversal. *D. Hinzke*[1], S. Gerlach[1], T. Ostler[2], R.W. Chantrell[2] and U. Nowak[1] *1. Physics, University of Konstanz, Konstanz, Germany; 2. Physics, University of York, York, United Kingdom*

FS-03. Accessing microscopic processes of the Gilbert damping. *J. Walowski*[1], A. Mann[1], U. Atxitia[2], O. Chubykalo-Fesenko[2], . Krzyk[3], M. Kläui[3] and M.G. Muenzenberg[1] *1. I. Phys. Institute, Goettingen University, Goettingen, Germany; 2. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain; 3. Fachbereich Physik, Universität Konstanz, Konstanz, Germany*

FS-04. Spin dynamics excited with mid-infrared femtosecond laser pulses.A. Zagdoud[1], M. Vomir[1], M. Albrecht[1] and *J. Bigot*[1] *1. IPCMS, UMR7504, CNRS - Université de Strasbourg, Strasbourg, France*

FS-05. Ultrafast Laser-induced Magnetisation Dynamics of TbFeCo Thin Films. *X. Zou*[1], T.Y. Cheng[1], J. Wu[1], T. Liu[2], J.W. Cai[2], L. Sun[3] and Y. Zhai[3] *1. Physics, University of York, York, United Kingdom; 2. Physics, Chinese Academy of Sciences, Beijing, China; 3. Physics, Southeast Univeristy, Nanjing, China*

FS-06. Influence of exchange coupling on current-driven domain wall motion in a nanowire. *T. Komine*[1], K. Takahashi[1], H. Murakami[1] and R. Sugita[1] *1. Department of Media and Telecommunications Engineering, Ibaraki University, Hitachi, Ibaraki, Japan*

FS-07. Ratchet Effect of Domain Wall Motion by AC Magnetic Field in Sawtooth Ferromagnetic Nanowires. *H. Piao*[1], H. Lee[2], J. Yoon[3], D. Kim[1], C. You[3] and T. Kim[2] *1. Physics, Chungbuk National University, Cheongju, Chungbuk, Korea, Republic of; 2. Nanotechnology & Advanced Materials Engineering, Sejong University, Seoul, 143-747, Korea, Republic of; 3. Physics, Inha University, Incheon, 402-751, Korea, Republic of*

FS-08. Dynamic domain wall pinning at defects in magnetic nanowires. *A. Kunz*[1] and J. Priem[1] *1. Physics, Marquette University, Milwaukee, WI*

FS-09. Domain wall motion driven by localized spin-polarized current. G. Finocchio[1], N. Maugeri[3], L. Torres[2] and *B. Azzerboni*[1] *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Universidad de Salamanca, Salamanca, Spain; 3. Ingegneria Civile, University of Messina, Messina, Italy*

FS-10. Thermally activated switching in nanoscale magnetic tunnel junctions: domain nucleation versus coherent rotation. *V. Korenivski*[1] and R. Leuschner[1] *1. MRAM Development Alliance, IBM-Infineon, Yorktown Heights, NY*

FS-11. Vortex nucleation in exchange biased magnetic nanoelements. *A.L. Dantas*[1], G.O. Reboucas[2,3] and A.S. Carrico[2] *1. Física, Universidade do Estado do Rio Grande do Norte, Mossoró, RN, Brazil; 2. Física, Universidade Federal do Rio Grande do Norte, Natal, RN, Brazil; 3. Física, Universidade Federal Rural do Semi - Arido, Angicos, RN, Brazil*

FS-12. Vortex coupling in arrays of ferromagnetic disks. *A. Vogel*[1], M. Bolte[1], L. Bocklage[1], J. Moser[1], H. Jung[2], K. Lee[2], S. Kim[2], U. Merkt[1] and G. Meier[1] *1. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany; 2. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, Seoul National University, Seoul, Korea, Republic of*

FS-13. Resonant spin-flop switching of two dipole-coupled nanomagnets. *S.S. Cherepov*[1], V. Korenivski[1] and D.C. Worledge[2] *1. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden; 2. IBM T. J. Watson Research Center, Yorktown Heights, NY*

FS-14. Azimuthal spin wave modes excited in an elliptical nanomagnet with vortex pair states. H. Zhang[1], *Y. Liu*[1], M. Yan[2] and R. Hertel[2] *1. Physics Department, Tongji University, Shanghai, China; 2. Institute of Solid State Research IFF-9, Jülich Research Center, Jülich, Germany*

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THURSDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session FT
MAGNETIZATION DYNAMICS AND DAMPING III (POSTER SESSION)
Jean-Marc Beaujour, Chair

FT-01. Magnetization dynamics in CoFeB buffered perpendicularly magnetized Co/Pd multilayer. *E.P. Sajitha*[1], J. Walowski[3], D. Watanabe[1], S. Mizukami[1], F. Wu[1], H. Naganuma[2], M. Oogane[2], Y. Ando[2] and T. Miyazaki[1] *1. WPI Advanced Institute for Materials Research, Tohoku Universiy, Sendai, Miyagi, Japan; 2. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 3. I. Phys. Institut, Universität Göttingen, D-37077 Göttingen, Germany*

FT-02. Observation of ultrafast precessional motion in PMA FePt thin film. *H. Song*[1], K. Lee[1], J. Kim[1], J. Jeong[1] and S. Shin[1] *1. Department of Physics and Center for Nanospinics of Spintronic Materials, Korea Advanced Institute of Science and Technology (KAIST), DaeJeon, Korea, Republic of*

FT-03. Ferromagnetic resonance study on highly doped $(Ga_{1-x},Mn_x)As$ films. *M. Kiessling*[1], F. Hoffmann[1], V. Novak[2], G. Woltersdorf[1] and C. Back[1] *1. University of Regensburg, Regensburg, Germany; 2. Institute of Physics ASCR v.v.i., Prague, Czech Republic*

FT-04. Fast parabolic-like pump-free decay of parametrically excited magnons. *S. Schäfer*[1], V. Kegel[1], A.A. Serga[1] and B. Hillebrands[1] *1. FB Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany*

FT-05. Self-Generation of Chaotic Spin-Wave Envelope Solitons in Magnetic Film-Based Feedback Rings. *Z. Wang*[1], A. Hagerstrom[1], W. Tong[2], M. Wu[1], R. Eykholt[1] and B. Kalinikos[3] *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. High Magnetic Field Laboratory, Chinese Academy of Sciences, Hefei, Anhui, China; 3. St.Petersburg Electrotechnical University, St. Petersburg, Russian Federation*

FT-06. Atomistic Modelling of Magnetisation Dynamics in Amorphous GdFeCo. *T.A. Ostler*[1], R.W. Chantrell[1] and R. Evans[1] *1. Physics, University of York, York, North Yorkshire, United Kingdom*

FT-07. On stability of magnetization dynamics in nanoparticles. *I. Mayergoyz*[1], C. Serpico[2] and G. Bertotti[3] *1. University of Maryland, College Park, MD; 2. Dipatimento di Ingegneria Elettrica, Universita degli Studi "Federico II", Napoli, Italy; 3. Instituto Nazionale di Ricerca Metrologica, Torino, Italy*

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FT-08. Contributions to damping via intergranular interaction in perpendicular recording media. S. McIntyre[1], T. Ostler[1], *R.F. Evans*[1], Y. Hancock[1], R.W. Chantrell[1] and W. Scholz[2] *1. Physics, University Of York, York, England, United Kingdom; 2. Seagate Technology, Bloomington, MN*

FT-09. Damping in $(CoFe)_{1-x}Ge_x$ alloys. *T. Mewes*[1], H. Lee[1], Y.H. Wang[1], C.K. Mewes[1], W.H. Butler[1], S. Maat[2], B. York[2], M.J. Carey[2], J.R. Childress[2] and M. Toney[3] *1. MINT Center/Department of Physics and Astronomy, University of Alabama, Tuscaloosa, AL; 2. Hitachi Global Storage Technologies, San Jose, CA; 3. Stanford Synchrotron Radiation Light Source, Menlo Park, CA*

FT-10. Effect of post annealing on magnetic damping of NiFe thin films. Y. Wang[1,2], *F. Yuan*[1], Y.C. Chen[2], D.S. Hung[3] and S.F. Lee[1] *1. Physics, Acdemia Sinica, Taipei, Taiwan; 2. Physics, National ChengKung University, Tainan, Taiwan; 3. Information and Telecommunication Engineering, Ming Chuan University, Taipei, Taiwan*

FT-11. Ferromagnetic relaxation in nanostructures: evidence of competition between intrinsic and extrinsic mechanisms. L.H. Vilela-Leão[1], J.B. Mendes[1], S.M. Rezende[1] and *A. Azevedo*[1] *1. Department of Physics, UFPE, Brazil, Recife, PE, Brazil*

FT-12. Surface roughness induced magnetic damping in $Ni_{80}Fe_{20}$ thin films investigated by *in-situ* time-resolved Kerr microscopy. *B. Choi*[1], J. Rudge[1], Y. Hong[2], A. Santoni[1], J. Kolthammer[1], A. Gavin[2] and G. Donohoe[3] *1. Dept. of Physics & Astronomy, University of Victoria, Victoria, BC, Canada; 2. MINT Center, University of Alabama, Tuscaloosa, AL; 3. Department of Electrical and Computer Engineering, University of Idaho, Moscow, ID*

THURSDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session FU
DYNAMICS IN MICROSTRUCTURES (POSTER SESSION)
Justin Shaw, Chair

FU-01. Effect of interactions on edge property measurements in magnetic multilayers. M. Zhu[1,2] and *R.D. McMichael*[1] *1. Center for Nanoscale Science and Technology, NIST, Gaithersburg, MD; 2. Maryland Nanocenter, University of Maryland, College Park, MD*

FU-02. Ferromagnetic Resonance and Spin Wave Propagation in Coplanar Micro-magnetic Waveguides. *T.M. Wallis*[1], D. Gu[1], T. Cecil[1], A. Imtiaz[1] and P. Kabos[1] *1. N. I. S. T., Boulder, CO*

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FU-03. Propagating collective spin wave modes on 2D magnonic crystals in the form of an array of dipole-coupled square nanodots.S. Tacchi[1], M. Madami[1], *G. Gubbiotti*[1], G. Carlotti[1], H. Tanigawa[2], T. Ono[2] and M. Kostylev[3] *1. CNISM, Unità di Perugia -Dipartimento di Fisica, Università di Perugia, Perugia, Italy; 2. Institute for Chemical Research, Kyoto University, Kyoto, Japan; 3. School of Physics, University of Western Australia, Crawley, WA, Australia*

FU-04. Spin dynamics and mode structure in nanomagnet arrays: Effects of size and thickness on linewidth and damping. *J.M. Shaw*[1], M.L. Schneider[1,2], T.J. Silva[1] and R.D. McMichael[3] *1. Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO; 2. Department of Physics and Astronomy, University of Montana, Missoula, MT; 3. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD*

FU-05. AC and DC driven noise and *I-V* characteristics of ferromagnetic nanostructures. *O. Tretiakov*[1] and A. Mitra[1] *1. Dept. of Physics, New York University, New York, NY*

FU-06. Radiation of spin waves from the open end of a microscopic magnetic-film waveguide.V.E. Demidov[1], S.O. Demokritov[1], *D. Birt*[2,3], B. O'Gorman[2], M. Tsoi[2,3] and X. Li[2,3] *1. Institute for Applied Physics, University of Muenster, Muenster, Germany; 2. Department of Physics, Center for Nano- and Molecular Science and Technology, University of Texas at Austin, Austin, TX; 3. Texas Materials Institute, University of Texas at Austin, Austin, TX*

FU-07. Diffraction of spin waves from a submicrometer-size defect in a micro-waveguide. *D. Birt*[1], B. O'Gorman[2], M. Tsoi[1,2], X. Li[1,2], V.E. Demidov[3] and S.O. Demokritov[3] *1. Texas Materials Institute, University of Texas at Austin, Austin, TX; 2. Department of Physics, Center for Nano- and Molecular Science and Technology, University of Texas at Austin, Austin, TX; 3. Institute for Applied Physics and Center for Nonlinear Sciecne, University of Münster, Münster, Germany*

FU-08. Width-modulated nanostrip magnonic-crystal waveguides. *D. Han*[1], K. Lee[1] and S. Kim[1] *1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, Korea, Republic of*

FU-09. Self-homodyne detection of Multi-vortex motion induced by rf current in micron-sized $Fe_{19}Ni_{81}$ ellipse dots. *A. Yamaguchi*[1,2], H. Miyajima[1], T. Sato[3], Y. Nakatani[3], A. Hirohata[4], T. Yamaoka[5], T. Uchiyama[6] and Y. Utsumi[7] *1. Department of Physics, Keio University, Yokohama, Japan; 2. PRESTO, JST, Saitama, Japan; 3. University of Electro-communications, Chofu, Japan; 4. Department of Electronics, York, United Kingdom; 5. SII Nanotechnology, Tokyo, Japan; 6. Department of Electrical Engineering and Computer Science, Nagoya University, Nagoya, Japan; 7. Laboratory of Advanced Science and Technology for Industry, University of Hyogo, Ako, Hyogo, Japan*

FU-10. Vortex Excitation In CPP Nanopillar Spin Valves With Non-Uniform Planar Polarizer. *A.V. Khvalkovskiy*[1,2], J. Grollier[1], N. Locatelli[1], K.A. Zvezdin[2] and V. Cros[1] *1. Unite Mixte de Physique CNRS/Thales and Universite Paris Sud 11, Palaiseau, France; 2. A.M. Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russian Federation*

THURSDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session FV

SPIN-TORQUE JUNCTIONS AND MATERIALS (POSTER SESSION)

Xiufeng Han, Chair

FV-01. Measurement of the transport spin polarization of FeV using point-contact Andreev reflection. *M. Osofsky*[1], L. Cheng[2], W.E. Bailey[2] and K. Bussmann[1] *1. Materials and Sensors Branch, Naval Research Laboratory, Washington, DC; 2. Materials Science, Dept of Applied Physics and Applied Mathematics, Columbia University, New York, NY*

FV-02. Effects of RF magnetic field on spin-transfer-torque switching.S. Yanagi[1], D. Saida[1], H. Morise[1] and *S. Nakamura*[1] *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Japan*

FV-03. GIANT ADIABATIC SPIN TORQUE IN MAGNETIC TUNNEL JUNCTIONS.X. Yao[1], *A. Lyle*[1], Y. Zhang[1], H. Wang[1], Y. Jing[1] and J. Wang[1] *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

FV-04. Oscillations in spin transfer torque driven magnetization reversal probability. *J. Hérault*[1], E. Gapihan[1], R.C. Sousa[1], C. Papusoi[1], M.T. Delaye[1], I.L. Prejbeanu[2], B. Delaet[3], J.P. Nozières[2] and B. Dieny[1] *1. SPINTEC (CEA Grenoble), Grenoble, France; 2. Crocus Technology, Grenoble, France; 3. CEA/LETI Minatec, Grenoble, France*

FV-05. Competitive effect of in-plane and out-of-plane spin torques in the current-induced magnetization dynamics in perpendicularly magnetized spin valves. *J. Guo*[1], M. Jalil[1] and S. Tan[2] *1. Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

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FV-06. Spin transfer switching and MR properties of Co/Pt multilayered free layers for submicron sized magneto-optical light modulation device. *K. Machida*[1], K. Furukawa[2], N. Funabashi[1,3], K. Aoshima[1], K. Kuga[1], T. Ishibashi[4] and N. Shimidzu[1] *1. Science & Technology Research Laboratories, Japan Broadcasting Corporation (NHK), Tokyo, Japan; 2. Department of Electrical Engineering, Tokyo Denki University, Tokyo, Japan; 3. Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan; 4. Department of Materials Science and Technology, Nagaoka University of Technology, Nagaoka, Japan*

FV-07. Spin Transfer on low resistance-area MgO-based magnetic tunnel junctions prepared by Ion beam deposition. *J. Yang*[1], R. Macedo[1], R. Ferreira[1], S. Freitas[1] and P. Freitas[1] *1. INESC MN, Lisbon, Portugal*

FV-08. Transmission electron microscopy study of electrical breakdown in spin transfer torque switching devices. *M. Schäfers*[1], V. Drewello[1], G. Reiss[1], A. Thomas[1], K. Thiel[3], G. Eilers[2], M. Münzenberg[2], H. Schuhmann[2] and M. Seibt[2] *1. Department of Physics, Bielefeld University, Bielefeld, Germany; 2. I. & IV. Physikalisches Institut, Georg-August-Universität Göttingen, Göttingen, Germany; 3. Fraunhofer Institut für Fertigungstechnik und Angewandte Materialforschung, Bremen, Germany*

FV-09. Calculation of spin transfer torque in magnetic superlattice nanowires exhibiting multiple reflections. *S. Hernandez*[1] and R.H. Victora[1] *1. University of Minnesota, Minneapolis, MN*

FV-10. Asymmetries in macrospin approximated perpendicular anisotropy spin-valve systems. *S. Moyerman*[2,1], I. Tudosa[2], Y. Henry[4], S. Mangin[3], J. Cucchiara[3] and E.E. Fullerton[2] *1. Physics, University of California, San Diego, La Jolla, CA; 2. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 3. Laboratoire de Physique des Matériaux, Vandoeuvre-les-Nancy, France; 4. Institut de Physique et Chimie des Matériaux de Strasbourg, Strasbourg, Germany*

FV-11. Low switching current in conventional in-plane STT-RAM structures with partial perpendicular anisotropy. *S.M. Watts*[1], X. Tang[1], Z. Diao[1], D. Apalkov[1], D. Druist[1], E. Chen[1] and V. Nikitin[1] *1. Grandis, Inc., Milpitas, CA*

FV-12. Microwave assisted spin torque switching. *L. Saharan*[1], G. Hrkac[1], M.A. Bashir[1] and T. Schrefl[2,1] *1. Department of Engineering Materials, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; 2. St Poelten University of Applied Sciences, St Poelten, Austria*

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FV-13. A strategy to reduce magnetization reversal time in nanopillars with perpendicular anisotropy. *M. Carpentieri*[1], G. Finocchio[2], L. Torres[3] and B. Azzerboni[2] *1. Elettronica, Informatica e Sistemistica, University of Calabria, Rende, Cosenza, Italy; 2. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Messina, Italy; 3. Fisica Aplicada, University of Salamanca, Salamanca, Salamanca, Spain*

FV-14. Effect of thermal fluctuations on magnetization switching in spin valve nanopillars. *M. Kuepferling*[1], P. Bortolotti[1], C. Serpico[2], M. Pasquale[1] and G. Bertotti[1] *1. INRIM, Torino, Italy; 2. University of Naples Federico II, Napoli, Italy*

FV-15. Magneto-optical observation of CPP-GMR device with perpendicular magnetic anisotropy driven by spin transfer switching using transparent top electrode. *N. Funabashi*[1,2], K. Aoshima[1], K. Machida[1], K. Kuga[1], T. Ishibashi[3] and N. Shimidzu[1] *1. Science & Technology Research Laboratories, Japan Broadcasting Corporation, Tokyo, Japan; 2. Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan; 3. Department of Materials Science and Technology, Nagaoka University of Technology, Nagaoka, Japan*

FV-16. Voltage induced control and magnetoresistance of magnetically frustrated systems. *A. Kalitsov*[1], M. Chshiev[1], B. Canals[2] and C. Lacroix[2] *1. SPINTEC, UMR 8191 CEA/CNRS/UJF, Grenoble, France; 2. Institut Néel, CNRS/UJF, Grenoble, France*

THURSDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session FW
MAGNETIC SENSORS II (NOT MAGNETIC RECORDING) (POSTER SESSION)

Masaaki Takezawa, Co-Chair
Albrecht Jander, Co-Chair

FW-01. Integration of the electronics and batteries inside the hollow core of a search coil.A. Grosz[1], E. Paperno[1], S. Amrusi[1] and *E. Liverts*[2] *1. Department of Electrical and Computer Engineering, Ben-Gurion University of the Negev, Beer-Sheva 84105, Israel; 2. Department of Mechanical Engineering, Ben-Gurion University of the Negev, Beer-Sheva 84105, Israel*

FW-02. Magnetic field simulation of magnetic phase detection senor for steam generator tube in nuclear power plants. *K. Ryu*[1], D. Son[2], D. Park[3] and Y. Kim[1] *1. Div. of Industrial Metrology, Korea Research Institute of Standards and Science, Daejeon, Korea, Republic of; 2. Department of Physics, Hannam University, Daejeon, Korea, Republic of; 3. Nuclear Materials Technology Development Team, Korea Atomic Energy Research Institute, Daejeon, Korea, Republic of*

