12TH JOINT MMM–INTERMAG CONFERENCE

January 14–18, 2013

Chicago, Illinois, USA

General Information

SCOPE OF THE CONFERENCE

The 12th Joint MMM/Intermag Conference is sponsored jointly by the American Institute of Physics (through Physics Conferences Incorporated) and the Magnetics Society of IEEE. The Conference will be held at the Hyatt Regency Chicago in the heart of Chicago, Illinois, easily accessible from O'Hare and Midway Airports. 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 in oral and poster sessions, invited symposia, a plenary session, and two evening sessions, one of which will be in a tutorial format. The Conference provides an outstanding opportunity for participants to meet their colleagues and discuss the latest advances in magnetism. Please note that all of the conference details, including web links for registration and hotel reservations, are available at the conference website: http://www.magnetism.org

CHICAGO

Few cities in the world can match the character and culture of Chicago. Here you can find world-class dining, museums and entertainment. Chicago is the largest and most visited city in the Midwest of the United States.

The Chicago Convention & Tourism Bureau is dedicated to helping you enjoy your stay in Chicago. On its web site, http://www.choosechicago.com you can experience the city like a local by obtaining the latest information on Chicago attractions such as the Navy Pier and Millennium Park, as well as the numerous outstanding museums and galleries. Most of these, including the world-renowned Art Institute of Chicago, are easily accessible from the conference hotel by walking or by Chicago's easy-to-use public transportation system. At the web site you can also learn all about where to eat in Chicago – from famous pizza joints to upscale restaurants. The site also offers a complimentary Visitors' Guide and suggested itineraries for seeing the city as well as weekly weather updates. So come to join us at the 12th Joint MMM/Intermag Conference and experience a new city.

To learn more about the City of Chicago and all that it has to offer its visitors, please visit the Convention and Visitors' Bureau web site at: http://www.choosechicago.com. Information such as weather (January weather is cold, with high temperatures about freezing) is available at this site.

VISA REQUIREMENTS

The U.S. has updated its visa policies, and 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 U.S. Consulate or Embassy. Review your visa status now to determine if you need a U.S. visa or visa renewal and to find out how to schedule an interview appointment, pay fees, and other vital instructions. If you need a personal letter of invitation to attend the Conference, please request one by filling out the form at this link: http://www.magnetism.org/invite_letter_request.html

Please do not ask for additional information to be included in the invitation letter. The web form at the link above provides space for entering information such as the title of your paper and whether or not you are the presenting author. All invitation letters are generated in PDF format and will be emailed to you. The PDF file, which you should print out on white paper using a color printer, is the original version of your letter. Please understand that it is absolutely identical to a letter that would be printed out in the conference office and mailed to you. The conference no longer provides hard copies of invitation letters by mail.

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 12th Joint Conference.

VISA WAIVER PROGRAM TRAVEL: All nationals and citizens of Visa Waiver Program (VWP) countries who plan to travel to the U.S. for temporary business or pleasure for 90 days or less are required by law to obtain travel authorization prior to travel to the United States. This authorization can be obtained online through the Electronic System for Travel Authorization (ESTA).

HOTEL

The Hyatt Regency Chicago is the location for all Joint Conference sessions and activities. Located near Chicago's Magnificent Mile, the hotel is surrounded by the city's premier landmarks and attractions. The Hyatt is 12 miles from Chicago Midway International Airport, 18 miles from Chicago O'Hare International Airport, and is easily reached by public transportation or taxi from either one. There are several distinctive venues onsite in which to obtain everything from coffee to a full meal, and an enclosed walkway to reach another office building offering a variety of food outlets.

The special group rate for 12th Joint MMM/Intermag Conference participants at the Hyatt Regency Chicago is $172 plus tax for a single or double room. **Please book early to ensure that you obtain the Conference rate throughout your stay.** For a limited number of rooms, these rates will be available for three days prior to and three days following the Joint Conference. Internet service will be offered in each sleeping room at the reduced rate of $6.50 plus tax (one-half of the current rate).

There is also a small block of student rooms being held at the rate of $99/night plus tax. These rooms are limited, and should be booked very early. The booking code for the student rooms will be sent to paid student registrants along with their registration confirmation. This code must be used whether you book via the web site or by telephone.

Please note that the Conference begins on Monday afternoon/evening, January 14th and ends on Friday afternoon, January 18th. To make a room reservation via the internet, please go to the web site: https://resweb.passkey.com/go/MMMIntermag2013.

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. If you need to call the hotel regarding your room reservation, the number to use is: 1-888-421-1442 within the US; and +1-402-592-6464 from outside the US. Each Conference participant is responsible for making his/her own hotel reservation and for paying all personal bills upon checkout. The Conference management cannot make or change hotel room reservations on your behalf.

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 and Advisory Committees in their attempt to keep your conference registration fees as low as possible by booking your room at the Hyatt Regency Chicago for the12th Joint MMM/Intermag Conference **before the cutoff date of Monday, December 17th.**

Your hotel room reservation must be received by the Hyatt Regency Chicago no later than Monday, December 17th, in order for you to receive the special Joint Conference rates.

LOCAL TRAVEL INFORMATION

Chicago is served by two major airports: O'Hare International and Midway International. O'Hare is 18 miles from the Hyatt. A taxi fare will be approximately $35-$45 one way. To use the train at $2.25 per person one way, pick it up below Baggage Claim by following the signs to C.T.A. Take the **Blue Line** to the Clark and Lake stop (approximately 7 blocks from the Hyatt). Walk East on Lake to Stetson Street; turn left on Stetson Street and walk 1 block to the Hyatt. **Note: This method is not recommended if you have more than 1 bag,** as there are numerous escalators and turnstiles. You can take a cab or walk from the Clark and Lake stop. Midway Airport is 12 miles from the Hyatt, and the taxi fare is approximately $30-$40 one way. To use the train at $2.25 per person, take the **Orange Line** to the State and Lake stop (approximately 7 blocks from the Hyatt). Walk 1 block north to Wacker Drive. Turn right onto Wacker, and the Hyatt is approximately 3 blocks ahead.

The Hyatt Regency Chicago also utilizes Go Airport Express for shuttle service to and from the airports. The telephone number for making reservations is: 1-773-247-1200 or 1-888-284-3826. **Reservations are required.** You may also access their web site at: http://www.airportexpress.com.

Renting a car is not recommended. The Hyatt Regency is in the heart of downtown Chicago. Parking is expensive, and most points of interest can be reached easily by taxi or public transportation. There are numerous restaurants close to the hotel.

CONFERENCE REGISTRATION

Please register **in advance at a reduced rate** prior to Monday, December 17, 2012. You are encouraged to register via the secure web site at: http://www.yesevents.com/joint

If you prefer, you may also register by downloading and completely filling out the Advance Registration Form available on the conference website. Payment in **U.S. dollars** must be made by personal or corporate check (**drawn on a U.S. bank only**), wire transfer or by MasterCard, Visa or American Express credit card. **Make checks payable to 2013 Joint MMM-Intermag. All Joint Conference attendees, including invited speakers, must pay registration fees.**

REMEMBER: All Advance Registration forms must be accompanied by full payment and must be received by December 17, 2012.

Onsite registration during the Conference will be at the higher rates listed below. After December 17th, 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 17th**	**After December 17th**
Full Registrant **Member**	$590	$685
Full Registrant **Non-Member**	$710	$825
Student **Member** or **IEEE Life Member**	$200	$250
Student **Non-Member**	$250	$300
Member Retiree	$270	$320
Non-Member Retiree	$325	$390

Please note that the student and retiree registration rates do not include a copy of the Proceedings (conference papers) , which can be purchased in CD/DVD format separately for $65. Paper copies of the proceedings can be purchased for an additional $70.

Please note that this is likely to be the last time that the paper format is available for MMM Conference journal publications.

You are eligible to register at the Member rate **ONLY** if you belong to IEEE, a society such as American Physical Society that is a member of the American Institute of Physics, or one of the Professional Societies that have reciprocity agreements with the American Institute of Physics. A list of these is available on the conference website. 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 17, 2012. Refunds of the original payment, less a $75 service fee, will be sent 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 outside the Regency Ballroom in the hotel's West Tower, will be open during the following hours:

Monday, January 14th	4:00 PM – 8:00 PM
Tuesday, January 15th	7:00 AM – 4:00 PM
Wednesday, January 16th	7:00 AM – 5:00 PM
Thursday, January 17th	8:00 AM – 3:00 PM
Friday, January 18th	8:00 AM – 1:00 PM

All attendees will be required to wear 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.**

IEEE MAGNETICS SOCIETY ANNUAL MEETING

This meeting is open to all Joint Conference participants and will be held on **Monday evening, January 14th, 6.00 – 6:45 PM, in Regency Ballroom C.** Come to learn more about what the IEEE Magnetics Society is doing to support and strengthen the Magnetics Community, and about the benefits of belonging to the Society. Your suggestions and feedback are most welcome! Bring your beverage with you from the *Bierstube* and join us. Light snacks will be provided.

IEEE Magnetics Society Membership: By joining the IEEE Magnetics Society, you become part of the world's best-known magnetics organization. In addition to discounts on registration for conferences, such as the 12th Joint MMM/Intermag Conference, you will gain access to local Chapter events and technical activities. To join, you may go online via the Society website at http://www.ieeemagnetics.org and follow the links, or you can come to the onsite Membership Booth at the conference. Note that if you wish to use your IEEE Magnetics Society membership to qualify for the registration discount, you must join *before* you register for the 12th Joint Conference.

SYMPOSIA

Eight symposia are scheduled during the conference. These sessions consist entirely of invited speaker presentations by experts in the field and will take place in Grand Ballroom CD throughout the week.

- Voltage control of magnetism
- Quantum limits to magnetism: single spin dynamics
- Spin transfer torques in magnetic bilayers with strong spin-orbit coupling
- Current trends in molecular magnetism
- Chiral magnetism and skyrmions
- New developments in spin caloritronics
- Progress in heat-assisted magnetic recording
- Magnetic nanomaterials for therapeutic applications

TUTORIAL

A tutorial session on Spin Caloritronics will be held **Monday evening, January 14th**, starting at **7:00 PM in Crystal Ballroom B,** which is located just upstairs from the registration area and opening night Bierstube. Please join tutorial speakers Gerrit Bauer, Burkard Hillebrands, and Roberto Myers as they outline some of the latest theoretical and experimental advances in this rapidly developing field. The talks will be targeted for students and non-specialists.

TUESDAY EVENING SESSION

A special session on *Magnetism for Energy Applications* will be held on **Tuesday evening, January 15th,** starting at **7:30 PM in** Crystal Ballroom B. Please join speakers Oliver Gutfleisch, Johannes Paulides, and Satoshi Hirosawa as they discuss research on new magnetic materials, applications such as magnetic refrigeration, and the development of new technologies based on permanent magnets.

PLENARY SESSION

Presentation of the IEEE Awards will be done at the Plenary Session on Wednesday, January 16, beginning at 4:00 PM in the Grand Ballroom (Salons ABCD). The finalists for the Best Student Presentation Award will also be acknowledged during this session. The plenary speaker is Professor Dr. Roland Wiesendanger of the University of Hamburg. His talk is titled: *Atomically Tailored Nanomagnets and their use for Atomic-Level Spintronics*.

Professor Wiesendanger is currently Professor and Director of the Institute of Applied Physics and the Interdisciplinary Nanoscience Center Hamburg at the University of Hamburg. He received his Diploma in experimental physics in 1986 and his PhD in 1987 from the University of Basel. He has been Professor of Experimental Solid State Physics at the University of Hamburg since 1992. Professor Wiesendanger is a founder of the field of spin-polarized scanning tunneling microscopy, in which his group has made several pioneering discoveries, the most recent of which will be highlighted in this talk. He is a member of the German Academy of Sciences Leopoldina and is the recipient of numerous awards and named lectureships.

PLENARY RECEPTION

Following the Awards Ceremony and Plenary Lecture, a Reception will be held for all participants of the 12th Joint MMM/Intermag Conference. This reception is partially supported by special funding from the IEEE Magnetics Society. The reception will be held in the Crystal Ballroom and Foyer. All registered participants are cordially invited to attend in order to celebrate the achievements of our award winners and to network with your colleagues.

SOCIAL EVENTS

Women in Magnetism Networking Event

The IEEE Magnetics Society will be sponsoring a Networking Reception for women in the magnetism community on **Tuesday, January 15th,** beginning at **6:00 PM in the Wrigley Room located on the Bronze Level of the West Tower** of the hotel. This is an opportunity to become acquainted with other women in the profession and to discuss a range of topics including leadership, work-life balance, and professional development. At the reception you will also have the opportunity to form small dinner groups in order to build new friendships and expand your professional network. All graduate students, researchers and retirees are encouraged to attend.

If you have questions, please contact Julie Borchers (*julie.borchers@nist.gov*) or Pallavi Dhagat (*dhagat@eecs.oregonstate.edu*).

NIST Reception

NIST employees, associates, alumni, collaborators, and friends are invited to attend a reception on **Tuesday, January 15th, 5:30 – 6:30 PM in the Soldier Field Room located on the Bronze Level of the West Tower** of the hotel. Potential NRC postdocs are also welcome. For questions, contact Bob Shull (*robert.shull@nist.gov*) or Ron Goldfarb (*ron.goldfarb@nist.gov*).

Student "Happy Hour with the Experts"

The conference will once again offer an opportunity for students to interact in small groups with senior scientists in different sub-fields of magnetism from industry, academia, and national laboratories around the world. The meetings will coincide with the *Bierstube* on Tuesday and Thursday nights, and reserved tables will be set aside for a group of students who have signed up in advance. An official announcement and instructions for signing up will be emailed to all paid student registrants in December. The tables will be filled on a first-come first-serve basis.

Coffee and Bierstube

Coffee service will be available on Tuesday through Friday mornings from 9:30 to 10:30 AM in Riverside Center Exhibition Hall among the Exhibits and Poster Sessions.

On Monday evening the **Bierstube** will be held adjacent to the Registration Desks outside the Regency Ballroom from 5:00 PM to 7:00 PM. On Tuesday and Thursday evenings, the Bierstube will be held in the Riverside Center Exhibition Hall adjacent to the Exhibits and Posters from 5:00 PM to 6:00 PM.

WIRELESS ACCESS

The "Cyber Lounge" will again be sponsored by the IEEE Magnetics Society, and will be located in the Riverside Center Exhibition Hall adjacent to the Exhibits and Posters. 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 **New Orleans Room located near the Regency Ballroom on the Gold Level of the West Tower.** 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 – 2:00 PM

SPEAKER PRACTICE ROOM

Speakers are reminded that the Joint Conference uses 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. 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 Atlanta Room, located across from the Publications Office on the "Gold Level" of the West Tower, to practice their presentations.** Audiovisual equipment (LCD projector and screen) will be available there for authors to use from 2:00 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.

ORAL PRESENTATION AND LCD PROJECTORS

Authors are expected to bring their presentations on their own laptop computer, and to have it powered on 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 adapter to connect up your computer. **Macintosh users must make sure that mirroring is activated.** You may test your presentation using the equipment available in the Speaker Practice Room described above. There will 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. In case of laptop failure bring a copy of your presentation on flash memory. Session Chairs will keep all sessions strictly on time to allow conference participants to move easily between sessions of interest to them.

BEST STUDENT PRESENTATION AWARD

There will be a competition for the best student presentation at the 12th Joint MMM/Intermag Conference to recognize and encourage excellence in graduate studies in the field of magnetism. A special committee will judge the presentations by the finalists. The 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 name of the winner will be published in the Program Booklet of the following MMM Meeting. The finalists for the best student presentation award are:

AD-04
Azure Avery
"Observation of the Planar Nernst Effect in Ferromagnetic Thin Fims with In-plane Thermal Gradients"

BF-01
Uwe Bauer
"Electrical Control of Domain Wall Motion in Perpendicular Magnetic Anisotropy Materials"

ED-09
Hiroshi Idzuchi
"Effect of spin absorption on precession dynamics of pure spin currents in lateral spin valves"

AF-13
Xue Lin
"X-ray imaging of magnetic normal modes driven by spin transfer torque in magnetic nanopillar devices"

FH-02
Elizabeth Rapoport
"Dynamics of magnetic domain wall mediated superparamagnetic microbeads transport"

56th MMM Conference Best Student Presentation Winner

Lino M. Pereira
(Co-authors: U. Whal, A. Vantomme, and J.P. Araujo)
Instituut voor Kern- en Stralingsfysica and INPAC, Katholieke Universiteit Leuven, Leuven, Belgium and (2) IFIMUP and IN-Institute of Nanoscience and Nanotechnology, University of Porto, Porto, Portugal

for the presentation

"Lattice Location of Transition Metals in Dilute Magnetic Semiconductors"

CONGRATULATIONS!

POSTER SESSIONS

The Poster Sessions will be held in the Riverside Center Exhibition Hall (located in the East Tower) from 9:00 AM –12:00 noon and 2:30 PM to 5:30 PM on Tuesday through Friday (***except*** **on Wednesday afternoon when the session will run from 1:00 to 4:00 PM**). Authors should set up their materials at least half-an-hour before session start times. Posters must be attended by an author or a knowledgeable delegate in order for the corresponding paper to be eligible for publication in the conference proceedings. Specifically, such a person **must be by the poster for the last hour of each session.**

The surface area available for posters is 1.5 m long by 1.2 m 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.

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 two awards made for each morning and each afternoon session. **If you wish to be eligible for the best poster award, the poster must be attended by an author for the last 2.5 hours of the poster session.**

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

Eligibility: All posters will be eligible for nomination for this award provided that 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 present at the poster during the last 2.5 hours of the poster session to present details and answer questions during the designated time. 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 during the last 2.5 hours 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.

The conference thanks GMW Associates for providing financial support of the Best Poster award at the 12th Joint MMM/Intermag Conference

Winners of the Best Poster Award at the 56th Annual MMM Conference

AR-05: Antiferromagnetism in the 2D Limit and Interface Superconductivity in Metal-Insulator $La_{2-x}Sr_xCuO_4$ Superlattices

A. Suter[1], E. Morenzoni[1], T. Prokscha[1], B.M. Wojek[2,1], H. Luetkens[1], A. Gozar,[3] G. Logvenov[4,3], and I. Bozovic[3]
1. Laboratory for Muon Spin Spectroscopy, Paul Scherrer Institut, Villigen PSI, Switzerland
2. Physics Institute, University of Zurich, Zurich, Switzerland
3. Brookhaven National Laboratory, Upton, NY
4. Max-Planck-Institut fürFestkörperforschung, Stuttgart, Germany

AU-08: Magnetovolume Effect in $Ho_2Fe_{17-x}Mn_x$ Compounds

J. Wang[1,2], A.J. Studer[1], S.J. Kennedy[2], R. Zeng[1], S.X. Dou[1], and S.J. Campbell[3]
1. Institute for Superconducting & Electronic Materials, University of Wollongong, Wollongong, NSW, Australia
2. Bragg Institute, ANSTO, Sydney, NSW, Australia
3. School of Physical, Environmental and Mathematical Sciences, The University of New South Wales, The Australian Defence Force Academy, Canberra, ACT, Australia

BS-02: Electrical Creation of Spin Accumulation in a Si Channel Using a Schottky Tunnel Contact

Y. Ando[1,2], Y. Maeda[1], K. Kasahara[1], Y. Baba[1], Y. Hoshi[3], K. Sawano[3], M. Miyao[1], and K. Hamaya[4]
1. Electronics, Kyushu University, Fukuoka, Japan
2. INAMORI Frontier Research Center, Kyushu University, Fukuoka, Japan
3. Advanced Research Laboratories, Tokyo City University, Tokyo, Japan
4. PRESTO, Japan Science and Technology Agency, Tokyo, Japan

BW-09: Nucleation of Magnetic Nanodomains in CMR Manganites

T. Koyama[1], Y. Togawa[2,3], K. Takayanagi[2], M. Kobayashi[1], K. Harada[1], and S. Mori[1,3]
1. Department of Materials Science, Osaka Prefecture University, Sakai, Osaka, Japan
2. Nanoscience and Nanotechnology Research Center, Osaka Prefecture University, Sakai, Osaka, Japan
3. CREST, Japan Science and Technology Corporation (JST), Tokyo, Osaka, Japan

CS-12: Critical Slowing Down in Laser Induced Demagnetization of Gd

M. Sultan[1,2], A. Melnikov[2,3], and U. Bovensiepen[1]
1. Faculty of Physics, University of Duisburg Essen, Duisburg, Germany
2. Institute of Experimental Physics, Freie University, Berlin, Germany
3. Fritz-Haber-Institut der Max-Planck Gesellschaft, Berlin, Germany

CU-10: Field-induced Magnetic Transition in Cobalt-Ferrite

M. Kriegisch[1], W. Ren[2], R. Sato-Turtelli[1], and R. Groessinger[1]
1. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria
2. Shenyang National Laboratory for Materials Science, Magnetism and Magnetic Materials Division, Shenyang, China

DQ-02: Fabrication of [001] $L1_0$-FePtRh Ferro-antiferromagnetic Pattern by Flat-patterning Method

T. Hasegawa[1], T. Tomioka[1], Y. Kondo[2], H. Yamane[1], and S. Ishio[2]
1. Department of Materials Science and Engineering, Akita University, Akita City, Japan
2. Akita Industrial Technology Center (AIT), Akita, Japan

DV-15: Stress-Depth Profiling for Non-destructive Testing using Magnetic Barkhausen Noise Signals

O. Kypris[1], L. Mierczak[2], C.I. Nlebedim[3], and D.C. Jiles[1]
1. Electrical & Computer Engineering, Iowa State University, Ames, IA
2. Wolfson Centre for Magnetics, School of Engineering, Cardiff University, Cardiff, United Kingdom
3. Ames Laboratory, US Department of Energy, Ames, IA

ES-07: Magnetic Properties and Thermal Response of Magnetite Nanoparticles Under Dynamical Conditions of External Magnetic Field Application

A. Bollero[1], F.J. Teran[1], C. Casado[1], J.F. Cunado[2], M. Morales[3], G. Salas[1], A. Villanueva[1,4], M. Calero[4], P. Acedo[4], J. Camarero[1,2] and R. Miranda[1,2]
1. IMDEA Nanoscience, Instituto Madrileño de Estudios Avanzados en Nanociencia, Madrid, Spain
2. Dpto. Física de la Materia Condensada, Universidad Autónoma de Madrid, Madrid, Spain
3. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain
4. Dpto. Biología, Universidad Autónoma de Madrid, Madrid, Spain

EW-09: Evolution of the Anomalous Conductance Plateau in an Asymmetrically Biased InAs/$In_{0.52}A_{l0.48}As$ Quantum Point Contact in the Presence of Lateral Spin-orbit Coupling

P. Das[1], K.B. Chetry[2], N. Bhandari[1], J.Wan[1], M. Cahay[1], R.S. Newrock[2], and S.T. Herbert[3]
1. School of Electronics and Computing Systems, University of Cincinnati, Cincinnati, OH
2. Physics Department, University of Cincinnati, Cincinnati, OH
3. Department of Physics, Xavier University, Cincinnati, OH

FP-01: Almost Identical Oscillations in Tunneling Resistances as a Function of Barrier Thickness for Parallel and Antiparallel Configurations in Fully Epitaxial Magnetic Tunnel Junctions with a MgO Barrier

Y. Honda, S. Hirata, H. Liu, K. Matsuda, T. Uemura, and M. Yamamoto[1]
Division of Electronics for Informatics, Hokkaido University, Sapporo, Japan

FW-11: Manipulating Ultra-Cold Atoms with a Reconfigurable Nanomagnetic System

T.J. Hayward[1], P.W. Fry[2], M.R. Gibbs[1], T. Schrefl[3], D.A. Allwood[1], K.J.Weatherill[4], A.D. West[4], C.S. Adams[4], and I.G. Hughes[4]
1. Department of Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom
2. Nanoscience and Technology Centre, University of Sheffield, Sheffield, United Kingdom
3. St Pölten University of Applied Sciences, St Pölten, Austria
4. Atomic and Molecular Physics Group, University of Durham, Durham, United Kingdom

GS-08: Effect of Different Compositions of CoFeB Spin Polarizer on Magnetoresistance and Switching Properties of Co/Pd Multilayers with PMA

T. Tahmasebi[1],[2], S. Piramanayagam[1], R. Sbiaa[1], H. Tan[1], and T. Chong[3]
*1. Data Storage Institute (DSI), Data Storage Institute (DSI), A*STAR (Agency for Science, Technology and Research), 5, Engineering Drive,Singapore, Singapore*
2. Electrical and Computer Engineering Department, National University of Singapore, NUS, Singapore, Singapore
3. Singapore University of Technology and Design (SUTD), Singapore

GT-14: $L1_0$ Ordered $Fe_{50}Pt_{50}$ and Co-based Superlattices as Perpendicular Magnetic Electrodes for Tunnel Junctions

Z. Kugler, G. Reiss, and A. Thomas
Thin Films and Physics of Nanostructures, Bielefeld University, Bielefeld, NRW, Germany

HP-12: The Role of Eddy Current Losses and Particle Size on AC Magnetic Field Induced Reflow in Solder/Magnetic Nanoparticle Nanocomposites

A.H. Habib[1], S. Xu[1], M.G. Ondeck[1], R. Swaminathan[2], and M.E. McHenry[1]
1. Materials Sci. and Eng., Carnegie Mellon University, Pittsburgh, PA
2. Intel Corp., Chandler, AZ

HX-06: Epitaxial $Fe_{1-x}Ga_x$ / GaAs Structures via Electrochemistry for Spintronics and MEMS Applications

K. Reddy[1], J. Park[3], S. Na[3], M. Maqableh[2], A. Flatau[3], and B. Stadler[1],[2]
1. Chemical Engineering and Materials Science, University of Minnesota -Twin Cities, Minneapolis, MN
2. Electrical and Computer Engineering, University of Minnesota - Twin Cities, Minneapolis, MN
3. Aerospace Engineering, University of Maryland, College Park, MD

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FUTURE CONFERENCES

58th Conference on Magnetism and Magnetic Materials
November 4-8, 2013, Denver, Colorado

2014 Intermag Conference
May 4-8, 2014, Dresden, Germany

59th Conference on Magnetism and Magnetic Materials
November 3-7, 2014, Honolulu, Hawaii

2015 Intermag Conference
May 4-8, 2015, Beijing, China

13th Joint MMM-Intermag Conference
January 11-15, 2016, San Diego, California

60th Conference on Magnetism and Magnetic Materials
October 31-November 4, 2016, New Orleans, Louisiana

The 21st International Conference on Magnetism (ICM 2018)
July 16-20, 2018, San Francisco, CA

ADDITIONAL INFORMATION

If you would like to receive more information about the Joint Conference or future MMM Conferences, to be placed on the mailing list, or to update your contact information, please email Anne LoPresti at *magnet@aip.org*. The latest information on the Joint Conference or future MMM conferences can always be found on the Web at the Conference homepage: http://www.magnetism.org.

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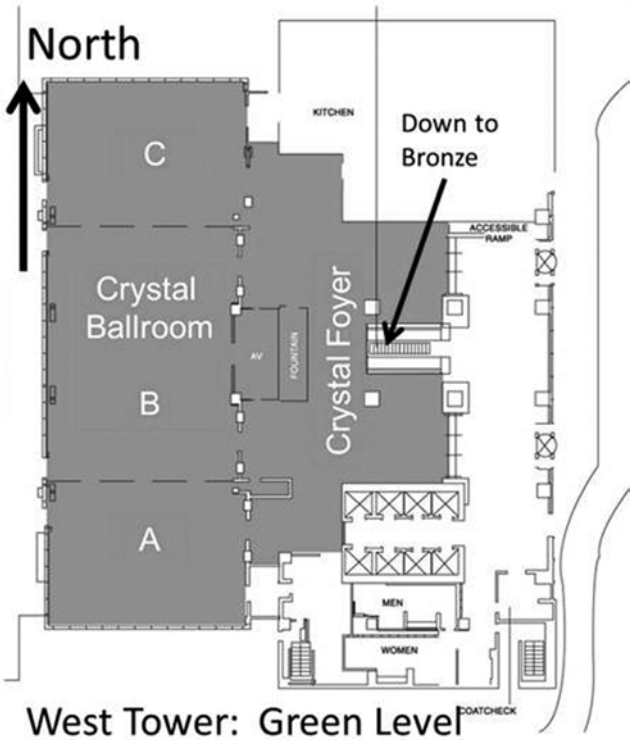
CONFERENCE PROGRAM

Mon eve 7:00 p.m.	XA	Tutorial - Spin Caloritronics	Crystal B
Tuesday 8:00 a.m.	AA	Voltage control of magnetism	Grand CD
	AB	Heat assisted magnetic recording	Grand AB
	AC	Vortex dynamics	Regency A
	AD	Spin caloritronics and spin injection	Regency B
	AE	Rare earth magnets I	Regency C
	AF	Spin torque I	Regency D
	AG	New magnetic materials, microwave materials and molecular magnetism	Crystal A
	AH	Magnetoresistive oxides (CMR) I	Crystal B
	AI	Tunnel/Giant magnetoresistance I	Crystal C
9:00 a.m.	AP	Magnetization dynamics I	Riverside Center
	AQ	MRAM and magnetic logic I	Riverside Center
	AR	Silicon spintronics and spin caloritronics	Riverside Center
	AS	Fundamental properties and cooperative phenomena I	Riverside Center
	AT	Rare earth magnets II	Riverside Center
	AU	Exchange bias I	Riverside Center
	AV	Perpendicular recording and bit patterned media	Riverside Center
	AW	Soft Magnetic Materials I: Crystalline alloys	Riverside Center
	AX	Soft magnetic materials II: Micro- and nanostructured materials	Riverside Center
1:30 p.m.	BA	Quantum limits to magnetism: Single spin dynamics	Grand CD
	BB	HAMR and BPMR	Grand AB
	BC	Domain wall dynamics	Regency A
	BD	Spin Hall effect and spin orbit torques	Regency B
	BE	Patterned films and nanoparticles I: Vortices, domain walls, nanomagnet arrays	Regency C
	BF	Voltage-controlled magnetic anisotropy	Regency D
	BG	Soft magnetic materials III: Bulk crystalline alloys, films, and devices	Crystal A
	BH	Magnetic semiconductors I	Crystal B
	BI	Electronic structure and itinerant magnetism	Crystal C
2:30 p.m.	BP	Micromagnetics I	Riverside Center
	BQ	Magnetic properties and perpendicular anisotropy in thin films and multilayers	Riverside Center
	BR	Spin torque and domain wall devices I	Riverside Center
	BS	Magnetoresistive oxides (CMR) II	Riverside Center
	BT	Hard magnetic thin films	Riverside Center
	BU	TMR/GMR I	Riverside Center
	BV	Soft magnetic materials for microwave applications I	Riverside Center
	BW	Soft magnetic materials for microwave applications II	Riverside Center
	BX	Magnetocaloric materials I	Riverside Center
	BY	Superconductivity	Riverside Center
7:30 p.m.	YA	Magnetic Materials and Energy Research	Crystal B
Wednesday 8:00 a.m.	CA	Spin transfer torques in magnetic bilayers with strong spin orbit coupling	Grand CD
	CB	MAMR and other advanced recording	Grand AB
	CC	Magnetization dynamics II	Regency A
	CD	Magnetocaloric materials II	Regency B
	CE	FePt and CoPt films I	Regency C
	CF	Magnetoelectric materials and devices I	Regency D
	CG	Soft magnetic materials for microwave applications III	Crystal A
	CH	Micromagnetics II	Crystal B
	CI	4f-,5f-, strongly correlated systems and superconducivity	Crystal C
9:00 a.m.	CP	Magnetization dynamics III	Riverside Center
	CQ	Motors and actuators I	Riverside Center
	CR	Motors and actuators II	Riverside Center
	CS	New magnetic materials	Riverside Center
	CT	FePt and CoPt films II	Riverside Center
	CU	Numerical methods and hysteresis I	Riverside Center
	CV	Energy assisted magnetic recording	Riverside Center
	CW	Soft magnetic materials for microwave applications IV	Riverside Center
	CX	Magnetic sensors and magnetoimpedance devices	Riverside Center
	CY	Magnetic nanoparticles I	Riverside Center
1:00 p.m.	DP	Half-metallics I: Heusler alloys and magnetite	Riverside Center
	DQ	Motors and actuators III	Riverside Center
	DR	Motors and actuators IV	Riverside Center
	DS	Patterned films and nanoparticles II: Vortices, nanowires, and magnetic media	Riverside Center
	DT	Rare-earth-free permanent magnets and applications	Riverside Center
	DU	Rare earth magnets III	Riverside Center
	DV	Magnetoelastic materials II	Riverside Center
	DW	Soft magnetic materials IV: Amorphous and nanocrystalline materials	Riverside Center
	DX	Magnetoelectric materials and devices II	Riverside Center
1:30 p.m.	DA	Current trends in molecular magnetism	Grand CD
	DC	Domain wall devices	Regency A
	DF	Magnetoelastic materials I	Regency D
	DG	Magnetic sensors and microwave devices I	Crystal A
	DH	Numerical methods and hysteresis II	Crystal B
	DI	Tunnel/Giant magnetoresistance II	Crystal C
4:00 p.m.	ZA	Plenary Session	Grand ABCD

Thursday	EA	Chiral magnetism and skyrmions	Grand CD
8:00 a.m	EB	Recording physics and modeling I	Grand AB
	EC	Spin waves and magnonics	Regency A
	ED	Spin pumping, absorption and scattering	Regency B
	EE	Magnetic properties of Fe based thin films and multilayers	Regency C
	EF	Spin torque II	Regency D
	EG	Soft magnetic materials V: Amorphous and nanocrystalline materials	Crystal A
	EH	Spins in graphene and silicon	Crystal B
	EI	Half-metallics II: Heusler alloys, oxides, and other	Crystal C
9:00 a.m.	EP	Magnetic nanoparticles II	Riverside Center
	EQ	Motors and actuators V	Riverside Center
	ER	Motors and actuators VI	Riverside Center
	ES	Multiferroic materials I	Riverside Center
	ET	(Anisotropic) magnetoresistance, magnetoimpedance, and Hall effect I	Riverside Center
	EU	Magnetic fluids and applications I	Riverside Center
	EV	TMR/GMR II	Riverside Center
	EW	Microwave, molecular and fluid magnetism	Riverside Center
	EX	Strongly correlated systems: Dynamics and low dimensions	Riverside Center
1:30 p.m.	FA	New developments in spin caloritronics	Grand CD
	FB	Reader, writer, tape, overcoats I	Grand AB
	FC	Ultrafast switching and magnetization dynamics	Regency A
	FD	Magneto-optical materials I	Regency B
	FE	Exchange bias II	Regency C
	FF	MRAM and magnetic logic II	Regency D
	FG	Inductors and transformers I	Crystal A
	FH	Magnetic fluids and applications II	Crystal B
	FI	(Anisotropic) magnetoresistance, magnetoimpedance, and Hall effect II	Crystal C
2:30 p.m.	FP	Magnetic semiconductors II	Riverside Center
	FQ	Permanent magnet processing and characterization I	Riverside Center
	FR	Magnetoelectric materials and devices III	Riverside Center
	FS	Patterned films and nanoparticles III: Nanomagnet arrays	Riverside Center
	FT	Spin torque and domain wall devices II	Riverside Center
	FU	Motors and actuators VII	Riverside Center
	FV	Magnetic nanoparticles and biomedical applications I	Riverside Center
	FW	Magnetic sensors and microwave devices II	Riverside Center
	FX	Novel applications	Riverside Center

Friday	GA	Progress in heat assisted magnetic recording	Grand CD
8:00 a.m.	GC	Magnetic imaging I	Regency A
	GD	Motors, generators and actuators I	Regency B
	GE	Anisotropy and exchange coupling in Co, Co/Pd and Co/Ni based multilayers	Regency C
	GF	Magnetic logic	Regency D
	GG	Soft magnetic materials for microwave applications V	Crystal A
	GH	Magnetic nanoparticles and biomedical applications II	Crystal B
.	GI	Low-dimensional systems I	Crystal C
9:00 a.m.	GP	Domain wall and vortex dynamics I	Riverside Center
	GQ	Motors and actuators VIII	Riverside Center
	GR	Motors and actuators IX	Riverside Center
	GS	Motors and permanent magnet machines	Riverside Center
	GT	Magnetocaloric materials III	Riverside Center
	GU	4f-, 5f- and strongly correlated systems	Riverside Center
	GV	Fundamental properties and cooperative phenomena II	Riverside Center
	GW	Multiferroic materials II	Riverside Center
	GX	Exchange bias III	Riverside Center
	GY	Magneto-optical materials II	Riverside Center
1:30 p.m.	HA	Magnetic nanomaterials for therapeutic applications	Grand CD
	HB	Patterned films and nanoparticles IV: Bit patterned media, antidots and magnetic logic	Grand AB
	HC	Magnetic imaging II: New applications	Regency A
	HD	Motors, generators and actuators II	Regency B
	HE	Control, propulsion, shielding, and MEMS for magnetic devices I	Regency C
	HF	Multiferroic materials III	Regency D
	HG	Soft magnetic materials VI: Nanostructuring, characterization and applications	Crystal A
	HH	Magnetic nanoparticles III	Crystal B
	HI	Critical phenomena and frustrated magnetism	Crystal C
2:30 p.m.	HP	Domain wall and vortex dynamics II	Riverside Center
	HQ	Low-dimensional systems II: Graphene and topological insulators	Riverside Center
	HR	Spin currents in metals and semiconductors	Riverside Center
	HS	Magnetic properties of thin films	Riverside Center
	HT	Control, propulsion, shielding, and MEMS for magnetic devices II	Riverside Center
	HU	Inductors and transformers II	Riverside Center
	HV	Reader, writer, tape, overcoats II	Riverside Center
	HW	Recording physics and modeling II	Riverside Center
	HX	Permanent magnet processing, and characterization II	Riverside Center
	HY	Magnetic imaging III: New instrumentation	Riverside Center



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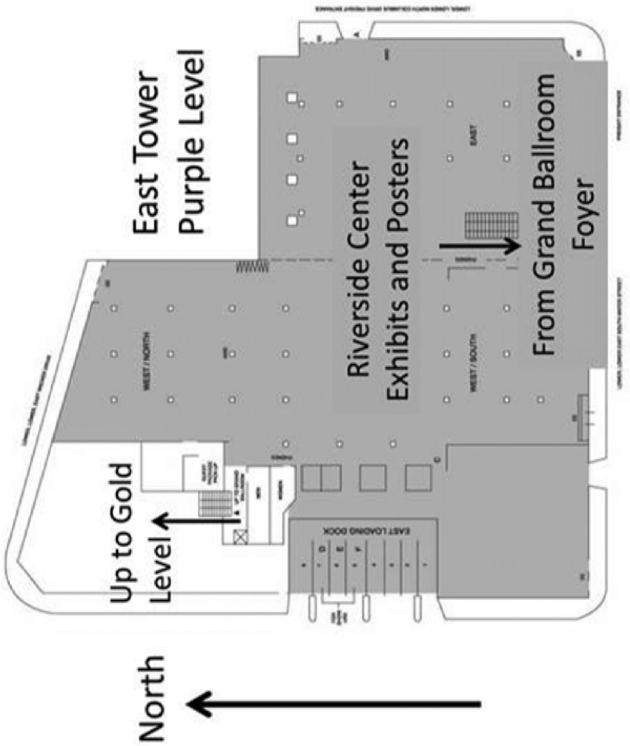

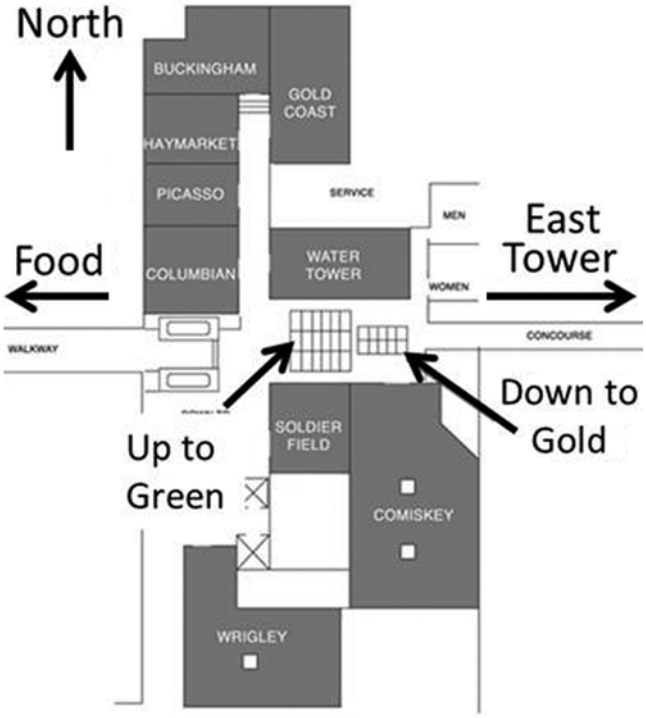

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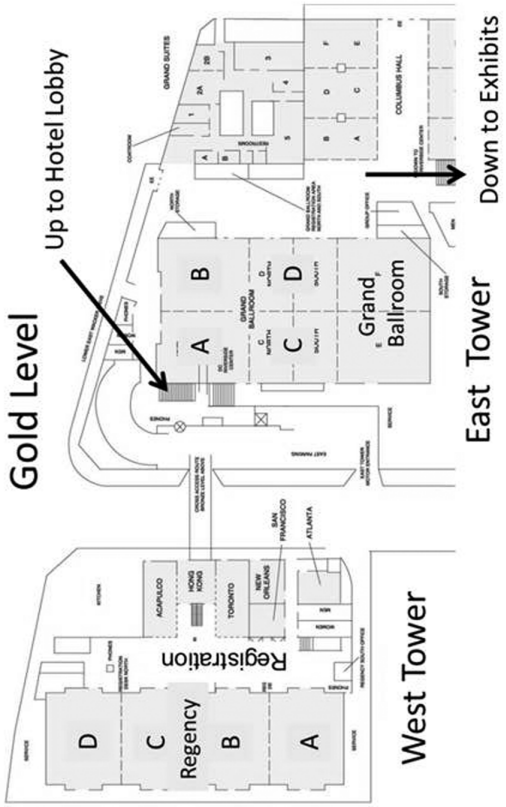

MONDAY EVENING 7:00 — CRYSTAL B

Session XA
TUTORIAL: SPIN CALORITRONICS
Ilya Krivorotov, Chair

7:00

XA-01. Spin caloritronics theory. ***(Invited)*** *G. Bauer[1,2] 1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Kavli Institute of Nanoscience, Delft University of Technology, Delft, Netherlands*

7:30

XA-02. Spin caloritronics with magnons. ***(Invited)*** *B. Hillebrands[1] 1. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany*

8:00

XA-03. Experimental aspects of spin caloritronics. ***(Invited)*** *R. Myers[1] 1. Department of Materials Science and Engineering, Ohio State University, Columbus, OH*

TUESDAY MORNING 8:00 — GRAND CD

Session AA
SYMPOSIUM ON VOLTAGE CONTROL OF MAGNETISM
Pedram Khalili, Chair

8:00

AA-01. Controlling Electron and Spin Transport by Interface Magnetoelectric Effects. ***(Invited)*** *E.Y. Tsymbal[1] 1. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE*

8:36

AA-02. High-speed dynamics induced by electric field in magnetic tunnel junctions. ***(Invited)*** *Y. Shiota[1,3]*, S. Miwa[1,3], F. Bonell[1,3], T. Nozaki[2,3], N. Mizuochi[1,3], T. Shinjo[1] and Y. Suzuki[1,3] *1. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 2. National Institute of Advanced Industrial Science and Technology (AIST), Spintronics Research Center, Tsukuba, Japan; 3. CREST, Japan Science Technology Agency, Saitama, Japan*

9:12

AA-03. Voltage control of magnetism using functional dielectric materials. ***(Invited)*** *G. Beach[1] 1. Materials Science and Engineering, MIT, Cambridge, MA*

9:48

AA-04. Electrical Manipulation of Interface Magnetism in Oxide Heterostructures. ***(Invited)***A. Chanthbouala[1], A. Crassous[1], V. Garcia[1], K. Bouzehouane[1], S. Fusil[1], L. Bocher[3], A. Gloter[3], C. Deranlot[1], S. Xavier[4], N. Mathur[2], M. Bibes[1] and *A. Barthélémy[1] 1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. University of Cambridge, Cambridge, United Kingdom; 3. Laboratoire de Physique des solides, Université Paris Sud, Orsay, France; 4. Thales Research and Technology, Palaiseau, France*

10:24

AA-05. Electric-Field-Induced Magnetization Reversal in Multiferroic Heterostructures. ***(Invited)*** *S. Salahuddin[1] 1. University of California at Berkeley, Berkeley, CA*

TUESDAY MORNING 8:00 — GRAND AB

Session AB
HEAT ASSISTED MAGNETIC RECORDING
Barry Stipe, Chair

8:00

AB-01. Modeling of a Au nanodot excited with InAs quantum dot emitters for use as a HAMR heat source. *K. Kuriyama[1]*, M.J. Chabalko[2], Y. Kong[2], Y. Lou[2], T.E. Schlesinger[2] and J.A. Bain[2] *1. Pioneer Corporation, Kawasaki, Kanagawa, Japan; 2. Dept. of ECE, Carnegie Mellon University, Pittsburgh, PA*

8:12

AB-02. A Process for Transferring and Patterning InAs Quantum Dot Optical Gain Media for Use in Fabricating Near Field Optical Sources for HAMR.E.B. Quirk[1], A. Gamble[1], R. Hussin[1], G. Slovin[1], T.E. Schlesinger[1], *J.A. Bain*[1], Y. Luo[1] and K. Kuriyama[2] *1. Electrical and Computer Engineering, Carnegie Mellon Universtiy, Pittsburgh, PA; 2. Pioneer Corporation, Kawasaki, Kanagawa, Japan*

8:24

AB-03. Analysis of Plasmon Resonances in Metallic Nanostructures with Heat Sink Used in Heat-Assisted Magnetic Recording. *L. Hung*[1], P. McAvoy[1], C. Krafft[2] and I. Mayergoyz[3] *1. Electrical and Computer Engineering, University of Maryland, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD; 3. Electrical and Computer Engineering, UMIACS and AppEl Center, University of Maryland, College Park, MD*

8:36

AB-04. System modeling of energy assisted bit patterned media magnetic recording. ***(Invited)*** D. Gabay[1], Q. Ding[1], M. Lubarda[1], M. Escobar[1] and *V. Lomakin*[1] *1. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA*

9:12

AB-05. Measurement of the Temperature Gradient in Thermally Assisted Magnetic Recording. *H. Richter*[1], C. Poon[1], O. Mosendz[1], G. Parker[1], R. Zakai[1] and B. Stipe[1] *1. HGST, San Jose, CA*

9:24

AB-06. Understanding Noise Mechanisms and SNR Performance in HAMR. *H. Li*[1] and J. Zhu[1] *1. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*

9:36

AB-07. Atomistic Simulation for Thermal Switching Field Distribution of FePt Grains. *S. Wang*[1], M. Mallary[2] and R.H. Victora[1] *1. Center for Micromagnetics and Information Technologies, Electrical and Computer Engineering Department, University of Minnesota, Minneapolis, MN; 2. Western Digital Technologies, San Jose, CA*

9:48

AB-08. Giant shifting in optical constants around Curie temperature for ferromagnetic metal in infrared region: a possible candidate for *Tc* measurement. *W. Wang*[1], S. Saito[1], G. Du[1], M. Matsuda[2], M. Suzuki[2] and M. Takahashi[3] *1. Department of Electronic Engineering, Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. J.A. Woollam Japan Corporation, Tokyo, Japan; 3. New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan*

10:00

AB-09. Measurement of magnetic properties relevant to heat-assisted-magnetic-recording. *A. Chernyshov*[1], D. Treves[1], T. Le[1], B. Valcu[1], H. Yuan[1], A. Ajan[1] and R. Acharya[1] *1. Western Digital, San Jose, CA*

10:12

AB-10. A New AFM-Based Technique to Detect the NFT Protrusion on Heat-Assisted Magnetic Recording Head. *D. Li*[1], M. Staffaroni[1], E. Schreck[1] and B. Stipe[1] *1. HGST, A Western Digital Company, San Jose, CA*

10:24

AB-11. Light Propagation Efficiency Evaluation Method by Using a Pinhole for Heat-assisted Magnetic Recording. *H. Takei*[1], Y. Iwanabe[1], A. Ando[1], M. Mukoh[1] and H. Miyamoto[1] *1. Hitachi,Ltd.,Central Research Laboratory, Tokyo, Japan*

10:36

AB-12. Improved media heat sinking for narrow-track heat-assisted magnetic recording. *S. Pisana*[1], O. Mosendz[1], R. Brockie[1], M. Staffaroni[1], G.J. Parker[1], O. Hellwig[1] and B.C. Stipe[1] *1. San Jose Research Center, HGST, a Western Digital Company, San Jose, CA*

10:48

AB-13. Efficiency Analysis of Near Field Optical Transducer Used in Heat-assisted Magnetic Recording. *B. Xu*[1], Z. Cen[1], Y. Toh[1], J. Li[1], K. Ye[1] and J. Zhang[1] *1. Data Storage Institute, Singapore*

TUESDAY MORNING 8:00 — **REGENCY A**

Session AC
VORTEX DYNAMICS
Aurelien Manchon, Chair

8:00

AC-01. Commensurate and incommensurate states in nanocontact vortex oscillations. S. Petit-Watelot[1], *J. Kim*[1], A. Ruotolo[2,3], R.M. Otxoa[1], K. Bouzehouane[3], J. Grollier[3], A. Vansteenkiste[4], B. Van de Wiele[5], V. Cros[3] and T. Devolder[1] *1. Institut d'Electronique Fondamentale, CNRS / Univ. Paris-Sud, Orsay, France; 2. Department of Physics and Materials Science, City University of Hong Kong, Kowloon, Hong Kong; 3. Unite Mixte de Physique CNRS/Thales and Univ. Paris-Sud, Palaiseau, France; 4. Department of Solid State Sciences, Ghent University, Ghent, Belgium; 5. Department of Electrical Energy, Systems and Automation, Ghent University, Ghent, Belgium*

8:12

AC-02. Analysis of synchronized magnetization vortex oscillations in injection-locked spin-transfer nano-oscillators. *M. d'Aquino*[1], C. Serpico[2] and P. Bortolotti[3] *1. Dipartimento per le Tecnologie, Università di Napoli "Parthenope", Napoli, Italy; 2. Dipartimento di Ingegneria Elettrica, Università degli Studi di Napoli Federico II, Napoli, Italy; 3. Unité Mixte de Physique CNRS/Thales, France, Paris, France*

8:24

AC-03. Experiments and theory of parametric excitations in spin-transfer vortex oscillators. *P. Bortolotti*[1], C. Serpico[2], E. Grimaldi[1], J. Grollier[1], A. Fukushima[3], H. Kubota[3], K. Yakushiji[3], S. Yuasa[3], K. Ando[3], V. Cros[1] and A. Fert[1] *1. Unité mixte de Physique CNRS/THALES, Palaiseau, France; 2. Ingegneria Elettrica, Università di Napoli "Federico II", Napoli, Italy; 3. National Institute of Advanced Industrial Science and Technology (AIST), Spintronics Research Center, Tsukuba, Japan*

8:36

AC-04. Control and manipulation of the dynamic response of interacting spin vortices. ***(Invited)*** *S. Jain*[1], V. Novosad[1], F.Y. Fradin[1], J.E. Pearson[1], V. Tiberkevich[3], A.N. Slavin[3] and S.D. Bader[1,2] *1. Materials Science Division, Argonne National Laboratory, Lemont, IL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Lemont, IL; 3. Department of Physics, Oakland University, Rochester, MI*

9:12

AC-05. Magnetic vortex core reversal by interference between (multi-GHz) azimuthal spin waves and the (sub-GHz) vortex gyromode. *M. Sproll*[1], H. Bauer[2], M. Noske[1], M. Kammerer[1], G. Dieterle[1], H. Stoll[1], A. Gangwar[2], M. Weigand[1], G. Woltersdorf[2], C. Back[2] and G. Schuetz[1] *1. Department Schuetz, Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Department for Experimental Physics, Regensburg University, Regensburg, Germany*

9:24

AC-06. Magnetic vortex gyration in nonparabolic potentials - Time-resolved imaging and broadband ferromagnetic resonance spectroscopy. *G. Meier*[1] *1. University of Hamburg, Hamburg, Germany*

9:36

AC-07. Direct imaging of spin wave emission from magnetic vortex cores. *S. Wintz*[1,2], M. Weigand[3], H. Stoll[3], G. Schü tz[3], J. Raabe[4], C. Quitmann[4], J. Lindner[1], A. Erbe[1] and J. Fassbender[1,2] *1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Technische Universität Dresden, Dresden, Germany; 3. Max-Planck-Institut für Intelligente Systeme, Stuttgart, Germany; 4. Paul Scherrer Institut, Villigen, Switzerland*

9:48

AC-08. Switching vortex chirality in patterned magnetic nanodisks by nanosecond field pulses. ***(Invited)*** *V. Uhlir*[1,2], M. Urbanek[2,3], L. Hladik[3], J. Spousta[2,3], M. Im[4], P. Fischer[4], E.E. Fullerton[1] and T. Sikola[2,3] *1. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 2. CEITEC BUT, Brno University of Technology, Brno, Czech Republic; 3. Institute of Physical Engineering, Brno University of Technology, Brno, Czech Republic; 4. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA*

10:24

AC-09. Spin vortex pair dynamics in the limit of strong core-core coupling. *B. Koop*[1], S.S. Cherepov[1], A.Y. Galkin[2], R.S. Chymyn[2], B.A. Ivanov[2], D.C. Worledge[3] and V. Korenivski[1] *1. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden; 2. Institute of Magnetism, National Academy of Science, Kiev, Ukraine; 3. T.J. Watson Research Center, IBM, Yorktown Heights, NY*

10:36

AC-10. Controlled excitation of the collective dynamics in coupled magnetic vortices. *S. Sugimoto*[1,2], H. Fujimori[1], Y. Niimi[1], Y. Fukuma[2,3], S. Kasai[2,4] and Y. Otani[1,2] *1. Institute for Solid State Physics, Chiba, Japan; 2. RIKEN, Saitama, Japan; 3. Frontier Research Academy for Young Researchers, Iizuka, Japan; 4. National Institute for Material Sciences, Tsukuba, Japan*

10:48

AC-11. Ballistic motion of vortices between magnetic nanocontacts. M. Manfrini[2], *T. Devolder*[1], J. Kim[1], S. Petit-Watelot[1], W. Van Roy[2], L. Lagae[2,3] and L. Altimime[2] *1. Institut d'Electronique Fondamentale, UMR CNRS 8622 and Univ Paris-Sud, Orsay, France; 2. IMEC, Leuven, Belgium; 3. Physics and Astronomy department, K.U. Leuven, Leuven, Belgium*

TUESDAY MORNING 8:00 **REGENCY B**

Session AD
SPIN CALORITRONICS AND SPIN INJECTION
Liam O'Brien, Chair

8:00

AD-01. Tunneling magneto Seebeck effect. ***(Invited)*** *A. Thomas*[1,2] *1. Physics, Bielefeld University, Bielefeld University, Germany; 2. Physics, University of Hamburg, Hamburg, Germany*

8:36

AD-02. Heat-induced spin-transfer torque in YIG/Pt structures. *M.B. Jungfleisch*[1], T. An[2], K. Ando[2], Y. Kajiwara[2], K. Uchida[2], V.I. Vasyuchka[1], A.V. Chumak[1], A.A. Serga[1], B. Hillebrands[1] and E. Saitoh[2]*1. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, 67663, Germany; 2. Institute for Materials Research, Tohoku University, Sendai, 980-8577, Japan*

8:48

AD-03. Thermally Induced Magnonic Spin Currents and Domain Wall Motion. *U. Ritzmann*[1], D. Hinzke[1], A. Kehlberger[2], R. Rö ser[2], G. Jacob[2], M. Klä ui[2] and U. Nowak[1]*1. Physics Department, University of Konstanz, Konstanz, Germany; 2. Institute of Physics, Johannes Gutenberg-University Mainz, Mainz, Germany*

9:00

AD-04. Observation of the Planar Nernst Effect in Ferromagnetic Thin Fims with In-plane Thermal Gradients. *A.D. Avery*[1,*], M.R. Pufall[2] and B.L. Zink[1]*1. Physics, University of Denver, Denver, CO; 2. National Institute of Standards and Technology, Boulder, CO*

9:12

AD-05. Thermoelectric Detection of Ferromagnetic Resonance of a Nanoscale Ferromagnet. ***(Invited)***F.L. Bakker[1], *J. Flipse*[1], A. Slachter[1], D. Wagenaar[1] and B.J. van Wees[1]*1. Physics of Nanodevices, Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands*

9:48

AD-06. Anisotropic magnetothermopower of Py thin films. *P.B. Jayathilaka*[1], T.M. Eggers[1], D.D. Belyea[1] and C.W. Miller[1]*1. University of South Florida, Tampa, FL*

10:00

AD-07. Transition from spin accumulation into interface states to spin injection in the Ge conduction band. *M. Jamet*[1], A. Jain[1], C. Vergnaud[1], J. Peiro[2], J. Le Breton[2], E. Prestat[1], L. Louahadj[1], C. Portemont[3], C. Ducruet[3], V. Baltz[1], A. Marty[1], A. Barski[1], P. Bayle-Guillemaud[1], L. Vila[1], J. Attané [1], E. Augendre[4], H. Jaffrè s[2] and J. George[2]*1. Institut Nanosciences et Cryogénie, Commissariat à l'Energie Atomique et aux Energies Alternatives et Université Joseph Fourier, Grenoble, France; 2. Unité Mixte de Physique, CNRS-Thalès et Université Paris Sud, Palaiseau, France; 3. CROCUS Technology, Grenoble, France; 4. LETI, Commissariat à l'Energie Atomique et aux Energies Alternatives, Grenoble, France*

10:12

AD-08. An investigation of the ordinal and inverted Hanle effects in highly-doped Si. *Y. Aoki*[1], M. Kameno[1], Y. Ando[1], E. Shikoh[1], T. Shinjo[1], M. Shiraishi[1], T. Sasaki[2], T. Oikawa[2] and T. Suzuki[3]*1. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 2. SQ Research Center, TDK Corporation, Nagano, Japan; 3. AIT, AIT, Akita, Japan*

10:24

AD-09. Spin accumulation and spin diffusion in aluminum using three-terminal Hanle measurements.O. Txoperena[1], M. Gobbi[1], A. Bedoya-Pinto[1], L.E. Hueso[1,2] and *F. Casanova*[1,2]*1. CIC nanoGUNE, Donostia-San Sebastian, Basque Country, Spain; 2. Ikerbasque, Basque Foundation for Science, Bilbao, Basque Country, Spain*

10:36

AD-10. Non-local and Local Signals for $Co_2FeAl_{0.5}Si_{0.5}$ / n-GaAs Junctions. *T. Saito*[1], N. Tezuka[1] and S. Sugimoto[1]*1. Materials Science, Tohoku university, Sendai, Miyagi, Japan*

10:48

AD-11. Spin injection into superconducting Nb by quasiparticle excitation. *T. Wakamura*[1], Y. Niimi[1] and Y. Otani[1,2]*1. ISSP, University of Tokyo, Kashiwa, Chiba, Japan; 2. ASI, RIKEN, Wako, Saitama, Japan*

TUESDAY MORNING 8:00 — REGENCY C

Session AE
RARE EARTH MAGNETS I
Christina Chen, Chair

8:00

AE-01. Predicting the Future of Permanent Magnetism. ***(Invited)*** *R. Skomski*[1], P. Manchanda[2], P.K. Sahota[2], B. Balasubramanian[1], A. Kashyap[2] and D.J. Sellmyer[1]*1. Physics and Astronomy and NCMN, University of Nebraska, Lincoln, NE; 2. School of Basic Sciences, Indian Institute of Information Technology, Mandi, Himachal Pradesh, India*

8:36

AE-02. Microstructure and coercivity relationships of hot-deformed Nd-Fe-B magnets. *J. Liu*[1,2], H.S. Amin[1], T. Ohkubo[1], A. Hattori[3], K. Hioki[3] and K. Hono[1,2]*1. National Institute for Materials Science, Tsukuba, Ibaraki Ken, Japan; 2. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Ibaraki Ken, Japan; 3. Daido Steel Co., Ltd, Nagoya, Aichi Ken, Japan*

8:48

AE-03. Dy-reduced hot-deformed Nd-Fe-B magnets by means of an optimized electrical resistivity. *S. Sawatzki*[1,2], I. Dirba[2], L. Schultz[2] and O. Gutfleisch[1,2] *1. TU Darmstadt, Materials Science, Darmstadt, Germany; 2. IFW Dresden, Dresden, Germany*

9:00

AE-04. Searching for New Neodymium Based Permanent Magnetic Materials Stabilized by Volatile or Toxic Elements. *B. Jensen*[1], K.W. Dennis[1] and R.W. McCallum[1] *1. Ames Laboratory, Ames, IA*

9:12

AE-05. Structural and magnetic properties of Iron-rich $Sm(CoFeCuZr)_z$ sintered magnet. *Y. Horiuchi*[1], T. Kobayashi[1], T. Kobayashi[1], K. Okamoto[1], M. Hagiwara[1], M. Endo[1], S. Sakurada[1] and T. Nakamura[2] *1. Corporate R & D Center, Toshiba Corporation, Kawasaki, Kanagawa, Japan; 2. Toshiba Corporation, Minato-ku, Tokyo, Japan*

9:24

AE-06. Mechanochemical synthesis of $(Sm,Pr)_2(Co,Fe)_{17}$ anisotropic hard magnetic powders. *A. Gabay*[1], W. Li[1] and G.C. Hadjipanayis[1] *1. Department of Physics and Astronomy, University of Delaware, Newark, DE*

9:36

AE-07. Texture and magnetic properties of low-temperature annealed Sm-Co films from amorphous precursors. *Y. Zhang*[1], J.E. Pearson[1], R.W. Brotzman[2], Y. Choi[3] and J.S. Jiang[1] *1. Materials Science, Argonne National Laboratory, Argonne, IL; 2. Energy Systems Division, Argonne National Laboratory, Argonne, IL; 3. Advanced Photon Source, Argonne National Laboratory, Argonne, IL*

9:48

AE-08. High-Temperature Magnetic Properties of Sm2Co17/Nd2Fe14B Hybrid Nanocomposite Magnets. *N. Poudyal*[1], V. Nguyen[1] and J. Liu[1] *1. Physics, University of Texas at Arlington, Arlington, TX*

10:00

AE-09. Microstructure-coercivity relationship of hot-deformed Nd-Fe-B anisotropic magnets. *H. Sepehri-Amin*[1], K. Hioki[2], T. Ohkubo[1], A. Hattori[2] and K. Hono[1] *1. National Institute for Materials Science of Japan (NIMS), Tsukuba, Ibaraki, Ibaraki, Japan; 2. Daido Corporate Research & Development Center, Daido Steel Co. Ltd., Nagoya, Japan*

10:12

AE-10. Finite-Temperature Micromagnetism. *R. Skomski*[1], G.C. Hadjipanayis[2] and D.J. Sellmyer[1] *1. Department of Physics & Astronomy and NCMN, University of Nebraska, Lincoln, NE; 2. Department of Physics, University of Delaware, Newark, DE*

10:24

AE-11. Coercivity reduction in permanent magnets due to thermal activation. *S. Bance*[1], H. Oezelt[1], T. Schrefl[1], G.T. Zimanyi[2], N. Dempsey[3], D. Givord[3] and G. Hrkac[4] *1. Industrial Simulation, St. Poelten University of Applied Sciences, St. Poelten, Austria; 2. Physics, University of California, Davis, CA; 3. Laboratoire Louis Néel, CNRS, Grenoble, France; 4. Engineering Materials, University of Sheffield, Sheffield, United Kingdom*

10:36

AE-12. Synthesis and Sintering of High Performance Permanent Magnets based on a novel "Hybrid Microwave Assisted Method" *D.G. Niarchos*[1], M. Gjoka[1], E. Devlin[1] and G. Hadjipanayis[2] *1. Institute for Advanced Materials Physicochemical Processes Nanotechnology, NCSR Demokritos, Aghia Paraskevi, Attikis, Attikis, Greece; 2. Physics and Astronomy, University of Delaware, Newark, DE*

TUESDAY MORNING 8:00 — REGENCY D

Session AF
SPIN TORQUE I
Alina Deac, Chair

8:00

AF-01. Determination of the frequency agility of Spin Transfer Oscillators. M. Quinsat[1,2], *A. Jenkins*[1], F. Garcia Sanchez[1], J.F. Sierra[4,1], C. Dieudonné [1], A. Zeltser[3], B. Dieny[1], J.A. Katine[3], M. Cyrille[2] and U. Ebels[1] *1. Spintec CEA/CNRS, Grenoble, France; 2. CEA-LETI, Grenoble, Rhone-Alpes, France; 3. Hitachi Global Storage Technologies, San Jose, CA; 4. Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain*

8:12

AF-02. Mutual phase locking of spin-transfer nanocontacts below the ferromagnetic resonance frequency. *M. Pufall*[1], W. Rippard[1], E. Evarts[1] and J. Shaw[1] *1. Electromagnetics Division, NIST, Boulder, CO*

8:24

AF-03. Withdrawn.