FW-03. Strain sensor using stress-magnetoresistance effect of Ni-Fe/Mn-Ir exchange-coupled magnetic film. T. Shinohara[1], *M. Sonehara*[1], T. Sato[1], K. Yamasawa[1] and Y. Miura[1] *1. Spin Device Technology Center, Shinshu University, Nagano, Nagano, Japan*

FW-04. Detection of Damage in Ground Steel Components using Magnetic Barkhausen Noise Technique. *L. Mierczak*[1], D.C. Jiles[1] and Y. Melikhov[1] *1. Wolfson Centre for Magnetics, Cardiff University, Cardiff CF24 3AA, United Kingdom*

FW-05. Analysis and improvement of detection accuracy for a wireless motion sensing system using integrated coil component. *S. Hashi*[1], S. Yabukami[2], H. Kanetaka[3], K. Ishiyama[1] and K. Arai[4] *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Department of Electrical Engineering and Information Technology, Tohoku Gakuin University, Tagajo, Japan; 3. Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan; 4. The Research Institute for Electric and Magnetic Materials, Sendai, Japan*

FW-06. Rotation sensor using magnetic wire attached on shaft and its implementation to electric vehicle. *T. Kohara*[1], T. Kusunoki[1], T. Yamada[1], T. Suzuki[1], H. Fujimoto[1], Y. Takemura[1], S. Abe[2], S. Kohno[3], H. Itoi[3] and F. Kaneko[3] *1. Yokohama National University, Yokohama, Japan; 2. Kanagawa University, Yokohama, Japan; 3. Nikkoshi Co.,Ltd, Tokyo, Japan*

FW-07. Differential pulsed eddy current sensor for the detection of wall thinning in an insulated stainless steel pipe. *C.S. Angani*[1,2], D.G. Park[1], G.D. Kim[1], C.G. Kim[2] and Y.M. Cheong[1] *1. Nueclear Materials Research Division, Korea Atomic Energy Research Institute (KAERI), Daejeon, Korea, Republic of; 2. Material Science Engineering, Chungnam National University (CNU), Daejeon, Korea, Republic of*

FW-08. High field-sensitivity planar Hall sensor based on a weak exchange coupling structure. *T. Hung*[1,2], S. Oh[1,2], J. Jeong[1,2] and C. Kim[1,2] *1. Department of Materials Science and Engineering, Chungnam National University, Daejeon, Korea, Republic of; 2. Center for NanoBioEngineering and Spintronics, Chungnam National University, Daejeon, Korea, Republic of*

FW-09. DC magnetoelectric sensor based on the direct coupling of the Lorentz force from aluminum strips with the transverse piezoelectricity in a PMN–PT single-crystal plate. C. Leung[1], *S. Or*[1], S. Ho[1] and H. Luo[2] *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China; 2. Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China*

FW-10. Two sources of cross-field error in racetrack fluxgate. *M. Janosek*[1], M. Butta[1] and P. Ripka[1] *1. Dpt. of Measurement, Czech Technical University in Prague, FEE, Praha 6, Czech Republic*

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FW-11. Planar Hall effect sensors - effects of shape, size, thickness and anisotropy. *I. Genish*[1], Y. Shperber[1], N. Naftalis[1], G. Salitra[2], D. Aurbach[2], J. Hoffman[3] and C.H. Ahn[3] *1. Physics, Bar - Ilan University, Ramat - Gan, Israel; 2. Chemistry, Bar - Ilan University, Ramat - Gan, Israel; 3. Applied Physics, Yale University, New Haven, CT*

FW-12. FPGA-based fluxgate magnetometer with digital integration. *M. Butta*[1], M. Janosek[1] and P. Ripka[1] *1. Faculty of Electrical Engineering, Czech Technical University in Prague, Praha, Czech Republic*

FW-13. Electromagnetic near field measurements by using magnet garnet crystal. *M. Takahashi*[1,2], K. Kawasaki[1], H. Ohba[1], T. Ikenaga[1,5], H. Ota[1], T. Orikasa[1,3], N. Adachi[1,4] and K. Arai[1] *1. Sendai EMC Research Center, NICT, Sendai, Miyagi, Japan; 2. RIEC, Tohoku University, Sendai, Miyagi, Japan; 3. Advantest Co., LTD, Sendai, MIyagi, Japan; 4. Ceramic Research Laboratory, Nagoya Institute of Technology, Tajimi, Gifu, Japan; 5. R&D Center, Taiyo Yuden Co., LTD., Takasaki, Gunma, Japan*

FW-14. Design of magnetic concentrator for high sensitivity anisotropic magnetoresistors devices. *M. Mansour*[1,2], C. Coillot[1], A. Roux[1] and F. Nguyen Van Dau[2] *1. Laboratoire de Physique des Plasmas, Velizy, France; 2. Thales Research and Technology, Palaiseau, France*

FW-15. MHz operation of orthogonal fluxgate sensor with DC bias current. *K. Shin*[1], H. Kim[2], Y. Kim[2], C. Yang[3] and H. Jeong[3] *1. Dept. of Multimedia Communication Engn., Kyungsung University, Pusan, Korea, Republic of; 2. Pukyong National University, Pusan, Korea, Republic of; 3. Agency for defense development, Jinhae, Korea, Republic of*

FW-16. Bulk High Permeability Mu-Metals based Magnetoelectric Sensors. *J. Lou*[1], M. Liu[1] and N.X. Sun[1] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA*

THURSDAY AFTERNOON 1:00 — EXHIBIT HALL C

Session FX

MEMS AND HIGH FREQUENCY DEVICES (POSTER SESSION)

Makoto Sonehara, Chair

FX-01. Galfenol bending mode sensor/energy harvester performance. *J. Yoo*[1] and A.B. Flatau[1] *1. Aerospace Engineering, University of Maryland, College Park, MD*

FX-02. Transmission line type thin film sensor for magnetocardiogram measurement at room temperature. *S. Yabukami*[1], Y. Ohtomo[1], K. Kojima[1], K. Kato[1], T. Ozawa[2] and K. Arai[3] *1. Tohoku-Gakuin University, Tagajo, Japan; 2. Miyagi National College of Technology, Sendai, Japan; 3. Research Institute for Electric and Magnetic Materials, Sendai, Japan*

FX-03. Far-infrared Ferromagnetic Resonance of Magnetic Garnet for High Frequency Electromagnetic Sensor. *N. Adachi*[1], D. Uematsu[1], T. Ota[1], M. Takahashi[2], K. Ishiyama[3], K. Kawasaki[4], H. Ota[4], K. Arai[4], S. Fujisawa[5], S. Okubo[5] and H. Ohta[5] *1. Ceramics Research Laboratory, Nagoya Institute of Technology, Tajimi, Gifu, Japan; 2. TAIYO YUDEN Co., Gunma, Japan; 3. Tohoku University, Sendai, Japan; 4. National Institute of Information and Communications Technology, Sendai, Japan; 5. Kobe University, Kobe, Japan*

FX-04. Impedance measurement using a resonance circuit for detecting steel bars and cables inside pliable plastic conduit tubes buried in concrete walls and slabs.K. Ishikawa[1], A. Haga[1], *K. Yamazaki*[2], K. Muramatsu[3] and K. Kobayashi[4] *1. Faculty of Engineering, Tohoku-Gakuin University, Tagajo, Miyagi, Japan; 2. R & D institute, Takenaka Corporation, Inzai, Chiba, Japan; 3. Faculty of Engineering, Saga University, Honjo, Saga, Japan; 4. Faculty of Engineering, Iwate University, Morioka, Iwate, Japan*

FX-05. A Compact X-band Tunable Band-Pass Filter Module Using A Pair of Microstrip Composite Band-Pass Filters in Cascade.Y. Zhu[1], G. Qiu[2], K. Chi[1], B.T. Wang[3] and *C.S. Tsai*[1,4] *1. Dept of Electrical Eng. and Computer Science, and Institute for Surface and Interface Sciences, University of California, Irvine, CA; 2. Broadcom Corp., 5300 California Ave, Irvine, CA; 3. Wang, NMR Inc., 550 North Canyons Parkway, Livermore, CA; 4. The Institute of Photonics and Optoelectronics, National Taiwan University, Taipei 115, Taiwan*

FX-06. Hexaferrite ring patch antenna for W-LAN multiple-input multiple-output antenna applications. *S. Bae*[1], Y. Hong[1], J. Lee[1], J. Park[1], J. Jalli[1], G.S. Abo[1], H. Kwon[2] and C. Jayasooriya[2] *1. Department of Electrical and Computer Engineering and MINT Center, University of Alabama, Tuscaloosa, AL; 2. Department of Electrical and Computer Engineering, Wichita State University, Wichita, KS*

FX-07. Miniaturized broadband ferrite T-DMB antennas for mobile phone applications. *S. Bae*[1], Y. Hong[1], J. Lee[1], W. Sung[2], J. Kum[2], W. Ahn[2], S. Park[2], G.S. Abo[1], J. Jalli[1] and J. Park[1] *1. Department of Electrical and Computer Engineering, MINT Center, University of Alabama, Tuscaloosa, AL; 2. E.M.W. Antenna Co. Ltd., Seoul, Korea, Republic of*

FX-08. Hysteresis of single domain magnetic microactuators. *Z. Wei*[1], M. Lai[2], Y. Hsieh[1] and C. Lin[1] *1. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Hsinchu, Taiwan*

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THURSDAY AFTERNOON 7:00 SALON 2

Session FZ
SYMPOSIUM: MAGNETISM ON THE INTERNATIONAL ROADMAP FOR SEMICONDUCTORS
Bernard Dieny, Chair

7:00

FZ-01. Magnetism in the International Technology Roadmap for Semiconductors (ITRS). ***(Invited)*** *C. Chappert*[1,2] *1. IEF, CNRS, Orsay, France; 2. IEF, Université Paris-Sud, Orsay, France*

7:30

FZ-02. MOS/MTJ-Hybrid Circuit with Nonvolatile Logic-in-Memory Architecture and Its Applications. ***(Invited)*** *T. Hanyu*[1] *1. RIEC, Tohoku University, Sendai, Miyagi, Japan*

8:00

FZ-03. A Spintronic Synapse: a path to a neuromorphic computing architecture. ***(Invited)*** *S. Parkin*[1], X. Jiang[1] and D. Modha[1] *1. IBM Almaden Research Ctr, San Jose, CA*

FRIDAY MORNING 9:00 SALON 2

Session GA
DOMAIN WALL DEVICES II
Seiji Mitani, Chair

9:00

GA-01. Detection of electromotive force induced by domain wall motion. ***(Invited)*** *G.S. Beach*[1], S. Yang[2], C. Knutson[2], D. Xiao[2], Q. Niu[2], M. Tsoi[2] and J. Erskine[2] *1. Dept of Materials Science and Engineering, MIT, Cambridge, MA; 2. Dept of Physics, University of Texas at Austin, Austin, TX*

9:36

GA-02. Spin-wave contributions to current-driven domain wall motion. Y. Le Maho[1], *J. Kim*[1] and G. Tatara[2] *1. Institut d'Electronique Fondamentale, CNRS / Univ. Paris-Sud, Orsay, France; 2. Graduate School of Science, Tokyo Metropolitan University, Tokyo, Japan*

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9:48

GA-03. Spin torque and charge resistance of ferromagnetic semiconductor 360 degree and 180 degree domain walls. *E.A. Golovatski*[1] and M.E. Flatté[1] *1. Physics, University of Iowa, Iowa City, IA*

10:00

GA-04. Fast pulse current-induced domain wall motion in high anisotropy multilayer systems. O. Boulle[1], J. Heinen[1], G. Malinowski[1,2], G. Faini[3] and *M. Klaui*[1] *1. Physics, University of Konstanz, Konstanz, Germany; 2. Applied Physics, TU Eindhoven, Eindhoven, Netherlands; 3. Phynano, CNRS-LPN, Marcoussis, France*

10:12

GA-05. Spin-transfer torque acceleration of domain walls in a Co/Pt multilayer wire. L. San Emeterio Alvarez[1], K. Wang[2], S. Landi[3], S. Bending[3] and *C. Marrows*[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Hitachi Cambridge Laboratory, Cambridge, United Kingdom; 3. Department of Physics, University of Bath, Bath, United Kingdom*

10:24

GA-06. Non-adiabatic spin-torques in narrow magnetic domain walls. *D. Ravelosona*[1], C. Burrowes[1], A.P. Mihai[2], J.V. Kim[1], S. Park[1], C. Chappert[1], L. Vila[2], A. Marty[2], F. Garcia-Sanchez[3], L.D. Buda-Prejbeanu[3], I. Tudosa[4], E.E. Fullerton[4] and J. Attane[2] *1. Institut d'Electronique Fondamentale, Orsay, France; 2. INAC, Grenoble, France; 3. SPINTEC, Grenoble, France; 4. Center for Magnetic Recording, San Diego, CA*

10:36

GA-07. Efficiency of current-assisted domain wall depinning in spin valves with perpendicular magnetic anisotropy. *S. Park*[1], N. Nguyen[1], C. Burrowes[1], E.E. Fullerton[2], C. Chappert[1] and D. Ravelosona[1] *1. Institut d'Electronique Fondamentale, UMR CNRS 8622, Université Paris Sud, Orsay, France; 2. Center for Magnetic Recording Research, University of California at San Diego, San Diego, CA*

10:48

GA-08. Magnetic Domain-Wall Logic In Spin-Valve Nanowires. *J. Sampaio*[1], L. Thevenard[1], E. Lewis[1], L. O'Brien[1], H.T. Zeng[1], D. Petit[1], D. Read[1], R.P. Cowburn[1] and S. Cardoso[2,3] *1. Imperial College London, London, United Kingdom; 2. INESC-Microsistemas e Nanotecnologias and IN- Institute of Nanoscience and Nanotechnology, Lisbon, Portugal; 3. Dept of Physics, Instituto Superior Tecnico, Lisbon, Portugal*

11:00

GA-09. Study of magnetization reversal in perpendicularly magnetized TbCo based spin-valves. *M. Gottwald*[1], W. Lin[1], M. Hehn[1], F. Montaigne[1], G. Lengaigne[1], S. Mangin[1], M. Im[2] and P. Fischer[2] *1. Institut Jean Lamour, Vandoeuvre les Nancy, Lorraine, France; 2. LBL, Center for X-ray Optics, Berkeley, CA*

11:12

GA-10. Magnetization Reversal in Cylindrical Nickel Nanowires. *J. Moser*[1], S. Martens[1], T. Böhnert[1], K. Pitzschel[1], M. Martens[1], U. Merkt[1], G. Meier[1] and K. Nielsch[1] *1. Institute of Applied Physics and Microstructure Research Center, University of Hamburg, Hamburg, Germany*

11:24

GA-11. The depinning process of the head-to-head domain wall in the L-shaped NiFe nanowire. S. Kim[1], *S. Lee*[1], J. Ko[1] and J. Hong[1] *1. Materials sience and engineering, Yonsei univ., Seoul, Seoul, Korea, Republic of*

11:36

GA-12. Optical characterization of all-magnetic logic operations in linked-ring structures. *S.R. Bowden*[1] and U.J. Gibson[1] *1. Thayer School of Engineering, Dartmouth College, Hanover, NH*

11:48

GA-13. Domain wall based multiturn sensors: from the 16 to 2^{12} turn counter and the physics behind. *R. Mattheis*[1], M. Diegel[1], S. Glathe[1], D. Berkov[2], M. Zeisberger[1] and M. Scherzinger[3] *1. Institute of Photonic Technology Jena, Jena, Germany; 2. Innovent e.V., Jena, Germany; 3. Novotechnik Messwertaufnehmer OHG, Ostfildern, Germany*

FRIDAY
MORNING
9:00

SALON 3

Session GB
SYMPOSIUM: EMERGENT PHENOMENA IN MAGNETIC COMPLEX OXIDES IN REDUCED DIMENSIONALITY
Jian Shen, Chair

9:00

GB-01. Charge Conduction in Multiferroics. ***(Invited)*** *S. Cheong*[1] *1. Department of Physics and Astronomy, Rutgers University, Piscataway, NJ*

9:36

GB-02. Influencing Properties in Complex Oxide Heterostructures with Dimensionality and Strain. ***(Invited)*** *J.W. Freeland*[1], P. Ryan[1], S. Park[2], J. Liu[3], J.W. Kim[1], M. Kareev[3], E. Karapetrova[1], J.X. Ma[4], J. Shi[4], W. Wu[2] and J. Chakhalian[3] *1. Advanced Photon Source, Argonne National Lab, Argonne, IL; 2. Department of Physics and Astronomy and Rutgers Center for Emergent Materials, Rutgers University, Piscataway, NJ; 3. Department of Physics, University of Arkansas, Fayetteville, AR; 4. Department of Physics, University of California, Riverside, CA*

10:12

GB-03. Potential barrier lowering and magnetotransport at $LaAlO_3/SrTiO_3$ interfaces. ***(Invited)*** *Y. Suzuki*[1], F. Wong[1], B. Nelson-Cheeseman[1], M. Chi[2] and N. Browning[2] *1. Materials Science & Eng., UC Berkeley, Berkeley, CA; 2. Chemical Engineering & Materials Science, UC Davis, Davis, CA*

10:48

GB-04. Fabrication and magnetic properties of one and two dimensional metal oxides. ***(Invited)*** *T. Kawai*[1] *1. Osaka University, ISIR, Osaka, Japan*

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11:24

GB-05. Magnetic Properties of Manganite Superlattices. *(Invited)*
S.J. May[1,2], A.B. Shah[3], S.G. te Velthuis[1], M.R. Fitzsimmons[4], P.J. Ryan[5], J.L. Robertson[6], J. Kim[5], T.S. Santos[7], J.M. Zuo[3], J.N. Eckstein[8], S.D. Bader[1,7] and A. Bhattacharya[1,7] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Materials Science and Engineering Department, Drexel University, Philadelphia, PA; 3. Materials Science and Engineering Department, University of Illinois, Urbana-Champaign, IL; 4. Los Alamos National Laboratory, Los Alamos, NM; 5. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 6. Oak Ridge National Laboratory, Oak Ridge, TN; 7. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 8. Department of Physics, University of Illinois, Urbana-Champaign, IL*

FRIDAY MORNING 9:00 — DELAWARE

Session GC
MAGNETIC MICROSCOPY II
Rudolf Schaefer, Chair

9:00

GC-01. Direct Observation of Stochastic Behavior in Nanoscale Magnetism. *(Invited)* *M. Im*[1], P. Fischer[1], L. Bocklage[2], G. Meier[2] and S. Shin[3] *1. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany; 3. Physics, Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of*

9:36

GC-02. Quantitative X-ray imaging of magnetic vortices in permalloy disks. *P. Fischer*[1], M. Im[1], S. Kasai[2] and A. Thiaville[3] *1. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Spintronics Group, Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Japan; 3. U Paris Sud, CNRS, Laboratoire de physique des solides, Orsay Cedex, France*

9:48

GC-03. Time-resolved X-ray microscopy of ac-field-driven coupled magnetic vortices. *M. Bolte*[1,2], L. Bocklage[2], A. Vogel[2], H. Jung[3], K. Lee[3], Y. Yu[3], M. Im[4], A. Drews[1,2], P. Fischer[4], G. Meier[2] and S. Kim[3,4] *1. Research Area Technical Information Systems, University of Hamburg, Hamburg, Germany; 2. Institute for Applied Physics, University of Hamburg, Hamburg, Germany; 3. Research Center for Spin Dynamics and Spin-Wave Devices, Seoul National University, Seoul, Korea, Republic of; 4. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA*

10:00

GC-04. Magnetic Vortex-Antivortex Dynamics in Rectangular Permalloy Patterns on Picosecond Timescale. *D. Kim*[1], B. Mesler[2], E. Anderson[2], P. Fischer[2], J. Moon[3] and K. Lee[3] *1. Physics, Chungbuk National University, Cheongju, Chungbuk, Korea, Republic of; 2. Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Materials Science and Engineering, Korea University, Seoul, Korea, Republic of*

10:12

GC-05. Design and Characterisation of a Switchable Nanomagnetic Atom Mirror. *T.J. Hayward*[1], P.W. Fry[2], P.M. Fundi[1], M.J. Gibbs[1], T. Schrelf[1], D.A. Allwood[1], K.J. Weatherill[3], A.D. West[3], C.S. Adams[3], I.G. Hughes[3], P.J. Curran[4] and S.J. Bending[4] *1. Department of Engineering Materials, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; 2. Nanoscience and Technology Centre, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; 3. Atomic and Molecular Physics Group, University of Durham, Durham, County Durham, United Kingdom; 4. Nanoscience Group, University of Bath, Bath, Somerset, United Kingdom*