8:36

AF-04. Quantitative MRFM characterization of the autonomous and forced dynamics in a spin transfer nano-oscillator. *O. Klein*[1], A. Hamadeh[1], V. Naletov[1], G. de Loubens[1], N. Locatelli[2], J. Grollier[2] and V. Cros[2] *1. Service de Physique de l'État Condensé, Gif-Sur-Yvette, France; 2. Unité Mixte de Physique CNRS/Thales, Palaiseau, France*

8:48

AF-05. Two-tone experiment in a vortex spin torque nano-oscillator. *S.Y. Martin*[1], C. Thirion[2], C. Hoarau[2], C. Baraduc[1] and B. Dié ny[1] *1. Spintec, Grenoble, France; 2. Institut Néel, CNRS, Grenoble, France*

9:00

AF-06. Time Required to Injection-Lock Spin-Torque Nanoscale Oscillators. *W. Rippard*[1], M. Pufall[1], A. Kos[1] and E. Evarts[1] *1. NIST, Boulder, CO*

9:12

AF-07. Spin-torque induced high-frequency magnetization precession in magnetic tunnel junctions with a perpendicularly magnetized free layer and an in-plane magnetized polarizer. ***(Invited)*** *H. Kubota*[1], K. Yakushiji[1], H. Maehara[1], S. Ishibashi[2], T. Saruya[1], A. Fukushima[1], M. Konoto[1], S. Miwa[2], Y. Suzuki[2,1], H. Arai[1], T. Taniguchi[1] and H. Imamura[1] *1. National Institute of Advance Industrial Science and Technology (AIST), Tsukuba, Japan; 2. Osaka University, Toyonaka, Japan*

9:48

AF-08. Magnetization dynamics of an MgO-based spin-torque oscillator with a perpendicular polarizer layer and a planar free layer. *H. Suto*[1], T. Yang[1], T. Nagasawa[1], K. Kudo[1], K. Mizushima[1] and R. Sato[1] *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

10:00

AF-09. General switching voltages for magnetic tunnel junctions with in-plane and/or perpendicular-to-plane anisotropy free layers. *K. Bernert*[1,2], V. Sluka[1], C. Fowley[1], H. Gan[1], J. Fassbender[1,2] and A.M. Deac[1] *1. Helmholtz Zentrum Dresden Rossendorf, Dresden, Germany; 2. Technische Universität, Dresden, 01062, Germany*

10:12

AF-10. Microwave signal generation in single-layer nano-contact spin torque oscillators. *S. Redjai Sani*[1,2], S. Mohseni[1,2] and J. Åkerman[1,3] *1. Material physics, Royal institute technology (KTH), Stockholm, Sweden; 2. KTH, Stockholm, Sweden; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

10:24

AF-11. Current-induced domain-walls motion in presence of spin-orbit torque in Pt/Co/AlOx trilayers. *E. Jué*[1], A. Hrabec[2], M. Miron[1], O. Boulle[1], S. Auffret[1], B. Rodmacq[1], S. Bandiera[1], S. Pizzini[2], J. Vogel[2], A. Schuhl[2] and G. Gaudin[1] *1. SPINTEC, Grenoble, France; 2. Institut Néel, Grenoble, France*

10:36

AF-12. Fabrication and characterization of a prototype Magneto-optical light modulator driven by spin transfer switching. *K. Aoshima*[1], K. Machida[1], D. Kato[1], K. Wada[2], H. Kinjou[1], Y. Hashimoto[1], K. Kuga[1], H. Kikuchi[1], T. Ishibashi[2] and N. Shimidzu[1] *1. Japan Broadcasting Corp., Tokyo, Japan; 2. Department of Materials Sciences and Technology, Nagaoka University of Technology, Nagaoka, Niigata, Japan*

10:48

AF-13. X-ray imaging of magnetic normal modes driven by spin transfer torque in magnetic nanopillar devices. *L. Xue*[1,*], Y. Cui[1], T. Tyliszczak[2], M. Im[3], P. Fischer[3], R.A. Buhrman[1] and D.C. Ralph[1] *1. Cornell University, Ithaca, NY; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA*

TUESDAY MORNING 8:00 CRYSTAL A

Session AG
NEW MAGNETIC MATERIALS, MICROWAVE MATERIALS AND MOLECULAR MAGNETISM
Arata Tsukamoto, Chair

8:00

AG-01. Nonreciprocal waves in an array of dipolarly coupled magnetic nano-pillars. *R.V. Verba*[1], V.S. Tiberkevich[2], E. Bankowski[3], T. Meitzler[3], G.A. Melkov[1] and A.N. Slavin[2] *1. Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 2. Oakland University, Rochester, MI; 3. U.S. Army TARDEC, Warren, MI*

8:12

AG-02. Physical properties of Al doped barium hexagonal ferrite ($BaFe_{12-x}Al_xO_{19}$) thin films grown by metal-organic decomposition on Pt. *I. Harward*[1], Y. Nie[1,2], D. Chen[1,3], J. Baptist[1], J.M. Shaw[4] and Z. Celinski[1] *1. Center for Magnetism and Magnetic Nanostructures, University of Colorado, Colorado Springs, CO; 2. Department of Microelectronic Science and Technology, Huazhong University of Science and Technology, Wuhan, Hubei, China; 3. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China; 4. National Institute of Standards and Technology, Boulder, CO*

8:24

AG-03. Scanning Tunneling Microscopy and Spectroscopy Study of $NdPc_2$ on Cu(100). S. Fahrendorf[1,4], C. Besson[2,4], N. Atodiresei[3,4], V. Caciuc[3,4], F. Matthes[1,4], P. Kö gerler[2,4], *D.E. Bürgler*[1,4], S. Blü gel[3,4] and C.M. Schneider[1,4] *1. Peter Grünberg Institute (PGI-6), Forschungszentrum Jülich, Jülich, Germany; 2. Institut für Anorganische Chemie, RWTH Aachen, Aachen, Germany; 3. Peter Grünberg Institute (PGI-1) and Institute for Advanced Simulation (IAS-1), Forschungszentrum Jülich, Jülich, Germany; 4. Jülich Aachen Research Alliance (JARA-FIT), Forschunsgzentrum Jülich, Jülich, Germany*

8:36

AG-04. Muon Spin Relaxation Study of Magnetic Ordering in $Ni[TCNQ-D4]_2$. A. Berlie[1], *I. Terry*[1], M. Szablewski[1], T. Lancaster[1] and S. Giblin[2] *1. Physics, Durham University, Durham, United Kingdom; 2. ISIS, Rutherford Appleton Laboratory, Oxford, United Kingdom*

8:48

AG-05. Extended Skyrmion Phase in Epitaxial FeGe(111) thin films. *S. Huang*[1] and C. Chien[1] *1. Physics & Astronomy, The Johns Hopkins Univeristy, Baltimore, MD*

9:00

AG-06. Optimisation of Seed Layers for Polycrystalline Co_2FeSi Heusler Alloy Thin Films. J. Sagar[1], L. Lari[1,2], *A. Hirohata*[3,4] and K. O'Grady[1] *1. Department of Physics, University of York, York, United Kingdom; 2. York JEOL Nanocentre, University of York, York, United Kingdom; 3. Department of Electronics, University of York, York, United Kingdom; 4. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan*

9:12

AG-07. Kinetic arrest related to a first order ferri- to antiferromagnetic transition in the Heusler compound Mn2PtGa. *A.K. Nayak*[1], M. Nicklas[1] and C. Felser[1,2] *1. Max Planck Institute for Chemical Physics of Solids, D-01187 Dresden, Germany, Dresden, Saxony, Germany; 2. Institut für Anorganische und Analytische Chemie, Johannes Gutenberg Universität, 55099 Mainz, Germany, Mainz, Rheinland-Pfalz, Germany*

9:24

AG-08. Chiral magnetic soliton lattice in chiral magnet $CrNb_3S_6$. *Y. Togawa*[1], T. Koyama[2], S. Mori[2], Y. Kousaka[3], J. Akimitsu[3], S. Nishihara[4], K. Inoue[4], A. Ovchinnikov[5] and J. Kishine[6] *1. N2RC, Osaka Prefecture University, Sakai, Osaka, Japan; 2. Dept. of Materials Science, Osaka Prefecture University, Sakai, Osaka, Japan; 3. Dept. of Physics and Mathematics, Aoyama Gakuin University, Sagamihara, Kanagawa, Japan; 4. Dept. of Chemistry, Hiroshima University, Higashi-Hiroshima, Hiroshima, Japan; 5. Dept. of Physics, Ural Federal University, Ekaterinburg, Russian Federation; 6. Graduate School of Arts and Sciences, The Open University of Japan, Chiba, Chiba, Japan*

9:36

AG-09. Structural and magnetic chirality in Co-doped B20 FeSi epilayers. *N.A. Porter*[1], P. Sinha[1], M.B. Ward[1] and C.H. Marrows[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

9:48

AG-10. Multifunctional MnxGa films with ultrahigh coercivity, giant perpendicular anisotropy and large energy products. *L. Zhu*[1], S. Nie[1], K. Meng[1], D. Pan[1], J. Zhao[1] and H. Zheng[1] *1. State Key Laboratory of Superlattices and Microstructures, Institute of Semiconductors,Chinese Acadamy of Sciences, Beijng, China*

10:00

AG-11. Origin of Magnetism in TiO Nanoclusters. *X. Wei*[1,3], R. Zhou[2,3], B. Balamurugan[1,3], R. Skomski[1,3], X. Zeng[2,3] and D.J. Sellmyer[1,3] *1. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Department of Chemistry, University of Nebraska, Lincoln, NE; 3. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE*

10:12

AG-12. Ferromagnetism in Mn half-doped LaCrO3 perovskite. P. Barrozo[2] and *J. Aguiar*[1] *1. Departamento de Física, Universidade Federal de Pernambuco, Recife, PE, Brazil; 2. Departamento de Física, Universidade Federal de Sergipe, São Cristovão, PE, Brazil*

TUESDAY MORNING 8:00

CRYSTAL B

Session AH
MAGNETORESISTIVE OXIDES (CMR) I

Daniel Phelan, Co-Chair
Jason Hoffman, Co-Chair

8:00

AH-01. Growth and characterization of high quality epitaxial $La_{0.7}Sr_{0.3}MnO_3$ thin films using dual-laser ablation technique. *D. Mukherjee*[1], R. Hyde[1], M. Hordagoda[1], N. Bingham[1], M. Phan[1], H. Srikanth[1], S. Witanachchi[1] and P. Mukherjee[1] *1. Department of Physics and Center for Integrated Functional Materials (CIFM), University of South Florida, Tampa, FL*

8:12

AH-02. Temperature dependent magnetic domain reconfiguration in $La_{2/3}Sr_{1/3}MnO_3$ thin films.D. Pesquera[1], V. Skumryev[2], F. Sánchez[1], G. Herranz[1] and *J. Fontcuberta*[1] *1. ICMAB-CSIC, Bellaterra, Spain; 2. 2I nstitució Catalana de Recerca i Estudis Avançats (ICREA) and Departament de Física, Universitat Autònoma de Barcelona, Bellaterra, Spain*

8:24

AH-03. Thickness dependence of dynamic and static magnetic properties of $La_{0.7}Sr_{0.3}MnO_3$ films on $SrTiO_3$(001).. Monsen[1], J.E. Boschker[4], F. Macià [2], J. Wells[1], P. Nordblad[3], A. Kent[2], R. Mathieu[3], T. Tybell[4] and *E. Wahlström*[1,2] *1. Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway; 2. New York University, New York, NY; 3. Uppsala University, Uppsala, Sweden; 4. Department of Electronics and Telecommunications, Norwegian University of Science and Technology, Uppsala, Sweden*

8:36

AH-04. Enhanced Anisotropy in $La_{0.7}Sr_{0.3}MnO_3$ Films via Interface Engineering. *D. Arena*[1], J. Lee[2], T.S. Santos[3,4], C.S. Nelson[1], S.I. Hyun[5], J.H. Shim[5] and C.C. Kao[2] *1. National Synchrotron Light Source, Brookhaven National Lab, Upton, NY; 2. Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory, Menlo Park, CA; 3. Western Digital Corporation, San Jose, CA; 4. Center for Nanoscale Materials,, Argonne National Laboratory, Argonne, IL; 5. Department of Chemistry, Pohang University of Science and Technology, Pohang, Republic of Korea*

8:48

AH-05. Electrical detection of spin-reorientation transition in ferromagnetic $La_{0.4}Sm_{0.3}Sr_{0.3}MnO_3$M. Aparnadevi[1] and *R. Mahendiran*[1] *1. Physics department, National University of Singapore*

9:00

AH-06. Unusual Hall effect of $La_{0.67}Ca_{0.33}MnO_3$ thin films with percolative phase transition. *L. Yu*[1], X. Zhang[1], S. von Molnár[1], P. Xiong[1], L. Wang[2] and W. Wu[2] *1. Department of Physics, Florida State University, Tallahassee, FL; 2. Heifei National Lab for Physical Science at Microscale, University of Science and Technology of China, Hefei, China*

9:12

AH-07. Current density and intrinsic electroresistance of the $Sm_{1-x}Sr_xMnO_3$ manganite. *S.T. Mahmud*[1], M.S. Saber[1], H.S. Alagoz[1], J.A. Jung[1] and K. Chow[1] *1. Physics, University of Alberta, Edmonton, AB, Canada*

9:24

AH-08. Field - induced magnetic phase transition in Pr3+ doped Sm0.5Sr0.5MnO3 manganites.S.K. Giri[1] and *T.K. Nath*[1] *1. Physics & Meteorology, Indian Institute of Technlogy Kharagpur, Kharagpur, West Bengal, India*

9:36

AH-09. Influence of Ga doping on rare earth moment ordering and ferromagnetic transition in $Nd_{0.7}Sr_{0.3}Co_{1-x}Ga_xO_3$ *K. Pawan*[1], R.V. Maheswar[1], M. Aparnadevi[1], T. Tripurari Saharan[1] and R. Mahendiran[1] *1. Physics, NUS, Singapore*

9:48

AH-10. Hot electron transport in a strongly correlated transition metal oxide ferromagnet.K. Rana[1], T. Yajima[2,3], S. Parui[1], A.F. Kemper[2], T. Devereaux[2], Y. Hikita[2], H.Y. Hwang[2,4] and *T. Banerjee*[1] *1. Physics of Nanodevices Group, University of Groningen, Groningen, Netherlands; 2. SLAC National Accelerator Laboratory, Stanford Institute for Materials and Energy Sciences, Menlo Park,California 94025, CA; 3. Department of Advanced Materials Science, University of Tokyo, Kashiwa, Chiba, 277-8561, Japan; 4. Geballe Laboratory for Advanced Materials,Department of Applied Physics, Stanford University, Stanford, CA*

10:00

AH-11. Charge Transfer and Interfacial Magnetism in $(LaNiO_3)_n/(LaMnO_3)_2$ Superlattices. *J. Hoffman*[1], I. Tung[4,3], B. Nelson-Cheeseman[1], M. Liu[2], J. Freeland[3] and A. Bhattacharya[1,2] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 3. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 4. Department of Materials Science and Engineering, Northwestern University, Evanston, IL*

10:12

AH-12. Crossover from Polaronic to Magnetically Phase-Separated Behavior in $La_{1-x}Sr_xCoO_3$ *D. Phelan*[1], J. Zhao[2], H. Zheng[2], S. Wang[1], S. El Khatib[4], J. Barker[3], J.F. Mitchell[2] and C. Leighton[1] *1. CEMS, University of Minnesota, Minneapolis, MN; 2. MSD, Argonne National Laboratory, Argonne, IL; 3. NCNR, National Institute of Standards and Technology, Gaithersburg, MD; 4. Physics, American University of Sharjah, Sharjah, United Arab Emirates*

10:24

AH-13. Electric field control of magnetization at oxide interfaces. ***(Invited)*** F.A. Cuellar[1,2], Y.H. Liu[4], Z. Sefrioui[1], C. Leon[1], J.W. Freeland[5], M. Garcia-Hernandez[3], N.M. Nemes[1,3], M. Varela[7], S.J. Pennycook[7], S. Okamoto[7], M.R. Fitzsimmons[6], S.G. teVelthuis[4], M. Bibes[2], A. Barthelemy[2] and *J. Santamaria*[1] *1. GFMC. Dept Applied Physics, Universidad Complutense de Madrid, Madrid, Spain; 2. Unité Mixte de Physique CNRS/Thales, 91767 Palaiseau, France; 3. Instituto de Ciencia de Materiales de Madrid (ICMM-CSIC), 28049 Cantoblanco. Madrid., Spain; 4. Materials Science Division, Argonne National Laboratory, Argonne, IL; 5. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 6. Los Alamos National Laboratory, Los Alamos, NM; 7. Condensed Matter Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN*

TUESDAY MORNING 8:00 — CRYSTAL C

Session AI
TUNNEL/GIANT MAGNETORESISTANCE I
Jeffrey McCord, Chair

8:00

AI-01. MnMn/O and CoCo/O Terminations at Co_2MnSi/MgO Interface in a Magnetic Tunnel Junction Investigated by High Resolution Scanning Transmission Electron Microscopy. *F. Shi*[1], H. Liu[2], M. Yamamoto[2] and P.M. Voyles[1] *1. Department of Materials Science and Engineering, University of Wisconsin-Madison, Madison, WI; 2. Division of Electronics for Informatics, Hokkaido University, Sapporo, Japan*

8:12

AI-02. Spin torque switching of perpendicularly magnetized CoFeB-based tunnel junctions with high thermal tolerance. *K. Yamane*[1], Y. Higo[1], H. Uchida[1], Y. Nanba[1], S. Sasaki[1], H. Ohmori[1], K. Bessho[1] and M. Hosomi[1] *1. Solid State Memories Development Department, Core Device Development Group, Advanced Device Technology Platform, Sony Corporation, Atsugi, Japan*

8:24

AI-03. Magneto-Seebeck effect in magnetic tunnel junctions with different barrier thicknesses. *M. Walter*[1], N. Roschewsky[1], J. Walowski[1], V. Zbarsky[1], J.C. Leutenantsmeyer[1], M. Marahrens[1], M. Mü nzenberg[1], V. Drewello[2], A. Bö hnke[2], K. Rott[2], G. Reiss[2], A. Thomas[2], P. Peretzki[3], M. Seibt[3], M. Czerner[4], M. Bachmann[4] and C. Heiliger[4] *1. I. Physikalisches Institut, Georg-August-Universität Göttingen, Göttingen, Germany; 2. Department of Physics, Universität Bielefeld, Bielefeld, Germany; 3. IV. Physikalisches Institut, Georg-August-Universität Göttingen, Göttingen, Germany; 4. I. Physikalisches Institut, Justus-Liebig-Universität Giessen, Giessen, Germany*

8:36

AI-04. Magnetoresistance effect in Mn_xGa_{100-x}/FM(FM=Fe, Co, CoFeB)/MgO/CoFeB perpendicular magnetic tunnel junctions with different MnGa composition. *Q. Ma*[1], T. Kubota[1], S. Mizukami[1], X. Zhang[1], H. Naganuma[2], M. Oogane[2], Y. Ando[2] and T. Miyazaki[1] *1. WPI-AIMR, Tohoku University, Sendai, Japan; 2. Department of Applied Physics, Tohoku University, Sendai, Japan*

8:48

AI-05. Spin-dependent current enhancement by current-confined path and spin-filtering layer. *H. Yuasa*[1], Y. Fuji[1], M. Hara[1] and H. Fukuzawa[1] *1. Corporate R&D Center, Toshioba Corporation, Kawasaki, Kanagawa, Japan*

9:00

AI-06. Single electron spintronics studied in individual nanometre-scale magnetic tunnel junctions. *R.C. Temple*[1], K.J. Dempsey[1], A.P. Mihai[1] and C.H. Marrows[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

9:12

AI-07. Graphene as a Tunnel Barrier. *E. Cobas*[1], A.L. Friedman[1], O.M. van 't Erve[1], J.T. Robinson[1] and B.T. Jonker[1] *1. Naval Research Laboratory, Washington, DC*

9:24

AI-08. Epitaxial magnetic tunnel junctions with a monocrystalline Al_2O_3 barrier. *H. Sukegawa*[1], S. Mitani[1], T. Niizeki[1], T. Ohkubo[1], K. Inomata[1] and K. Hono[1] *1. Magnetic Material Unit, National Institute for Materials Science (NIMS), Tsukuba, Japan*

9:36

AI-09. Magnetization tilt angles in [Pd/Co]/Cu/[Co/Pd]-NiFe pseudo spin valves. *T. Nguyen*[1], S. Chung[1], S.M. Mohseni[1,2], R.K. Dumas[3], V. Fallahi[4], T.M. Eggers[5], C.W. Miller[5] and J. Åkerman[1,3] *1. Materials Physics, Royal Institute of Technology (KTH), 164 40 Kista, Stockholm, Sweden; 2. NanOsc AB, Electrum 205, 164 40 Kista, Stockholm, Sweden; 3. Department of Physics, University of Gothenburg, 412 96, Gothenburg, Sweden; 4. Department of Optics and Laser Engineering, University of Bonab, 5551761167, Bonab, Islamic Republic of Iran; 5. Physics Department, University of South Florida, Tampa, FL*

9:48

AI-10. Unusual features in the bias dependence of magnetocurrent in Si based devices. *S. Parui*[1], K. Rana[1] and T. Banerjee[1] *1. Physics of Nanodevices Group,, University of Groningen, Groningen, Netherlands*

10:00

AI-11. Controlling shot noise in double barrier epitaxial magnetic tunnel junctions. J. Cascales[1], *F.G. Aliev*[1], D. Herranz[1], T. Szczepanski[2], V. Dugaev[2], J. Barnas[3], A. Dulluard[4], M. Hehn[4] and C. Tiusan[4] *1. Universidad Autonoma de Madrid, Madrid, Spain; 2. Rzeszow University of Technology, Rzeszow, Poland; 3. Adam Mickiewicz University, Poznan, Poland; 4. Institut Jean Lamour, Nancy, France*

TUESDAY MORNING 9:00 — RIVERSIDE CENTER

Session AP
MAGNETIZATION DYNAMICS I (POSTER SESSION)
Zihui Wang, Chair

AP-01. Control of spin-wave phase and wavelength in microscopic magnonic waveguides. *V.E. Demidov*[1] and S.O. Demokritov[1] *1. Institute for Applied Physics, University of Muenster, Muenster, Germany*

AP-02. Spin-torque nano-emitters for magnonic applications. *H. Ulrichs*[1], V.E. Demidov[1], S.O. Demokritov[1] and S. Urazhdin[2] *1. University of Muenster, Muenster, Germany; 2. Emory University, Atlanta, GA*

AP-03. Angle-dependent spin-wave spectra of two-dimensional bicomponent magnonic crystals. *G. Duerr*[1], S. Tacchi[2], M. Madami[2], G. Gubbiotti[2,3], G. Carlotti[2] and D. Grundler[1] *1. Physik-Department E10, Technische Universitaet Muenchen, Garching b. Muenchen, Germany; 2. CNISM, Unità di Perugia and Dipartimento di Fisica, Perugia, Italy; 3. Istituto Officina dei Materiali del Consiglio Nazionale delle Ricerche (IOM-CNR), Sede di Perugia, c/o Dipartimento di Fisica, Perugia, Italy*

AP-04. Elliott-Yafet type scattering in Ultrafast Demagnetization Dynamics. *B.Y. Mueller*[1], M. Cinchetti[1], M. Aeschlimann[1] and B. Rethfeld[1] *1. Department of Physics, Technical University Kaiserslautern, Kaiserslautern, Germany*

AP-05. Spin Wave Modes in Cross Shaped Magnetic Nanoelements. B.K. Mahato[1], *B. Rana*[1], R. Mandal[1], D. Kumar[1], S. Barman[1], S. Sugimoto[3], Y. Fukuma[2,4], Y. Otani[2,3] and A. Barman[1] *1. Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Centre For Basic Sciences, Kolkata, West Bengal, India; 2. Advanced Science Institute, RIKEN, Hirosawa, Wako, Saitama, Japan; 3. Institute for Solid State Physics, University of Tokyo, Kashiwanoha, Kashiwa, Chiba, Japan; 4. Frontier Research Academy for Young Researchers, Kyushu Institute of Technology, lizuka, Fukuoka, Japan*

AP-06. The influence of structural changes on the spin waves spectra of periodic antidot wire. *J.W. Klos*[1], D. Kumar[2], M. Krawczyk[1] and A. Barman[2] *1. Faculty of Physics, Adam Mickiewicz University, Poznan, Poland; 2. Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Center for Basic Sciences, Kolkata, India*

AP-07. Theory of topological chiral edge modes in magnonic crystals. R. Shindou[1], R. Matsumoto[1], J. Ohe[2] and *S. Murakami*[1] *1. Department of Physics, Tokyo Institute of Technology, Tokyo, Japan; 2. Department of Physics, Toho University, Funabashi, Japan*

AP-08. Spin-wave-based majority-gate logic device. *S. Cherepov*[1], M. Bao[1], K. Wong[1], J.G. Alzate[1], J. Nath[1], P. Upadhyaya[1], P. Khalili Amiri[1], A. Khitun[2] and K.L. Wang[1] *1. Department of Electrical Engineering, University of California, Los Angeles, CA; 2. Department of Electrical Engineering, University of California, Riverside, CA*

AP-09. Multiplets of collective spin-wave modes during magnetization reversal in a one-dimensional magnonic crystal consisting of alternating-width nano-stripes. G. Gubbiotti[2], *S. Tacchi*[1], M. Madami[1], G. Carlotti[1], A. Adeyeye[3] and M. Kostylev[4] *1. Dipartimento di Fisica, CNISM-Unità di Perugia, Perugia, Italy; 2. Dipartimento di Fisica, CNR-IOM, Perugia, Italy; 3. Department of Electrical and Computer, Information Storage Materials Laboratory,National University of Singapore; 4. School of Physics, University of Western Australia, Perth, WA, Australia*

AP-10. Spin wave dispersion in NiFe antidot array with alternated holes diameter. *M. Madami*[1], S. Tacchi[1], G. Gubbiotti[1,2], G. Carlotti[1,3], J. Ding[4], A.O. Adeyeye[4], J.W. Klos[5] and M. Krawczyk[5] *1. CNISM - Unità di Perugia and Dipartimento di Fisica, Univesità di Perugia, Perugia, Italy; 2. Dipartimento di Fisica, IOM-CNR, Perugia, Italy; 3. Istituto di Nanoscienze, Centro S3, CNR, Modena, Italy; 4. Department of Electrical and Computer Engineering, National University of Singapore, Information Storage Materials Laboratory, Singapore; 5. Faculty of Physics, Adam Mickiewicz University, Poznan, Poland*

AP-11. Interference based spin wave switching in ferromagnetic cross. *A. Kozhanov*[1,2], A. Anferov[2], D. Ouellette[2], A.P. Jacob[3] and S. Allen[2] *1. Physics and Astronomy, Georgia State University, Atlanta, GA; 2. University of California, Santa Barbara, CA; 3. GlobalFoundries, Albany, NY*

AP-12. Ferromagnetic Resonance Study on a Grid of Permalloy Nanowires. *V. Dasari*[1], K.G. Padmalekha[1], S.V. Bhat[1] and P. Kumar[1] *1. Department of Physics, Indian Institute of Science, Bangalore, India*

AP-13. Effect of breaking the axial symmetry on the magnonic band structure of an antidot spinwave waveguide. *M. Krawczyk*[1], J.W. Klos[1], D. Kumar[2], J. Romero Vivas[1] and A. Barman[2] *1. Faculty of Physics, Adam Mickiewicz University, Poznan, Poland; 2. Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Centre for Basic Sciences, Kolkata, India*

AP-14. Observation of Robust FMR in Permalloy Quasiperiodic Arrays. *V.. Bhat*[1], J. Woods[1], L. DeLong[1], J. Sklenar[2], J. Ketterson[2] and J. Hastings[3] *1. Physics and Astronomy, University of Kentucky, Lexington, KY; 2. Physics and Astronomy, Northwestern University, Evanston, IL; 3. Electrical and Computer Engineering, University of Kentucky, Lexington, KY*

AP-15. Bragg reflection in a CoFeB/Ni80Fe20 bicomponent two-dimensional magnonic crystal. *H. Yu*[1], G. Duerr[1], R. Huber[1], M. Bahr[1], F. Brandl[1] and D. Grundler[1] *1. Technische Universität München, Garching b. München, Germany*

AP-16. Temperature dependence of switching in perpendicular spin transfer torque magnetic random access memory. *D. Cimpoesu*[1] and A. Stancu[1] *1. Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*

TUESDAY MORNING 9:00

RIVERSIDE CENTER

Session AQ
MRAM AND MAGNETIC LOGIC I (POSTER SESSION)

Nick Rizzo, Co-Chair
Ryoichi Nakatani, Co-Chair

AQ-01. $Ni/Ni_{80}Fe_{20}$ Binary Nanomagnets for Logic Applications. *J. Ding*[1] and A.O. Adeyeye[1,2] *1. Department of Electrical and Computer Engineering, National University of Singapore; 2. Advanced Materials for Micro- and Nano-Systems, Singapore-MIT Alliance, Singapore*

AQ-02. FeCo-Oxide as a magnetic coupling layer for electrically isolated read/write paths in mLogic. *V.M. Sokalski*[1], D. Bromberg[1], D. Morris[1], M.T. Moneck[1], E. Yang[1], L. Pileggi[1] and J. Zhu[1] *1. ECE, Carnegie Mellon, Pittsburgh, PA*

AQ-03. Rad-hard Performance of Spin-transfer Torque Materials and Devices. *K.M. Bussmann*[1], P.J. McMarr[1], H. Hughes[1], S. Cheng[1], R. Shull[2], A.P. Chen[2], S. Schä fer[3], T. Mewes[3], A. Ong[4], E. Chen[4], M.H. Mendenhall[5], R.A. Reed[5], M. Nelson[6] and K. Delikat[6] *1. Naval Research Laboratory, Washington, DC; 2. National Institute of Standards and Technology, Gaithersburg, MD; 3. University of Alabama, Tuscaloosa, AL; 4. Grandis, Milpitas, CA; 5. Vanderbilt University, Nashville, TN; 6. United States Naval Academy, Annapolis, MD*

AQ-04. Radiation hardened MRAM-based FPGA. *O. Gonçalves*[1], G. Prenat[1] and B. Dieny[1] *1. SPINTEC Laboratory CEA/INAC, CNRS, UJF, INPG, CEA, Grenoble, France*

AQ-05. Process Integration of Thermal-Assist MRAM with 90nm CMOS. *M. Gaidis*[1], E. O'Sullivan[1], A. Levi[2], A. Annunziata[1], R. Martin[1], G. Sharma[3], C. Long[1], S. Maheswarla[2], R. Kilaru[1], E. Gapihan[3], M. Dydyk[3], D. Beery[2], P. Trouilloud[1], A. Galan[1], P. Rice[4], T. Topuria[4], Y. Zhu[1] and W. Gallagher[1] *1. IBM-Crocus MRAM Alliance, IBM T.J. Watson Research Center, Yorktown Heights, NY; 2. IBM-Crocus MRAM Alliance, Crocus Technology, Santa Clara, CA; 3. IBM-Crocus MRAM Alliance, Crocus Technology, Yorktown Heights, NY; 4. IBM-Crocus MRAM Alliance, IBM Almaden Research Center, San Jose, CA*

AQ-06. Intra- and Inter-layer magnetic dipolar interactions in magnetic tunnel junctions. *M. Tran*[1], K. Eason[1], J. Chenchen[1], G. Han[1] and R. Sbiaa[1] *1. Data Storage Institute (A*STAR), Singapore*

AQ-07. Accelerated NEB simulations of energy barrier for MRAM free layer: interface vs. bulk anisotropy cases. *M.A. Escobar*[1,2], O. Mryasov[3,4], E. Fullerton[2], A. Singh[4], M.V. Lubarda[2], R. Chang[1,2] and V. Lomakin[1,2] *1. ECE, UCSD, La Jolla, CA; 2. CMRR, UCSD, La Jolla, CA; 3. Physics and Astronomy, University of Alabama, Tuscaloosa, AL; 4. MINT Center, University of Alabama, Tuscaloosa, AL*

AQ-08. Pulse width and temperature dependences of critical current density of spin transfer torque switching amorphous GdFeCo for thermally assisted MRAM. *B. Dai*[1], T. Kato[1], S. Iwata[1] and S. Tsunashima[2] *1. Quantum Engineering, Nagoya University, Nagoya, Japan; 2. Department of Research, NISRI, Nagoya, Japan*

AQ-09. Switching Uniformity and STT-MRAM Scalability Towards Sub-20 nm Nodes. *A.V. Khvalkovskiy*[1], D. Apalkov[1], R. Chepulskyy[1], S. Watts[1], V. Nikitin[1] and M. Krounbi[1] *1. Grandis, Inc., San Jose, CA*

AQ-10. Enhanced Thermal Stability in Perpendicular Top-pinned Magnetic Tunnel Junction with Synthetic Antiferromagnetic Free Layers. *C. Yoshida*[1], T. Takenaga[1], Y. Iba[1], Y. Yamazaki[1], H. Noshiro[1], K. Tsunoda[1], A. Hatada[1], M. Nakabayashi[1], A. Takahashi[1], M. Aoki[1] and T. Sugii[1] *1. Low-power Electronics Association & Project, Tsukuba, Ibaraki, Japan*

AQ-11. Temperature-dependent transport properties of MRAM tunnel junctions. *J.J. Kan*[1], K. Lee[2], S.H. Kang[2] and E.E. Fullerton[1] *1. Center for Magnetic Recording Research, University of California San Diego, La Jolla, CA; 2. Advanced Technology, Qualcomm, Inc, San Diego, CA*

AQ-12. Switching properties in magnetic tunnel junctions with interfacial perpendicular anisotropy. *R. Tomasello*[1], V. Puliafito[1], B. Azzerboni[1] and G. Finocchio[1] *1. Matter Physics and Electronic Engineering, University of Messina, Messina, Italy*

AQ-13. High switching efficiency magnetic structure for STT-MRAM. *G. Jan*[1], Y. Wang[1], Y. Lee[1], R. Tong[1], T. Zhong[1], T. Torng[1] and P. Wang[1] *1. TDK/Headway Technologies, Milpitas, CA*

AQ-14. Spectroscopic FMR Signature for Anomalous Write Error Rate Tail in MTJ MRAM.R. Heindl[2], *E.R. Evarts*[1], W.H. Rippard[1] and M.R. Pufall[1] *1. National Institute of Standards and Technology, Boulder, CO; 2. Department of Physics, San Jose State University, San Jose, CA*

AQ-15. Giant Thermoelectric Effect in MgO Magnetic Tunnel Junctions asymmetrically heated by hot electron tunneling current. *S. Amara*[1], R. Sousa[1], H. Bea[1], K. Mackay[2] and B. Dieny[1] *1. SPINTEC, Spintec (UMR 8191 CEA/CNRS/UJF), Grenoble, France, Grenoble, France; 2. Crocus Technology, Crocus Technology, Grenoble, France., Grenoble, France*

TUESDAY MORNING 9:00 **RIVERSIDE CENTER**

Session AR
SILICON SPINTRONICS AND SPIN CALORITRONICS (POSTER SESSION)

Olaf van't Erve, Chair

AR-01. Thermally excited magnonic spin currents probed by the longitudinal spin-Seebeck effect in YIG. *A. Kehlberger*[1], R. Rö ser[1], G. Jakob[1], U. Ritzmann[2], D. Hinzke[2], D. Kim[3], M. Onbasli[3], C.A. Ross[3], U. Nowak[2] and M. Klä ui[1] *1. Institute of Physics, University of Mainz, Mainz, Germany; 2. Department of Physics, University of Konstanz, Konstanz, Germany; 3. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

AR-02. Thermal creation of spin polarization in silicon using a ferromagnetic tunnel contact. *A. Dankert*[1] and S.P. Dash[1] *1. Chalmers University of Technology, Göteborg, Sweden*

AR-03. Spin accumulation in Si for CoFe/MgO/Mg/Si-on-insulator devices. *H. Sugiyama*[1], M. Ishikawa[1], T. Inokuchi[1], T. Tanamoto[1], Y. Saito[1] and N. Tezuka[2] *1. Corporate Research & Development Center, TOSHIBA Corporation, Kawasaki, Japan; 2. Department of Materials Science, Tohoku University, Sendai, Japan*

AR-04. Spin injection into intrinsic Si using CoFe/Mg/AlO_x/Si barrier-height-controlled junction. *T. Okishio*[1], T. Akushichi[1], Y. Shuto[1] and S. Sugahara[1] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

AR-05. Correlation of electrical spin injection and non-linear charge-transport in Fe/MgO/Si.Y. Pu[1], *J.T. Beardsley*[1], P.M. Odenthal[2], A.G. Swartz[2], R.K. Kawakami[2], P.C. Hammel[1], E. Johnston-Halperin[1], J. Sinova[3,4] and J.P. Pelz[1] *1. Physics, The Ohio Stated University, Columbus, OH; 2. Physics and Astronomy, University of California, Riverside, Riverside, CA; 3. Physics, Texas A&M University, College Station, TX; 4. Institute of Physics ASCR, Praha, Czech Republic*

AR-06. Local spin transport at room-temperature in highly doped Si. *T. Sasaki*[1], T. Suzuki[2], M. Shiraishi[3], Y. Suzuki[3], H. Koike[1] and T. Oikawa[1] *1. Devices Development Center, TDK Corporation, Chiba, Japan; 2. Akita Industrial Technology Center, Akita, Japan; 3. Graduate School of Engineering Science, Osaka University, Osaka, Japan*

AR-07. Room-temperature detection of sign reversed spin-accumulation signals in Si using an atomically smooth Fe_3Si/Si(111) interface. *Y. Fujita*[1], S. Yamada[1], K. Sawano[2], H. Itoh[3,4], M. Miyao[1,3] and K. Hamaya[1] *1. Department of Electronics, Kyushu University, Fukuoka, Japan; 2. Advanced Research Laboratories, Tokyo City University, Tokyo, Japan; 3. CREST, Japan Science and Technology Agency, Tokyo, Japan; 4. Department of Pure and Applied Physics, Kansai University, Suita, Japan*

AR-08. Spin Accumulation and Spin Lifetime in p-Type Germanium at Room Temperature. *S. Iba*[1], H. Saito[1], A. Spiesser[1], S. Watanabe[2], R. Jansen[1], S. Yuasa[1] and K. Ando[1] *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan; 2. Institute of Applied Physics, University of Tsukuba, Tsukuba, 305-8568, Japan*

AR-09. Time Dependence of Spin Relaxation in Semiconductors. *F. Dogan*[1], H. Kesserwan[1] and A. Manchon[1] *1. Material Science, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

AR-10. Emergence of non-equilibrium magnetization through transfer of spin motive force. *R. Sugano*[1,4], M. Ichimura[1,4], S. Takahashi[2,4] and S. Maeakawa[3,4] *1. Central Research Laboratory, Hitachi., Ltd., Hatoyama, Saitama, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan; 3. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibaragi, Japan; 4. JST, CREST, Chiyoda-ku, Tokyo, Japan*

AR-11. Observation of spontaneous spin Hall effect in Ni80Fe20. *A. Tsukahara*[1], Y. Kitamura[1], E. Shikoh[1], Y. Ando[1], T. Shinjo[1] and M. Shiraishi[1] *1. Osaka University, Osaka Toyonaka, Japan*

AR-12. Spin-flip photon emission and absorption in magnetic point contacts.Y.G. Naidyuk[1], O.P. Balkashin[1], V.V. Fisun[1], I.K. Yanson[1], A. Kadigrobov[2], R.I. Shekhter[2], M. Jonson[2], V. Neu[3], M. Seifert[3], S. Andersson[4] and *V. Korenivski*[4] *1. B I Verkin Institute for Low Temperature Physics and Engineering, National Academy of Sciences of Ukraine, Kharkiv, Ukraine; 2. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 3. Leibniz-Institut für Festkörper- und Werkstoffforschung, Dresden, Germany; 4. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden*

AR-13. Spin Hall Angle Quantification from Spin Pumping and Microwave Photoresistance. *Z. Feng*[1], L. Sun[1], B. You[1], D. Wu[1], J. Du[1], W. Zhang[1], A. Hu[1], Y. Yang[2], D. Tang[2] and H. Ding[1] *1. National Laboratory of Solid State Structures and Department of Physics, Nanjing University, Nanjing, China; 2. School of Electronic Science and Engineering, Nanjing University, Nanjing, China*

AR-14. Chemical composition tuning of the anomalous Hall effect in isoelectronic L10 FePd(1-x)Pt(x) alloy films. P. He[1,2], L. Ma[1], Z. Shi[1], G. Guo[3,4], J. Zheng[5], Y. Xin[6] and *S. Zhou*[1,2] *1. Department of Physics, Tongji University, Shanghai, China; 2. Department of Physics, Fudan University, Shanghai, Shanghai, China; 3. Graduate Institute of Applied Physics, National Chengchi University, Taipei, Taiwan; 4. Department of Physics, National Taiwan University, Taipei, Taiwan; 5. Laboratory for Electron and X-ray Instrumentation, University of California Irvine, Irvine, CA; 6. NHMFL, Florida State University, Tallahassee, FL*

AR-15. Single and multiple extraction spin valves for scalable spintronic circuits. *Y. Manzke*[1], R. Farshchi[1], P. Bruski[1], J. Herfort[1] and M. Ramsteiner[1] *1. Paul-Drude-Institut für Festkörperelektronik, Berlin, Germany*

AR-16. Thickness Dependent Spin Pumping Effects in $La_{0.7}Sr_{0.3}MnO_3$/Platinum Bilayer Film. *G. Luo*[1,2], C. Chang[2] and G.g. Lin[1] *1. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 2. Deparment of Phicics, National Taiwan University, Taipei, Taiwan*

TUESDAY MORNING 9:00

RIVERSIDE CENTER

Session AS
FUNDAMENTAL PROPERTIES AND COOPERATIVE PHENOMENA I (POSTER SESSION)

Daniel Haskel, Co-Chair
Xiaofeng Jin, Co-Chair

AS-01. Electronic, structural, and magnetic properties of O and Py deficient CoO/Py interfaces. *U. Schwingenschlogl*[1] and S. Grytsyuk[1] *1. KAUST, Thuwal, Saudi Arabia*

AS-02. Soft x-ray magnetic circular dichroism study of valence and spin states in FeT_2O_4 (T=V, Cr) spinel oxides. J.S. Kang[1], J. Hwang[1], D.H. Kim[1], E. Lee[1], W.C. Kim[2], C.S. Kim[2], H. Lee[3], J.Y. Kim[3], B. Kim[4] and *B.I. MIN*[4] *1. Physics, The Catholic University of Korea, Bucheon, Republic of Korea; 2. Physics, Kookmin University, Seoul, Republic of Korea; 3. Physics, Pohang Accelerator Laboratory, Pohang, Republic of Korea; 4. Physics, POSTECH, Pohang, Republic of Korea*

AS-03. Strain-engineered new magnetic order in YTiO3: a first-principles study. X. Huang[1] and *S. Dong*[1] *1. Department of Physics, Southeast University, Nanjing, 211189, China*

AS-04. Electronic structure and transport properties of superconducting Heusler topological insulators. *C. Shekhar*[1], A.K. Nayak[1], M. Nicklas[1], S. Ouardi[1], G.H. Fecher[1], W. Schnelle[1] and C. Felser[1] *1. Max Planck Institute for Chemical Physics of Solids, 01187 Dresden, Germany*

AS-05. Magnetism and multiplets in metal-phthalocyanine molecules. *Y. Kitaoka*[1], T. Sakai[1], K. Nakamura[1], T. Akiyama[1] and T. Ito[1] *1. Mie University, Tsu, Japan*

AS-06. Possible quantum critical behaviour in the $(Cr_{84}Re_{16})_{100-y}V_y$ alloy system. *B.S. Jacobs*[1], A.R. Prinsloo[1], C.J. Sheppard[1] and A.M. Strydom[1] *1. Physics, University Of Johannesburg, Johannesburg, Gauteng, South Africa*

AS-07. Strain effect of multilayer FeN structure on GaAs substrate. *X. Zhang*[1,2], N. Ji[1,2], V. Lauter[3] and J. Wang[1,2] *1. The Center for Micromagnetics and Information Technologies (MINT) & Electrical and Computer Engineering Department, University of Minnesota, Minneapolis, MN; 2. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN; 3. Neutron Science Scattering Division, Oak Ridge National Laboratory, Oak Ridge, TN*

AS-08. Spin polarized HSE hybrid functional calculations of VO2. *U. Schwingenschlogl*[1], R. Grau-Crespo[2] and H. Wang[1] *1. KAUST, Thuwal, Saudi Arabia; 2. University College London, London, United Kingdom*

AS-09. Effect of Pt Impurities and Stacking Faults on the Magnetocrystalline Anisotropy of hcp Cobalt – a First-Principles Study. *C.J. Aas*[1], K. Palotás[2], L. Szunyogh[2,3] and R.W. 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. Condensed Matter Research Group of Hungarian Academy of Sciences, Budapest University of Technology and Economics, Budapest, Hungary*

AS-10. Soft X-ray Absorption, Photoelectron and Photon emission Spectroscopies of magnetic 3d transtion metal intercalates. *M. Yablonskikh*[1], S. Alexey[2], Y. Yarmoshenko[2], N. Skorikov[2] and A. Titov[3] *1. Sincrotrone Elettra, Bazovizza, Italy; 2. Institute of Metal Physics, Russian Academy of Sciences-Ural Division, 620990, Yekaterinburg, Russian Federation; 3. Ural Federal University, prospekt Lenina 51, Yekaterinburg, Russian Federation*

AS-11. Heusler compounds: From gapless semiconductors to spingapless antiferromagnets. *G.H. Fecher*[1] and C. Felser[1] *1. Inorganic Chemistry, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

AS-12. Effect of oxygen vacancies on the electronic structure and transport properties of $SrRuO_3$ thin films. *W. Lu*[1], K. He[1], W. Song[2], G. Chow[1] and J. Chen[1] *1. Department of Materials Science and Engineering, National University of Singapore; 2. Data Storage Institute, A*STAR (Agency for Science, Technology and Research), Singapore*

AS-13. Magnetic properties of Eu-Fe thin films.K.A. Balin[1,2], A. Nowak[1], M. Wojtyniak[1], J. Szade[1], J. Korecki[3], M. Slezak[3], D. Wilgocka-Slezak[4], T. Giela[4], C. Quitmann[5], J. Raabe[5] and *Z. Celinski[2]1. A.Chelkowski Institute of Physics, University of Silesia, Katowice, Poland; 2. Center for Magnetism and Magnetic Nanostructures, University of Colorado at Colorado Springs, Colorado Springs, CO; 3. Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Krakow, Poland; 4. Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Krakow, Poland; 5. SLS, Paul Scherrer Institute, Villigen, Switzerland*

AS-14. Critical phenomena in double-exchange ferromagnets $Pr_{1-x}Pb_xMnO_3$ *D. Ginting*[1], D. Nanto[1], Y.D. Zhang[1], S.C. Yu[1] and T.L. Phan[1]*1. Physic, Bk 21 Chungbuk National University, Cheongju, Republic of Korea*

AS-15. Magnetic properties of proton irradiated $BiFeO_3$ *S. Han*[1], S. Kim[1] and C. Kim[1]*1. Department of Physics, Kookmin University, Seoul, Republic of Korea*

AS-16. Spin-phonon coupling probed by infrared transmission spectroscopy in the double perovskite Ba2YMoO6. *Z. Qu*[1], Y. Zou[1], S. Zhang[1], L. Ling[1], L. Zhang[1] and Y. Zhang[1,2]*1. High Magnetic Field Laboratory, Chinese Academy of Sciences, Hefei, Anhui, China; 2. High Magnetic Field Laboratory, University of Science and Technology of China, Hefei, Anhui, China*

TUESDAY MORNING 9:00 — RIVERSIDE CENTER

Session AT
RARE EARTH MAGNETS II (POSTER SESSION)
Dimitrios Niarchos, Chair

AT-01. Coercivity enhancement of sintered $Nd_{14.1}Co_{1.34}Cu_{0.04}Fe_{bal}B_{5.84}$ magnet by DyHx diffusion in green compact. *S. Guo*[1], Y. Liu[1], R. Chen[1], D. Lee[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 Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

AT-02. Dysprosium diffusion behavior and microstructure modification in sintered Nd-Fe-B magnets via dual-alloy method. *L. Chaowei*[1], G. Shuai[1], F. Wenbiao[1], C. Renjie[1], L. Don[1] and Y. Aru[1]*1. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, and Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, CAS, Ningbo, China*

AT-03. Coercivity enhancement and mechanism analysis of hot deformation Nd-Fe-B magnets by DyF3 diffusion. *X. Tang*[1], R. Chen[1], W. Yin[1], D. Lee[1] and A. Yan[1]*1. Ningbo Institute of Materials Technology & Engineering, NingBo, Zhejiang, China*

AT-04. Computer Simulations of Magnetic Properties of Sm-Co/α-Fe Nanocomposite Magnets with Core-shell Structure.H. Fukunaga[1], *R. Horikawa*[1], M. Nakano[1], T. Yanai[1], T. Fukuzaki[2] and K. Abe[2]*1. Graduate School of Engineering, Nagasaki University, Nagasaki, Japan; 2. Sumsung Yokohama Research Institute, Yokohama, Japan*

AT-05. Effect of soft phase on magnetic properties of bulk Sm-Co/FeCo nanocomposite magnets. *Y. Shen*[1,2], S. Leontsev[1,2], Z. Turgut[2,3], M. Lucas[2,4], A. Sheets[2,3] and J. Horwath[2]*1. UDRI, University of Dayton, Dayton, OH; 2. Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; 3. UES Inc., Dayton, OH; 4. UTC Inc., Dayton, OH*

AT-06. Preparation of anisotropic Sm2Fe17NX magnetic materials by strip casting technique. *M. Xing*[1], J. Han[1], F. Wan[1], S. Liu[1], C. Wang[1], J. Yang[1] and Y. Yang[1]*1. Peking University, Beijing, China*

AT-07. Magnetic and microstructural characteristics of a DyF_3 dip-coated Nd-Fe-B sintered magnet. *K. Bae*[1], T. Kim[1], S. Lee[1], S. Namkung[2] and T. Jang[2]*1. Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. Hybrid Engineering, Sunmoon University, Ansan, Republic of Korea*

AT-08. Enhanced texture in die upset nanocomposite magnet by NdCu grain boundary diffusion.X. Tang[1,2], *R. Chen*[1,2], W. Yin[1,2], X. Tang[1,2], D. Lee[1,2] and A. Yan[1,2]*1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Science, Ningbo, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Science, Ningbo, China*

AT-09. Texture Evolution During Backward Extrusion of Nd-Fe-B Ring Magnet. *W. Yin*[1,2], R. Chen[1,2], X. Tang[1,2], W. Fu[1,2], D. Lee[1,2] and A. Yan[1,2]*1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, 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, Zhejiang, China*

AT-10. Anisotropic MnBi/Sm-Fe-N hybrid magnets fabricated by hot compaction. *V. Neelam*[1], A. Gabay[1] and G. Hadjipanayis[1]*1. Department of Physics and Astronomy, University of Delaware, Newark, DE*

AT-11. Effect of magnetic field annealing to the structure and magnetic properties of sintered Nd-Fe-B permanent magnets. *X. Zhang*[1,2], M. Shi[2], Q. Ma[1,2], Y. Liu[1,2], L. Xu[1,2] and J. Zhang[3] *1. Key Lab of Integrated Exploitation of Bayan Obo Multi-Metal Resources, Inner Mongolia University of Science and Technology, Baotou, Inner Mongolia, China; 2. School of Mathematics,Physics and Biological Engineering, Inner Mongolia University of Science and Technology, Baotou, China; 3. College of Materials Science and Engineering, Beijing University of Technology, Beijing, Beijing, China*

AT-12. Nano/sub-micron textured Nd2Fe14B particles prepared by wet and surfactant assisted ball milling. *S.K. Pal*[1], L. Schultz[1] and O. Gutfleisch[2,1] *1. IFW Dresden, P.O. Box 270116, D-01171, Dresden, Germany; 2. T U Darmstadt, Petersenstr. 23, 64287, Darmstadt, Germany*

AT-13. Sturctural, Magnetic and Mössbauer Analysis of $Dy_2Fe_{17-x}Nb_x$ Alloys. *B.K. Rai*[1], S. Khanra[2], S.A. Sikkanther[3], K. Ghosh[2] and S.R. Mishra[1] *1. Physics, The University of Memphis, Memphis, TN; 2. Physics and Astronomy, Missouri State University, Springfield, MO; 3. Department of Science, Estill High School, Estill, SC*

AT-14. Effect of rare-earth content on coercivity and temperature stability of sintered Nd-Fe-B magnets prepared by dual-alloy method. *W. Fu*[1], S. Guo[1], C. Lin[1], R. Chen[1], D. Lee[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 Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*

AT-15. Analysis of Magnetization Reversal Process of Nd–Fe–B Sintered Magnets by Magnetic Domain Observation Using Kerr Microscope. *M. Takezawa*[1], Y. Kimura[1], Y. Morimoto[1] and J. Yamasaki[1] *1. Department of Applied Science for Integrated System Engineering Faculty of Engineering, Kyushu Institute of Technology, Kitakyushu, Japan*

TUESDAY MORNING 9:00

RIVERSIDE CENTER

Session AU
EXCHANGE BIAS I (POSTER SESSION)

Dirk Backes, Co-Chair
Ferran Macia, Co-Chair

AU-01. Surface pinning and exchange bias phenomena in core/shell structured Fe/γ-Fe_2O_3 nanoparticles. *P. Lampen*[1,2], H. Khurshid[1], S. Chandra[1], M. Phan[1], H. Srikanth[1], J. Borchers[2], K. Krycka[2], B. Kirby[2], M. Wasbrough[2], S. Watson[2] and W. Chen[2] *1. Physics, University of South Florida, Tampa, FL; 2. NIST Center for Neutron Research, Gaithersburg, MD*

AU-02. Asymmetric hysteresis and its dependence on magnetic anisotropy in exchange biased Co/CoO core-shell nanoparticles. *S. Chandra*[1], H. Khurshid[1], M.H. Phan[1] and H. Srikanth[1] *1. Department of Physics, University of South Florida, Tampa, FL*

AU-03. Exchange bias and parallel spin wave excitation in NiFe/IrMn bilayers. *M.A. Sousa*[1], F. Pelegrini[1], J.Q. Marcatoma[2], W. Alayo[3] and E. Baggio-Saitovich[2] *1. Física, Universidade Federal de Goiás, Goiânia, Goiás, Brazil; 2. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Rio de Janeiro, Brazil; 3. Departamento de Física, Universidade Federal de Pelotas, Pelotas, Rio Grande do Sul, Brazil*

AU-04. Thermal hysteresis of interface biased dipolar coupled nanoelements. *A.L. Dantas*[1], M.G. Dias[2], I.S. Queiroz Jr[2,3], G.O. Rebouç as[3] and A.S. Carriç o[2] *1. Departamento de Física, Universidade do Estado do Rio Grande do Norte, Natal, RN, Brazil; 2. Department of Physics, UFRN, Natal, RN, Brazil; 3. Department of Physics, UFERSA, Natal, RN, Brazil*

AU-05. Magnetic Degradation of Exchange Biased Thin Films during Ion Milling. *J.C. Read*[1], P.M. Braganca[1], N. Robertson[1] and J.R. Childress[1] *1. San Jose Research Center, HGST, San Jose, CA*

AU-06. Exchange bias of $[Co/Pt]_3$/IrMn multilayer on porous anodized alumina with perpendicular magnetic anisotropy. *Z. Shi*[1], X. Fan[2], S. Zhou[1], H. Hu[3], M. Yang[4] and J. Du[4] *1. Department of Physics, Tongji University, Shanghai, China; 2. Surface Physics State Laboratory and Department of Physics, Fudan University, Shanghai, China; 3. School of Mathematics and Physics, Shanghai University of Electric Power, Shanghai, China; 4. Department of Physics, Nanjing University, Nanjing, China*

AU-07. Effects of annealing field direction on the exchange bias in NiFe layer coupled with epitaxial Cr2(1-x)Fe2xO3(x= 0.4) films grown on Al2O3. *S. Ki*[1] *1. Kyungpook National University, Daegu, Republic of Korea*

AU-08. Exchange Bias Effect in the Single Phase PrTiO3. *F. Hong*[1], Z. Cheng[1], X. Wang[1] and S. Dou[1] *1. Institute for Superconducting & Electronic Materials, University of Wollongong, Wollongong, NSW, Australia*

AU-09. Exchange Bias in Ferromagnetic/Antiferromagnetic/Ferromagnetic Co/FeF_2/Co Trilayers. *T. Johnson*[1] and D. Lederman[1] *1. Physics, West Virginia University, Morgantown, WV*

AU-10. Exchange Bias in Core-Shell Iron-Iron Oxide Nanoclusters. *M. Kaur*[1], J.S. McCloy[2] and Y. Qiang[1] *1. Physics, Univ. of Idaho, Moscow, ID; 2. Pacific Northwest National Laboratory, Richland, WA*

AU-11. On the interplay between exchange bias and dipolar interactions in magnetic core-shell nanoparticles. *S. Ammar*[1], F. Mammeri[1], T. Gaudisson[1], L. Ourry[1], S. Nowak[1], H. Hammoud[2], R. Sayed Hassan[2], N. Yaacoub[2], J. Grenè che[2] and N. Menguy[3] *1. ITODYS, CNRS UMR-7086, Université Paris Diderot, Paris, France; 2. IMMM, CNRS UMR-6283, Université du Maine, La Mans, France; 3. IMPMC, CNRS UMR-7590, Université Pierre & Marie Curie, Paris, France*

AU-12. Exchange bias evidence in granular Oxide-based hetero-nanostructures using X-ray Magnetic Circular Dichroism. *T. Gaudisson*[1], S. Sharma[1], S. Ammar[1], N. Yaacoub[2], R. Sayed Hassan[2], J. Greneche[2], N. Menguy[3], M. Arrio[3] and P. Sainctavit[3] *1. ITODYS, Université Paris Diderot, CNRS UMR-7086, Paris, France; 2. IMMM, Université du Maine, CNRS UMR-6283, Avenue Messiaen 72085 Le Mans, France; 3. IMPMC, Université Pierre et Marie Curie, CNRS UMR-7590, Place Jussieu 75005, France*

AU-13. Temperature dependence of exchange-bias in Tb-Fe/(Co/Pt) systems. *M.A. Marioni*[1], S. Romer[1], K. Thorwarth[1], N.R. Joshi[1], C. Corticelli[1], S. Oezer[2], H. Rohrmann[3] and H.J. Hug[1,2] *1. EMPA, Dübendorf, Switzerland; 2. Physics, University of Basel, Basel, Switzerland; 3. Oerlikon Balzers, Balzers, Liechtenstein*

AU-14. Influence of interface roughness on the magnetic properties of Co/CoO multilayers. *J. Wang*[1], T. Sannomiya[1], J. Shi[1] and Y. Nakamura[1] *1. Department of Metallurgy and Ceramics Science, Tokyo Institute of Technology, Tokyo, Japan*

AU-15. Magnetoelectric Cr_2O_3 thin film exhibiting high blocking temperature. *T. Ashida*[1], N. Shimomura[1], Y. Sato[1], T. Nozaki[1] and M. Sahashi[1] *1. Electronic Engineering, Tohoku University, Sendai, Japan*

AU-16. Signature of exchange bias and spin-glass like phenomena in Fe/CoO nanocomposite. *S.P. Pati*[1] and D. Das[1] *1. UGC-DAE Consortium for Scientific Research, Kolkata Centre, Kolkata, West Bengal, India*

TUESDAY MORNING 9:00

RIVERSIDE CENTER

Session AV
PERPENDICULAR RECORDING AND BIT PATTERNED MEDIA (POSTER SESSION)

Alexander Goncharov, Chair

AV-01. Micromagnetic study on influence of the magnetic field direction on the domain structure in stacked media. *Y. Yamaguchi*[1], S. Sato[1], T. Komine[1] and R. Sugita[1] *1. Media and Telecommunications Engineering, Ibaraki University, Hitachi, Ibaraki, Japan*

AV-02. Effect of applied magnetic field angle and intensity on magnetic cluster state of stacked perpendicular recording media. *S. Sato*[1], Y. Yamaguchi[1], T. Komine[1] and R. Sugita[1] *1. Media and Telecommunications Engineering, Ibaraki University, Hitachi, Ibaraki, Japan*

AV-03. Magnetic reptation and the exchange-spring effect in composite perpendicular recording media. *K. Srinivasan*[1] and E. Roddick[1] *1. Western Digital, San Jose, CA*

AV-04. The Effect of Media Design on Orientation in Perpendicular Media. *J. Chureemart*[1], P. Chureemart[1], J. Pressesky[2], T. Nolan[2] and K. O'Grady[1] *1. Physics, University of York, York, United Kingdom; 2. Seagate Media Research Center, Fremont, CA*

AV-05. Uniaxial magnetocrystalline anisotropy for hcp Co-Pt disordered alloy films by reducing the stacking faults with adding third element based on valence electron engineering. *N. Nozawa*[1], S. Saito[1], S. Hinata[1] and M. Takahashi[2] *1. Department of Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. New Industry Creation Hatchery Center, Tohoku University, Sendai, Miyagi, Japan*

AV-06. Deposition of Co-Pt film with inclined anisotropy. *A. Honda*[1] and N. Honda[1] *1. Graduate School Engineering, Tohoku Institute of Technology, Sendai, Japan*

AV-07. Effects of Cu doping on magnetic properties and microstructure of $SmCo_{5-x}Co_x$ thin films grown on Ru (0002). *S. Yin*[1,2], H. Wang[1], H. Zhao[1], J. Yong[2] and J. Wang[1] *1. ECE, University of Minnesota, Minneapolis, MN; 2. Material Science, University of Science and Technology Beijing, Beijing, Beijing, China*

AV-08. Nanoscale composition control in $L1_0$ FePtRh film for ferromagnetic-antiferromagnetic patterning. *T. Hasegawa*[1], Y. Kondo[2], H. Yamane[2], A. Arakawa[1] and S. Ishio[1] *1. Department of Materials Science and Engineering, Akita University, Akita City, Japan; 2. Akita Industrial Technology Center (AIT), Akita, Japan*

AV-09. Control of magnetic properties of MnGa films by Kr^+ ion irradiation for application to bit patterned media. *D. Oshima*[1], T. Kato[1], S. Iwata[1] and S. Tsunashima[2] *1. Graduate School of Engineering, Nagoya University, Nagoya, Japan; 2. Nagoya Industrial Science Research Institute, Nagoya, Japan*

AV-10. Granular Interactions in sub-10nm CoCrPt-SiOx. Magnetic Recording Media. *C. Morrison*[1], L. Saharan[2], Y. Ikeda[3], K. Takano[3], G. Hrkac[2] and T. Thomson[1] *1. School of Computer Science, University of Manchester, Manchester, United Kingdom; 2. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 3. San Jose Research Center, HGST, San Jose, CA*

AV-11. 8 Tb/in^2-class Bit Patterned Media Design for Thermally Assisted Magnetic Recording. *J. Ushiyama*[1], F. Akagi[1], A. Ando[1] and H. Miyamoto[1] *1. Hitachi, Ltd., Tokyo, Japan*

AV-12. Influence of magnetostatic interaction on the magnetization reversal of Co/Pd multilayer nanorings. *Y. Ren*[1,2] and A.O. Adeyeye[1] *1. Information Storage Materials Laboratory, Department of Electrical and Computer Engineering, National University of Singapore; 2. Key Lab for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, Lanzhou, China*

AV-13. In-situ evaluation of annealing effect on ion-irradiation induced ferromagnetism at FeRh thin film surface by means of XMCD. *K. Aikoh*[1,4], A. Tohki[1], M. Sakamaki[2], K. Amemiya[2], A. Iwase[1] and T. Matsui[3] *1. Research Organization for the 21st Century, Osaka Prefecture University, Sakai, Osaka, Japan; 2. High Energy Accelerator Research Organization, Tsukuba, Ibaraki, Japan; 3. Department of Materials Science, Osaka Prefecture University, Sakai, Osaka, Japan; 4. Osaka Vacuum, Ltd., Sakai, Osaka, Japan*

TUESDAY MORNING 9:00

RIVERSIDE CENTER

Session AW
SOFT MAGNETIC MATERIALS I: CRYSTALLINE ALLOYS (POSTER SESSION)

Matthew Lucas, Chair

AW-01. Temperature Stability of Y-doped FeAlGa Magnetostrictive Alloys. *T.I. Fitchorov*[1], Y. Chen[1], H. Chang[1], L. Jiang[2], G. Zhang[2], H. Hao[2] and V.G. Harris[1] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Baotou Research Institute of Rare Earths, Baotou, Inner Mongolia, China*

AW-02. Curie temperature and magnetic anisotropy in Mn_xSb ($0 \le x \le 1.22$) compounds. Y.b. Yang[1], Y.H. Xia[1], C. Yun[1], S.Q. Liu[1], Y.C. Yang[1] and *J.b. Yang*[1] *1. School of Physics, BeiJing, China*

AW-03. Microwave Absorbing Characteristics of Flake-shaped Fe-Ni-Mo/Epoxy Composites. *R. Yang*[1] and W. Liang[2] *1. Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 2. Department of Aeronautics and Astronautics, National Cheng Kung University, Tainan, Taiwan*

AW-04. Correlation between $L2_1$ ordering and magnetic properties of Co_2FeAl Heusler polycrystalline films. *Y. Chang*[1], S. Shiao[2], S. Liu[3], S. Chen[3], H. Lee[2] and J. Duh[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 3. Dept. of Materials Science and Engineering, Univ. of Feng Chia, Taichung, Taiwan*

AW-05. Stress Competition and Vortex Magnetic Anisotropy in FeCoAlO High-frequency Soft Magnetic Films with Gradient Al-O Contents. S. Li[1,2], M. Liu[4], J. Lou[3], S. Xu[1], Z. Wang[1], W. Shao[1], S. Chen[1], L. Xia[1], *T. Nan*[3], Z. Zhou[3], N. Sun[3] and J. Duh[5] *1. College of Physics Science, Qingdao University, Qingdao, Shandong, China; 2. Physics, Fujian Normal University, Fuzhou, Fujian, China; 3. Electrical and Computer Engineering Department, Northeastern University, Boston, MA; 4. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 5. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

AW-06. Rapid Fabrication of Diameter-Modulated CoFe Nanowires. *A. Esmaeily*[1,2], M. Venkatesan[1], A. Razavian[1,2] and J. Coey[1] *1. School of Physics and CRANN, Trinity College Dublin, Dublin, Ireland; 2. Department of Nanophysics, Institute of Nanoscience and Nanotechnology, University of Kashan, Kashan, Islamic Republic of Iran*

AW-07. Microstructures and magnetostrictive strains of Fe-Ga-Ni ferromagnetic shape memory alloys. *Y. Lin*[1] *1. Department of Mold and Die Engineering, National Kaohsiung University of Applied Sciences, Kaohsiung, Taiwan*

AW-08. Semi-physical parameter identification for an enhanced iron-loss formula allowing loss-separation. *S. Steentjes*[1], M. Lessmann[1] and K. Hameyer[1] *1. Institute for Electrical Machines, Aachen, Germany*

AW-09. Macroscopic eddy currents and losses in Soft Magnetic Composites (SMCs). O. de la Barrière[1], F. Fiorillo[3], C. Appino[3], *C. Ragusa*[2], M. LoBue[2], F. Mazaleyrat[1], M. Lé crivain[1] and C. Gé linas[4] *1. Satie, Ens Cachan, Cachan, France; 2., Politecnico di Torino, Torino, Italy; 3. Electromagnetism, Inrim, Torino, Italy; 4. QMP, Sorel-Tracy, QC, Canada*

AW-10. Effects of FeCo Magnetic Nanoparticles on Microstructure of Sn-Ag-Cu Alloys. *S. Xu*[1], A. Habib[2], A. Prasitthipayong[1] and M. McHenry[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Pacific Northwest National Laboratory, Richland, WA*

AW-11. Magnetization mechanism of Si-gradient steel sheet manufactured by CVD-Siliconizing process. *T. Hiratani*[1], M. Namikawa[1], H. Ninomiya[2] and H. Toda[1] *1. Steel Research Lab., JFE Steel Corporation, Kurashiki, Japan; 2. Electrical Steel Sales Dept., JFE Steel Corporation, Tokyo, Japan*

AW-12. Strain effects in epitaxial oxide grown on MgO(001) substrates. *D. Duc Dung*[1,2], D. Van Thiet[1,2] and S. Cho[1] *1. Department of Physics, University of Ulsan, Ulsan, Republic of Korea; 2. Department of General Physics, School of Engineering Physics, Ha Noi University of Science and Technology, Ha Noi, Viet Nam*

TUESDAY MORNING 9:00

RIVERSIDE CENTER

Session AX
SOFT MAGNETIC MATERIALS II: MICRO- AND NANOSTRUCTURED MATERIALS (POSTER SESSION)

Ivan Skorvanek, Co-Chair
Attila Kakay, Co-Chair

AX-01. Understanding the dense stripe domains in soft magnetic film. D. Wu[1], Y. Lou[1], F. Zheng[1], *D. Wei*[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. Laboratory of Advanced Materials, Department of Materials Science and Engineering, Beijing, China*

AX-02. Domain wall mobility in rapidly solidified ultrathin amorphous wires. *T. Ovari*[1] and H. Chiriac[1] *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

AX-03. Magnetostatic Interactions and Magnetic Anisotropy of Elongated $Ni_{80}Fe_{20}$ nanorings. *Y. Ren*[1,2] and A.O. Adeyeye[1] *1. Information Storage Materials Laboratory, Department of Electrical and Computer Engineering, National University of Singapore; 2. Key Lab for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, Lanzhou, China*

AX-04. Perpendicular magnetic anisotropy of [CoSiB(t_{CoSiB} Å)/Pd(13 Å)]$_5$ superlattices. *J. Yoon*[1], S. Jung[2], J. Cho[1], C. You[1], M. Jung[3] and H. Yim[2] *1. Department of Physics, Inha University, Incheon, Republic of Korea; 2. Department of Physics, Sookmyung Women's University, Seoul, Republic of Korea; 3. Department of Physics, Sogang University, Seoul, Republic of Korea*

AX-05. Magnetic anisotropy evolution in CoFe/Au barcode nanowire arrays. B. Kim[1], *B. Park*[1], K. Kim[1] and Y.K. Kim[1,2] *1. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Republic of Korea*

AX-06. Magnetization Reversal in Antiferromagnetically Coupled $[Pt/CoFeB]_N/Ru/[CoFeB/Pt]_3$ Structures with Perpendicular Anisotropy. Y. Xiao[1], S. Chen[1], Z. Zhang[1], B. Ma[1] and *Q. Jin*[1,2] *1. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 2. Department of Physics, East China Normal University, Shanghai, China*

AX-07. Unidirectional Anisotropy Induced In Fe57/Co/Al Multilayers. V. Jain[1], S. Jani[1], *L. Nambakkat*[1], V. Kanippoth[1], R.V. Reddy[2] and A. Gupta[2] *1. Physics, Mohanlal Sukhadia University, Udaipur, Rajasthan, India; 2. Physics, UGC-DAE Consortium for Scientific Research, Indore, Madhya Pradesh, India*

AX-08. Characterization of as-synthesized FeCo magnetic nanoparticles by co-precipitation method. *K. Kim*[1], J. Kim[1], J. Kim[2], J. Kim[3] and Y. Lim[1] *1. Physics, Yeungnam University, Gyeongsan, Republic of Korea; 2. Advanced Research Institute, LG Electronics Inc, Seoul, Republic of Korea; 3. Materials Science Eng., Hanyang Univ., Ansan, Republic of Korea*

AX-09. Microstructure and magnetic properties of C/Co-P, SiO_2/Co-P and Al_2O_3/Co-P composite particles prepared by electroless plating. *E.A. Denisova*[1], L.A. Chekanova[1], S.V. Komogortsev[1], R.S. Iskhakov[1], G.N. Bondarenko[2], V.K. Mal'tsev[1] and O.A. Goncharova[1] *1. Kirensky Institute of Physics SB RAS, Krasnoyarsk, Krasnoyarsky kray, Russian Federation; 2. Institute of Chemistry and Chemical Technology SB RAS, Krasnoyarsk, Russian Federation*

AX-10. Magnetic and electrical properties of nanogranular CoFe-TiO2 films. *Y. Wang*[1], H. Zhang[1] and F. Bai[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

AX-11. Etching of FeCo films with gas cluster ion beams and their magnetic properties. *N. Toyoda*[1], A. Fujimoto[1], A. Yamaguchi[1] and I. Yamada[1] *1. Graduate School of Engineering, University of Hyogo, Himeji, Hyogo, Japan*

AX-12. Improving soft magnetic properties of nanometer CoNbZr films by electrical pulse annealing in GHz frequency range. *G. Hao*[1], H. Zhang[1] and X. Tang[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology, ChengDu, China*

AX-13. Annealing temperature dependence of magnetic properties in Pd/CoFeB/Pd films. *C. Cho*[1], S. Yun[1], J. Moon[1], C. Moon[2], H. Kim[3], S. Yoo[3] and S. Choe[1] *1. Department of Physics & Astronomy, Seoul National University, Seoul, Republic of Korea; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Republic of Korea; 3. Department of Materials Science and Engineering, Seoul National University, Seoul, Republic of Korea*

AX-14. Optimization of Ultra-soft CoZrTa/SiO2/CoZrTa Trilayer Elements for Integrated Inductor Structures. *C. Cheng*[1], R. Davis[2], N.A. Sturken[2], K. Shepard[2] and W.E. Bailey[1] *1. Applied Physics and Applied Mathematics, Columbia University, New York, NY; 2. Electronic Engineering, Columbia University, New York, NY*

TUESDAY AFTERNOON 1:30 GRAND CD

Session BA
SYMPOSIUM ON QUANTUM LIMITS TO MAGNETISM: SINGLE SPIN DYNAMICS
David Awschalom, Chair

1:30

BA-01. Creating and Controlling Single Spins in Diamond above 600 K. ***(Invited)*** *D.M. Toyli*[1], D.J. Christle[1], A. Alkauskas[1], B.B. Buckley[1], C.G. Van de Walle[1] and D.D. Awschalom[1] *1. Center for Spintronics and Quantum Computation, UC Santa Barbara, Santa Barbara, CA*

2:06

BA-02. Theory of single-spin dynamics for transition-metal dopants in diamond. ***(Invited)*** *M.E. Flatté*[1,2], T. Chanier[1,2] and C.E. Pryor[1,2] *1. Optical Science and Technology Center, University of Iowa, Iowa City, IA; 2. Department of Physics and Astronomy, University of Iowa, Iowa City, IA*

2:42

BA-03. Current-driven spin dynamics of artificially constructed quantum magnets. ***(Invited)*** *A.A. Khajetoorians*[1] *1. Institute of Applied Physics, Hamburg University, Hamburg, Germany*

3:18

BA-04. Photonic Devices for Spin-Based Quantum Information Processing. ***(Invited)*** *C. Santori*[1], A. Faraon[1], V.M. Acosta[1], Z. Huang[1] and R.G. Beausoleil[1] *1. Intelligent Infrastructure Laboratory, Hewlett-Packard Laboratories, Palo Alto, CA*

3:54

BA-05. Imaging magnetic fields with single spins. ***(Invited)*** *J. Wrachtrup*[1] and P. Neumann[1] *1. University of Stuttgart, Stuttgart, Germany*

TUESDAY AFTERNOON 1:30 GRAND AB

Session BB
HAMR AND BPMR
Matthew Moneck, Chair

1:30

BB-01. Bit Patterned Media for High Density Magnetic Recording. ***(Invited)*** *O. Hellwig*[1], E. Dobisz[1], M. Grobis[1], D. Kercher[1], J. Lille[1], A. McCallum[1], E. Marinero[1], R. Ruiz[1], M.E. Schabes[1], T. Wu[1], D. Weller[1] and T.R. Albrecht[1] *1. Research, HGST, a Western Digital Company, San Jose, CA*

2:06

BB-02. Advantages of composite layer media design for HAMR. *O. Mosendz*[1], G. Parker[1], S. Pisana[1], H. Richter[1], O. Hellwig[1], D. Weller[1] and B. Stipe[1] *1. San Jose Research Center, HGST, a Western Digital Company, San Jose, CA*

2:18

BB-03. Microstructure and Magnetic Properties of FePt-MOx Granular Films. *T. Shiroyama*[1], T. Abe[1], W. Cui[1], B. Varaprasad[1], Y. Takahashi[1] and K. Hono[1] *1. National Institute for Materials Science, Tsukuba, Japan*

2:30

BB-04. Effect of thermal control layer on the heat transport in FePt/MgO/Ag HAMR media films. D. Xu[1,2], *C. Sun*[1], D. Brewe[1], J. Chen[2], S. Heald[1] and G. Chow[2] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Materials Science & Engineering, National University of Singapore*

2:42

BB-05. Growth of L10 ordered FePt granular film on Ag heat sink layer. P.W. Lwin[1], *J. Hu*[1], K. Cher[1] and T. Zhou[1] *1. Recording Devices and Physics, Data Storage Institute, Agency for Science Technology and Research, Singapore*

2:54

BB-06. Precise dot position control of self-assembled diblock copolymer for synchronous writing on bit-patterned media. *Y. Kamata*[1], T. Okino[1], R. Yamamoto[1] and A. Kikitsu[1] *1. Corporate R&D center, Toshiba Corporation, Kawasaki, Japan*

3:06

BB-07. Fabrication of bit patterned media by templated self-assembly of gold nanoparticles. *M. Asbahi*[1], K. Lim Tze Peng[1], N. Thiyagarajah[2], F. Wang[1], W. Zhai[1], H. Duan[1], V. Ng[2] and J. Yang Kwang Wei[1] *1. Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore; 2. Information Storage Materials Laboratory, Department of Electrical and Computer Engineering, National University of Singapore*

3:18

BB-08. Structural Characterization of Large Scale Nanoisland Arrays by Small Angle X-Ray Scattering. *G. Heldt*[1,2], J. Kohlbrecher[2], S.L. Lee[3], R.V. Chopdekar[2], C. Morrison[1], O. Bunk[2], A. Menzel[2], L.J. Heyderman[2] and T. Thomson[1] *1. School of Computer Science, University of Manchester, Manchester, United Kingdom; 2. Paul Scherrer Institute, Villigen PSI, Switzerland; 3. School of Physics & Astronomy, University of St. Andrews, St. Andrews, United Kingdom*

3:30

BB-09. Angular dependence of switching field distribution in $(Co/Pd)_n$ multilayer nanostructure arrays. *J.W. Lau*[1] and X. Liu[2] *1. NIST, Gaithersburg, MD; 2. Read Head Technology, HGST, a Western Digital Company, San Jose, CA*

3:42

BB-10. Co/Pd Nanopillars for Advanced Media by Glancing Angle Deposition. *H. Su*[1,2] and S. Gupta[1,2] *1. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL; 2. Department of Metallurgical and Materials Engineering, The University of Alabama, Tuscaloosa, AL*

3:54

BB-11. Optimization of Bit Patterned Media Recording (BPMR) System via Tolerance Design. M. Lin[1], M. Elidrissi[1], *K. Chan*[1], K. Eason[1], H. Wang[1], J. Yang[2], M. Asbahi[2], N. Thiyagarajah[3] and V. Ng[3] *1. Data Storage Institute, Singapore; 2. Institute of Material Research and Engineering, Singapore; 3. National University of Singapore, Singapore*

4:06

BB-12. The influence of ion-milling damage to magnetic anisotropy of Co80Pt20 nanopillars. *Z. Sun*[1,3], B. Khodadadi[2,3], C. Mewes[2,3], T. Mewes[2,3] and D. Li[1,3] *1. Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, AL; 2. Physics, The University of Alabama, Tuscaloosa, AL; 3. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL*

4:18

BB-13. Influence of damaged edge on the magnetic properties of the FePt/Fe ECC patterned media. *L. Huang*[1,2], J. Hu[2], B. Zong[2], S. Zeng[3], A. Ariando[3] and J. Chen[1] *1. Materials Science and Engineering, National Univ.of Singapore; 2. Data Storage Institute, Singapore; 3. Physics, National University of Singapore*

TUESDAY AFTERNOON 1:30 — REGENCY A

Session BC
DOMAIN WALL DYNAMICS
Guido Meier, Chair

1:30

BC-01. Spin Torque Diode Measurements of Domain Wall Resonance in Magnetic Tunnel Junctions. S. Lequeux[1], *J. Grollier*[1], J. Sampaio[1], V. Cros[1], R. Matsumoto[1,2], A. Fukushima[2], K. Yakushiji[2], H. Kubota[2] and S. Yuasa[2] *1. Unité Mixte CNRS/Thales, Palaiseau, France; 2. AIST, Tsukuba, Japan*

1:42

BC-02. Micromagnetic Study of Domain Wall Motion in Polycrystalline Nanowires with Materials Distributions. *M.V. Lubarda*[1], M. Kuteifan[2], M.A. Escobar[3], R. Chang[3], D. Gabay[3], M. Hu[3], S. Fu[3], S. Li[3], E.E. Fullerton[3] and V. Lomakin[3] *1. Materials Science, University of California at San Diego, San Diego, CA; 2. Matériaux, Ecole Nationale Supérieure des Mines de Nancy, Nancy, France; 3. Electrical and Computer Engineering, University of California at San Diego, San Diego, CA*

1:54

BC-03. Observation of Mutual Domain Imprinting in Heterogeneous Anisotropy Patterned Films. *G. Heldt*[1,2], R.V. Chopdekar[2], J. Raabe[2], S.E. Stevenson[2], L. Saharan[3], G. Hrkac[3], T. Thomson[1] and L.J. Heyderman[2] *1. School of Computer Science, University of Manchester, Manchester, United Kingdom; 2. Paul Scherrer Institute, Villigen PSI, Switzerland; 3. Department of Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom*

2:06

BC-04. Spin-transfer torques in patterned synthetic antiferromagnetic and ferrimagnetic structures with narrow domain walls. ***(Invited)*** *S. Lepadatu*[1,2], R. Beacham[3], M.J. Benitez[3], G. Burnell[1], T.A. Moore[1], D. McGrouther[3], S. McVitie[3], R. Stamps[3], J. Miguel[4], S.S. Dhesi[4] and C.H. Marrows[1] *1. University of Leeds, Leeds, United Kingdom; 2. National Physical Laboratory, London, United Kingdom; 3. University of Glasgow, Glasgow, United Kingdom; 4. Diamond Light Source, Didcot, United Kingdom*

2:42

BC-05. Domain wall dynamics in asymmetric stacks: the roles of Rashba field and the Spin Hall effect. *E. Martinez*[1] and G. Finocchio[2] *1. Fisica Aplicada, Universidad de Salamanca, Salamanca, Salamanca, Spain; 2. Universy of Messina, Messina, Italy*

2:54

BC-06. Topologically robust sorting of chiral magnetic domain walls. *T. Phung*[1,2], A. Pushp[1], C. Rettner[1], B. Hughes[1], S. Yang[1], L. Thomas[1] and S. Parkin[1] *1. IBM Almaden Research Center, San Jose, CA; 2. Electrical Engineering, Stanford University, Stanford, CA*

3:06

BC-07. Modeling current-driven motion of 360 degree domain walls. *J. Zhang*[1], M.D. Mascaro[1], Y. Jang[1], G.S. Beach[1] and C.A. Ross[1] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

3:18

BC-08. Switching Behavior of Single Magnetic Nanowires under the Influence of Temperature Gradients. *A. Michel*[1], T. Boehnert[1], S. Martens[1], V. Vega[2], D. Goerlitz[1] and K. Nielsch[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 2. Depto. Física, Universidad de Oviedo, Oviedo, Spain*

3:30

BC-09. Magnonic domain wall heat conductance in ferromagnetic wires. *P. Yan*[1] and G. Bauer[2,1] *1. Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

3:42

BC-10. Current-driven domain wall motion in the presence of the spin Hall effect and extrinsic pinning potentials. *J. Ryu*[1], K. Lee[2] and H. Lee[1] *1. Physics, POSTECH, Pohang, Republic of Korea; 2. Materials Science and Engineering, Korea University, Seoul, Republic of Korea*

3:54

BC-11. Interfacial Current-Induced Torques in Pt/Co/GdOx. *S. Emori*[1], D.C. Bono[1] and G.S. Beach[1] *1. Materials Science and Engineering, MIT, Cambridge, MA*

4:06

BC-12. Probing nanowire edge roughness using an extended magnetic domain wall.K.J. O'Shea[1], J. Tracey[1], S. Bramsiepe[1] and *R. Stamps*[1] *1. University of Glasgow, Glasgow, United Kingdom*

4:18

BC-13. Single Shot Time-Domain Measurements of Spin-Transfer Induced Domain Wall Propagation in Magnetic Tunnel Junctions.J. Sampaio[1], *J. Grollier*[1], S. Lequeux[1], V. Cros[1], R. Matsumoto[1,2], A. Fukushima[2], H. Kubota[2], K. Yakushiji[2] and S. Yuasa[2] *1. Unité Mixte CNRS/Thales, Palaiseau, France; 2. AIST, Tsukuba, Japan*

TUESDAY AFTERNOON 1:30 — REGENCY B

Session BD
SPIN HALL EFFECT AND SPIN ORBIT TORQUES

Andrew Kent, Chair

1:30

BD-01. Spin transfer torque devices utilizing the spin Hall effect of tungsten. *C. Pai*[1], L. Liu[1], Y. Li[1], H. Tseng[1], D.C. Ralph[2,3] and R.A. Buhrman[1] *1. Applied and Engineering Physics, Cornell University, Ithaca, NY; 2. Physics, Cornell University, Ithaca, NY; 3. Kavli Institute at Cornell, Ithaca, NY*

1:42

BD-02. Micromagnetic understanding of magnetization dynamics driven by the spin-Hall effect. *M. Carpentieri*[1], L. Liu[2], L. Torres[3], D. Ralph[2] and G. Finocchio[4] *1. Elettrotecnica ed Elettronica, Politecnico of Bari, Bari, Bari, Italy; 2. Cornell University, Ithaca, NY; 3. Universidad de Salamanca, Salamanca, Spain; 4. University of Messina, Messina, Italy*

1:54

BD-03. Determination of the current induced effective field vector in Ta|CoFeB|MgO. *J. Kim*[1], J. Sinha[1], M. Hayashi[1], M. Yamanouchi[2,3], S. Fukami[2,3], T. Suzuki[4], S. Mitani[1] and H. Ohno[2,3] *1. National Institute for Materials Science, Tsukuba, Japan; 2. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan; 3. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 4. Renesas Electronics Corporation, Sagamihara, Japan*

2:06

BD-04. Demagnetization of a fully saturated perpendicularly polarized magnet by in-plane current pulses through Spin Hall Effect. *D. Bhowmik*[1], L. You[1], X. Tang[2], E. Chen[2] and S. Salahuddin[1] *1. Electrical Engineering and Computer Sciences, University of California Berkeley, Berkeley, CA; 2. Grandis Inc, Milipitas, CA*

2:18

BD-05. Effect of Pure Spin Current on Spin Waves in Py/Pt Nanowires. *Z. Duan*[1], C. Boone[1], I. Krivorotov[1], N. Reckers[2], S. Stienen[2] and J. Lindner[2] *1. Physics, UC Irvine, Irvine, CA; 2. Physics, University of Duisburg-Essen, Duisburg, Germany*

2:30

BD-06. Spin-Hall nano-oscillators. *S.O. Demokritov*[1], V.E. Demidov[1], H. Ulrichs[1], S. Urazhdin[2], V. Tiberkevich[3] and A. Slavin[3] *1. University of Muenster, Muenster, Germany; 2. Emory University, Atlanta, GA; 3. Oakland University, Rochester, MI*

2:42

BD-07. Giant spin Hall effect induced by skew scattering on high SO impurities in copper. ***(Invited)*** *Y. Niimi*[1], Y. Kawanishi[1], D. Wei[1], C. Deranlot[2], H. Yang[3], M. Chshiev[3], T. Valet[4], A. Fert[2] and Y. Otani[1,5] *1. ISSP, University of Tokyo, Kashiwa, Japan; 2. CNRS/Thales, Palaiseau, France; 3. SPINTEC, Grenoble, France; 4. In Silicio SAS, Aix en Provence, France; 5. RIKEN-ASI, Wako, Japan*

3:18

BD-08. Spin Hall Effect dominated domain-wall depinning in Pt / Co / Pt.P. Haazen[1], E. Murè [1], J. Franken[1], R. Lavrijsen[1], B. Koopmans[1] and *H. Swagten*[1] *1. Applied Physics department, Eindhoven University of Technology, Eindhoven, Netherlands*

3:30

BD-09. Spin scattering by induced moments in ultrathin paramagnets. *W. Bailey*[1,2], A. Ghosh[2], S. Auffret[2], U. Ebels[2], F. Wilhelm[3] and A. Rogalev[3] *1. Materials Science & Engineering, Dept. of Applied Physics and Applied Math, Columbia University, New York, NY; 2. SPINTEC, UMR(8191), CEA/ CNRS/ UJF, Grenoble, France; 3. European Synchrotron Radiation Facility (ESRF), Grenoble, France*

3:42

BD-10. Change of inverse spin Hall signal with ferromagnet/normal metal stacking order. *V. Vlaminck*[1], H. Schultheiss[1], J.E. Pearson[1], F.Y. Fradin[1], S.D. Bader[1,2] and A. Hoffmann[1] *1. MSD, Argonne National Lab, Argonne, IL; 2. CNM, Argonne National Lab, Argonne, IL*

3:54

BD-11. Extrinsic anomalous Hall effect in nickel thin films modified by interface modification.J. Xu[1], Y. Li[1], D. Hou[1], L. Ye[1], D. Wei[1] and *X. Jin*[1] *1. Fudan University, Shanghai, China*

4:06

BD-12. Spin-polarized electron scattering in permalloy films: a spin-wave study.M. Haidar[1] and *M. Bailleul*[1] *1. IPCMS, CNRS / Université de Strasbourg, Strasbourg, France*

4:18

BD-13. Intrinsic spin-orbit effects in LAO/STO 2DEGs. *C. Sahin*[1], G. Vignale[2] and M.E. Flatté [1] *1. Optical Science and Technology Center and Department of Physics and Astronomy, University of Iowa, Iowa City, IA; 2. Department of Physics and Astronomy, University of Missouri, Columbia, MO*

TUESDAY AFTERNOON 1:30

REGENCY C

Session BE
PATTERNED FILMS AND NANOPARTICLES I: VORTICES, DOMAIN WALLS, NANOMAGNET ARRAYS

Kristen Buchanan, Chair

1:30

BE-01. Unconventional spin structure in patterned nanomagnets. *C. Phatak*[1], A.K. Petford-Long[1,2] and O. Heinonen[1] *1. Materials Science Division, Argonne National Laboratory, Lemont, IL; 2. Centre for Nanoscale Materials, Argonne National Laboratory, Lemont, IL*

1:42

BE-02. Controlled generation of isolated magnetic antivortices. *A. Haldar*[1], M. Asmat-Uceda[1], L. Li[1] and K.S. Buchanan[1] *1. Department of Physics, Colorado State University, Fort Collins, CO*

1:54

BE-03. Enhanced controllability of domain wall pinning by magnetic stray field. *S. Ahn*[1,2], K. Moon[1], C. Cho[1] and S. Choe[1] *1. Seoul National University, Seoul, Republic of Korea; 2. Massachusetts Institute of Technology, Cambridge, MA*

2:06

BE-04. Imaging current induced magnetic domain wall motion in $La_{0.7}Sr_{0.3}MnO_3$ nanowires by XMCD-PEEM. *M. Foerster*[1], C.A. Vaz[1,2], L. Peñ a[1], S. Finizio[1], L. Mé chin[3], R. Reeve[1], M. Mawass[1], A. Bisig[2,4], F. Bü ttner[1,5], S. Eisebitt[5] and M. Klä ui[1,2] *1. Institut für Physik, Johannes Gutenberg-Universität Mainz, Mainz, Germany; 2. SwissFEL, Paul Scherrer Institut, Villigen PSI, Switzerland; 3. GREYC, CNRS - ENSICAEN - UCBN, Caen, France; 4. Max-Planck-Institute for Intelligent Systems, Stuttgart, Germany; 5. Technische Universität Berlin, Berlin, Germany*

2:18

BE-05. Investigation of long-range magnetic correlations in artificial kagome ice. *S. Daunheimer*[1], B.B. Maranville[2], K. Krycka[2], M. Fitzsimmons[3], J.A. Borchers[2] and J. Cumings[1] *1. Dept. of Materials Sci. & Eng., University of Maryland, College Park, MD; 2. NIST Center for Neutron Research, NIST, Gaithersburg, MD; 3. Lujan Neutron Scattering Center, Los Alamos National Laboratory, Los Alamos, NM*

2:30

BE-06. Domain dynamics and fluctuations in patterned arrays of magnetic nanoparticles. Z. Budrikis[2], J.P. Morgan[4], J. Akerman[4], *R. Stamps*[1], P. Politi[3], S. Langridge[5] and C.H. Marrows[4] *1. University of Glasgow, Glasgow, United Kingdom; 2. ISI Foundation, Turin, Italy; 3. CNR, Florence, Italy; 4. University of Leeds, Leeds, United Kingdom; 5. ISIS Rutherford Laboratory, Oxon, United Kingdom*

2:42

BE-07. Ordered Perovskite/Spinel Magnetoelectric Nanocomposites formed by Directed Self-assembly. *N. Aimon*[1], H. Choi[1], J. Liao[1], D. Kim[1] and C.A. Ross[1] *1. DMSE, MIT, Cambridge, MA*

2:54

BE-08. Broad-Band FMR Studies on an Artificial Square Spin-Ice Bar Array. *J. Sklenar*[1], V.S. Bhat[2], L. De Long[2] and J.B. Ketterson[1] *1. Physics and Astronomy, Northwestern University, Evanston, IL; 2. Physics, University of Kentucky, Lexington, KY*

3:06

BE-09. An Experimental Evaluation of Magnetic Nanoparticle Interaction Models. *R.A. Booth*[1] and S.A. Majetich[1] *1. Physics, Carnegie Mellon, Pittsburgh, PA*

3:18

BE-10. Magnonic Crystals Based on Binary Ferromagnetic Nanostructure. *J. Ding*[1] and A.O. Adeyeye[1] *1. Department of Electrical and Computer Engineering, National University of Singapore*

3:30

BE-11. Structural and magnetic properties of 2D self-organized Co nanorods elaborated by chemical solution epitaxy. *C. Achkar*[1], N. Liakakos[1], T. Blon[1], B. Warot-Fonrose[2], E. Snoeck[2], B. Chaudret[1], K. Soulantica[1] and M. Respaud[1] *1. LPCNO, Toulouse, France; 2. CEMES, Toulouse, France*

3:42

BE-12. Magnetic reversals in epitaxially patterned magnetic nanowire arrays with competing anisotropies. *W. Zhang*[1], M.E. Bowden[2] and K.M. Krishnan[1] *1. Materials Science and Engineering, University of Washington, Seattle, WA; 2. Environmental Molecular Science Laboratory, Pacific Northwest National Laboratory, Richland, WA*

3:54

BE-13. Effects of spin wave quantization in magnetization reversal of an array of magnetic discs. M.E. Stebliy[1], A.V. Ognev[1,2], A.S. Samardak[1,2], L.A. Chebotkevich[1,2], *R.V. Verba*[3], G.A. Melkov[3], V.S. Tiberkevich[4] and A.N. Slavin[4] *1. Far Eastern Federal University, Vladivostok, Russian Federation; 2. Institute of Automation and Control Processes, Vladivostok, Russian Federation; 3. Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 4. Oakland University, Rochester, MI*

4:06

BE-14. Magnetic field dependence of spin wave in ultra-close packed NiFe disks arranged into a hexagonal lattice. E.K. Semenova[2], *F. Montoncello*[1], S. Tacchi[3], G. Dü rr[4], E. Sirotkin[5], E. Ahmad[5], M. Madami[3], G. Gubbiotti[3,6], D. Grundler[4], F.Y. Ogrin[5], R.J. Hicken[5], V.V. Kruglyak[5], D.V. Berkov[2], N.L. Gorn[2] and L. Giovannini[1] *1. Physics Department, University of Ferrara and CNISM, Ferrara, Italy; 2. Innovent Technology Development, Jena, Germany; 3. Physics Department, University of Perugia and CNISM, Perugia, Italy; 4. Physik Department, Technische Universität München, Garching, Germany; 5. School of Physics, University of Exeter, Exeter, United Kingdom; 6. Istituto Officina dei Materiali, Consiglio Nazionale delle Ricerche, Perugia, Italy*

4:18

BE-15. Self-assembled nanocrystal superlattic membranes of cubic FePt nanoparticles at the liquid-air interface. *M. Zhou*[1], W. Li[1], M. Zhu[1], D. Zhou[1] and Y. Hou[2] *1. Central Iron and Steel Research Institute, Beijing, China; 2. College of Engineering, Peking University, Beijing, China*

TUESDAY AFTERNOON 1:30 — REGENCY D

Session BF
VOLTAGE-CONTROLLED MAGNETIC ANISOTROPY
Evgeny Tsymbal, Chair

1:30

BF-01. Electrical Control of Domain Wall Motion in Perpendicular Magnetic Anisotropy Materials. *U. Bauer*[1,*], S. Emori[1] and G.S. Beach[1] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

1:42

BF-02. Enhanced Voltage Control of Magnetic Anisotropy of Ta/CoFeB/MgO by Suppression of Ta Diffusion and CoFeB Surface Oxidation. *N. Miyakawa*[1], D.C. Worledge[2] and K. Kita[1] *1. Department of Materials Engineering, The University of Tokyo, Bunkyo-ku, Tokyo, Japan; 2. IBM Thomas J. Watson Research Center, Yorktown Heights, NY*

1:54

BF-03. Strong electric field effect on Fe/V(001) epitaxial film with perpendicular anisotropy. *A.R. Rajanikanth*[1], T. Hauet[1], G. Langaigne[1], F. Montaigne[1], S. Mangin[1] and S. Andrieu[1] *1. Lorraine University, Institut Jean Lamour, Vandoeuvre, France*

2:06

BF-04. Electric field induced modification of the electronic structure and magnetic properties of Fe(*n*MLs)/V(001) and MgO/Fe(*n*MLs)/V(001) thin magnetic layers. *L. Calmels*[1] and R. Arras[1] *1. CEMES-CNRS, Toulouse Cedex 4, France*

2:18

BF-05. Characterization of Voltage Control of Magnetic Anisotropy Up to 8 MV/cm by Using Substrate Bias Structure. *J. Koba*[1], N. Miyakawa[1] and K. Kita[1] *1. Department of Materials Engineering, University of Tokyo, Bunkyo-ku, Tokyo, Japan*

2:30

BF-06. 90-degree Bistable Switching and Barrier Energy Control in Single Domain Magnetoelectric Nickel/PMN-PT Heterostructures. *J.L. Hockel*[1], K. Wong[2], P. Khalili[2], J. Alzate[2], K. Wang[2] and G.P. Carman[1] *1. Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA; 2. Electrical Engineering, UCLA, Los Angeles, CA*

2:42

BF-07. Stress-mediated magnetoelectric memory effect with uni-axial $TbCo_2$/FeCo multilayer on 011-cut PMN-PT electrostrictive material. Y. Dusch[1], *N. Tiercelin*[1], A. Klimov[2], S. Giordano[1], P. Pernod[1] and V. Preobrazhensky[1,3] *1. International Associated Laboratory LEMAC, IEMN UMR CNRS 8520, PRES Lille Nord de France, ECLille, Villeneuve d'Ascq, France; 2. International Associated Laboratory LEMAC, V. A. Kotel'nikov Institute of Radioengineering and Electronics, 125009 Moscow, Russian Federation; 3. International Associated Laboratory LEMAC, Wave Research Center, GPI RAS, Moscow, Russian Federation*

2:54

BF-08. Towards electric tuning of magnetic anisotropy at ferrimagnetic-insulator/metal interfaces. *M. Gajek*[1], L. Guo[1], S. Brown[1] and D. Worledge[1] *1. IBM, Yorktown Heights, NY*

3:06

BF-09. Single domain formation in Ni nanostructure induced by electric field. *C. Hsu*[1], C. Liang[1], J.L. Hockel[1], S. Keller[1] and G.P. Carman[1] *1. Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA*

3:18

BF-10. Electric-field control of magnetism in multiferroic heterostructures. ***(Invited)*** *Y. Zhao*[1], S. Zhang[1], P. Li[1], S. Rizwan[2], J. Zhang[3,6], J. Seidel[3], T. Qu[1,3], Z. Luo[4], Q. He[3], T. Zou[2], Q. Chen[1], J. Wang[1], L. Yang[1], Y. Sun[2], C. Gao[4], W. Wu[5], X. Han[2] and R. Ramesh[3] *1. Tsinghua University, Beijing, China; 2. Beijing National Laboratory for Condensed Matter Physics, Chinese Academy of Sciences, Beijing, China; 3. University of California, Berkeley, CA; 4. University of Science and Technology of China, Hefei, China; 5. Rutgers University, Piscataway, NJ; 6. Beijing Normal University, Beijing, China*

3:54

BF-11. Strain-induced modification of perpendicular magnetic anisotropy in Pt/Co/Pt films. *P.M. Shepley*[1], A.W. Rushforth[2] and T. Moore[1] *1. Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom*

4:06

BF-13. Large magnetoelectric effect at cobalt/poly(vinylidene fluoride) interfaces. P.V. Lukashev[1], *T.R. Paudel*[1], J.M. López-Encarnación[2], S. Adenwalla[1], E.Y. Tsymbal[1] and J.P. Velev[3] *1. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE; 2. Chemical Sciences and Engineering Division, Argonne National Laboratory, Argonne, IL; 3. Physics, Institute for Functional Nanomaterials, University of Puerto Rico, San Juan, Puerto Rico*

4:18

BF-12. Ferroelectric Control of Magnetic Anisotropy in a Co/P(VDF-TrFE) Heterostructure: A Polarized Neutron Reflectometry Study. *K. Foreman*[1,2], A. Mardana[1,2], D. Lohman[3], V. Lauter[4], S. Ducharme[1,2] and S. Adenwalla[1,2] *1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE; 3. Department of Physics, Central College, Pella, IA; 4. Spallation Neutron Source, Oak Ridge National Laboratory, Oak Ridge, TN*

TUESDAY AFTERNOON 1:30

CRYSTAL A

Session BG
SOFT MAGNETIC MATERIALS III: BULK CRYSTALLINE ALLOYS, FILMS, AND DEVICES

Samuel Kernion, Chair

1:30

BG-01. Magnetostrictive vibrations model of a transformer core and the contribution of the higher harmonics in the magnetic field. *S. Gorji Ghalamestani*[1], L. Vandevelde[1], J.J. Dirckx[2] and J.A. Melkebeek[1] *1. Electrical Energy, Systems & Automation, University of Ghent, Ghent, Belgium; 2. Laboratory of Biomedical Physics, University of Antwerp, Antwerp, Belgium*

1:42

BG-02. An integrated inductor for high current with using Fe-Si metal alloy composite films. *S. Lim*[1,2], H. Kim[1], I. Jeong[2], T. Lee[2] and H. Hwang[2] *1. Electronic Systems Engineering, ERICA, Hanyany Univ., Ansan, Kyunggi-do, Republic of Korea; 2. R&D Center, Chang Sung Corporation, Incheon, Republic of Korea*

1:54

BG-03. Modeling of Localized Reflow in Solder/Magnetic Nanocomposites for Area-Array Packaging. *S. Xu*[1], A. Pickel[1], A. Prasitthipayong[1], A. Habib[2] and M. McHenry[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Energy Materials, Pacific Northwest National Laboratory, Richland, WA*

2:06

BG-04. Phase separation in Ni-Cu films induced by Ni-Ni exchange interaction. A.F. Kravets[1,2], A.N. Timoshevskii[1], B.Z. Yanchitsky[1], O.Y. Salyuk[1], S.O. Yablonovskii[1], S. Andersson[2] and *V. Korenivski*[2] *1. Institute of Magnetism, National Academy of Science, Kiev, Ukraine; 2. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden*

2:18

BG-05. Magnetic field enhanced soft magnetic properties of Fe-Co alloys. B. Frincu[1], R. Madugundo[1,2], O. Geoffroy[2], T. Waeckerle[3] and *S. Rivoirard*[1] *1. CRETA, CNRS, Grenoble, France; 2. G2Elab, CNRS/Grenoble University, Grenoble, France; 3. Research Center, APERAM, Imphy, France*

2:30

BG-06. Effect of composition, precipitation and annealing conditions on soft magnetic properties of Fe-P rolled sheet alloy. *S. Jafari*[1,2], T. Ohkubo[1], A.A. Beitollahi[2] and K. Hono[1] *1. National Institute for Materials Science, Tsukuba, Japan; 2. School of Metallurgy & Materials Engineering, Iran University of Science and Technology, Tehran, Islamic Republic of Iran*

2:42

BG-07. Magnetic and magnetocaloric properties of Ni-Mn-Sn alloys. *N.H. Dan*[1], N.H. Duc[1], N.H. Yen[1], P.T. Thanh[1], T.D. Thanh[1,3], D.T. Huu[1], D.T. Anh[2], N.T. Mai[2], N.A. Bang[2], P.T. Long[3] and S.C. Yu[3] *1. Institute of Materials Science, Ha Noi, Viet Nam; 2. Hanoi University of Science, Ha Noi, Viet Nam; 3. Chungbuk National University, Cheongju, Republic of Korea*

2:54

BG-08. Magnetic properties of Fe and Fe-Si alloys with {100} texture. *J. Sung*[1] and Y. Koo[1] *1. GIFT, POSTECH, Pohang, Kyung Buk, Republic of Korea*

3:06

BG-09. A model for predicting instantaneous core loss in electric circuit coupled finite element simulations of electrical machines. *L. Rodrigues*[1] and G.W. Jewell[1] *1. Electronic and Electrical Engineering, the University of Sheffield, Sheffield, United Kingdom*

3:18

BG-10. Temperature evolution of the structure and Rh magnetization across the antiferromagnetic-to-ferromagnetic phase transition in FeRh films. *Y. Choi*[1], J. Kim[1], S. Moyerman[2], V. Uhlí r[2], E.E. Fullerton[2] and P.J. Ryan[1] *1. Advanced Photon Source, Argonne National Lab, Argonne, IL; 2. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA*

3:30

BG-11. Influence of the interface on the ferromagnetism of the FeRh epilayers. *C. Le Graet*[1], M.A. de Vries[2], D.A. Arena[3] and C.H. Marrows[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. CSEC and School of Chemistry, University of Edinburgh, Edinburgh, United Kingdom; 3. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY*

3:42

BG-12. Chemical manipulation of magnetic ordering in M1-xSnxPn2Se4 semiconductors. *P.F. Poudeu Poudeu*[1], H. Djieutedjeu[1] and S.K. Ranmohotti[1] *1. Materials Science and Engineering, University of Michigan, Ann Arbor, MI*

3:54

BG-13. Phonon densities of states of face-centered-cubic Fe-Ni alloys. *M. Lucas*[1,2], L. Mauger[3], J.A. Muñ oz[3], I. Halevy[3], J.C. Horwath[1], S.L. Semiatin[1], D.L. Abernathy[4], M.B. Stone[4], Y. Xiao[5] and B.T. Fultz[3] *1. Air Force Research Laboratory, Wright-Patterson AFB, OH; 2. Universal Technology Corporation, Air Force Research Laboratory, Dayton, OH; 3. W. M. Keck Laboratory, California Institute of Technology, Pasadena, CA; 4. Oak Ridge National Laboratory, Oak Ridge, TN; 5. HPCAT, Geophysical Laboratory, Carnegie Institute of Washington, Argonne, IL*

4:06

BG-14. Highly Ordered Co2MnSi/MgO/Co2MnSi Magnetic Tunnel Junction Heterostructures Grown by Molecular Beam Epitaxy. *S. Patel*[1], A. Kozhanov[1], B.D. Schultz[1] and C. Palmstrø m[1] *1. University of California, Santa Barbara, Santa Barbara, CA*

TUESDAY AFTERNOON 1:30

CRYSTAL B

Session BH
MAGNETIC SEMICONDUCTORS I

Jianhua Zhao, Chair

1:30

BH-01. Magnetic behaviors of (Ga,Mn)As nanowires fabricated via both top-down and bottom-up methods. X. Yu[1], L. Chen[1], H. Wang[1], J. Misuraca[2], X. Yang[1], F. Yang[1], P. Xiong[2], S. von Molnar[2] and *J. Zhao*[1] *1. State Key Laboratory of Superlattices And Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China; 2. Department of Physics, Florida State University, Tallahassee, FL*

1:42

BH-02. Tuning maximum attainable domain velocities through magneto-crystalline anisotropy engineering. *L. Thevenard*[1], A. Hussein[3], S. Shihab[1], H. Bardeleben[1], M. Bernard[1], A. Lemaî tre[2] and C. Gourdon[1] *1. Institut des Nanosciences de Paris, Université Pierre et Marie Curie, Paris, France; 2. Laboratoire de Photonique et Nanostructures, CNRS, Marcoussis, France; 3. Laboratoire d'Optique Appliqué (ENSTA et Ecole Polytechnique) ENSTA, Palaiseau, France*

1:54

BH-03. Local correlation effects in the electronic structure of Mn doped GaAs. *I. Di Marco*[1], P. Thunströ m[1], M. Katsnelson[2], J. Sadowski[3], K. Karlsson[4], S. Lebè gue[5], J. Kanski[6] and O. Eriksson[1] *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands; 3. MAX-lab, Lund University, Lund, Sweden; 4. Department of Life Sciences, Högskolan i Skövde, Skövde, Sweden; 5. Institut Jean Barriol, Nancy University, Nancy, France; 6. Department of Applied Physics, Chalmers University, Gothenburg, Sweden*

2:06

BH-04. Experimental observation of the optical spin transfer torque. ***(Invited)*** P. Nemec[3], E. Rozkotova[3], N. Tesarova[3], F. Trojanek[3], E. De Ranieri[4], K. Olejnik[1], J. Zemen[1,2], V. Novak[1], M. Cukr[1], P. Maly[3] and *T. Jungwirth*[1,2] *1. Department of Spintronics and Nanoelectronics, Institute of Physics ASCR, Prague, Czech Republic; 2. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; 3. Faculty of Mathematics and Physics, Charles University in Prague, Prague, Czech Republic; 4. Hitachi Cambridge Laboratory, Cambridge, United Kingdom*

2:42

BH-05. Control of ferromagnetism by moving the electron wavefunction in ferromagnetic semiconductor (In,Fe)As quantum wells. *L.D. Anh*[1], P.N. Hai[1] and T. Masaaki[1] *1. Department of Electrical Engineering and Information Systems, The University of Tokyo, Tokyo, Japan*

2:54

BH-06. Element-Specific Spin and Orbital Polarization in Fe/GaAs and Fe/(Ga,Mn)As hybrid systems. *A. Alsmadi*[1,2], Y. Choi[2], D.J. Keavney[2], E.E. Alp[2], K.F. Eid[3], X. Liu[4], J. Leiner[4], K. Tivakornsasithorn[4], M. Dobrowolska[4] and J. Furdyna[4] *1. Physics Department, The Hashemite University, Zarqa, Jordan; 2. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 3. Department of Physics, Miami University, Oxford, OH; 4. Department of Physics, University of Notre Dame, Notre Dame, IN*

3:06

BH-07. Antiferromagnetic Couplings in EuO1-x. *P. Liu*[1] and J. Tang[1] *1. Physics & Astronomy, University of Wyoming, Laramie, WY*

3:18

BH-08. Experimental verification of the spin gapless semiconductivity in the Heusler compound Mn_2CoAl. *S. Ouardi*[1], G.H. Fecher[1], W. Schnelle[1] and C. Felser[1] *1. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

3:30

BH-09. Electrical control of magnetism in Mn-doped ZnO. X. Wang[1], R. Lortz[2], C. Leung[3] and *A. Ruotolo*[1] *1. City University of Hong Kong, Kowloon, Hong Kong; 2. The Hong Kong University of Science and Technology, Kowloon, Hong Kong; 3. The Hong Kong Polytechnic University, Kowloon, Hong Kong*

3:42

BH-10. Correlation between magnetism and electronic structure of $Zn_{1-x}Co_xO$ nanoparticles. *J. Chess*[1], G. Alanko[1], A.K. Farrar[1], D.A. Tenne[1], C.B. Hanna[1] and A. Punnoose[1] *1. Physics, Boise State University, Boise, ID*

3:54

BH-11. Observation of Room Temperature Ferromagnetism in Cluster Free, *Co* doped Y_2O_3 Dilute Magnetic Oxide Films. *C. Wu*[1], S. Huang[1], W. Lee[1], Y. Chang[2], T. Wu[1], Y. Soo[1], M. Hong[3] and J. Kwo[1] *1. Department of Physics, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Mat. Sci. and Eng., National Tsing Hua University, Hsinchu, Taiwan; 3. Department of Physics, National Taiwan University, Taipei, Taiwan*

4:06

BH-12. Effect of Gd doping and O vacancies on the Curie temperature of EuO: A magnetostructural cluster expansion approach. *J.M. An*[1] and K.D. Belashchenko[1] *1. Physics and Astronomy, Univ. of Nebraska, Lincoln, NE*

4:18

BH-13. Evidence of strong spin fluctuations in the meta-stable BiVO3. *M.P. Singh*[1] and F. Razavi[1] *1. Department of Physics, Brock University, St Catharines, ON, Canada*

TUESDAY AFTERNOON 1:30

CRYSTAL C

Session BI
ELECTRONIC STRUCTURE AND ITINERANT MAGNETISM

Vladimir Antropov, Chair

1:30

BI-01. Unusual surface magnetism and conductivity predicted (and experimentally indicated) for BaMn2As2, a bulk semiconducting antiferromagnet. *B.N. Harmon*[1], Y. Lee[1], R. Prozorov[1] and D.L. Johnston[1] *1. Physics, Ames Laboratory, Ames, IA*

1:42

BI-02. Influence of spin-orbit interactions on the electronic structure and magnetic properties of IrMn. *H. Chen*[1], F. Wu[1] and A.H. MacDonald[1] *1. Department of Physics, University of Texas at Austin, Austin, TX*

1:54

BI-03. Magnetic Anisotropy in FePt: Effect of Chemical Disorder and Stoichiometry. *C.J. Aas*[1], L. Szunyogh[2,3] and R.W. 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. Condensed Matter Research Group of Hungarian Academy of Sciences, Budapest University of Technology and Economics, Budapest, Hungary*

2:06

BI-04. Breakdown of Hund's third rule in amorphous Co-W nanoparticles and Co3W alloy. A.I. Figueroa[1], *F. Bartolome*[1], J. Bartolome[1], L.M. Garcia[1], F. Petroff[2], C. Deranlot[2], F. Wilhelm[3] and A. Rogalev[3] *1. ICMA, CSIC & University of Zaragoza, Zaragoza, Spain; 2. Unité Mixte de Physique, CNRS/Thales, and Universite Paris-Sud, Orsay, France; 3. ESRF, Grenoble, France*

2:18

BI-05. Probing buried magnetic layers and interfaces with depth-resolved standing-wave excited angle-resolved photoemission (SW-ARPES). *A.X. Gray*[1,2], A.M. Kaiser[2,3], S. Nemšák[2,3], G.K. Palsson[2,3], G. Conti[2,3], J. Minár[4], J. Braun[4], L. Plucinski[5], M. Huijben[6], A. Bostwick[7], E. Rotenberg[7], V.N. Strocov[8], S. Yang[9], A. Winkelmann[10], G. Rijnders[6], D.H. Blank[6], C.M. Schneider[5], H. Ebert[4], S. Stemmer[11] and C.S. Fadley[2,3] *1. Stanford Institute for Materials and Energy Science, SLAC National Accelerator Laboratory, Menlo Park, CA; 2. Department of Physics, University of California Davis, Davis, CA; 3. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Physical Chemistry Institute, Ludwig Maximillian University, Munich, Germany; 5. Peter-Grünberg-Institut PGI-6, Forschungszentrum Jülich GmbH, Jülich, Germany; 6. MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands; 7. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 8. Swiss Light Source, Paul Scherrer Institute, Villigen, Switzerland; 9. IBM Almaden Research Center, San Jose, CA; 10. Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany; 11. Materials Department, University of California, Santa Barbara, Santa Barbara, CA*

2:30

BI-06. Pressure Tuning of the Spin-Orbit Coupled Ground State in Sr_2IrO_4 *D. Haskel*[1], G. Fabbris[1,2], M. Zhernenkov[1], P.P. Kong[3], C.Q. Jin[3], G. Cao[4] and M. van Veenendaal[1,5] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Department of Physics, Washington University, St. Louis, MO; 3. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 4. Department of Physics and Astronomy and Center for Advanced Materials, University of Kentucky, Lexington, KY; 5. Department of Physics, Northern Illinois University, De Kalb, IL*

2:42

BI-07. On the origin of the magnetism in cubic $SrTi_{1-x}Fe_xO_{3-\delta}$ perovskites: A first-principles approach. *J.M. Florez*[1,2], S.P. Ong[1], G.F. Dionne[1], P. Vargas[2], G. Ceder[1] and C.A. Ross[1] *1. Materials Science and Engineering Department, Massachusetts Institute of Technology, Cambridge, MA; 2. Departamento de Fisica, Universidad Tecnica Federico Santa Maria, Valparaiso, Valparaiso, Chile*

2:54

BI-08. Consistent Agreement Between Calculations and Experimental Spectra for LSCO. *Y. Lee*[1,2], B. Harmon[1,2], S. Medling[3], F. Bridges[3], H. Zheng[4], J.F. Mitchell[4] and J.W. Freeland[5] *1. Division of Materials Sciences and Engineering, Ames Laboratory, Ames, IA; 2. Department of Physics and Astronomy, Iowa State University, Ames, IA; 3. Department of Physics, University of California, Santa cruz, CA; 4. Material Science Division, Argonne National Laboratory, Argonne, IL; 5. Advanced Photon Source, Argonne National Laboratory, Argonne, IL*

3:06

BI-09. Assessment of the magnetic properties and electronic structure of SrRuO3 using LDA, LDA+U and LDA+DMFT. *O. Grånäs*[1], I. di Marco[1], O. Eriksson[1], L. Nordström[1] and C. Etz[1] *1. Dept. of Physics and Astronomy, Uppsala University, Uppsala, Sweden*

3:18

BI-10. Room temperature stabilized tetragonal $SrRuO_3$ (001) film with giant perpendicular uniaxial anisotropy. *W. Lu*[1], W. Song[2], K. He[1], J. Chai[3], C. Sun[4], G. Chow[1] and J. Chen[1] *1. Department of Materials Science and Engineering, National University of Singapore; 2. Data Storage Institute, A*STAR (Agency for Science, Technology and Research), Singapore; 3. Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore; 4. Advanced Photon Source, Argonne National Laboratory, Argonne, IL*

3:30

BI-11. Exchange interaction in non-collinear magnets. *A. Szilva*[1], A. Bergman[1], M. Costa[1], L. Nordström[1], L. Szunyogh[2] and O. Eriksson[1] *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Department of Theoretical Physics, Budapest University of Technology and Economics, Budapest, Hungary*

3:42

BI-12. Susceptibility of Fe Atoms in Cu Clusters. *R. Zhang*[1,2], T. George[1,2], R. Skomski[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*

3:54

BI-13. Effect of lattice vibrations on magnetic phase transition in BCC Iron. *J. Yin*[1], M. Eisenbach[1], D.M. Nicholson[1] and A. Rusanu[1] *1. Oak Ridge National Laboratory, Oak Ridge, TN*

4:06

BI-14. A "How To" for Magnetic Carbon. *H. Ohldag*[1], E. Arenholz[2], T. Tyliszczak[2], R. Hoehne[3], D. Spemann[3], P. Esquinazi[3], M. Ungureneau[3] and T. Butz[3] *1. SSRL, SLAC National Accelerator Laboratory, Menlo Park, CA; 2. ALS, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Experimental Physics, University Leipzig, Leipzig, Germany*

TUESDAY AFTERNOON
2:30

RIVERSIDE CENTER

Session BP
MICROMAGNETICS I (POSTER SESSION)

Michael Donahue, Co-Chair
Claudia Mewes, Co-Chair

BP-01. Magnetostrictive Effects and Micromagnetic Modeling. *A. Tuggle*[1] and C. Mewes[1] *1. MINT Center / Dept. of Physics and Astronomy, University of Alabama, Tuscaloosa, AL*

BP-02. Multiferroic domain structure in orthorhombic multiferroics of cycloidal spin order: three-dimensional phase field simulations. P. Chu[1], *S. Dong*[2] and J. Liu[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 2. Department of Physics, Southeast University, Naniing, Jiangsu, China*

BP-03. Size dependence on Thermally Excited Mag-Noise Spatial Distribution in Magnetic Tunnel Junction Sensors. *T. Zeng*[1], Y. Zhou[2], K. Lin[3], P. Lai[1] and P.W. Pong[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, China; 2. Department of Physics, The University of Hong Kong, China; 3. Department of Materials Science and Engineering, National Chung Hsing University, Tai Chung, Taiwan*

BP-04. Micromagnetic modeling of spin-wave generation by strain-induced anisotropy change. *J. Nath*[1], S. Cherepov[1], J.G. Alzate[1], K. Wong[1], P. Upadhyaya[1], J. Hockel[2], T. Wu[2], P. Khalili Amiri[1], G. Carman[2] and K.L. Wang[1] *1. Department of Electrical Engineering, University of California, Los Angeles, CA; 2. Department of Mechanical and Aerospace Engineering, University of California, Los Angeles, CA*

BP-05. Local transverse fields for domain wall selection in nanowire arrays. J. Vogeler-Wunsch[1] and *A. Kunz*[1] *1. Physics, Marquette University, Milwaukee, WI*

BP-06. Micromagnetic Studies of the effects of Crystalline Anisotropy on the Energy Landscape of Thin Ferromagnetic Nanorings. *G.D. Chaves-O'Flynn*[1] and C.B. Muratov[1] *1. Mathematical Sciences, New Jersey Institute of Technology, Newark, NJ*

BP-07. Controllable Single Magnonic band gap in nanostrip magnonic-crystal waveguides. *Q. Wang*[1], L. Jin[1] and Z. Zhong[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, Chengdu, Sichuan, China*

BP-08. Effect of Neighbor Interaction among Nano-Magnetic Disks. *S. Rajaram*[1], D.K. Karunaratne[1], S. Sarkar[2] and S. Bhanja[1] *1. Electrical Engineering, University of South Florida, Tampa, FL; 2. Computer Science Engineering, University Of South Florida, Tampa, FL*

BP-09. Micromagnetic analysis of size effects in the switching of synthetic antiferromagnets. *L. Stoleriu*[1], C. Pinzaru[1] and A. Stancu[1] *1. Department of Physics, Al. I. Cuza University, Iasi, Romania*

BP-10. Magnetic properties in multisegmented cylindrical systems with alternating magnetic wires and tubes. *D. Salazar-Aravena*[1], R. Corona[1], J. Escrig[1], V. Gutknecht[2], V. Roscher[2], J. Bachmann[2], D. Goerlitz[2] and K. Nielsch[2] *1. Departamento de Física, Universidad de Santiago de Chile, Santiago, Chile; 2. Institute of Applied Physics, University of Hamburg, Hamburg, Germany*

BP-11. Magnonic Spectra in Defective $Ni_{80}Fe_{20}$ Antidot Lattices with Varying Lattice Constants. R. Mandal[1], D. Kumar[1], B. Rana[1] and *A. Barman*[1] *1. Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Centre for Basic Sciences, Kolkata, West Bengal, India*

BP-12. Laser pulse heating and thermal stresses in magnetic nanowires. *A. Iordana*[1], D. Ioan[1] and S. Alexandru[1] *1. Department of Physics, Alexandru Ioan Cuza, Iasi, Romania*

BP-13. Simulated magnetic and magnetotransport behavior of nanoscale MgO tunnel junctions. *A.V. Silva*[1], D.C. Leitã o[1], R. Ferreira[2], S. Cardoso[1] and P.P. Freitas[1] *1. INESC-MN, Lisboa, Portugal; 2. International Iberian Nanotechnology Laboratory, Braga, Portugal*

BP-14. Spin-waves excitation in ferromagnetic nanowire. G. Finocchio[1], *A. Giordano*[1], R. Zivieri[3], M. Carpentieri[2] and B. Azzerboni[1] *1. University of Messina, Messina, Italy; 2. Politecnico of Bari, Bari, Italy; 3. University of Ferrara, Ferrara, Italy*

BP-15. Vortex states of Dipolar coupled nanodisks. A.L. Dantas[1], A.S. Carriç o[3], *I.S. Queiroz Jr*[2], G.O. Rebouç as[2], M.G. Dias[3] and T.R. Moura[3] *1. Departamento de Física, UERN, Natal, RN, Brazil; 2. Department of Physics, UFERSA, Mossoro, RN, Brazil; 3. Department of Physics, UFRN, Natal, RN, Brazil*

BP-16. Reconstruction of size distribution curve for magnetic particles in ferrofluids by Bayesian method with NPE and Shapiro-Wilk test. G. Lei[1], *J. Zhu*[1] and Y. Guo[1] *1. University of Technology, Sydney, Sydney, NSW, Australia*

TUESDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session BQ
MAGNETIC PROPERTIES AND PERPENDICULAR ANISOTROPY IN THIN FILMS AND MULTILAYERS (POSTER SESSION)

Takayuki Nozaki, Co-Chair
Theodore Monchesky, Co-Chair

BQ-01. Brillouin light scattering investigation of the spin waves in perpendicularly magnetized Co/Ni multilayers. *G. Gubbiotti*[1], G. Carlotti[2], S. Tacchi[2], M. Madami[2], T. Ono[3], T. Koyama[3], D. Chiba[3], F. Casoli[4] and M. Pini[5] *1. Dipartimento di Fisica, CNR-IOM, Perugia, Italy; 2. Dipartimento di Fisica, CNISM-Unità di Perugia, Perugia, Italy; 3. Laboratory of Nano Spintronics, Division of Materials Chemistry, Institute for Chemical Research, Kyoto, Japan; 4. CNR-IMEM, Parma, Italy; 5. CNR-ISC, Sesto Fiorentino-Firenze, Italy*

BQ-02. Controlling magnetic anisotropy Co/Ni multilayers. *M. Arora*[1], T. Mckinnon[1], F. Rashidi[1], E. Girt[1] and B. Heinrich[1] *1. Physics, Simon Fraser University, Burnaby, BC, Canada*

BQ-03. Magnetic anisotropy and thermal stability study of perpendicular Co/Ni multilayers. G. Wang[1], Z. Zhang[1], B. Ma[1] and *Q. Jin*[1,2] *1. Optical Science and Engineering, Fudan University, Shanghai, Shanghai, China; 2. Physics, East China Normal University, Shanghai, Shanghai, China*

BQ-04. Field annealing effect on Co/Ni multilayer thin films for domain wall motion. *E. Yang*[1], V.M. Sokalski[1], M. Moneck[1] and J. Zhu[1] *1. Carnegie Mellon University, Pittsburgh, PA*

BQ-05. Effect of Exchange Break Layer on Co/Pd Exchange Spring Magnetic Multilayer. *C. Barton*[1] and T. Thomson[1] *1. School of Computer Science, University of Manchester,Oxford Road, Manchester, M13 9PL, Lancs, United Kingdom*

BQ-06. Ultra-thin Co/Pd Multilayers Compatible with High-Temperature Thermal Cycles. *M. Gottwald*[1], K. Lee[2], J. Langer[3], B. Oecker[3], S.H. Kang[2] and E.E. Fullerton[1] *1. Center for Magnetic Recording Research, University of California San Diego, La Jolla, CA; 2. Advanced Technology, Qualcomm Incorporated, San Diego, CA; 3. Singulus AG, Kahl am Main, Germany*

BQ-07. Tunable temperature dependent nucleation field in perpendicular exchange spring typed magnetic tunnel junctions. *W. Yi*[1], D.. Le Roy[2], J. Jiang[1], H.X. Wei[1], S.H. Liou[2] and X.F. Han[1] *1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Department of Physics and Astronomy, Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE*

BQ-08. CoFe/Pd multilayer films with strong perpendicular magnetic anisotropy and modifiable magnetic properties. Z. Meng[1], *D. Ngo*[1], T. Taiebeh[2], G. Han[2] and K. Teo[1] *1. Department of Electrical and Computer Engineering, National University of Singapore; 2. Data Storage Institute, Agency for Science, Technology and Research (A*STAR), Singapore, 117608, Singapore*

BQ-09. Probing depth-dependent magnetization reversal in nanoporous Co/Pt with polarized neutron reflectometry. *B.J. Kirby*[1], M.T. Rahman[2,3], R.K. Dumas[4,5], J.E. Davies[6], P. Greene[4], C.H. Lai[2] and K. Liu[4] *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 3. MINT Center, University of Minnesota, Minneapolis, MN; 4. Physics, University of California at Davis, Davis, CA; 5. Physics, University of Gothenburg, Gothenburg, Sweden; 6. Advanced Technology Group, NVE Corporation, Eden Prarie, MN*

BQ-10. Microstructure study of CoPt thin film with phase change from $A1 \rightarrow L1_1 \rightarrow A1 \rightarrow L1_0$ *C. Huang*[1] and A. Sun[1] *1. Department of Chemical Engineering and Materials Science, Yuan-Ze University, Chung-Li, Taiwan*

BQ-11. Multilayer nanogranular films $(Co_{40}Fe_{40}B_{20})_X(SiO_2)_{100-X}$ /α-Si:H and $(Co_{40}Fe_{40}B_{20})_X(SiO_2)_{100-X}$ / SiO_2 : magnetic and resonance properties. *E.A. Denisova*[1], S.V. Komogortsev[1], R.S. Iskhakov[1], A.D. Balaev[1], L.A. Chekanova[1], Y.E. Kalinin[2] and A.V. Sitnikov[2] *1. Kirensky Institute of Physics SB RAS, Krasnoyarsk, Russian Federation; 2. Voronezh State Technical University, Voronezh, Russian Federation*

BQ-12. The intrinsic temperature dependence and the origin of the crossover of the coercivity in perpendicular MgO/CoFeB/Ta structures. C. Cheng[1], *M. Tsai*[1], C. Tsai[2] and G. Chern[1] *1. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. Department of Engineering and Management of Advanced Technology, Hang Jung Christian University, Tainan, Taiwan*

BQ-13. Study Pt buffer-improved perpendicular magnetic anisotropy of TbFeCo nanowires by extraodinary Hall effect measurement. *H. Awano*[1] and B. Do[1] *1. Toyota Technological Institute, Nagoya, Japan*

BQ-14. $L1_0$-FePt ultrathin film with large perpendicular anisotropy. *L. Huang*[1] and J. Chen[1] *1. Materials Science and Engineering, National Univ. of Singapore, Singapore*

BQ-15. Using different Mn-oxides to affect the anisotropy in FePt in bilayers without altering the exchange bias. *K. Lin*[1], C. Shueh[1], R. Desautels[2], W. Chen[3], T. Wu[3] and J. van Lierop[2] *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 2. Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 3. Taiwan Spin Research Center, National Yunlin University of Science and Technology, Douliu, Taiwan*

BQ-16. Magnetic and structural properties of Fe/MgO(111)/Fe3O4(111) heterostructures. *V. Lazarov*[1], Z. Cai[3], K. Zeimer[2] and H. Sukegawa[3] *1. Physics, University of York, York, United Kingdom; 2. National Institute of Materials Science, Tsukuba, Japan; 3. Chemical Engineering, Northeastern University, Boston, MA*

TUESDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session BR
SPIN TORQUE AND DOMAIN WALL DEVICES I (POSTER SESSION)

Eric Evarts, Co-Chair
William Rippard, Co-Chair

BR-01. Current-induced magnetization dynamics in a spin-valve comprising two spin-transfer torque-coupled ferromagnetic layers. *V. Sluka*[1], C.J. Fowley[1], K. Bernert[1,2], H. Gan[1], J. Fassbender[1,2] and A.M. Deac[1] *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Technische Universität Dresden, Dresden, Germany*

BR-02. Strong spin polarization of Co/Ni(111) epitaxial layers with perpendicular anisotropy. *T. Hauet*[1], A. Neggache[1,2], A.R. Rajanikanth[1], F. Montaigne[1], F. Bertran[2], P. Lefevre[2], A. Taleb[2], S. Mangin[1] and S. Andrieu[1] *1. Lorraine University, Institut Jean Lamour, Vandoeuvre, France; 2. SOLEIL Synchrotron, CNRS, Saclay, France*