10:24

GC-06. Quantitative images of three-dimensional magnetization of Co/Pd multilayers using SEMPA. *B.J. McMorran*[1], A.C. Cochran[1], P. Morrow[1], D.T. Pierce[1], J. Unguris[1], R.K. Dumas[2] and K. Liu[2] *1. National Institute of Standards and Technology, Gaithersburg, MD; 2. Department of Physics, University of California, Davis, Davis, CA*

10:36

GC-07. Direct observation of current-driven magnetic vortex precession with unprecedented spatial resolution. ***L. Huang***[1,2], A.T. Bollinger[1] and Y. Zhu[1,2] *1. Condensed Matter Physics and Material Science, Brookhaven National Laboratory, Upton, NY; 2. Department of Physics and Astronomy, Stony Brook University, Stony Brook, NY*

10:48

GC-08. Lorentz TEM observation of magnetic domains in La0.825Sr0.175(Mn,Al)O3. *S. Mori*[1], Y. Nagamine[1], Y. Togawa[2], K. Yoshii[3] and K. Takenaka[4] *1. Dept. of Material Sceince, Osaka Prefecture University, Sakai, Osaka, Japan; 2. Nanoscience and Nanotechnology Research Center, Osaka Prefecture University, Sakai, Osaka, Japan; 3. Japan Atomic Energy Agency, Sayo, Hyougo, Japan; 4. Deaprtment of Crystalline Materials Science, Nagoya, Nagoya, Japan*

11:00

GC-09. Role of edge microstructure and pinning in the magnetization reversal of patterned ferromagnetic heterostructures. *M. Tanase*[1], A.K. Petford-Long[2] and A. Imre[3] *1. Physics, University of Illinois at Chicago, Chicago, IL; 2. Materials Science Division, Argonne National Laboratory, Lemont, IL; 3. Center for Nanoscale Materials, Argonne National Laboratory, Lemont, IL*

11:12

GC-10. EMCD measurements : application to iron and iron-cobalt films and comparison with XMCD experiments. *B. Warot-Fonrose*[1], C. Gatel[1], L. Calmels[1], V. Serin[1], E. Snoeck[1] and S. Cherifi[2] *1. CEMES-CNRS, Toulouse, France; 2. IPCMS, Strasbourg, France*

11:24

GC-11. Imaging magnetism at the nanoscale : thin foils quantitative analysis using electron holography. *E. Snoeck*[1], A. Masseboeuf[1,2], C. Gatel[1], E. Javon[1], A. Marty[2] and P. Bayle-Guillemaud[2] *1. CEMES, CNRS, Toulouse Cedex, France; 2. INAC, CEA, Grenoble, France*

11:36

GC-12. A transmission electron microscope study of an MgO barrier in a magnetic tunnel junction grown by dc-rf magnetron sputtering. *V. Harnchana*[1], A.P. Brown[1], A.T. Hindmarch[2], R.M. Brydson[1] and C.H. Marrows[2] *1. Institute for Materials Research, University of Leeds, Leeds, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

11:48

GC-13. TEM *in situ* tunneling measurements in nano-MTJs. *J.W. Lau*[1], P. Morrow[1], J.C. Read[1], V. Höink[1], L. Huang[2] and Y. Zhu[2] *1. Metallurgy Division, National Institute of Standards and Technology, Gaithersburg, MD; 2. Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY*

FRIDAY MORNING 9:00 — VIRGINIA

Session GD
VORTEX DYNAMICS
Valentyn Novosad, Chair

9:00

GD-01. Dynamical stability of coupled vortex modes excited by spin transfer in multi-nanocontact. *A. Dussaux*[1], A. Ruotolo[1], B. Georges[1], V. Cros[1], J. Grollier[1], C. Deranlot[1], S. Fusil[1], K. Bouzehouane[1] and A. Fert[1] *1. Unité Mixte de Physique CNRS/Thales and Université Paris Sud 11, Palaiseau, France*

9:12

GD-02. Coupled vortex pair dynamics excited by spin transfer torque. *N. Locatelli*[1], V.V. Naletov[2], J. Grollier[1], V. Cros[1], G. De Loubens[2], O. Klein[2], G. Faini[3] and A. Fert[1] *1. Unite Mixte de Physique CNRS/Thales and Université Paris Sud 11, Palaiseau, France; 2. Service de Physique de l'Etat Condensé, CEA Saclay, Gif-sur-Yvette, France; 3. Laboratoire de Photonique et de Nanostructures, LPN-CNRS, Marcoussis, France*

9:24

GD-03. Nonlinear Magnetic Vortex Dynamics in the Presence of Pinning. *T. Chen*[1] and P.A. Crowell[1] *1. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN*

9:36

GD-04. Velocity of the vortex core switching in elliptic dot. *T. Sato*[1], Y. Nakatani[1], K. Yamada[2] and T. Ono[2] *1. University of Electro-communications, Tokyo, Japan; 2. Institute for Chemical Research, Kyoto University, Uji, Japan*

9:48

GD-05. Critical Velocity Of The Vortex Core Reversal In A Magnetic Nano-Dot Subjected To A Bias Magnetic Field Perpendicular To The Dot Plane. *A.V. Khvalkovskiy*[1,2], A.N. Slavin[3], J. Grollier[2], K.A. Zvezdin[1,4] and K.Y. Guslienko[5,6] *1. A.M. Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russian Federation; 2. Unite Mixte de Physique CNRS/Thales and Universite Paris Sud 11, Palaiseau, France; 3. Oakland University, Rochester, MI; 4. Istituto P.M. s.r.l., Torino, Italy; 5. Dpto. Fisica de Materiales, Universidad del Pais Vasco, San Sebastian, Spain; 6. IKERBASQUE, the Basque Foundation for Science, Bilbao, Spain*

10:00

GD-06. Topological Gauge Field in Nanomagnets: Spin Wave Excitations Over a Slowly Moving Magnetization Background. *K.Y. Guslienko*[1,3], G.R. Aranda[2] and J.M. Gonzalez[1] *1. Dpto. Fisica de Materiales, Universidad del Pais Vasco, Donostia-San Sebastian, Spain; 2. Centro de Física de Materiales, UPV/CSIC, Donostia - San Sebastián, Spain; 3. IKERBASQUE, the Basque Foundation for Science, Bilbao, Spain*

10:12

GD-07. Vortex-antivortex pair production and the energetic origin of the magnetic vortex core reversal. *S. Gliga*[1], Y. Liu[2], A. Kákay[1] and R. Hertel[1] *1. Electronic Properties, Research Center Jülich, Jülich, Germany; 2. Deparment of Physics, Tongji University, Shanghai, China*

10:24

GD-08. Optimized switching of the spin vortex chirality in submicron magnetic elements. *R. Antos*[1] and Y. Otani[2,3] *1. Fac. of Math. & Phys., Inst. of Phys., Charles University, Prague, Czech Republic; 2. ISSP, University of Tokyo, Kashiwa, Japan; 3. Advanced Science Institute, RIKEN, Wako, Japan*

10:36

GD-09. Tailoring the properties of magnetic vortices. *F. Garcia*[1], E.R. Novais[2], A.D. Santos[3], J. Schoenmaker[4], A.C. Seabra[5] and A.P. Guimaraes[6] *1. LNLS, Campinas, Brazil; 2. CBPF, Rio de Janeiro, Brazil; 3. IFUSP, São Paulo, Brazil; 4. UFABC, Santo Andre, Brazil; 5. EPUSP, São Paulo, Brazil; 6. CBPF, Rio de Janeiro, Brazil*

10:48

GD-10. Dipolar-interaction induced vortex gyrations in coupled vortex oscillators. *H. Jung*[1], Y. Yu[1], K. Lee[1], M. Im[2], P. Fischer[2], M. Bolte[3], L. Bocklage[3], A. Vogel[3], G. Meier[3] and S. Kim[1,2] *1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, Korea, Republic of; 2. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany*

11:00

GD-11. Non-linear vortex motion induced by simultaneous application of rf and dc current in a micron-sized $Fe_{19}Ni_{81}$ disk. *A. Yamaguchi*[1,2], K. Motoi[1], H. Miyajima[1], T. Sato[3] and Y. Nakatani[3] *1. Department of Physics, Keio University, Yokohama, Japan; 2. PRESTO, JST, Saitama, Japan; 3. University of Electro-communications, Chofu, Japan*

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11:12

GD-12. Dynamics of one dimensional chains of magnetic vortices in response to local and global excitations.S. Barman[1,2], A. Barman[1,2] and *Y. Otani*[2,3] *1. S. N. Bose National Centre for Basic Sciences, Kolkata, India; 2. RIKEN ASI, 2-1 Hirosawa, Wako, Saitama 351-0198, Japan; 3. Institute for Solid State Physics, University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8581, Japan*

11:24

GD-13. Controlled switching of Néel caps in flux-closure magnetic dots. *O. Fruchart*[1], A. Masseboeuf[3], F. Cheynis[1], N. Rougemaille[1], J. Toussaint[1,2], R. Belkhou[4,5], P. Bayle-Guillemaud[3] and A. Marty[3] *1. Institut Néel, CNRS et Université Joseph Fourier, Grenoble, France; 2. Institut National Polytechnique de Grenoble, Grenoble, France; 3. CEA-Grenoble, INAC/SP2M, Grenoble, France; 4. Synchrotron SOLEIL, Gif-sur-Yvette, France; 5. ELETTRA Sincrotrone, Trieste, Italy*

11:36

GD-14. Micromagnetics of nanoscale spin-flop bi-layers: statics and dynamics of S, C, and Vortex spin-states. *S. Cherepov*[1], A. Konovalenko[1], V. Korenivski[1] and D. Worledge[2] *1. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden; 2. IBM T. J. Watson Research Center, Yorktown Heights, NY*

11:48

GD-15. Spin-torque driven magnetic vortex self-oscillations in perpendicular magnetic fields. *G. Finocchio*[1], V.S. Pribiag[3], L. Torres[2], R.A. Buhrman[3] and B. Azzerboni[1] *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain; 3. Cornell University, Ithaca, NY*

FRIDAY MORNING 9:00

WASHINGTON 1

Session GE
ULTRATHIN FILMS AND SURFACE EFFECTS II
Xiaofeng Jin, Chair

9:00

GE-01. In-Plane Field Effects on the Formation and Motion of Domain Walls Created by Perpendicular Fields in Ultrathin Co Films with Perpendicular Anisotropy. Y.L. Iunin[1], Y.P. Kabanov[1], V.I. Nikitenko[1,2], A.J. Shapiro[2], *R.D. Shull*[2], L.Y. Zhu[3] and C.L. Chien[3] *1. Institute of Solid State Physics RAS, Chernogolovka, Moscow region, Russian Federation; 2. National Institute of Standards and Technology, Gaithersburg, MD; 3. The Johns Hopkins University, Baltimore, MD*

9:12

GE-02. Perpendicular magnetic anisotropy in ultrathin single layers of CoFeB. *C. Fowley*[1], N. Decorde[1], K. Rode[1], H. Kurt[1] and M. Coey[1] *1. CRANN & School of Physics, Trinity College Dublin, Dublin 2, Ireland*

9:24

GE-03. Persistence of a Room-Temperature, High-Moment Ferromagnetic Phase in Epitaxial FeRh Thin Films. *D.A. Arena*[1], L.H. Lewis[2], Y. Ding[1], S. Langridge[3], C.J. Kinane[3,4], B.J. Hickey[4], M. Ali[4] and C.H. Marrows[4] *1. National Synchrotron Light Source, Brookhaven National Lab, Upton, NY; 2. Dept. of Chemical Engineering, Northeastern University, Boston, MA; 3. ISIS, Rutherford Appleton Laboratory, Didcot, Oxon, United Kingdom; 4. School of Physics and Astronomy, Unversity of Leeds, Leeds, Yorkshire, United Kingdom*

9:36

GE-04. Proper scaling of the anomalous Hall effect. *(Invited)* Y. Tian[1], L. Ye[1] and *X. Jin*[1] *1. Physics Department, Fudan University, Shanghai, China*

10:12

GE-05. Direct observation of V magnetic polarization on antiferromagnetic Cr(001). *C. Clavero*[1], M. Bode[2], G. Bihlmayer[3], S. Blügel[3] and R. Lukaszew[1,4] *1. Department of Applied Science, The College of William and Mary, Williamsburg, VA; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 3. Institut für Festkörperforschung, Forschungszentrum Jülich, Jülich, Germany; 4. Department of Physics, College of William & Mary, Williamsburg, VA*

10:24

GE-06. Wurtzite-type CoO nanocrystals in ultrathin ZnCoO films observed by surface x-ray diffraction. *H.L. Meyerheim*[1], C. Tusche[1], A. Ernst[1], S. Ostanin[1], I.V. Maznichenko[2], K. Mohseni[1], N. Jedrecy[3], J. Zegenhagen[4], J. Roy[4], I. Mertig[2] and J. Kirschner[1] *1. Max-Planck-Institut f. Mikrostrukturphysik, Halle, Germany; 2. Institut f. Physik, Martin-Luther-University Halle-Wittenberg, Halle, Germany; 3. Institut des Nano Sciences de Paris, Université P. et M. Curie-Paris 6 and CNRS-UMR7588, Paris, France; 4. ESRF, B.P. 220, Grenoble, France*

10:36

GE-07. Electrical control of the magnetic state of cubic iron. *T. Yamada*[1], L. Gerhard[1], T. Balashov[1], A. Takacs[1], M. Daene[2], A. Ernst[2], I. Mertig[3] and W. Wulfhekel[1] *1. Physikalisches Institut, Universitaet Karlsruhe, Karlsruhe, Germany; 2. Max-Plank-Institut fuer Mikrostrukturphysik, Halle, Germany; 3. Institut fuer Physik, Martin-Luther-Universitaet Halle-Wittenberg, Halle, Germany*

10:48

GE-08. In-plane anisotropy properties in Fe_3O_4 thin films on MgO substrates. *J. Dou*[1], M.J. Pechan[1], P. Jayathilaka[2], D. Williams[2], C. Bauer[2] and C. Miller[2] *1. Department of Physics, Miami University, Oxford, OH; 2. Department of Physics, University of South Florida, Tampa, FL*

11:00

GE-09. Direct observation of 90 degree magnetic coupling through NOL of Fe oxide by Spin-SEM. *H. Yuasa*[1], H. Fukuzawa[1] and M. Konoto[2] *1. R&D Center, Toshiba, Kawasaki, Japan; 2. Nanoelectronics Research Institute, AIST, Tsukuba, Japan*

11:12

GE-10. Enhanced Surface Spin Polarisation of Fe Nanoclusters. *A. Pratt*[1,2], C. Woffinden[2], R. Kröger[2], S.P. Tear[2] and C. Binns[3] *1. York Institute for Materials Research, The University of York, York, North Yorkshire, United Kingdom; 2. Department of Physics, The University of York, York, North Yorkshire, United Kingdom; 3. Physics and Astronomy, University of Leicester, Leicester, Leicestershire, United Kingdom*

11:24

GE-11. Contributions to the uniaxial magnetic anisotropy in epitaxial CoFe/GaAs(001). *A.T. Hindmarch*[1], D.A. Arena[2], K.J. Dempsey[1], M. Henini[3] and C.H. Marrows[1] *1. Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY; 3. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom*

11:36

GE-12. Thickness-dependent perpendicular magnetic anisotropy of CoPt layer on CoPt/AlN multilayer. *Y. Yu*[1], J. Shi[1] and Y. Nakamura[1] *1. Department of Metallurgy and Ceramics Science, Tokyo Institute of Technology, Tokyo, Japan*

11:48

GE-13. Ultra-smooth nitridized Cu thin films for reduced roughness and tailored spacer layers. *Y. Fang*[1], C. Bauer[2], D. Williams[2], P. Johan[1], C. Zha[1], C. Miller[2] and J. Åkerman[1,3] *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology in Sweden, Stockholm, Sweden; 2. Department of Physics, University of South Florida, Tampa, FL; 3. Physics department, University of Gothenburg, Göthborg, Sweden*

FRIDAY MORNING 9:00 — WASHINGTON 2

Session GF

MAGNETIC SEMICONDUCTORS: OXIDES

Hsiung Chou, Chair

9:00

GF-01. A few ways in which LDA theories can predict false ferromagnetism in insulators and how to cure these problems. *(Invited)* *A. Zunger*[1], S. Lany[1], J. Chan[1], H. Raebiger[1] and J. Osorio[1] *1. NREL, Golden, CO*

9:36

GF-02. Magnetization Process in Dilute Magnetic Oxides. *M. Coey*[1], J.T. Mlack[1], M. Venkatesan[1] and P. Stamenov[1] *1. School of Physics and CRANN, Trinity College, Dublin 2, Ireland*

9:48

GF-03. Magnetism, electronic structure, and stability of defect complexes in semiconductors and insulators. *H. Raebiger*[1] *1. Department of Physics, Yokohama National University, Yokohama, Kanagawa, Japan*

10:00

GF-04. Tailoring the Ferromagnetism with non-magnetic impurity in Co-TiO2 nanoparticles. *B. Ali*[1], L.R. Shah[2], C. Ni[1], J.Q. Xiao[2] and S.I. Shah[1,2] *1. Materials Science, University of Delaware, Newark, DE; 2. Physics and Astronomy, University of Delaware, Newark, DE*

10:12

GF-05. Transition metal dopants essential for producing ferromagnetism in nanoparticles. *L. Johnson*[1], A. Thurber[1], J. Anghel[1], M. Sabetian[1], D. Tenne[1], C.B. Hanna[1] and A. Punnoose[1] *1. Physics, Boise State University, Boise, ID*

10:24

GF-06. Coexistence of metallic and ionic Co in ferromagnetic Anatase Co:TiO_2 *Y. Lee*[1], M. de Jong[1] and R. Jansen[1] *1. MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

10:36

GF-07. One- and two-band models for oxygen impurities in Ti oxides. *R. Skomski*[1], X.H. Wei[1], B. Balamurugan[1], M. Chipara[2] and D.J. Sellmyer[1] *1. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE 68588, NE; 2. Department of Physics and Geology, University of Texas–Pan American, Edinburg, TX 78539, TX*

10:48

GF-08. Origin of magnetic moments in defective TiO_2 single crystals. *S. Zhou*[1], E. Cizmar[1], K. Potzger[1], M. Krause[1], G. Talut[1], M. Helm[1], J. Fassbender[1], S. Zvyagin[1], J. Wosnitza[1] and H. Schmidt[1] *1. Institute of Ion Beam Physics and Materials Research, Forschungszentrum Dresden-Rossendorf, Dresden, Germany*

11:00

GF-09. Effects of Gd doping and oxygen vacancies on the Curie temperature of EuO films prepared via pulsed laser deposition. X. Wang[1], P. Liu[1], K.A. Fox[1], *J. Tang*[1], M.J. An[2], K. Belashchenko[2] and P.A. Dowben[2] *1. Department of Physics and Astronomy, University of Wyoming, Laramie, WY; 2. Department of Physics and Astronomy and the Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE*

11:12

GF-10. Electric transport mechanism and magnetic coupling for carriers in Co doped ZnO thin films. *C. Lin*[1], H. Hsu[2] and H. Chou[1] *1. Physics, National Sun Yat-sen University, Kaohsiung, Taiwan; 2. Physics, National PingTung University of Education, PingTung, Taiwan*

11:24

GF-11. Defects inducing ferromagnetism in carbon-doped ZnO films.X. Li[1], *X. Xu*[1], J. Guo[1], Z. Quan[1] and G. Gehring[2] *1. Department of Chemistry and Materials Science, Shanxi Normal University, Linfen, Shanxi, China; 2. Department of Physics and Astronomy, University of Sheffield, Sheffield, United Kingdom*

11:36

GF-12. Magnetism and magneto-resistance in ZnAlO/Co multilayers.Z. Quan[2], X. Xu[2] and *G. Gehring*[1] *1. Physics and Astronomy, University of Sheffield, Sheffield, United Kingdom; 2. School of Chemistry and Materials, Shanxi Normal University, Linfen 041004, Shanxi, China*

11:48

GF-13. Ferromagnetism in dilute magnetic semiconductors through defect engineering: Li-doped ZnO. *J. Yi*[1], L. Chin Chean[2], J. Ding[1] and Y. Feng[2] *1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 2. Physics, National University of Singapore, Singapore, Singapore*

FRIDAY MORNING 9:00 — WASHINGTON 3

Session GG
MOTORS AND ACTUATORS
Jiabin Wang, Chair

9:00

GG-01. Wide Air Gap and Large Scale Bearingless Segment Motor with Six Stator Elements. *W. Gruber*[1,3], T. Nussbaumer[2], H. Grabner[4,3] and W. Amrhein[1,3] *1. Institute for Electrical Drives and Power Electronics, University Linz, Linz, Austria; 2. Levitronix GmbH, Zurich, Switzerland; 3. ACCM GmbH, Linz, Austria; 4. LCM GmbH, Linz, Austria*