BR-03. Effect of an in-plane field on microwave dynamics in point contact spin valve structures combining in-plane and out-of-plane magnetic layers. *C. Fowley*[1], V. Sluka[1], K. Bernert[1,2], H. Gan[1], J. Fassbender[1], W.H. Rippard[3], M.R. Pufall[3], S.E. Russek[3] and A.M. Deac[1] *1. Helmholtz Zentrum Dresden Rossendorf, Dresden, Germany; 2. Technische Universität, Dresden, Germany; 3. National Institute of Standards and Technology, Boulder, CO*

BR-04. Thermal spin torque in single and double magnetic tunnel junctions. *C.A. Akosa*[1] and A. Manchon[1] *1. Material Science and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

BR-05. Zero-field spin transfer torque oscillator based on magnetic tunnel junctions with a tilted free layer. *W. Skowronski*[1], J. Wrona[1], T. Stobiecki[1], G. Reiss[2] and S. van Dijken[3] *1. Department of Electronics, AGH University of Science and Technology, Krakow, Poland; 2. Thin Films and Physics of Nanostructures, Bielefeld University, Bielefeld, Germany; 3. Department of Applied Physics, Aalto University School of Science, Espoo, Finland*

BR-06. Dependence of Current-Induced Effective Rashba Field and Perpendicular Magnetic Anisotropy on Thickness of Ferromagnetic Layer and Annealing temperature. *K. Lee*[1,2], B. Min[1], K. Lee[2] and K. Shin[1] *1. Spin Convergence Research Center, Korea Institute of Science and Technology, Seoul, Republic of Korea; 2. Departments of Materials Science and Engineering, Korea University, Seoul, Republic of Korea*

BR-07. Precessional reversal in orthogonal spin transfer magnetic random access memory devices. *H. Liu*[1], D. Bedau[1], D. Backes[1], J.A. Katine[2] and A.D. Kent[1,3] *1. Department of Physics, New York University, New York, NY; 2. HGST Research, San Jose, CA; 3. Spin Transfer Technologies, Boston, MA*

BR-08. Modelling Stochastic Behaviors of Spin Transfer Torque in Magnetic Tunnel Junction for Memory and Logic Electrical Simulation. *Y. Zhang*[1,2], W. Zhao[1,2], T. Devolder[1,2], J. Klein[1,2], G. Prenat[3], J. Kim[1,2], C. Chappert[1,2], B. Dieny[3] and D. Ravelosona[1,2] *1. Institut d'Electronique Fondamentale, Univ. Paris-Sud, Orsay, France; 2. CNRS, UMR8622, Orsay, France; 3. Spintec Laboratory, CEA/CNRS, Grenoble, France*

BR-09. Opposite direction of current-induced domain-wall motion between ferromagnetic Pt/Co/Pt and Pd/Co/Pd thin films. *S. Yoo*[1,2], K. Moon[1], D. Kim[1], K. Shin[2], B. Min[2] and S. Choe[1] *1. Department of Physics and Astronomy, Seoul National University, Seoul, Republic of Korea; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Republic of Korea*

BR-10. Hysteresis regime in the operation of a spin-torque nano-oscillator with two free layers. *O.V. Prokopeko*[1], G.E. Rowlands[2], I.N. Krivorotov[2], V.S. Tiberkevich[3] and A.N. Slavin[3] *1. Department of Radiophysics, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 2. Department of Physics and Astronomy, University of California, Irvine, CA; 3. Department of Physics, Oakland University, Rochester, MI*

BR-11. Parametric excitation in a magnetic tunnel junction-based spin torque oscillator. *P. Dürrenfeld*[1], P.K. Muduli[1,2] and J. Åkerman[1,3] *1. Department of Physics, University of Gothenburg, Göteborg, Sweden; 2. Department of Physics, Indian Institute of Technology Delhi, New Delhi, India; 3. Materials Physics, School of ICT, KTH-Royal Institute of Technology, Kista, Sweden*

BR-12. Non-Adlerian phase slip and non-stationary synchronization of spin-torque oscillators to a microwave source. M. Carpentieri, G. Finocchio[2], *A. Giordano*[2], B. Azzerboni[2] and F. Lattarulo *1. Elettrotecnica ed Elettronica, Politecnico of Bari, Bari, Italy; 2. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy*

BR-13. Stray Field Engineering and Switching Properties of Etch-stop technique patterned p-MTJs. *C. Chien*[1], D. Wang[1], K. Shen[1], K. Kuo[1], S. Yang[1], S. Huang[1] and Y. Wang[1] *1. Electronics and Optoelectronics Research Laboratories, Industrial Technology Research Institute, Hsinchu, Taiwan*

BR-14. Effect of the Oersted field on current-induced domain wall motion and domain wall chirality in bilayer nanostripes. *M. Ishaque*[1], S. Perl[1], S. Pizzini[1], O. Fruchart[1], N. Rougemaille[1], J. Toussaint[1] and J. Vogel[1] *1. Nanoscience, Institut Néel, Grenoble, France*

BR-15. Influence of FeCo alloy composition on spin-transfer torque and TMR: Ab initio studies. C. Franz[1], M. Czerner[1] and *C. Heiliger*[1] *1. I. Physikalisches Institut, Justus Liebig University, Giessen, Germany*

BR-16. Electric field induced resonant switching of domain wall chirality in nanoscale Magnetic Tunnel Junctions. *P. Upadhyaya*[1], S. Hoffman[2], R. Dusad[2], J.G. Alzate[1], P.K. Amiri[1], S. Cherepov[1], Y. Tserkovnyak[2] and K.L. Wang[1] *1. Electrical Engineering, UCLA, Los Angeles, CA; 2. Physics & Astronomy, UCLA, Los Angeles, CA*

TUESDAY AFTERNOON 2:30 **RIVERSIDE CENTER**

Session BS
MAGNETORESISTIVE OXIDES (CMR) II (POSTER SESSION)

Brittany Nelson-Cheeseman, Chair

BS-01. Photoelectronic behaviors of bilayer ultrathin film manganite-based heterojunctions. W. Gao[1], L. Hu[2], Y. Sun[2], J. Sun[1], *Z. Wang*[1], J. Shen[3] and B. Shen[1] *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, Beijing, China; 2. Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, Anhui, China; 3. Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, Beijing, China*

BS-02. Tuning of CMR effect in LCMO/PCMO superlattices. S. Huehn[1], M. Jungbauer[1], M. Michelmann[1], F. Massel[1], F. Koeth[1], C. Balani[1] and *V. Moshnyaga*[1] *1. I. Physical Institute, Universtaet Goettingen, Goettingen, Germany*

BS-03. Strain Modulated Magnetic Coupling in C-type Antiferromagnetic Nd0.35Sr0.65MnO3 films. *S. Cheng*[1,2], C. Chang[1,2], M. Chu[1], J.G. Lin[1] and T. Chuang[2] *1. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 2. Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan*

BS-04. Charge ordering and magnetic properties of doped manganites: Issues and opportunities. *M.P. Singh*[1], K. Yadav[2], G.D. Varma[2] and F.S. Razavi[1] *1. Department of Physics, Brock University, St Catharines, ON, Canada; 2. Department of Physics, Indian Institute of Technology, Roorkee, Roorkee, India*

BS-05. Effects of lattice deformation on magnetic properties of $La_{0.8}Hf_{0.2}MnO_3$ thin films. Z. Wu[1], *Y. Jiang*[1] and J. Gao[1] *1. Physics, The University of Hong Kong*

BS-06. Mechanisms of the electron paramagnetic resonance line broadening in $La_{1-x}Ca_xMnO_3$ M. Auslender[1], *E. Rozenberg*[2], A.I. Shames[2] and Y.M. Mukovskii[3] *1. Electrical and Computer Engineering, BGU, Beer Sheva, Israel; 2. Physics, BGU, Beer Sheva, Israel; 3. Physics, MISIS, Moscow, Russian Federation*

BS-07. Pressure dependence of resistivity and magnetoresistance in Pr-doped $La_{0.7}Ca_{0.3}MnO_3$ J. Hari Om[1], *D. Repaka*[1] and R. Mahendiran[1] *1. Physics, National University of Singapore, Singapore*

BS-08. The magnetic entropy change with the different transition element on the Mn site of $La_{0.7}Ca_{0.3}MnO_3$ *Y. Zhang*[1,2], T. Phan[1], S. Yu[1] and J. Huang[2] *1. Department of Physics, Chungbuk National University, Cheongju, Chungbuk, Republic of Korea; 2. Baotou Research Institute of Rare Earths, Baotou, Inner Mongolia, China*

TUESDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session BT
HARD MAGNETIC THIN FILMS (POSTER SESSION)

David Arnold, Co-Chair
Katayun Barmak, Co-Chair

BT-01. Magnetic Properties and Microstructure of Perpendicular FePt-(B4C-Ag) Granular Films. *J. Tsai*[1], W. Tsai[1], Y. Lin[1] and S. Wu[1] *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

BT-02. Effect of non-magnetic layer on the magnetization process for Nd-Fe-B thin films and circular dots. *H. Iwama*[1], S. Suzuki[1], T. Sato[1], H. Makuta[1], M. Doi[1,2] and T. Shima[1,2] *1. Tohoku Gakuin University, Tagajo, Japan; 2. Core Research for Evolutional Science and Technology (CREST), Tokyo, Japan*

BT-03. Magnetization reversal mechanism in perpendicular exchange-coupled Fe/L10-FePt bilayers. *D. Fiorani*[1], G. Varvaro[1], F. Albertini[2], E. Agostinelli[1], F. Casoli[2], S. Laureti[1], P. Lupo[2], P. Ranzieri[2] and A.M. Testa[1] *1. Institute of Structure of Matter, National Research Council, Roma, Italy; 2. National Research Council, Istituto dei Materiali per l'Elettronica e il Magnetismo, Parma, Italy*

BT-04. Effect of Ta underlayer on the magnetic properties and microstructures of Pr-Fe-B thin films. *C. Huang*[1], A. Sun[1], H. Chang[2] and W. Chang[3] *1. Department of Chemical Engineering and Materials Science, Yuan-Ze University, Chung-Li, Taiwan; 2. Department of Physics, Tunghai University, Taichung, Taiwan; 3. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan*

BT-05. Synthesis of high-aspect ratio, hard ferromagnetic CoxC nanowires. *Z.J. Huba*[1] and E. Carpenter[1] *1. Chemistry, Virginia Commonwealth University, Richmond, VA*

BT-06. Effect of non-magnetic layers on the structure and magnetic properties for Nd-Fe-B films and multilayers. *S. Suzuki*[1], Y. Hatayama[1] and T. Shima[1,2] *1. Tohoku Gakuin university, Tagajo, Miyagi, Japan; 2. Core Research for Evolutional Science and Technology (CREST), Tokyo, Japan*

BT-07. Numerical Study of Enhanced Coercivity of Nd-Fe-B Magnets with Antiferromagnetically Coupled Thin Surface Layers. *Y. Yokoi*[1], M. Nakano[1], T. Yanai[1] and H. Fukunaga[1] *1. Graduate School of Engineering, Nagasaki University, Nagasaki, Japan*

BT-08. Magnetic properties of Nd-Fe-B thin films grown on high quality Mo (100) underlayer. *R. Goto*[1], S. Okamoto[1], N. Kikuchi[1] and O. Kitakami[1] *1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan*

BT-09. Perpendicular magnetic anisotropy in epitaxial $Co_{1-x}Fe_{2+x}O_4$ thin films reactively sputtered on MgO(001) substrates. *T. Niizeki*[1], Y. Utsumi[1], M. Iura[1], H. Yanagihara[1], H. Nakao[2] and E. Kita[1] *1. Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan; 2. Photon Factory, Institute of Materials Structure Science, KEK, Tsukuba, Ibaraki, Japan*

BT-10. Study of Perpendicular Magnetic Anisotropy and Magneto-elastic Coupling in the First Principles and Phenomenology. *J. Inoue*[1], H. Itoh[2], M. Tanaka[3], K. Mibu[3], T. Niizeki[1], H. Yanagihara[1] and E. Kita[1] *1. University of Tsukuba, Tsukuba, Japan; 2. Kansai University, Suita, Japan; 3. Nagoya Institute of Technology, Nagoya, Japan*

BT-11. Synthesis and magnetic properties of CoNi Nanowires with controllable morphology. *K.H. Gandha*[1], N. Poudyal[1], Q. Zhang[1] and J. Liu[1] *1. Physics, The University of Texas at Arlington, Arlington, TX*

BT-12. Magnetic properties of rapidly quenched cubic, tetragonal and hexagonal $Mn_{3-x}Ga$ nanostructures. *Y. Huh*[1,2], P. Kharel[2,3], E. Krage[1,2], R. Skomski[2,3], J.E. Shield[2,4] and D.J. Sellmyer[2,3] *1. Physics, South Dakota State University, Brookings, SD; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 3. Physics and Astronomy, University of Nebraska, Lincoln, NE; 4. Mechanical and Materials Engineering, University of Nebraska, Lincoln, NE*

BT-13. Atomic structure and magnetic properties of Co7Hf alloy. *M. Nguyen*[1,2], X. Zhao[1,2], L. Ke[1,2], V. Antropov[1,2], C. Wang[1,2] and K. Ho[1,2] *1. Ames Laboratory US DOE, Ames, IA; 2. Department of Physics and Astronomy, Iowa State University, Ames, IA*

TUESDAY AFTERNOON 2:30 RIVERSIDE CENTER

Session BU
TMR/GMR I (POSTER SESSION)
Jiang Xiao, Chair

BU-01. Use of Half Metallic Heusler Alloys in the CoFeB/MgO/Heusler alloys Tunnel Junctions. *P.J. Chen*[1], G. Feng[1] and R.D. Shull[1] *1. National Institute of Standards and Technology, Gaithersburg, MD*

BU-02. Co-existence of and gradual transitions between co-tunneling, Kondo Effect and impurity caused spin-flips in discontinuous magnetic tunnel junction. *D. Ciudad*[1,2], Z.C. Wen[3], A.T. Hindmarch[1], E. Negusse[4], D.A. Arena[4], X.F. Han[3] and C.H. Marrows[1] *1. School of Physics and Astronomy, University of Leeds, Leeds LS2 9JT, United Kingdom; 2. Francis Bitter Magnet Lab, Massachusetts Institute of Technology (MIT), Cambridge, MA; 3. Beijing National Laboratory of Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China; 4. National Synchrotron Light Source, Brookhaven National Laboratory, Upton 11973, NY*

BU-03. Tunnel magneto-thermoelectric transport in CoFeB/MgO-based nanopillars. N. Liebing[1], *P. Krzysteczko*[1], S. Serrano-Guisan[1], K. Rott[2], G. Reiss[2], J. Langer[3], B. Ocker[3] and H.W. Schumacher[1] *1. Physikalisch-Technische Bundesanstalt, Braunschweig, Germany; 2. Bielefeld University, Bielefeld, Germany; 3. Singulus AG, Kahl am Main, Germany*

BU-04. Magnetic properties of top-pinned PMA MTJ for STT-MRAM. *T. Devolder*[1], P. Ducrot[1], J. Kim[1], M. Manfrini[2], S. Cornelissen[2], G. Kar[2] and L. Altimime[2] *1. Institut d'Electronique Fondamentale, UMR CNRS 8622, Univ. Paris-Sud, Orsay, France; 2. IMEC, Kapeldreef 75, 3001 Leuven, Belgium, Leuven, Belgium*

BU-05. Increased perpendicular magnetoresistance in FeCoB/MgO/FeCoB magnetic tunnel junctions by modified seedlayer. *V.M. Sokalski*[1], M.T. Moneck[1], E. Yang[1], D. Bromberg[1] and J. Zhu[1] *1. ECE, Carnegie Mellon, Pittsburgh, PA*

BU-06. High TMR ratio in Co_2FeSi and Fe_2CoSi based magnetic tunnel junctions. *C. Sterwerf*[1], M. Meinert[1], J. Schmalhorst[1], M. Glas[1], G. Reiss[1] and E. Arenholz[2] *1. Bielefeld University, Thin Films and Physics of Nanostructures, Department of Physics, Bielefeld, Germany; 2. Lawrence Berkeley National Laboratory, Advanced Light Source, Berkeley, CA*

BU-07. Temperature dependence of tunneling conductance in the perpendicular anisotropy CoFeB/MgO/CoFeB magnetic tunnel junctions. *H. Liu*[1], D. Li[1], P. Guo[1], Y. Yang[1], S. Sakul[2], H. Naganuma[2], R. Yu[1] and X. Han[1] *1. Beijing National Laboratory of Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Japan*

BU-08. Magnetoresistance of Permalloy contacted Carbon nanotube quantum dots. *M. Elkin*[1] and B.J. Hickey[1] *1. Condensed Matter, The University of Leeds, Leeds, West Yorkshire, United Kingdom*

BU-09. Ultralow Resistance-Area Product in MgO-Based Magnetic Tunnel Junctions with CoFe/CoFeB/Ta/NiFe Multilayered Free Layer. *A. Emura*[1], M. Hiroki[1,2], N. Kazumasa[1], H. Hiroyuki[1], S. Takeshi[1], N. Yoshinori[1], T. Koji[1], K. Hitoshi[2], F. Akio[2] and Y. Shinji[2] *1. Process Development Center, Canon ANELVA Corp., Kawasaki, Kanagawa, Japan; 2. Nano Spintronics research center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan*

BU-10. Suppressed shot noise in electron-beam-evaporated and sputtered-deposited MgO-based magnetic tunnel junctions. *R. Stearrett*[1], J.F. Feng[2], X. Kou[1], J.Q. Xiao[1], M. Coey[2] and E.R. Nowak[1] *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. CRANN and School of Physics, Trinity College, Dublin, Ireland*

BU-11. Low frequency noise in Co/Pd-based pseudo-spin-valves with perpendicular magnetic anisotropy. *J. Chen*[1] and J. Coey[1] *1. School of Physics and CRANN, Trinity College Dublin, Dublin, Ireland*

BU-12. Interface characterization of Co_2MnGe/Rh_2CuSn Heusler multilayers. *R. Knut*[1], O. Karis[1], P. Svedlindh[4], P. Warnicke[2], D. Arena[2], M. Björck[1], K. Gunnarsson[4], O. Mryasov[3], S. Mukherjee[5], D. Das Sarma[5], S. Granroth[7] and M. Gorgoi[6] *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. NSLS, Brookhaven National Lab, Upton, NY; 3. Department of Physics and Astronomy, University of Alabama, Tuscaloosa, AL; 4. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden; 5. Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore, India; 6. BESSY, Helmholtz Zentrum Berlin, Berlin, Germany; 7. Department of Physics, University of Turku, Turku, Finland*

TUESDAY AFTERNOON 2:30 RIVERSIDE CENTER

Session BV
SOFT MAGNETIC MATERIALS FOR MICROWAVE APPLICATIONS I (POSTER SESSION)

Mohammad Afsar, Chair

BV-01. Deposition of Y-Type hexaferrites at the atomic scale. *M. Mohebbi*[1], K. Ebnabbasi[1] and C. Vittoria[1] *1. Electrical Engineering, Northeastern University, Boston, MA*

BV-02. The Effects of Size and Shape of Iron Particles on the Microwave Absorbing Properties of Composite Absorbers. R. Yang[1] and *W. Liang*[2] *1. Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 2. Department of Aeronautics and Astronautics, National Cheng Kung University, Tainan, Taiwan*

BV-03. Synthesis, Magnetic Properties, and Mössbauer Studies of $Ni_{0.75}Zn_{0.25}Al_xFe_{2-x}O_4$ ($0 \le x \le 1$) Nanoparticles. B.K. Rai[1], *L. Wang*[1] and S.R. Mishra[1] *1. Physics, The University of Memphis, Memphis, TN*

BV-04. Smart slow wave transmission lines for radio frequency applications. G. Wang[2] and *H. Zhang*[1] *1. Intel Corporation, Columbia, SC; 2. Electrical Engineering, University of South Carolina, Columbia, SC*

BV-05. An improved magnetic softness for NiCuZn ferrite by two-step sintering method. N. Cheng[1], *Z. Wang*[1] and T. Liu[1] *1. Tianjin University, Tianjin, China*

BV-06. Structural and magnetic properties study of ZnO-doped cobalt ferrite nanoparticles. T.J. Castro[1], S.W. da Silva[1], F. Nakagomi[1], N.S. Moura[2,3], *A. Franco Jr*[3], V.K. Garg[1], A.C. Oliveira[1] and P.C. Morais[1] *1. Instituto de Fisca, Universidade de Brasilia, Brasilia, DF, Brazil; 2. Instituto de Física, Universidade Federal deGoiás, Goiânia, GO, Brazil; 3. Instituto de Química, Universidade Federal de Goiás, Goiânia, GO, Brazil*

BV-07. Design of SPM BLDC motor with ferrite PM as the substitution of the rare-earth PM for water pump. *H. Kim*[1], G. Lee[1] and T. Jung[1] *1. KyungNam Univ., Changwong-Si, Republic of Korea*

BV-08. Investigation of magnetic properties of Zn doped Y-type Barium ferrite. *J. Lim*[1], B. Lee[2] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Republic of Korea; 2. Department of Physics, Hankuk University of Foreign studies, Yongin, Kyungki, Republic of Korea*

BV-09. Effect of VC nano - inhibitors and dynamic continuous annealing on the magnetic properties of GO steels. *F. Kovac*[1], I. Petryshynets[1], J. Marcin[2] and I. Skorvanek[2] *1. Microstructural Engineering of Steels, Institute of Materials Research, Slovak Academy of Science, Košice, Slovakia; 2. Laboratory of Nanomaterials and Applied Magnetism, Institute of Experimental Physic, Slovak Academy of Sciences, Košice, Slovakia*

BV-10. Magnetic and FMR study on CoFe2O4/ ZnFe2O4 bilayers. *B. Sahu*[1], S.C. Sahoo[2], N. Venkataramani[3], S. Prasad[1], R. Krishnan[4], M. Kostylev[5] and R.L. Stamps[5,6] *1. Physics, IIT Bombay, Mumbai, Maharastra, India; 2. Physics, Central University of Kerala Riverside Transit Campus, Kerala, Kerala, India; 3. Metallurgical Engineering & Materials Science, IIT Bombay, Mumbai, Maharastra, India; 4. CNRS, CNRS/Universite de Versailles-St-Quentin, Versailles Cedex, France; 5. Physics, University of Western Australia, Crawley, Perth, WA, Australia; 6. Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

BV-11. Microstructure and Electromagnetic Properties of Microwave Sintered NiCuZn+CCTO composites materials for application in LTCC devices. *Q. Yang*[1], H. Zhang[1], X. Fang[1] and Y. Liu[1] *1. University of Electronic Science and Technology of China, Chengdu, China*

BV-12. Deposition of M-type hexaferrites at the atomic scale utilizing targets natural to the crystal sublattices. *M. Mohebbi*[1], K. Ebnabbasi[1] and C. Vittoria[1] *1. Electrical Engineering, Northeastern University, Boston, MA*

TUESDAY AFTERNOON 2:30 RIVERSIDE CENTER

Session BW
SOFT MAGNETIC MATERIALS FOR MICROWAVE APPLICATIONS II (POSTER SESSION)

Yajie Chen, Chair

BW-01. Structural and magnetic properties of Mn3+ substituted ordered and disordered Li0.5Cr0.5Fe2O4 nanoparticles. *S.E. Shirsath*[1], R.H. Kadam[2], M.L. Mane[3], A. Ghasemi[4], X. Liu[1] and A. Morisako[1] *1. Information Engineering, Shinshu University, Nagano, Nagano prefecture, Japan; 2. Materials Science Research Laboratory, ShriKrishna Mahavidyalaya, Gunjoti, Osmanabad, 413613, India; 3. Department of Physics, SGRG Shinde Mahavidyalaya, Paranda, Osmanabad, India; 4. Materials Engineering Department, Malek Ashtar University of Technology, Shahin Shahr, Islamic Republic of Iran*

BW-02. Low loss NiZn/Co_2Z composite ferrite with almost equal values of permeability and permittivity for antenna applications. *Z. Zheng*[1], H. Zhang[1] and J. 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*

BW-03. Size effects on the magnetic characterization and magnetic resonance in zinc-doped nickel ferrite nanoparticles. *C. Lin*[1], M. Chen[2], M. Shaikh[1], T. Han[3], H. Sung[4] and J. Fan[5] *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan; 2. Department of Electro-optical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan; 3. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 4. Department of Materials Science and Engineering, Da Yeh University, Changhua, Taiwan; 5. Department of Electrical Engineering, Da Yeh University, Changhua, Taiwan*

BW-04. Crystal structure and magnetic properties of Mn-Zn ferrites nanoparticles. *G. Thirupathi*[1] and R. Singh[1] *1. School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

BW-05. Magnetic and reflection loss characteristics of SrFe12-x(Sm0.5Dy0.5)xO19/multiwalled carbon nanotube nanocomposite.A. Ghasemi[1], *A. Morisako*[1] and X. Liu[1] *1. Shinshu University, Nagano, Japan*

BW-06. Magneto-Optic Ring Resonator Analysis Using Jones Calculus Technique. *J.W. Pritchard*[1], M. Mina[1] and R.J. Weber[1] *1. Iowa State University, Ames, IA*

BW-07. Effects of Nb2O5 on DC-bias-superposition characteristic of the low-temperature-fired NiCuZn ferrites. *H. Su*[1], X. Tang[1], H. Zhang[1], Y. Jing[1] and B. Liu[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, SiChuan, China*

BW-08. Effects of BaM interfacial layer on the c-axis orientation of BaM thin films deposited on SiO_2/Si substrates.Z. Xu[1,2], Z. Lan[1], K. Sun[1], Z. Yu[1], G. Zhu[1], R. Guo[1] and *F. Bai*[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China; 2. Zhaoqing Science and Technology Center, Zhaoqing, Guangdong, China*

BW-09. Frequency dependence of the exchange bias coupling strength in static and dynamic experiments: Multilayer films of FeNi/IrMn.J. Vargas[1], A. Srivastava[1], D.R. Lenormand[1], C. Garcia[2] and *L. Spinu*[1] *1. Advance Materials Research Institute, University of New Orleans, New Orleans, LA; 2. Physics Department, Bogazici University, Istanbul, Turkey*

BW-10. Complex permittivity and permeability of low-temperature sintered M-type barium hexaferrite in Ka-band frequency range. *Z. Zheng*[1] and H. Zhang[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

BW-11. Temperature dependence of magnetization and magnetocrystalline anisotropy in Zr and Zn doped Ba M-type hexaferrite films. *B. Hu*[1], Y. Chen[1], Z. Su[1], L. Burns[2], G. Uddin[3], K. Ziemer[3] and V. Harris[1] *1. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Metamagnetics Inc, Canton, MA; 3. Department of Chemical Engineering, Northeastern University, Boston, MA*

BW-12. Enhanced microwave magnetic properties of Ni ferrite doped ZnO.C. Dong[1], X. Zheng[1], C. Jiang[1] and *D. Xue*[1] *1. Key Laboratory for Magnetism and Magnetic Materials of MOE, Lanzhou, China*

BW-13. Crystallinity and Magnetic Properties of Bi3Fe5O12 Thick Film Prepared by MOD Technique. *N. Adachi*[1], K. Yogo[1] and T. Ota[1] *1. Nagoya Institute of Technology, Tajimi, Japan*

TUESDAY AFTERNOON 2:30 — RIVERSIDE CENTER

Session BX
MAGNETOCALORIC MATERIALS I (POSTER SESSION)
Victorino Franco, Chair

BX-01. Crystal structure, magnetic properties and magnetocaloric effect of Gd_5Rh_4C. Wang[1,2], J. Zou[2], J. Liu[2,3], V.K. Pecharsky[2,3], K.A. Gschneidner, Jr[2,3], *Y. Long*[1], V. Smetana[2,4] and G.J. Miller[2,4] *1. Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China; 2. The Ames Laboratory U.S. Department of Energy, Iowa State University, Ames, IA; 3. Department of Materials Science and Engineering, Iowa State University, Ames, IA; 4. Department of Chemistry, Iowa State University, Ames, IA*

BX-02. On the crystal structure and magnetic properties of the Mn0.94Ti0.06CoGe alloy.P. Shamba[1], *J. Wang*[1,2], R. Zeng[1], J. Debnath[1], F. Hong[1], Z. Cheng[1], A. Studer[2], S. Kennedy[2] and S. Dou[1] *1. University of Wollongong, Wollongong, NSW, Australia; 2. Bragg Institute, Australia Nuclear and Science Technology Organisation, Menai, NSW, Australia*

BX-03. Normal and inverse MCE in the room temperature ferromagnet $Pr_{0.58}Sr_{0.42}MnO_3$ *D. Repaka*[1], M. Aparnadevi[1], P. Kumar[1], T. Tripurari Sharan[1] and R. Mahendiran[1] *1. Physics, National University of Singapore*

BX-04. Magnetic entropy change and refrigerant capacity of rapidly solidified $TbNi_2$ alloy ribbons. *J.L. Sanchez Llamazares*[1], C.F. Sanchez-Valdes[2], P.J. Ibarra-Gaytan[1], P. Alvarez[3], P. Gorria[4] and J.A. Blanco[4] *1. División de Materiales Avanzados, Instituto Potosino de Investigación científica y Tecnológica A.C., San Luis Potosi, San Luis Potosi, Mexico; 2. Institut de Ciencia de Materials de Barcelona, Bellaterra, Barcelona, Spain; 3. Departamento de Electricidad y Electrónica, Universidad del País Vasco, Leioa, Vizcaya, Spain; 4. Departamento de Física, Universidad de Oviedo, Oviedo, Asturias, Spain*

BX-05. Impact of reduced dimensionality on the magnetic and magnetocaloric response of $La_{0.7}Ca_{0.3}MnO_3$ *P.J. Lampen*[1], N.S. Bingham[1,2], M. Phan[1], H. Srikanth[1], H. Kim[2], M. Osofsky[2], A. Piqué [2], T. Phan[3] and S. Yu[3] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Naval Research Laboratory, Washington, DC; 3. Department of Physics, Chungbuk National University, Cheongju, Republic of Korea*

BX-06. Solid state cooling: functional phase transitions revisited. *K.G. Sandeman*[1] *1. Department of Physics, Imperial College London, London, United Kingdom*

BX-07. Joint magnetocaloric behavior in Heusler alloys. *T. Gottschall*[1], J. Liu[2], K. Skokov[1], J.D. Moore[2] and O. Gutfleisch[1] *1. Functional Materials, TU Darmstadt, Darmstadt, Germany; 2. IFW Dresden, Dresden, Germany*

BX-08. Magnetization Model for Heusler Alloys Near the Kittel Temperature. *E. Della Torre*[1] and L.H. Bennett[1] *1. George Washington University, Washington, DC*

BX-09. Magnetostructural phase transitions and large magnetocaloric effects in MnCo1-xZnxGe. *T. Samanta*[1], I. Dubenko[1], A. Quetz[1], S. Stadler[2] and N. Ali[1] *1. Department of Physics, Southern Illinois University Carbondale, Carbondale, IL; 2. Department of Physics & Astronomy, Louisiana State University, Baton Rouge, LA*

BX-10. Low hysteresis and large room temperature magnetocaloric effect of Gd5Si2.05-xGe1.95-xNi2x (2x=0.08, 0.1) compounds.J. Min[1], *X. Zhong*[1], Z. Liu[1], Z. Zheng[1], D. Zeng[1], V. Franco[2] and R. Ramanujan[3] *1. School of Materials Science and Engineering, South China University of Technology, Guangzhou, China; 2. Departamento Física de la Materia Condensada, Universidad de Sevilla, Sevilla, Spain; 3. School of Materials Science and Engineering, Nanyang Technological University, Singapore*

BX-11. Influence of thermal treatment on microstructure, magnetic and magnetocaloric properties of Gd cold rolled ribbons. *S.V. Taskaev*[1], V.D. Buchelnikov[1], K.P. Skokov[2], M.D. Kuz'min[4], A.P. Pellenen[3], D.Y. Karpenkov[5], D.S. Bataev[1], R. Faizullin[1], A.P. Kamantsev[6] and O. Gutfleisch[2] *1. Physics, Chelyabinsk State University, Chelyabinsk, Russian Federation; 2. Institut fur Materialwissenschaft, TU Darmstadt, Darmstadt, Germany; 3. National Research South Ural State University, Chelyabinsk, Russian Federation; 4. Leibniz Institute for Solid State and Materials Research, Dresden, Germany; 5. Physics, Tver State University, Tver, Russian Federation; 6. Kotel'nikov Institute of Radioengineering and Electronics of RAS, Moscow, Russian Federation*

BX-12. In-Plane and Out-Plane magnetic properties in Ni46Co4Mn38Sb12 Heusler alloys ribbons. *R. Sahoo*[1], D.M. Rajkumar[2], D. Babu[3], K.G. Suresh[4] and M. Raja[5] *1. Physics, IIT Bombay, India, Mumbai, India; 2. DMRL, Hyderabad, India; 3. DMRL, Hyderabad, India; 4. Physics, IIT Bombay, Mumbai, India; 5. DMRL, Hyderabad, India*

BX-13. Optimizing magnetocaloric properties of $La(Fe,Si)_{13}$ alloys by substituting Fe by Ni and Cr. *M. Krautz*[1], K. Skokov[1], T. Gottschall[1], J. Liu[1], L. Schultz[1] and O. Gutfleisch[2,1] *1. Institute for Metallic Materials, IFW Dresden, Dresden, Germany; 2. Department of Materials Science, TU Darmstadt, Darmstadt, Germany*

BX-14. Large inverse magnetocaloric effect and magnetoresistance in nickel rich $Ni_{52}Mn_{34}Sn_{14}$ Heusler alloy.D. Pal[1,2], A. Ghosh[1] and *K. Mandal*[1] *1. Department of Material Science, S. N. Bose National Centre for Basic Sciences, Kolkata, West Bengal, India; 2. Department of Physics, Kandi Raj College, Kandi, West Bengal, India*

BX-15. A comparative study of the magneto-caloric and magnetovolume effects of R2Fe17 intermetallic alloys (R= Dy, Ho, Er, Tm and Lu).P. Alvarez-Alonso[1], P. Gorria[2], *J.A. Blanco*[2], J.L. Sanchez-Llamazares[3], M. Reiffers[4,5] and J. Sanchez-Marcos[6] *1. Electricidad y Electrónica, Universidad del País Vasco, Leioa, Vizcaya, Spain; 2. Física, Universidad de Oviedo, Oviedo, Asturias, Spain; 3. División de Materiales Avanzados, Instituto Potosino de Investigación Científica y Tecnológica, San Luis Potosí, San Luis Potosí, Mexico; 4. Faculty of Humanities and Natural Sciences, Presov University, Presov, Slovakia; 5. Institute of Experimental Physics, Kosice, Slovakia; 6. Instituto de Ciencia de Materiales de Madrid, Madrid, Madrid, Spain*

BX-16. Anomalous and conventional magnetocaloric effects in CeSi. *J.L. Snyman*[1], E. Carleschi[1], B.P. Doyle[1] and A.M. Strydom[1] *1. Physics Department, University of Johannesburg, Johannesburg, Gauteng, South Africa*

TUESDAY AFTERNOON 2:30 **RIVERSIDE CENTER**

Session BY
SUPERCONDUCTIVITY (POSTER SESSION)
Gavin Burnell, Chair

BY-01. A search for field-induced ordering in the optimally doped $Ba(Fe,Co)_2As_2$ superconductor.K. Quinn[1], *D. Ryan*[1], P.C. Canfield[2], S. Budko[2] and J.M. Cadogan[3] *1. Physics, McGill University, Montreal, QC, Canada; 2. Department of Physics and Astronomy, Iowa State University, Ames, IA; 3. School of Physical, Environmental and Mathematical Sciences, The University of New South Wales, Canberra, ACT, Australia*

BY-02. Resistivity Study of Superconductivity in Nd1-xCexCoIn5. *C. Dehmer*[1], K. Storr[1], R. Hu[2,3] and C. Petrovic[2] *1. Chemistry and Physics, Prairie View A&M Univerity, Prairie View, TX; 2. Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory, Uptown, NY; 3. Center for Nanophysics, and Advanced Materials, and Department of Physics, University of Maryland, College Park, MD*

BY-03. Experimental and Simulation Study of Pinning Phenomena in Superconductors with Regular Composite Pinning Arrays. *L. Horng*[1], R. Cao[2], T. Yang[3], T. Wu[4], J. Chen[1], J. Wang[1] and J. Wu[1] *1. Dep. Physics, National Changhua University of Education, Changhua, Taiwan; 2. Department of Electrical Engineering, Feng Chia University, Taichung, Taiwan; 3. Department of Electrical Engineering, Chung Hua University, Hsinchu, Taiwan; 4. Department of Electronic Engineering, National Formosa University, Huwei, Taiwan*

BY-04. The first-principles investigations on magnetic ground-state in superconducting picene. *G. Zhong*[1], C. Zhang[2], G. Wu[1], Z. Huang[3], X. Chen[4] and H. Lin[1,2] *1. Center for Photovoltaics and Solar Energy, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China; 2. Beijing Computational Science Research Center, Beijing, China; 3. Faculty of Physics and Electronic Technology, Hubei University, Wuhan, China; 4. Department of Physics, South China University of Technology, Guangzhou, China*

BY-05. Van Hove scenario and superconductivity in the full Heusler alloy Pd_2ZrGa. *R. Kumar*[1] and T. Arumugam[1] *1. Department of Condensed Matter Physics, Tata Institute of Fundamental Research, Mumbai, Maharastra, India*

BY-06. Flux pinning mechanism and anisotropy in Fe1.06Te0.6Se0.4 single crystal. *M. Shahbazi*[1], X. Wang[1], K. Choi[2] and S. Dou[1] *1. ISEM, Wollongong, NSW, Australia; 2. Seoul National University, Seoul, Republic of Korea*

BY-07. Superconductivity and high field transport properties of Ni doped SmFeAsO. *A. Pal*[1,2], S.S. Mehdi[2], M. Husain[2] and V.S. Awana[1] *1. Superconductivity and Cryogenics, National Physical Laboratory, New Delhi, India; 2. Department of Physics, Jamia Millia Islamia, New Delhi, India*

BY-08. Local and global electromagnetic properties of LCMO/YBCO hybrid structures. *O. Shcherbakova*[1], S.A. Fedoseev[1], F.S. Wells[1], I.A. Golovchanskiy[1] and A.V. Pan[1] *1. Institute for Superconducting and Electronic Materials, and School of Engineering Physics, University of Wollongong, Wollongong, NSW, Australia*

BY-09. Properties of Superconducting Thin Films covered by Periodic Ferromagnetic Stripes. *W. Bang*[1], D. Rathnayaka[1], I.F. Lyuksyutov[1], W. Teizer[1,2] and D.G. Naugle[1] *1. Physics and Astronomy, Texas A&M University, College Station, TX; 2. WPI-Advanced Institute for Materials Research, Tohoku University, Sendai, Japan*

BY-10. Spin-lattice coupling study in $Li_{1-\delta}FePn$ (Pn=As or P) with Li deficiency δ from density-functional perturbation theory calculations. *Z. Xing*[1,2], T. Wang[3] and B. Li[2] *1. Dept. of Materials Science and Engineering, Nanjing University, Nanjing, Jiangsu, China; 2. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, Jiangsu, China; 3. Dept. of Mathematics, Nanjing University of Aeronautics and Astronautics, Nanjing, Jiangsu, China*

BY-11. Mass enhancements by anisotropic magnetic interactions in LiFeP and LiFeAs from first-principle calculations. *T. Wang*[1], B. Li[2] and Z. Xing[2,3] *1. Mathematics, Nanjing University of Aeronautics and Astronautics, Nanjing, Jiangsu, China; 2. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, Jiangsu, China; 3. Department of Materials Science and Engineering, Nanjing University, Nanjing, Jiangsu, China*

BY-12. Reducing thickness dependence of critical current density in $GdBa_2Cu_3O_{7-\delta}$ thin films by addition of nanostructured defects. *D.H. Tran*[1], W. Putri[1], B. Kang[1], W. Kang[2], N. Lee[2], J. Lee[3] and W. Seong[3] *1. Physics, Chungbuk National University, Cheongju, Chungbuk, Republic of Korea; 2. Physics, Sungkyunkwan University, Suwon, Republic of Korea; 3. Convergence Technology Laboratory, Korea Institute of Science and Technology, Seoul, Republic of Korea*

BY-13. Annealing effects on superconductivity in Rb0.8Fe2-ySe2 single crystals. Z. Zhang[1], *Z. Yang*[1], L. Li[1] and Y. Zhang[2] *1. Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, Anhui, China; 2. High Magnetic Field Laboratory, Chinese Academy of Sciences, Hefei, Anhui, China*

BY-14. Quantum melting transition of the driven vortex system in two-dimensional weakly disordered Josephson junction arrays. B. Li[1], Z. Xing[1] and *M. Liu*[2] *1. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, Jiangsu, China; 2. Department of Physics, Southeast University, Nanjing, Jiangsu, China*

BY-15. Upper critical fields in a FeSe0.5Te0.5 superconducting single crystal. D. Soto-Velasco[1], F.J. Rivera-Gó mez[1], C.R. Santillán-Rodrí guez[1], R.J. Sáenz-Hernández[1], M.E. Botello-Zubiate[1] and *J.A. Matutes-Aquino*[1] *1. Magnetism, Centro de Investigación en Materiales Avanzados, S.C. (CIMAV), Chihuahua, Chihuahua, Mexico*

BY-16. Novel Macroscopic Quantum Phenomena in Magnets and Superconductors. *J. Tejada*[1] *1. Departament de Fisica Fonamental, University of Barcelona, Barcelona, Spain*

TUESDAY EVENING 7:30 — **CRYSTAL B**

Session YA
EVENING SESSION: MAGNETISM FOR ENERGY APPLICATIONS
Werner Scholz, Chair

7:30

YA-01. Rare earth and rare earth free future (permanent) magnets. ***(Invited)*** *O. Gutfleisch*[1] *1. Institut für Materialwissenschaft, Technische Universität Darmstadt, Darmstadt, Germany*

8:00

YA-02. Permanent magnet machines: crucial or critical. ***(Invited)*** *J. Paulides*[1] and E. Lomonova[1] *1. Department of Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

8:30

YA-03. Critical issues for the realization of permanent magnets free of critical elements. ***(Invited)*** *S. Hirosawa*[1] and K. Hono[1] *1. Elements Strategy Initiative Center for Magnetic Materials, National Institute for Materials Science, Tsukuba, Japan*

WEDNESDAY MORNING 8:00 — GRAND CD

Session CA
SYMPOSIUM ON SPIN TRANSFER TORQUES IN MAGNETIC BILAYERS WITH STRONG SPIN ORBIT COUPLING
Kyung Jin Lee, Chair

8:00

CA-01. Diffusive Spin Dynamics in Ferromagnetic Thin Films with Spin-Orbit Interaction. ***(Invited)*** *A. Manchon*[1] *1. King Abdullah University of Science and Technology, King Abdullah University of Science and Technology, Saudi Arabia*

8:36

CA-02. *Ab Initio* study of Spin-Orbit Torques in inversion asymmetric Magnetic Layers. ***(Invited)*** *F. Freimuth*[1], Y. Mokrousov[1] and S. Blügel[1] *1. Peter Grünberg Institut & Institute for Advanced Simulation, Forschungszentrum Jülich and JARA, Jülich, Germany*

9:12

CA-03. Spin Hall effect induced magnetic switching and persistent magnetic oscillation. ***(Invited)*** *L. Liu*[1], C. Pai[1], D.C. Ralph[1,2] and R.A. Buhrman[1] *1. Cornell University, Ithaca, NY; 2. Kavli Institute at Cornell, Ithaca, NY*

9:48

CA-04. Spin-Orbit torques in ferromagnetic thin films. ***(Invited)*** *G. Gaudin*[1], I. Miron[1,2], K. Garello[2], P. Zermatten[1], M. Costache[2], S. Auffret[1], S. Bandiera[1], B. Rodmacq[1], A. Schuhl[1] and P. Gambardella[3,4] *1. SPINTEC (UMR-8191, CEA/CNRS/UJF, INAC), Grenoble, France; 2. Catalan Institute of Nanotechnology (ICN-CIN2), Barcelona, Spain; 3. Departament de Física, Universitat Autonoma de Barcelona (UAB), Barcelona, Spain; 4. Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain*

10:24

CA-05. Direction of motion and high speed of domain walls in nanowires with perpendicular magnetic anisotropy. ***(Invited)*** *S. Parkin*[1] *1. IBM Almaden Research Center, San Jose, CA*

WEDNESDAY MORNING 8:00 — GRAND AB

Session CB
MAMR AND OTHER ADVANCED RECORDING
Yiming Wang, Chair

8:00

CB-01. Demonstration of Microwave-Assisted Magnetization Reversal in Perpendicular Media. *L. Lu*[1], M. Wu[1], M. Mallary[2], G. Bertero[2], K. Srinivasan[2], R. Acharya[2], H. Schultheiss[3] and A. Hoffmann[3] *1. Physics, Colorado State University, Fort Collins, CO; 2. Western Digital Technologies, San Jose, CA; 3. Materials Science Division, Argonne National Laboratory, Argonne, IL*

8:12

CB-02. Switching behaviors and its dynamics in a single Co/Pt multilayer nanodot under microwave assistance. *S. Okamoto*[1], N. Kikuchi[1], M. Furuta[1], O. Kitakami[1] and T. Shimatsu[2,3] *1. IMRAM, Tohoku Univ., Sendai, Japan; 2. RIEC, Tohoku University, Sendai, Japan; 3. CIR, Tohoku University, Sendai, Japan*

8:24

CB-03. Oscillation Behavior of a Small Size Spin Torque Oscillator for over 5 Tb/in^2 *K. Watanabe*[1], K. Sugiura[1], Y. Sato[1], M. Igarashi[1] and Y. Shiroishi[2] *1. Central Research Laboratory, Hitachi, Ltd., Odawara, Japan; 2. Research and Development Division, Hitachi, Ltd., Odawara, Japan*

8:36

CB-04. Thin spin-torque oscillator with high AC-field for high density microwave-assisted magnetic recording. *Y. Sato*[1], K. Sugiura[1], M. Igarashi[1], K. Watanabe[1] and Y. Shiroishi[2] *1. Central Research Laboratory, Hitachi, Ltd., Odawara, Kanagawa, Japan; 2. Research and Development Division, Hitachi, Ltd., Odawara, Kanagawa, Japan*

8:48

CB-05. Effect of effective field distribution on recording performance in MAMR. *M. Shiimoto*[1], M. Igarashi[1], H. Katada[1], M. Matsubara[1], Y. Hosoe[1], Y. Nishida[1] and I. Tagawa[1] *1. Japan Research Laboratory, HGST, Odawara-shi, Japan*

9:00

CB-06. Performance Limitation of Microwave Assisted Magnetic Recording Combined with Exchange Coupled Composite Media Explored by Genetic Algorithm. *H. Fukuda*[1] and Y. Shiroishi[2] *1. Central Research Lab., Hitachi, Ltd., Tokyo, Japan; 2. Research & Development Group, Hitachi, Ltd., Tokyo, Japan*

9:12

CB-07. Acoustic Assisted Magnetic Recording. ***(Invited)*** *P. Dhagat*[1], W. Li[1] and A. Jander[1] *1. School of EECS, Oregon State University, Corvallis, OR*

9:48

CB-08. Pulse duration dependence of microwave-assisted magnetization reversal in CoCrPt-based granular medium. *Y. Nozaki*[1,3], N. Ishida[1], Y. Soeno[2] and K. Sekiguchi[1] *1. Dept. of Physics, Keio Univ., Yokohama, Japan; 2. Device Development Center, TDK Corporation, Ichikawa, Japan; 3. CREST, JST, Tokyo, Japan*

10:00

CB-09. Effect of Magnetostatic Interactions between Spin-Torque Oscillator and SPT Writer on Oscillation Characteristics of Spin-Torque Oscillator. *S. Asaka*[1], T. Hashimoto[1], K. Yoshida[1] and Y. Kanai[2] *1. Kogakuin University, Tokyo, Tokyo, Japan; 2. Niigata Institute of Technology, Kashiwazaki, Niigata, Japan*

10:12

CB-10. Microwave assisted switching experiments in Co/Pt dot array with narrow switching field distribution. *M. Furuta*[1], S. Okamoto[1], N. Kikuchi[1], O. Kitakami[1] and T. Shimatsu[2,3] *1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Miyagi, Japan; 2. Research Institute of Electrical Communication, Tohoku University, Miyagi, Japan; 3. Center for Interdisciplinary Research, Tohoku University, Miyagi, Japan*

10:24

CB-11. Nanoantennas for Optical Control of Magnetization at the Nanoscale. *B. Koene*[1], M. Savoini[1], X. Wu[2], B. Hecht[2], A.V. Kimel[1], A. Kirilyuk[1] and T. Rasing[1] *1. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands; 2. Nano-Optics and Biophotonics Group, Physics Institute, University of Wurzburg, Wurzburg, Germany*

10:36

CB-12. Shingled Magnetic Recording on Bit Patterned Media at 10Tb/in^2 *S. Wang*[1] and R.H. Victora[1] *1. Center for Micromagnetics and Information Technologies, Electrical and Computer Engineering Department, University of Minnesota, Minneapolis, MN*

10:48

CB-13. Nonlinear Transition Shift in Heat Assisted Magnetic Recording. *B. Valcu*[1] and M. Alex[1] *1. Western Digital, San Jose, CA*

WEDNESDAY MORNING 8:00 **REGENCY A**

Session CC
MAGNETIZATION DYNAMICS II
Leszek Malkinski, Chair

8:00

CC-01. Measurement of the dynamical dipolar coupling in a pair of magnetic nano-disks. *B. Pigeau*[1], C. Hahn[1], G. de Loubens[1], V. Naletov[1], O. Klein[1], K. Mitsuzuka[2], D. Lacour[2], M. Hehn[2], S. Andrieu[2] and F. Montaigne[2] *1. Service de Physique de l'État Condensé, Gif-Sur-Yvette, France; 2. Institut Jean Lamour, Nancy, France*

8:12

CC-02. Observation of interfacial spin current reflection by measurement of damping due to spin-pumping in metallic multilayers. *C.T. Boone*[1], J. Shaw[1], H. Nembach[1] and T. Silva[1] *1. Physical Measurement Lab, National Institute of Standards and Technology, Boulder, CO*

8:24

CC-03. Direct observation of microwave-driven nonlinear three magnon splitting and confluence processes in yttrium iron garnet films by time-resolved Brillouin light scattering. *J. Liu*[1], G.A. Riley[1], C.L. Ordó ñ ez-Romero[2], B.A. Kalinikos[3] and K.S. Buchanan[1] *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. Instituto de Física, Universidad Nacional Autónoma de México, Mexico City, CU, Mexico; 3. St. Petersburg Electro-technical University, St. Petersburg, Russian Federation*

8:36

CC-04. The origin of linewidth and damping in magnetic multilayers with perpendicular anisotropy. ***(Invited)*** *J.M. Shaw*[1] *1. NIST, Boulder, CO*

9:12

CC-05. Large *rf* signal phase offset in ferromagnetic heterostructures. *W. Bailey*[1], C. Cheng[1], S. Auffret[2], R. Knut[3], O. Karis[3], S. Zohar[1,5], D. Keavney[5], P. Warnicke[4], J.S. Lee[4] and D.A. Arena[4] *1. Materials Science & Engineering, Dept. of Applied Physics and Applied Math, Columbia University, New York, NY; 2. SPINTEC, UMR(8191), CEA/ CNRS/ UJF, Grenoble, France; 3. MAXLab, Lund, Sweden; 4. NSLS, Brookhaven National Lab, Upton, NY; 5. Advanced Photon Source, Argonne National Lab, Lemont, IL*

9:24

CC-06. Frequency and field control of the magnetic relaxation in 2D magnonic crystals. *K. Lenz*[1], M. Kö rner[1], R. Gallardo[2], P. Landeros[2], S. Facsko[1], J. Lindner[1] and J. Fassbender[1] *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Departamento de Física, Universidad Técnica Federico Santa Maria, Valparaíso, Chile*

9:36

CC-07. Evidence for non-local damping in individual nano structures with a single magnetic layer. *H. Nembach*[1], J. Shaw[1], C. Boone[1] and T. Silva[1] *1. NIST, Boulder, CO*

9:48

CC-08. Investigation of a new ferromagnetic relaxation mechanism in ferromagnetic/Platinum bilayers.S.M. Rezende[1], R.L. Rodriguez-Suarez[2], M.M. Soares[1], L.H. Vilela-Leã o[1], G.L. da Silva[1] and *A. Azevedo*[1] *1. Departamento de Fisica, UFPE, Recife, PE, Brazil; 2. Facultad de Física, Pontificia Universidad Católica de Chile, Santiago, Chile*

10:00

CC-09. Magnon magnetometry of non-linear spin-wave excitations. *H.G. Bauer*[1], P. Majchrak[1], T. Kachel[2], C.H. Back[1] and G. Woltersdorf[1] *1. University of Regensburg, Regensburg, Bayern, Germany; 2. Helmholtz-Zentrum, Berlin, Germany*

10:12

CC-10. Parallel pumping instabilities and nonlinear transverse pumping of spin wave modes in a nanodisk.F. Guo[1,2], L.M. Belova[3] 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; 3. Dept. of Materials Science and Engineering, Royal Institute of Technology, Stockholm, Sweden*

10:24

CC-11. Optical detection of precessional dynamics and damping of magnetization in magnetic films with a large perpendicular magnetic anisotropy. ***(Invited)*** *S. Mizukami*[1], Y. Ando[2], A. Sakuma[2] and T. Miyazaki[1] *1. WPI-AIMR, Tohoku University, Sendai, Japan; 2. Dept. Appl. Phys., Tohoku University, Sendai, Japan*

WEDNESDAY MORNING 8:00 REGENCY B

Session CD
MAGNETOCALORIC MATERIALS II
Karl Sandeman, Chair

8:00

CD-01. Influence of magnetic interactions on the magnetocaloric effect of composites.C. Romero-Muñ iz[1], *V. Franco*[1] and A. Conde[1] *1. Condensed Matter Physics, Sevilla University, Sevilla, Spain*

8:12

CD-02. Growth and Characterization of Magnetocaloric $Gd_5(Si_xGe_{1-x})_4$ Thin Films. *R.L. Hadimani*[1,2], I.C. Nlebedim[2,1], Y. Melikhov[3] and D.C. Jiles[1,2] *1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Ames Laboratory, US Department of Energy, Iowa State University, Ames, IA; 3. Wolfson Centre for Magnetics, Cardiff University, Cardiff, Wales, United Kingdom*

8:24

CD-03. Metamagnetism in the magnetocaloric material Fe2P1-xTx (T= B and Si). *E.K. Delczeg-Czirjak*[1,2], L. Bergqvist[2], O. Eriksson[1], Z. Gercsi[3], P. Nordblad[4], L. Szunyogh[5], B. Johansson[2,1] and L. Vitos[2,6] *1. Department of Physics and Astronomy, Materials Theory, Uppsala University, Uppsala, Sweden; 2. Department of Materials Science and Engineering, Applied Materials Physics, Royal Institute of Technology (KTH), Stockholm, Sweden; 3. Department of Physics, Blackett Laboratory, Imperial College London, London, United Kingdom; 4. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden; 5. Department of Theoretical Physics and Condensed Matter Research Group of the Hungarian Academy of Sciences, Budapest University of Technology and Economics, Budapest, Hungary; 6. Department of Materials Theory, Research Institute for Solid State Physics and Optics, Wigner Research Center for Physics, Budapest, Hungary*

8:36

CD-04. Tuning the Curie Temperature in γ-FeNi Nanoparticles for Magnetocaloric Applications by Controlling the Oxidation Kinetics. *H. Ucar*[1], J.J. Ipus[2], D.E. Laughlin[1] and M.E. Mchenry[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Dpto. Física de la Materia Condensada, ICMSE-CSIC, Universidad de Sevilla, Sevilla, Spain*

8:48

CD-05. Suppression of Minority Phase in FeCoCrNi with Pd Additions and Annealing. *D.D. Belyea*[1], C.A. Bauer[1], M. Lucas[2], E. Michel[2,3], J. Horwath[2,4] and C.W. Miller[1] *1. Physics, University of South Florida, Tampa, FL; 2. Air Force Research Laboratory, Wright Patterson Air Force Base, OH; 3. UTC., Inc., Dayton, OH; 4. Wright State University, Dayton, OH*

9:00

CD-06. A Hybrid-exchange Density Functional Study of $La_{1-x}Ca_xMnO_3$ as a Candidate Material for Magnetic Refrigeration. *R. Korotana*[1], G. Mallia[1], Z. Gercsi[2], L. Liborio[1] and N. Harrison[1,3] *1. Chemistry, Imperial College London, London, United Kingdom; 2. Physics, Imperial College London, London, United Kingdom; 3. Computational Science and Engineering, STFC Daresbury Laboratory, Cheshire, United Kingdom*

9:12

CD-07. Effect of Crystallographic Alignment on the Magnetocaloric Effect in Alloys Near the Ni_2MnGa Stoichiometry. *A.K. Giri*[1], B. Paterson[2], M.V. McLeod[3], C.L. Dennis[2], B. Majumdar[3], K.C. Cho[1] and R.D. Shull[2] *1. Weapons and Materials Research Directorate, US Army Research Laboratory, Aberdeen Proving Ground, MD; 2. Material Measurement Laboratory, NIST, Gaithersburg, MD; 3. Materials & Metallurgical Engineering Department, New Mexico Institute of Mining and Technology, Socorro, NM*

9:24

CD-08. FeCoCrxNi alloys for magnetic refrigeration applications. *M. Lucas*[1,2], D. Belyea[3], N. Bryant[1,4], E. Michel[1,4], Z. Turgut[1,5], S. Leontsev[1,6], J.C. Horwath[1], S.L. Semiatin[1], M.E. McHenry[7] and C.W. Miller[3] *1. Air Force Research Laboratory, Wright-Patterson AFB, OH; 2. UTC Inc., Dayton, OH; 3. University of South Florida, Tampa, FL; 4. Wright State University, Dayton, OH; 5. UES Inc., Wright-Patterson AFB, OH; 6. UDRI, University of Dayton, Dayton, OH; 7. Materials Science and Engineering Department, Carnegie Mellon University, Pittsburgh, PA*

9:36

CD-09. Magnetic entropy change of FeCrAs-like iron-pnictides: Monte Carlo modeling of non-collinear Fe_2P antiferromagnets. *J.M. Florez*[1,2], C. Garcia[3,2], P. Vargas[2] and C.A. Ross[1] *1. Materials Science and Engineering Department, Massachusetts Institute of Technology, Cambridge, MA; 2. Departamento de Fisica, Universidad Tecnica Federico Santa Maria, Valparaiso, Valparaiso, Chile; 3. Department of Physics, Bogazici University, Istanbul, Istanbul, Turkey*

9:48

CD-10. The maximal cooling power of magnetic and thermoelectric refrigerators with $La(FeCoSi)_{13}$ alloys. *K.P. Skokov*[1], A.Y. Karpenkov[2], D.Y. Karpenkov[2] and O. Gutfleisch[1] *1. Technische Universität Darmstadt, Darmstadt, Germany; 2. Tver State University, Tver, Russian Federation*

10:00

CD-11. Does any universal behavior exist in inverse magnetocaloric materials? *A. Biswas*[1], S. Chandra[1], S. Datta[2], B. Ghosh[2], A.K. Raychaudhuri[2], M. Phan[1] and H. Srikanth[1] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Unit for Nanoscience, S. N. Bose National Centre for Basic Sciences, Kolkata, India*

10:12

CD-12. Direct Measurement of the Hysteretic Latent Heat in a Magnetocaloric NiMnIn Heusler Alloy. *M. Ghahremani*[1], L.H. Bennett[1], E. Della Torre[1], M. Zou[2] and F. Johnson[2] *1. Electrical and Computer Engineering, The George Washington University, Washington, DC; 2. GE Global Research, Niskayuna, NY*

10:24

CD-13. Age splitting of the La(Fe1-xSix)13Hy first order magnetocaloric transition and its thermal restoration. *C.B. Zimm*[1] and S.A. Jacobs[1] *1. Technology Center, Astronautics Corp. of America, Madison, WI*

10:36

CD-14. Contribution of paramagnetic entropy to magnetocaloric effect in $La(Fe_xSi_{1-x})_{13}$ *A. Fujita*[1] and M. Kano[1] *1. Depatment of Materials Science, Graduate School of Engineering, Tohoku University, Sendai, Japan*

10:48

CD-15. The magnetocaloric effect dependence on the Curie temperature. *J.H. da Silva*[1], J.S. Amaral[1,2], A.M. Pereira[1], S. Das[2], V.S. Amaral[2] and J.P. Araújo[1] *1. 3MN, IFIMUP and IN – Institute of Nanoscience and Nanotechnology, Departamento de Física e Astronomia, Faculdade de Ciências, Universidade do Porto,, 4169-007 Porto, Portugal., Porto, Portugal; 2. Departamento de Física and CICECO, Universidade de Aveiro, 3810-193 Aveiro, Portugal, Aveiro, Portugal*

WEDNESDAY MORNING 8:00 REGENCY C

Session CE
FEPT AND COPT FILMS I
Nora Dempsey, Chair

8:00

CE-01. $L1_0$ FePt: Ordering, Anisotropy Constant and their relation to Film Composition. ***(Invited)*** *K. Barmak*[1,2] and B. Wang[2] *1. Department of Applied Physics and Applied Mathematics, Columbia University, Columbia, NY; 2. Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

8:36

CE-02. Magnetism of L10 (Fe,Co)Pt Films. *Y. Liu*[2,1] and D.J. Sellmyer[2,1] *1. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE*

8:48

CE-03. Intrinsic Properties of Fe-Substituted $L1_0$ Magnets. P. Manchanda[1,2], A. Kashyap[1,2], M.J. Lucis[3], L.H. Lewis[4], A. Mubarok[5], J.I. Goldstein[5], S. Constantinides[6], F.E. Pinkerton[7], J.E. Shield[3] and *R. Skomski*[2] *1. School of Basic Sciences, Indian Institute of Technology, Mandi, Mandi, Himchal Pradesh, India; 2. Department of Physics and Astronomy and NCMN, University of Nebraska, Lincoln, Lincoln, NE; 3. Department of Mechanical and Materials Engineering, University of Nebraska, Lincoln, Lincoln, NE; 4. Department of Chemical Engineering, Northeastern University, Boston, MA; 5. University of Massachusetts, Amherst, MA; 6. Arnold Engineering, Rochester, NY; 7. General Motors R&D Centre, Warren, MI*

9:00

CE-04. $L1_0$ ordered FePd, FePt, and CoPt films with flat surfaces prepared on MgO(110) and MgO(111) substrates. *M. Ohtake*[1], A. Itabashi[1], F. Kirino[2] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Conservation for Cultural Property, Tokyo University of the Arts, Tokyo, Japan*

9:12

CE-05. Strain effects on microstructure and magnetic properties of FePt films. K. Dong[1], H. Li[1] and *J. Chen*[1] *1. Department of Materials Science and Engineering, National University of Singapore, Singapore*

9:24

CE-06. Effects of heating rate on (001) preferred orientation and surface roughness of rapid-annealed FePt thin films. *S. Hsiao*[1], S. Liu[2], S. Chiu[1], S. Chen[2] and H. Lee[1] *1. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 2. Materials Science and Engineering, Feng Chia University, Taichung, 407, Taiwan*

9:36

CE-07. Highly (001)-oriented thin continuous $L1_0$ FePt film by introducing an FeO_x layer. *J. Liao*[1], K. Huang[1], L. Wang[1] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

9:48

CE-08. Synthesis, self-assembly and fractal properties of FePt nanocubes. *M. Zhu*[1], M. Zhou[1], Y. Li[1], D. Zhou[1], L. Zheng[1] and W. Li[1] *1. Division of Functional Materials, Central Iron and Steel Research Institute, Beijing, China*

10:00

CE-09. Control of the microstructure of FePt-SiN_x-C (001) films by a nucleation layer grown on TiN intermediate layer. *H. Li*[1,2], K. Dong[1], J. Hu[2], G. Chow[1] and J. Chen[1] *1. Materials Science and Engineering, National University of Singapore, Singapore; 2. Data Storage Institute, Singapore*

10:12

CE-10. Fabrication and Magnetic Characterization of Thick Electroplated $L1_0$ CoPt Hard Magnets. *O.D. Oniku*[1] and D.P. Arnold[1] *1. Electrical and Computer Engineering, University of Florida, Gainesville, FL*

10:24

CE-11. Influence of temperature on the magnetic properties of electroplated Co-rich CoPt thick films. *A. Garraud*[1], O.D. Oniku[1] and D.P. Arnold[1] *1. Interdisciplinary Microsystems Group, University of Florida, Gainesville, FL*

WEDNESDAY MORNING
8:00

REGENCY D

Session CF
MAGNETOELECTRIC MATERIALS AND DEVICES I
Gregory Carman, Chair

8:00

CF-01. Magnetoelectric control of the Superparamagnetic Limit. *L.T. Schelhas*[1], H. Kim[2], S. Keller[3], J.L. Hockel[3], S.H. Tolbert[1,2] and G.P. Carman[2,3] *1. Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA; 2. Department of Materials Science and Engineering, University of California, Los Angeles, Los Angeles, CA; 3. Department of Mechanical and Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA*

8:12

CF-02. High Resolution Magnetic Imaging of Strain-Mediated Coupling in Multiferroic Heterostructures. *S. Bowden*[1,2], I. Takeuchi[3], S. Fackler[3], A. Varatharajan[3], T. Gao[3] and J. Unguris[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; 3. Materials Science and Engineering, University of Maryland, College Park, MD*

8:24

CF-03. Direct magnetoelectric effect in $BaTiO_3 - CoFe_2O_4$ epitaxial heterostructures. I. Fina[1], N. Dix[1], J. Rebled[1,2], F. Peiró[2], S. Estradé[2], L. Fà brega[1], F. Sánchez[1] and *J. Fontcuberta*[1] *1. ICMAB-CSIC, Bellaterra, Spain; 2. Universitat de Barcelona, LENS, MIND IN2UB, Barcelona, Spain*

8:36

CF-04. Film thickness dependence of domain pattern transfer in ferromagnetic-ferroelectric heterostructures. *T. Lahtinen*[1], J. Karkimaa[1] and S. van Dijken[1] *1. Department of Applied Physics, Aalto University, Espoo, Finland*

8:48

CF-05. Fast strain driven ordering of magnetoelectric Cr2O3 thin films for straintronic applications. *U. Singh*[1,2], W. Echtenkamp[1,2], C. Binek[1,2] and S. Adenwalla[1,2] *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. NCMN, University of Nebraska-Lincoln, Lincoln, NE*

9:00

CF-06. Isothermal Electric Field-Tuning of Exchange Bias Training in Cr_2O_3/PdCo. *W. Echtenkamp*[1] and C. Binek[1] *1. Physics & Astronomy, University of Nebraska, Lincoln, Lincoln, NE*

9:12

CF-07. Tunable Magnetoelectric Properties of BST/LSMO Multiferroic Nanocomposites. J. Beltran-Huarac[1], C. Garcia[1], R. Martinez[1] and *R. Palai*[1] *1. Dept. of Physics, University of Puerto Rico, San Juan*

9:24

CF-08. A Study of Spatially-Resolved Charge and Strain-Mediated Magnetoelectric Coupling in PZT-LSMO Thin Film Heterostructures Using Polarized Neutron Reflectometry and Transmission Electron Microscopy. *S.R. Spurgeon*[1], J.D. Sloppy[1], C.R. Winkler[1], M. Jablonski[1], S.E. Lofland[2], D.M. Kepaptsoglu[3], K. Jambunathan[4], A.R. Damodaran[4], Q. Ramasse[3], H. Ambaye[5], R.J. Goyette[5], V. Lauter[6], J.C. Idrobo[6], L. Martin[4] and M.L. Taheri[1] *1. Materials Science and Engineering, Drexel University, Philadelphia, PA; 2. Physics and Astronomy, Rowan University, Glassboro, NJ; 3. SuperSTEM, STFC Daresbury Laboratories, Warrington, United Kingdom; 4. Materials Science and Engineering, University of Illinois — Urbana Champaign, Urbana, IL; 5. Spallation Neutron Source, Oak Ridge National Laboratory, Oak Ridge, TN; 6. Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN*

9:36

CF-09. Electric-field controlled reversible change in the magnetic coercive field of Co/BiFeO3 thin film heterostructures. *T. Gao*[1], A. Varatharajan[1], S. Maruayam[1], I. Takeuchi[1], W. Ratcliff[2], S. Bowden[3], J. Unguris[3], D. Pierce[3] and R. Maran[4] *1. Materials Science and Engineering, University of Maryland, College Park, MD; 2. Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 3. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 4. School of Materials Science and Engineering, University of New South Wales, Sydney, NSW, Australia*

9:48

CF-10. Induced Spin and Dipole Ordering at Ferroelectric/Ferromagnetic Interface. *R. Cheng*[1], J. Carvell[1] and Q. Yang[2] *1. Indiana University Purdue University Indianapolis, Indianapolis, IN; 2. Department of Electrical and Computer Engineering, University of Rhode Island, Kingston, RI*

10:00

CF-11. Room Temperature Magneto-Electric Effects in Bulk Poly-Crystalline materials of of M- and Z- type Hexaferrites. *K. Ebnabbasi*[1], M. Mohebbi[1] and C. Vittoria[1] *1. Electrical Engineering, Northeastern University, Boston, MA*

10:12

CF-12. Nonlinear magnetoelectric effects in composite multiferroic structures. *Y.K. Fetisov*[1], D.A. Burdin[1], D.V. Chashin[1], N.A. Ekonomov[1] and L.Y. Fetisov[1] *1. Physics, MIREA, Moscow, Russian Federation*

10:24

CF-13. Gate Voltage induced Phase Transition in Magnetite (Fe_3O_4) Nanowires.J. Gooth[1], J.G. Gluschke[1], R. Zierold[1], T. Boehnert[1], S. Barth[2] and *K. Nielsch*[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 2. Institute of Materials Chemistry, Vienna University of Technology, Vienna, Austria*

10:36

CF-14. Coupled ferromagnetism and ferroelectricity in superlattices of non-ferroelectric antiferromagnetic manganites.K. Rogdakis[1], J.W. Seo[2], Z. Viskadourakis[1], Y. Wang[3], L. Ah Qune[2], E. Choi[4], *J.D. Burton*[3], E.Y. Tsymbal[3], J. Lee[4] and C. Panagopoulos[1,2] *1. Electron Complexity Laboratory, Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, Heraklion, Greece; 2. Division of Physics and Applied Physics, Nanyang Technological University, Nanyang, Singapore; 3. Department of Physics and Astronomy, University of Nebraska Lincoln, Lincoln, NE; 4. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Republic of Korea*

10:48

CF-15. Exchange Biased Magnetoelectric Composites for Vector Field Magnetometers. *E. Lage*[1], D. Meyners[1] and E. Quandt[1] *1. Institute for Materials Science, Kiel University, Kiel, Germany*

WEDNESDAY MORNING 8:00 CRYSTAL A

Session CG
SOFT MAGNETIC MATERIALS FOR MICROWAVE APPLICATIONS III

Vince Harris, Chair

8:00

CG-01. Magnetic Field Generator Coil Designs for Magneto-Optic Applications. *J.W. Pritchard*[1], M. Mina[1] and R.J. Weber[1] *1. Iowa State University, Ames, IA*

8:12

CG-02. Microwave absorption of structural polymer composites containing glass-coated amorphous microwires.F. Qin[1], Z. Chen[1], G. Hilton[2] and *H. Peng*[1] *1. ACCIS, University of Bristol, Bristol, Avon, United Kingdom; 2. Department of Electrical and Electronic Engineering, University of Bristol, Bristol, United Kingdom*

8:24

CG-03. Low temperature magnetization studies of nanocrystalline Zn-ferrite thin films. *M. Bohra*[1,2], S. Prasad[1], N. Venkataramani[1] and S.C. Sahoo[3] *1. Indian Institute of Technology Bombay, Mumbai 400076, India, Mumabi, India; 2. Okinawa Institute of Science and Technology Graduate University (OIST), Okinawa, Japan; 3. Physics, Central University of Kerala, India, Kasaragod, India*

8:36

CG-04. Sublattice Origin of Magnetic Relaxation in Rare Earth Iron Garnets. *J.S. McCloy*[1] and B. Walsh[1] *1. Pacific Northwest National Laboratory, Richland, WA*

8:48

CG-05. New analysis method of magnetization dispersion by the complex permeability spectra measurement: application to a soft amorphous magnetic layer. *M. Gloanec*[1], S. Dubourg[1], F. Duverger[1], D. Plessis[1], A. Bonneau-Brault[1] and O. Bodin[1] *1. CEA, DAM, le Ripault, Monts, France*

9:00

CG-06. Equivalent Electrical Model of a Ferrite Core Inductor Excited by a Square Waveform Including Saturation and Power Losses for Circuit Simulation. *R. Salas*[1] and J. Pleite[1] *1. Departamento de Tecnología Electrónica, Universidad Carlos III de Madrid, Leganés (Madrid), Spain*

9:12

CG-07. Unbiased microwave circulator using ferromagnetic nanowires arrays. *G. Hamoir*[1,2], I. Huynen[2] and L. Piraux[1]*1. Institute of Condensed Matter and Nanosciences, Université Catholique de Louvain, Louvain-la-Neuve, Brabant Wallon, Belgium; 2. Information and Communication Technologies, Electronics and Applied Mathematics, Université Catholique de Louvain, Louvain-la-Neuve, Brabant Wallon, Belgium*

9:24

CG-08. Effect of Iron Nanoclusters on the Magnetic Properties of Iron–(Nickel Zinc Ferrite) Nanocomposites. *A.K. Giri*[1], G. Hirsh[1], K. Duncan[2], S.P. Karna[1] and C.L. Dennis[3]*1. Weapons and Materials Research Directorate, US Army Research Laboratory, Aberdeen Proving Ground, MD; 2. Space and Terrestrial Communications Directorate, CERDEC-S&TCD, Aberdeen Proving Ground, MD; 3. Material Measurement Laboratory, NIST, Gaithersburg, MD*

9:36

CG-09. Analysis of Absorption Characteristics of Rectangular and Pyramid Wave Absorber of Mn-Zn Ferrite by Spectral Method. *H. Jaim*[1] and M. Gaffar*1. Department of Mechanical, Materials & Aerospace Engineering, University of Central Florida, Orlando, FL; 2. Electrical and Computer Engineering, Purdue University, West Lafayette, IN*

9:48

CG-10. Nanometer-Thick Yttrium Iron Garnet Films with Low Damping. *Y. Sun*[1], Y. Song[1], H. Chang[1], M. Kabatek[1], M. Jantz[1], W. Schneider[1], M. Wu[1], H. Schultheiss[2] and A. Hoffmann[2]*1. Physics, Colorado State University, Fort Collins, CO; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL*

10:00

CG-11. Miniature hexaferrite axial-mode helical antenna for unmanned aerial vehicle applications. *N.J. Neveu*[1], Y. Hong[1], J. Lee[1], J. Park[1], G. Abo[1], W. Lee[1] and D. Gillespie[1]*1. Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, AL*

10:12

CG-12. Magnetic field control of magnetic loss tangent and ferrite antenna performance. *J. Lee*[1], Y. Hong[1], W. Lee[1], G.S. Abo[1], N. Neveu[1], J. Park[1], W. Seong[2], S. Park[2], W. Ahn[2] and S. An[3]*1. Electrical and Computer Engineering and MINT Center, The University of Alabama, Tuscaloosa, AL; 2. EMW Co., Ltd., Seoul, Republic of Korea; 3. Samsung Electro-Mechanics Co., Ltd., Suwon, Republic of Korea*

10:24

CG-13. Dependence of Magnetic and Thermoelectric Properties of Cobalt Ferrite on Vacuum Heat Treatment. *C.I. Nlebedim*[1,2], E.M. Levin[1,3], R. Prozorov[1,3] and D.C. Jiles[2,1]*1. Ames Laboratory, US Department of Energy, Iowa State University, Ames, IA; 2. Electrical and Computer Engineering Department, Iowa State University, Ames, IA; 3. Department of Physics and Astronomy, Iowa State University, Ames, IA*

10:36

CG-14. The Role of Atmosphere on Exsolution Processes and Magnetic Properties of Ulvospinel. *C. Groschner*[1], S. Lan[1], A. Wise[1], D.E. Laughlin[1], M. Diaz-Michelena[2] and M.E. McHenry[1]*1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Payloads and Instrumentation Area, Instituto Nacional de Técnica Aeroespacial, Madrid, Spain*

10:48

CG-15. Synthesis and Characterization of NiZn Ferrite Nanocomposite Materials. *P.E. Parsons*[1,2], K. Duncan[1,3], J.Q. Xiao[2] and S.P. Karna[1]*1. Weapons and Materials Research Directorate, US Army, Aberdeen, MD; 2. Physics and Astronomy, University of Delaware, Newark, DE; 3. Space and Terrestrial Communications Directorate, US Army, Aberdeen, MD*

WEDNESDAY MORNING 8:00 — CRYSTAL B

Session CH
MICROMAGNETICS II
Yaowen Liu, Chair

8:00

CH-01. Monte Carlo Simulations of Random Magnetization Dynamics on General Purpose Graphics Processing Units (GPUs). *Z. Liu*[1], A. Lee[1], P. McAvoy[1], G. Bertotti[2], C. Serpico[3] and I. Mayergoyz[4]*1. Electrical and Computer Engineering, University of Maryland, College Park, MD; 2. INRiM, Torino, Italy; 3. Dipartimento di Ingegneria Elettrica, Universita` di Napoli "Federico II", Napoli, Italy; 4. Department of Electrical and Computer Engineering, UMIACS and AppEl Center, University of Maryland, College Park, MD*

8:12

CH-02. Concurrent GPU-CPU micromagnetics for large-scale simulations. *A. Vansteenkiste*[1], M. Dvornik[1], B. Van de Wiele[1], M. Helsen[1], J. De Clercq[1] and B. Van Waeyenberge[1]*1. Ghent University, Ghent, Belgium*

8:24

CH-03. Multi-Level Tensor Grid Acceleration of the Finite Element Micromagnetics. *A. Goncharov[1] 1. HGST, a Western Digital Company, San Jose, CA*

8:36

CH-04. Strangling of an artifact in micromagnetic simulations: Application to artificial spin systems. *F. Montaigne*[1], H. Riahi[1], N. Rougemaille[2], J. Toussaint[2], B. Canals[2], M. Hehn[1] and D. Lacour[1] *1. Institut Jean Lamour, Université de Lorraine - CNRS, Vandoeuvre lès Nancy, France; 2. Institut Néel, CNRS, Grenoble, France*

8:48

CH-05. Structure and periodicity of cross-tie walls in thin magnetic strips. *M.J. Donahue[1] 1. Mathematical & Computational Sciences Division, National Institute of Standards and Technology, Gaithersburg, MD*

9:00

CH-06. Micromagnetic Computation of Astroids from Energy Landscapes: Stoner-Wohlfarth astroid as infinite-exchange limit. *P.B. Visscher[1] 1. Department of Physics and MINT Center, University of Alabama, Tuscaloosa, AL*

9:12

CH-07. Coexistence of vortex and multi-domain state - A novel magnetization phase in twisted anisotropy bilayers. *M.T. Bryan*[1], G. Heldt[2], L. Saharan[1], T. Thomson[2], L. Heyderman[3] and G. Hrkac[1] *1. Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 2. School of Computer Science, University of Manchester, Manchester, United Kingdom; 3. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, Villigen, Switzerland*

9:24

CH-08. Effect of thermal fluctuations on the performance of particulate media. *J.E. Martin*[1], M.V. Lubarda[1], V. Lomakin[1] and P. Jubert[2] *1. Center for Magnetic Recording Research, Dept. of ECE, University of California at San Diego, San Diego, CA; 2. IBM Research - Almaden, San Jose, CA*

9:36

CH-09. A Novel Variational Method for Estimating the Effective Anisotropy Strength of Tilted Exchange-Springs. *V. Fallahi*[1], T. Nguyen[2], Y. Fang[3], S. Mohseni[2,4], S. Chung[2,3], R. Dumas[3] and J. Åkerman[2,4] *1. Department of Optics and Laser Engineering, University of Bonab, 5551761167, Bonab, Islamic Republic of Iran; 2. Materials Physics, School of ICT, KTH – Royal Institute of Technology, Electrum 229, 164 40, Kista, Stockholm, Sweden; 3. Department of Physics, University of Gothenburg, 412 96, Gothenburg, Sweden; 4. NanOsc AB, Electrum 205, 164 40 Kista, Stockholm, Sweden*

9:48

CH-10. Spin-Cherenkov Effect in a thin strip induced by a propagating field pulse. *M. Yan*[1,2], A. Kákay[2], C. Andreas[2,3] and R. Hertel[3] *1. Department of Physics, Shanghai University, Shanghai, China; 2. Peter Grünberg Institut (PGI-6), Forschungszentrum Jülich, Jülich, Germany; 3. Institut de Physique et Chime des Matériaux de Strasbourg, Université de Strasbourg, Strasbourg, France*

10:24

CH-11. Exact enumeration of an Ising model for Ni_2MnGa. *M. Eisenbach*[1], G. Brown[2,1] and D.M. Nicholson[1] *1. Oak Ridge National Lab, Oak Ridge, TN; 2. Florida State University, Talahassee, FL*

10:36

CH-12. Thermally-assisted magnetization reversal in nanomagnets with spin-transfer torque. *D. Pinna*[1], A.D. Kent[1] and D.L. Stein[1,2] *1. Physics, New York University, New York, NY; 2. Courant Institute of Mathematical Sciences, New York University, New York, NY*

10:48

CH-13. Coupling Micromagnetics with Electromagnetics to account for Eddy currents. *R. Chang*[1,2], M.A. Escobar[1,2], S. Li[1,2], S. Fu[1,2], M.V. Lubarda[1,2] and V. Lomakin[1,2] *1. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 2. Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA*

WEDNESDAY MORNING 8:00 CRYSTAL C

Session CI
4F-, 5F-, STRONGLY CORRELATED SYSTEMS AND SUPERCONDUCTIVITY

Dominic Ryan, Co-Chair
Pascoal Pagliuso, Co-Chair

8:00

CI-01. Magnetic Properties of a Perovskite-related Iron-Based Mixed Anion Compound $Sr_2VFeAsO_{3-\delta}$ *T. Yujiro*[1], M. Matoba[1] and K. Yoichi[1] *1. Science and Technology, Graduate School of Keio, Yokohama, Japan*

8:12

CI-03. Unusual Magnetic Frustration in Lu-doped Gd_5Ge_4 *Y. Mudryk*[1], V.K. Pecharsky[1,2] and K.A. Gschneidner, Jr[1,2] *1. The Ames Laboratory of U.S. Department of Energy, Iowa State University, Ames, IA; 2. Materials Science and Engineering, Iowa State University, Ames, IA*

8:24

CI-04. Strong magnetic coupling in a magnetically dilute f-electron insulator; a dysprosium boron cluster compound. *T. Mori*[1,2], R. Sahara[3], Y. Kawazoe[3], K. Yubuta[3], T. Shishido[3] and Y. Grin[4] *1. National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Univ. Tsukuba, Tsukuba, Japan; 3. Tohoku Univ., Sendai, Japan; 4. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

8:36

CI-05. First-principles study of spin-disorder resistivity of heavy rare-earth metals: Gd–Tm series. *J.K. Glasbrenner*[1], K.D. Belashchenko[1], J. Kudrnovsky[2], V. Drchal[2], S. Khmelevskyi[3] and I. Turek[4] *1. Department of Physics & Astronomy, University of Nebraska - Lincoln, Lincoln, NE; 2. Institute of Physics, Academy of Sciences of the Czech Republic, Praha, Czech Republic; 3. CMS, Institute of Applied Physics, Vienna University of Technology, Vienna, Austria; 4. Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Brno, Czech Republic*

8:48

CI-06. Volume Collapse and Electronic Structure of Terbium Metal at High Pressures. *G. Fabbris*[1,2], J.L. Mardegan[3,1], K.W. Dennis[4], R. McCallum[4], J.S. Schilling[2] and D. Haskel[1] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Department of Physics, Washington University, St. Louis, MO; 3. Instituto de Física "Gleb Wataghin", UNICAMP, Campinas, São Paulo, Brazil; 4. Materials and Engineering Physics, Ames Laboratory, Ames, IA*

9:00

CI-07. Investigation of the magnetic hyperfine field at R and Zn sites in RZn (R = Gd, Tb, Dy) compounds using PAC spectroscopy technique with ^{140}Ce and ^{111}Cd. *B. Bosch-Santos*[1], A.W. Carbonari[1], G.A. Cabrera-Pasca[1], M.S. Costa[1] and R.N. Saxena[1] *1. CRPq, IPEN/USP, Sao Paulo, Sao Paulo, Brazil*

9:12

CI-08. Spin resonance in Luttinger liquid with spin-orbit interaction. *O. Tretiakov*[1,2], K.S. Tikhonov[2] and V.L. Pokrovsky[2] *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Physics and Astronomy, Texas A&M University, College Station, TX*

9:24

CI-09. Non-local Electron Transport Processes in Superconducting Lateral Spin Valves. J.L. Webb[1,2], B.J. Hickey[1] and *G. Burnell*[1] *1. Physics and Astronomy, University of Leeds, Leeds, West Yorkshire, United Kingdom; 2. Synkrotronljusfysik, Lunds Universitet, Lund, Sweden*

9:36

CI-10. Effect of Interface-Induced Exchange Fields on Cuprate-Manganite Spin Switches. ***(Invited)*** *Y. Liu*[1], C. Visani[2], N.M. Nemes[2], M.R. Fitzsimmons[3], L.Y. Zhu[1], J. Tornos[2], M. Garcia-Hernandez[4], M. Zhernenkov[3], A. Hoffmann[1], C. Leon[2], J. Santamaria[2] and S. te Velthuis[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. GFMC, Dpto. Fisica Aplicada III, Univ. Complutense, Moncloa, Madrid, Spain; 3. Los Alamos National Laboratory, Los Alamos, NM; 4. Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Cientificas, Cantoblanco, Madrid, Spain*

10:12

CI-11. Local Structural Relations between Superconductivity Transition Temperatures and Distorted Tetrahedral $FeAs_4$ in $La_{0.5}Gd_{0.5}FeAsO_{1-x}F_x$ *S. Hiromu*[1], I. Seiya[1], M. Masanori[1], A. Toshiyuki[2], I. Mitsuru[2] and K. Yoichi[1] *1. Faculty of Science and Technology, Keio Univesity, Yokohama, Kanagawa, Japan; 2. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan*

10:24

CI-02. Magnon excitation energies in transition metal monoxides. *A. Jakobsson*[1,2], M. Lezaic[2], B. Sanyal[1] and S. Blügel[2] *1. Physics and Astronomy, Uppsala Universitet, Uppsala, Sweden; 2. Peter Grünberg Institute and Institute for Advanced Simulation, Forchungzentrum Jülich and JARA, Jülich, Germany*

10:36

CI-12. Magnetism dependent phonon anomaly in LaFeAsO observed via inelastic x-ray scattering. *S. Hahn*[1,2], G.S. Tucker[1,2], J. Yan[3,4], A.H. Said[5], B. Leu[5], R.W. McCallum[2], E.E. Alp[5], T.A. Lograsso[2,6], R.J. McQueeney[1,2] and B.N. Harmon[1,2] *1. Physics and Astronomy, Iowa State University, Ames, IA; 2. Division of Materials Science and Engineering, Ames Laboratory, Ames, IA; 3. Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN; 4. Materials Science and Engineering, The University of Tennessee, Knoxville, TN; 5. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 6. Materials Science and Engineering, Iowa State University, Ames, IA*

WEDNESDAY MORNING 9:00 RIVERSIDE CENTER

Session CP
MAGNETIZATION DYNAMICS III (POSTER SESSION)
Carl Boone, Chair

CP-01. Anormalous ISHE in Pt/Py system due to surface oxidation on Py layer. *S. Kim*[2,1], B. Min[3], K. Lee[1], K. Shin[3] and S. Park[2] *1. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. Nano Material Research Team, Korea Basic Science Institute, Daejeon, Republic of Korea; 3. Korea Institute of Science and Technology (KIST), Seoul, Republic of Korea*

CP-02. Micromagnetic modeling of longitudinal magnetization dynamics and anisotropic relaxation of magnons. M. Dvornik[1], *A. Vansteenkiste*[1] and B. Van Waeyenberge[1] *1. DyNaMat Lab, Department of Solid State Sciences, Ghent University, Gent, Belgium*

CP-03. Irreversible magnetization reversal by in-plane pulse field in perpendicularly magnetized nanodots. *N. Kikuchi*[1], Y. Suyama[1], M. Furuta[1], S. Okamoto[1], O. Kitakami[1] and T. Shimatsu[2,3] *1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan; 2. Center for Interdisciplinary Research, Tohoku University, Sendai, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

CP-04. Gilbert damping constants for perpendicular magnetic anisotropy with micromagnetic simulations. *J. Yoon*[1], C. You[1] and M. Jung[2] *1. Department of Physics, Inha University, Incheon, Republic of Korea; 2. Department of Physics, Sogang University, Seoul, Republic of Korea*

CP-05. Enhanced Gilbert damping at Permalloy/graphene interfaces. *S. Singh*[1], A. Patra[2], B. Barin[1], E. del Barco[1] and B. Ozyilmaz[2] *1. Department of Physics, University of Central Florida, Orlando, FL; 2. Department of Physics, National University of Singapore*

CP-06. Experimental confirmation of the Landau-Lifshitz-Bloch functional dependence of damping on Curie temperature. *T. Silva*[1], H. Nembach[1], J. Shaw[1] and M. Schneider[2] *1. Div. 687.03, NIST, Boulder, CO; 2. Everspin Technologies, Chandler, AZ*

CP-07. Probing dynamical magnetization pinning in circular dot as a function of the external magnetic field orientation. *G.N. Kakazei*[1,3], G.R. Aranda[2], S.A. Bunyaev[1], V.O. Golub[3], E.V. Tartakovskaya[3], A.V. Chumak[4], A.A. Serga[4], B. Hillebrands[4] and K.Y. Guslienko[2,5] *1. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal; 2. Dpto. Física de Materiales, Universidad del País Vasco, San Sebastian, Spain; 3. Institute of Magnetism NAN of Ukraine, Kiev, Ukraine; 4. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 5. IKERBASQUE, The Basque Foundation for Science, Bilbao, Spain*

CP-08. Spin-torque oscillators using perpendicular anisotropy in CoFeB–MgO magnetic tunnel junctions. *M. Carpentieri*[1] and F. Lattarulo[1] *1. Elettrotecnica ed Elettronica, Politecnico of Bari, Bari, Italy*

CP-09. Atomistic spin dynamics of low-dimensional magnets. *L. Bergqvist*[1], A. Taroni[2], A. Bergman[2], C. Etz[2], J. Hellsvik[2] and O. Eriksson[2] *1. KTH Royal Institute of Technology, Stockholm, Sweden; 2. Uppsala University, Uppsala, Sweden*

CP-10. Quadratic scaling of intrinsic Gilbert damping with spin-orbital coupling in $L1_0$ FePdPt films. P. He[1,4], X. Ma[2], J. Zhang[1], H. Zhao[3], G. Lü pke[2], Z. Shi[1] and *S. Zhou*[1] *1. Shanghai Key Laboratory of Special Artificial Microstructure Materials & Technology and Physics Department, Tongji University, Shanghai, China; 2. Department of Applied Science, College of William and Mary, Williamsburg, VA; 3. Key Laboratory of Micro and Nano Photonic Structures (Ministry of Education) and Department of Optical Science and Engineering, Fudan University, Shanghai, China; 4. Surface Physics State Laboratory and Department of Physics, Fudan University, Shanghai, China*

CP-11. Ultrafast Demagnetization Dynamics due to Spin-Flip Scattering and Dynamical Exchange Splitting. *B.Y. Mueller*[1], S. Vollmar[1], H.C. Schneider[1] and B. Rethfeld[1] *1. Department of Physics, Technical University Kaiserslautern, Kaiserslautern, Germany*

CP-12. Low-power photo-induced precession of magnetization in ultra-thin Co/Pd multi-layer films. *K. Yamamoto*[1], T. Matsuda[1], K. Nishibayashi[1], Y. Kitamoto[2] and H. Munekata[1] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 2. School of Interdisciplinary Graduate Science and Engineering, Tokyo Institute of Technology, Yokohama, Japan*

CP-13. Theory of ultrafast non-thermal spin dynamics. *H. Kesserwan*[1], F. Dogan[1] and A. Manchon[1] *1. King Abdullah University of Science and Technology (KAUST), Physical Science and Engineering Division, Thuwal, Saudi Arabia*

CP-14. Correlation between Ultrafast demagnetization process and Gilbert damping in amorphous TbFeCo thin films. *Y. Ren*[1], Z. Zhang[2], Q. Jin[2] and S. Zhou[3] *1. Key Lab for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, Lanzhou, China; 2. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 3. Department of Physics, Tongji University, Shanghai, China*

CP-15. Stochastic Landau Lifshitz Bloch Macrospin Model of Thermally Assisted Switching in CoNi/Pd Magnetic Multilayers. *U. Kilic*[1,2], G. Finocchio[3], T. Hauet[4], S. Florez[5], G. Aktas[1] and O. Ozatay[1] *1. Pyhsics Department, Bogazici University, Istanbul, Turkey; 2. Electrical and Electronics Engineering Department, Istanbul Bilgi University, Istanbul, Turkey; 3. Dipartimento di Fisica della Materia e Ingegneria Elettronica, University of Messina, Dipartimento di Fisica della Materia e Ingegneria, Italy; 4. Institut Jean Lamour, Université De Lorraine-CNRS UMR, Nancy, France; 5. HGST, a Western Digital Company-San Jose Research Center, San Jose, CA*

CP-16. Damping in Fe_3O_4/Ag through the Verwey Transition. *D. Stanley*[1], M.J. Pechan[1], P.B. Jayathilaka[2] and C.W. Miller[2] *1. Physics, Miami University, Oxford, OH; 2. Physics, University of South Florida, Tampa, FL*

WEDNESDAY MORNING 9:00 — RIVERSIDE CENTER

Session CQ
MOTORS AND ACTUATORS I (POSTER SESSION)
Kaiyuan Lu, Chair

CQ-01. Reduction of Load Torque Ripples in Permanent Magnet Synchronous Machines by Improved Skewing. W. Chu[1] and *Z. Zhu*[1] *1. Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, United Kingdom*

CQ-02. 3D Geometric Modeling of Toroidal Coil Windings with Constant Conduction Area. E.C. Goltz[1], *P.R. Eckert*[1] and A.F. Flores Filho[1] *1. Electrical Engineering, Federal University of Rio Grande do Sul, Porto Alegre, RS, Brazil*

CQ-03. Design, Analysis and Experimental Validation of Doubly Salient Permanent Magnet Linear Synchronous Motor. *S. Chung*[1], Y. Jeong[1], J. Kim[1], B. Woo[1], D. Hong[1] and J. Lee[1] *1. Electric Motor Research Center, KERI, Changwon, Republic of Korea*

CQ-04. Regulation On the Energy Efficiency of the Compulsator for Driving Capillary. *J. Li*[1], X. Yan[1], L. Tan[1] and J. Tian[1] *1. Xi'an Jiaotong University, High Voltage and Insulation Institute, School of Electrical Engineering, Xi'an, China*

CQ-05. Quantitative Comparison for Fractional-Slot Concentrated-Winding Configurations of Permanent-Magnet Vernier Machines. Y. Junqin[1] and *L. Guohai*[1] *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, Jiangsu, China*

CQ-06. Comparison of Triangular and Sinusoidal Periodic Frequency Modulation on Reducing Permanent Magnet Synchronous Motor Electromagnetic Noise. Y. Xu[1], Q. Yuan[1], J. Zou[1], *H. Wang*[1] and K. Liu[1] *1. Harbin Institute of Technology, Harbin, Heilongjiang, China*

CQ-07. Electromagnetic performance analysis of a new flux-switching permanent-magnet double-rotor machine. L. Mo[1,2], *L. Quan*[1], X. Liu[1] and Y. Chen[1] *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China; 2. Faculty of Electronic and Electrical Engineering, Huaiyin Institute of Technology, Huaian, China*

CQ-08. Claw-Pole Stator PM Brushless Machine Having SMC Stator Core – Analytical Modeling and Experimental Validation. *Y. Shen*[1], Z.Q. Zhu[1], J.T. Chen[1] and R.P. Deodhar[2] *1. EEE, The University of Sheffield, Sheffield, United Kingdom; 2. IMRA Europe S.A.S. U.K. Research Center, Brighton, United Kingdom*

CQ-09. Torque Density and Magnet Usage Efficiency Enhancement of Sandwiched Switched Flux Permanent Magnet Machines Using V-shape Magnets. *Y.J. Zhou*[1] and Z.Q. Zhu[1] *1. University of Sheffield, Sheffield, United Kingdom*

CQ-10. Influence of end-effect on torque-speed characteristics of various switched flux permanent magnet machines. *M. Al-ani*[1] and Z. Zhu[1] *1. Electronic and Electrical Engeneering, University of Sheffield, Sheffield, United Kingdom*

WEDNESDAY MORNING 9:00 — RIVERSIDE CENTER

Session CR
MOTORS AND ACTUATORS II (POSTER SESSION)
Seungjae Min, Chair

CR-01. Saliency Ratio Improvement of Fractional-Slot Interior Permanent-Magnet Machines. *K. Wang*[1] and Z.Q. Zhu[1] *1. Department of Electronic and Electrical Engineering, The University of Sheffield, Sheffield, United Kingdom*

CR-02. Comparative Study of Novel Variable Flux Doubly Salient Machine with Doubly Fed Doubly Salient Machine. *X. Liu*[1] and Z. Zhu[1] *1. Electronic and Electrical Engineering, University of Sheffield, Sheffield, United Kingdom*

CR-03. Force characteristics of the H-module linear actuator with varying tooth-shift-distance. *X. Liu*[1], K. Lu[1], Z. Chen[1] and Y. Ye[2]*1. Department of Energy Technology, Aalborg University, Aalborg, Denmark; 2. College of Electrical Engineering, Zhejiang University, Hangzho, China*

CR-04. Analytical evaluation of pitching moment in high-precision permanent magnet linear synchronous motor. *C. Han*[1], H. Cho[2], C. Park[3], S. Choi[3] and S. Jang[1]*1. Dept. of Electrical Engineering, Chungnam National University, Daejeon, Republic of Korea; 2. Dept. of Electric, Electronic & Communication Eng. Edu., Chungnam National University, Daejeon, Republic of Korea; 3. Dept. of Robot and Intelligent Machinery, Korea Institute of Machinery and Materials, Daejeon, Republic of Korea*

CR-05. Experimental validation Rotor Eddy Current Loss of Coreless Double-sided PMSM/G Applied to Flywheel Energy Storage System.S. Jang[1], *J. Kim*[1], J. Choi[1], J. Choi[1], D. You[2] and S. Sung[3]*1. Electrical Engineering, Chungnam National University, Daejeon, Republic of Korea; 2. Fire Safety Engineering, Cheongyang Provincial College, Chungnam, Republic of Korea; 3. Korea Ocean Research Development Institute, Daejeon, Republic of Korea*

CR-06. Integrated system design and characteristic analysis of axial flux permanent magnet wind power generator and linear induction motor based on analytical approach. *Y. Park*[1], S. Jang[1], S. Sung[2], M. Koo[1] and J. Choi[1]*1. Chungnam National University, Daejoen, Republic of Korea; 2. Korea Ocean Research & Development Institute, Daejeon, Republic of Korea*

CR-07. Analysis of Torque Characteristics and Power Factor of a Novel Brushless Double Rotor Machine Used for HEVs. *P. Zheng*[1], Q. Wu[1], C. Tong[1], J. Bai[1], Z. Song[1] and Q. Zhao[1]*1. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China*

CR-08. Optimal Design of a Double Sided Hybrid Excited Linear Flux Switching PM Motor With Low Force Ripple. *C. Hwang*[1], P. Li[2] and C. Liu[3]*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*

CR-09. Influence of Various Non-Oriented Electrical Steels on Motor Efficiency and Iron Loss in Switched Reluctance Motor. *H. Toda*[1], K. Senda[1], S. Morimoto[2] and T. Hiratani[1]*1. Steel Research Lab., JFE Steel, Kurashiki, Okayama, Japan; 2. Graduate School of Engineering, Osaka Prefecture University, Sakai, Osaka, Japan*

CR-10. Comparative Analysis of Surface-mounted and Interior Permanent Magnet Synchronous Motor for Compressor of Air-conditioning System for Electric Vehicle. *H. Park*[1], S. Jang[1], H. Shin[1], J. Choi[1] and J. Choi[1]*1. Department of Electrical Engineering, Chungnam National University, Daejeon, Republic of Korea*

WEDNESDAY MORNING 9:00

RIVERSIDE CENTER

Session CS
NEW MAGNETIC MATERIALS (POSTER SESSION)
Leonard Spinu, Chair

CS-01. Exploiting the magnetic properties of iron doped zirconia. *D. Sangalli*[1], A. Lamperti[1], E. Cianci[1] and A. Debernardi[1]*1. MDM - IMM, CNR, Agrate Brianza (MB), Italy*

CS-02. Origin of ferromagnetism in $BaTiO_3$ nanoparticles. *L.T. Phan*[1], P. Zhang[1], D.S. Yang[2], T. Thanh[1] and S. Yu[3]*1. Department of Physics, Chungbuk National University, Cheongju, Republic of Korea; 2. School of Science Education, Chungbuk National University, Cheongju, Republic of Korea; 3. Institute of Materials Science, Vietnam Academy of Science and Technology, Hanoi, Viet Nam*

CS-03. Ferromagnetism induced in undoped ZnO pellets. *Y. Chen*[1], E. Goering[1], L. Jeurgens[2], T. Tietze[1] and G. Schü tz[1]*1. Schütz, Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Joining Technologies and Corrosion, Empa, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland*

CS-04. Magnetic and Transport properties of Mn-rich Ni-Mn-In alloy.S. Dwevedi[1] and *A.K. Nigam*[1]*1. Department of Condensed Matter Physics and Material Sciences, Tata Institute of Fundamental Research, Mumbai, Maharashtra, India*

CS-05. Structural and magnetic properties of the tetragonal Heusler compound Fe2MnGa. *T. Gasi*[1], A.K. Nayak[2] and C. Felser[1,2]*1. Institut für Anorganische und Analytische Chemie, Johannes Gutenberg Universität,, Mainz, Germany; 2. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

CS-06. Static and Dynamic Magnetic Properties Of Co-sputtered $Co_{1-x}Au_x$ Films. *X. Wen*[1], J. Ding[1], X. Liu[1] and A. Adeyeye[1]*1. Information Storage Materials Laboratory, Department of Electrical and Computer Engineering, National University of Singapore, Singapore*

CS-07. Magnetocaloric effect and magnetoresistance in the intermetallic compounds Dy_5X_4 (X = Si, Ge). *S.K. Malik*[4], R. Nirmala[1], A.V. Morozkin[2] and A.K. Nigam[3]*1. Indian Institute of Technology Madras, Chennai, India; 2. Moscow Lomonosov State University, Moscow, Russian Federation; 3. Tata Institute of Fundamental Research, Mumbai, India; 4. Departamento de Física Teórica e Experimentalhysics (IIP)-UFRN, Natal, Brazil*

CS-08. Magnetic and Structural Properties of the New Double Perovskite Family Sr2GdRu1-xRexOy. *L.T. Corredor Bohórquez*[1,2], J. Roa-Rojas[2], D. Té llez[2], P. Pureur[3], F. Mesquita[3] and J. Aguiar[1] *1. Departamento de Física, Laboratório de Supercondutividade e Materiais Avançados, Universidade Federal de Pernambuco, Recife, Pernambuco, Brazil; 2. Departamento de Física, Grupo de Física de Nuevos Materiales, Universidad Nacional de Colombia, Bogotá D.C., Colombia; 3. Instituto de Física, Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*

CS-09. Interplay of 3d-4f exchange interaction in $Pr_{0.5-x}$ Nd_x $Sr_{0.5}$ CoO_3 *K. Pawan*[1], M. Aparnadevi[1], R.V. Maheswar[1], T. Tripurari Saharan[1] and R. Mahendiran[1] *1. Physics, NUS, Singapore*

CS-10. Anomalous Hall Effect of $Fe_{16}N_2$ Thin Film on Ag Under Layer. *M. Yang*[1,2], X. Zhang[1], G. Yu[2] and J. Wang[1] *1. The Center for Micromagnetics and Information Technologies (MINT) and Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Materials Physics and Chemistry, University of Science and Technology, Beijing, China*

CS-11. Spin super-exchange and magnetocoloric effects in Dy(OH)3 nanorods. *R. Zeng*[1,2] *1. SETG, SCEM, University of Western Sydney, Penrith, NSW, Australia; 2. ISEM, UOW, Wollongong, NSW, Australia*

CS-12. Crystal and magnetic structure of orthosilicate Li_2FeSiO_4 by Mössbauer analysis. *I. Lee*[1], S. Kim[1], T. Kouh[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Republic of Korea*

CS-13. Magnetic Compton scattering study of magneto-dielectric $Ba(Co_{0.85}Mn_{0.15})O_{3-\delta}$ *R. Shinoda*[1], M. Itou[2], Y. Sakurai[2], H. Yamamoto[3], N. Hirao[3], Y. Baba[3], A. Iwase[1] and T. Matsui[4,1] *1. Department of Materials Science, Osaka Prefecture University, Sakai, Osaka, Japan; 2. Japan Synchrotron Radiation Reserch Institute (JASRI) SPring-8, Sayo, Hyogo, Japan; 3. Japan Atomic Energy Agency (JAEA), Tokai, Ibaraki, Japan; 4. Research Organization for the 21st Century, Osaka Prefecture University, Sakai, Osaka, Japan*

CS-14. Effect of temperature on the crystal growth, size, shape and magnetic properties of spinel $CuCr_2Se_4$ nanocrystals. *M. Shaikh*[1], C. Lin[1], M. Chen[2], H. Hsu[3], G. Huang[1] and P. Chien[3] *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan; 2. Department of Electro-optical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan; 3. Department of Physics, National Pintung University of Education, Pintung, Taiwan*

CS-15. The phase evaluation, magnetic and exchange bias properties in Fe_{50} Mn_{24+x} Ga_{26-x} (x = 0-3) melt-spun ribbons. *C.W. Shih*[1], X.G. Zhao[1,2], H.W. Chang[3], W.C. Chang[1] and Z.D. Zhang[2] *1. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China; 3. Department of Physics, Tung Hai University, Taichung, Taiwan*

CS-16. Synthesis and room-temperature ferromagnetism of Cu-doped SnO2 nanowires grown by thermal evaporation. A. Johari[1], *M. Sharma*[1] and M.C. Bhatnagar[2] *1. Centre for Applied Research in Electronics, Indian Institute of Technology Delhi, New Delhi, Delhi, India; 2. Department of Physics, Indian Institute of Technology Delhi, New Delhi, Delhi, India*

WEDNESDAY MORNING 9:00 **RIVERSIDE CENTER**

Session CT
FEPT AND COPT FILMS II (POSTER SESSION)

Parashu Kharel, Co-Chair
David Sellmyer, Co-Chair

CT-01. Influences of in-plane initial stresses on microstructure and ordering of FePt thin films. *S. Hsiao*[1,2], H. Lee[1], S. Liu[2], S. Chen[2], F. Yuan[3] and A. Sun[4] *1. National Synchrotron Radiation Research Center, Hsinchu, 300, Taiwan; 2. Materials Science and Engineering, Feng Chia University, Taichung, 407, Taiwan; 3. Applied Physics and Center for Nanostorage, National Taiwan University, Taipei, 106, Taiwan; 4. Chemical Engineering & Materials Science, Yuan Ze University, Jungli, 320, Taiwan*

CT-02. Ordering process of FePt nanoparticles synthesized by polyol process. *S. Fujieda*[1], K. Shinoda[1], S. Suzuki[1] and B. Jeyadevan[2] *1. Tohoku University, Sendai, Japan; 2. The University of Shiga Prefecture, Hikone, Japan*

CT-03. Thickness effects of Si light absorption layer on the (001) ordering of $L1_0$-FePt. *L. Wang*[1], J. Liao[1], W. Shih[1], Y. Wu[1] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

CT-04. Formation mechanism and magnetic propertices of PtM (Fe, Ni) nanocrystals. *B. Bian*[1], W. Xia[1], J. Zhang[1], A. Yan[1], J. Du[1] and J. Liu[2] *1. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Department of Physics, University of Texas at Arlington, Arlington, TX*

CT-05. Low temperature (001) ordering of $L1_0$-FePt by the addition of B_2O_3 *L. Wang*[1], Y. Wu[1] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

CT-06. Stabilized perpendicular magnetic anisotropy of $L1_1$ CoPt thin film at room temperature. *A. Sun*[1], C. Huang[1], L. Li[1], J. Hsu[2], F. Yuan[2], H. Lu[3], S. Wang[3], S. Hsiao[4], H. Lee[4] and J. Mei[5] *1. Department of Chemical Engineering & Materials Science, Yuan Ze University, Taoyuan, Taiwan; 2. Department of Physics, National Taiwan University, Taipei, Taiwan; 3. Department of Materials and Mineral Resources Engineering, National Taipei University of Technology, Taipei, Taiwan; 4. National Synchrotron Radiation Research Center (NSRRC), Hsinchu, Taiwan; 5. Department and Institute of Electrical Engineering, Minghsin University of Science and Technology, Hsinchu, Taiwan*

CT-07. Perpendicular graded anisotropy FePt/CoPt thin films with small coercivity. *S. Liu*[1], S. Hsiao[2], S. Chen[1] and H. Lee[2] *1. Feng Chia University, Taichung, Taiwan; 2. National Synchrotron Radiation Research Center, Hsinchu, Taiwan*

CT-08. Temperature-dependent magnetic properties of $L1_0$ FePtRh films. *D. Xu*[1,2], C. Sun[1], J. Chen[2], S. Heald[1] and G. Chow[2] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Materials Science & Engineering, National University of Singapore, Singapore*

CT-09. Effect of Oxygen Stoichiometry on Microstructural and Magnetic Properties of FePt/TaO_x Bilayer Fabricated by Ion-Beam-Bombardment Deposition. *G. Li*[1], C. Leung[2], Y. Chen[3], J. Hsu[4], A. Sun[5], K. Lin[3] and P.W. Pong[1] *1. Department of Electrical and Electronics Engineering, The University of Hong Kong, China; 2. Department of Applied Physics, Hong Kong Polytechnic University, Hong Kong, China; 3. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 4. Department of Chemical Engineering and Materials Science, Yuan Ze University, Chungli, Taiwan; 5. Department of Physics, National Taiwan University, Taipei, Taiwan*

WEDNESDAY MORNING 9:00

RIVERSIDE CENTER

Session CU
NUMERICAL METHODS AND HYSTERESIS I (POSTER SESSION)
Alexandru Stancu, Chair

CU-01. Analysis of Random Magnetization Switching using Monte Carlo Simulations. *A. Lee*[1], Z. Liu[1], G. Bertotti[2], C. Serpico[3] and I. Mayergoyz[4] *1. Electrical Engineering, University of Maryland, College Park, MD; 2. INRiM, Torino, Italy; 3. Dipartimento di Ingegneria Elettrica, Universita` di Napoli "Federico II", Napoli, Italy; 4. Department of Electrical and Computer Engineering, UMIACS and AppEl Center, University of Maryland, College Park, MD*

CU-02. Simulation of Magnetization Errors using Conformal Mapping Field Computations. *P. Offermann*[1], M. Hafner[1] and K. Hameyer[1] *1. Institute of Electrical Machines, RWTH Aachen University, Aachen, Germany*

CU-03. Efficient Numerical Solution of Magnetic Field problems in presence of Hysteretic Media for Non-Destructive Evaluation. M. d'Aquino[1], *C. Petrarca*[2], G. Rubinacci[2], A. Tamburrino[3,4], S. Ventre[3] and F. Villone[3] *1. Dipartimento per le Tecnologie, Università degli Studi di Napoli "Parthenope", Napoli, Italy; 2. Dipartimento di Ingegneria Elettrica, Università degli Studi di Napoli Federico II, Napoli, Italy; 3. Dipartimento di Ingegneria Elettrica e dell'Informazione, Università degli Studi di Cassino e del Lazio Meridionale, Cassino, Italy; 4. Department of Electrical and Computer Engineering, Michigan State University, East Lansing, MI*

CU-04. An Operator Splitting Finite Element Method for Eddy-current Field Analysis in High-speed Rotating Solid Conductors. Y. Zhao[1], S. Ho[1] and *W. Fu*[1] *1. Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

CU-05. Development of Numerical Technic for Deperming of Isotropic Ferromagnetic Material by Using Vector M-B Preisach Model. H. Ju[1], G. Park[1] and *H. Won*[1] *1. School of Electrical Engineering, Pusan National Univesity, Busan, Republic of Korea*

CU-06. Dynamic Preisach hystersis model for magnetostrictive materials for energy application. *G. La Rocca*[1], V. Franzitta[2], A. Viola[2] and M. Trapanese[1] *1. Dipartimento di Ingegneria Elettrica, Palermo University, Palermo, Italy; 2. Dipartimento dell'Energia, Palermo University, Palermo, Italy*

CU-07. An efficient inverted vector hysteresis model based on Preisach model with rotational operator. *S. Bi*[1], A. Sutor[1] and R. Lerch[1] *1. Chair of Sensor Technology, University Erlangen-Nuremberg, Erlangen, Germany*

CU-08. Improved Hysteresis Modelling Combined Stoner-Wohlfarth with Preisach models. W. Xu[1], J. Zhu[2], *S. Wang*[1], N. Duan[1] and J. Qiu[1] *1. Xi'an Jiaotong University, Xi'an, China; 2. University of Technology at Sydney, Sydney, NSW, Australia*

WEDNESDAY MORNING 9:00

RIVERSIDE CENTER

Session CV
ENERGY ASSISTED MAGNETIC RECORDING (POSTER SESSION)
Davide Guarisco, Chair

CV-01. Simulation of Switching Phase Diagram with DC and AC magnetic fields by Classical Two-Particle Model of ECC media. *L. Wang*[1], K. Zhang[1], D. Wei[1] and K. Gao[2] *1. Lab of Advanced Materials, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China; 2. Advance Technology Development, Seagate Technology, Bloomington, MN*

CV-02. Effects of Si_3N_4 buffer layer on the magnetic properties of exchange-coupled PtFe/Fe composite films. W. Cui[1], W. Gong[1], *Y. Zhang*[1], W. Liu[1] and Z. Zhang[1] *1. Shenyang National Laboratory for Materials Science and International Centre for Materials Physics, Institute of Metal Research, Chinese Academy of Sciences, Shenayng, China*

CV-03. Current-induced Fast-ordering of $L1_0$-FePt Films with Small Grain Size. *M. Yang*[1,2], C. Feng[1], K. Gong[1], H. Li[3], L. Wang[1], Q. Zhan[1], B. Li[1], J. Wang[2] and G. Yu[1] *1. Materials Science and Engineering, University Science and Technology Beijing, Beijing, China; 2. The Center for Micromagnetics and Information Technologies (MINT) and Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 3. Materials Science and Engineering, Tsinghua University, Beijing, China*

CV-04. Ordering temperature of L10-FePd film reduced by Ag underlayer. B. Li[1], W. Liu[1], X. Zhao[1], *Y. Zhang*[1], W. Gong[1], J. Feng[1], F. Wang[1] and Z. Zhang[1] *1. Shenyang National Laboratory for Materials Science and International Centre for Materials Physics, Institute of Metal Research, Chinese Academy of Sciences, Shenayng, China*

CV-05. Effect of Underlayers on Grain Morphology of FePt-SiO_x Thin Films. *H. Ho*[1,2], N.T. Nuhfer[2], D.E. Laughlin[1,2] and J. Zhu[1,3] *1. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

CV-06. Head and Granular Media Design for Thermally Assisted Magnetic Recording for Achieving Recording Density of 6 Tb/in^2 *F. Akagi*[1], J. Ushiyama[1], A. Ando[1] and H. Miyamoto[1] *1. Hitachi Ltd., Tokyo, Japan*

CV-07. Power absorption and thermal analysis of head and media for heat-assisted magnetic recording. J. Li[1], *B. Xu*[1], Z. Cen[1], J. Zhang[1] and K. Ye[1] *1. Data Storage Institute, Agency for Science, Technology and Research, Singapore*

CV-08. Experimental Characterization of Transition Noise in HAMR. *K. Kim*[1] and J. Moon[1] *1. KAIST, Daejeon, Republic of Korea*

CV-09. Microstructure and magnetic performance of perpendicularly magnetic anisotropic $Fe_3Pt/Fe_2Pt/L1_0$-FePt(001)/MgO(001) graded films. *Y. Lin*[1], J. Hsu[2], F. Yuan[2], P. Kuo[2] and J. Mei[3] *1. Graduate Institute of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan; 2. Physics, National Taiwan University, Taipei, Taiwan; 3. Department and Institute of Electrical Engineering, Minghsin University of Science and Technology, Hsinchu, Taiwan*

CV-10. Epitaxial Growth of FePt on MgO and amorphous substrates for ultrahigh magnetic recording densities. *D.G. Niarchos*[1], T. Speliotis[1], G. Giannopoulos[1], G. Varvaro[2], A. Testa[2], D. Fiorani[2], G. Hadjipanayis[3] and W. Li[3] *1. IMS, NCSR Demokritos, Aghia Paraskevi, Attikis, Greece; 2. Institute of Structure of Matter, CNR, Rome, Italy; 3. Physics and Astronomy, University of Delaware, Newark, DE*

CV-11. Critical temperatures in HAMR reversal process of a single magnetic grain. *S. Mukherjee*[1] *1. Carnegie Mellon University, Pittsburgh, PA*

CV-12. Thermal stability of FePt based exchange coupled composite films. H. Chu[1], H. Guo[1], J. Liao[1], *B. Ma*[1], Z. Zhang[1] and Q. Jin[2,1] *1. Fudan University, Shanghai, China; 2. East China Normal University, Shanghai, China*

WEDNESDAY MORNING 9:00 **RIVERSIDE CENTER**

Session CW
SOFT MAGNETIC MATERIALS FOR MICROWAVE APPLICATIONS IV (POSTER SESSION)

Xiaoming Kou, Chair

CW-01. Magnetic and Mössbauer Studies of $Mn_{0.679-x}Zn_{0.256}Ti_xFe_{2.066}O_4$ Spinel Ferrites:Effect of Cation Distribution. *H. Ji*[1,2], Z. Lan[1], Z. Xu[1], H. Zhang[1] and G.J. Salamo[2] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices,, Chengdu, China; 2. Institute for Nanoscale Materials Science and Engineering University of Arkansas, Fayetteville, AR*

CW-02. Enhanced magnetization by Cr doping in YFeO3 for magnetooptical application. H. Shen[1,2], *Z. Cheng*[2], J. Xu[1] and X. Wang[2] *1. Shanghai Institute of Technology, Shanghai, Shanghai, China; 2. University of Wollongong, Wollongong, NSW, Australia*

CW-03. Synthesis and magnetic properties of novel non-stoichiometric Co_2Z hexaferrite. *L. Jia*[1], H. Zhang[1], L. Xu[1], S. Xiao[1] and B. Liu[1] *1. University of Electronic Science and Technology of China, Chengdu, China*

CW-04. Influences of calcination temperature on densification and magnetic properties of Bi-modified NiCuZn ferrites. S. Zhang[1], *L. Jia*[1], H. Zhang[1], K. Chen[1] and B. Liu[1] *1. University of Electronic Science and Technology of China, Chengdu, China*

CW-05. Study of site occupancy in single crystalline $Zn_xFe_{3-x}O_4$ microspheres based on Mössbauer analysis. *Y. Li*[1], S. An[2] and C. Kim[1] *1. Physics, Kookmin University, Seoul, Republic of Korea; 2. Corporate R&D Institute, Samsung Electro-Mechanics, Suwon, Republic of Korea*

CW-06. The Interplay of Shape Anisotropy and Magnetocrystalline Anisotropy in Electrodeposited Fe_3O_4 Films. R. Wu[1], X. Chen[1], Y. Yang[1], J. Wei[1], M. Xing[1], Y. Xia[1] and *J. Yang*[1,2] *1. School of Physics, Peking University, Beijing 100871, China; 2. State Key Laboratory for Mesoscopic Physics, Department of Physics, Peking University, Beijing 100871, China*

CW-07. Magnetic properties of Sr substituted Y-type hexaferrite. *K. Cho*[1], C. Rhee[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Republic of Korea*

CW-08. The dispersion spectra of permeability and permittivity for LiZn ferrite doped with Bi2O3. R. Guo[1], Z. Yu[1], X. Jiang[1], K. Sun[1], Z. Xu[1], Z. Lan[1] and *F. Bai*[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, SiChan, China*

CW-09. Dramatic reduction of FMR linewidth in epitaxial Pb(ZrTi)O3-NiFe2O4 nanocomposite films. *G. Yu*[1] and F. Bai[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

CW-10. The magnetic properties of temper rolled NO FeSi steels with enhanced rotating cube texture. *I. Petryshynets*[1], F. Kovac[1], J. Marcin[2] and I. Skorvanek[2] *1. Microstructural Engineering of Steels, Institute of Materials Research, Slovak Academy of Science, Košice, Slovakia; 2. Laboratory of Nanomaterials and Applied Magnetism, Institute of Experimental Physic, Slovak Academy of Sciences, Košice, Slovakia*

CW-11. The effects of sintering temperature on the dielectric behavior and magnetic property of ferrimagnetic $Tb_3Fe_5O_{12}$ P. Tsai[1], X. Qi[1,2] and *Y. Siao*[1] *1. Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan; 2. Research Center for Energy Technology and Strategy, National Cheng Kung University, Tainan, Taiwan*

CW-12. Ferromagnetic resonance study on Fe3O4 thin film. *J.G. Lin*[1], M. Song[1], J. Lin[1], M. Samant[2] and S. Parkin[2] *1. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 2. IBM Research Division, Almaden Research Center, San Jose, CA*

WEDNESDAY MORNING 9:00 RIVERSIDE CENTER

Session CX
MAGNETIC SENSORS AND MAGNETOIMPEDANCE DEVICES (POSTER SESSION)

Kwang-Ho Shin, Co-Chair
Jung-Il Hong, Co-Chair

CX-01. Magnetic field resolution of the Magnonic Crystal-based magnetic field sensor. *N. Kanazawa*[1], T. Ueno[1], H. Takagi[1], Y. Nakamura[1], K. Ishiyama[2] and M. Inoue[1] *1. Electrical and Electronic Information Engineering, Toyohashi University of Technology, Toyohashi, Aichi, Japan; 2. Electromagnetic Bioinformation Engineering, Research Institute of Electrical Communication Tohoku University, Sendai, Miyagi, Japan*

CX-02. MgO based magnetic tunnel junction with $Co_{20}Fe_{60}B_{20}$ sensing layer for magnetic field sensors. *T. Takenaga*[1], C. Yoshida[1], Y. Yamazaki[1], A. Hatada[1], M. Nakabayashi[1], Y. Iba[1], A. Takahashi[1], H. Noshiro[1], K. Tsunoda[1], M. Aoki[1], T. Furukawa[1], H. Ohji[1] and T. Sugii[1] *1. Low-power Electronics Association & Project (LEAP), Tsukuba, Japan*

CX-03. Implementation of Linear Field Sensor using STT-MTJ. *S. Kim*[1,2], K. Lee[2] and S. Park[1] *1. Nano Material Research Team, Korea Basic Science Institute, Daejeon, Republic of Korea; 2. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea*

CX-04. Integrated differential CMOS-TMR current sensor. *W. Raberg*[1], S. Schmitt[1] and J. Zimmer[1] *1. Technology Development Sense & Control, Infineon Technologies AG, Neubiberg, Germany*

CX-05. MgO Magnetic Tunnel Junction Electrical Current Sensor with Integrated Ru Thermal Sensor. *A. Lopes*[1,2], S. Cardoso[1,2], P.P. Freitas[1,2], R. Ferreira[4], J. Sánchez[3], D. Ramí rez[3] and S.I. Ravelo[3] *1. INESC-MN: Instituto de Sistemas e Computadores-Microsistemas e Nanotecnologias, Lisboa, Portugal; 2. Physics, Instituto Superior Técnico, Lisboa, Portugal; 3. Electronic Engineering, University of Valencia, Valencia, Spain; 4. Iberian International Nanotechnology Laboratory (INL), Braga, Portugal*

CX-06. Thermal stability of magnetic tunnel junction sensors with Conetic alloy. *Z. Lei*[1], Z. Yang[1], P. Chen[2], A. Castillo[2], G. Feng[2], R. Shull[2], R. Hui[1] and P. Pong[1] *1. The University of Hong Kong; 2. National Institute of Standards and Technology, Gaithersburg, MD*

CX-07. Large current-controlled DC magnetic field sensor based on Pb(Zr, Ti)O3/Terfenol-D magnetoelectric laminated composites. *L. Zhang*[1], C. Leung[1], S. Or[1] and S. Ho[1] *1. The Hong Kong Polytechnic University, Kowloon, Hong Kong*

CX-08. Highly sensitive giant magneto-impedance in a solenoid containing Co-based ribbon. *S. Chen*[1], Q. Man[1] and B. Shen[1] *1. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

CX-09. Highly sensitive amorphouse wire CMOS magneto-impedance sensor with coplanar line filter for avoiding interference noise. *S. Kawahara*[1] and T. Uchiyama[1] *1. Electrical Engineering and Computer Science, Nagoya University, Nagoya-si, Japan*

CX-10. Giant Magneto-Impedance Thin Film Magnetic Sensor. *S. Nazari Nejad*[1], A. Akhavan Fomani[1] and R. Mansour[1] *1. Center for Integrated RF Engineering, Electrical and Computer Engineering, University of Waterloo, Waterloo, ON, Canada*

CX-11. Thermal stability of the ferromagnetic in-plane uniaxial anisotropy of Fe-Co-Hf-N/Ti-N multilayer films for high-frequency sensor applications. *K. Krueger*[1], K. Seemann[1], H. Leiste[1], M. Stueber[1], C. Thede[2] and E. Quandt[2] *1. Institute for Applied Materials (IAM-AWP), Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany; 2. Institute for Materials Science, Kiel University, Kiel, Germany*

CX-12. Large enhancement in low-frequency magnetic field detectability through array of magnetoelectric FeNi/PZT tube sensors. *S.M. Gillette*[1], Y. Chen[1], J. Hsu[1], T. Fitchorov[1], L. Jiang[2], H. Hao[2], J. Yang[2] and V.G. Harris[1] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Baotou Research Institute of Rare Earths, Baotou, Inner Mongolia, China*

CX-13. Characterization of current sensor with variable sensitivity and measuring range using bias magnetic field of a hard magnetic film magnetized by pulsed-current method. M. Sonehara[1], H. Kamada[1], *S. Iida*[2,1] and T. Sato[1] *1. Department of Electrical and Electronic Engineering, Faculty of Engineering, Shinshu University, Nagano, Japan; 2. Department of Electrical and Electronic Engineering, Kisarazu National College of Technology, Kisarazu, Japan*

CX-14. Application of Amorphous Material with Thin Film Fluxgate Sensor in Magnetic Property Analysis. *C. Lin*[1], C. Hsu[2], C. Lee[1], Y. Chang[3], F. Lin[4] and C. Tseng[5] *1. Department of Electrical Engineering, Chung Yuan Christian University, Tao-Yuan, 320, Taiwan; 2. Division of Electrical Engineering, Fortune Electric Company, Ltd., Tao-Yuan, 320, Taiwan; 3. Department of Electrical Engineering, Chang Gung University, Kwei-Shan, 333, Taiwan; 4. Department of Electrical Engineering, National Central University, Tao-Yuan, 320, Taiwan; 5. Division of Physics, Institute of Nuclear Energy Research, Tao-Yuan, 320, Taiwan*

CX-15. A Study on the Characteristics of Variable Reluctance Resolver considering Uneven Magnetic Fields. *K. Kim*[1] *1. Dept. of Electrical Engineering, Hanbat National University, Daejeon, Republic of Korea*

CX-16. Development of built-in multifunctional traffic counter using MI sensor located roadside. *H. Goto*[1] and T. Uchiyama[1] *1. Electrical Engineering and Computer Science, Nagoya University, Nagoya, Japan*

WEDNESDAY MORNING 9:00

RIVERSIDE CENTER

Session CY
MAGNETIC NANOPARTICLES I (POSTER SESSION)

Cristina Gomez-Polo, Chair

CY-01. Shape controlled synthesis and magnetic properties of core/shell structured FeO/Fe_3O_4 Nanoparticles. *H. Khurshid*[1], W. Li[2], S. Chandra[1], M. Phan[1], G. Hadjipanayis[2], P. Mukherjee[1] and H. Srikanth[1] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE*

CY-02. Magnetoresistive properties of the "Disk on the Disk" structure. *M. Stebliy*[1], A. Ognev[1], A. Samardak[1] and L. Chebotkevich[1] *1. Far Eastern Federal University, Vladivostok, Russian Federation*

CY-03. In-Situ Field-Aligned Fe Nanoparticle Chains Synthesized by Gas-Phase Condensation Method. *S. He*[1], Y. Jing[1], W. Wang[1] and J. Wang[1] *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

CY-04. Magnetic properties of magnetite nanoclusters. *J. Lee*[1], H. Yoon[1], J. Cha[2], J. Lee[2] and Y.K. Kim[1] *1. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. Department of Chemistry, Seoul National University, Seoul, Republic of Korea*

CY-05. Magnetic properties of ferrite-titanate nanostructured composites synthesized by the polyol method and consolidated by spark plasma sintering. U. Acevedo[1,2], T. Gaudisson[2], R. Ortega-Zempoalteca[1], S. Nowak[2], S. Ammar[2] and *R. Valenzuela*[1] *1. Materials Science, National Autonomous University of Mexico, Mexico, DF, Mexico; 2. ITODYS, Universite de Paris-Diderot, Paris, Paris, France*

CY-06. Grain size effect on magnetic and electric properties of nanocrystalline $LuMnO_3$ materials. *T. Han*[1], S. Pan[1], Y. Liu[1] and Y. Hu[1] *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

CY-07. Structure and magnetic properties of self-assembled MgFe2O4 –BiFeO3 nano-composite thin films fabricated by pulsed laser deposition. *D. Kim*[1], N.M. Aimon[1] and C.A. Ross[1] *1. Department of Materials Science and Engineering, MIT, Cambridge, MA*

CY-08. Theoretical and experimental characterization of hexagonal cobalt nanoplates. *E. Vargas*[1], J. Palma[2], J. Escrig[2,3], C. Chaneac[4], T. Coradin[4] and J. Denardin[2,3] *1. Depto. Metalurgia, Universidad de Santiago de Chile, Santiago, Chile; 2. Depto. Fisica, Universidad de Santiago de Chile, Santiago, Chile; 3. CEDENNA, Center for the Development of Nanoscience and Nanotechnology, Santiago, Chile; 4. LCMCP. Collège de France, Université Pierre et Marie, Curie Paris VI, Paris, France*

CY-09. Effect of dipolar interactions on the coercive field and the magnetic remanence of Ni nanoparticles assembly. *S.H. Masunaga*[1] and R.F. Jardim[1] *1. Universidade de São Paulo, São Paulo, SP, Brazil*

CY-10. Magnetic Properties and Phase Transitions of Gadolinium-infused Carbon Nano-Tubes. *A. Quetz*[1], I. Dubenko[1], T. Samanta[1], H. Vinson[1], S. Stadler[2], S. Talapatra[1] and N. Ali[1] *1. Department of Physics, Southern Illinois University, Carbondale, IL; 2. Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA*

CY-11. Effect of the Zn content in the magnetic properties of $Co_{1-x}Zn_xFe_2O_4$ mixed ferrites. *A. Franco Jr*[1] and F.C. e Silva[1,2] *1. Instituto de Física, Universidade Federal deGoiás, Goiânia, GO, Brazil; 2. Instituto de Química, Universidade Federal de Goiás, Goiânia, GO, Brazil*