9:12

GG-02. Optimal stator design of interior permanent magnet motor to reduce torque ripple using the level set method.J. Kwack[1], *S. Min*[1] and J. Hong[1] *1. Automotive Engineering, Hanyang University, Seoul, Korea, Republic of*

9:24

GG-03. Methodology of dynamic actuation for flexible magnetic actuator and biomimetic robotics application. *S. Kim*[1], S. Hashi[1] and K. Ishiyama[1] *1. Tohoku university, RIEC, Sendai, Japan*

9:36

GG-04. Efficiency optimization of an helical motion asynchronous motor. *V. Di Dio*[1] and M. Trapanese[1] *1. Dipartimento di Ingegneria Elettrica, Elettronica e delle Telecomunicazioni, Palermo University, Torino, Italy*

9:48

GG-05. 3D magnetic field modeling of a segmented cylindrical Halbach array. *K.J. Meessen*[1], J.J. Paulides[1] and E.A. Lomonova[1] *1. Eindhoven University of Technology, Eindhoven, Netherlands*

10:00

GG-06. Optimization of magnetization directions in a three dimensional magnetic system. *J. Choi*[1], J. Yoo[2], S. Nishiwaki[3] and K. Izui[3] *1. Center for Information Storage Device, Yonsei University, Seoul, Korea, Republic of; 2. School of Mechanical Engineering, Yonsei University, Seoul, Korea, Republic of; 3. Department of Mechanical Engineering and Science, Kyoto University, Kyoto, Japan*

10:12

GG-07. Robust Design of a Novel Optical Image Stabilizer with Suppressing Magnetic Torque Variations.C. Chiu[1], *Y. Chen*[1], T. Huang[1] and P. Chao[1,2] *1. Department of Electrical Engineering, National Chiao Tung University, Hsinchu, Taiwan; 2. Institute of Imaging and Biomedical Photonics, National Chiao Tung University, Tainan, Taiwan*

10:24

GG-08. Development of small sized actuator with compliant mechanism for optical image stabilization. *M. Song*[1], H. Baek[1], N. Park[1], K. Park[1], T. Yoon[1], Y. Park[1] and S. Lim[2] *1. Center for Information Storage Device, Yonsei University, Seoul, Korea, Republic of; 2. SAMSUNG ELECTRO-MECHANICS CO., LTD., Suwon, Korea, Republic of*

10:36

GG-09. Semi-analytical design sensitivity analysis of electromagnetic-structure coupled problem with commercial finite element package. *M. Lee*[1] and T. Lee[2] *1. Department of Automotive Engineering, Hanyang University, Seoul, Korea, Republic of; 2. School of Mechanical Engineering, Hanyang University, Seoul, Korea, Republic of*

10:48

GG-10. Design and Analysis of A Large Linear Switched Reluctance Motor with Segmental Secondary. *M. Mirzaei*[1,2] and S. Abdollahi[2,1] *1. Darmstadt University of Technology, Institute for Electrical Energy Conversion, Darmstadt, Germany; 2. Electrical Engineering, University of Tehran, Tehran, Iran, Islamic Republic of*

11:00

GG-11. Optimization of the Magnetic Performance of a Linear Variable Reluctance (VR) Micro Step Motor. *S. Hansen*[1], Z. Celinski[2] and H.H. Gatzen[1] *1. Institut fuer Mikrotechologie, Leibniz Universitaet Hannover, Garbsen, Lower Saxony, Germany; 2. University of Colorado, Center for Magnetism and Magnetic Nanostructures, Colorado Springs, CO*

11:12

GG-12. Analytical Hybrid Flux Switching Permanent Magnet Machines Model. *E. Ilhan*[1], B. Gysen[1], J. Paulides[1] and E. Lomonova[1] *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

11:24

GG-13. An energy-compliant magnetodynamic error criterion for eddy-current calculations.L. Rondot[1], *V.G. Mazauric*[2] and P.F. Wendling[3] *1. CEDRAT Technologies, Meylan Cedex, France; 2. Innovation Dept., Schneider Electric, Grenoble Cedex 9, France; 3. Magsoft Corporation, Ballston Spa, NY*

11:36

GG-14. Prediction and measurement of iron loss in a short-stroke, single-phase, tubular permanent magnet machine. *J. Wang*[1] *1. Electronic and Electrical Engineering, The University of Sheffield, Sheffield, United Kingdom*

11:48

GG-15. Toroidally-wound self-bearing BLDC motor using Lorentz force. *H. Lee*[1], S. Yoo[1] and M. Noh[1] *1. Mechatronics Engineering, Chungnam National University, Deajeon, Korea, Republic of*

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FRIDAY MORNING 9:00

WASHINGTON 5

Session GH
CHANNEL AND SIGNAL PROCESSING
Vijayakumar Bhagavatula, Chair

9:00

GH-01. Signal Processing for Near 10 Tbit/in^2 Density in Two Dimensional Magnetic Recording (TDMR). *E. Hwang*[1], R. Negi[1] and B. Kumar[1] *1. Data Storage Systems Center, Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

9:12

GH-02. Parallel error correcting for multi-track recording channels. *H. Kamabe*[1] *1. Information Science, Gifu University, Gifu, Japan*

9:24

GH-03. Joint TA Suppression and Turbo Equalization for Magnetic Recording Channels. *P. Kovintavewat*[1] and S. Koonkarnkhai[2] *1. Data Storage Technology Research Unit, Faculty of Science and Technology, Nakhon Pathom Rajabhat University, Mueng District, Nakhon Pathom, Thailand; 2. Department of Electrical Engineering, King Mongkut's University of Technology North Bangkok, Bangsue, Bangkok, Thailand*

9:36

GH-04. Error Event Analysis in BPM with Island Size Distributions. *Y.J. Shi*[1], P.W. Nutter[1], B.D. Belle[1] and J.J. Miles[1] *1. School of Computer Science, The University of Manchester, Manchester, United Kingdom*

9:48

GH-05. Reduced-Complexity Turbo Equalization for Nonbinary LDPC Codes in Magnetic Recording Channels. *S. Jeon*[1] and B. Kumar[1] *1. Data Storage Systems Center, Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

10:00

GH-06. Two-dimensional Soft Output Viterbi Algorithm for Patterned Media Storage. *J. Kim*[1] and J. Lee[1] *1. School of Electronic Engineering, Soongsil Unversity, Seoul, Korea, Republic of*

10:12

GH-07. Minimum Distance Bounds and Code Design for Qary LDPC Codes. *A. Risso*[1], M.N. Kaynak[1] and P.R. Khayat[1] *1. R/W Channel Architecture, STMicroelectronics, San Diego, CA*

10:24

GH-08. Performance of 32k-bit LDPC Codes in Magnetic Recording Channels. *S. Jeon*[1] and B. Kumar[1] *1. Data Storage Systems Center, Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

10:36

GH-09. Iterative Timing Recovery with the Split-Preamble Strategy for Magnetic Recording Channels. *C. Warisarn*[1], P. Kovintavewat[2] and P. Supnithi[1] *1. Faculty of Engineering and Industry/University Cooperative Research Center in Data Storage Technology and Applications, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Bangkok, Thailand; 2. Data Storage Technology Research Unit, Nakhon Pathom Rajabhat University, Nakhon Pathom, Nakhon Pathom, Thailand*

10:48

GH-10. Estimation of Error Floors of Long LDPC Codes Applied to Magnetic Recording Channels. *X. Hu*[1,2], Z. Li[3], B. Kumar[2] and R. Barndt[1] *1. STMicroelectronics, San Diego, CA; 2. Electrical Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. LSI Corp., San Jose, CA*

11:00

GH-11. A graph-based inter-track interference mitigation technique for bit patterned media.L.M. Myint[1], *P. Supnithi*[2] and P. Tantaswad[1] *1. School of Technology, Shinawatra University, Bangkok, Pathumthani, Thailand; 2. Faculty of Engineering and I/U CRC in Data Storage Technology and Applications, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Ladkrabang, Thailand*

11:12

GH-12. Pattern-dependent noise-predictive soft detection in the post-processor with error filters. *I. Djurdjevic*[1], B.A. Wilson[1] and T.R. Oenning[2] *1. Hitachi Global Storage Technologies, San Jose, CA; 2. Hitachi Global Storage Technologies, Rochester, MN*

11:24

GH-13. RS Plus LDPC Codes for Perpendicular Magnetic Recording.W. Chang[1] and *J.R. Cruz*[1] *1. Electrical and Computer Engineering, University of Oklahoma, Norman, OK*

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11:36

GH-14. Adaptive Nonlinear Partial Response Maximum Likelihood Detector Based on Reduced Multivariate Polynomial for Perpendicular Magnetic Recording Channels. *G. Kong*[1] and S. Choi[1] *1. School of Electrical and Electronic Engineering, Yonsei University, Seoul, Korea, Republic of*

FRIDAY MORNING 8:00 — EXHIBIT HALL C

Session GP
HARD MAGNETS I: R2Fe14B (POSTER SESSION)
Wei Tang, Chair

GP-01. Magnetic Domain Observation of Hydrogenation Disproportionation Desorption Recombination Processed Nd-Fe-B Powders with High-Resolution Kerr Microscope using Ultraviolet Light. *M. Takezawa*[1], K. Maruko[1], N. Tani[1], Y. Morimoto[1], J. Yamasaki[1], T. Nishiuchi[2] and S. Hirosawa[2] *1. Dept. of Appl. Sci. for Integ. Syst. Engin., Kyushu Institute of Technology, Kitakyushu, Japan; 2. NEOMAX Company, Hitachi Metals, Ltd., Osaka, Japan*

GP-02. Rod-like disproportion microstructure in the Pr13Fe80B7 alloys treated by conventional HDDR process. *J. Han*[1], X. Kong[1], S. Liu[1], J. Yang[1,2], C. Wang[1], H. Du[1] and Y. Yang[1] *1. School of Physics, Peking University, Beijing, China; 2. State Key Laboratory for Mesoscopic Physics, Beijing, China*

GP-03. Structure and magnetic properties of magnetically isotropic and anisotropic Nd-Fe-B permanent magnets prepared by spark plasma sintering technology. W. Liu[1], Y. Jiang[1], M. Yue[1], *D. Zhang*[1], J. Zhang[1] and X. Liu[2] *1. College of Material Scicence and Engineering, Beijing University of Technology, Beijing, China; 2. Center for the Physics of Materials and Department of Physics, McGill University, Montreal, QC, Canada*

GP-04. Studies of sintered MRE2Fe14B magnets (MRE=Y+Dy+Nd). *W. Tang*[1], Y. Wu[1], N.T. Oster[1], K.W. Dennis[1], M.J. Kramer[1], I.E. Anderson[1] and R.W. McCallum[1] *1. Ames Lab of DOE, Iowa State University, Ames, IA*

GP-05. Nitrogenation effect of NdFe10.5Mo1.5 alloys prepared by strip casting technique. *J. Han*[1], X. Kong[1], S. Liu[1], C. Wang[1], J. Yang[1,2], H. Du[1] and Y. Yang[1] *1. School of Physics, Peking University, Beijing, China; 2. State Key Laboratory for Mesoscopic Physics, Beijing, China*

GP-06. Coercivity enhancement of sintered Nd14.4Fe78.4Co1.3B5.9 magnets by dysprosium diffusion in grain boundaries of rapid solidification strips. *Y. Ding*[1], R.J. Chen[1], Z. Liu[1], A.R. Yan[1] and D. Lee[1] *1. Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

GP-07. Investigation on microstructure, texture, and magnetic properties of hot deformed NdFeB ring magnets. *A. Li*[1], W. Li[1], B. Lai[1], H. Wang[1], M. Zhu[1] and W. Pan[1] *1. Division of Functional Materials, Central Iron & Steel Research Institute, Beijing, China*

GP-08. Effect of Cu-addition and die-upset temperature on texture in die-upset Nd-lean Nd-Fe-B alloy. *H. Kwon*[1] and J. Yu[2] *1. Materials Science and Engineering, Pukyong National University, Busan, Korea, Republic of; 2. Korea Institute of Materials Science, Changwon, Korea, Republic of*

GP-09. In field magnetic domain observation of Nd-Fe-B thin films with different preparation conditions. *K. Sato*[1], M. Yuriko[1] and T. Shima[1] *1. Faculty of Engineering, Tohoku Gakuin University, Tagajo, Japan*

GP-10. Structure and magnetic properties of Nd-Fe-Cu thin films. *Y. Mishina*[1], T. Sato[2], N. Haruka[1], N. Oka[1] and T. Shima[1] *1. Faculty of Engineering, Tohoku Gakuin University, Tagajo, Japan; 2. Toyota Central R&D Labs., Nagakute, Japan*

GP-11. Magnetic properties of Ne-Fe-B thick film magnets prepared by using arc plasma. *M. Sahara*[1], K. Yamawaki[1], T. Yanai[1], M. Nakano[1] and H. Fukunaga[1] *1. Faculty of engineering, Nagasaki university, Nagasaki, Japan*

GP-12. Sweep rate dependence of the coercivity and fluctuation field in some RE-Fe(Co)-Al, RE = Nd or Pr, bulk amorphous ferromagnets. *S.J. Collocott*[1] *1. CSIRO Materials Science & Engineering, Lindfield, Sydney, NSW, Australia*

FRIDAY MORNING 8:00

EXHIBIT HALL C

Session GQ
CRITICAL PHENOMENA, SPIN GLASSES, AND FRUSTRATION (POSTER SESSION)
Pavel Lukashev, Chair

GQ-01. Anomalous Behavior of Thermodynamic Properties of MnAs During Phase Coexistence in a Magnetic First Order Transition. *S. Gama*[1], A. de Campos[2], A.A. Coelho[3], L.M. da Silva[2], A.G. Carvalho[4], F.G. Gandra[3], A.O. dos Santos[2], L.P. Cardoso[3], Y. Ren[5], D.E. Brown[6], P.J. von Ranke[7] and F. Garcia[8] *1. Dept. de Ciências Exatas e da Terra, Universidade Federal de São Paulo - Unifesp, Diadema, São Paulo, Brazil; 2. Centro de Ciências Sociais, Saúde e Tecnologia (CCSST), Universidade Federal do Maranhão, Imperatriz, Maranhão, Brazil; 3. Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas - Unicamp, Campinas, São Paulo, Brazil; 4. Divisão de Metrologia de Materiais, Instituto Nacional de Metrologia, Normalização e Qualidade Industrial, Duque de Caxias, Rio de Janeiro, Brazil; 5. X-Ray Science Division/XOR, Argonne National Laboratory, Argonne, IL; 6. Department of Physics, Northern Illinois University – NIU, DeKalb, IL; 7. Instituto de Física Armando Dias Tavares, Universidade do Estado do Rio de Janeiro - UERJ, Rio de Janeiro, Rio de Janeiro, Brazil; 8. Laboratório Nacional de Luz Síncrotron – LNLS, Campinas, São Paulo, Brazil*

GQ-02. T_C dependence on the demagnetization factor. Determination of the 'true' value of the Curie point T_C for ferromagnetic materials. *V.I. Zverev*[1], M.D. Kuz'min[3], Y. Mudryk[2], V.K. Pecharsky[2], K.A. Gschneidner[2] and A.M. Tishin[1] *1. Department of Physics, M.V. Lomonosov Moscow State University, Moscow, Russian Federation; 2. The Ames Laboratory U.S. Department of Energy, Iowa State University, Ames, IA; 3. Leibniz-Institut für Festkörper- und Werkstoffforschung, Drezden, Germany*

GQ-03. Magnetic phase separation and cluster spin-glass behavior in $LaMn_{1-x}Fe_xO_{3+y}$ *O.F. de Lima*[1], R.L. de Almeida[1], J.A. Coaquira[2] and S.K. Malik[3] *1. Instituto de Física, Universidade Estadual de Campinas - UNICAMP, Campinas, SP, Brazil; 2. Instituto de Física, Universidade de Brasília - UnB, Brasília, DF, Brazil; 3. Int. Center for Cond. Matter Phys. - ICCMP, Universidade de Brasília - UnB, Brasília, DF, Brazil*

GQ-04. Mg-doping effect on structural and magnetic properties on two-dimensional triangular lattice LiVO2. *Y. Li*[1], W. Wang[2], X. Li[2], L. Liu[2], A. Wang[3], N. Chen[2], Y. Liu[2], Q. Ma[2] and G. Cao[2] *1. Department of Engineering Science and Materials, University of Puerto Rico, Mayaguez Campus, Mayaguez; 2. Department of Physics, University of Science and Technology Beijing, Beijing, China; 3. Department of Physics, Capital Normal University, Beijing, China*

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GQ-05. Exchange bias in spin glass (Fe-Au)/NiFe thin films. *F. Yuan*[1], J. Lin[1] and S.F. Lee[1] *1. Physics, Acdemia Sinica, Taipei, Taiwan*

GQ-06. Exchange bias in Pt doped NiMn thick films. *Y. Oner*[1], M. Özdemir[2], S. Kazan[3], A. Basaran[3], B. Aktas[3] and T. Sato[4] *1. Department of Physics, Istanbul Technical University, Istanbul, Turkey; 2. Department of Physics,, Marmara University, Istanbul, Turkey; 3. Department of Physics, Gebze Advanced Technology, Kocaeli, Turkey; 4. Department of Instrumentation Engineering, Keio University, 3-14-1 Hiyoshi, Kohoku-ku,, Japan*

GQ-07. The geometrical frustration properties of the antiferromagnetic $Ni_{1-x}Fe_xGa_2S_4$ ($0.01 \le x \le 1$). *B. Myoung*[1], S. Kim[1], B. Lee[2] and C. Kim[1] *1. Physics, Kookmin University, Seoul, Korea, Republic of; 2. Physics, Hankuk University of Foreign Studies, Yongin, Kyungki, Korea, Republic of*

GQ-08. Thermomagnetic Irreversibility and Magnetic Short Range Ordering in Mn2.5Co0.5O4 Tetragonal Spinel Thin Films. *K. Kuo*[1], G. Chern[1], Y.Y. Li[2] and C.R. Wang[3] *1. Taiwan Spin Research Center and Department of Physics, National Chung Cheng University, Chia-Yi 621, Taiwan; 2. Department of Chemical Engineering, National Chung Cheng University, Chia-Yi 621, Taiwan; 3. Department of Physics, National Tunghai University, Taichung 407, Taiwan*

GQ-09. Exchange bias associated with magnetic glass state in Gd5Ge4. *S. Yuan*[1], F. Hong[1], J. Ge[1], S. Cao[1], L. Yu[1], A. Wu[2] and J. Xu[2] *1. Department of Physics, Shanghai University, Shanghai, China; 2. Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China*

GQ-10. Stripe Clusters in the Dipolar Ising Model. *A.B. MacIsaac*[1] *1. Dept. of Applied Mathematics, University of Western Ontario, London, ON, Canada*

GQ-11. Critical behavior of perovskite manganite $La_{0.7}Ca_{0.3}Mn_{0.95}Cu_{0.05}O_3$ *T. Phan*[1], P. Thanh[1,2], N. Sinh[2], K. You[1] and S. Yu[1] *1. Chungbuk National University, Cheongju, Korea, Republic of; 2. Hanoi University of Natural Science, Hanoi, Viet Nam*

GQ-12. Critical phenomena of roughness with respect to external magnetic field in ultrathin ferromagnetic film. *K. Lee*[1], C. Lee[2], Y. Cho[2], S. Seo[2] and S. Choe[1] *1. Center for Subwavelength Optics and School of Physics and Astronomy, Seoul National University, Seoul, Korea, Republic of; 2. Samsung Advanced Institute of Technology, Suwon, Korea, Republic of*

GQ-13. First-principles calculation on the Curie temperature of GdFeSi. *X. Liu*[1] and Z. Altounian[1] *1. physics department, McGill University, Montreal, QC, Canada*

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GQ-14. Study of the size effect in nanoparticles systems of [Fe (NH2-trz)3](Br)2.3H2O spin crossover compound. *A. Rotaru*[1,2], J. Linares[1], F. Varret[1], A. Stancu[2], J. Létard[3], T. Forestier[3] and C. Etrillard[3] *1. GEMaC, University of Versailles et Saint Quentin en Yvelines, Versailles, Yvelines, France; 2. Departement of Physics, Faculty of Physics, "Alexandru Ioan Cuza" University, Iasi, Iasi, Romania; 3. ICMCB, Bordeaux I University, Bordeaux, France*