CY-12. High thermal stable core-shell fcc-Cobalt-B2O3 nanoparticles. *V. Singh*[1], V. Srinivas[1,2] and N. Babu[3] *1. Physics and Meteorology, Indian Institute of Technology Kharagpur, Kharagpur, West Bengal, India; 2. Physics, Indian Institute of Technology Madras, Chennai, India; 3. Department of Engineering, University of Cambridge, Cambridge CB2 1PZ, United Kingdom*

CY-13. Correlations between microstructure and magnetostructural response in FeRh nanostructures. *R. Barua*[1], F. Jimenez-Villacorta[1], J.E. Shield[2], D. Heiman[3] and L.H. Lewis[1] *1. Department of Chemical Engineering, Northeastern University, Boston, MA; 2. Department of Mechanical Engineering, University of Nebraska, Lincoln, NE; 3. Department of Physics, Northeastern University, Boston, MA*

CY-14. Colloidal solutions of FePt nanoparticles by Pulsed Laser Ablation in liquid medium. *F. Casoli*[1], L. Nasi[1], G. Cristoforetti[2], E. Tognoni[2], F. Albertini[1], V. Chiesi[1], S. Fabbrici[1], M. Campanini[1] and R. Cabassi[1] *1. IMEM - CNR, Parma, Italy; 2. INO - CNR, Pisa, Italy*

CY-15. Nonylphenol polyethoxylate coated BCC-iron nanocrystals for ferrofluids with technical applications. *D. Ortega Ponce*[1], N. Perez[2], J.L. Vilas[2], K. Suzuki[4] and J.S. Garitaonandia[3] *1. Physics and Astronomy, University College London, London, Greater London, United Kingdom; 2. Kimika Fisikoa Saila, Euskal Herriko Unibertsitatea, Bilbao, Spain; 3. Fisika Aplikatua II Saila, Euskal Herriko Unibertsitatea, Bilbao, Spain; 4. Department of Materials Engineering, Monash University, Melbourne, VIC, Australia*

CY-16. Effect of surface topology on spontaneous magnetization of dodecanethiol-capped Au nanoparticles. H. Zhang[1], K. Saito[2], E. Goikolea[3], J.S. Garitaonandia[3], D. Ortega[4] and *K. Suzuki*[1] *1. Department of Materials Engineering, Monash University, Clayton, VIC, Australia; 2. Centre for Green Chemistry, Monash University, Clayton, VIC, Australia; 3. Zientzia eta Teknologia Fakultatea, Euskal Herriko Unibertsitatea, UPV/EHU, Bilbao, Spain; 4. Department of Physics and Astronomy, University College of London, London, United Kingdom*

WEDNESDAY AFTERNOON 1:30 — GRAND CD

Session DA
SYMPOSIUM ON CURRENT TRENDS IN MOLECULAR MAGNETISM
Sara Majetich, Chair

1:30

DA-01. Quantum Tunneling of the Magnetization in Molecular Magnets: A Microscopic View. ***(Invited)*** *E. del Barco*[1] *1. University of Central Florida, Orlando, FL*

2:06

DA-02. Lanthanide based single-ion magnets: molecular design of spin qubits. ***(Invited)*** *F. Luis*[1], M. Martí nez-Pé rez[1], S. Cardona-Serra[2], E. Coronado[2], M. Clemente-Juan[2], A. Gaita-Ariñ o[2], H. Prima-Garcí a[2], A. Camó n[1], P. Alonso[1], M. Evangelisti[1], J. van Slageren[3] and J. Sesé [4] *1. Instituto de Ciencia de Materiales de Aragón (ICMA), CSIC & Universidad de Zaragoza, Zaragoza, Spain; 2. Instituto de Ciencia Molecular (ICMol), Universidad de Valencia, Paterna, Valencia, Spain; 3. Institut für Physikalische Chemie, Universität Stuttgart, Stuttgart, Germany; 4. Instituto de Nanociencia de Aragón (INA), Universidad de Zaragoza, Zaragoza, Spain*

2:42

DA-03. EPR and X-ray Studies of Pressure Effects in Molecule-Based Magnets. ***(Invited)*** *S. Hill*[1,2], A. Prescimone[3], C.C. Beedle[2], K. Thirunavukkuarasu[2], C. Morien[1,2], S.M. Winter[4], D. Allan[5], J.A. Schlueter[6], S.W. Tozer[2], J.L. Manson[7], R.T. Oakley[4], S. Parsons[3] and E.K. Brechin[3] *1. Physics, Florida State University, Tallahassee, FL; 2. NHMFL, Florida State University, Tallahassee, FL; 3. Chemistry, University of Edinburgh, Edinburgh, United Kingdom; 4. Chemistry, University of Waterloo, Waterloo, ON, Canada; 5. Diamond Light Source, Harwell, Chilton, Oxon, United Kingdom; 6. Materials Science Division, Argonne National Lab, Argonne, IL; 7. Chemistry and Biochemistry, Eastern Washington University, Cheney, WA*

WEDNESDAY AFTERNOON 1:30 — REGENCY A

Session DC
DOMAIN WALL DEVICES
Dorothee Petit, Chair

1:30

DC-01. Current-induced domain wall motion in perpendicular magnetized Tb-Fe-Co wire in presence of Rashba field. *B. Do*[1] and H. Awano[1] *1. Toyota Technological Institute, Nagoya, Japan*

1:42

DC-02. Domain wall pinning induced by patterned traps in perpendicularly magnetized Pt/CoFeB/Pt nanowires. *A. Beguivin*[1], R. Lavrijsen[1] and R.P. Cowburn[1] *1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom*

1:54

DC-03. Domain wall dynamics in amorphous and crystalline CoFeB-MgO films with PMA. *C. Burrowes*[1], J. Adam[1], N. Vernier[1], I. Barisic[1], G. Agnus[1], T. Devolder[1], R. Mantovan[2], A. Lamperti[2], B. Ocker[3], T. Schultz[4], S. Noh[4], T. Zacke[4], M. Klaui[4], R. Cowburm[5] and D. Ravelosona[1] *1. Université Paris Sud, Orsay, France; 2. CNR-IMM MDM, Agrate Brianza (MB), Italy; 3. Singulus Technologies AG, Kahl am Main, Germany; 4. Johannes Gutenberg-University Mainz, Mainz, Germany; 5. University of Cambridge, Cambridge, United Kingdom*

2:06

DC-04. In-line Domain wall injection in perpendicularly magnetized Co/Ni nanowires using a static 90° DW fabricated by local ion irradiation. *T. Phung*[1,2], A. Pushp[1], L. Thomas[1], S. Yang[1], C. Rettner[1], K. Ryu[1], J. Baglin[1], B. Hughes[1] and S. Parkin[1] *1. IBM Almaden Research Center, San Jose, CA; 2. Electrical Engineering, Stanford University, Stanford, CA*

2:18

DC-05. Treating CoFeB-MgO films with light ion irradiation for spintronics applications.I. Barisic[1], S. Eimer[1], J. Adam[1], N. Vernier[1], G. Agnus[1], T. Devolder[1], C. Torre[1], B. Ockert[2] and *D. Ravelosona*[1] *1. Institut d'Electronique Fondamentale, Université Paris Sud, Orsay, France; 2. Singulus Technology AG, Hanauer Landstrasse 103, Kahl am Main, Germany*

2:30

DC-06. Fe nanopillars as tunable domain wall pinning sites.J. Franken[1], M. van der Heijden[1], T. Ellis[1], R. Lavrijsen[1], *H. Swagten*[1] and B. Koopmans[1] *1. Department of Applied Physics and Center for NanoMaterials, Eindhoven University of Technology, Eindhoven, Netherlands*

2:42

DC-07. Chirality control of vortex domain walls in magnetic nanowires.A. Pushp[1], *T. Phung*[1,2], C. Rettner[1], B. Hughes[1], S. Yang[1], L. Thomas[1] and S. Parkin[1] *1. IBM Almaden Research Center, San Jose, CA; 2. Electrical Engineering, Stanford University, Stanford, CA*

2:54

DC-08. Formation and Current Effects on 360° Domain Walls in Magnetic Wires. *L. Tryputen*[1], J.A. Currivan[1], J. Zhang[1], F. Liu[1], D. Bono[1] and C.A. Ross[1] *1. Department of Materials Science and Engineering, MIT, Cambridge, MA*

3:06

DC-09. Spin-Wave Generation by DW Collision. *S. Woo*[1], T. Delaney[1] and G. Beach[1] *1. Materials Science and Engineering, MIT, Cambridge, MA*

3:18

DC-10. All-Magnetic, Nonvolatile, Addressable Chainlink Memory. *D. Bromberg*[1], D. Morris[1], L. Pileggi[1] and J. Zhu[1] *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

3:30

DC-11. Magnetization Reversal Study of Single NiFe Cylindrical Nanowires with a Y-Junction.S. Martens[1], *J. Montero Moreno*[1], M. Waleczek[1], M. Salem[1], D. Goerlitz[1] and K. Nielsch[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany*

WEDNESDAY AFTERNOON 1:30 — REGENCY D

Session DF
MAGNETOELASTIC MATERIALS I
Samuel Lofland, Chair

1:30

DF-01. Strain-induced magnetic anisotropy in FeRh thin films. ***(Invited)*** *C. Bordel*[1,2], J. Juraszek[2], C. Baldasseroni[3], S. Mankovsky[4], J. Minár[4], D.W. Cooke[1], H. Ebert[4], S. Moyerman[5], E.E. Fullerton[5] and F. Hellman[1,6] *1. Physics, University of California, Berkeley, CA; 2. GPM, UMR CNRS 6634, Université de Rouen, Av. de l'Université - BP12, St Etienne du Rouvray, France; 3. Materials Science and Engineering, University of California, Berkeley, CA; 4. Universität München, Butenandtstr. 5-13, München, Germany; 5. Center for Magnetic Recording Research, University of California, San Diego, CA; 6. Lawrence Berkeley National Laboratory, Berkeley, CA*

2:06

DF-02. Texture Development in Galfenol Wire. *A. Boesenberg*[1], J.B. Restorff[2], M. Wun-Fogle[2], H. Sailsbury[3] and E. Summers[1] *1. ETREMA Products, Inc, Ames, IA; 2. Naval Surface Warfare Center, Carderock Division, West Bethesda, MD; 3. Ames Laboratory, Ames, IA*

2:18

DF-03. Mechanical manipulation of magnetic domains in continuous and patterned FeGa thin films. *P. Alexander*[1], I. Takeuchi[1] and J. Cumings[1] *1. University of Maryland, College Park, MD*

2:30

DF-04. Large enhancement in magnetostrictive effect of FeGa alloys doped with terbium. L. Jiang[1], J. Yang[1], H. Hao[1], G. Zhang[1], S. Wu[1], *Y. Chen*[2,3] and V.G. Harris[2,3] *1. Baotou Research Institute of Rare Earths, Baotou, Inner Mongolia, China; 2. Center for Microwave Magnetic Materials and Integrated Circuits, Northeastern University, Boston, MA; 3. Dept of Electrical and Computer Engineering, Northeastern University, Boston, MA*

2:42

DF-05. Pressure effects on the magnetic properties of FeCuZr studied by magnetization and XMCD. A. Martinez[1], J.J. Romero[2], A. Sancho[3], L.M. Garcia[3], *F. Bartolome*[3], F. Baudelet[4], A. Hernando[1] and P. Crespo[1] *1. Laboratorio de Magnetismo Aplicado, UCM-ADIF-CSIC, Madrid, Spain; 2. Instituto de Ceramica y Vidrio, CSIC, Madrid, Spain; 3. ICMA, CSIC, Zaragoza, Spain; 4. SOLEIL, Gif-sur-Yvette, France*

2:54

DF-06. Characterization and Modeling of Bending Behavior of a New Generation of Magnetorheological Elastomers. *R. Sinko*[1], J. Koo[1], Y. Kim[2] and K. Kim[2] *1. Mechanical and Manufacturing Engineering, Miami University, Oxford, OH; 2. Mechanical Engineering, KAIST, Daejeon, Republic of Korea*

3:06

DF-07. Coupling of Structural and magnetic domain evolution in FeRh films through the AFM-FM phase transition. J. Kim[1], *D.J. Keavney*[1], M.V. Holt[2], P.J. Ryan[1], S. Moyerman[3], V. Uhlí r[3] and E.E. Fullerton[3] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Center for NanoScale Materials, Argonne National Laboratory, Argonne, IL; 3. University of California - San Diego, La Jolla, CA*

3:18

DF-08. Epitaxial Ni-Mn-Ga films of thickness ranging from 10 to 100 nm grown on MgO and Cr sacrificial layer: a structural and magnetic study. *F. Albertini*[1], F. Casoli[1], S. Fabbrici[1], P. Ranzieri[1], L. Nasi[1], V. Chiesi[1], L. Righi[2], C.A. Vladimir[3,4], E. Villa[5], F. Celegato[6] and P. Tiberto[6,1] *1. IMEM-CNR, Parma, Italy; 2. Dipartimento di Chimica GIAF, Università di Parma, Parma, Italy; 3. Departamento Electricidad y Electronica, Universidad del Pais Vasco, Bilbao, Spain; 4. Iberbasque, Basque Foundation for Science, Bilbao, Spain; 5. IENI-CNR, Lecco, Italy; 6. INRIM, Torino, Italy*

3:30

DF-09. Small-Angle Neutron Scattering Study of Magnetic Ordering and Inhomogeneity Across the Martensitic Phase Transformation in $Ni_{50-x}Co_xMn_{40}Sn_{10}$ alloys. K. Preet Bhatti[1], S. El-Khatib[2,3], V. Srivastava[1,4], R.D. James[1] and *C. Leighton*[1] *1. University of Minnesota, Minneapolis, MN; 2. American University of Sharjah, Sharjah, United Arab Emirates; 3. NIST Center for Neutron Research, Gaithersburg, MD; 4. GE, Niskayuna, NY*

WEDNESDAY AFTERNOON 1:30 — CRYSTAL A

Session DG
MAGNETIC SENSORS AND MICROWAVE DEVICES I

Geoffrey Beach, Chair

1:30

DG-01. High magnetic permeability and impedance matching calculation of ε-$Ga_xFe_{2-x}O_3$ in the 60 GHz-band. *A. Namai*[1], S. Kurahashi[2], T. Goto[3] and S. Ohkoshi[1,4] *1. Department of Chemistry, The University of Tokyo, Tokyo, Japan; 2. Ehime Institute of Industrial Technology, Ehime, Japan; 3. DOWA Electronics Materials Co., Ltd., Okayama, Japan; 4. CREST, JST, Tokyo, Japan*

1:42

DG-02. Compact and low loss tunable phase shifters with low bias fields of <100 Oe using partially magnetized YIG. *X. Yang*[1], J. Wu[1], Y. Gao[1], T. Nan[1], B. Rappaport[3], T. Tonnu[2], A.M. Awobode[4], A.K. Amini[5] and N. Sun[1] *1. ECE, Northeastern University, Boston, MA; 2. Quincy High School, Quincy, MA; 3. Wellesley High School, Wellesley, MA; 4. Physics, Boston Adult Technical Academy, Boston, MA; 5. Science, Technology, Engineering and Math, Roxbury Community College, Boston, MA*

1:54

DG-03. Ferromagnetic resonance absorption of SmCo5 films with perpendicular anisotropy. *M. Pasquale*[1], M. Seifert[2], M. Kuepferling[1], V. Neu[2] and L. Schultz[2] *1. Elettromagnetismo, INRIM, Torino, Italy; 2. IFW, Dresden, Germany*

2:06

DG-04. 3-D Magnetic Near Field Scanner for IC Chip-Level Noise Coupling Measurements. *S. Muroga*[1], K. Arai[1], S. Dhungana[1], Y. Endo[1], K. Yanagi[1] and M. Yamaguchi[1,2] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan*

2:18

DG-05. Multi Amorphous Wire Assembly GMI Sensor for Stable pico-Tesla Resolution. *T. Uchiyama*[1], N. Hamada[2] and C. Cai[2] *1. Electronics and Computer Science, Graduate School of Engineering, Nagoya University, Nagoya, Japan; 2. Aichi Steel Corporation, Tokai-shi, Japan*

2:30

DG-06. Noise Statistics of Magnetoelectric Laminate Composite Sensors. *M.A. Pedicone*[1], K.M. Haughey[1], E.R. Nowak[1], J. Li[2] and D. Viehland[2] *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Materials Science and Engineering, Virginia Tech, Blacksburg, VA*

2:42

DG-07. MEMS Torsion Oscillator Magnetic Field Sensors. *X. Yin*[1], Q. Jiao[1], S. Liou[1] and Y. Lu[2] *1. Physics, University of Nebraska- Lincoln, Lincoln, NE; 2. Western Digital Corporation, Fremont, CA*

2:54

DG-08. Stress - depth profiling for non-destructive evaluation using a frequency-dependent model of Barkhausen emissions. *O. Kypris*[1], I.C. Nlebedim[2,1] and D.C. Jiles[1,2] *1. Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Ames Laboratory, US Department of Energy, Iowa State University, Ames, IA*

3:06

DG-09. Contact-less Speed Probe Based on Eddy Currents. A. Faba[1], *E. Cardelli*[1] and F. Tissi[1] *1. Dept. of Industrial Engineering, University of Perugia, Perugia, Italy*

3:18

DG-10. Magnetic Nano Cilia Flow Sensor and Manipulator. *M. Hein*[1], B. Stadler[1], M. Tundra[2] and A. Flatau[3] *1. Electrical and Computer Engineering, University of Minnesota Twin Cities, Minneapolis, MN; 2. Diagnostic BioSensors LLC, Minneapolis, MN; 3. Aerospace Engineering, University of Maryland, College Park, MD*

WEDNESDAY AFTERNOON
1:30

CRYSTAL B

Session DH
NUMERICAL METHODS AND HYSTERESIS II
Amr Adly, Chair

1:30

DH-01. Finite Difference Solvers on Graphics Processing Units (GPUs). *S. Fu*[1], S. Li[1], R. Chang[1], M. Donahue[2] and V. Lomakin[1] *1. Department of Electrical and Computer Engineering, Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 2. National Institute of Standards and Technology, Gaithersburg, MD*

1:42

DH-02. Withdrawn

1:54

DH-03. A general integrator for the Landau-Lifshitz-Gilbert equation. *M. Page*[1], D. Praetorius[1] and L. Banas[2] *1. Analysis and Scientific Computing, Vienna University of Technology, Vienna, Austria; 2. Department of Mathematics, Heriot-Watt University, Edinburgh, United Kingdom*

2:06

DH-04. A Mutual Demagnetizing Tensor for N-Body Magnetic Field Modeling. *O.U. Khan*[1], C. Ragusa[2], F.G. Khan[1] and B. Montrucchio[1] *1. Department of Control and Computer Engineering, Politecnico di Torino, Turin, Torino, Italy; 2. Department of Energy, Politecnico di Torino, Turin, Torino, Italy*

2:18

DH-05. Clockwise Jiles-Atherton hysteresis model for the description of front propagation problems. *P. Andrei*[1] and M. Dimian[2] *1. Department of Electrical and Computer Engineering, Florida State University, Tallahassee, FL; 2. Department of Electrical Engineering and Computer Science, Stefan cel Mare University, Suceava, Romania*

2:30

DH-06. Application of Jiles-Atherton Model: Magnetic Two-phase Hysteresis Induced by Stress. *A. Raghunathan*[1], P. Klimczyk[2] and Y. Melikhov[2] *1. JFWTC, GE Global Research, Bangalore, KA, India; 2. Wolfson Centre for Magnetics, Cardiff University, Cardiff, United Kingdom*

2:42

DH-07. Understanding the distribution of switching events as observed on FORC diagram of ferromagnetic nanowire arrays.C. Dobrota[1] and *A. Stancu*[1] *1. Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*

2:54

DH-08. Validation of the rotational vector Preisach model with measurements and simulations of vectorial minor loops. *A. Sutor*[1], B. Shasha[1] and R. Lerch[1] *1. Sensor Technology, University Erlangen-Nuremberg, Erlangen, Germany*

3:06

DH-09. Modeling of hysteresis in multidomain nanostructures. *E. Cardelli*[1], M. Carpentieri[3], A. Faba[1] and G. Finocchio[2] *1. Dept. of Industrial Engineering, University of Perugia, Terni, Italy; 2. University of Messina, Messina, Italy; 3. Politecnico di Bari, Bari, Italy*

3:18

DH-10. A dynamical model with hysteresis for the homogenization of ferromagnetic laminated cores.F. Henrotte[2], I. Niyonzima[3], *S. Steentjes*[1], R. Sabariego[3], C. Geuzaine[3] and K. Hameyer[1] *1. Institute for Electrical Machines, RWTH Aachen University, Aachen, Germany; 2. Institute of Mechanics, Materials and Civil Engineering, Universite Catholique de Louvain, Louvain-la-Neuve, Belgium; 3. Department of Electrical Engineering and Computer Science, Liege, Belgium*

3:30

DH-11. Hysteresis And Exchange Bias In Terms Of Coupling Frustration In A CoO/(Co/Pt)×20 Multilayer. *A. Benassi*[1], D. Passerone[1], M.A. Marioni[1,2] and H.J. Hug[1,2] *1. Empa, Swiss Federal Institute for Materials Testing and Research, Zurich, Switzerland; 2. Department of Physics, University of Basel, Basel, Switzerland*

WEDNESDAY AFTERNOON
1:30

CRYSTAL C

Session DI
TUNNEL/GIANT MAGNETORESISTANCE II
Seiji Mitani, Chair

1:30

DI-01. Magnetic properties of MgO-[Co/Pt] multilayer with a CoFeB insertion layer. *S. Ishikawa*[1], H. Sato[2], M. Yamanouchi[1,2], S. Ikeda[1,2], S. Fukami[2], F. Matsukura[2,3] and H. Ohno[1,2] *1. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan; 2. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Miyagi, Japan; 3. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

1:42

DI-02. Enhanced Interfacial Specific Resistance and Large MR Ratio in Fe/Co superlattice based Tri-layer with Ag spacer layer. *J. Jung*[1], Y. Shiokawa[1], Z. Jin[1], B. Lao[1] and M. Sahashi[1] *1. Electronic Engineering, Tohoku University, Sendai 980-8579, Japan*

1:54

DI-03. Strain-Enhanced Tunneling Magnetoresistance in MgO Magnetic Tunnel Junctions. *L.M. Loong*[1], X. Qiu[1] and H. Yang[1] *1. National University of Singapore*

2:06

DI-04. Spin filtering with EuO: Insight from the complex band structure. *P.V. Lukashev*[1], A.L. Wysocki[2], J.P. Velev[3], M. Schilfgaarde[4], S.S. Jaswal[1], K.D. Belashchenko[1] and E.Y. Tsymbal[1] *1. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE; 2. School of Applied Engineering Physics, Cornell University, Ithaca, NY; 3. Physics, Institute for Functional Nanomaterials, University of Puerto Rico, San Juan, Puerto Rico; 4. Physics, Kings College London, London, United Kingdom*

2:18

DI-05. Fabrication of MgO/Co Ferrite-Based Magnetic Tunnel Junctions. *H. Hosoya*[1,3], H. Maehara[1,3], A. Emura[1], T. Saruya[1,3], K. Nishimura[1,3], Y. Nagamine[1,3], K. Tsunekawa[1,3], H. Kubota[2,3], A. Fukushima[2,3] and S. Yuasa[2,3] *1. Process Development, Canon ANELVA, Kawasaki, Kanagawa, Japan; 2. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan; 3. CREST, Japan Science and Technology Agency, Kawaguchi, Saitama, Japan*

2:30

DI-06. Investigation of MnAl and MnGa for Spintronic Applications. *W.H. Butler*[1,2], C. Mewes[1,2] and T. Xu[1,2] *1. MINT Center, University of Alabama, Tuscaloosa, AL; 2. Physics, University of Alabama, Tuscaloosa, AL*

2:42

DI-07. Elemental specific spin and orbital moments in CoFeB/MgO exhibiting perpendicular magnetic anisotropy. R. Knut[1], *O. Karis*[1], P. Warnicke[2], D. Arena[2], J. Persson[4], J. Åkerman[4,5], A.T. Nguyen[4], D. Das Sarma[3,1], T.Q. Le[4], A. Sahoo[3] and M.S. Mohseni[4] *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. NSLS, Brookhaven National Lab, Upton, NY; 3. Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore, India; 4. Materials Physics, School of Information Communication Technology, Royal Institute of Technology, Stockholm, Sweden; 5. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

2:54

DI-08. CPP Magnetoresistance and Spin Transport in CoFe/Ru/CoFe Pseudo Spin-Valves. *J.R. Childress*[1], N. Smith[1] and J.A. Katine[1] *1. San Jose Research Center, HGST, San Jose, CA*

3:06

DI-09. Exchange-spring and field-cool magnetoresistances of antiferromagnet-based tunnel junctions. *X. Marti*[1,3], D. Petti[2], E. Albisetti[2], H. Reichlova[3,1], J. Gazquez[4], M. Varela[5], M. Molina-Ruiz[6], A. Lopeandia[6], K. Olejnik[3], V. Novak[3], I. Fina[4], J. Hayakawa[7], J. Wunderlich[8] and T. Jungwirth[3,9] *1. Charles University, Prague, Czech Republic; 2. LNESS – Dipartimento di Fisica Politecnico di Milano, Como, Italy; 3. IInstitute of Physics ASCR, v.v.i., Cukrovarnická, Praha, Czech Republic; 4. Institut de Ciencia de Materials de Barcelona, ICMAB-CSIC, Bellaterra, Spain; 5. Materials Science & Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN; 6. Departament de Fisica, Universitat Autonoma de Barcelona, Bellaterra, Spain; 7. Hitachi Ltd., Advanced Research Laboratory, Saitama, Japan; 8. Hitachi Cambridge Laboratory, Cambridge, United Kingdom; 9. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom*

WEDNESDAY AFTERNOON
1:00

RIVERSIDE CENTER

Session DP
HALF-METALLICS I: HEUSLER ALLOYS AND MAGNETITE (POSTER SESSION)

Catherine Jenkins, Chair

DP-01. Control of room-temperature spin polarization in Heusler-compound $Fe_{3-x}Co_xSi$ films grown on Si by substitution of Co for Fe. *K. Tanikawa*[1], S. Oki[1], S. Yamada[1], K. Mibu[2], M. Miyao[1,3] and K. Hamaya[1] *1. Department of Electronics, Kyushu University, Fukuoka, Japan; 2. Nagoya Institute of Technology, Nagoya, Aichi 466-8555, Japan; 3. CREST, Japan Science and Technology Agency, Tokyo, Japan*

DP-02. A GW study of half-metallic Heusler compounds: on the influence of many-body corrections. *M. Meinert*[1], G. Reiss[1], C. Friedrich[2] and S. Blü gel[2] *1. Department of Physics, Bielefeld University, Bielefeld, Germany; 2. Peter Grünberg Institute and Institute for Advanced Simulation, Forschungszentrum Jülich, Jülich, Germany*

DP-03. Magnetic properties and phase stability of $Co_2Cr(Ga,Si)$ Heusler alloys. *R.Y. Umetsu*[1], A. Okubo[2] and R. Kainuma[2] *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Department of Materials Science, Graduate School of Engineering, Tohoku University, Sendai, Japan*

DP-04. Size dependence of Peltier cooling effect in Heusler compound Co_2MnSi/Au current perpendicular to plane nano-pillar junction. *S. Bosu*[1], Y. Sakuraba[1] and K. Takanashi[1] *1. Institute for Materials Research,Tohoku University, Sendai, Japan*

DP-05. Electronic properties of $Co_2Fe_xMn_{1-x}Si$ Heusler alloys studied by hard X-ray photoelectron spectroscopy. *A. Gloskovskii*[1], S. Thiess[1], W. Drube[1], S. Ouardi[2,3], G. Fecher[2,3], C. Felser[2,3], B. Detlefs[4], T. Kubota[5] and Y. Ando[5] *1. HASYLAB/DESY, Hamburg, Germany; 2. Uni-Mainz, Mainz, Germany; 3. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 4. ESRF, Grenoble, France; 5. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Japan*

DP-06. Structure and magnetic properties of $Ni_2Mn_{1+x}Al_{1-x}$ Heusler alloys. Y. Kim[1], W. Han[1], *H. Kim*[1], H. An[1] and C. Yoon[1] *1. Materials Science and Engineering, Hanyang University, Seoul, Republic of Korea*

DP-07. Magnetocrystalline Anisotropy of Co2FeAl Epitaxial Films. *C. Chesman*[1,2], V.M. Escobar[2], L.D. Machado[2], M.A. Correa[2], C.G. Bezerra[2], J.E. Pearson[1] and A. Hoffmann[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Department of Physics, Federal University of Rio Grande do Norte, Natal, Rio Grande do Norte, Brazil*

DP-08. 3-dimension mapping of the anisotropic magnetoresistance in Fe3O4 single crystal thin film.Z. Ding[1], H. Chunrui[1], Z. Jie[1], C. Gong[1], L. Junxue[1] and *W. Yizheng*[1]*1. Department of Physics, State Key Laboratory of Surface Physics, and Advanced Materials Laboratory, Fudan University, Shanghai, China*

DP-09. Magnetotransport properties in epitaxial Fe_3O_4(001) thin films with CPP geometry. *H. Yanagihara*[1], K. Shimada[1], T. Niizeki[1], E. Kita[1], J. Inoue[1], A. Fukushima[2] and S. Yuasa[2]*1. Inst. Appl. Phys., University of Tsukuba, Tsukuba, Japan; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

WEDNESDAY AFTERNOON 1:00 RIVERSIDE CENTER

Session DQ
MOTORS AND ACTUATORS III (POSTER SESSION)
Chang-Chou Hwang, Chair

DQ-01. Design of a Novel Copper-rotor Line Start Permanent Magnet Machine Tailoring Skin and Proximity Effects for Improved Starting Performance. *L. Iyer*[1], X. Lu[1], K. Mukherjee[1] and N.C. Kar[1]*1. Electrical and Computer Engineering, University of Windsor, Windsor, ON, Canada*

DQ-02. 2D Electromagnetic Analysis and Force Calculations for Induction Motors With Broken Bars.H.H. Hanafy[1], T.M. Abdo[1] and *A. Adly*[1]*1. Elect. Power & Machines Dept., Cairo University, Giza, Egypt*

DQ-03. Imbalance Fault Detection of Direct-Drive Wind Turbine with Permanent Magnet Synchronous Generator Using Stator Current Demodulation Signal.H. Jun[1], *Z.J. Zhong*[1] and C. Ming[1]*1. Southeast University, Nanjing, China*

DQ-04. Novel High Force Density Tubular Permanent-Magnet Motor for Artificial Hearts. *J. Ji*[1] and J. Zhao[1]*1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*

DQ-05. New Type of Magnetic Actuator System for Inspect in a Complex Pipe. *H. Yaguchi*[1] and K. Sasaki[1]*1. Tohoku Gakuin University, Tagajo, Japan*

DQ-06. Comparative analysis and experimental verification of wind power generator for torque ripple minimization considering rotor position and ferrite PM pole shape.S. Jang[1], *H. Seo*[1], Y. Park[1], H. Park[1] and J. Choi[1]*1. Electrical Engineering, Chungnam Nat'l Univ, Daejeon, Republic of Korea*

DQ-07. Design and Analysis of a New Modular Linear Flux-Reversal Permanent-Magnet Motor. *W. Zhao*[1] and L. Xu[1]*1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*

DQ-08. A vibration-based energy harvester for charging battery.Y. Chan[1], W. Fu[1] and *S. Ho*[1]*1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong*

DQ-09. Minimization of Cogging Force in a Novel Linear Permanent-Magnet Motor for Artificial Heart Propulsion.S. Yan[1], *J. Ji*[1] and W. Zhao[1]*1. Jiangsu University, Zhenjiang, China*

DQ-10. Cogging Force Reduction of Double-Sided Flux-Switching Permanent Magnet Linear Machine for Direct Drives in Precision Servo Applications. *Q. Liu*[1,2], H. Yu[1], M. Hu[1], C. Liu[1], L. Huang[1] and S. Zhou[1]*1. Engineering Research Center of Motion Control of MOE, Southeast University, Nanjing, China; 2. Department of Electrical Engineering, Jiangsu Maritime Institute, Nanjing, China*

WEDNESDAY AFTERNOON 1:00 RIVERSIDE CENTER

Session DR
MOTORS AND ACTUATORS IV (POSTER SESSION)
Jianguo Zhu, Chair

DR-01. Design Considerations for Spindle SPM Motors With Minimized Usage of Rare-Earth Magnets. *C. Hwang*[1], C. Chang[2] and C. Liu[3]*1. Feng Chia University, Taichung, Taiwan; 2. Feng Chia University, Taichung, Taiwan; 3. National Sun Yat-sen University, Kaohsiung, Taiwan*

DR-02. A Novel Brushless Electrical Continuously Variable Transmission System Based on Flux-modulated Method. *S. Niu*[1], S. Ho[1] and W. Fu[1]*1. The Hong Kong Polytechnic University, Hong Kong*

DR-03. Permanent magnet shape design of wind power generator considering AC/DC Load condition and skew effect for torque ripple minimization with analytical approach.S. Jang[1], *M. Koo*[1], Y. Park[1], H. Park[1] and J. Choi[1]*1. Electrical Engineering, Chungnam National University, Daejeon, Republic of Korea*

DR-04. Torque Analysis and Measurements of Cylindrical Air-Gap Synchronous Permanent Magnet Couplings Based on Analytical Magnetic Field Calculations. *J. Choi*[1], H. Shin[1], S. Jang[1] and S. Lee[2]*1. Chungnam National University, Dae-jeon, Republic of Korea; 2. Gwangju R&D Center, Korea Institute of Industrial Technology, Gwangju, Republic of Korea*

DR-05. A new flux-mnemonic magnetic-geared stator-permanent-magnet motor for electric vehicles. *X. Zhu*[1,2], L. Chen[2], X. Liu[1] and L. Qiao[1]*1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China; 2. Institute of Automotive Engineering, Jiangsu University, Zhenjiang, China*

DR-06. Magnetically Induced Vibration of an IPM motor Due to the Distorted Magnetic Force Originating from the Flux Weakening Control. *D. Kim*[1], G. Jang[1] and J. Nam[1] *1. PREM, Dept. of Mechanical Engineering, Hanyang University, Seoul, Republic of Korea*

DR-07. A New Topology of Coaxial Magnetic Gear Using Stationary Permanent Magnet Ring.X. Li[1], k. Chau[2], *M. Cheng*[1], W. Hua[1] and Y. Du[1] *1. School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China; 2. Department of Electrical and Electronic Engineering, The University of Hong Kong, China*

DR-08. Proximity Losses in the Windings of High Speed Brushless Permanent Magnet AC Motors with Single Tooth Windings and Parallel Paths.M. Popescu[2] and *D. Dorrell*[1] *1. University of Technology Sydney, Sydney, NSW, Australia; 2. Motor Design Ltd., Ellesemere, United Kingdom*

DR-09. Thermal Analysis of Water Cooled IPMSM Using Thermal Equivalent Circuit. *K. Kim*[1], B. Lee[1], J. Jung[1] and J. Hong[1] *1. Automotive Engineering, Hanyang University, Seoul, Republic of Korea*

DR-10. Cooling Optimization of a High Speed Permanent Magnet Synchronous Motor.J. Dong[1], *Y. Huang*[1] and L. Jin[1] *1. School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China*

WEDNESDAY AFTERNOON 1:00 RIVERSIDE CENTER

Session DS
PATTERNED FILMS AND NANOPARTICLES II: VORTICES, NANOWIRES, AND MAGNETIC MEDIA (POSTER SESSION)

Randy Dumas, Chair

DS-01. Lateral Interactions of Magnetic Domain Walls Analyzed by Magnetic Force Microscopy. *C. Nam*[1,2], M. Mascaro[1] and C. Ross[1] *1. Materials Science and Engineering, MIT, Cambridge, MA; 2. Physics, Hannam University, Daejeon, Republic of Korea*

DS-02. Vortex state formation and stability in single and double layer arrays of nanorings and nanodisks.M. Zhu[1], C. Mathieu[1], S. Dubbaka[1] and *W. Scholz*[1] *1. Seagate Technology, Bloomington, MN*

DS-03. Probing the magnetization reversal of permalloy nano-rings with high wall height-to-thickness ratios.Y. Huang[1], C. Chao[2], C. Kuo[2], L. Horng[2] and *J. Wu*[1,2] *1. Graduate Institute of Photonics, National Changhua University of Education, Changhua, Taiwan; 2. Department of Physics, National Changhua University of Education, Changhua, Taiwan*

DS-04. Influence of asymmetric degree on vortex state and switching fields in Permalloy rings. *C. Huang*[1], W. Lin[2], K. Hu[1], T. Wu[3], J. Wu[1] and L. Horng[1] *1. Department of Physics and Taiwan SPIN Research Center, National Changhua University of Education, Changhua, Taiwan; 2. Institute of Photonics, National Changhua University of Education, Changhua, Taiwan; 3. Department of Electronic Engineering, National Formosa University, Yunlin, Taiwan*

DS-05. Magnetic Reversal Mechanism In Dome-Like Nanostructures. *J.L. Palma*[1], C. Gallardo[1], J. Escrig[1,2] and J.C. Denardin[1,2] *1. Physics Department, Universidad de Santiago de Chile (USACH), Santiago, Chile; 2. Center for the Development of Nanoscience and Nanotechnology (CEDENNA), Santiago, Chile*

DS-06. Enhanced magnetic anisotropy of Metal-Organic nanowire arrays by FeCo/ polypyrrole co-electrodeposition.X. Luo[1], *S. Tang*[1], Y. Li[1], W. Xia[1], J. Gao[1], S. Zhang[1] and Y. Du[1] *1. Nanjing National Laboratory of Microstructures, Jiangsu Provincial Laboratory for Nanotechnology and Department of Physics, Nanjing University, Nanjing, Jiangsu, China*

DS-07. Transport Properties of Magnetic Ni and Ni-alloy Nanowire Arrays. *D.C. Leitao*[1], L.G. Vivas[3], C.T. Sousa[2], A.M. Pereira[2], M. Vazquez[3], J. Ventura[2] and J.P. Araujo[2] *1. INESC-MN, Lisboa, Portugal; 2. IFIMUP-IN, Porto, Portugal; 3. ICMM - CSIC, Madrid, Spain*

DS-08. Magnetic field angle dependence of the magnetization reversal in cylindrically distributed nanowires arrays with longitudinal and transversal anisotropy. *C. Garcia*[1,4], V. Vega[2], V. Prida[2], P. Vargas[3] and C.A. Ross[4] *1. Physics, Bogazici University, Istanbul, Turkey; 2. Física, Universidad de Oviedo, Oviedo, Spain; 3. Fisica, Universidad Tecnica Federico Santa Maria, Valparaiso, Chile; 4. Materials Science and Engineering, MIT, Cambridge, MA*

DS-09. Tailoring magnetic anisotropy in Co_{100-x} Ni_x nanowire arrays. *A. Pereira*[1,4], C. Gallardo[2,4], J. Briones[2,4], L. Gonzalez Vivas[3], J. Denardin[2,4] and J. Escrig[2,4] *1. Metalurgia, Universidad de Santiago de Chile, Santiago, Santiago, Chile; 2. Fisica, Universidad de Santiago de Chile, Santiago, Santiago, Chile; 3. Institute of Materials Science of Madrid, Madrid, Madrid, Spain; 4. Center for the Development of Nanoscience and Nanotechnology at Santiago, Santiago, Chile*

DS-10. Structural and magnetic properties of patterned perpendicular media with linearly graded anisotropy.J. Zhang[1], Z. Sun[2], J. Sun[1], D. Li[2] and *S. Kang*[1] *1. Physics, Shandong University, Jinan, Shandong, China; 2. MINT Center, The University of Alabama, Tuscaloosa, AL*

DS-11. Energy barrier versus switching field for patterned $Co_{80}Pt_{20}$ alloy and Co/Pt multilayer films. *J. de Vries*[1], T. Bolhuis[1] and L. Abelmann[1] *1. University of Twente, MESA+ Institute for Nanotechnology, Enschede, Netherlands*

DS-12. Magnetic perpendicularly CoFeB/MgO/CoFeB-based magnetic tunnel junctions using $(Co/Pd)_n$ multilayer films. *Y. Chang*[1,2], A. Canizo-Cabrera[3,2], V. Garcia-Vazquez[4], Y. Chang[5] and T. Wu[2,6] *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. Universidad del Valle de Puebla, Puebla, Pue, Mexico; 4. Instituto de Física Luis Rivera Terrazas, Benemérita Universidad Autónoma de Puebla, Puebla, Pue, Mexico; 5. Department and Institute of Electronic Engineering, National Yunlin University of Science and Technology, Douliou, Yunlin, Taiwan; 6. Graduate School of Materials Science, National Yunlin University of Science and Technology, Douliou, Yunlin, Taiwan*

DS-13. Decoupled Fe-Co Magnetic Structures of Ta/MgO/CoFeB/Ta Exhibiting Coupled Superparamagnetism and Perpendicular Anisotropy.C. Yang[1], *Y. Tseng*[1], K. Shen[2] and Y. Wang[2] *1. Materials Science & Engineering, National Chiao-Tung University, Hsin-Chu, Taiwan; 2. Electronics and Optoelectronics Research Laboratories, Industrial Technology Research Institute, Hsin-Chu, Taiwan*

DS-14. Metal layer effect on the perpendicular magnetic anisotropy in MgO/CoFeB/cap (cap = Ta, Ru, and Nb). *D. Lee*[1], H. Chang[1], C. Cheng[2] and G. Chern[2] *1. Electrical Engineering, Da-Yeh University, Chunghua, Taiwan; 2. Physics, Chung Cheng University, Chia-Yi, Taiwan*

DS-15. Atomistic calculation of the temperature dependent anisotropy of CoFe-MgO magnetic tunnel junctions. *P. Chureemart*[1], R.F. Evans[1] and R.W. Chantrell[1] *1. Department of Physics, University of York, York, United Kingdom*

DS-16. Magnetic properties of preferentially-oriented nanostructured cobalt ferrite thin films grown using oblique-angle pulsed laser deposition. *D. Mukherjee*[1], R. Hyde[1], M. Hordagoda[1], N. Bingham[1], H. Srikanth[1], P. Mukherjee[1] and S. Witanachchi[1] *1. Department of Physics and Center for Integrated Functional Materials (CIFM), University of South Florida, Tampa, FL*

WEDNESDAY AFTERNOON 1:00

RIVERSIDE CENTER

Session DT
RARE-EARTH-FREE PERMANENT MAGNETS AND APPLICATIONS (POSTER SESSION)

Thomas Schrefl, Chair

DT-01. Giant magneto-crystalline anisotropy in hexagonal FeNi alloys: A first-principles study. *S. Ozaki*[1], M. Tsujikawa[2], Y. Miura[1,2], K. Abe[1,2] and M. Shirai[1,2] *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan*

DT-02. Phase and elemental distributions in alnico magnetic materials. *Q. Xing*[1], M.K. Miller[2], L. Zhou[1], H.M. Dillon[1], R.W. McCallum[1], I.E. Anderson[1], S. Constantinides[3] and M.J. Kramer[1] *1. Ames Laboratory, Ames, IA; 2. Oak Ridge National Laboratory, Oak Ridge, TN; 3. Arnold Magnetic Technologies Corp., Rochester, NY*

DT-03. Magnetism of MnBi-Based Nanostructures. *P. Kharel*[1,2], V.R. Shah[2], R. Skomski[1,2], J.E. Shield[2,3] and D.J. Sellmyer[1,2] *1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 3. Mechanical and Materials Engineering, University of Nebraska, Lincoln, NE*

DT-04. Better MnBi magnets: a DFT high-throughput screening approach. *L. Wang*[1], N. Zarkevich[1], Y. Ye[1], L. Ke[1], M. Kramer[1], V. Antropov[1] and D.D. Johnson[1] *1. Ames Laboratory US Department of Energy, Iowa State University, Ames, IA*

DT-05. Synthesis and Magnetic Properties of soft ferrite coated nanocomposite $SrAl_2Fe_{10}O_{19}/Ni_{0.75}Zn_{0.25}Fe_2O_4$ permanent ferrites via chemical method. *B.K. Rai*[1] and S.R. Mishra[1] *1. Physics, The University of Memphis, Memphis, TN*

DT-06. FeCo and FeNi nanocluster wires by hydrogen reduction in nanoporous alumina templates. *B. Cui*[1], M. Marinescu[1] and J. Liu[1] *1. Electron Energy Corporation, Landisville, PA*

DT-07. $HfCo_7$-based Rare-Earth-Free Permanent-Magnet Alloys. *B. Balasubramanian*[1,2], B. Das[1,2], R. Skomski[1,2], P.K. Sahota[4], S.R. Valloppilly[2], J.E. Shield[3], A. Kashyap[4] and D.J. Sellmyer[1,2] *1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 3. Department of Mechanical and Materials Engineering, University of Nebraska, Lincoln, NE; 4. School of Basic Sciences, Indian Institute of Technology, Mandi, India*

DT-08. Ferromagnetic tetragonal MnGa polycrystalline microparticles with permanent magnet properties. *B. Cui*[1], M. Marinescu[1] and J. Liu[1] *1. Electron Energy Corporation, Landisville, PA*

DT-09. Anistropy Investigations in $L1_0$-Structured FeNi (Tetrataenite). *N. Bordeaux*[1], A. Mubarok[2], J.I. Goldstein[2], F.E. Pinkerton[3], E. Poirier[3] and L.H. Lewis[1] *1. Chemical Engineering, Northeastern University, Boston, MA; 2. Department of Mechanical and Industrial Engineering, University of Massachusetts, Amherst, MA; 3. Research and Development Center, General Motors, Warren, MI*

DT-10. MnAlC hard magnets consolidated by SPS.A. Pasko[1], E. Fazakas[2], M. LoBue[1], L.K. Varga[2] and *F. Mazaleyrat*[1] *1. SATIE, ENS Cachan, Cachan, France; 2. ISSPO, Wigner RCP, HAS, Budapest, Hungary*

DT-11. Torque Density Elevation of Interior PM Synchronous Motor with Minimized Magnet Volume. *M. Kim*[1], K. Lee[1], J. Lee[1] and J. Lee[1] *1. Hanyang University, Seoul, Republic of Korea*

DT-12. A Disk-Type Motor with U-Shaped Ferrite Permanent Magnets for Compressors. *C. Wang*[1], W. Yu[2], C. Chu[2] and Y. Chang[1] *1. Industrial Technology Research Institute, Hsinchu, Taiwan; 2. Rechi Precision Co., Ltd., Taoyuan, Taiwan*

DT-13. Calcutation torque profile of multi-degree-of freedom spherical motor with magnetic equivalent circuit. *H. Lee*[1], S. Kim[2] and J. Lee[1] *1. Electric Engineering, Hanyang Univ. Seoul. Korea, Seoul, Republic of Korea; 2. Electric Engineering, Korea Testing Cerification, Gunposi, Republic of Korea*

WEDNESDAY AFTERNOON 1:00

RIVERSIDE CENTER

Session DU
RARE EARTH MAGNETS III (POSTER SESSION)

Felix Jimenez-Villacorta, Co-Chair
Simon Bance, Co-Chair

DU-01. Magnetic properties of Sm-Zr-Fe melt-spun ribbons. *T. Saito*[1] and D. Nishio-Hamane[2] *1. Department of Mechanical Science and Engineering, Chiba Institute of Technology, Chiba, Japan; 2. Institute for Solid State Physics, The University of Tokyo, Kashiwa, Japan*

DU-02. The role of Bi addition in NdFeB magnet: An experimental and theoretical study. *V.V. Nguyen*[1], X. Liu[1], N. Poudyal[1], X. Han[1] and J. Liu[1] *1. Physics, University of Texas at Arlington, Arlington, TX*

DU-03. Effect of partial substitution of Dy for Nd-Fe-B / Nd-Cu thin films on the structure and magnetic properties. Y. Hatayama[1], *H. Abe*[1], S. Suzuki[1], M. Doi[1,2] and T. Shima[1,2] *1. Tohoku Gakuin University, Tagajo, Japan; 2. Core Research for Evolutional Science and Technology (CREST), Tokyo, Japan*

DU-04. Magnetism of Hard Single-Phase (Sm,Zr)Co5 Alloys. *W. Zhang*[1,2], S. Valloppilly[2], X. Li[2], Y. Liu[1,2], S. Michalski[1,2], T. George[1,2], R. Skomski[1,2], J. Shield[1,3] and D. Sellmyer[1,2] *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 3. Department of Mechanical and Materials Engineering, University of Nebraska, Lincoln, NE*

DU-05. Study on corrosion behaviors and mechanism of rare-earth permanent magnets. *A. Li*[1], Y. Sun[1], Y. Li[1], S. Huang[1], H. Feng[1], M. Zhu[1] and W. Li[1] *1. Division of Functional Materials, Central Iron & Steel Research Institute, Beijing, China*

DU-06. Formation of disordered Th_2Zn_{17} - type Sm_2Fe_{17} and hard magnetic properties of their nitrides. Y. Xia[1], J. Wei[1], Y. Zhang[1], Z. Song[1], S. Liu[1], J. Han[1] and *J. Yang*[1] *1. School of Physics, Peking University, Beijing, China*

DU-07. Recoil loops and magnetization studies of multilayer composite thin films. *W. Cui*[1], Y. Takahashi[1] and K. Hono[1] *1. National Institute for Materials Science, Tsukuba, Japan*

DU-08. Back pressure assisted production of hot deformed nanocrystalline NdFeB ring magnets. *I. Dirba*[1], S. Sawatzki[1], L. Schultz[1] and O. Gutfleisch[2,1] *1. Institute for Metallic Materials, Institute of Solid State and Materials Research Dresden, Dresden, Germany; 2. Material Science, Technical University of Darmstadt, Darmstadt, Germany*

DU-09. Formation of Disordered Modified Th_2Zn_{17} Type Structure of $Sm_{1.5}Y_{0.5}Fe_{17-x}Si_x$ Mixed Rare-earth System. J. Wei[1], R. Wu[1], Y. Yang[1], X. Chen[1], Y. Xia[1], Y. Yang[1] and *J. Yang*[1,2] *1. School of Physics, Peking University, Beijing, China; 2. State Key Laboratory, Department of Physics, Peking University, Beijing, China*

DU-10. $Nd_2Fe_{14}B$ Nanoparticles Fabricated via High Energy Planetary Ball Milling. *O. Koylu-Alkan*[1], G.C. Hadjipanayis[1] and D. Niarchos[2] *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. IMS Demokritos, Athens, Greece*

DU-11. The influence of desorption-recombination speed on the microstructure and magnetic properties of Nd-Fe-B magnets prepared by HDDR process. *J. Lee*[1], H. Cha[1], J. Yu[1], Y. Baek[1] and H. Kwon[2] *1. Korea Institute of Materials Science, Changwon, Republic of Korea; 2. Pukyong National University, Busan, Republic of Korea*

DU-12. Self-Induced Reversal Columns. *H. Oezelt*[1], T. Schrefl[1], M. Winklhofer[2] and G.T. Zimanyi[3] *1. Industrial Simulation, St. Poelten University of Applied Sciences, St. Poelten, Austria; 2. Earth and Environmental Sciences, University of Munich, Munich, Germany; 3. Physics, University of California, Davis, CA*

DU-13. Preparation and Magnetic Properties of Submicron-Sized $SmCo_5$ Powders Prepared From Nanostructured Precursor Oxides. *B.G. Kelly*[1] and K.M. Unruh[1] *1. Physics and Astronomy, University of Delaware, Newark, DE*

DU-14. Surfactant removal study for nano-scale SmCo5 magnetic powder prepared by surfactant-assisted high energy ball milling. *S. Leontsev*[1,2], Y. Shen[1,2], M.S. Lucas[2,3] and J.C. Horwath[2] *1. University of Dayton Research Institute, Dayton, OH; 2. Air Force Research Laboratories, Wright-Patterson Air Force Base, OH; 3. UTC Inc., Dayton, OH*

DU-15. Magnetic properties around the grain-boundaries of Nd-Fe-B magnets based on first principles calculations. *H. Tsuchiura*[1] and A. Sakuma[1] *1. Department of Applied Physics, Tohoku University, Sendai, Japan*

DU-16. Cost effective recycling process of industrial scrap and hard drive scrap rare earth magnets into valuable permanent magnets. *C. Chinnasamy*[1], M.M. Jasinski[1] and J. Liu[1] *1. Electron Energy Corporation, EEC Technology Center, Lancaster, PA*

WEDNESDAY AFTERNOON 1:00

RIVERSIDE CENTER

Session DV
MAGNETOELASTIC MATERIALS II (POSTER SESSION)
Bethanie Stadler, Chair

DV-01. Effect of buffer layer and external stress on magnetic properties of flexible FeGa films. Z. Xiaoshan[1,2], *Z. Qingfeng*[1,2], D. Guohong[1,2], L. Yiwei[1,2], Z. Zhenghu[1,2], Y. Huali[1,2], C. Bin[1,2] and L. Run-Wei[1,2] *1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

DV-02. Generic Model of Superexchange Effects in Magnetoelastic Oxides. *G.F. Dionne*[1], D. Kim[1], L. Bi[1] and C.A. Ross[1] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

DV-03. Magnetostriction in Magnetorheological Elastomers: the Role of Anisotropy and Disorder. *W. Rieger*[1], C. Kassner[1], Z. Buck[1], A. Stefankiewicz[1], P. Von Lockette[2] and S.E. Lofland[1] *1. Physics, Rowan University, Glassboro, NJ; 2. Mechanical Engineering, Rowan University, Glassboro, NJ*

DV-04. Field Dependence of the Magnetic Anisotropy in $Fe_{1-x}Zn_x$ Thin Films. *D.A. Resnick*[1], A. McClure[2], C.M. Kuster[1], P. Rugheimer[2] and Y.U. Idzerda[2] *1. Physics, Carroll University, Waukesha, WI; 2. Physics, Montana State University, Bozeman, MT*

DV-05. Structural and magnetic characterization of the inter-martensitic phase transition in NiMnSn Heusler alloy ribbons. J.L. Sánchez Llamazares[1], H. Flores-Zúñ iga[1], D. Rí os-Jara[1], C.F. Sanchez-Valdes[2] and *C. Garcia*[3] *1. Instituto Potosino de Investigación Científica y Tecnológica, San Luis de Potosi, Mexico; 2. Institut de Ciencia de Materials de Barcelona, CSIC, Bellaterra, Spain; 3. Physics, Bogazici University, Istanbul, Turkey*

DV-06. Relationships between magnetization and dynamic stress for Galfenol rod alloy and its application in force sensor. L. Weng[1], B. Wang[1], Y. Sun[1], Z. Wang[1], W. Huang[1] and *B. Cui*[1,2] *1. Electrical Engineering, Hebei University of Technology, Tianjin, China; 2. Electron Energy Corporation, Landisville, PA*

DV-07. 2D Magnetic Hysteresis Properties Measurement for Magneto-Rheological Elastomer. J. Zeng[1,2], *Y. Guo*[2], Y. Li[2], J. Zhu[2] and J. Li[2] *1. SEE, Shenyang University of Technology, Shenyang, China; 2. FEIT, University of Technology, Sydney, Sydney, NSW, Australia*

DV-08. The effect of magnetic annealing on the magnetostriction for Sm-Dy-Fe rod alloys. *B. Wang*[1], Z. Wang[1], L. Weng[1], W. Huang[1], Y. Sun[1] and B. Cui[2] *1. School of Electrical Engineering, Hebei University of Technology, Tianjin, China; 2. Electron Energy Corporation, Landisville, PA*

DV-09. First principles studies of large magnetostriction of Galfenol and related alloys. *Y. Zhang*[1], H. Wang[2] and R. Wu[1] *1. University of California at Irvine, Irvine, CA; 2. Institute of Metal Research and International Centre of Materials Physics, Chinese Academy of Sciences, Shenyang, China*

DV-10. A study of magnetic and magnetoelastic properties of Zn doped cobalt ferrite. *V. Reddy*[1], P. Praveen[1], D. Das[1], M. Kriegisch[2], C. Grijalva[2] and R. Groessinger[2] *1. School of Engineering Sciences and Technology, University of Hyderabad, Hyderabad, Andhra Pradesh, India; 2. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria*

DV-11. Modulating Superparamagnetism with Magnetoelastic Anisotropy. *H. Kim*[1], L.T. Schelhas[2], S. Keller[3], S.H. Tolbert[2,1] and G.P. Carman[3,1] *1. Department of Materials Science and Engineering, UCLA, Los Angeles, CA; 2. Department of Chemistry and Biochemistry, UCLA, Los Angeles, CA; 3. Department of Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA*

DV-12. Vector Magnetic Hysteresis Modeling of Stress Annealed Galfenol. *A. Adly*[1], D. Davino[2], A. Giustiniani[3] and C. Visone[2] *1. Elect. Power & Machines Dept., Cairo University, Giza, Egypt; 2. Dept. of Engineering, University of Sannio, Benevento, Italy; 3. DIEII, University of Salerno, Salerno, Italy*

DV-13. Evolution of magnetic properties of magnetic film patterns due to self-rolling and anodizing processes. *L.M. Malkinski*[1], S. Min[1], J.A. Gaffney[1], R. Eskandari[1], J.B. Wiley[2], J. Lim[2] and J. Tripathy[2] *1. Advanced Materials Research Institute and the Department of Physics, University of New Orleans, New Orleans, LA; 2. Advanced Materials Research Institute and the Department of Chemistry, University of New Orleans, New Orleans, LA*

DV-14. Properties of Electrochemically Deposited FeGa (Galfenol) Thin Films. *E. Estrine*[1], B. Stadler[1] and M. Reddy[1] *1. Electrical Engineering, University of Minnesota, Minneapolis, MN*

DV-15. Stress Effects on Complex Permeability Spectra of Mn-substituted Cobalt Ferrite. *C. Lo*[1] *1. Iowa State University, Ames, IA*

DV-16. Structural, Magnetic and Magnetoelastic Properties of Magnesium Substituted Cobalt Ferrite. *C.I. Nlebedim*[1,2], R.L. Hadimani[2,1], R. Prozorov[1,3] and D.C. Jiles[2,1] *1. Ames Laboratory, US Department of Energy, Iowa State University, Ames, IA; 2. Electrical and Computer Engineering Department, Iowa State University, Ames, IA; 3. Department of Physics and Astronomy, Iowa State University, Ames, IA*

WEDNESDAY AFTERNOON 1:00 RIVERSIDE CENTER

Session DW
SOFT MAGNETIC MATERIALS IV: AMORPHOUS AND NANOCRYSTALLINE MATERIALS (POSTER SESSION)

Matthew Willard, Co-Chair
Maria Daniil, Co-Chair

DW-01. Magnetoimpedance studies in as quenched $Fe_{73.5}Si_{13.5}B_8CuV_{3-x}AlNb_x$ nanocrystalline ribbons. *C. Venkatrao*[1] and G. Markandeyulu[1] *1. Advanced Magnetic Materials Laboratory, Department of Physics, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India*

DW-02. Magnetic permeability of Si-rich (FeCoNi)-based nanocrystalline alloy: Thermal stability in a wide temperature range. W. Jia[1], *Z. Wang*[1], J. Yun-yun[1], S. Rui-min[1] and W. Zhuan-ping[1] *1. Tianjin University, Tianjin, China*

DW-03. Effect of magnetic field annealing on magnetic properties for nanocrystalline $(Fe_{1-x}Co_x)_{78.4}Si_9B_9Nb_{2.6}Cu_1$ alloys. Z. Wen[1], *Z. Wang*[1], R. Shi[1] and J. Wang[1] *1. Tianjin University, Tianjin, China*

DW-04. Dependency of corrosion performance of soft magnetic nano-crystalline Fe83.3Si3B10P3Cu0.7 ribbon alloy with high Bs. *Z. Dan*[1], H. Matsumoto[1], Y. Yamada[1] and A. Makino[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

DW-05. The soft magnetic properties of ring-shaped $(Co_{0.6}Fe_{0.3}Ni_{0.1})_{68}(B_{0.811}Si_{0.189})_{27}Nb_5$ bulk metallic glass. *Y. Dong*[1], Q. Man[1] and B. Shen[1] *1. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

DW-06. Effects of P to Fe concentration ratio on glass-forming ability, crystallization behavior and magnetic properties in $(Fe_{0.79+x}P_{0.1-x}C_{0.04}B_{0.04}Si_{0.03})_{99}Cu_1$ alloys. *M. Zhang*[1] and B. Shen[1] *1. Ningbo Institute of Material Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

DW-07. Stress-induced magnetic hysteresis in amorphous microwires probed by microwave GMI measurements. V.V. Popov[1], V.N. Berzhansky[1], H.V. Gomonay[2] and *F. Qin*[3] *1. Taurida National University, Simferopol, Ukraine; 2. National Technical University of Ukraine 'KPI', Kyiv, Ukraine; 3. ACCIS, University of Bristol, Bristol, Avon, United Kingdom*

DW-08. Impact of structural relaxation events on field induced anisotropy in Fe and Co-rich amorphous alloys. *A. Leary*[1], J. Luo[1], S. Kernion[1], P.R. Ohodnicki[2] and M.E. McHenry[1] *1. Carnegie Mellon, Pittsburgh, PA; 2. NETL, Pittsburgh, PA*

DW-09. Tailoring of the soft magnetic property and uniaxial anisotropy of magnetostrictive films by interlayer. *D. Wen*[1], H. Zhang[1], F. Bai[1], Y. Ma[1], L. Jin[1] and J. Li[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

DW-10. Magnetic properties and nanostructure of $Fe_{83.3-85.3}B$-P-$Cu_{0.7}$ nanocrystalline alloys. *A. Urata*[1,2], M. Yamaki[1], K. Satake[1], H. Matsumoto[2] and A. Makino[2] *1. NEC TOKIN Corporation, Sendai, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

DW-11. Magnetic enhancement from thin ribbon irradiated by intense and high energy ion pulses. *H. Song*[1] and D. Park[1] *1. Korea Atomic Energy Research Institute, Daejeon, Republic of Korea*

DW-12. Reduction of Coreloss in Inverter Driven Electric Motors Using Amorphous Cores. *Y. Wang*[1] and W. Fu[1] *1. Polyu HK, Hong Kong*

DW-13. A Medium-Frequency Transformer with Multiple Secondary Windings for Medium-Voltage Converter Based Wind Turbine Generating Systems. M. Islam[1], Y. Guo[1] and *J. Zhu*[1] *1. Center for Electrical Machines and Power Electronics, University of Technology Sydney, Ultimo, NSW, Australia*

DW-14. Numerical Computation for a New Way to Reduce Vibration and Noise Due to Magnetostriction and Magnetic Forces of Transformer Cores. Z. Lihua[1], *Y. Qingxin*[2,1], Y. Rongge[1], Z. Xian[1] and Y. Weili[1] *1. Hebei University of Technology, Tianjin, China; 2. Tianjin Polytechnic University, Tianjin, China*

WEDNESDAY AFTERNOON 1:00 RIVERSIDE CENTER

Session DX
MAGNETOELECTRIC MATERIALS AND DEVICES II (POSTER SESSION)

Sergiy Cherepov, Co-Chair
Scott Keller, Co-Chair

DX-01. Magnetic Field Tunable Acoustic Resonator with Ferromagnetic-Ferroelectric Layered Structure. *N. Polzikova*[1], S. Alekseev[1], I. Kotelyanskii[1], A. Raevskii[1,3] and Y. Fetisov[2] *1. Kotel'nikov Institute of Radio-engineering and Electronics of RAS, Moscow, Russian Federation; 2. Moscow State Institute of Radio-engineering, Electronics and Automation, Moscow, Russian Federation; 3. Moscow Institute of Physics and Technology, Dolgoprudny, Russian Federation*

DX-02. X-ray magnetic circular dichroism of ultrathin Fe-Co under an electric field. *F. Bonell*[1,2], D. Lam[1,2], S. Yoshida[1,2], Y. Takahashi[1,2], Y. Shiota[1,2], S. Miwa[1,2], T. Nakamura[3] and Y. Suzuki[1,2] *1. Division of Material Science, Graduate School of Engineering Science, Toyonaka, Osaka, Japan; 2. CREST, Japan Science Technology Agency, 4-1-8 Honcho, Kawaguchi, Saitama, Japan; 3. Japan Synchrotron Radiation Research Institute/SPring-8, Sayo, Hyogo, Japan*

DX-03. First observation of magnetoelectric effect in M-type hexaferrite thin films. *M. Mohebbi*[1], K. Ebnabbasi[1] and C. Vittoria[1] *1. Electrical Engineering, Northeastern University, Boston, MA*

DX-04. Tailoring magnetic anisotropy of multiferroic FePt / BaTiO3. *M. Lee*[1], K. Yun[1], S. Lee[1] and Y. Chung[1] *1. Hanyang University, Seoul, Republic of Korea*

DX-05. First-principles studies of substitutional doping and magnetoelectric effect in Cr_2O_3 *S. Mu*[1], A.L. Wysocki[1] and K.D. Belashchenko[1] *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*

DX-06. Piezo-electrically gating the Verwey transition and non-volatile resistance switching in epitaxial Fe_3O_4/PMN-PT. *M. Liu*[1], J. Hoffman[2], B. Nelson-Cheeseman[2] and A. Bhattacharya[1,2] *1. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL*

DX-07. Electric Field Control of the Verwey Transition and Induced Magnetoelectric Eect in Magnetite. *J. Wong*[1], A.G. Swartz[1], R. Zheng[1], W. Han[1] and R.K. Kawakami[1] *1. Physics and Astronomy, University of California, Riverside, Riverside, CA*

DX-08. Electric field modulation of magnetism and electric properties in La-Ca-MnO_3/ PZT magnetoelectric laminate. *S. Chen*[1,2], H. Zhang[1], F. Liu[1], Q. Ye[1], Z. Huang[1] and D. Wang[2] *1. Department of Physics, Fujian Normal University, Fuzhou, Fujian, China; 2. Department of Physics, Nanjing University, Nanjing, Jiangsu, China*

DX-09. *Ab initio* study of magnetic anisotropy in Co:ZnO with electron-filling. B. Shao[1] and *X. Zuo*[1] *1. College of Information Technical Science, Nankai University, Tianjin, China*

DX-10. Ferroelectric control of the magnetocrystalline anisotropy of the Fe/BaTiO3 (001) interface. *P.V. Lukashev*[1], J.D. Burton[1], S.S. Jaswal[1] and E.Y. Tsymbal[1] *1. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE*