GQ-15. Magnetic structure and spin reorientation in antiferromagnetic NdFeO3. *M.K. Singh*[1], H.M. Jang[2] and R.S. Katiyar[1] *1. Physics, University of Puerto Rico, San Juan, Puerto Rico, San Juan; 2. Department of Material Science, Pohang University of Science and Technology, Pohang, Korea, Republic of*

GQ-16. Bose-Einstein condensation of magnons confined to a nanoparticle. *P.R. Johnson*[1], E. Della Torre[2], L.H. Bennett[2] and R.E. Watson[3] *1. American University, Washington, DC; 2. ECE, George Washington University, Washington, DC; 3. Brookhaven National Laboratory, Upton, NY*

FRIDAY MORNING 8:00 — EXHIBIT HALL C

Session GR
NANOPARTICLES FOR BIOMEDICINE (POSTER SESSION)
Sara Majetich, Chair

GR-01. Detecting Magnetic Nanoparticles Developed for Use as Viral Surrogates. *(Invited)* *E. Stump*[1], R. Wickramasinghe[1], M. Gutierrez-Padilla[2], J. Pellegrino[2], R.J. Usselman[3], S.E. Russek[3], T. Douglas[4] and M. Young[4] *1. MAST Center, Colorado State University, Fort Collins, CO; 2. Mechanical Engineering, University of Colorado, Boulder, CO; 3. Electromagnetics, National Institute of Standards and Technology, Boulder, CO; 4. Chemistry, Montana State University, Bozeman, MT*

GR-02. Self-heating Properties Under AC Magnetic Field and Their Evaluation by AC/DC Hysteresis Loops of NiFe2O4 Nanoparticles. *H. Kobayashi*[1], A. Hirukawa[1], A. Tomitaka[1], T. Yamada[1], M. Jeun[2], S. Bae[2] and Y. Takemura[1] *1. Yokohama National University, Yokohama, Japan; 2. National University of Singapore, Singapore, Singapore*

GR-03. Magnetic properties of M (M = Mn, Fe, Co, Ni) substituted ZnFe2O4 nanoparticles synthesized in polyol as potential heating mediators for hyperthermia. *H. Basti*[1,2], S. Ammar[1], F. Chau[1], L. Ben Tahar[2], L. Smiri[2], J. Carey[3] and S. Benderbous[4] *1. ITODYS, University Paris 7, Paris, France; 2. Chemistry department, Faculty of Science of Bizerte, Zarzouna, Tunisia; 3. LPCNO, INSA of Toulouse, Toulouse, France; 4. LBPM, University Paul Sabatier, Toulouse, France*

GR-04. Temperature control of hyperthermia implant resonant by changing excitation frequency of MRI. *M. Shimizu*[1], T. Yamada[1], Y. Takemura[1], T. Niwa[2] and T. Inoue[3] *1. Yokohama National University, Yokohama, Japan; 2. Kanagawa Children's Medical Center, Yokohama, Japan; 3. Yokohama City University, Yokohama, Japan*

GR-05. Structure of the Multicoil Exciting System by Using Dual Frequencies for Functional Hyperthermia. *K. Furiya*[1], T. Takura[2], T. Sato[1], F. Sato[2] and H. Matsuki[1] *1. Graduate School of Biomedical Engineering,Tohoku University, Sendai, Miyagi, Japan; 2. Graduate School of Engineering,Tohoku University, Sendai, Miyagi, Japan*

GR-06. Optimal design of magnetic coils for focused hyperthermia.S. Ho[1], *S. Niu*[1] and W. Fu[1] *1. The Hong Kong Polytechnic University, Hong Kong, China*

GR-07. Magnetic Trap Effects on a Nanowires's Dynamics within Capillary Blood Flow. *M. Pavel*[1,2], R. Tanasa[1] and A. Stancu[1] *1. Department of Physics, "Alexandru Ioan Cuza" University of Iasi, Iasi, Romania; 2. Faculty of Medicine, "Gr. T. Popa" University of Medicine and Pharmacy, Iasi, Romania*

GR-08. Embedding of Magnetic Nanoparticles in Polycaprolactone Nanofiber Scaffolds to Facilitate Bone Healing and Regeneration. *J.T. Kannarkat*[1,2], J. Battogtokh[2,3], J. Philip[2,3], O.C. Wilson[4] and P.M. Mehl[2,3] *1. Thomas Jefferson High School for Science and Technology, Alexandria, VA; 2. Vitreous State Laboratory, The Catholic University of America, Washington, DC; 3. Physics Department, The Catholic University of America, Washington, DC; 4. Biomedical Engineering, The Catholic University of America, Washington, DC*

GR-09. Two-Component Magnetic Structure of Iron Oxide Nanoparticles Mineralized in Listeria Innocua Protein Cages. *R.J. Usselman*[1], M.T. Klem[2,3], M. Young[2,4], T. Douglas[2,3], S. Russek[1] and R. Goldfarb[1] *1. Magnetics Group, NIST, Boulder, CO; 2. Center for Bio-inspired Nanomaterials, Montana State University, Bozeman, MT; 3. Chemistry and Biochemistry, Montana State University, Bozeman, MT; 4. Plant Science, Montana State University, Bozeman, MT*

GR-10. Prussian Blue Coated Nanoparticles. *F.N. Radwan*[1] and E.E. Carpenter[1] *1. Chemistry, Virginia Commonwealth University, Richmond, VA*

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GR-11. Organosilica particles technology as a novel surface engineering for magnet particles. *M. Nakamura*[1] and K. Ishimura[1] *1. Department of Anatomy and Cell Biology, The University of Tokushima Graduate School, Tokushima, Tokushima, Japan*

FRIDAY MORNING 8:00 **EXHIBIT HALL C**

Session GS
BIOMEDICAL APPLICATIONS (POSTER SESSION)
Manuel Vazquez, Chair

GS-01. Whole-Heart Magnetic Resonance Coronary Angiography (WH MRCA) with Multi-Breath-Hold Imaging and Automatic Breathing Level Tracking. *S. Kuhara*[1], A. Ninomiya[1], T. Okada[2], T. Kamae[2] and K. Togashi[2] *1. MRI Systems Develop Department, Toshiba Medical Systems Corporation, Otawara-shi, Tochigi, Japan; 2. Department of Diagnostic Radiology, Kyoto University Hospital, Kyoto, Japan*

GS-02. The noise rejection method for magnetocardiogram using wavelet transformation and independent component analysis. *K. Kobayashi*[1], M. Yoshizawa[1] and Y. Uchikawa[2] *1. Faculty of Engineering, Iwate University, Morioka, Iwate, Japan; 2. School of Science and Engineering, Tokyo Denki University, Hikigun, Saitama, Japan*

GS-03. The Method of Instant Amplification of the MCG&MEG Signals. *R. Sklyar*[1] *1. Independent researcher, Lviv, Ukraine*

GS-04. Visualization of the sensitivity of the MEG sensor array based on the 3-D modeling of cortical surface and volume conductor. *S. Iwaki*[1] *1. Natinal Institute of Advanced Industrial Sc ience and Technology (AIST), Ikeda, Osaka, Japan*

GS-05. Beamformer for Simultaneous MEG and EEG analysis. *S.H. Ko*[1] and S.C. Jun[1] *1. Information & Communications, Gwangju Institute of Science and Technology, Gwangju, Korea, Republic of*

GS-06. Efficiency test of filtering methods for the removal of TMS artifacts on human electroencephalography with artificially TMS-corrupted signals. N.A. Zilber[1,2], Y. Katayama[3], *K. Iramina*[2,3] and W. Erich[1] *1. Lehrstuhl für Medizintechnik, Fakultät Maschinenwesen, Technische Universität München, Munich, Germany; 2. Graduate School of Systems Life Sciences, Kyushu University, Fukuoka, Japan; 3. Department of Informatics, Graduate School of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan*

GS-07. Effect of the stimulus frequency and pulse number of rTMS on the inter-reversal time of perceptual reversal on the right SPL.K. Nojima[1], S. Ge[2], Y. Katayama[3], S. Ueno[4] and *K. Iramina*[1,3] *1. Graduate School of Systems Life Sciences, Kyushu Univercity, Fukuoka, Japan; 2. Graduate School of Information Science and Electrical Engineering, Kyushu Univercity, Fukuoka, Japan; 3. Department of Informatics, Graduate School of Information Science and Electrical Engineering, Kyushu Univercity, Fukuoka, Japan; 4. Department of Applied Quantum Physics, Graduate School of Engineering, Kyushu Univercity, Fukuoka, Japan*

GS-08. Dosimetry of typical transcranial magnetic stimulation devices.M. Lu[1] and *S. Ueno*[2] *1. Institute of Biophysics and Biomedical Engineering, Faculty of Sciences, University of Lisbon, Lisbon, Portugal; 2. Department of Applied Quantum Physics, Graduate School of Engineering, Kyushu University, Fukuoka, Japan*

GS-09. Effect of Transcranial Magnetic Stimulation on Isotonic Finger Muscle Contraction. *M. Odagaki*[1], H. Fukuda[1] and O. Hiwaki[1] *1. Hiroshima City University, Hiroshima, Japan*

GS-10. Influence of Pulsed Electromagnetic field on the Rat Basophilic Leukemia Cell. *S. Shin*[1], D. Hwang[2], E. Chung[1], J. Bang[1], S. Choi[3], J. Choi[2], G. Cho[2], Y. Park[3], T. Jang[2], S. Lee[2] and S. Kim[2] *1. biotechnology, Sangji university, Wonju, Korea, Republic of; 2. Oriental Medical Engineering, Sangji university, Wonju, Korea, Republic of; 3. Nuga Oriental Medical Instrument Research Center, Nuga CO. LTD.., Wonju, Korea, Republic of*

GS-11. Effects of static magnetic fields on light scattering in red chromatophore of gold fish scale. *M. Iwasaka*[1] *1. Chiba University, Chiba, Japan*

GS-12. Magnetic resonance imaging of sub-pixel structures. *M. Takeuchi*[1], D. Kim[2], M. Sekino[2], H. Ohsaki[2], S. Ueno[3] and N. Iriguchi[1] *1. Department of Science and Technology, Kumamoto University, Kumamoto, Japan; 2. Department of Advanced Energy,Graduate School of Frontier Sciences, University of Tokyo, Chiba, Japan; 3. Department of Applied Quantum Physics,Graduate School of Engineering, Kyushu University, Fukuoka, Japan*

GS-13. High-resolution microcoil 1H-NMR of magnetic microparticles for bio-imaging applications. *A.E. Baldwin*[1,2], R.J. Usselman[2], Y. Nakashima[3], S.E. Russek[2] and J. Moreland[2] *1. Physics, Kalamazoo College, Kalamazoo, MI; 2. EEEL, Electromagnetics Division, NIST, Boulder, CO; 3. Department of Applied Science for Electronics and Materials, Kyushu University, Fukuoka, Japan*

GS-14. High Magnetization Aqueous Ferrofluid as a MRI Contrast Agent: A Simple One-Step Synthesis.K.J. Carroll[1], *M.D. Shultz*[2], P.P. Fatouros[2] and E.E. Carpenter[1] *1. Chemistry, Virginia Commonwealth University, Richmond, VA; 2. Radiology, Virginia Commonwealth University, Richmond, VA*

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GS-15. Multifunctional doxorubicin/superparamagnetic iron oxide encapsulated Pluronic F127 micelles for chemotherapy/MR imaging. *P. Lai*[1] and Y. Chang[1] *1. Chemistry, National Chung Hsing University, Taichung, Taiwan*

GS-16. Formulation of Iron Oxides by Nanoparticles of Biodegradable polymer PLA-TPGS for MRI. *P. Chandrasekharan*[1], D. Maity[2], Y. Chang-Tong[3], C. Kai-Hsiang[3], J. Ding[2] and S. Feng[1] *1. Department of Chemical and Biomolecular Engineering, National University of Singapore, Singapore, Singapore; 2. Department of Material Science and Engineering, National University of Singapore, Singapore, Singapore; 3. Singapore Bioimaging Consortium, Biopolis, Singapore, Singapore*

FRIDAY MORNING 8:00 **EXHIBIT HALL C**

Session GT
MAGNETIC FLUIDS AND SEPARATIONS (POSTER SESSION)
Cindi Dennis, Chair

GT-01. Experimental Characterization of Thermal Conductance Switching in Magnetorheological Fluids under Magnetic Fields. *G. Cha*[1], L.A. Ahure[2], N. Wereley[2] and Y. Ju[1] *1. UCLA, Los Angeles, CA; 2. University of Maryland, College Park, MD*

GT-02. Magnetorheology and sedimentation behavior of an aqueous suspension of surface modified carbonyl iron particles. *H.B. Cheng*[1,2], L. Zou[1], J.H. Song[1], Q.J. Zhang[1] and N.M. Wereley[2] *1. State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan, China; 2. Smart Structures Laboratory, Dept. of Aerospace Engineering, University of Maryland, College Park, MD*

GT-03. Magnetoviscosity measurements of cobalt ferrite ferrofluids by means of complex magnetic susceptibility. *J.A. Tafur-Bermúdez*[1], C. Barrera[2], C. Rinaldi[2] and E.J. Juan[1] *1. Electrical and Computer Engineering, UPR-Mayagüez, Mayagüez; 2. Chemical Engineering, UPR-Mayagüez, Mayagüez*

GT-04. Equilibrium Shapes of Ferrofluid Under Different Forces Using Continuum Shape Sensitivity and Level Set Method. *Y. Kim*[1] and I. Park[1] *1. School of Information and Communication Engineering Sungkyunkwan University, Suwon, Kyeonggi-do, Korea, Republic of*

GT-05. Morphological study of magnetic fluid droplets on patterned magnetic thin films. *M. Lai*[1], C. Lee[1], S. Yang[2], H. Chang[2] and H. Chen[1] *1. Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*

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GT-06. Visualization of magnetic micro-particles in liquid and control of their motion using dynamic magnetic field. *S. Tokura*[1,2], M. Hara[1], N. Kawaguchi[1], J. Izawa[1] and N. Amemiya[2] *1. Research Laboratory, IHI Corporation, Yokohama, Japan; 2. Department of Electrical Engineering, Kyoto University, Kyoto, Japan*

GT-07. Magnetic particle microseparator made of magnetic films. *Z. Wei*[1] and C. Lee[2] *1. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Hsinchu, Taiwan*

GT-08. A ferrofluid-based neural network: design of an analogue associative memory.R. Palm[1] and *V. Korenivski*[1] *1. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden*

GT-09. Temperature dependence of magnetic susceptibility of the assembly of magnetite nanoparticles. *S.A. Kunikin*[1] and Y.I. Dikansky[1] *1. General Physics, Laboratory of magnetic nanomaterials, Stavropol state university, Stavropol, Stavropol, Russian Federation*

GT-10. One-step synthesis of well-dispersed iron oxide nanoparticles and their magnetic properties. *C. Lin*[1], T. Tsai[2], S. Lu[1] and S. Chen[2] *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University, Yung-Kang, Taiwan; 2. Department of Electronic Engineering, Southern Taiwan University, Yung-Kang, Taiwan*

GT-11. Withdrawn

GT-12. Silica coated magnetic nanoparticles for separation of nuclear acidic waste. *H. Han*[1], J. Kaczor[2], M. Kaur[1], A. Johson[2], A. Paszczynski[2] and Y. Qiang[1] *1. Department of Physics and Environmental Science Program, University of Idaho, Moscow, ID; 2. Environmental Biotechnology Institute, University of Idaho, Moscow, ID*

FRIDAY MORNING 8:00 **EXHIBIT HALL C**

Session GU

INSTRUMENTATION AND MEASUREMENT TECHNIQUES (POSTER SESSION)

Joe Davies, Chair

GU-01. Observation of In Plane Magnetization Reversal Using Polarization Dependent Magnetooptical Kerr Effect. *H. Ohldag*[1] and F.U. Hillebrecht[2] *1. SSRL, Stanford University, Menlo Park, CA; 2. Institute fuer Festkoerperforschung, Forschungszentrum Juelich, Juelich, Germany*

GU-02. On-wafer probe method for CIPT measurements. *T. Cecil*[1], W. Rippard[1] and S. Russek[1] *1. Electromagnetics Division, National Insitute of Standards and Technology, Boulder, CO*

GU-03. Magnetic response vs. lift height of thin ferromagnetic films. *G. Burch*[2], T. Schulz[1], D. Dahlberg[1] and A. Kunz[3] *1. Physics, University Of Minnesota, Minneapolis, MN; 2. Physics, University Of California Berkeley, Berkeley, CA; 3. Physics, Marquette University, Milwaukee, WI*

GU-04. Generalized measurement method for the determination of the dynamic behavior of magnetic materials in any magnetization state. *J.E. Lezaca*[1], P. Quéffélec[1] and A. Chevalier[1] *1. Electronique, University of Brest - CNRS, URM 3192 - Lab-STICC, Brest, Bretagne, France*

GU-05. Characterization of coupled novel magnetic multilayers with Anomalous Hall effect. *S. Wong*[1], K. Srinivasan[1], R. Law[1], E. Tan[1], H. Tan[1], R. Sbiaa[1] and S. Piramanayagam[1] *1. (A*STAR) Agency for Science Technology and Research, Data Storage Institute, Singapore, Singapore*

GU-06. A versatile diffractometer for soft X-rays: ALICE@BESSY. *S. Buschhorn*[1], F. Brüssing[1], F. Radu[1], R. Abrudan[1] and H. Zabel[1] *1. Experimentalphysik IV, Ruhr - Universität Bochum, Bochum, Germany*

GU-07. Design assessments of a refined DC magnetron sputter with multiple magnetron arrangements. *C. Liu*[1], M. Lai[1] and C. Hwang[2] *1. Electrical Engineering, National Sun Yat-sen University, Kaohsuing, Taiwan; 2. Electrical Engineering, Feng Chia University, Taichung, Taiwan*

GU-08. Parameters Extraction of Ferrite EMI Suppressors for PCB Applications. *A.B. Menicanin*[1], M.S. Damnjanovic[2] and L.D. Zivanov[2] *1. Institute for Multidisciplinary Research, Belgrade, Serbia; 2. Faculty of Technical Science, Novi Sad, Serbia*

GU-09. AC magnetic property measurements on cobalt ferrite for sensor applications. *N. Ranvah*[1], I.C. Nlebedim[1], Y. Melikhov[1], J.E. Snyder[1], A.J. Moses[1], P.I. Williams[1] and D.C. Jiles[1] *1. Wolfson Centre for Magnetics, Cardiff University, Cardiff, Wales, United Kingdom*

GU-10. Deducing Local Field Values From Large Sense Coil Fluxmeter Measurements Using Semi-Orthogonal Compactly Supported Spline Wavelets.S. Abd-El-Hafiz[1] and *A. Adly*[2] *1. Eng. Mathematics Dept., Cairo University, Giza, Egypt; 2. Elect. Power and Machines Dept., Cairo University, Giza, Egypt*

GU-11. Influence of creep-fatigue on dynamic coercivity in 9Cr-1Mo ferritic steel. *C. Kim*[1] and I. Park[2] *1. Engineering Science and Mechanics, Pennsylvania State University, State College, PA; 2. Mechanical Engineering, Seoul National University of Technology, Seoul, Korea, Republic of*

GU-12. Computer simulation of the apparent image effect in closed-circuit magnetic measurements. *C.H. Chen*[1], C.D. Graham[2], A. Wangler[1], A.K. Higgins[1], B.K. Pugh[1] and R.M. Strnat[3] *1. University of Dayton Research Institute, Dayton, OH; 2. University of Pennsylvania, Philadelphia, PA; 3. Magnet-Physics Inc., Fishers, IN*

GU-13. Relaxation of Polymer Coated Fe_3O_4 Magnetic Nanoparticles in Aqueous Solution. *S. Keshavarz*[1], Y. Xu[2], S. Hrdy[1], C. Lemley[2], T. Mewes[1] and Y. Bao[2] *1. MINT Center/Department of Physics and Astronomy, University of Alabama, Tuscaloosa, AL; 2. MINT Center/Department of Chemical and Biological Engineering, University of Alabama, Tuscaloosa, AL*

GU-14. Determination of forces between biomolecules in solution by magneto-optical transmittance of bio-functionalized superparamagnetic particles. *S. Park*[1,2], P. Ko[3] and A. Sandhu[1] *1. Quantum Nanoelectronics Research Center, Tokyo Institute of Technology, Tokyo, Japan; 2. Tokyo Tech Global COE Program on Evolving Education and Research Center For Spatio-Temporal Biological Network, Tokyo Institute of Technology, Tokyo, Japan; 3. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Tokyo, Japan*