DX-11. The magnetic properties of the Au/CoOx/Pt resistance switching devices. B.J. Fu[1], G.X. Chen[1], C. Yun[1] and *B.J. Yang*[1] *1. Physics, Peking University, Beijing, China*

DX-12. Tunning magnetic anisotropy of nanostructured NiFe and NiFe/CoFe/PZT composite films. P. Thang[2], N. Minh Hong[2], L. Cuong[2] and *L.T. Phan*[1] *1. Department of Physics, Chungbuk National University, Cheongju, Republic of Korea; 2. University of Engineering and Technology, Vietnam National University, Hanoi, Viet Nam*

DX-13. First principles study of magnetic anisotropy and magnetoelectric effect of FePd/MgO(001) ultrathin films. K. He[2,1] and *J. Chen*[1] *1. Materials Science and Engineering, National University of Singapore, Sinagpore, Singapore; 2. Physics, China University of Geosciences (Wuhan), Wuhan, Hubei, China*

DX-14. The Effects of Coverage and Symmetry of Fe Adatoms on Graphene on the Magnetic Properties under External Electric Field: Ab-initio study. *K. Yun*[1], M. Lee[1], S. Lee[1] and Y. Chung[1] *1. Materials Science and Engineering, Hanyang University, Seoul, Republic of Korea*

DX-15. Electron occupancy of 3d-orbitals in manganite thin films. G. Herranz[1], D. Pesquera[1], F. Sánchez[1], *J. Fontcuberta*[1], A. Barla[2], E. Pellegrin[2], F. Bondino[3] and E. Magnano[3] *1. ICMAB-CSIC, Bellaterra, Spain; 2. ALBA Synchrotron Light Source, Cerdanyola del Vallès, Spain; 3. IOM-CNR Laboratorio TASC, Basovizza, Italy*

DX-16. Interface-controlled Magnetism and Transport of Manganite Films and Superlattices. O. Shapoval[2], S. Huehn[1], M. Michelmann[1], M. Jungbauer[1], A. Belenciuc[2], S. Lichtert[3], J. Verbeeck[3] and *V. Moshnyaga*[1] *1. I. Physical Institute, Universtaet Goettingen, Goettingen, Germany; 2. D. Ghitu Institute of the Electronic Engineering and Nanotechnologies, Academy of Sciences, Chisinau, Moldova; 3. EMAT, University of Antwerp, Antwerp, Belgium*

WEDNESDAY AFTERNOON 4:00 — **GRAND ABCD**

Session ZA
PLENARY SESSION
Paul Crowell, Chair

4:00

ZA-01. Atomically Tailored Nanomagnets and their use for Atomic-Level Spintronics. *(Invited)* *R. Wiesendanger*[1] *1. Institute of Applied Physics, University of Hamburg, Germany*

THURSDAY MORNING 8:00

GRAND CD

Session EA
SYMPOSIUM ON CHIRAL MAGNETISM AND SKYRMIONS
Christopher Marrows, Chair

8:00

EA-01. Skyrmionic matters: multidimensional solitons in chiral magnetism and their extended topological textures. ***(Invited)*** *U.K. Rossler*[1], A.A. Leonov[1], A.B. Butenko[1] and A.N. Bogdanov[1] *1. IFW Dresden, Leibniz Institute for Solid State & Materials Research, Dresden, Germany*

8:36

EA-02. Realization and manipulation of the skyrmion in helimagnets. ***(Invited)*** *X. Yu*[1] and Y. Tokura[1,2] *1. CERG and CMRG, Advanced Science Institute, RIKEN, Wako, Saitama, Japan; 2. Department of Applied Physics and QPEC, University of Tokyo, Tokyo, Japan*

9:12

EA-03. Dynamics and emergent electromagnetism of magnetic whirls in chiral magnets. ***(Invited)*** *A. Rosch*[1] *1. University of Köln, Köln, Germany*

9:48

EA-04. Chiral Magnetic Phases in MnSi thin films. ***(Invited)*** *T. Monchesky*[1], E.A. Karhu[1], U.K. Rossler[2], A.B. Butenko[2], A.N. Bogdanov[2], M.D. Robertson[3], M. Wilson[1], S. Kahwaji[1], B.J. Kirby[4], H. Fritzsche[5] and C.F. Majkrzak[4] *1. Department of Physics and Atmospheric Science, Dalhousie University, Halifax, NS, Canada; 2. IFW Dresden, Leibniz Institute for Solid State & Materials Research, Dresden, Germany; 3. Department of Physics, Acadia University, Wolfville, NS, Canada; 4. Center for Neutron Research, NIST, Gaithersburg, MD; 5. Canadian Neutron Beam Centre, National Research Council Canada, Chalk River, ON, Canada*

10:24

EA-05. Spontaneous atomic-scale magnetic skyrmion lattice in an ultra-thin film: real-space observation and theoretical foundation. ***(Invited)*** *S. Heinze*[1] *1. Kiel University, Kiel, Germany*

THURSDAY MORNING 8:00

GRAND AB

Session EB
RECORDING PHYSICS AND MODELING I
Daniel Bai, Chair

8:00

EB-01. Fundamental magnetic and magneto-transport properties of HAMR and PMR material systems. ***(Invited)*** *O.N. Mryasov*[1,2], S. Faleev[2], A. Stott[2], A. Singh[1] and J. Kudrnovky[3] *1. Physics and Astronomy, University of Alabama, Tuscaloosa, AL; 2. MINT, University of Alabama, Tuscaloosa, AL; 3. Condensed Matter Theory, Institute of Physics ASCR, Praha, Czech Republic*

8:36

EB-02. A Study of Linear Density Dependence of Media Noise Power in Perpendicular Magnetic Recording. *Y. Nishida*[1], H. Katada[1], M. Hashimoto[1], I. Tagawa[1] and R. Wood[2] *1. HGST, Odawara, Kanagawa, Japan; 2. HGST, San Jose, CA*

8:48

EB-03. Influence of the grain–boundary on the switching field of magnetic grains at finite temperatures. *L. Saharan*[1], C. Morrison[2], J. Miles[2], T. Thomson[2], T. Schrefl[3] and G. Hrkac[1] *1. Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 2. School of Computer Science, University of Manchester, Manchester, United Kingdom; 3. University of Applied Sciences, St Poelten, Austria*

9:00

EB-04. Transition Parameter "a" Variation of Individual Writing Process and its Impact to Jitter Noise. *C. Ong*[1], B. Santoso[1], S. Ang[1] and Z. Yuan[1] *1. DDS, Data Storage Institute, Singapore*

9:12

EB-05. Dependence of erasure band on write field strengths in shingled magnetic recording. *Z. Liu*[1], H. Wang[1], Z. Yuan[1], C. Ong[1] and S. Ang[1] *1. Data Storage Institute, Singapore*

9:24

EB-06. The Impact of Areal Density and Millions of Square Inches (MSI) of Produced Memory on Petabyte Shipments of TAPE, NAND Flash, and HDD Storage Class Memories. *R. Fontana*[1], G. Decad[1] and S. Hetzler[2] *1. IBM Systems and Technology Group, San Jose, CA; 2. IBM Research Division, San Jose, CA*

9:36

EB-07. Generalized Belief Propagation Detector for TDMR Microcell Model. *S. Khatami*[1] and B. Vasić [1]*1. Electrical Engineering, University of Arizona, Tucson, AZ*

9:48

EB-08. Improved Maximum Likelihood Syncmark Detection for Magnetic Recording Channels. *S. Yang*[1] and D. Qin[2]*1. LSI Corporation, Milpitas, CA; 2. LSI Corporation, Allentown, PA*

10:00

EB-09. Modeling of Localized Dynamic Erasure Using Time Dependent Switching Rates. *A. Goncharov*[1] and P. Van Der Heijden[1]*1. HGST, a Western Digital Company, San Jose, CA*

10:12

EB-10. Reverse Overwrite Properties for High Data Rate Perpendicular Magnetic Recording. *F. Liu*[1], S. Li[1], Z. Li[1], L. Wang[1], D. Bai[1], T. Pan[1] and H. Lin[1]*1. Western Digital Corporation, Fremont, CA*

10:24

EB-11. Side-reading effects in high-track-density tape recording. *S. Furrer*[1], H.E. Rothuizen[1], J. Engelen[1] and M.A. Lantz[1]*1. IBM Research - Zurich, Ruschlikon, Switzerland*

10:36

EB-12. HAMR Head Thermal Modeling including Media Hot Spot and Air-Bearing Effects. *L. Huang*[1]*1. HGST, a Western Digital Company, San Jose, CA*

10:48

EB-13. Integrating Magnetic Heads with Plasmonic Nanostructures in Multilayer Configurations. *E. Ogut*[1], P.M. Menguc[2] and K. Sendur[1]*1. Mechatronics Engineering Program, Sabanci University, Istanbul, Turkey; 2. Mechanical Engineering Department, Ozyegin University, Istanbul, Turkey*

THURSDAY MORNING
8:00

REGENCY A

Session EC
SPIN WAVES AND MAGNONICS
Hans Nembach, Chair

8:00

EC-01. Spin waves turning a corner. *K. Vogt*[1,2], H. Schultheiss[2], S. Jain[2], J.E. Pearson[2], A. Hoffmann[2], S.D. Bader[2,3] and B. Hillebrands[1]*1. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

8:12

EC-02. Oscillatory Spatial Intensity Pattern for Spin Waves Excited with a Coplanar Waveguide Antenna. *D. Birt*[1], K. An[2], M. Tsoi[1,2], S. Tamaru[3], D. Ricketts[3], K.L. Wong[4], P.K. Amiri[4], K.L. Wang[4] and X. Li[1,2]*1. Texas Materials Institute, The University of Texas at Austin, Austin, TX; 2. Department of Physics, Center for Nano- and Molecular Science and Technology, The University of Texas at Austin, Austin, TX; 3. Electrical and Computer Engineering Department, Carnagie Mellon University, Pittsburgh, PA; 4. Department of Electrical Engineering, University of California, Los Angeles, Los Angeles, CA*

8:24

EC-03. Thermoelectric Detection of Spin Waves. *H. Schultheiss*[1], J.E. Pearson[1], S.D. Bader[1,2] and A. Hoffmann[1]*1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

8:36

EC-04. Current-induced Spinwave Doppler shift evidenced by time-resolved Kerr microscopy. *J. Chauleau*[1], H. Bauer[1], M. Ribow[1], G. Woltersdorf[1] and C.H. Back[1]*1. Regensburg University, Regensburg, Germany*

8:48

EC-05. A bi-chromatic spin-wave gun based on supermagnonic domain walls. *A. Kakay*[1], M. Yan[1,2], C. Andreas[1,3] and R. Hertel[3]*1. Peter Grünberg Institute, Forschungszentrum Jülich, Jülich, NRW, Germany; 2. Department of Physics, Shanghai University, Shanghai, China; 3. Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg, Strasbourg, Alsace, France*

9:00

EC-06. Scattering of surface spin waves in one-dimension photo-induced magnonic crystal. *C.L. Ordóñez-Romero*[1], I. Ricardez-Vargas[2], K. Volke-Sepulveda[1], N. Qureshi[3], O. Kolokoltsev[3] and G. Monsivais-Galindo[1] *1. Solid State, Physics Institute, UNAM., Mexico City, D.F., Mexico; 2. División Académica de Ciencias Básicas, UJAT, Cunduacán, Tabasco, Mexico; 3. CCADET, Universidad Nacional Autónoma de México, Mexico City, D.F., Mexico*

9:12

EC-07. Forbidden band gaps in the spin-wave spectrum of a two-dimensional bicomponent magnonic crystal. *S. Tacchi*[1], G. Duerr[2], J.W. Klos[3], M. Madami[1], S. Neusser[2], G. Gubbiotti[1,4], G. Carlotti[1], M. Krawczyk[3] and D. Grundler[2] *1. CNISM-Dipartimento di Fisica, Università di Perugia, Perugia, Italy; 2. Lehrstuhl für Physik funktionaler Schichtsysteme, Technische Universität München, Physik Department, München, Germany; 3. Faculty of Physics, Adam Mickiewicz University, Poznan, Poland; 4. Istituto Officina dei Materiali del CNR (CNR-IOM), Unita` di Perugia, c/o Dipartimento di Fisica, Perugia, Italy*

9:24

EC-08. Spin wave properties of two-dimensional magnetic superlattices. *G. Sietsema*[1] and M. Flatté [1] *1. Physics, University of Iowa, Iowa City, IA*

9:36

EC-09. Parametric interaction of discrete spin wave modes in magnetic nanostructures. G.A. Melkov[1], D. Slobodianiuk[1], V.S. Tiberkevich[2] and *A.N. Slavin*[2] *1. Faculty of Radiophysics, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 2. Department of Physics, Oakland University, Rochester, MI*

9:48

EC-10. Influence of Lattice Symmetry on the Magnetization Dynamics in Artificial Ferromagnetic Nanodot Lattices. *A. Barman*[1], S. Saha[1], R. Mandal[1], S. Barman[1], D. Kumar[1], B. Rana[1], Y. Fukuma[2,4], S. Sugimoto[3] and Y. Otani[2,3] *1. Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Centre For Basic Sciences, Kolkata, West Bengal, India; 2. Advanced Science Institute, RIKEN, Wako, Saitama, Japan; 3. Institute for Solid State Physics, University of Tokyo, Kashiwa, Chiba, Japan; 4. Frontier Research Academy for Young Researchers, Kyushu Institute of Technology, lizuka, Fukuoka, Japan*

10:00

EC-11. Ferromagnetic resonance frequency increase and resonance line broadening of a ferromagnetic Fe-Co-Hf-N film by high-frequency field perturbation. *K. Seemann*[1], H. Leiste[1] and K. Krü ger[1] *1. Institute for Applied Materials, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*

10:12

EC-12. LLBS simulation of the temperature dependent macrospin switching in the presence of a polarized current. E. Oniciuc[1], L. Stoleriu[1] and *A. Stancu*[1] *1. Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*

10:24

EC-13. Tailored ultrashort spin-current pulses in magnetic heterostructures observed by terahertz emission spectroscopy. ***(Invited)*** *T. Kampfrath*[1], M. Battiato[2], P. Maldonado[2], G. Eilers[3], J. Nö tzold[1], I. Radu[4], F. Freimuth[5], Y. Mokrousov[5], S. Blü gel[5], M. Wolf[1], P.M. Oppeneer[2] and M. Mü nzenberg[3] *1. Department of Physical Chemistry, Fritz Haber Institute, Berlin, Germany; 2. Department of Physics, University Uppsala, Uppsala, Sweden; 3. Department of Physics, University Göttingen, Göttingen, Germany; 4. BESSY II, Helmholtz Center Berlin, Berlin, Germany; 5. Peter Grünberg Institute and Institute for Advanced Simulation, Forschungszentrum Jülich and JARA, Jülich, Germany*

THURSDAY MORNING 8:00 — REGENCY B

Session ED
SPIN PUMPING, ABSORPTION AND SCATTERING

Matthieu Jamet, Chair

8:00

ED-01. Platinum thickness dependence of the inverse spin-Hall voltage from spin pumping in a hybrid YIG/Pt system. *V.M. Castel*[1], . Vlietstra[1], J. Ben Youssef[2] and B. van Wees[1] *1. University of Groningen, RUG, Zernike Institute for Advanced Materials and Department of Physics, Groningen, Netherlands; 2. Université de Bretagne Occidentale, UBO, Laboratoire de Magnétisme de Bretagne, Brest, France*

8:12

ED-02. Spinmotive force and voltage generation via magnetization dynamics in magnetic nanostructures. *M. Hayashi*[1], J. Ieda[2,3], Y. Yamane[2,4], J. Ohe[5], Y. Takahashi[1], S. Mitani[1] and S. Maekawa[2,3] *1. National Intsitute for Materials Science, Tsukuba, Japan; 2. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Japan; 3. CREST, Japan Science and Technology Agency, Tokyo, Japan; 4. Institute for Materials Research, Tohoku University, Sendai, Japan; 5. Department of Physics, Toho University, Funabashi, Japan*

8:24

ED-03. Giant electromotive force in Pd/ Fe_3Si samples induced by spin pumping. *Y. Ando*[1], K. Ichiba[1], E. Shikoh[1], T. Shinjo[1], K. Hamaya[2] and M. Shiraishi[1] *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Department of Electronics, Kyushu University, Fukuoka, Japan*

8:36

ED-04. Ferromagnetic resonance induced spin-pumping in an Fe/MgO/Si heterostructure. *Y. Pu*[1], R. Adur[1], P.M. Odenthal[2], A. Berger[1], J. Beardsley[1], A.G. Swartz[2], J.P. Pelz[1], R.K. Kawakami[2], E. Johnston-Halperin[1] and P.C. Hammel[1] *1. Physics, The Ohio State University, Columbus, OH; 2. Physics and Astronomy, University of California, Riverside, Riverside, CA*

8:48

ED-05. Optical spin pumping in group-IV heterostructures. *A. Ferrari*[1], F. Bottegoni[1], S. Cecchi[1], G. Isella[1] and F. Ciccacci[1] *1. Dipartimento di Fisica, Politecnico di Milano, Milano, Italy*

9:00

ED-06. Soft X-Ray Spectroscopy of Optically Excited Spin Populations in Highly Doped GaAs. *S. Zohar*[1] and D. Keavney[1] *1. Argonne National Laboratory, Argonne, NY*

9:12

ED-07. Generation of spin currents from magnetization dynamics. ***(Invited)*** *K. Ando*[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

9:48

ED-08. Investigation of temperature and bias effects on spin polarization and spin lifetime in GaAs-based spin LEDs with an Fe injector. *R. Mansell*[1], J. Laloe[1], S.N. Holmes[2], A. Petrou[3], I. Farrer[1], D.A. Ritchie[1], G.A. Jones[1] and C.H. Barnes[1] *1. Department of Physics, University of Cambridge, Cambridge, United Kingdom; 2. Department of Physics, State University of New York, Buffalo, NY; 3. Toshiba Cambridge Research Laboratory, Cambridge, United Kingdom*

10:00

ED-09. Effect of spin absorption on precession dynamics of pure spin currents in lateral spin valves. *H. Idzuchi*[1,2,*], Y. Fukuma[1,3] and Y. Otani[1,2] *1. ISSP Univ. of Tokyo, Kashiwa, Japan; 2. ASI RIKEN, Wako, Japan; 3. Kyushu Institute of Technology, Iizuka, Japan*

10:12

ED-10. Role of Interdiffusion in Metallic Non-Local Spin Transport Devices. *L. O'Brien*[1,2], M. Erickson[3], D. Spivak[3], H. Ambaye[4], R. Goyette[4], V. Lauter[4], P.A. Crowell[3] and C. Leighton[1] *1. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 2. Thin Film Magnetism, University of Cambridge, Cambridge, United Kingdom; 3. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN; 4. Spallation Neutron Source, Oak Ridge National Laboratory, Oak Ridge, TN*

10:24

ED-11. A model of spin injection including the effect of interface diffusion. *P. Chureemart*[1], R. Cuadrado[1], I. D'Amico[1] and R.W. Chantrell[1] *1. Department of Physics, University of York, York, United Kingdom*

10:36

ED-12. Distinguishing Spin Relaxation Processes in Organic Semiconductors. M.E. Flatté [1] and *N.J. Harmon*[1] *1. Physics, University of Iowa, Iowa City, IA*

THURSDAY MORNING 8:00

REGENCY C

Session EE
MAGNETIC PROPERTIES OF FE BASED THIN FILMS AND MULTILAYERS

Christopher Morrison, Chair

8:00

EE-01. Structure and properies of graphene/ferromagnet interfaces. *M. Fonin*[1], P. Leicht[1], M. Sicot[1], E. Voloshina[2], K. Horn[3] and Y.S. Dedkov[4] *1. Universität Konstanz, Konstanz, Germany; 2. Institut für Chemie und Biochemie - Physikalische und Theoretische Chemie, Freie Universität Berlin, Berlin, Germany; 3. Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany; 4. SPECS Surface Nano Analysis GmbH, Berlin, Germany*

8:12

EE-02. Real-space observation of magnetic chiral order in Fe/Ni/W(110) thin films. A. Schmid[1] and *G. Chen*[1] *1. NCEM, Berkeley Lab, Berkeley, CA*

8:24

EE-03. Strain induced (001) orientation and superlattice structure identification of $L1_0$-FePt/B_4C multilayer thin films on Si/SiO_2 by magnetron sputtering. *H. Wang*[1], J. Zhang[1], L. Zhang[2], H. Wang[1] and Q. Mo[1] *1. Physics, Hubei University, Wuhan, China; 2. MMC, EDF R&D, Moret-sur-loing, France*

8:36

EE-04. Noble metal-free large magnetic anisotropy ferromagnet "$L1_0$-ordered FeNi" ***(Invited)*** *M. Mizuguchi*[1], T. Kojima[1], M. Ogiwara[1], T. Tashiro[1] and K. Takanashi[1] *1. Institute for Materials Research (IMR), Tohoku University, Sendai, Japan*

9:12

EE-05. Nucleation and growth of magnetic domain structure of alternate monoatomic (Fe/Ni)x multilayer deposited on step-bunched Cu(001). *M. Kotsugi*[1], T. Ohtsuki[1], T. Ohkochi[1], T. Kojima[2], M. Ogiwara[2], M. Mizuguchi[2] and K. Takanashi[2] *1. Japan Synchrotron Radiation Research Institute, Hyogo, Japan; 2. Tohoku University, Sendai, Japan*

9:24

EE-06. Thermopower of FePt thin films.H. Zeng[1], *H. Xing*[1] and G. Hu[2] *1. Physics, University at Buffalo, SUNY, Buffalo, NY; 2. IBM T.J. Watson Research Center, Yorktown Heights, NY*

9:36

EE-07. Magnetic stability of FeRh ultrathin films. *G. Han*[1], J. Qiu[1], Q. Yap[1], P. Luo[1], D. Laughlin[2], J. Zhu[2], T. Kanbe[3] and T. Shige[3] *1. Nano Spin-Electronics, Data Storage Institute, Singapore; 2. Carnegie Mellon University, Pittsburgh, PA; 3. Showa Denko K.K, Tokyo, Japan*

9:48

EE-08. Metastable fcc-Fe thin film epitaxially grown on Cu(100) single-crystal underlayer. *M. Ohtake*[1], K. Shimamoto[1] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan*

10:00

EE-09. Surfactant-induced enhancement of perpendicular magnetic anisotropy in Fe/MgO interfaces. *J. Koo*[1,2], S. Mitani[1,2], H. Sukegawa[2], Z. Wen[2] and K. Inomata[2] *1. University of Tsukuba, Tsukuba, Japan; 2. National Institute for Materials Science, Tsukuba, Japan*

10:12

EE-10. Separate contributions into perpendicular magnetic anisotropy of Fe|MgO interface from first principles. *R. Chepulskyy*[1], D. Apalkov[1], A. Khvalkovskiy[1], W.H. Butler[2], H. Ahn[3] and M. Krounbi[1] *1. Grandis, Inc., San Jose, CA; 2. MINT Center, University of Alabama, Tuscaloosa, AL; 3. CAE, Samsung Electronics, Hwasung, Gyeonggi-Do, Republic of Korea*

10:24

EE-11. Effect of nanorippled Si substrate on the magnetic properties of Fe/Cr multilayers. *S. Koyiloth Vayalil*[1] and A. Gupta[1] *1. UGC-DAE Consortium for Scientific Research, UGC-DAE Consortium for Scientific Research, Indore, Madhya Pradesh, India*

10:36

EE-12. Vector magnetometry of biquadratic coupling in Fe / Cr / Fe bilayers. *R. Mansell*[1], D. Petit[1], A. Fernandez-Pacheco[1], R. Lavrijsen[1], J. Lee[1] and R. Cowburn[1] *1. Department of Physics, University of Cambridge, Cambridge, United Kingdom*

10:48

EE-13. Investigation of ZnO thin films grown on ferromagnetic metallic buffers by MBE toward realization of ZnO-based MTJs. *M. Belmoubarik*[1], T. Nozaki[1], H. Endo[2] and M. Sahashi[1] *1. Electronic Engineering, Tohoku University, Sendai, Miyagi 890-8579, Japan; 2. Iwate Industrial Research Institute, Morioka 020-0852, Japan*

THURSDAY MORNING 8:00 — REGENCY D

Session EF
SPIN TORQUE II
Teruo Ono, Chair

8:00

EF-01. Decoherence, mode-hopping, and mode coupling in spin-torque oscillators. ***(Invited)*** *O. Heinonen*[1,2], P.K. Muduli[3,4] and J. Åkerman[3,5] *1. Argonne National Laboratory, Lemont, IL; 2. Department of Physics and Astronomy, Northwestern University, Evanston, IL; 3. Deparment of Physics, University of Gothenburg, Gothenburg, Sweden; 4. Department of Physics, Indian Institute of Technology of Delhi, Delhi, India; 5. Materials Physics, KTH - Royal Institute of Technology, Kista, Sweden*

8:36

EF-02. Spin Torque in the Framework of Random Magnetization Dynamics Driven by a Jump-Noise Process. *G. Bertotti*[1], C. Serpico[2], Z. Liu[3], A. Lee[3] and I. Mayergoyz[3,4] *1. INRiM, Torino, Italy; 2. Dipartimento di Ingegneria Elettrica, Universita` di Napoli "Federico II", Napoli, Italy; 3. Electrical and Computer Engineering, University of Maryland, College Park, MD; 4. UMIACS and AppEl Center, College Park, MD*

8:48

EF-03. Two-Mode Oscillation Regimes of a Spin-Torque Nano-Oscillator. *V. Tyberkevych*[1] and A. Slavin[1] *1. Department of Physics, Oakland University, Rochester, MI*

9:00

EF-04. Consequences of the Oersted field induced asymmetric energy landscape in nanocontact spin torque oscillators*. *R.K. Dumas*[1], E. Iacocca[1], S. Bonetti[2], S.R. Sani[3,4], M. Mohseni[3,4], A. Eklund[5], J. Persson[4], O. Heinonen[6] and J. Åkerman[1,3] *1. Physics Department, University of Gothenburg, Gothenburg, Sweden; 2. Stanford Institutue for Energy and Materials Science, Stanford University, Stanford, CA; 3. Materials Physics, Royal Institute of Technology (KTH), Kista, Sweden; 4. NanOsc AB, Kista, Sweden; 5. Devices and Circuits, Royal Institute of Technology (KTH), Kista, Sweden; 6. Materials Science Division, Argonne National Laboratory, Lemont, IL*

9:12

EF-05. Discrepancy Between Thermal FMR and Spin-Torque FMR on MTJ Structures. *E.R. Evarts*[1], R. Heindl[2], M. Pufall[1] and W.H. Rippard[1] *1. National Institute of Standards and Technology, Boulder, CO; 2. San Jose State University, San Jose, CA*

9:24

EF-06. Topological constraints on ST-RAM error rates. *P.B. Visscher*[1] and W.H. Butler[1] *1. Department of Physics and MINT Center, University of Alabama, Tuscaloosa, AL*

9:36

EF-07. Fabrication of CoFeB/MgO/CoFeB magnetic tunnel junctions (MTJs) with ultrathin barriers for thermal spin transfer torque. *J.C. Leutenantsmeyer*[1], M. Walter[1], V. Zbarsky[1], P. Peretzki[2], H. Schumann[2], M. Seibt[2], A. Thomas[3] and M. Mü nzenberg[1] *1. I. Physikalisches Institut, Universität Göttingen, Göttingen, Germany; 2. IV. Physikalisches Institut, Universität Göttingen, Göttingen, Germany; 3. Thin Films and Physics of Nanostructures, Universität Bielefeld, Bielefeld, Germany*

9:48

EF-08. Control of magnetization dynamics by pure spin currents. ***(Invited)*** *V.E. Demidov*[1], S.O. Demokritov[1] and S. Urazhdin[2] *1. Institute for Applied Physics, University of Muenster, Muenster, Germany; 2. Emory University, Atlanta, GA*

10:24

EF-09. Influence of a pure spin current on the magnetization dynamics of a single nanomagnet. *P.S. Keatley*[1], A. Aziz[2], M. Ali[3], M. Blamire[2], B.J. Hickey[3] and R.J. Hicken[1] *1. School of Physics, University of Exeter, Exeter, United Kingdom; 2. Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 3. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

10:36

EF-10. Influence of Spin Diffusion on Tunneling Spin Torque. *A. Manchon*[1], R. Matsumoto[2,3], H. Jaffres[2] and J. Grollier[2] *1. Materials Science and Eng., KAUST, Thuwal, Saudi Arabia; 2. Unite Mixte de Physique CNRS/Thales and Universite Paris Sud 11, Orsay, France; 3. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan*

10:48

EF-11. Spin-Wave Excitation in Magnetic Insulators by Spin-Transfer Torque. *J. Xiao*[1] and G. Bauer[2,3] *1. Physics Department, Fudan University, Shanghai, China; 2. IMR, Tohoku University, Sendai, Japan; 3. Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands*

THURSDAY MORNING 8:00 — CRYSTAL A

Session EG

SOFT MAGNETIC MATERIALS V: AMORPHOUS AND NANOCRYSTALLINE MATERIALS

Mike McHenry, Chair

8:00

EG-01. Magnetization kinetics in tension and field annealed Fe-based amorphous alloys. *R. Hasegawa*[1], K. Takahashi[1], B. Francoeur[2] and P. Couture[2] *1. Metglas, Inc, Conway, NJ; 2. Inst. de recherche d'Hydro-Quebec, Varennes, QC, Canada*

8:12

EG-02. Field induced magnetic anisotropy in Fe-based amorphous alloys. *D. Azuma*[1,2], R. Hasegawa[2], S. Saito[3] and M. Takahashi[3] *1. Metglas Yasugi works, Hitachi Metals, Ltd., Yasugi-shi, Shimane-ken, Japan; 2. R&D, Metglas, Inc., Conway, SC; 3. Electronic Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

8:24

EG-03. The use of amorphous boron powder enhances mechanical alloying in soft magnetic FeNbB alloy. J.J. Ipus[1], J.S. Blázquez[1], *V. Franco*[1] and A. Conde[1] *1. Physics of Condensed Matter, University of Seville, Seville, Spain*

8:36

EG-04. The influence of pressure on the phase stability of nanocomposite Fe88Zr7B4Cu1 during heating. *A. Leary*[1], S. Kernion[1], M.A. Lucas[2], P.R. Ohodnicki[3] and M.E. McHenry[1] *1. Carnegie Mellon, Pittsburgh, PA; 2. Wright Patterson, Dayton, OH; 3. NETL, Pittsburgh, PA*

8:48

EG-05. Reduced losses in rolled FINEMET (Fe-Si-B-Nb-Cu) nanocrystalline ribbon. S.J. Kernion[1], *M.S. Lucas*[2,4], J. Horwath[2], Z. Turgut[2,5], E. Michel[2], V. Keylin[3], J.F. Huth[3], S. Shen[1], A. Leary[1] and M.E. McHenry[1] *1. Materials Science and Engineering, Carnegie Mellon Univ, Pittsburgh, PA; 2. Air Force Research Laboratory, Wright-Patterson Air Force Base, Dayton, OH; 3. Magnetics, a division of Spang & Co., Pittsburgh, PA; 4. UTC Inc., Dayton, OH; 5. UES Inc., Dayton, OH*

9:00

EG-06. Soft magnetic composites manufactured by warm co-extrusion of bulk metallic glass and steel powders. *F. Johnson*[1], T.R. Raber[1], R.J. Zabala[1], B.J. Steven[1] and B. Tanico[1] *1. Ceramic and Metallurgy Technologies, General Electric Global Research, Niskayuna, NY*

9:12

EG-07. Tunable Microwave Properties in Magnetic Polymer Nanocomposites. ***(Invited)*** *H. Srikanth*[1] *1. Department of Physics, University of South Florida, Tampa, FL*

9:48

EG-08. Magnetic Properties and Crystallization Behavior of Nanocrystalline $(Co_{1-x}Ni_x)_{88}Zr_7B_4Cu_1$ Soft Magnetic Alloys. B.C. Hornbuckle[2], B. Wang[2], T.T. Sasaki[2], M. Daniil[3], *M.A. Willard*[1] and G.B. Thompson[2] *1. U. S. Naval Research Laboratory, Washington, DC; 2. Department of Metallurgical & Materials Engineering, University of Alabama, Tuscaloosa, AL; 3. Department of Physics, George Washington University, Washington, DC*

10:00

EG-09. Magnetic Properties of (Fe,Si,Al)-based Nanocrystalline Alloys with Varying Degrees of Structural Ordering. *M. Daniil*[2] and M.A. Willard[1] *1. U. S. Naval Research Laboratory, Washington, DC; 2. George Washington University, Washington, DC*

10:12

EG-10. The effect of substituting Nb and Hf for Zr in Fe-Co-Ni-Zr-B-Cu nanocrystalline soft magnetic alloys. *K.E. Knipling*[1], J. Olmos-Silverman[2], M. Daniil[3] and M.A. Willard[1] *1. Code 6355, Naval Research Laboratory, Washington, DC; 2. Department of Engineering, Harvey Mudd College, Claremont, CA; 3. Department of Physics, George Washington University, Washington, DC*

10:24

EG-11. Understanding the two-step crystallization process in a FeCrB metallic glass: a combined magnetic and neutron thermo-diffraction study. *P. Gorria*[1], A. Fernandez-Martinez[2,3], J.D. Santos[1], M.J. Perez[1] and G.J. Cuello[4] *1. Physics, University of Oviedo, Oviedo, Asturias, Spain; 2. Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Institut des Sciences de la Terre, CNRS and University of Grenoble I, Grenoble, France; 4. Institut Laue Langevin, Grenoble, France*

THURSDAY MORNING 8:00 — CRYSTAL B

Session EH
SPINS IN GRAPHENE AND SILICON
Hanan Dery, Chair

8:00

EH-01. Long spin relaxation lengths in high mobility graphene devices. *M.H. Guimarães*[1], P.J. Zomer[1], A. Veligura[1], T. Maassen[1], I.J. Vera-Marun[1], N. Tombros[1] and B.J. van Wees[1] *1. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Groningen, Netherlands*

8:12

EH-02. Electrical detection of spin precession in freely-suspended graphene spin valves on cross-linked poly(methyl methacrylate) (PMMA). *I. Neumann*[1,2], J. Van De Vondel[1], G. Bridoux[1], M.V. Costache[1], F. Alzina[1], C.M. Sotomayor Torres[1,3] and S.O. Valenzuela[1,3] *1. Catalan Institute of Nanotechnology (ICN-CIN2), Bellaterra, Barcelona, Spain; 2. Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain; 3. Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Barcelona, Spain*

8:24

EH-03. Probing magnetic moment formation in graphene through the scattering of spin currents. *A. Swartz*[1], K. McCreary[1], W. Han[1], J. Fabian[2] and R. Kawakami[1] *1. Department of Physics and Astronomy, University of California, Riverside, Riverside, CA; 2. Institute for Theoretical Physics, University of Regensburg, Regensburg, Germany*

8:36

EH-04. D'yakonov-Perel spin scattering in single and bilayer graphene. ***(Invited)*** *B. Beschoten*[1] *1. II. Instituts of Physics, RWTH Aachen University, Aachen, Germany*

9:12

EH-05. Spin injection from ferromagnetic metal/graphene tunnel contacts into silicon. *O. van't Erve*[1], C. Li[1], A. Friedman[1], E. Cobas[1], J. Robinson[1], A. Hanbicki[1] and B. Jonker[1] *1. Naval Research Laboratory, Washington, DC*

9:24

EH-06. In-plane anisotropy of spin accumulation in silicon/oxide/ferromagnet tunnel devices.S. Sharma[1,2], *A.M. Spiesser*[1], H. Saito[1], S. Yuasa[1], B.J. van Wees[2] and R. Jansen[1] *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology AIST, Tsukuba, Ibaraki, Japan; 2. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands*

9:36

EH-07. Electrical Spin Injection into Silicon: The Role of Schottky Barrier.A. Dankert[1], R.S. Dulal[1] and *S.P. Dash*[1] *1. Microtechnology and Nanoscience, Chalmers University of Technology, Göteborg, Sweden*

9:48

EH-08. Room temperature detection of spin accumulation in silicon across Schottky tunnel barriers using a metal-oxide-semiconductor field-effect transistor structure. ***(Invited)*** *K. Hamaya*[1,2], Y. Ando[1], K. Masaki[1], Y. Maeda[1], Y. Fujita[1], S. Yamada[1], K. Sawano[3] and M. Miyao[1] *1. Department of Electronics, Kyushu University, Fukuoka, Japan; 2. PRESTO, Japan Science and Technology Agency, Sanbancho, Tokyo 102-0075, Japan; 3. Advanced Research Laboratories, Tokyo City University, 8-15-1 Todoroki, Tokyo 158-0082, Japan*

10:24

EH-09. Spintronics in graphene. *M. Martin*[1], B. Dlubak[1], C. Deranlot[1], B. Servet[2], S. Xavier[2], R. Mattana[1], M. Sprinkle[3], C. Berger[3,4], W. De Heer[3], F. Petroff[1], A. Anane[1], P. Seneor[1] and A. Fert[1] *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Thales Research and Technology, Palaiseau, France; 3. School of Physics, Georgia Institute of Technology, Atlanta, GA; 4. CNRS-Institut Néel, Grenoble, France*

10:36

EH-10. Spin Transport in Graphene-Based Lateral Spin Valves. *M. Cubukcu*[1], M. Martin[2], P. Laczkowski[1], C. Vergnaud[1], A. Marty[1], C. Beigné [1], L. Notin[1], J. Attané [1], L. Vila[1], P. Seneor[2], M. Anane[2], C. Deranlot[2], S. Auffret[3], A. Fert[2] and M. Jamet[1] *1. INAC/SP2M, CEA Grenoble and Université Joseph Fourier, Grenoble, France; 2. Unité Mixte de Physique CNRS-Thalès, Palaiseau, France; 3. Spintec, UMR CEA/CNRS/UJF-Grenoble 1/ Grenoble-INP, INAC, Grenoble, France*

10:48

EH-11. Valley polarization in single layer MoS_2 by optical pumping. *G. Kioseoglou*[1], A.T. Hanbicki[2], M. Currie[2], A.L. Friedman[2], D. Gunlycke[2] and B.T. Jonker[2] *1. University of Crete, Heraklion, Greece; 2. Naval Research Lab, Washington, DC*

THURSDAY MORNING 8:00 — CRYSTAL C

Session EI
HALF-METALLICS II: HEUSLER ALLOYS, OXIDES, AND OTHER

Olof Karis, Chair

8:00

EI-01. Element-specific magnetic structure of Co2MnGe thin films with facing Cu metal layer. *C. Jenkins*[1], M.J. Carey[2], J. Shaw[3], H. Nembach[3] and T.J. Silva[3] *1. Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, CA; 2. Sensor Materials and Technology, HGST, a Western Digital company, San Jose, CA; 3. Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO*

8:12

EI-02. Testing the half-metallic magnetic behavior of $Co_{1.5}Fe_{1.5}Ge(001)$ by spin-resolved photoemission.A. Neggache[1,2], T. Hauet[1], F. Bertran[2], F. Porcher[3], A. Bataille[3], P. Boulet[1], P. Lefevre[2], A. Taleb[2], S. Maat[4], J.R. Childress[4] and *S. Andrieu*[1] *1. Lorraine University, Institut Jean Lamour, Vandoeuvre, France; 2. SOLEIL Synchrotron, CNRS, Saint Aubin, France; 3. Laboratoire Leon Brillouin, CEA, Saclay, France; 4. San Jose Research Center, HGST, a Western Digital Company, San Jose, CA*

8:24

EI-03. Exploring electronic structure of Heusler type thin films using XMLD and XMCD. *G. Jakob*[1], M. Emmel[1], E. Vilanova-Vidal[1], S. Diehl[1], T. Methfessel[1] and H. Elmers[1] *1. Institute of Physics, University of Mainz, Mainz, Germany*

8:36

EI-04. Growth of very high quality fully-epitaxial $Co_2FeAl_{0.5}Si_{0.5}$(CFAS) Heusler films on $MgAl_2O_4$(001). *B. Peters*[1], C.G. Blum[2], P.M. Woodward[1], S. Wurmehl[2] and F.Y. Yang[1] *1. The Ohio State University, Columbus, OH; 2. IFW Dresden, Dresden, Germany*

8:48

EI-05. Survey of Full Heusler Alloys. *J.C. Romero*[1,2] and W.H. Butler[1,2] *1. MINT Center, University of Alabama, Tuscaloosa, AL; 2. Physics, University of Alabama, Tuscaloosa, AL*

9:00

EI-06. Work-function control of half-metallic full-Heusler $Co_2FeSi_{1-x}Al_x$ thin films for Si-based spin-transistor applications. *Y. Kawame*[1], M. Sato[1], Y. Shuto[1] and S. Sugahara[1,2] *1. ISEL, Tokyo Institute of Technology, Yokohama, Japan; 2. CREST, JST, Kawaguchi, Japan*

9:12

EI-07. Magnetic and electronic properties of tetragonal Heusler $D0_{22}$-Mn_3Ge (001) films. *H. Kurt*[1,2], N. Baadji[2], K. Rode[2], M. Venkatesan[2], P. Stamenov[2], S. Sanvito[2] and M. Coey[2] *1. Engineering Physics, Istanbul Medeniyet University, Istanbul, Turkey; 2. School of Physics, Trinity College Dublin, Dublin, Dublin, Ireland*

9:24

EI-08. The zero-magnetization Heusler ferrimagnet.H. Kurt[1], N. Baadji[1], K. Rode[1], M. Venkatesan[1], P. Stamenov[1], S. Sanvito[1] and *J. Coey*[1] *1. Physics, Trinity College Dublin, Dublin, Ireland*

9:36

EI-09. Influence of interfacial structural properties on tunnel magnetoresistance in epitaxial magnetic tunnel junctions with Co_2MnSi electrode and MgO barrier. *H. Liu*[1], Y. Honda[1], K. Matsuda[1], M. Arita[1], T. Uemura[1] and M. Yamamoto[1] *1. Hokkaido University, Sapporo, Japan*

9:48

EI-10. Ab initio studies of disorder in the full Heusler Co2(Fe,Mn)Si alloy.P.J. Hasnip[1], J. Smith[1] and *V. Lazarov*[1] *1. Physics, University of York, York, United Kingdom*

10:00

EI-11. Influence of structural defects on the electronic structure and magnetic properties of half-metallic magnetite. *R. Arras*[1], B. Warot-Fonrose[1] and L. Calmels[1] *1. CEMES-CNRS, Toulouse, France*

10:12

EI-12. Magnetism and Magnetotransport in symmetry matched spinels: Fe3O4/MgAl2O4. *D. Gilks*[1], J. Naughton[1], L. Lari[1,2], Z. Cai[3], A. Gerber[4], S. Thompson[1], K. Ziemer[3] and V.K. Lazarov[1] *1. Department of Physics, University of York, York, United Kingdom; 2. York-JEOL Nanocentre, University of York, York, United Kingdom; 3. Department of Chemical Engineering, Northeastern University, Boston, MA; 4. School of Physics and Astronomy, Tel Aviv University, Tel Aviv, Israel*

10:24

EI-13. Highly spin-polarized conducting state at the interface betweeen non-magnetic band insulators: $LaAlO_3/FeS_2$ (001). *J.D. Burton*[1] and E.Y. Tsymbal[1] *1. Physics and Astronomy, University of Nebraska Lincoln, Lincoln, NE*

10:36

EI-14. 3D Effect in Determination of Spin Polarization using Andreev Reflection Spectroscopy. *J.A. Gifford*[1], C.N. Snider[1], J. Martinez[1] and T.Y. Chen[1] *1. Physics, Arizona State University, Tempe, AZ*

10:48

EI-15. Magneto-Electric Effect of Organometallic Benzene-Vanadium Wires.P. Manchanda[1], P.K. Sahota[1], R. Skomski[2] and *A. Kashyap*[1] *1. School of Basic Sciences, Indian Institute of Technology, Mandi, Himchal Pradesh, India; 2. Department of Physics and Astronomy and NCMN, University of Nebraska, Lincoln, Lincoln, NE*

THURSDAY MORNING 9:00 — RIVERSIDE CENTER

Session EP
MAGNETIC NANOPARTICLES II (POSTER SESSION)
Shivaraman Ramaswamy, Chair

EP-01. The influence of thermal annealing on magnetic properties of FeCo(Cu) alloy nanowires. *C. Bran*[1], J. Tomkowicz[1], J. Garcia[2], V. Prida[2], R. Perez del Real[1] and M. Vazquez[1] *1. Institute of Materials Science, Madrid, Spain; 2. Physics Dept, University of Oviedo, Oviedo, Spain*

EP-02. Arrays of ordered nanostructures in Fe-(Pt, Pd) thin films by self-assembling of polystyrene nanospheres. *P. Tiberto*[1], G. Barrera[1], L. Boarino[1], F. Celegato[1], M. Coisson[1], N. De Leo[1], E. Olivetti[1], F. Albertini[2] and F. Casoli[2] *1. INRIM, Torino, Italy; 2. CNR_IMEM, Parma, Italy*

EP-03. Grain size effect on charge ordering, magnetism and magnetoresistance in $Nd_{0.75}Na_{0.25}MnO_3$ *D. Repaka*[1], M. Aparnadevi[1], P. Kumar[1], T. Tripurari Sharan[1] and R. Mahendiran[1] *1. Physics, National University of Singapore*

EP-04. Nanoscopic Physical Behaviors of Self-Assembled $Sr_{12}O_{19}$ Nanoparticles Fabricated from Sputtered Film. *Y. Yasukawa*[1,2], Y. Ogawa[1], X. Liu[1,2] and A. Morisako[1,2] *1. Computer Science and Engineering, Shinshu University, Nagano, Japan; 2. Spin Device Technology Center, Shinshu University, Nagano, Japan*

EP-05. Realization of Large Single Domain Fe3O4 Particles with the Size of 30-40 nm and Good Dispersibility in Aqueous Solution and Exploration of their Nucleation Mechanism. L. Zhuang[1], *Y. Xu*[2], R. Liang[1], P. Zhu[2], N. Buske[3] and H. Shen[1] *1. School of Physics and Engineering, State Key Laboratory of Optoelectronic Materials and Technologies, Guangdong Provincial Key Laboratory of Photovoltaics Technologies, Sun Yat-sen University, Guangzhou, China; 2. Department of Orthodontics, Guanghua School of Stomatology, Hospital of Stomatology, Sun Yat-sen University, Guangzhou, China; 3. MagneticFluids, Ko penicker Landstrasse 203, D-12437, Berlin, Germany*

EP-06. Magnetic Study of GaAs/Fe Core/Shell Nanowires Grown on (110) GaAs Substrates. *R.E. Pimpinella*[1], L. Sonderhouse[1], X. Liu[1], J.K. Furdyna[1] and M. Dobrowolska[1] *1. Physics, University of Notre Dame, Notre Dame, IN*

EP-07. Synthesis of gold/iron oxide magnetic nanowires and nanospheres using sodium citrate via aqueous method. *L. Li*[1], K.Y. Mak[1], C.W. Leung[2], K.Y. Chan[3], W.K. Chan[3] and T. Pong P.W[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong; 2. Department of Physics, Hong Kong Polytechnic University, Hong Kong; 3. Department of Chemistry, The University of Hong Kong*

EP-08. Synthesis and characterization of multifunctional Fe_3O_4-ZnO core-shell nanoparticles. *J.H. Min*[1,2], H. Liu[2,3], J. Wu[2] and Y.K. Kim[1,2] *1. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Republic of Korea; 3. Institute of Molecular and Crystal Engineering, School of Chemistry and Chemical Engineering, Henan University, Kaifeng, China*

EP-09. Magnetic and optical properties of Ag-doped ZnO nanocrystals by nanoemulsion. *J. Gim*[1], J. Wu[2], H. Yoon[1], J.S. Lee[1] and Y.K. Kim[1,2] *1. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. Pioneer Research Center for Biomedical Nanocrystals, Seoul, Republic of Korea*

EP-10. Influence of the morphology on the magnetic properties of dodecanethiol-capped Au nanoparticles. *D. Ortega Ponce*[1], E. Goikolea[2], J.S. Garitaonandia[2], M. Insausti[2] and K. Suzuki[3] *1. Physics and Astronomy, University College London, London, Greater London, United Kingdom; 2. Zientzia eta Teknologia Fakultatea, Euskal Herriko Unibertsitatea, Bilbao, Bizkaia, Spain; 3. Department of Materials Engineering, Monash University, Melbourne, VIC, Australia*

EP-11. Abnormal Magnetic Behaviors in Unique Square alpha-MnO2 Nanotubes. *R. Zeng*[1,2] *1. ISEM, University of Wollongong, Wollongong, NSW, Australia; 2. SETG, UWS, Campbelltown, NSW, Australia*

EP-12. Comparison of magnetic properties of Ni and Co nanowire and nanotube arrays by ferromagnetic resonance. M.P. Proenca[1], C.T. Sousa[1], J. Ventura[1], Y.G. Pogorelov[1], M. Vázquez[2], A. Timopheev[3], N.A. Sobolev[3], J.P. Araujo[1] and *G.N. Kakazei*[1,4] *1. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal; 2. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain; 3. Department of Physics & I3N, University of Aveiro, Aveiro, Portugal; 4. Institute of Magnetism NAS of Ukraine, Kiev, Ukraine*

EP-13. Functionalization of Fe3O4 Nanoparticles with fatty acids obtained of Mauritia flutuosa L. oil. *J.L. Lopez Aguilar*[1], R.M. Paniago[2], H.D. Pfannes[2], K. Balzuweit[2] and J. Dias Filho[3] *1. Centro de Ciencias Biologicas e da Natureza, Universidade Federal do Acre, Rio Branco, Acre, Brazil; 2. Departamento de Fisica, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil; 3. Centro de Ciencias Exatas, Universidade Estadual de Montes Claros, Montes Claros, Minas Gerais, Brazil*

EP-14. Structural and magntic behaviour of $Ni_{0.5}Cd_xFe_{2.5-x}O_4$ spinel nanoferrites. A. Thakur[1], P. Thakur[1] and *J. Hsu*[2] *1. School of Physics, Shoolini University, Solan (H.P.), India; 2. Physics, National Taiwan University, Taipei, Taiwan*

EP-15. Role of oxygen defects on the magnetic properties of ultra-small $Sn_{1-x}Fe_xO_2$ nanoparticles. *K. Dodge*[1], J. Chess[1], G. Alanko[1], C.B. Hanna[1] and A. Punnoose[1] *1. Physics, Boise State University, Boise, ID*

EP-16. Solution-based on-pot synthesis of FeSe magnetic nanoparticles. *A.A. Farghaly*[1] and E. Carpenter[1] *1. Chemistry, Virginia Commonwealth University, Richmond, VA*

THURSDAY MORNING 9:00 RIVERSIDE CENTER

Session EQ
MOTORS AND ACTUATORS V (POSTER SESSION)
Hiroyuki Yaguchi, Chair

EQ-01. Uncertainty Analysis and Robust Design Optimization for PM Transverse Flux Machines with Soft Magnetic Composite Cores. G. Lei[1], *J. Zhu*[1], Y. Guo[1], W. Xu[2], T. Wang[1] and J. Hu[1] *1. University of Technology, Sydney, Sydney, NSW, Australia; 2. RMIT University, Melbourne, VIC, Australia*

EQ-02. A Parameterized Finite Element Computation of V-shape Interior Permanent Magnet Motor.H. Zhang[1], *H. Liu*[1], X. Zhai[1] and W. Fu[2] *1. School of Electrical Engineering, Beijing Jiaotong University, Beijing, China; 2. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

EQ-03. Analysis of Tooth-tip Flux Leakage in Surface-mounted PM Linear Vernier Machines. *W. Li*[1] *1. The University of Hong Kong, China*

EQ-04. Saturation and Ducting Effects in a Brushless Doubly-Fed Reluctance Machine. *D. Dorrell*[1], A.M. Knight[2], W.K. Song[1] and R.E. Betz[3] *1. University of Technology Sydney, Sydney, NSW, Australia; 2. University of Alberta, Edmonton, AB, Canada; 3. University of Newcastle, Newcastle, NSW, Australia*

EQ-05. Switch type power generator using Iron-gallium alloy. *T. Ueno*[1] *1. Kanazawa University, Kanazawa, Japan*

EQ-06. A method of producing a Z-pulse output from the thin axial resolver. *K. Tanaka*[1] and I. Sasada[1] *1. Applied Science for Electronics and Materials, Kyushu University, Fukuoka, Japan*

EQ-07. Eddy Current Damping Suppression of Air-core Monopole Linear Motor for Nanopositioning System. *L. Li*[1], D. Pan[1] and T. Wang[1] *1. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, China*

EQ-08. Design of Five-Phase Modular Flux-Switching Permanent-Magnet Machines.W. Zhao[1] and *J. Ji*[1] *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*

EQ-09. Enhanced iron-loss model with consideration of minor loops applied to FE-simulation of electrical machines. *S. Steentjes*[1] and K. Hameyer[1] *1. Institute for Electrical Machines, Aachen, Germany*

EQ-10. A novel rotor position method for sensorless control of Magnetic-Geared Permanent-Magnet Brushless motor.Y. Wang[1,2] and *W. Fu*[2] *1. Electric Engineering, ZheJiang University, HangZhou, Zhejiang, China; 2. Polyu HK, Hong Kong*

THURSDAY MORNING 9:00

RIVERSIDE CENTER

Session ER
MOTORS AND ACTUATORS VI (POSTER SESSION)
Min Fu Hsieh, Chair

ER-01. Design and Analysis of Axial Permanent Magnet Couplings Based on 3D FEM. *H. Shin*[1], J. Choi[1], S. Jang[1] and K. Lim[2] *1. Electrical engineering, Chungnam National University, Daejeon, Republic of Korea; 2. Gaon Solution Co., Ltd., Suwon, Republic of Korea*

ER-02. Quantitative Comparison and Analysis of Magnetless Machines with Reluctance Topologies.C. Lee[1], K. Chau[1], C. Liu[1] and *M. Chen*[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, China*

ER-03. Analysis and Modeling of Air-core Monopole Linear Motor for Nanopositioning System. *D. Pan*[1], L. Li[1] and T. Wang[1] *1. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, China*

ER-04. Reduction of Rotor Eddy Current Loss in High Speed PM Brushless Machine by Grooving Retaining Sleeve.J. Shen[1], *H. Hao*[1] and M. Jin[1] *1. Dept. of Electrical Engineering, Zhejiang University, Hangzhou, Zhejiang Province, China*

ER-05. Analysis on Magnetic Characteristic of Large Permanent Magnet Wind Power Generator with Magnet Pole Segmentation for Minimization of Cogging Torque.S. Jang[1], *H. Park*[1], J. Choi[1], C. Han[1] and M. Choi[2] *1. Electrical Engineering, Chungnam National University, Daejeon, Republic of Korea; 2. Electrical Engineering, Mokpo University, Mokpo, Republic of Korea*

ER-06. Design of a Permanent magnet Motor with Wide Temperature Range. *H. Liu*[1], Y. Hu[1], M. Tulbane[1], W. Wu[1], L. Chow[1], B. Bai[1], J. Harms[2], M. Epstein[2] and T. Wu[1] *1. University of Central Florida, Orlando, FL; 2. MagLev Energy, Inc., Largo, FL*

ER-07. Magnetic Anisotropy Comparison with Volume Averaged Method and Energy Conservation Method in Multi-Scale Calculation. *K. Fujisaki*[1] *1. Toyota Technological Institute, Nagoya-city, Aichi-prefecture, Japan*

ER-08. Development of a Novel Magnetic Circuit Model for Design of Premium Efficiency Three-Phase Line Start Permanent Magnet Machines with Improved Starting Performance. *X. Lu*[1], L. Iyer[1], K. Mukherjee[1] and N.C. Kar[1] *1. Electrical and Computer Engineering, University of Windsor, Windsor, ON, Canada*

ER-09. Design of Dual Stator Radial Flux Permanent Magnet Generator for Small Wind Turbine. *G. Lee*[1], H. Kim[1] and T. Jung[1] *1. Electrical Engineering, Kyungnam University, Chang Won, Republic of Korea*

ER-10. 3-D Analytical Linear Force and Rotary Torque Analysis of Linear and Rotary Permanent Magnet Actuator.P. Jin[1,2], H. Lin[2], S. Fang[2], F. Yi[2], *J. Yan*[2], Y. Guo[2] and M. Huang[2] *1. College of Energy & Electrical Engineering, Hohai University, Nanjing, China; 2. School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China*

THURSDAY MORNING 9:00

RIVERSIDE CENTER

Session ES
MULTIFERROIC MATERIALS I (POSTER SESSION)

Yan Zhuang, Chair

ES-01. Magnetic and ferroelectric domain dynamics in multiferroic $YMnO_3$ single crystal. *Y. Du*[1], D. Chen[1], X. Wang[1] and S. Dou[1] *1. Institute for Superconducting and Electronic Materials (ISEM), University of Wollongong, Fairy Meadow, NSW, Australia*

ES-02. Multiferroicity in spin ice Ho2Ti2O7. D. Liu[1], L. Lin[1], Y. Xie[1], Z. Yan[1], *S. Dong*[2] and J. Liu[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 2. Department of Physics, Southeast University, Nanjing, China*

ES-03. Effect of Ni substitution on Y-type Barium Ferrite. *M. Won*[1], J. Lim[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Republic of Korea*

ES-04. Finite-Size Scaling of Domain Pattern Transfer in Thin-Film Ferromagnetic-Ferroelectric Heterostructures. *K. Franke*[1], T. Lahtinen[1] and S. van Dijken[1] *1. Department of Applied Physics, Aalto University School of Science, Espoo, Finland*

ES-05. Dielectric responses and origin in antiferromagnetic/ferroelectric (1-x)($BiFeO_3$)-(x)($BaTiO_3$) ceramics. *C. Tu*[1,2], Y. Peng[2], J. Anthoninappen[1], R.R. Chien[3], L. Chang[2] and I. Wu[2] *1. The Graduate Institute of Applied Science and Engineering, Fu Jen Catholic University, Taipei, Taiwan; 2. Physics, Fu Jen Catholic University, Taipei, Taiwan; 3. Physics, Montana State University, Bozeman, MT*

ES-06. Structural Transformation and Enhancement in Magnetic Properties of Single Phase $Bi_{1-x}Pr_x$ FeO_3 Nanoparticles. *S.K. Srivastav*[1], N.S. Gajbhiye[1] and A. Banerjee[2] *1. Department of Chemistry, Indian Institute of Technology, Kanpur, Uttar Pradesh, India; 2. Department of Physics, UGC-DAE CSR, University Campus -Khandawa Road, Indore, Madhya Pradesh, India*

ES-07. Modulated Multiferroicity in Dy-doped Gd2Ti2O7. L. Lin[1], Y. Xie[1], D. Liu[1], Z. Yan[1], *S. Dong*[2] and J. Liu[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 2. Department of Physics, Southeast University, Nanjing, Jiangsu, China*

ES-08. Weak ferromagnetic behavior of $BiFeO_3$ at low temperature. *S. Han*[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Republic of Korea*

ES-09. Size effect on multiferroic TbMn2O5 nanorods. *C. Yang*[1], Y. Chen[1], W. Huang[1], C. Weng[1], Y. Huang[1], Y. Chen[2] and M. Wu[2] *1. Department of Physics, Chung Yuan Christian University, Chung-Li, Taoyuan, Taiwan; 2. Institute of Physics, Academia Sinica, Nankang, Taipei, Taiwan*

ES-10. Intrinsic defects in multiferroic $BiFeO_3$ and their effect on magnetism. *T.R. Paudel*[1], S.S. Jaswal[1] and E.Y. Tsymbal[1] *1. Physics, University of Nebraska, Lincoln, Lincoln, NE*

ES-11. Structure and multiferroic study of Bi5Ti3FeO15. *H. Zhao*[1,2], H. Kimura[1], Z. Cheng[3], X. Wang[3], M. Osada[1], Q. Yao[1] and L. Guo[1] *1. NIMS, Tsukuba, Ibaraki, Japan; 2. Shanghai Institute of Ceramics, Shanghai, China; 3. University of Wollongong, Wollongong, NSW, Australia*

ES-12. Magnetic properties of multiferroic $BiFeO_3$ thin films by pulse laser deposition. M. Coisson[1], G. Barrera[1], *P. Tiberto*[1], L. Batista[2], U. Rabe[2], S. Hirsekorn[2], E.J. Herrera Jimé nez[3], A.C. Garcia Castro[3], F.J. Espinoza Beltrán[3] and J. Muñ oz Saldañ a[3] *1. INRIM, Torino, Italy; 2. Fraunhofer Institute for Nondestructive Testing, Saarbrücken, Germany; 3. Centro de Investigación y de Estudios Avanzados del I.P.N, Santiago de Querétaro, Mexico*

ES-13. Low-Temperature Thermal Conductivity and Magnetic Structure of Multiferroic Orthoferrites. *Z. Zhiying*[1] and S. Xuefeng[1] *1. National Laboratory for Physical Sciences at Microscale, University of Science and Technology of China, Hefei, Anhui, China*

ES-14. Heteroepitaxial growth of the multiphase multiferroic BiFeO3. C. Mix[1] and *G. Jakob*[1] *1. Institute of Physics, University of Mainz, Mainz, Germany*

ES-15. Magnetic anisotropy change of SrCoxTixFe12-xO19 from first-principles calculations. M. Feng[1], B. Shao[2] and *X. Zuo*[2] *1. School of Physics, Nankai University, Tianjin, Tianjin, China; 2. College of Information Technical Science, Nankai University, Tianjin, Tianjin, China*

ES-16. Effects of residual and tunable strain in thin films of $La_{0.7}Ba_{0.3}MnO_3$ J. Wang[1], *Y. Jiang*[1], Z. Wu[1] and J. Gao[1] *1. Department of Physics, The University of Hong Kong*

THURSDAY MORNING 9:00 RIVERSIDE CENTER

Session ET
(ANISOTROPIC) MAGNETORESISTANCE, MAGNETOIMPEDANCE, AND HALL EFFECT I (POSTER SESSION)

Mikihiko Oogane, Chair

ET-01. Quantitative investigation of magnetic domains in GaMnAs films with in-plane and out-of-plane anisotropies using the Hall effect. *S. Lee*[1], H. Lee[1], T. Yoo[1], S. Lee[1], X. Liu[2] and J.K. Furdyna[2] *1. Physics Department, Korea University, Seoul, Republic of Korea; 2. Physics Department, University of Notre Dame, Notre Dame, IN*

ET-02. Anisotropic magnetoresistance in epitaxial La0.67(Ca1-xSrx)0.33MnO3 films. Y. Liu[1,2], Z. Yang[1,2], H. Yang[1,2], S. Katlakunta[1,2], Q. Zhan[1,2] and *R. Li*[1,2] *1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

ET-03. Electric-field driven variation in magnetoresistance of Co/Cu/Fe/$BaTiO_3$ heterostructure. *H. Kojima*[1], T. Naito[1], H. Muraoka[1], E. Wada[1], I. Suzuki[1], Y. Shirahata[1], M. Itoh[1] and T. Taniyama[1] *1. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

ET-04. Anomalous Hall Effect and Magnetoresistance in Co/$Pd_{1-x}Ag_x$ Multilayers with Perpendicular Magnetic Anisotropy. *Z. Guo*[1], B. Zhang[1], Q. Zhang[1], R.O. Aboljadaye[1] and X. Zhang[1] *1. Thin Film Lab, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

ET-05. Thermal degradation study of (Fe-Co)-(Mg-F) nanogranular TMR films by Mössbauer spectroscopy. *S. Koyama*[1], J. Totsuka[1], N. Kobayashi[2] and T. Goto[3] *1. Daido Corporate R&D Center, Daido Steel Co., Ltd., Nagoya, Japan; 2. Research Institute for Electromagnetic Materials, Sendai, Japan; 3. Faculty of Engineering, Tohoku Gakuin Univ., Tagajo, Japan*

ET-06. Comparison of Anisotropic Interface Magnetoresistance in Co/Pt, Co/Pd, and Co/Ta multilayers. C. Hsieh[1,2], L. Huang[1,2], L. Lin[1], J. Lee[1] and *S. Lee*[1,2] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Graduate Institute of Applied Physics, National Chengchi University, Taipei, Taiwan*

ET-07. Anomalous Hall effect in epitaxial ferromagnetic FeGa/Fe3Ga hybrid structure: evidence of spin carrier polarized by clusters. *D. Duc Dung*[1,2], D. Anh Tuan[1], D. Van Thiet[1,2], Y. Shin[1] and C. Sunglae[1] *1. Department of Physics, University of Ulsan, Ulsan, Republic of Korea; 2. Department of General Physics, School of Engineering Physics, Hanoi University of Science and Technology, Hanoi, Viet Nam*

ET-08. Nanomechanical modulation of magnetic properties in GaMnAs. J. Lee[1], M. Cho[1] and *Y. Park*[1] *1. Department of Physics & Astronomy, Seoul National University, Seoul, Republic of Korea*

ET-09. Anisotropic magnetoresistance in La0.67Ca0.33MnO3 /BaTiO3 heterostructures. X. Yali[1,2], L. Yiwei[1,2], Y. Huali[1,2], Y. Zhihuan[1,2], *Z. Qingfeng*[1,2] and L. Run-Wei[1,2] *1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*

ET-10. Anisotropic Low field Magnetoimpedance in (001) Oriented $La_{0.7}Sr_{0.3}MnO_3$ Thin Films. *R.S. Joshi*[1], D.R. Sylvinson[2] and P. Kumar[1] *1. Physics, Indian Institute of Science, Bengaluru, Karnataka, India; 2. Indian Institute of Science Education and Research, Trivandrum, Kerala, India*

ET-11. Hall circuit in nonmagnetic/ferromagnetic/nonmagnetic metal trilayers. P. Zhang[1], *W. Lin*[2], K. Xie[1], D. Wu[1] and H. Sang[1] *1. National Laboratory of Solid State Microstructures, School of Physics, Nanjing University, Nanjing, China; 2. Institut d'Electronique Fondamentale, Université Paris-Sud, Orsay, France*