GU-15. Frequency dependence of the soil susceptibility – measurement and compensation.P. Ripka[1] and *M. Janosek*[1] *1. Dpt. of Measurement, Czech Technical University in Prague, FEE, Praha 6, Czech Republic*

GU-16. Experimental evidence of field-induced localization of spin excitations in NiFe elliptical rings by micro-focused Brillouin light scattering. *(Invited)* *M. Madami*[1], F. Montoncello[2], G. Capuzzo[2], L. Giovannini[2], F. Nizzoli[2], G. Gubbiotti[1], S. Tacchi[1], G. Carlotti[1,2], H. Tanigawa[3] and T. Ono[3] *1. Dipartimento di Fisica, CNISM, Perugia, Perugia, Italy; 2. Dipartimento di Fisica, Università di Perugia, Perugia, Perugia, Italy; 3. Institute for Chemical Research, University of Kyoto, Uji, Kyoto, Japan*

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FRIDAY MORNING 8:00

EXHIBIT HALL C

Session GV
MACHINE MODELING AND ANALYSIS (POSTER SESSION)

Francis Dawson, Co-Chair
Andy Knight, Co-Chair

GV-01. Electrical motor characteristics by numerical electromagnetic field calculation methods. *K. Fujisaki*[1], S. Satoh[2] and M. Enokizono[3] *1. Technical development bureau, Nippon Steel Corporation, Futtsu-city, Chiba-prefecture, Japan; 2. N-Tec Ohita Corp., Ohita-city, Ohita-prefecture, Japan; 3. Department of Electrical and Electronics Engineering, Oita University, Ohita-city, Ohita-prefecture, Japan*

GV-02. Use of the external magnetic field to determine some induction machine parameters. J. Brudny[1,2], J. Lecointe[1,2], *F. Morganti*[1,2] and R. Romary[1,2] *1. Univ Lille Nord de France, F-5900 Lille, France; 2. LSEE, UArtois, F-62400 Béthune, France*

GV-03. Comprehensive mathematical model of permanent magnet synchronous machine incorporating both structural and saturation saliencies. *Y. Wang*[1], N. Duan[2], J. Zhu[1], S. Wang[2], Y. Guo[1], W. Xu[1] and Y. Li[1] *1. Faculty of Engineering and Information Technology, University of Technology, Sydney, Broadway, NSW, Australia; 2. Faculty of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China*

GV-04. Initial rotor position and magnetic polarity identification of PM synchronous machine based on nonlinear machine model and finite element analysis. *Y. Wang*[1], N. Duan[2], J. Zhu[1], S. Wang[2], Y. Guo[1], W. Xu[1] and Y. Li[1] *1. Faculty of Engineering and Information Technology, University of Technology, Sydney, Broadway, NSW, Australia; 2. Faculty of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China*

GV-05. Axial vibration study of a mobile fan motor. C. Wang[1], *Y. Yao*[2], K. Liang[3], C. Huang[3], Y. Chang[3] and D. Lowther[4] *1. Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan; 2. nstitute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan; 3. Energy and Environment Research Laboratories, Industrial Technology Research Institute, Hsinchu, Taiwan; 4. Department of Electrical & Computer Engineering, McGill University, Montreal, QC, Canada*

GV-06. Interaction Body Force Field and Mechanical Deformation in Soft Magnetic Materials Employing Equivalent Magnetizing Sources and Virtual Air-gap Scheme. *S. Lee*[1], Y. Kim[2] and S. Choi[2] *1. School of Electrical Eng. and Computer Science, Kyungpook National University, Daegu, Korea, Republic of; 2. School of Information and Communication Engineering, Sungkyunkwan University, Suwon, Korea, Republic of*

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GV-07. A Magnetostrictive force Analysis of Large Scale Motor by a Strong Magneto-Mechanical Coupling Formulation. *P. Shin*[1], H. Cheung[1], H. Chung[1] and C. Koh[2] *1. Eelectrical Engineering, Hongik University, Jochiwon, Chungnam, Korea, Republic of; 2. Electrical and Computer Eng., Chungbuk National University, CheongJu, Chungbuk, Korea, Republic of*

GV-08. Effect of compressive stress in thickness direction on iron losses of non-oriented electrical steel sheet. *D. Miyagi*[1], Y. Aoki[1], M. Nakano[1] and N. Takahashi[1] *1. Okayama University, Okayama, Japan*

GV-09. An adaptive equivalent circuit modeling method for eddy current driven electromechanical system. *W. Li*[1] and C. Koh[1] *1. electrical engineering, Chungbuk national university, Cheongju, Korea, Republic of*

GV-10. An extended B-H curve modeling of 2D magnetic properties of silicon steel and its influences on motor performances. *H. Yoon*[1], P. Shin[2] and C. Koh[1] *1. Chungbuk National University, Cheongju, Korea, Republic of; 2. Hongik University, Jochiwon, Korea, Republic of*

GV-11. Study on reduction cogging torque of interior permanent magnet synchronous motor considering tapping the rotor and barrier flux angle using response surface method. *C. Jin*[1], J. Bae[1], I. Jang[1], S. Kim[1] and J. Lee[1] *1. Electrical Engineering, Hanyang University, Seoul, Korea, Republic of*

GV-12. Novel Memetic Algorithm implemented with GA(Genetic Algorithm) and MADS(Mesh Adaptive Direct Search) for Optimal Design of Electromagnetic System. *Y. Ahn*[1], J. Park[1], C. Lee[2] and S. Jung[1] *1. Depratment of Electrical Engineering, Dong-A University, Busan, Korea, Republic of; 2. Depratment of Electrical Engineering, Dong-Eui University, Busan, Korea, Republic of*

GV-13. Optimal Design of Permanent Magnetic Actuators by Parallel Genetic Algorithm for Medium Voltage Circuit Breakers. *K. Park*[1] and S. Hahn[1] *1. Electrical engineering, Dong-A University, Busan, Korea, Republic of*

GV-14. Optimization of Permanent Magnet Surface Shape for Minimization of Cogging Torque by Using FEM and Genetic Algorithm.S. Ho[1], *N. Chen*[1] and W. Fu[1] *1. Electrical Engineering Departement, Hong Kong polytechnic University, Hung Hom, Kowloon,Hong Kong, China*

GV-15. Optimal design of permanent magnet segmentation and conductive shields in high-speed machines using network-field coupled multislice time-stepping finite-element method.S. Ho[1], *S. Niu*[1] and W. Fu[1] *1. The Hong Kong Polytechnic University, Hong Kong, China*

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FRIDAY MORNING 8:00

EXHIBIT HALL C

Session GW
POWER AND CONTROL MAGNETICS (POSTER SESSION)
Jian Guo Zhu, Chair

GW-01. Characteristic Analysis of EM-PM Hybrid Levitation and Propulsion Device for Magnetically Levitated Vehicle. *H. Cho*[1], H. Han[1], J. Lee[1], K. Rho[1] and S. Sung[2] *1. Dept. Magnetic Levitation and Linear Drive, Korea Institute of Machinery and Materials, Daejeon, Korea, Republic of; 2. Dept. of Ocean Engineering Research, Korea Ocean Research & Development Institute, Daejeon, Korea, Republic of*

GW-02. Dynamic and experiment performance of linear switched reluctance machine with inductance variation according to airgap length. *J. Park*[1], S. Jang[1], J. Choi[1], I. Kim[2] and S. Sung[1] *1. Electrical Engineering, Chungnam National University, Daejeon, Korea, Republic of; 2. Hoseo University, Asan, Korea, Republic of*

GW-03. Comparison and analysis on performances and parameters of interior PM motor with distributed windings according to slot/pole combination for high performance sensorless drive applications. *J. Choi*[1], K. Ko[1] and S. Jang[1] *1. Chungnam National University, Dae-jeon, Korea, Republic of*

GW-04. Compact model of a slotless tubular linear generator for renewable energy performance assessments.C. Lin[1], *C. Liu*[1] and C. Hwang[2] *1. Electrical Engineering, National Sun Yat-sen University, Kaohsuing, Taiwan; 2. Electrical Engineering, Feng Chia University, Taichung, Taiwan*

GW-05. Improved Model for Inductive Switching Devices in Power Systems. *A.E. Umenei*[1], Y. Melikhov[1] and D.C. Jiles[1] *1. Wolfson Centre for Magnetics, Cardiff University, Cardiff, United Kingdom*

GW-06. Utilizing Magnetic Shape Memory Materials in Power Harvesting Applications.C. Visone[1], D. Davino[1] and *A. Adly*[2] *1. Dept. of Engineering, University of Sannio, Benevento, Italy; 2. Elect. Power and Machines Dept., Cairo University, Giza, Egypt*

GW-07. A Novel Traveling Wave Induction Heating System with Magnetic Slot Wedges and The Corresponding Finite-Element Analysis of Eddy Currents and Temperature Distributions.J. Wang[1], *S. Ho*[1], W. Fu[1] and Y. Wang[2] *1. Electrical Engineering, Hong Kong Polytechnic University, Kowloon, Hong Kong, China; 2. Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei Univ of Technology, Tianjin, China*

GW-08. Asymmetrical Arrangement of Coils in an Induction Cooker to Achieve Uniform Heat Distribution. *Z. Shi*[1], K. Cheng[1] and W. Xu[2] *1. Electrical Engineering, Hong Kong Polytechnic University, Hong Kong, Hong Kong, China; 2. Engineering and Information Technology, University of Technology, Sydney, Sydney, NSW, Australia*

GW-09. A Hybrid Hysteresis Model of Soft Magnetic Composite Based on Neural Networks. *H. Lu*[1], Y. Guo[1] and J. Zhu[1] *1. Engineering and Information Technology, University of Technology, Sydney, Sydney, NSW, Australia*

GW-10. Magnetic Measurement of Soft Magnetic Composite Material by an Improved 3D Tester with Flexible Excitation Coils and Novel Sensing Coils. *Y. Li*[1,2], J. Zhu[2], Q. Yang[1], Z.W. Lin[2], Y. Guo[2], Y. Wang[2] and W. Xu[2] *1. Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, Tianjin, Tianjin, China; 2. School of Electrical, Mechanical and Mechatronic Systems, University of Technology, Sydney, Sydney, NSW, Australia*

GW-11. Approximate Optimization for Minimum Torque ripple of Three Phase Switched Reluctance Motor Using Response Surface Modeling. *J. Choi*[1], Y. Chun[1], P. Han[1], D. Koo[1] and J. Lee[2] *1. Electric Motor Research Center, Korea Electrotechnology Research Institute, Changwon Si, Gyeongsangnam-Do, Korea, Republic of; 2. Department of Electrical Engineering, Hanyang University, Seoul, Korea, Republic of*

GW-12. Reduction design of vibration and noise in IPMSM type ISG for HEV.J. Jung[1], *S. Lee*[1], G. Lee[1], J. Hong[1], D. Lee[2] and K. Kim[3] *1. Automotive Engineering, Hanyang University, Seoul, Korea, Republic of; 2. Motor R&D Center, S&T Daewoo, Busan, Korea, Republic of; 3. HEV System Engineering Team, Hyundai-Kia Motors, Hwaseong, Korea, Republic of*

GW-13. Magnetic field analysis according to winding disposition for the transformer of distributed high speed train. *B. Park*[1] and D. Hyun[1] *1. Hanyang Univ., Seoul, Korea, Republic of*

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FRIDAY MORNING 8:00

EXHIBIT HALL C

Session GX

EMI AND COMPUTATIONAL ELECTROMAGNETICS (POSTER SESSION)

Ichiro Sasada, Chair

GX-01. Temperature Distribution of Power Transformer by Coupled Electromagnetic-Thermal Analysis. *H. Ahn*[1], Y. Oh[2] and S. Hahn[1] *1. Dept. of EE, Dong-A University, Busan, Korea, Republic of; 2. Korea Electrotechnology Research Institute, Changwon, Korea, Republic of*

GX-02. Development of Two-Transistor Forward Converter for New-Polymer-bonded Magnetic Transformer. *K. Ding*[1] and K. Cheng[1] *1. Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

GX-03. Effect of Core Magnetic Properties Degradation on Hot Spot Temperature of Aged Oil-Cooled Transformers. J.H. Shazly[2] and *A. Adly*[1] *1. Elect. Power and Machines Dept., Cairo University, Giza, Egypt; 2. Dept. of Elect. Eng., Fayoum University, Fayoum, Egypt*

GX-04. Transient Analysis and Control of Bias Magnetic State in the Transformer of an On-Line PWM Switching Full Bridge DC-DC Converter. J. Chen[1], S. Ho[2], *W. Fu*[2], J. Zhu[3], Y. Guo[3] and Z. Zhang[1] *1. College of Electromechanical Engineering, DongHua University, Shanghai, 201620, China; 2. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China; 3. Faculty of Engineering, University of Technology, Sydney, NSW, Australia*

GX-05. The validation of inductive power-transformer design evaluation method by measuring impedance. *K. Han*[1,2], B. Lee[2] and S. Baek[1] *1. Electrical Engineering Department, Dongguk University, Seoul, Korea, Republic of; 2. Vehicle Dynamics & Propulsion System Research Department, Korea Railroad Research Institute, Uiwang, Kyeonggi-do, Korea, Republic of*

GX-06. Stray Capacitances with Voltage Distribution Characteristics in Planar Transformer with Matrix Structure and Magnetic Core of Iron-base Nanocrystal Material. *J. Lou*[1], D. Liang[1], Y. Chen[1] and L. Gao[1] *1. Electrical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China*

GX-07. The Influence of Conductive Layer Geometry on Maximal Impedance Frequency Shift of Zig-zag Ferrite EMI Suppressor. M.S. Damnjanovic[1], L.D. Zivanov[1], G.M. Stojanovic[1] and *A.B. Menicanin*[2] *1. Faculty of Technical Sciences, Novi Sad, Serbia; 2. Institute for Multidisciplinary Research, Belgrade, Serbia*

GX-08. High quality factor Ni-Zn Ferrite Planar Inductor. *J. Lee*[1], Y. Hong[1], S. Bae[1], J. Park[1], J. Jalli[1], G.S. Abo[1], B. Choi[3] and G.W. Donohoe[2] *1. Department of Electrical and Computer Engineering, MINT Center, University of Alabama, Tuscaloosa, AL; 2. Department of Physics and Astronomy, University of Victoria, Victoria, BC, Canada; 3. Department of Electrical and Computer Engineering, University of Idaho, Moscow, ID*

GX-09. GHz sandwich strip inductors based on Fe-N films.A. Gromov[1] and *V. Korenivski*[1] *1. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden*

GX-10. Realization of Open-Type Magnetically Shielded Room Combined with Square Cylinders Made of Magnetic and Conductive Materials for MRI. *S. Hirosato*[1], Y. Keita[1], H. Yu[4], M. Kazuhiro[2], H. Akira[3], K. Kiyotaka[4], S. Hitomi[5] and K. Koichiro[5] *1. Takenaka Corporation, Inzai, Japan; 2. Saga Univ, saga, Japan; 3. Tohoku-Gakuin Univ, tagajo, Japan; 4. Kagoshima National College of Technology, kirishima, Japan; 5. Iwate Univ, morioka, Japan*

GX-11. Experimental study of the active compensation to a full-size separate-shell magnetic shield. *Y. Nakashima*[1,2], Y. Suzuki[1], K. Enokizono[1] and I. Sasada[1] *1. Kyushu University, Fukuoka, Japan; 2. Japan Society for the Promotion of Science, Tokyo, Japan*

GX-12. Improved Electromagnetic Interference Shielding Properties of Anodized Aluminum Using Layered Metallic Coatings.J. Chen[1], R. Yang[2], *H. Hsu*[1], C. Lin[1] and T. Yang[1] *1. Materials Science and Engineering, Feng Chia Univ., Taichung, Taiwan; 2. Aerospace and System Engineering, Feng Chia Univ., Taichung, Taiwan*

GX-13. Optimal elevator shaft shielding method to reduce magnetic field fluctuations due to movement of elevator for MRI. *K. Kamata*[1], K. Yamazaki[2], S. Hirosato[2], A. Haga[3] and K. Kobayashi[4] *1. Electronic Control Engineering, Kagoshima National College of Technology, Kirishima, Kagoshima, Japan; 2. R & D institute, Takenaka Corporation, Inzai, Chiba, Japan; 3. Faculty of Engineering, Tohoku-Gakuin University, Tagajo, Miyagi, Japan; 4. Faculty of Engineering, Iwate University, Morioka, Iwate, Japan*

GX-14. Analysis and Experiment of Flux Distribution around Magnetic Structure in Earth's Magnetic Field.N. Takahashi[1], *D. Miyagi*[1], M. Nakano[1], Y. Mitsuyama[1], T. Ishikawa[1], K. Kittaka[1], I. Ogura[2] and M. Kinoshita[2] *1. Okayama University, Okayama, Japan; 2. Universal System & Machinery Co., Ltd., Maizuru, Japan*

GX-15. A Study on the High Frequency Power Converter for Wireless Power Transmission Using Magnetic Resonance. *J. Ahn*[1], S. Go[2] and J. Lee[2] *1. Electrical Engineering, Osan University, Osan, Gyeonggi, Korea, Republic of; 2. Electrical Engineering, Hanyang University, Seoul, Korea, Republic of*

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FRIDAY MORNING 8:00

EXHIBIT HALL C

Session GY
MAGNETIC MICROSCOPY III (POSTER SESSION)
Marco Beleggia, Chair

GY-01. Magnetostriction and magnetic structure in annealed recrystallization of strain-forged ferromagnetic shape memory Fe-Pd-Rh alloys. *Y. Lin*[1,2] and H. Lee[1] *1. Depart. of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan; 2. Depart. of Mold and Die Engin., National Kaohsiung University of Applied Sciences, Kaohsiung, Taiwan*

GY-02. X-rays and Magnetism – A Perfect Match. *H. Ohldag*[1], E. Arenholz[2], A. Scholl[2], Y. Acremann[1] and J. Stohr[1] *1. SSRL, Stanford University, Menlo Park, CA; 2. Advanced Light Source, LBNL, Berkeley, CA*

GY-03. Magneto-optical imaging and coercivity mapping of GdFe spin-valve structures. *T. Ishibashi*[1], T. Kosaka[1], M. Naganuma[1], T. Shioda[1], K. Aoshima[2], N. Funabashi[2], K. Machida[2], K. Kuga[2] and N. Shimidzu[2] *1. Department of Materials Science and Technology, Nagaoka University of Technology, Niigata, Japan; 2. Science & Technology Research Laboratories, Japan Broadcasting Corporation, Tokyo, Japan*

GY-04. Direct Electric Resistance Measurement for Nano-Contacts in the Nano-Oxide Layer by In-Situ Conductive-AFM. *Y. Watanabe*[1], S. Kawasaki[1], K. Miyake[1], M. Doi[1] and M. Sahashi[1] *1. department of electronic engineering, Tohoku university, Sendai, Japan*

GY-05. Effect of shape anisotropy on magnetization reversal of Co nanorings. ***(Invited)*** *K. He*[1], D.J. Smith[2] and M.R. McCartney[2] *1. School of Materials, Arizona State University, Tempe, AZ; 2. Department of Physics, Arizona State University, Tempe, AZ*

GY-06. Downward continuation applied to the detection and imaging of small magnetic structures. *E.C. Talarico*[1], A.C. Bruno[1] and E. Andrade Lima[2,1] *1. Department of Physics, PUC-Rio, Rio de Janeiro, Rio de Janeiro, Brazil; 2. Dept. of Earth, Atmospheric, and Planetary Sciences, MIT, Cambridge, MA*

FRIDAY
AFTERNOON
2:00

SALON 2

Session HA
SYMPOSIUM: COMPETITIVE MEMORY AND STORAGE TECHNOLOGIES
Stefan Maat, Chair

2:00

HA-01. Magnetic Hard Disk Drives: Enabling the Digital Universe. ***(Invited)*** *W.C. Cain*[1] *1. Western Digital, Lake Forest, CA*

2:36

HA-02. ADVANCES AND FUTURE PROSPECTS OF STT-RAM. ***(Invited)*** *E. Chen*[1], D. Apalkov[1], Z. Diao[1], A. Driskill-Smith[1], D. Druist[1], D. Lottis[1], V. Nikitin[1], X. Tang[1], S. Watts[1], S. Wang[1], S.A. Wolf[2], A.W. Ghosh[2], J.W. Lu[2], S.J. Poon[2], M. Stan[2], W.H. Butler[3], S. Gupta[3], C.K. Mewes[3], T. Mewes[3] and P.B. Visscher[3] *1. Grandis, Milpitas, CA; 2. University of Virginia, Charlottesville, VA; 3. University of Alabama, Tuscaloosa, AL*

3:12

HA-03. Tape Based Magnetic Recording Technology Landscape and Comparisons with Hard Disk Drive and Flash Roadmaps. ***(Invited)*** *R. Fontana*[1] and P. Koeppe[1] *1. IBM Systems and Technology Group, San Jose, CA*

3:48

HA-04. Ferroelectric Random Access Memory (F-RAM). ***(Invited)*** *C. Taylor*[1] *1. Quality Assurance, Ramtron International Corp, Colorado Springs, CO*

4:24

HA-05. Current status of NAND flash memory and future prospect of the next generation nonvolatile semiconductor memory for new storage systems. ***(Invited)*** *T. Endoh*[1] *1. TOHOKU UNIVERSITY, tendoh@cir.tohoku.ac.jp, Sendai, Japan*

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FRIDAY AFTERNOON 2:00

SALON 3

Session HB
SPIN INJECTIONS IN METALS: SPIN TORQUE
Yoshishige Suzuki, Chair

2:00

HB-01. Spin Injection through Transparent Interfaces. ***(Invited)*** *A. Sharoni*[1,2], F. Casanova[2,3], M. Erekhinsky[2] and I.K. Schuller[2] *1. Department of Physics, Bar Ilan University, Ramat Gan, Israel; 2. Department of Physics, University of California, San Diego, La Jolla, CA; 3. Nanodevices laboratory, CIC Nanogune, Donostia-San Sebastian, Basque Country, Spain*

2:36

HB-02. Temperature dependence of the non-local resistance and spin diffusion length in metallic lateral spin valves. *M.J. Erickson*[1], C. Leighton[2] and P.A. Crowell[1] *1. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN; 2. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

2:48

HB-03. Surface spin-flip scattering in metallic lateral spin valves. *F. Casanova*[1,2], M. Erekhinsky[2], A. Sharoni[2] and I.K. Schuller[2] *1. Nanodevices group, CIC nanoGUNE, Donostia-San Sebastian, Gipuzkoa, Spain; 2. Physics, University of California - San Diego, La Jolla, CA*

3:00

HB-04. Enhanced spin injection and detection in spin valves with integrated tunnel barriers. *A. Vogel*[1], J. Wulfhorst[1] and G. Meier[1] *1. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany*

3:12

HB-05. Interplay between spin transport and magnetization dynamics. ***(Invited)*** *S. Zhang*[1] and S.S. Zhang[1] *1. Department of Physics, University of Arizona, Tucson, AZ*

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3:48

HB-06. First-principles calculation of the non-adiabatic spin torque parameter in Fe and Ni. *K. Gilmore*[1], I. Garate[2,3], M.D. Stiles[1] and A.H. MacDonald[2] *1. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 2. Department of Physics, The University of Texas at Austin, Austin, TX; 3. Department of Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada*

4:00

HB-07. Signatures of structural asymmetries on the spin torque bias dependence in magnetic tunnel junctions. *A. Manchon*[1], S. Zhang[1] and K. Lee[2] *1. Department of Physics, University of Arizona, Tucson, AZ; 2. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of*

4:12

HB-08. Ab initio calculations of spin-transfer torques in tunnel junctions: The influence of the magnetic material. *C. Heiliger*[1] and M.D. Stiles[2] *1. I. Physikalisches Institut, Justus Liebig University, Giessen, Germany; 2. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD*

4:24

HB-09. Self-consistent simulation of Quantum Transport and Magnetization Dynamics in STT-RAM. *K. Munira*[1], C. Liu[2], A. Nigam[1], M. Stan[1], C.K. Mewes[2], W.H. Butler[2] and A.W. Ghosh[1] *1. Charles L Brown School of Electrical and Computer Engineering, University of Virginia, Charlottesville, VA; 2. Department of Physics and Astronomy and Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL*

4:36

HB-10. Factor of two reduction of spin torque switching voltage using vanadium caps. *D. Worledge*[1], D. Abraham[1], S. Brown[1], M. Gaidis[1], G. Hu[1], C. Long[1], J. Nowak[1], E. O'Sullivan[1], R. Robertazzi[1], J. Sun[1] and P. Trouilloud[1] *1. TJ Watson Research Center, IBM, Yorktown Heights, NY*

4:48

HB-11. Enhanced Perpendicular Spin Transfer Torque In Magnetic Multilayers With A Capping Layer. *N. Chung*[1,2], M. Jalil[1] and S. Tan[2] *1. National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, A*STAR (Agency for Science, Technology and Research), Singapore, Singapore*

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FRIDAY AFTERNOON 2:00

DELAWARE

Session HC
MAGNETIC MULTILAYERS AND THIN FILMS
Thomas Hauet, Chair

2:00

HC-01. Controlled anisotropy variation in Co thickness graded Co/Pd multilayers. *J.E. Davies*[1,2], B.J. Kirby[3], K. Liu[4], S.M. Watson[3], G.T. Zimanyi[4], R.D. Shull[2], P.A. Kienzel[3] and J.A. Borchers[3] *1. Advanced Technology, NVE Corp., Eden Prairie, MN; 2. Magnetic Materials Group, Metallurgy Division, NIST, Gaithersburg, MD; 3. Center for Neutron Research, NIST, Gaithersburg, MD; 4. Physics Department, University of California, Davis, CA*

2:12

HC-02. Determination of the Saturation Magnetization from Perpendicular Magnetic Anisotropy Measurements of Ion Irradiated Multilayers. *K. Lenz*[1], D. Markó[1], T. Strache[1], R. Kaltofen[2] and J. Fassbender[1] *1. Institute of Ion Beam Physics and Materials Research, Forschungszentrum Dresden-Rossendorf e.V., Dresden, Germany; 2. Institut für Integrative Nanowissenschaften, Leibniz-Institut für Festkörper- und Werkstoffforschung e.V., Dresden, Germany*

2:24

HC-03. Reversal of patterned Co/Pd multilayers with graded magnetic structure. *P. Morrow*[1], C.L. Dennis[1], J.W. Lau[1], B. McMorran[2], A. Cochran[2], J. Unguris[2], R. Dumas[3] and K. Liu[3] *1. Metallurgy Division, National Institute of Standards and Technology, Gaithersburg, MD; 2. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 3. Physics Department, University of California, Davis, CA*

2:36

HC-04. X-ray magnetic circular dichroism studies of Co/Ni multilayers. *E. Shipton*[1,2], K. Chan[1], E.E. Fullerton[1], S. Moyerman[1,2], J. Mohanty[2], I. Tudosa[1], S. Andreiu[3] and S. Mangin[3] *1. Center for Magnetic Recording Research, UC San Diego, La Jolla, CA; 2. Physics, UC San Diego, La Jolla, CA; 3. Institut Jean Lamour, CNRS UMR, Nancy-Université, Nancy, France*

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2:48

HC-05. Investigation of the magnetization reversal in nanostructured exchange spring bilayers. *F. Springer*[1], H. Rohrmann[3] and M. Albrecht[2] *1. Department of Physics, University of Konstanz, Konstanz, Germany; 2. Institute of Physics, Technical University of Chemnitz, Chemnitz, Germany; 3. OC Oerlikon AG, Balzers, Liechtenstein*

3:00

HC-06. Thin film multilayers with perpendicular magnetic anisotropy for spintronic applications. *J.L. Beaujour*[1], A.D. Kent[1], S.H. Park[2], N.M. Nguyen[2], N. Vernier[2], C. Chappert[2] and D. Ravelosona[2] *1. Physics, New York University, New York, NY; 2. Institut d'Electronique Fondamentale, Université Paris Sud, Orsay, France*

3:12

HC-07. Ferromagnetic resonance in arrays of coupled CoFeB/Cu/CoFeB trilayers electrodeposited in nanoporous membranes. *S. Hadj-Messaoud*[1], L. Carignan[1] and D. Ménard[1] *1. Engineering physics, École Polytechnique Montréal, Montreal, QC, Canada*

3:24

HC-08. Antiferromagnetic coupling in Fe/Si/Fe structures with interfacial Co "dusting". *R. Gareev*[1], M. Kiessling[1], M. Buchmeier[2], G. Woltersdorf[1] and C. Back[1] *1. Institute of Experimental and Applied Physics, University of Regensburg, Regensburg, Germany; 2. Institute of Applied Physics, University of Muenster, Muenster, Germany*

3:36

HC-09. Preparation of hcp-NiFe(11-20) Thin Films on Au(100) Underlayers. *T. Tanaka*[1], M. Ohtake[1], F. Kirino[2] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan*

3:48

HC-10. Structure and electrical resistivity of sputtered Tb/Ti and Tb/Si magnetic multilayers. D. Diercks[1], A.V. Svalov[2,3], M. Kaufman[4], V.V. Vas'kovskiy[3] and *G.V. Kurlyandskaya*[2] *1. Center for Advanced Research and Technology, University of North Texas, Denton, TX; 2. Electricity and Electronics, University of the Basque Country UPV-EHU, Leioa, Vizcaya, Spain; 3. Institute of Physics and Applied Mathematics, Ural State University, Ekaterinburg, Russian Federation; 4. Dept of Metallurgical and Materials Engineering, Colorado School of Mines, Golden, CO*

4:00

HC-11. Two switching events in wires combining nickel core and iron oxide shell with fully controlled geometric parameters. Y. Chong[1,2], D. Görlitz[1], S. Martens[1], S. Allende[3,4], *K. Nielsch*[1] and J. Bachmann[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 2. Max Planck Institute of Microstructure Physics, Halle, Germany; 3. Departamento de Física, Universidad de Chile, Santiago, Chile; 4. Centro para el Desarrollo de la Nanociencia y la Nanotecnologia, Santiago, Chile*

4:12

HC-12. Magnetic anisotropy and domain structure in FePd thin films with perpendicular magnetic anisotropy. *J.R. Skuza*[1], C. Clavero[2], K. Yang[2], B. Wincheski[3] and R. Lukaszew[1,2] *1. Department of Physics, College of William & Mary, Williamsburg, VA; 2. Department of Applied Science, College of William & Mary, Williamsburg, VA; 3. Nondestructive Evaluation Sciences Branch, NASA Langley Research Center, Hampton, VA*

4:24

HC-13. Tuning perpendicular magnetic anisotropy by applied voltage in a ferromagnetic/piezoelectric stack. *N. Lei*[1], P. Lecoeur[1], D. Ravelosona[1] and C. Chappert[1] *1. Institut d'Electronique Fondamentale, UMR CNRS 8622, Université Paris Sud, Orsay, France*

4:36

HC-14. Magnetic Interactions in Perovskite Oxide Superlattices. *Y. Takamura*[1], F. Yang[1], E. Arenholz[2], A. Scholl[2], A. Doran[2], A. Young[2], M.D. Biegalski[3] and H.M. Christen[3] *1. Chemical Engineering and Materials Science, UC Davis, Davis, CA; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Center for Nanophase Materials Science, Oak Ridge National Laboratory, Oak Ridge, TN*

4:48

HC-15. Prediction of a spin-polarized two-dimensional electron gas at the $LaAlO_3$/EuO(001) Interface. *Y. Wang*[1], M.K. Niranjan[1], J.D. Burton[1], J.M. An[1], K.D. Belashchenko[1] and E.Y. Tsymbal[1] *1. Department of Physics and Astronomy, Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE*

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FRIDAY AFTERNOON 2:00

VIRGINIA

Session HD

TRANSFORMERS AND INDUCTORS

Charles R. Sullivan, Chair

2:00

HD-01. Analysis of integrated solenoid inductor with closed magnetic core. *J. Wright*[1], D. Lee[2,3], A. Mohan[2], A. Papou[2], P. Smeys[2] and S.X. Wang[1,3] *1. Dept. of Electrical Engineering, Stanford, Stanford, CA; 2. National Semiconductor, Santa Clara, CA; 3. Dept. of Material Science, Stanford, Stanford, CA*

2:12

HD-02. Inductive Displacement Sensor in Humanoid Robotic Application.L. Nagy[1], *S. Djuric*[1], M. Damnjanovic[1], N. Djuric[1], A. Menicanin[2] and L. Zivanov[1] *1. Faculty of Technical Sciences, Novi Sad, Serbia; 2. Institute for Multidisciplinary Research, Belgrade, Serbia*

2:24

HD-03. Wideband Vibration Energy Harvester with High Permeability Magnetic Material. *X. Xing*[1], J. Lou[1], G. Yang[1], O. Obi[1], C. Driscoll[1] and N.X. Sun[1] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA*

2:36

HD-04. Common mode analysis of ethernet transformers. *D. Bowen*[1], I.D. Mayergoyz[1], C. Krafft[2] and D. Kroop[3] *1. University of Maryland, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD; 3. Northrop Grumman, Annapolis, MD*

2:48

HD-05. Design of a reactor driven by inverter power supply to reduce the noise considering electromagnetism and magnetostriction. *Y. Gao*[1], K. Muramatsu[1], K. Fujiwara[2], Y. Ishihara[2], S. Fukuchi[3] and T. Takahata[3] *1. Dept. of Electrical and Electronic Engineering, Saga University, Saga, Saga, Japan; 2. Dept. of Electrical Engineering, Doshisha University, Kyotanabe, Kyoto, Japan; 3. Sao Electric Mfg. Co. Ltd., Sao Electric Mfg. Co. Ltd., Yukuhashi, Fukuoka, Japan*

3:00

HD-06. High inductance-density air-core power inductors and transformers designed for operation at 100-500 MHz.
C.D. Meyer[1,2], S.S. Bedair[2], B.C. Morgan[2] and D.P. Arnold[1] *1. Electrical and Computer Engineering, University of Florida, Gainesville, FL; 2. U.S. Army Research Laboratory, Adelphi, MD*

3:12

HD-07. Modeling and Simulation of High Voltage and Frequency Planar Transformer to a Plasma Inertization Plant. *J.A. Diaz Amado*[1], A. Ortiz Salazar[1], G. Barbosa[1] and J. Dubut[1] *1. DCA, Universidade Federal Rio Grande do Norte, Natal, Rio grande do norte, Brazil*

3:24

HD-08. Wireless solar energy to homes:a magnetic resonant approach. *M. Sun*[1], X. Liu[1], C. Li[1], W. Xi[1] and S.A. Hackworth[1] *1. University of Pittsburgh, Pittsburgh, PA*

3:36

HD-09. A room temperature thermomagnetic generator.
M. Trapanese[1] *1. Dipartimento di Ingegneria Elettrica, Elettronica e delle Telecomunicazioni, Università di Palermo, Palermo, Italy*

3:48

HD-10. Detection and localization of short-circuits in a transformer core by measurement of the leakage flux in its vicinity. C. Schulz[1,2], S. Duchesne[1,2], *F. Morganti*[1,2] and D. Roger[1,2] *1. Université Lille Nord de France, F59000 Lille, France; 2. UArtois, LSEE, F62400 Bethune, France*

4:00

HD-11. Investigation on damage of windings in air core reactor using the stress analysis. *Y. Gao*[1], K. Muramatsu[1] and T. Matsuo[1] *1. Dept. of Electrical and Electronic Engineering, Saga University, Saga, Saga, Japan*

4:12

HD-12. A Model to Predict Amplitude and Phase Errors in Current Transformers. *T. Kutrowski*[1], P.I. Anderson[1] and A.J. Moses[1] *1. School of Engineering, Cardiff University, Wolfson Centre for Magnetics, Cardiff, United Kingdom*

4:24

HD-13. Models for optimizing magnetoelastic thin film-planar coil sensor design. *U. Marschner*[1], E. Starke[1], G. Pfeifer[1], W. Fischer[1] and A. Flatau[2] *1. Institute for Semiconductor and Microsystems Technology, Technische Universität Dresden, Dresden, Germany; 2. Aerospace Engineering, University of Maryland, College Park, MD*

4:36

HD-14. Effects of Torsion Stress on the Magnetic Properties in Amorphous Cores. *C. Hsu*[1,2], Y. Chang[1], C. Tseng[3], R. Cheng[2] and H. Chu[2] *1. Electric Machine, Fortune Electric Ltd, Co., Taoyuan, Taiwan; 2. Electrical Engineering, Chang Gung University, Kwei-Shan, Taiwan; 3. Physics, Institute of Nuclear Energy Research, Long-Tan, Taiwan*

4:48

HD-15. Magnetic Properties of Amorphous Toroidal Cores Using Newly Developed Step-Lap Joints. Y. Chang[1], *C. Hsu*[1,2] and C. Tseng[3] *1. Electrical Engineering, Chang Gung University, Kwei-Shan, Tao-Yuan, Taiwan; 2. Electric Machine, Fortune Electric Ltd, Co., Chung-Li, Tao-Yuan, Taiwan; 3. Physics, Institute of Nuclear Energy Research, Long-Tan,Tao-Yuan, Taiwan*

FRIDAY AFTERNOON 2:00 — WASHINGTON 1

Session HE

CRYSTALLINE SOFT MAGNETS AND DOMAINS II

Zafer Turgut, Co-Chair
Amanda Petford-Long, Co-Chair

2:00

HE-01. Metallic Nanofibers with Tunable Magnetic Interacting Nanograin Fabricated via Electrospinning and Annealing. *X. Chen*[1], J. Xiao[1] and K. Unruh[1] *1. University of Delaware, Newark, DE*

2:12

HE-02. Fe-Co-Cr Nanocomposites for Application in Self-Regulated RF Heating. *K.J. Miller*[1], A. Colletti[1], P.J. Papi[1] and M.E. McHenry[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

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2:24

HE-03. Minimizing Oxygen Inclusion when Electroplating High Saturation Density CoFe for MEMS Applications. *J. Chen*[1], E. Flick[1] and H.H. Gatzen[1] *1. Leibniz Universitaet Hannover, Institute for Microtechnology, Garbsen, Germany*

2:36

HE-04. Research on Measurement of Heat Effect of Deicing Magnetic Materials in Alternating Magnetic Field at Low Temperatures. *R.c. Ye*[1], Y. Long[1], C. Chen[1], W. Qiang[1], L. Xu[1] and Y. Chang[1] *1. Department of Materials Science, University of Science and Technology Beijing, Beijing, China*

2:48

HE-05. Chemical Synthesis of Monodisperse γ-Fe-Ni Magnetic Nanoparticles with Tunable Curie Temperatures for Self-Regulated Hyperthermia. *K.L. McNerny*[1], Y. Kim[1], D.E. Laughlin[1] and M.E. McHenry[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

3:00

HE-06. Demagnetizing factors for non-ideal soft magnetic materials.C. Graham[1] and *B.E. Lorenz*[2] *1. Materials Science, Univ of Pennsylvania, Philadelphia, PA; 2. Electrical Engineering, Widener University, Chester, PA*

3:12

HE-07. Magnetic Spin Configuration in $L1_0$ Structured $Fe_{50}Pt_{50-x}Rh_x$ Films. *J. Fenske*[1], D. Lott[1], G.J. Mankey[2], W. Schmidt[3], K. Schmalzl[3], E.V. Tartakovskaya[4,1], F. Klose[5], A. Mulders[5] and A. Schreyer[1] *1. GKSS Research Centre, Geesthacht, Germany; 2. MINT Center, University of Alabama, Tuscaloosa, AL; 3. Jülich Research Center, Institute for Research on Solid State Physics, Jülich, Germany; 4. Institute for Magnetism, National Ukrainian Academy of Science, Kiev, Ukraine; 5. Australian Nuclear Science and Technology Organization, Menai, NSW, Australia*

3:24

HE-08. One Step Synthesis of Water Dispersible Iron Nanoparticles Using Hydrophillic Polymers. *H. Khurshid*[1], B. Leone[2], V. Tzitzios[1], W. Li[1] and G.C. Hadjipanayis[1] *1. Physics and Astronomy, University of DE, Newark, DE; 2. Institute of Materials Science, Demokritos, Athens, Greece*

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3:36

HE-09. Magnetic hyperthermia of single-domain Fe and FeCo nanoparticles : record losses, evidences for Stoner-Wohlfarth behaviour and self-regulation of temperature. *M. Boubker*[1], A. Meffre[1], L. Lacroix[1], J. Carrey[1], S. Lachaize[1], M. Gougeon[2], M. Respaud[1] and B. Chaudret[3] *1. Université de Toulouse, INSA; UPS; LPCNO, Toulouse, France; 2. Univertsité de Toulouse, CIRIMAT, Toulouse, France; 3. Laboratoire de Chimie de Coordination, CNRS, Toulouse, France*

3:48

HE-10. Micromagnetic study of magnetic domains in platelets with perpendicular uniaxial anisotropy. *B. Van de Wiele*[1], L. Dupré[1] and D. De Zutter[2] *1. Department of Electrical Energy, Systems and Automation, Ghent University, Ghent, Belgium; 2. Department of Information Technology, Ghent University, Ghent, Belgium*

4:00

HE-11. A Facile Method for Iron Carbide and Iron Nanoparticles by Organometallic Routes. *H. Khurshid*[1], V. Tzitzios[2], W. Li[1], G. Meece[1] and G.C. Hadjipanayis[1] *1. Physics and Astronomy, University of DE, Newark, DE; 2. Institute of Materials Science, Demokritos, Athens, Greece*

4:12

HE-12. Magnetic properties and structure of the high saturation magnetization FeCoN thin films. X. Liu[1], L. Zhang[1], *G. Wu*[2] and F. Wei[1] *1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Research Institute of Magnetic Materials, Lanzhou University, Lanzhou, Gansu, China; 2. Department of Physics, University of Virginia, Charlottesville, VA*

4:24

HE-13. Synthesis and magnetic properties of platelet FeCo particles. *H. Hiyama*[1], D. Kodama[1], T. Matsumoto[2], K. Shinoda[2], R. Kasuya[1] and B. Jeyadevan[1] *1. The graduate school of environmental studies, Tohoku University, Sendai, Japan; 2. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan*

4:36

HE-14. Domain structure and evolution evidenced by entropic analysis of enhanced AFM-MFM matrices on Co/PZT multilayered structure. *A. Chiolerio*[1], P. Martino[1], M. Quaglio[2], A. Lamberti[2], F. Celegato[3], M. Cocuzza[2] and P. Allia[2] *1. Physics, Politecnico di Torino, Turin, Italy; 2. Materials Science and Chemical Engineering, Politecnico di Torino, Turin, TO, Italy; 3. Electromagnetism Division, INRIM, Turin, TO, Italy*

4:48

HE-15. Magnetic field induced enhancement in thermal conductivity of magnetite nanofluid. K.H. Parekh[1] and *H. Lee*[2] *1. Department of Physics, Indian Institute of Technology Gandhinagar, Ahmedabad, India; 2. Mineral Resources Research Division, KIGAM, Daejeon, Korea, Republic of*

FRIDAY AFTERNOON 2:00

WASHINGTON 2

Session HF
HARD MAGNETS II: R2Fe14B
Jinfang Liu, Chair

2:00

HF-01. Size-dependent spin-reorientation transition in $Nd_2Fe_{14}B$ compound. *C. Rong*[1], N. Poudyal[1] and J. Liu[1] *1. Department of Physics, University of Texas at Arlington, Arlington, TX*

2:12

HF-02. 3D atom probe investigation of the nanostructure development of Nd-Fe-B based HDDR powder. *H. Sepehri-Amin*[1,2], T. Ohkubo[2], T. Nishiuchi[3], S. Hirosawa[3] and K. Hono[2,1] *1. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba 305-8577, Japan; 2. National Institute for Materials Science, Tsukuba 305-0047, Japan; 3. NEOMAX Company, Hitachi Metals, Osaka 618-0013, Japan*

2:24

HF-03. A high-resolution FEG-SEM investigation of anisotropic hydrogen decrepitation in Nd-Fe-B-based sintered magnets. M. Soderznik[1], *P. McGuiness*[1], K. Zuzek-Rozman[1], G. Yan[2] and S. Kobe[1] *1. Department for Nanostructured Materials, Jozef Stefan Institute, Ljubljana, Slovenia; 2. Department of Physics, Wuhan University, Wuhan, China*

2:36

HF-04. Study of domain configuration in textured NdFeB-Fe composites. *J. Thielsch*[1], D. Hinz[1], L. Schultz[1] and O. Gutfleisch[1] *1. Institute for Metallic Materials, Leibniz Institute for Solid State and Materials Research Dresden, Dresden, Germany*

2:48

HF-05. EBSD multi-phase local texture analysis in NdFeB sintered magnets. *T.G. Woodcock*[1] and O. Gutfleisch[1] *1. IFW Dresden, Dresden, Germany*

3:00

HF-06. Nano-sized disorders in hard magnetic grains and their influence on magnetization reversal at artificial Nd/Nd2Fe14B interfaces. *T. Fukagawa*[1], S. Hirosawa[1], T. Ohkubo[2] and K. Hono[2] *1. Magnetic Materials Research Laboratory, Hitachi Metals, Ltd, Osaka, Japan; 2. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Japan*

3:12

HF-07. Grain boundary structure and chemistry of Dy-containing and Dy-diffused Nd-Fe-B sintered magnets.H. Sepehri-Amin[1,2], W. Li[2], T. Ohkubo[2] and *K. Hono*[2,1] *1. Graduate school of pure and applied sciences, University of Tsukuba, Tsukuba 305-8577, Ibaraki, Japan; 2. National Institute for Materials Science, Tsukuba 305-0047, Ibaraki, Japan*

3:24

HF-08. High performance nanostructured Nd-Fe-B fine powder prepared by melt spinning and jet milling. *Z. Chen*[1], D. Miller[1] and J. Herchenroeder[1] *1. Magnequench Neo Powders Pte Ltd, Singapore, Singapore*

3:36

HF-09. Grain refinement during HDDR processing of Nd-Fe-B powders by high pressure reactive milling. *K. Güth*[1], J. Lyubina[1], B. Gebel[1], L. Schultz[1] and O. Gutfleisch[1] *1. IFW Dresden, Dresden, Germany*

3:48

HF-10. Effects of compositions on characteristics and microstructures for melt-spun ribbons and hot deformed magnets of Nd12.8+xFe81.23-x-y-zCoyGazB6. *P. Yi*[1], A. Yan[1] and D. Lee[1] *1. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology; Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology & Engineering, Chinese Academy of Science, Ningbo, Zhejiang, China*

4:00

HF-11. Effect of Annealing on Microstructural Changes of Nd-Rich Phases and Magnetic Properties of Nd-Fe-B Sintered Magnet. *D. Park*[1], D. Kim[2], T. Jang[3], T. Kim[1] and S. Lee[1] *1. Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Korea Institute of Materials Science, Changwon, Korea, Republic of; 3. Hybrid Engineering, Sunmoon University, Asan, Korea, Republic of*

4:12

HF-12. Structure and exchange-coupling in $Nd_2Fe_{14}B$ thin films grown on α-Fe(100). *D. Ogawa*[1], K. Koike[2], T. Akiya[3], T. Miyazaki[4], M. Oogane[1], Y. Ando[1] and H. Kato[2,3] *1. Department of Applied Physics, Tohoku University, Sendai, Miyagi, Japan; 2. Department of Applied Mathematics and Physics, Yamagata University, Yonezawa, Yamagata, Japan; 3. New Industry Creation Hatchery Center, Tohoku University, Sendai, Miyagi, Japan; 4. Faculty of Engineering, Tohoku University, Sendai, Miyagi, Japan*

4:24

HF-13. Microstructure and magnetic properties of NdFeB thick films on patterned substrates. *D.T. O'Brien*[1], M. Kustov[1,2], P. Kauffman[2], A. Masse[2], J. Nussbaumer[2], G. Reyne[2] and N.M. Dempsey[1] *1. CNRS/UJF, Institut Néel, Grenoble, France; 2. G2E Lab, Grenoble-INP, Grenoble, France*

4:36

HF-14. Effects of C and Cr contents on the magnetic properties and microstructure of directly quenched NdFeTiZrB bulk magnets. *H.W. Chang*[1], J.Y. Gan[2], C.C. Hsieh[2], X.G. Zhao[2] and W.C. Chang[2] *1. Department of Physics, Tunghai University, Taichung, Taiwan; 2. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan*

4:48

HF-15. Temperature dependence of the spontaneous remagnetization in $Nd_{60}Fe_{30}Al_{10}$ and $Nd_{60}Fe_{20}Co_{10}Al_{10}$ bulk amorphous ferromagnets. *S.J. Collocott*[1] *1. CSIRO Materials Science & Engineering, Lindfield, Sydney, NSW, Australia*

FRIDAY AFTERNOON 2:00 — WASHINGTON 3

Session HG
MAGNETO-CALORIC MATERIALS II

Carl Zimm, Co-Chair
Oliver Gutfleisch, Co-Chair

2:00

HG-01. Controlling the magnetocaloric effect using porous $La(Fe,Si)_{13}$ *J. Lyubina*[1], L. Schultz[1] and O. Gutfleisch[1] *1. Institute for Metallic Materials, IFW Dresden, Dresden, Germany*

2:12

HG-02. Refrigerant capacity and direct measurements of the magnetocaloric effect on LaFe11.2Co0.7Si1.1Cx materials. *M. Balli*[1], D. Fruchart[2], J. Huang[3] and O. Sari[1] *1. University of Applied Sciences of Western Switzerland, Yverdon-Les-Bains, Switzerland; 2. Néel Institute, MCMF Department, CNRS, Grenoble, France; 3. Baotou Research Institute on Rare Earths, Baotou, China*

2:24

HG-03. Reduction of hysteresis losses and large magnetic entropy change in the B-doped La(Fe, Si)13 compounds. *J. Shen*[1,3], F. Wang[2], J. Zhao[2,3], J. Wu[1], F. Hu[2], Y. Li[3], J. Sun[2] and B. Shen[2] *1. Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China; 2. State Key Laboratory of Magnetism, Beijing National Laboratory for Condensed Matter Physics and Institute of Physics, Chinese Academy of Sciences, Beijing, China; 3. School of Material Science and Engineering, Hebei University of Technology, Tianjin, China*

2:36

HG-04. Controlling the magnetism of Gd5Ge4 via precise chemical substitution. *D. Paudyal*[1], Y. Mudryk[1], V.K. Pecharsky[1,2], S. Misra[1,3], G.J. Miller[1,3] and K.A. Gschneidner, Jr.[1,2] *1. The Ames Laboratory U. S. Department of Energy, Iowa State University, Ames, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames, IA; 3. Department of Chemistry, Iowa State University, Ames, IA*

2:48

HG-05. Directionality of the Magnetic Behavior of the $Ni_{50}Mn_{35}In_{15}$ Alloy near its First-Order Transition. *V. Provenzano*[1], R.D. Shull[1], A.J. Shapiro[1] and T. Zhang[2] *1. Magnetic Materials Group, NIST, Gaithersburg, MD; 2. School of Materials Science and Engineering, Sichuan University, Chengdu, China*

3:00

HG-06. Magnetic, electrical and magneto-thermal properties in Ni-Co-Mn-Sb Heusler alloys. *A.K. Nayak*[1], K.G. Suresh[1] and A.K. Nigam[2] *1. Physics, IIT Bombay, Mumbai, Maharastrha, India; 2. Physics, TIFR, Mumbai, Maharastrha, India*

3:12

HG-07. Understanding the influence of the pressure on magnetic properties using a Landau approximation for the Bean-Rodbell model. *A.M. Carvalho*[1], P.J. von Ranke[2], A.A. Coelho[3] and S. Gama[4] *1. INMETRO, Duque de Caxias, RJ, Brazil; 2. UERJ, Rio de Janeiro, RJ, Brazil; 3. UNICAMP, Campinas, SP, Brazil; 4. UNIFESP, Diadema, SP, Brazil*

3:24

HG-08. Direct Measurement of Temperature Changes in the Compounds with the First-order Magnetic Phase Transition. *J. Huang*[1,2], H. Yan[1], Y. Wang[1], C. Liu[1], J. Chen[1], Y. Deng[1], P. Jin[1], O. Tegus[3] and L. Song[3] *1. Baotou Research Institute of Rare Earths, Baotou, Inner Mongolia, China; 2. National Engineering Research Centre of Rare Earth Metallurgy and Function Materials, Baotou, Inner Mongolia, China; 3. Inner Mongolia Normal University, Huhhot, Inner Mongolia, China*

3:36

HG-09. Magnetocaloric effect and critical exponents in Sr-doped $Eu_8Ga_{16}Ge_{30}$ type-I clathrates.A. Chaturvedi[1], V. Franco[1,2], M.H. Phan[1], S. Stefanoski[1], H. Kirby[1], G.S. Nolas[1] and *H. Srikanth*[1] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Dpto. Física de la Materia Condensada, Universidad de Sevilla, Sevilla, Spain*

3:48

HG-10. Preferential crystallographic alignment in polycrystalline MnP. *R.A. Booth*[1], M. Marinescu[2], J. Liu[2] and S.A. Majetich[1] *1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Electron Energy Corporation, Landisville, PA*

4:00

HG-11. Large reversible magnetocaloric effect in Er_3Co compound. *P. Kumar*[1,2], N.K. Singh[1,3], K.G. Suresh[1] and A.K. Nigam[4] *1. Physics, IIT Bomay, Mumbai, Maharastra, India; 2. Physics, Tulane University, New Orleans, LA; 3. Ames Laboratory, Iowa State University, Ames, IA; 4. Condence Matter, TIFR, Mumbai, Maharastra, India*

4:12

HG-12. Magnetic properties and magnetocaloric effects in antiferromagnetic ErTiSi. *J. Shen*[1,3], J. Zhao[2,3], J. Wu[1], F. Hu[2], Y. Li[3], J. Sun[2] and B. Shen[2] *1. Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China; 2. State Key Laboratory of Magnetism, Beijing National Laboratory for Condensed Matter Physics and Institute of Physics, Chinese Academy of Sciences, Beijing, China; 3. School of Material Science and Engineering, Hebei University of Technology, Tianjin, China*

4:24

HG-13. Magnetic and magneto-thermodynamic properties of Ho_5Si_4 *N.K. Singh*[1], D. Paudyal[1], V.K. Pecharsky[1,2] and K.A. Gschneidner, Jr.[1,2] *1. Ames Laboratory, Iowa State University, Ames 50011-3020, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames 50011-2300, IA*

4:36

HG-14. Entropy localization in magnetic compounds and thin-film nanostructures. *R. Skomski*[1], C. Binek[1], S. Michalski[1], T. Mukherjee[1], A. Enders[1] and D.J. Sellmyer[1] *1. Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE 68508, NE*

4:48

HG-15. Prediction of realistic entropy behaviour from mixed state magnetization data for first order phase transition materials. *S. Das*[1], J. Amaral[1] and V. Amaral[1] *1. Departamento de Física and CICECO, Universidade de Aveiro, Aveiro, Portugal*

FRIDAY AFTERNOON 2:00 — WASHINGTON 5

Session HH
OTHER HALF METALS II
Claudia Mewes, Chair

2:00

HH-01. Putting all optical determination of the spin polarization into practice. *A. Mann*[1], J. Walowski[1], D. Ebke[2], J. Schmalhorst[2], A. Thomas[2], A. Hütten[2], G. Reiss[2], S. Maat[3], M.J. Carey[3], J.R. Childress[3] and M.G. Muenzenberg[1] *1. I. Phys. Institute, Goettingen University, Goettingen, Germany; 2. Department of Physics, Bielefeld University, Bielefeld, Germany; 3. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

2:12

HH-02. Formation of Co_2FeSi/SiN/Si tunnel junctions for Si-based spin transistors. *K. Hayashi*[1], Y. Takamura[1], R. Nakane[2] and S. Sugahara[1,3] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 2. Department of Electrical Engineering and Information Systems, The University of Tokyo, Tokyo, Japan; 3. CREST, Japan Science and Technology Agency, Kawaguchi, Japan*

2:24

HH-03. Dependence of the magnetic properties of Co2MnGe on Ge content and annealing temperature. *H. Nembach*[1], M.L. Schneider[2], J.M. Shaw[1], T.J. Silva[1], M.J. Carey[3], S. Maat[3] and J.R. Childress[3] *1. Electromagnetics Divsion, National Institute of Standards and Technology, Boulder, CO; 2. Department of Physics and Astronomy, University of Montana, Missoula, MT; 3. Hitachi Global Storage Technologies, San Jose, CA*

2:36

HH-04. Effect of the Mn composition in Co_2MnSi electrodes on tunnel magnetoresistance characteristics of $Co_2MnSi/MgO/Co_2MnSi$ magnetic tunnel junctions. *T. Ishikawa*[1], H. Liu[1], T. Taira[1], K. Matsuda[1], T. Uemura[1] and M. Yamamoto[1] *1. Division of Electronics for Informatics, Hokkaido University, Sapporo, Japan*

2:48

HH-05. Investigations of ferrimagnetism in Mn_2VAl Heusler epitaxial thin film. *T. Kubota*[1], K. Kodama[2], T. Nakamura[2], Y. Sakuraba[3], M. Oogane[1], K. Takanashi[3] and Y. Ando[1] *1. Graduate School of Engineering, Tohoku university, Sendai, Miyagi, Japan; 2. SPring-8, Japan Synchrotron Radiation Research Institute, Sayo, Hyogo, Japan; 3. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

3:00

HH-06. Structural and magnetic properties of $D0_{22}$ MnGa thin films. *S. Mohseni*[1], C. Zha[1,2], J. Persson[1], J. Nogués[1,3] and J. Åkerman[1,4] *1. Department of Microeletronics and Applied Physics, Royal Institute of Technology, Kista-Stockholms, Sweden; 2. Department of Physics, Norwegian University of Science and Technology (NTNU), Trondheim, Norway; 3. ICREA and Centre d'Investigació en Nanociència i Nanotecnologia (ICN-CSIC), Campus Universitat Autònoma de Barcelona, Bellaterra, Spain; 4. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

3:12

HH-07. Anomalous magnetic and thermoelectric properties of the halfmetallic ferromagnets Co2TiSi, Co2TiGe, and Co2TiSn. *C. Felser*[1], J. Barth[1], G.H. Fecher[1], B. Balke[1], T. Graf[1], A. Shkabko[2] and A. Weidenkaff[2] *1. Institute of Inorganic Chemistry, University of Mainz, Mainz, Germany; 2. Solid State Chemistry and Catalysis, EMPA, Swiss Federal Laboratories for Materials Testing and Research,, Duebendorf, Switzerland*

3:24

HH-08. Magnetic and transport properties of $Fe_2VAl_{1-x}Z_x$ (Z=B,In,Si;0-0.2) Heusler alloys. *V. Mutta*[1], S. Shin[1], S. Veeturi[2] and V. Rao[3] *1. Physics and Centre for nanospinics of spintronic materials, Korea Advanced Institute of Science and Technology, Deajeon, Korea, Republic of; 2. Department of Physics and Meteorology, Indian Institute of Technology, Kharagpur, Kharagpur, India; 3. Cryogenic Engineering Centre, Indian Institute of Technology, Kharagpur, Kharagpur, India*

3:36

HH-09. X-ray diffraction study for atomic disorder in full-Heulser alloy thin films using Co x-ray source. *Y. Takamura*[1] and S. Sugahara[1,2] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 2. CREST, Japan Science and Technology Agency, Kawaguchi, Japan*

3:48

HH-10. Large negative magnetoresistance in Nickel-rich Ni-Mn-Ga Heusler alloys.D. Pal[1], *K. Mandal*[1] and O. Gutfleisch[2] *1. Material Science, S. N. Bose National Centre for Basic Sciences, Kolkata, West Bengal, India; 2. Leibniz Institute für Festkörper- und Werkstoffforschung Dresden (IFW-Dresden), Dresden, Germany*

4:00

HH-11. The effect of substrate-induced strain on the magnetic structure of CrO_2 *H. Sims*[1,2], D. Mazumdar[2] and W.H. Butler[1,2] *1. Physics, University of Alabama, Tuscaloosa, AL; 2. Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL*

4:12

HH-12. Effect of 3d-transition metal substitution on the electronic properties of CrO2. *M. Williams*[1], H. Sims[1,2], D. Mazumdar[1] and W.H. Butler[1,2] *1. MINT center, University of Alabama, Tuscaloosa, AL; 2. Physics, University of Alabama, Tuscaloosa, AL*

4:24

HH-13. Magnetorefractive measurements of magnetoresistance in (100) and (111) Fe_3O_4 films. *S. Thompson*[1], V.K. Lazarov[1], R.C. Bradley[1], T. Deakin[1], B. Kaeswurm[1] and B.W. Wessels[2] *1. Department of Physics, The University of York, York, United Kingdom; 2. Materials Science and Engineering, Northwestern University, Chicago, IL*

4:36

HH-14. Spin-dependent intergranular transport in highly spin-polarized $Co_{1-x}Fe_xS_2$ thin films. *M.A. Manno*[1], R. Frakie[1], B. Bolon[2] and C. Leighton[1] *1. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 2. Physics Department, Hamline University, Saint Paul, MN*

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4:48

HH-15. Impact of transition metal buffer layers on magnetite thin film growth. *C. Bauer*[1], P.B. Jayathilaka[1], D.V. Williams[1], M. Monti[2], J.T. Markert[2] and C.W. Miller[1] *1. Applied Physics, University of South Florida, Tampa, FL; 2. Physics, University of Texas at Austin, Austin, TX*

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