THURSDAY MORNING 9:00 RIVERSIDE CENTER

Session EU
MAGNETIC FLUIDS AND APPLICATIONS I (POSTER SESSION)

Zoe Boekelheide, Chair

EU-01. Mesoporous Fe-MCM-22 additive effect on magnetorheological response of magnetic carbonyl iron suspension. Y. Liu[1], X. Quan[1], W. Ahn[2] and *H. Choi*[1] *1. Department of Polymer Science and Engineering, Inha Univ, Incheon, Republic of Korea; 2. Department of Chemical Engineering, Inha Univ, Incheon, Republic of Korea*

EU-02. Sub-micron sized magnetic particles of Mn0.25Fe2.75O4 and their magnetorheological characteristics. Y. Liu[1], Y. Li[2], C. Kim[2] and *H. Choi*[1] *1. Department of Polymer Science and Engineering, Inha Univ, Incheon, Republic of Korea; 2. Department of Physics, Kookmin University, Seoul, Republic of Korea*

EU-03. Thermal variation of MgZn-nanoferrites for magnetic hyperthermia. *S. Hyun*[1], H. Kim[2], M. Kim[1], K. Yoo[2] and C. Kim[1] *1. Physics, Kookmin University, Seoul, Republic of Korea; 2. Nanomedical Graduate Program, Yonsei University, Seoul, Republic of Korea*

EU-04. Selective Isolation of Superparamagnetic Beads by a Magnetic Microfluidic Chip. *C. Gooneratne*[1], O. Yassine[1], I. Giouroudi[2] and J. Kosel[1] *1. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 2. Vienna University of Technology, Vienna, Austria*

EU-05. Magneto-optical investigation of dextran-functionalized maghemite nanoparticles: Signature of small-size cluster organization. *P.C. Morais*[1,2], C.R. Stein[2], F.M. Oliveira[2], K.L. Caiado[3], P.P. Sartoratto[3] and K. Skeff-Neto[2] *1. Department of Control Science and Engineering, Huazhong University of Science and Technology, Wuhan, China; 2. Instituto de Fisica, Universidade de Brasilia, Brasilia, DF, Brazil; 3. Instituto de Quimica, Universidade Federal de Goias, Goiania, GO, Brazil*

EU-06. Interaction Between Magnetic Nanoparticles and Domain Wall in Giant Magnetoresistive Spin Valve Nanowire. *T. Klein*[1], J. Lee[2], X. Chao[1], W. Wang[1], T. Rahman[1] and J. Wang[1] *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Physics, University of Central Florida, Orlando, FL*

EU-07. Realistically modeled TMS-coils for stress and Lorentz force calculations during MRI.K. Porzig[1], *L.J. Crowther*[2], R.L. Hadimani[2], H. Brauer[1] and D.C. Jiles[2] *1. Department of Advanced Electromagnetics, Ilmenau University of Technology, Ilmenau, Germany; 2. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*

EU-08. Magnetoconvection Effect of Magnetic Nanofluids for Cooling in Current Carrying Conductor.G. Jeong[1], H. Lee[1], S. Choi[2], Y. Kim[3] and *S. Lee*[1] *1. School of Electrical Eng. and Computer Science, Kyungpook National Univ., Daegu, Republic of Korea; 2. Korea Basic Science Institute, Busan, Republic of Korea; 3. Department of Electrical and Electronic Engineering, Joongbu University, Chungnam, Republic of Korea*

EU-09. Magnetorheological Damper Utilizing an Inner Bypass for Ground Vehicle Suspensions.X. Bai[1], W. Hu[1] and *N.M. Wereley*[1] *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD*

EU-10. Microfluidic Platform for Magnetic Nanoparticle Trapping and Detection. *C.E. Little*[1,2], S.E. Russek[1] and J. Pellegrino[2] *1. Natl Inst of Standards & Tech, Boulder, CO; 2. Mechanical Engineering, University of Colorado, Boulder, CO*

EU-11. Magnetorheological Fluid Composites Synthesized for Helicopter Landing Gear Applications. *L.A. Powell*[1] and N.M. Wereley[1] *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD*

THURSDAY MORNING 9:00

RIVERSIDE CENTER

Session EV
TMR/GMR II (POSTER SESSION)
Martina Mueller, Chair

EV-01. Micromagnetic Studies of Lateral TMR Memory Cell Driven by Spin Polarized Current or by Magnetic Field. *L. Xu*[1], Y. Wang[2], D. Wei[2] and Z. Ma[1] *1. School of Physics, Peking University, Beijing, China; 2. Lab of Advanced Materials, Dept. of Materials Science & Engineering, Tsinghua University, Beijing, China*

EV-02. Characterization of double barrier magnetic tunnel junctions by current-in-plane tunnelling.P. Clé ment[1], C. Ducruet[2], *C. Baraduc*[1], M. Chshiev[1] and B. Dié ny[1] *1. SPINTEC, Grenoble, France; 2. Crocus-Technology, Grenoble, France*

EV-03. Effects of CoFe insertion on CoFeB/MgO/CoFeB perpendicular magnetic tunnel juncions. *K. Nishimura*[1], H. Okuyama[1], Y. Hirobe[1], H. Maehara[1], T. Seino[1] and K. Tsunekawa[1] *1. Canon ANELVA Corporation, Kawasaki-shi, Japan*

EV-04. The effects of deposition rate and annealing on CoFeB/MgO/CoFeB perpendicular magnetic tunnel junctions.L. Ye[1], C. Lee[1,2], H. Chen[1,2], Y. Wang[1,2] and *T. Wu*[1,2] *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*

EV-05. Fabrication of Fe/MgO/Gd magnetic tunnel junctions. *Y. Takahashi*[1,2], Y. Shiota[1,2], S. Miwa[1,2], F. Bonell[1,2], N. Mizuochi[1,2], T. Shinjo[1] and Y. Suzuki[1,2] *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 2. CREST, Japan Science Technology Agency, Kawaguchi, Saitama, Japan*

EV-06. *p*MTJ with both top and bottom electrodes consist of $L1_0$-FePd/CoFeB bilayer. *M. Khan*[1], H. Naganuma[1], M. Oogane[1] and Y. Ando[1] *1. Applied Physics, Tohoku University, Sendai, Japan*

EV-07. Interlayer exchange coupling and perpendicular magnetic anisotropy in Co40Fe40B20/MgO/Co20Fe60B20 tunnel junction structures.. Weng[1], *C. Cheng*[1] and G. Chern[1] *1. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan*

EV-08. Synthetic Antiferromagnetic MgO/CoFeB/Ta(x)/CoFeB/MgO Structures with Perpendicular Magnetic Anisotropy. *C. Cheng*[1], T. Cheng[1], C. Shiue[1] and G. Chern[1] *1. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan*

EV-09. $L1_0$-ordered MnAl alloy film with large perpendicular magnetic anisotropy. *M. Oogane*[1], H. Saruyama[1], H. Naganuma[1] and Y. Ando[1] *1. Tohoku Univ., Sendai, Japan*

EV-10. Process related switching field variation in MgO magnetic tunnel junction nanopillars. *A.V. Silva*[1], D.C. Leitao[1], R.J. Macedo[1], R. Ferreira[2], L. Francis[2], R. Petrova[2], B. Rodriguez[2], S. Cardoso[1] and P.P. Freitas[1] *1. INESC-MN, Lisboa, Portugal; 2. INL, Braga, Portugal*

EV-11. Current-perpendicular-to-plane giant magnetoresistance in pseudo spin valves with $Co_2Fe(Ge_{0.5}Ga_{0.5})$ Heusler alloy ferromagnetic layers and Cu/Ag spacers. *S. Li*[1], Y. Takahashi[1], H. Goripati[2], T. Furubayashi[1] and K. Hono[1,2] *1. National Institute for Materials Science, Tsukuba, Japan; 2. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan*

EV-12. Structural and magnetic properties of epitaxial Fe:MgO anti-granular films. M. Rummey[1], J. Sagar[2], A. Vick[1], L.R. Fleet[2], Y. Zhang[3] and *A. Hirohata*[1,4] *1. Electronics, The University of York, York, United Kingdom; 2. Physics, The University of York, York, United Kingdom; 3. Electronic Engineering, City University of Hong Kong; 4. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan*

EV-14. DC Bias Dependence of Magnetoimpedance in MgO Magnetic Tunnel Junctions. M. Arikan[1], M. Carter[2], G. Xiao[3] and *S. Ingvarsson*[1] *1. Science Institute, University of Iceland, Reykjavik, Iceland; 2. Micro Magnetics Inc., Fall River, MA; 3. Physics Department, Brown University, Providence, RI*

EV-15. Influence of a thin Cu-Pc layer on spin transport in organic magnetic tunnel junctions. *Y. Bae*[1], N. Lee[1], T. Kim[1], A. Pratt[2,3], Y. Soh[4] and G. Aeppli[4] *1. Department of Physics, Ewha Womans University, Seoul, Republic of Korea; 2. National Institute for Materials Science, Tsukuba, Japan; 3. Department of Physics, University of York, York, United Kingdom; 4. London Centre for Nanotechnology, London, United Kingdom*

THURSDAY MORNING 9:00

RIVERSIDE CENTER

Session EW
MICROWAVE, MOLECULAR AND FLUID MAGNETISM (POSTER SESSION)

Enrique del Barco, Chair

EW-01. Phase noise of a non-isochronous auto-oscillator with delayed feedback based on a YIG film delay line. *R.S. Khymyn*[1,2], V.S. Tiberkevich[1], X.F. Zhang[3], H. Xu[3], H.X. Tang[3] and A.N. Slavin[1] *1. Oakland University, Rochester Hills, MI; 2. Institute of Magnetism, NASU, Kiev, Ukraine; 3. Yale University, New Haven, CT*

EW-02. Extensive Monte Carlo study of the spin-phonon coupling model for spin crossover compounds. The limit of the mean field approximation. A.M. Apetrei[1], K. Boukheddaden[2] and *A. Stancu*[1] *1. RAMTECH Center, Faculty of Physics, Alexandru Ioan Cuza University, Iasi, Iasi, Romania; 2. Groupe d'Etudes de la Matière Condensée, Université de Versailles, Versailles, Ile de France, France*

EW-03. Crystallographically textured self-biased W-type hexaferrites for X-band microwave applications. *Z. Su*[1], Y. Chen[1], B. Hu[1], A. Sokolov[1], S. Bennett[1], L. Burns[2] and V. Harris[1] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Metamagnetics Inc., Canton, MA*

EW-04. Pressure and temperature hybrid minor loops in spin transition materials. *R. Tanasa*[1], A. Stancu[1], F. Varret[2], J. Linares[2], E. Codjovi[2] and J. Letard[3] *1. Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania; 2. Groupe d'Etude de la Matière Condensée, Université de Versailles CNRS-UMR8635, Versailles, France; 3. Groupe des Sciences Moleculaires, CNRS, Université de Bordeaux, ICMCB, Pessac, France*

EW-05. Magnetic and Self-biased Properties of Highly Oriented M-type Barium Ferrite Films on Pt-coated Si Substrate by Magnetron Sputtering. *Y. Li*[1], Y. Liu[1], K. Yang[1], J. Li[1] and H. Zhang[1] *1. State Key Laboratory of Electronic Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

EW-06. A first-principles study of magnetic structures and electronic properties of $FeSO_4F$ and $LiFeSO_4F$. *T. Tsevelmaa*[1], D. Odkhuu[1] and S. Hong[1] *1. Physics, University of Ulsan, Ulsan, Republic of Korea*

EW-07. Effect of compounding principles on magnetic performance of poly(methylmethacrylate) (PMMA)/Fe3O4 magnetic nanocomposites. *L. Xie*[1,3], M. Rudolf[2], K. Stefan[1], G. Ziegmann[1] and U. Peuker[2] *1. Institute of Polymer Materials and Plastics Engineering, Clausthal University of Technology, Clausthal-Zellerfeld, Germany; 2. 2 Institute for Mechanical Process Engineering and Mineral Processing., TU Bergakademie Freiberg, Freiberg, Germany; 3. ABB Corporate Research, Daettwil, Switzerland*

EW-08. Anisotropic Magnetocaloric Effect in Molecular Magnets. *N.A. de Oliveira*[1] *1. Instituto de Fisica, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil*

EW-09. Microwave complex permeability of Fe3O4 nanoflake composites with and without magnetic field-induced rotational orientation. X. Liu[1], S. Or[1], *C. Leung*[1] and S. Ho[1] *1. The Hong Kong Polytechnic University, Kowloon, Hong Kong*

EW-10. A Miniaturized Ultra Wideband(UWB) Substrate Integrated Waveguide(SIW) Based on Magnetic Metamaterial. D. Wo[1], *K. Zhang*[1], Y. Lv[1] and Q. Wu[1] *1. Harbin Institue of Technology, Harbin, China*

EW-11. A new kind of low absorption material in terahertz band—-single crystal garnet film by LPE method. *Q. Yang*[1], Q. Wen[1] and H. Zhang[1] *1. University of Electronic Science and Technology of China, Chengdu, China*

EW-12. Two-step hysteretic spin transition in 2D spin crossover compounds investigated by Monte Carlo Entropic sampling technique.D. Chiruta[1,2], J. Linares[1], P.R. Dahoo[3] and *M. Dimian*[2,4] *1. GEMAC, University of Versailles Saint Quentin, Versailles, France; 2. Electrical Engineering and Computer Science, Stefan cel Mare University, Suceava, Romania; 3. LATMOS, University of Versailles Saint Quentin, Versailles, France; 4. LISV, University of Versailles Saint Quentin, Versailles, France*

EW-13. Magnetic Antibubbles: Novel Fluid Transport by Precise Magnetic Control. *J.E. Silpe*[1] and D.W. McGrail[2] *1. Macromolecular Science & Engineering, University of Michigan, Ann Arbor, MI; 2. Biomedical Engineering, University of Michigan, Ann Arbor, MI*

EW-14. A novel method for studying ferrofluids. *C. Buzduga*[1], V. Vlad[1] and C. Ciufudean[1] *1. Faculty of Electrical Engineering and Computer Science, University of "Stefan cel Mare", Suceava, Romania*

EW-15. The low-frequency alternative-current magnetic susceptibility and magnetic properties of Si(100)/ $Fe_{40}Fd_{40}B_{20}$(XÅ)/ZnO(500Å) and Si(100)/ZnO(500Å)/ $Fe_{40}Fd_{40}B_{20}$(YÅ) systems. *Y. Chen*[1], S. Xie[1] and H. Zheng[1] *1. Department of Materials Science and Engineering, I-Shou University, Kaohsiung, Taiwan*

EW-16. Low-loss NiCuZn ferrite with matching permeability and permittivity by two-step sintering process. *H. Su*[1], X. Tang[1], H. Zhang[1], Y. Jing[1] and B. Liu[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, SiChuan, China*

THURSDAY MORNING 9:00

RIVERSIDE CENTER

Session EX
STRONGLY CORRELATED SYSTEMS: DYNAMICS AND LOW DIMENSIONS (POSTER SESSION)

Thomas Moore, Co-Chair
Ingmar Neumann, Co-Chair

EX-01. First-principles Analyses of Unusual Ferromagnetism Observed in CrSi2(core)/SiO2(shell) Nanocables.C. Lee[1], T. Li[1], S. Chiou[2], S. Lo[2], Y. Hsu[1], Y. Han[1] and *H. Ouyang*[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Industrial Technology Research Institute, Hsinchu, Taiwan*

EX-02. Induced magnetism in transition metal intercalated graphitic systems. *U. Schwingenschlogl*[1], M. Upadhyay-Kahaly[1] and T. Kaloni[1] *1. KAUST, Thuwal, Saudi Arabia*

EX-03. Theoretical study of Resistive hysteresis in magnetic ion doped DNA. *S. Sun*[1], H. Chou[2], H. Hsu[3], C. Yu[4] and C. Chang[5] *1. Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Physics, National Sun Yat-Sen University, Kaohsiung, Taiwan; 3. Applied Physics, National Pingtung University of Education, Pingtung, Taiwan; 4. Electrophysics, National Chiayi University, Chiayi, Taiwan; 5. Biological Science and Technology, National Chiao Tung University, Hsinchu, Taiwan*

EX-04. Effects of interlayer spacing on the magnetic properties of layered nickel hydroxides. *M. Seehra*[1] and V. Singh[1] *1. Physics, West Virginia University, Morgantown, WV*

EX-05. Numerical investigation of skyrmion formation in geometrically confined thin film nanostructures. *M. Beg*[1], J. Diviney[1], D. Chernishenko[1], M. Bisotti[1], W. Wang[1], M. Albert[1], R. Stamps[2] and H. Fangohr[1] *1. University of Southampton, Southampton, United Kingdom; 2. University of Glasgow, Glasgow, United Kingdom*

EX-06. Hyperfine interactions in cubic $GdIn_3$ system. *G.A. Cabrera-Pasca*[1], J. Mestnik-Filho[1], A.W. Carbonari[1] and R.N. Saxena[1] *1. CRPq, Instituto de Pesquisas Energéticas e Nucleares, São Paulo, São Paulo, Brazil*

EX-07. Electron spin resonance of $EuIn_2As_2$ intermetallic antiferromagnet.P.F. Rosa[1,2], C. Adriano[1,2], T.M. Garitezi[1], R.R. Ribeiro[3], Z. Fisk[2] and *P. Pagliuso*[1,2] *1. DEQ, IFGW - Unicamp, Campinas, São Paulo, Brazil; 2. Physics and Astronomy, UCI, Irvine, CA; 3. Centro de Ciencias Naturais e Humanas, UFABC, Santo André, São Paulo, Brazil*

EX-08. Electron Spin Resonance in Antiferro-Quadrupolar Ordered CeB_6 *P.U. Schlottmann*[1] *1. Department of Physics, Florida State University, Tallahassee, FL*

EX-09. Ab initio study of the Magnetic Properties of Narrow Boron Nitride Nanoribbon. *J. Rufinus*[1] *1. Science Division, Widener University, Chester, PA*

EX-10. Low dimensional magnetism in single crystalline Ca3Co2O6 and Ca3CoRhO6 compounds.T. Basu[1], K. Iyer[1], P.L. Paulose[1] and *E.V. Sampathkumaran*[1] *1. Tata Institute of Fundamental Research, Mumbai, India*

EX-11. Magnetic properties and X-ray absorption fine structure spectra of $La_{0.7}Ca_{0.3}MnO_3$ nanoparticles. *L.T. Phan*[1], D. Yang[2], Y. Zhang[1], P. Zhang[1] and S. Yu[1] *1. Department of Physics, Chungbuk National University, Cheongju, Republic of Korea; 2. School of Science Education, Chungbuk National University, Cheongju, Republic of Korea*

EX-12. Layered J_1-J_2 Heisenberg spin-1/2 model: role of interlayer coupling $J_\perp$. *M. Haque*[1], M.A. Ahsan[1], D.K. Ghosh[2] and J. Berakdar[3] *1. Physics, Jamia Millia Islamia, New Delhi, Delhi, India; 2. Physics, IIT Bombay, Mumbai, Maharashtra, India; 3. Institute of Physics, Martin-Luther University, Halle-Wittenberg, Saxony Anhalt, Germany*

EX-13. Effect of Y-doping on the spin entropy in Ca3-xYxCo4O9+δD. Zhang[1,2], *Z. Wang*[1,3], G. Tang[4], L. Qiu[1], D. Zhang[5] and Y. Du[1,2] *1. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China; 2. Jiangsu Provincial Laboratory for NanoTechnology, Nanjing, China; 3. Center for Superconducting Physics and Materials, Department of Physics, Nanjing University, Nanjing 210093, Nanjing, China; 4. Department of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, China; 5. Department of Informatics, Linyi University, Linyi, China*

EX-14. Spin ordering between sub-lattices in nasicon $Li_3Fe_2(PO_4)_3$ measured by Mössbauer spectroscopy. *H. Kim*[1], W. Kwon[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Republic of Korea*

EX-15. Coexistence of incommensurate and commensurate spiral orders and pressure effect on polycrystalline CoCr2O4. *X. Chen*[1], Z. Yang[1], Y. Zhou[1], Z. Huang[2], L. Ling[2], S. Zhang[2], Y. Sun[1,2] and Y. Zhang[2,3] *1. Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, Anhui, China; 2. High Magnetic Field Laboratory, Chinese Academy of Sciences, Hefei, Anhui, China; 3. University of Science and Technology of China, Hefei, Anhui, China*

EX-16. Size Dependent Ferromagnetic Resonance and Anisotropic Field of Hexagonal Barium Ferrite Powders. L. Chao[1] and *M. Afsar*[1] *1. Electrical and Computer Engineering, Tufts University, Medford, MA*

THURSDAY AFTERNOON 1:30 GRAND CD

Session FA
SYMPOSIUM ON NEW DEVELOPMENTS IN SPIN CALORITRONICS
Gerrit Bauer, Chair

1:30

FA-01. Thermoelectric generation based on spin Seebeck effect. ***(Invited)*** *K. Uchida*[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

2:06

FA-02. Entanglement of Spin Seebeck Effect and Anomalous Nernst Effect. ***(Invited)*** *S. Huang*[1,2], D. Qu[1], W. Wang[1], S. Lee[3], J. Kwo[2] and C. Chien[1] *1. Department of Physics and Astronomy, The Johns Hopkins University, Baltimore, MD; 2. Department of Physics, National Tsing Hua University, Hsinchu, Taiwan; 3. Institute of Physics, Academia Sinica, Taipei, Taiwan*

2:42

FA-03. Spin Currents in Magneto-Thermal Landscapes. ***(Invited)*** *S.T. Goennenwein*[1] *1. Walther-Meissner-Institut, Garching, Germany*

3:18

FA-04. Negative damping of propagating spin waves in yttrium iron garnet films under thermal gradients. ***(Invited)*** *S. Rezende*[1], E. Padró n-Hernández[1], M.M. Soares[1], R.O. Cunha[1], D.L. Domí nguez[1] and A. Azevedo[1] *1. Fisica, Universidade Federal de Pernambuco, Recife, PE, Brazil*

3:54

FA-05. Magnon-drag thermopile. ***(Invited)*** *M. Costache*[1], G. Bridoux[1], I. Neumann[1,2] and S. Valenzuela[1,3] *1. Catalan Institute of Nanotechnology (ICN), Barcelona, Spain; 2. Universitat Autònoma de Barcelona (UAB), Barcelona, Spain; 3. Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain*

THURSDAY AFTERNOON 1:30 GRAND AB

Session FB
READER, WRITER, TAPE, OVERCOATS I
Jeffrey Childress, Chair

1:30

FB-01. The design and performance of tri-layer head with the gap less than 20nm. *M. Takagishi*[1], H. Iwasaki[1], Y. Isowaki[1] and S. Hashimoto[1] *1. Toshiba Co., Kawasaki, Japan*

1:42

FB-02. Novel System Design for Readback at 10 Tbits/in^2 User Areal Density. *Y. Wang*[1] and R.H. Victora[1] *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

1:54

FB-03. Shield Design for Enhanced Reader Resolution. *A. Tuggle*[1,2], S. Gider[2], D. Mauri[2] and M. Ho[2] *1. Department of Physics and Astronomy, University of Alabama, Tuscaloosa, AL; 2. Magnetic Head Operations, Western Digital, Fremont, CA*

2:06

FB-04. Angular dependence of reference layer spin-torque critical voltage in CPP-GMR magnetic read heads. *G. Mihajlovic*[1], N. Smith[1], J.C. Read[1], J.R. Childress[1], C. Tsang[1] and P. van der Heijden[1] *1. Recording Head Research, HGST, a Western Digital Company, San Jose, CA*

2:18

FB-05. Microstructure and magneto-transport properties of CPP-GMR pseudo spin-valves with polycrystalline Heusler alloy Co2Mn(Ga0.25Ge0.75). *Y. Du*[1,2], T. Nakatani[2], N. Hase[2], Y. Takahashi[2], T. Furubayashi[2] and K. Hono[2,1] *1. University of Tsukuba, Tsukuba, Japan; 2. National Institure for Materials Science, Tsukuba, Japan*

2:30

FB-06. Structural Analysis of Heusler alloy ultrathin films. *Y. Choi*[1], M. Carey[1], J. Read[1], J. Childress[1], T. Weekenstroo[2], F. Ferraro[2], J. Kohlhepp[2] and B. Koopmans[2] *1. HGST, San Jose, CA; 2. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

2:42

FB-07. Gap layer effect on performances of differential dual spin valve. *G. Han*[1], J. Qiu[1], Q. Yap[1], P. Luo[1], C. Koong[1], B. Zong[1] and M. Chandra Sekhar[1] *1. Non-volatile Memory, Data Storage Institute, Singapore*

2:54

FB-08. Writer Field Gradient Measurement on Spinstand. *Z. Yuan*[1], C. Ong[1], S. Ang[1], Z. Liu[1] and B. Santoso[1] *1. DSI, Singapore*

3:06

FB-09. Effect of the dimensions of a stepped-pole writer on side erasure and recording performance. *P. Jubert*[1], H.E. Rothuizen[2] and M.A. Lantz[2] *1. IBM Research - Almaden, San Jose, CA; 2. IBM Research - Zürich, Rüschlikon, Switzerland*

3:18

FB-10. Write field dynamics in the presence of antiferromagnetic coupling of writer pole. *Z. Li*[1], D. Bai[1], T. Pan[1], D. Han[1], F. Liu[1] and S. Li[1] *1. Western Digital, Fremont, CA*

3:30

FB-11. Magnetic writer scaling dynamics for high data rate recording. *M. Bashir*[1], E. Meloche[2], M.A. Gubbins[1] and A. Misra[2] *1. Research and Development, Seagate Technology, Londonderry, United Kingdom; 2. Research and Development, Seagate Technology, Minneapolis, MN*

3:42

FB-12. Study of trailing edge shield magnetic properties for writer performance improvement for perpendicular magnetic recording. *S. Basu*[1], M.A. Gubbins[1], E. Meloche[2], R.W. Lamberton[1], M. Bashir[1] and V. Venugopal[1] *1. Seagate Technology, Londonderry, United Kingdom; 2. Seagate Technology, Minneapolis, MN*

3:54

FB-13. The role of the disk lubricant on the heat transfer between the head and the disk. *S. Vangipuram Canchi*[1], S. Deoras[1] and X.C. Guo[1] *1. HGST, San Jose, CA*

4:06

FB-14. Carbon Overcoat Oxidation in Heat Assisted Magnetic Recording. *B. Marchon*[1], X. Guo[1], F. Rose[1], E. Schreck[1], N. Wang[1] and K. Komvopoulos[2] *1. San Jose Research Center, HGST, San Jose, CA; 2. Department of Mechanical Engineeering, UC Berkeley, Berkeley, CA*

4:18

FB-15. The effect of the pinned layer in transport measurements of CPP-GMR spin-valves with antiparallel-pinned layers. *M.J. Carey*[1], S. Chandrashekariaih[1], S. Maat[1], J. Katine[1] and J. Childress[1] *1. HGST, San Jose, CA*

THURSDAY AFTERNOON 1:30 — REGENCY A

Session FC
ULTRAFAST SWITCHING AND MAGNETIZATION DYNAMICS
Antonio Azevedo, Chair

1:30

FC-01. The mystery of all-optical magnetization switching. ***(Invited)*** *M. Aeschlimann*[1] *1. Department of Physics and Research Center OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany*

2:06

FC-02. Uncovering the Ultrafast Angular Momentum Transfer Channels on the Nanoscale in GdFeCo. *C.E. Graves*[1,2], A.H. Reid[2,3], B. Wu[1,2], T. Wang[2,4], S. de Jong[2], I. Radu[3], M. Messerschmidt[2], R. Coffee[2], M. Bionta[2], S.W. Epp[5], R. Hartmann[6], A. Tsukamoto[7], J.J. Turner[2], W.F. Schlotter[2], Y. Acremann[8], A.V. Kimel[3], A. Kirilyuk[3], T. Rasing[3], J. Stö hr[2], A.O. Scherz[2] and H.A. Dü rr[2]*1. Applied Physics, Stanford University, Stanford, CA; 2. SLAC National Accelerator Laboratory, Menlo Park, CA; 3. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands; 4. Materials Science and Engineering, Stanford University, Stanford, CA; 5. Advanced Study Group, CFEL, Hamburg, Germany; 6. PNSensor, München, Germany; 7. Electronics and Computer Science, Nihon University, Chiba, Japan; 8. Laboratory for Solid State Physics, ETH Zürich, Zürich, Switzerland*

2:18

FC-03. Ultrafast Magnetization Enhancement in Metallic Multilayers Driven by Superdiffusive Spin Current. *E. Turgut*[1], C. La-O-Vorakiat[1], D. Rudolf[2], M. Battiato[3], J. Shaw[4], S. Mathias[5], R. Adam[2], P. Maldonado[3], P. Grychtol[1], H.T. Nembach[4], P.M. Oppeneer[3], M. Aeschlimann[5], C.M. Schneider[2], T.J. Silva[4], H.C. Kapteyn[1] and M.M. Murnane[1]*1. Physics, JILA, University of Colorado and NIST, Boulder, CO; 2. PGI-6 & JARA-FIT, Research Centre Jülich, Jülich, Germany; 3. Physics and Astronomy, Uppsala University, SE-75120, Uppsala, Sweden; 4. Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO; 5. OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany*

2:30

FC-04. A microscopic model for ultrafast magnetization dynamics of multisublattice magnets.A.J. Schellekens[1] and *B. Koopmans*[1]*1. Applied Physics, TU/e, Eindhoven, Noord-Brabant, Netherlands*

2:42

FC-05. Fast strain driven switching of Co|Pt multilayers with perpendicular anisotropy. *U. Singh*[1,2] and S. Adenwalla[1,2]*1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. NCMN, University of Nebraska-Lincoln, Lincoln, NE*

2:54

FC-06. Modeling of laser-heating induced ultrafast demagnetization dynamics in TbFeCo ferrimagnetic films.X. Jiao[1], *Y. Liu*[1], Y. Ren[2], Z. Zhang[2] and Q. Jin[2,3]*1. Department of Physics, Tongji University, Shanghai, China; 2. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 3. Department of Physics, East China Normal University, Shanghai, China*

3:06

FC-07. Femtosecond laser pulse induced ultrafast spin reorientation in Fe/GaAs thin films. *Y. Gong*[1], A.R. Kutayiah[1], X.H. Zhang[2], J.H. Zhao[2] and Y.H. Ren[1]*1. Physics, Hunter College, CUNY, New York, NY; 2. State Key Laboratory for Superlattices and Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China*

3:18

FC-08. Λ-process-based spin manipulation in magnetic endohedral fullerenes. *C. Li*[1,2], S. Zhang[1], W. Jin[2], G. Lefkidis[2] and W. Hü bner[2]*1. School of Mechanics, Civil Engineering and Architecture, Northwestern Polytechnical University, Xi'an, China; 2. Department of Physics and Research Center OPTIMAS, Kaiserslautern University of Technology, Kaiserslautern, Germany*

3:30

FC-09. Ultrafast thermal switching of rare earth ferrimagnets. *S. Wienholdt*[1], D. Hinzke[1], K. Carva[2], P.M. Oppeneer[2] and U. Nowak[1]*1. Dept. of Physics, University of Konstanz, Konstanz, Germany; 2. Dept. of Physics and Astronomy, Uppsala University, Konstanz, Sweden*

3:42

FC-10. Experimental sub-100ps vortex core reversal by spin wave excitation. *M. Noske*[1], M. Kammerer[1], M. Weigand[1], M. Sproll[1], G. Dieterle[1], A. Gangwar[3], G. Woltersdorf[3], A. Vansteenkiste[2], B. Van Waeyenberge[2], H. Stoll[1], C. Back[3] and G. Schuetz[1]*1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Ghent University, Ghent, Belgium; 3. Regensburg University, Regensburg, Germany*

3:54

FC-11. Photo-induced coherent spin precession in La0.67Ca0.33MnO3. *Y. Ren*[1], Y. Gong[1], H. Zhao[2], Q. Li[3] and G. Luepke[4]*1. Physics & Physics, Hunter College of the City University of New York, New York, NY; 2. Optical Science and Engineering, Fudan University, Shanghai, China; 3. Physics, Pennsylvania State University, University Park, PA; 4. Applied Science, College of William and Mary, Williamsburg, VA*

4:06

FC-12. Ultrafast spin transfer in non-collinearly magnetized structures. *K.C. Kuiper*[1], A.J. Schellekens[1] and B. Koopmans[1]*1. Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

4:18

FC-13. Comparing competing models for laser-induced ultrafast demagnetization.A.J. Schellekens[1] and *B. Koopmans*[1]*1. Applied Physics, TU/e, Eindhoven, Noord-Brabant, Netherlands*

THURSDAY AFTERNOON 1:30 REGENCY B

Session FD
MAGNETO-OPTICAL MATERIALS I
Takayuki Ishibashi, Chair

1:30

FD-01. Magntoplasmonic effects in pure ferromagnetic nanostructutres. ***(Invited)*** *P. Vavassori*[1,2], N. Maccaferri[1], V. Bonanni[3], S. Bonetti[4], J. Nogué s[5], M. Kataja[6], S. van Dijken[6], J. Åkerman[5] and A. Dmitriev[4] *1. CIC Nanogune, San Sebastian, Spain; 2. Ikerbasque, Basque Foundation for Science, Bilbao, Spain; 3. Applied Physics, Chalmers University of Technology, Göteborg, Sweden; 4. Materials Physics, Royal Institute of Technology, Kista, Sweden; 5. Universitat Autònoma de Barcelona, Catalan Institute of Nanotechnology (ICN), Bellaterra (Barcelona), Spain; 6. Applied Physics, Aalto University, Espoo, Finland*

2:06

FD-02. Optimization of YIG/Ce:YIG films on Si substrates for on-chip optical isolators. *T. Goto*[1], M.C. Onbasli[1], G.F. Dionne[1] and C.A. Ross[1] *1. Department of Materials and Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

2:18

FD-03. Sub-wavelength tuned magneto-optical Kerr effect in L10-FePt films with perpendicular anisotropy. X. Zhang[1], J. Li[2], Z. Shi[3] and *S. Zhou*[1,3] *1. Physics Department, Fudan University, Shanghai, China; 2. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 3. Physics Department, Tongji University, Shanghai, China*

2:30

FD-04. Bi-directional excitation of magnetoplasmons in 2D magnetoplasmonic crystals. *A. Chetvertukhin*[1], A. Baryshev[2], T. Dolgova[1], H. Uchida[3], M. Inoue[2] and A. Fedyanin[1] *1. Lomonosov Moscow State University, Moscow, Russian Federation; 2. Toyohashi University of Thechonlogy, Toyohashi, Japan; 3. Tohoku Institute of Technology, Sendai, Japan*

2:42

FD-05. Ultrafast dynamics of magneto-optical Kerr effect in magnetoplasmonic crystals. *P.P. Vabishchevich*[1], A.Y. Frolov[1], M.R. Shcherbakov[1], T.V. Dolgova[1] and A.A. Fedyanin[1] *1. Faculty of Physics, Lomonosov Moscow State University, Moscow, Russian Federation*

2:54

FD-06. Nickel and iron plasmon-assisted magneto-optical nanostructures based on commercial digital discs. *A. Grunin*[1], E.A. Bogdanov[2], V.V. Rodionova[2,1], A.Y. Goikhman[2], A.V. Chetvertukhin[1], T.V. Dolgova[1], A.A. Ezhov[1] and A.A. Fedyanin[1] *1. Lomonosov Moscow State University, Moscow, Russian Federation; 2. Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation*

3:06

FD-07. Infrared magneto-optical materials based on manganite composites. *A.V. Telegin*[1], Y.P. Sukhorukov[1], E.V. Mostovshchikova[1], B.A. Gizhevskii[1], V.D. Bessonov[1,2] and S.V. Telegin[1] *1. UD of RAS, Institute of Metal Physics, Ekaterinburg, Russian Federation; 2. University of Bialystok, Bialystok, Poland*

3:18

FD-08. Oxygen stoichiometry dependence of the magnetic and magnetooptical properties of epitaxial SrTi1-xCoxO3-δ films. *M. Onbasli*[1], J. Florez[1], T. Goto[1], D. Kim[1], G. Dionne[1] and C. Ross[1] *1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

3:30

FD-09. Magneto-optical Coupling in a Si/Bi:YIG Microdisk Resonator. *X. Zhang*[1], X. Han[1] and H. Tang[1] *1. Electrical Engineering, Yale University, New Haven, CT*

3:42

FD-10. Incorporation of Gold Nanoparticles in LPE Grown Garnet Films. *G.S. Lang*[1], D. Bowen[1], C. Krafft[2] and I.D. Mayergoyz[1,3] *1. Electrical and Computer Engineering, University of Maryland, College Park, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD; 3. Center of Applied Electromagnetics, University of Maryland, College Park, MD*

3:54

FD-11. Ultrafast dynamics of Faraday rotation in multilayered structures. *M.I. Sharipova*[1], A.I. Musorin[1], A.V. Chetvertukhin[1], T.V. Dolgova[1] and A.A. Fedyanin[1] *1. Physics, Lomonosov Moscow State University, Moscow, Russian Federation*

THURSDAY AFTERNOON 1:30

REGENCY C

Session FE
EXCHANGE BIAS II

Igor Roshchin, Co-Chair
Josep Nogues, Co-Chair

1:30

FE-01. Control of the *magnitude and sign* of the hysteresis loop shift for CoFeB (in-plane) / epitaxial-$SmCo_5$ (perpendicular) bilayers. *A. Bollero*[1], F.J. Pedrosa[1], J. Camarero[1,2], R. Miranda[1,2], V. Neu[3], M. Seifert[3], L. Schultz[3], V. Baltz[4], B. Dieny[4], R.P. del Real[5] and M. Vázquez[5] *1. IMDEA Nanoscience, Madrid, Spain; 2. Departamento de Física de la Materia Condensada and Instituto "Nicolás Cabrera", Universidad Autónoma de Madrid, Madrid, Spain; 3. IFW Dresden, Institute for Metallic Materials, Dresden, Germany; 4. SPINTEC, UMR-8191 CNRS/CEA-INAC/UJF, Grenoble, France; 5. ICMM, Instituto de Ciencia de Materiales CSIC, Madrid, Spain*

1:42

FE-02. Effect of size confinement on EB in Co/CoO Nanostructures. *S. Laureti*[1,2], S. Suck[2], H. Haas[2], E. Prestat[3], O. Bourgeois[2] and D. Givord[2] *1. ISM-CNR, roma, Italy; 2. Institut Néel, CNRS-UJF, Grenoble, France; 3. CEA-INAC/UJF, Grenoble, France*

1:54

FE-03. Effect of CoO spin orientation on the exchange coupling in Fe/CoO systems. *J. Zhu*[1], Q. Li[1], J. Li[1], Z. Ding[1], Y. Wu[1], C. Hua[2], M. Huang[2], H. Lin[2] and T. Pi[2] *1. Physics Department, Fudan University, Shanghai, China; 2. National Synchrotron Radiation Research Center, Hsinchu, Taiwan*

2:06

FE-04. Effect of rotatable and pinned CoO spins on irreversible magnetization switching in epitaxial CoO/Fe. *P.K. Greene*[1], J. Park[2], Z.Q. Qiu[2] and K. Liu[1] *1. Physics, UC Davis, Davis, CA; 2. Physics, UC Berkeley, Berkeley, CA*

2:18

FE-05. Contributions of freezing interfacial spin structure to exchange bias in NiO-Permalloy thin films. *J. McCord*[1] and S. Mangin[2] *1. Insitute for Materials Science, CAU Kiel, Dresden, Germany; 2. Institut Jean Lamour, University Nancy, Nancy, France*

2:30

FE-06. Direct spectroscopic observations of non-rotatable magnetic moments in Fe50Mn50/Co bilayer using XMCD. *P. Audehm*[1], M. Schmidt[1], G. Schuetz[1] and E. Goering[1] *1. Schütz, Max-Planck-Institute for Intelligent Systems, Stuttgart, Germany*

2:42

FE-07. Controlling Exchange Bias in FeMn with Cu. D. Kaya[1], P.N. Lapa[1], P. Jayathilaka[3], H. Kirby[3], C.W. Miller[3] and *I.V. Roshchin*[1,2] *1. Department of Physics and Astronomy, Texas A&M University, College Station, TX; 2. Materials Science and Engineering Program, Texas A&M University, College Station, TX; 3. Department of Physics, University of South Florida, Tampa, FL*

2:54

FE-08. Exchange Bias Effect in the Single Phase Bulk Ferromagnetic Alloy. *F. Hong*[1], J. Wang[1], Z. Cheng[1], X. Wang[1] and S. Dou[1] *1. Institute for Superconducting & Electronic Materials, University of Wollongong, Wollongong, NSW, Australia*

3:06

FE-09. Exchange bias driven by Dzyaleshinskii-Moriya interaction. *R. Yanes*[1], J. Jackson[3], L. Udvardi[2], L. Szunyogh[2] and U. Nowak[1] *1. Department of Physics, Universität Konstanz, Konstanz, Baden-Württemberg, Germany; 2. Department of Theoretical Physics, Budapest University of Technology and Economics, Budapest, Budapest, Hungary; 3. Max-Planck-Institut for Solid State Research, Stuttgart, Baden-Württemberg, Germany*

3:18

FE-10. Setting temperature effect in polycrystalline exchange-biased FeCo/IrMn bilayers: a depth-selective CEMS investigation. L.E. Fernandez-Outon[1], M.S. Araújo Filho[1], R.E. Araújo[1], J.D. Ardisson[1] and *W.A. Macedo*[1] *1. Laboratório de Física Aplicada, Centro de Desenvolvimento da Tecnologia Nuclear, Belo Horizonte, MG, Brazil*

3:30

FE-11. Reversal asymmetry and training effect in $Ir_{22}Mn_{78}/Co_{60}Fe_{40}$ bilayers probed with magnetoresistance. *H. Fulara*[1], S. Chaudhary[1], S.C. Kashyap[1] and D.K. Pandya[1] *1. Physics, IIT of Delhi, Delhi, India*

3:42

FE-12. Exchange anisotropy pinning of a standing spin wave mode. R. Magaraggia[2], *R. Stamps*[1], M. Ali[3] and C.H. Marrows[3] *1. University of Glasgow, Glasgow, United Kingdom; 2. University of Western Australia, Perth, WA, Australia; 3. University of Leeds, Leeds, United Kingdom*

3:54

FE-13. The interplay of interface-induced magnetism and exchange bias behavior in a Ni80Fe20/α- Fe2O3 bilayer. *D. Cortie*[1,2], C. Shueh[4], S. Brueck[2,3], M. James[2,3], H. Fritzsche[5], K. Lin[4], X. Wang[1] and F. Klose[2] *1. The Institute for Superconducting and Electronic Materials, The University of Wollongong, Wollongong, NSW, Australia; 2. The Bragg Institute, The Australian Nuclear Science and Technology Organisation, Lucas Heights, NSW, Australia; 3. The University of New South Wales, Sydney, NSW, Australia; 4. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 5. Canadian Neutron Beam Centre, National Research Council Canada, Chalk River, ON, Canada*

4:06

FE-14. NiFe/CoFe/Cu/CoFe/MnIr spin valves studied by ferromagnetic resonance. *A. Timopheev*[1,2], N. Sobolev[1], Y. Pogorelov[3], S. Bunyaev[3], J. Teixeira[3], G. Kakazei[3], S. Cardoso[4] and P. Freitas[4] *1. Department of Physics & I3N, University of Aveiro, Aveiro, Portugal; 2. Physics of Magnetic Phenomena, Institute of Physics of NAS of Ukraine, Kyiv, Ukraine; 3. Departamento de Física e Astronomia, IFIMUP and IN-Institute of Nanoscience and Nanotechnology, Universidade do Porto, Porto, Portugal; 4. INESC-MN and IN, Institute of Nanoscience and Nanotechnology, Lisbon, Portugal*

4:18

FE-15. The Effect of Crystallinity on Exchange Bias in MnO/Mn_3O_4 Core/Shell Nanoparticles. *R.A. Booth*[1], C.L. Dennis[2] and S.A. Majetich[1] *1. Physics, Carnegie Mellon, Pittsburgh, PA; 2. Materials Science and Engineering Laboratory, NIST, Gaithersburgh, MD*

THURSDAY AFTERNOON
1:30

REGENCY D

Session FF
MRAM AND MAGNETIC LOGIC II
Eugene Chen, Chair

1:30

FF-01. Nudged Elastic Band Calculation of Switching Modes and Energy Barriers in Perpendicular MRAM. *D. Apalkov*[1], A.V. Khvalkovskiy[1], R. Chepulskyy[1], S. Watts[1], X. Tang[1], V. Nikitin[1] and M. Krounbi[1] *1. Grandis, Inc., San Jose, CA*

1:42

FF-02. Sub-30nm p-MTJ with small switching current, large MR, and high thermal stability. *E. Kitagawa*[1], S. Kashiwada[1], M. Yakabe[1], C. Kamata[1], T. Ochiai[1], Y. Kato[1], T. Daibou[1], N. Shimomura[1], J. Ito[1] and H. Yoda[1] *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Kanagawa, Japan*

1:54

FF-03. Unified analysis of spin-injection thermally-assisted and dynamic switching in perpendicularly magnetized GMR nanopillars. *S. Yamashita*[1], H. Tomita[1], S. Miwa[1], T. Nozaki[1], T. Nagase[2], K. Nishiyama[2], E. Kitagawa[2], M. Yoshikawa[2], T. Daibou[2], M. Nagamine[2], T. Kishi[2], S. Ikegawa[2], N. Shimomura[2], H. Yoda[2] and Y. Suzuki[1] *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 2. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Kanagawa, Japan*

2:06

FF-04. Magnetic ratchet for 3-dimensional memory and logic. ***(Invited)*** *R.P. Cowburn*[1] *1. Physics Department, University of Cambridge, Cambridge, United Kingdom*

2:42

FF-05. Effect of Ta layer on CoFeB crystallization in MgO tunnel junctions with Co|Pd multi-layer electrode. *G. Hu*[1], J. Jordan-Sweet[2] and P. Rice[3] *1. IBM-Headway MRMA Alliance, IBM T.J. Watson Research Center, Yorktown Heights, NY; 2. IBM T.J. Watson Research Center, Yorktown Heights, NY; 3. IBM Almaden Research Center, San Jose, CA*

2:54

FF-06. Reduced magnetization in CoPtV and CoNiPt synthetic alloy thin films for STT-MRAM application. *K. Yakushiji*[1], H. Kubota[1], A. Fukushima[1], S. Yuasa[1] and K. Ando[1] *1. Spintronics Research Center, AIST, Tsukuba, Japan*

3:06

FF-07. MgO/CoFeB/Ta/CoFeB/MgO recording structure in magnetic tunnel junctions with perpendicular magnetic easy axis. *H. Sato*[1], M. Yamanouchi[1,2], S. Ikeda[1,2], S. Fukami[1], K. Mizunuma[2], F. Matsukura[1,3] and H. Ohno[1,2] *1. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Miyagi, Japan; 2. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan; 3. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

3:18

FF-08. A fully functional 64Mb DDR3 ST-MRAM built on 90nm CMOS technology. ***(Invited)*** *N. Rizzo*[1], F.B. Mancoff[1], D. Houssameddine[1], R. Whig[1], J. Janesky[1], M. DeHerrera[1], J.J. Sun[1], K. Nagel[1], S. Deshpande[1], M.L. Schneider[1], H.J. Chia[1], S. Alam[1], T. Andre[1], S. Aggarwal[1] and J.M. Slaughter[1] *1. Everspin Technologies, Chandler, AZ*

3:54

FF-09. Statistical analysis of spin-torque switching in in-plane magnetized MgO-MTJs under in-plane magnetic fields. *H. Ohtori*[1,2], A. Fukushima[2], K. Yakushiji[2], H. Kubota[2], T. Taniguchi[2], H. Imamura[2], S. Yuasa[2] and K. Ando[2] *1. Univ. of Tsukuba, Tsukuba, Japan; 2. Spintronics Research Center, AIST, Tsukuba, Japan*

4:06

FF-10. Investigation of Write Error Rate in Spin Transfer Torque Magnetic Random Access Memory (STT-MRAM). *Z. Wang*[1], Y. Zhou[1], J. Zhang[1] and Y. Huai[1] *1. Avalanche Technology, Fremont, CA*

4:18

FF-11. Effects of dual-MgO interfaces on MTJ properties towards highly scalable STT-MRAM. *S. Kim*[1], W. Lim[1], J. Kim[1], W. Kim[1], S. Park[1], K. Kim[1], K. Kim[1], J. Jeong[1], Y. Lee[1], J. Lee[1], H. Ahn[1], J. Park[1], S. Oh[1], J. Lee[1], S. Park[1], S. Jeong[1], S. Choi[1], H. Kang[1] and C. Chung[1] *1. Samsung Electronics, Hwasung, Gyeonggi-Do, Republic of Korea*

THURSDAY AFTERNOON
1:30

CRYSTAL A

Session FG
INDUCTORS AND TRANSFORMERS I
Donald Gardner, Chair

1:30

FG-01. Shielding Analysis of Coaxial High Frequency Transformers used for Electric Vehicle On-Board Charging Systems. W. Water[1], S. Stegen[1] and *J. Lu*[1] *1. Griffith University, South Brisbane, QLD, Australia*

1:42

FG-02. Magnetic-Circuit-based Iron Loss Estimation under Square Wave Excitation with Various Duty Ratios. *K. Nakamura*[1], K. Fujita[1] and O. Ichinokura[1] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan*

1:54

FG-03. Coupled Inductors with Crossed Anisotropy CoZrTa/SiO_2 Multilayer Cores. *R. Davies*[1,3], C. Cheng[2], N. Sturcken[3], W.E. Bailey[2] and K.L. Shepard[1] *1. Department of Electrical Engineering, Columbia University, New York, NY; 2. Materials Science and Engineering Program, Department of Applied Physics and Applied Mathematics, Columbia University, New York, NY; 3. Ferric Semiconductor, Inc., New York, NY*

2:06

FG-04. Voltage Tunable RF Integrated Multiferroic Inductors with FeCoB/Al2O3 Multilayer Films. *Y. Gao*[1], X. Yang[1], T. Nan[1], Z. Zhou[1] and N. Sun[1] *1. Northeastern University, Northeastern University, Boston, MA*

2:18

FG-05. Acoustic noise in amorphous alloy-based transformer cores. *K. Takahashi*[1], D. Azuma[1] and R. Hasegawa[1] *1. R&D, Metglas, Inc., Conway, SC*

2:30

FG-06. Effect of magnetic field on on-chip inductors with patterned magnetic films. *H. Wu*[1], S. Zhao[1], D.S. Gardner[2] and H. Yu[1] *1. Ira A. Fulton Schools of Engineering, Arizona State University, Tempe, AZ; 2. Intel Labs, Intel Corp., Santa Clara, CA*

2:42

FG-07. Kerr-Imaged Edge-Curling Wall Effects of Narrow Magnetic Cores. *A. El-Ghazaly*[1], J.M. Mullenix[1] and S.X. Wang[1,2] *1. Electrical Engineering, Stanford University, Stanford, CA; 2. Materials Science and Engineering, Stanford University, Stanford, CA*

2:54

FG-08. Dedicating Galilean electromagnetism to power integrity issues. *V.G. Mazauric*[1] and N. Hamdache[1] *1. Strategy & Innovation, Schneider Electric, Grenoble Cedex 9, France*

3:06

FG-09. Effects of Winding Geometry on the Self-resonance and Loading Behavior of Miniature Air-core Toroidal Transformers with Nested and Interleaved Windings Fabricated by Printed Circuit Board Methods for Ethernet Applications. *D. Bowen*[1], A. Lee[1], C. Krafft[2] and I. Mayergoyz[1,3] *1. Electrical and Computer Engineering, University of Maryland, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD; 3. UMIACS and AppEL, University of Maryland, College Park, MD*

3:18

FG-10. Sputtered Laminated Magnetic Materials and Their Use in Integrated Transformers. ***(Invited)*** *S.X. Wang*[1,2], J. Mullenix[1] and A. El-Ghazaly[1] *1. Department of Electrical Engineering, Stanford University, Stanford, CA; 2. Materials Science and Engineering, Stanford University, Stanford, CA*

3:54

FG-11. Analysis of Meander-type Winding PCB Transformers for Application in DC/DC Converters. *S. Djuric*[1], G. Stojanovic[1] and M. Damnjanovic[1] *1. Faculty of Technical Sciences, University of Novi Sad, Novi Sad, Serbia*

4:06

FG-12. Introduction of an Optimized Integrated Capacitor Layer in a HF Planar Integrated Magnetic System. S. Stegen[1] and *J. Lu*[1] *1. School of Engineering, Griffith University, Nathan, QLD, Australia*

4:18

FG-13. Design of An Integrated Magnetics Structure for a Current Doubler Rectifier for Power Supply Applications. *E.S. El Sahwi*[1], A.A. El-Deib[1] and F.P. Dawson[1] *1. Electrical and Computer Engineering, University of Toronto, Toronto, ON, Canada*

THURSDAY AFTERNOON
1:30

CRYSTAL B

Session FH
MAGNETIC FLUIDS AND APPLICATIONS II
R. Sooryakumar, Chair

1:30

FH-01. Inverted Linear Halbach Array for Separation of Magnetic Nanoparticles. *Y. Ijiri*[1], S. Williams[2,3], L.R. Moore[2], C. Poudel[1], T. Orita[2] and M. Zborowski[2] *1. Department of Physics and Astronomy, Oberlin College, Oberlin, OH; 2. Department of Biomedical Engineering, Lerner Research Institute, Cleveland Clinic, Cleveland, OH; 3. Cambrian Technologies, Inc., Cleveland, OH*

1:42

FH-02. Dynamics of magnetic domain wall mediated superparamagnetic microbeads transport. *E.A. Rapoport*[1,*] and G.S. Beach[1] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

1:54

FH-03. Size-dependent relaxation properties of monodisperse magnetite nanoparticles measured over seven decades of frequency by AC Susceptometry. *R.M. Ferguson*[1], A.P. Khandhar[1], J. Blomgren[2], C. Johansson[2] and K.M. Krishnan[1] *1. Materials Science & Engineering, University of Washington, Seattle, WA; 2. Acreo AB, Gothenburg, Sweden*

2:06

FH-04. Micro-Magnetic Imprinting: a novel route for the low cost fabrication of micro-patterned magnetic polymers for bio-medical applications. *N. Dempsey*[1], L. Cuong[1], L.F. Zanini[1], M. Kustov[1] and F. Dumas-Bouchiat[1,2] *1. Institut Neel CNRS-UJF, Grenoble, France; 2. Université de Limoges, Limoges, France*

2:18

FH-05. Rapid Characterization of Magnetic Moment of Cells for Magnetic Separation. *C. Ooi*[1], C.M. Earhart[2], J. Lee[3], R.J. Wilson[2] and S.X. Wang[2,4] *1. Chemical Engineering, Stanford University, Stanford, CA; 2. Materials Science and Engineering, Stanford University, Stanford, CA; 3. Mechanical Engineering, Stanford University, Stanford, CA; 4. Electrical Engineering, Stanford University, Stanford, CA*

2:30

FH-06. Monodisperse vs. Disperse Particle Chain Structures in Magnetorheological Fluid. *S.G. Sherman*[1] and N.M. Wereley[1] *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD*

2:42

FH-07. Self-Assembled Swimmers and Simple Robots in Active Magnetic Colloids. ***(Invited)*** *I.S. Aronson*[1] and A. Snezhko[1] *1. Materials Sciences, Argonne National Laboratory, Argonne, IL*

3:18

FH-08. Magnetic Properties of Jet-Printer Inks containing Dispersed Magnetite Nanoparticles. *P. Tiberto*[1], G. Barrera[1], F. Celegato[1], M. Coisson[1], A. Chiolerio[2], P. Martino[3], P. Pandolfi[3] and P. Allia[4] *1. INRIM, Torino, Italy; 2. IIT, Torino, Italy; 3. Politronica s.r.l, Torino, Italy; 4. DISAT, Politecnico di Torino, Torino, Italy*

3:30

FH-09. Direct measurements of femtonewton forces between two magnetic Brownian microparticles. *E. Lyubin*[1], M. Skryabina[1], M. Khokhlova[1] and A. Fedyanin[1] *1. Faculty of Physics, Lomonosov Moscow State University, Moscow, Russian Federation*

3:42

FH-10. Processing of China Clays using a commercial-scale, conduction-cooled superconducting magnetic separation system. *D.D. Jackson*[1] *1. Quantum Design, Inc., San Diego, CA*

3:54

FH-11. 3D mapping of sensitivity of epitaxial graphene Hall sensors to local magnetic and electrical fields. R. Rajkumar[1], A. Manzin[2], A. Tzalenchuk[1] and *O. Kazakova*[1] *1. NPL, Teddington, Middlesex, United Kingdom; 2. INRIM, Torino, Italy*

THURSDAY AFTERNOON 1:30 — CRYSTAL C

Session FI
(ANISOTROPIC) MAGNETORESISTANCE, MAGNETOIMPEDANCE, AND HALL EFFECT II
William Bailey, Chair

1:30

FI-01. Magneto-thermopower and Magnetoresistance of Single CoNi Alloy Nanowires. *T. Boehnert*[1], V. Vega[2], V.M. Prida[2], A. Michel[1] and K. Nielsch[1] *1. Applied Physics, University of Hamburg, Hamburg, Germany; 2. Depto. Física, Universidad de Oviedo, Oviedo, Spain*

1:42

FI-02. Magnetic and transport properties of $Mn_{3-x}Co_xGa$ epitaxially grown tetragonal or cubic Heusler compound thin films. *T. Kubota*[1], S. Ouardi[2,3], S. Mizukami[1], G.H. Fecher[2,3], C. Felser[2,3], Y. Ando[4] and T. Miyazaki[1] *1. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan; 2. Institute of Inorganic Chemistry and Analytical Chemistry, Johannes Gutenberg University of Mainz, Mainz, Germany; 3. Department of Inorganic Chemistry, Max-Planck-Institute for Chemical Physics of Solids, Dresden, Germany; 4. Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

1:54

FI-03. Non-equilibrium proximity-induced anisotropic magnetoresistance. *Y. Chen*[1], S. Takahashi[2], H. Nakayama[2], S. Goennenwein[3], E. Saitoh[2,4] and G. Bauer[1,2] *1. Kavli Institute of Nanoscience, Delft University of Technology, Delft, Netherlands; 2. Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Walther-Meiβner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 4. CREST, Japan Science and Technology Agency, Tokyo, Japan*

2:06

FI-04. High-field linear magnetoresistance in topological insulators. *B.A. Assaf*[1], P. Wei[2], F. Katmis[2,3], J.S. Moodera[2,3] and D. Heiman[1] *1. Physics, Northeastern University, Boston, MA; 2. Francis Bitter Magnet Lab, MIT, Cambridge, MA; 3. Physics, MIT, Cambridge, MA*

2:18

FI-05. The anomalous Hall effect in the perpendicular Ta/CoFeB/MgO thin films. *Z. Tao*[1], W. Shaobing[1,2] and Y. Xiaofei[2] *1. Institute of physics and Beijing National Laboratory for Condensed Matter Physics, Chinese Academy of Sciences, Beijing, China; 2. Electronic Science and Technology, Huazhong University of Science & Technology, Wuhan, Hubei, China*

2:30

FI-06. Point Contact Andreev Reflection from Semimetallic Bismuth - the roles of the minority carriers and the large spin-orbit coupling. *P.S. Stamenov*[1] *1. Physics Department, School of Physics, Dublin, Ireland*

2:42

FI-07. Evidence of superconductor proximity effect in Bi2Te3 thin films when iindium contacts are used in magnetotransport studies. *J.A. Hagmann*[1], X. Liu[1], M. Dobrowolska[1] and J.K. Furdyna[1] *1. Physics, University of Notre Dame, Notre Dame, IN*

2:54

FI-08. Spin Rectification Enabled by Anomalous Hall Effect. *X. Fan*[1], H. Chen[1] and D. Xue[1] *1. The Key Lab for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, Lanzhou, Gansu, China*

THURSDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session FP
MAGNETIC SEMICONDUCTORS II (POSTER SESSION)

Antonio Ruotolo, Co-Chair
Laura Thevenard, Co-Chair

FP-01. The electronic and magnetic properties of Mn-implanted 6H-SiC. *M. Al azri*[1], M. Elzain[1], K. Bouziane[2], S.M. Ché rif[3], A. Declemy[4] and L. Thomé [5] *1. Physics, Sultan Qaboos University, Muscat, Oman; 2. Pôle Energies renouvelables Environnement et Etudes Pétrolières, Université Internationale de Rabat, Rabat, Morocco; 3. LSPM (CNRS-UPR 3407), Université Paris 13, Villetaneuse, France; 4. PhyMat, CNRS UMR 6630, Université de Poitiers, Futuroscope Chasseneuil Cedex, France; 5. CSNSM-Orsay, Université d'Orsay, Orsay, France*

FP-02. The local magnetic moment and electron transfer of ZnO-based dilute magnetic semiconductors. *Z. Huang*[1], S. Chen[1], Z. Weng[1], Z. Chen[1], G. Xu[1] and S. Chen[1] *1. Department of Physics and Energy, Fujian Normal University, Fuzhou, China*

FP-03. Giant magnetoreflection and magnetotransmission in $Hg_{1-x}Cd_xCr_2Se_4$ single crystals. Y.P. Sukhorukov[1], *A.V. Telegin*[1] and E. Zhukov[2] *1. UD of RAS, Institute of Metal Physics, Ekaterinburg, Russian Federation; 2. Kurnakov Institute of General and Inorganic chemistry of RAS, Moscow, Russian Federation*

FP-04. Doping dependence of the magnetic and transport properties of ε-$Fe_{1-x}Co_xSi$ epilayers. *P. Sinha*[1], N.A. Porter[1] and C.H. Marrows[1] *1. University of Leeds, Leeds, United Kingdom*

FP-05. Magnetic and structural investigations on as-grown and annealed PLD SnO_2:Co thin films. *G.M. Stoian*[1], P.A. Stampe[2], R.J. Kennedy[2], Y. Xin[3] and S. von Molnár[1] *1. Physics, Florida State University, Tallahassee, FL; 2. Florida A&M University, Tallahassee, FL; 3. National High Magnetic Field Laboratory, Tallahassee, FL*

FP-06. Magnetic polaron percolation in epitaxial Mn doped ZnO thin films grown at higher doping concentrations using dual-laser ablation technique. D. Mukherjee[1], R. Hyde[1], N. Bingham[1], H. Srikanth[1], P. Mukherjee[1] and *S. Witanachchi*[1] *1. Department of Physics and Center for Integrated Functional Materials (CIFM), University of South Florida, Tampa, FL*

FP-07. A Comparative Study of Polarized Spin Currents in Cobalt doped ZnO Films Depending on Co Amounts. *M.M. Can*[1,2], T. Firat[3], S. Shah[4,5] and A. Oral[1,2] *1. Faculty of Engineering and Natural Sciences, Sabanci University, Istanbul, Turkey; 2. Nanoscience Research and Application Center, Sabanci University, Istanbul, Turkey; 3. Physics Engineering, Hacettepe University, Ankara, Turkey; 4. Physics and Astronomy, University of Delaware, Newark, DE; 5. Material Science and Engineering, University of Delaware, Newark, DE*

FP-08. Magnetic Properties of Fe doped, Co Doped and Fe+Co co-doped ZnO. *J. Beltran*[1], J. Osorio[2], C. Barrero[2] and A. Punnoose[3] *1. Instituto de Química, Universidad de Antioquia, Medellín, Antioquia, Colombia; 2. Instituto de Física, Universidad de Antioquia, Medellín, Antioquia, Colombia; 3. Department of Physics, Boise State University, Boise, ID*

FP-09. Carrier-Mediated Ferromagnetism in High Tc FeSb2-xSnxSe4 p-type Semiconductor. *H. Djieutedjeu*[1], K.G. Ranmohotti[1], J. Makongo[1], X. Zhou[2], C. De La Cruz[3], C. Uher[2], N. Haldolaarachchige[4], D. Young[4] and P. Poudeu[1] *1. Materials Science Engineering, University of Michigan, Ypsilanti, MI; 2. Department of Physics, University of Michigan, Ann Arbor, MI; 3. Neutron Division, Oak Ridge National Laboratory, Oak Ridge, TN; 4. Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA*

FP-10. p-Type Conductivity and strong ferromagnetism in Pt coated ZnCoO:H introduced by the spillover effect. *S. Jeong*[1], J. Shin[2], S. Lee[1], W. Kim[1], Y. Cho[1], S. Kim[3], D. Cho[4], H. Lee[5], N. Park[6], Y. Kuroiwa[7] and I. Takeuchi[8] *1. Department of Cogno-Mechatronics Engineering, Pusan National University, Miryang, Republic of Korea; 2. Department of Nano Fusion Technology, Pusan National University, Miryang, Republic of Korea; 3. Korea Atomic Energy Research Institute, Daejeon, Republic of Korea; 4. Seoul National University, Seoul, Republic of Korea; 5. Ulsan National Institute of Science and Technology (UNIST), Ulsan, Republic of Korea; 6. Interdisciplinary School of Green Energy, Ulsan National Institute of Science and Technology (UNIST), Ulsan, Republic of Korea; 7. Department of Physical Science, Hiroshima University, Higashi-Hiroshima, Japan; 8. Department of Material Science and Engineering, University of Maryland, College Park, MD*

FP-11. Synthesis and magnetic properties of metastable La2VMnO6 double perovskites. *M.P. Singh*[1] and F.S. Razavi[1] *1. Department of Physics, Brock University, St Catharines, ON, Canada*

FP-12. GRM/TMR structures based on CrO_2(001) with epitaxial VO_2 as the barrier layer. *X. Zhang*[1,2], X. Zhong[2], P. LeClair[2,3] and A. Gupta[1,2] *1. Department of Chemistry, The University of Alabama, Tuscaloosa, AL; 2. MINT Center, The University of Alabama, Tuscaloosa, AL; 3. Department of Physics and Astronomy, The University of Alabama, Tuscaloosa, AL*

FP-13. Magnetism of 3d transitional metal doped h-BN monolayer: a density functional theory study. Y. Lu[1], T. Zhou[1] and *X. Zuo*[1] *1. College of Information Technical Science, Nankai University, Tianjin, China*

FP-14. Controlling of the x values of FeO_x thin films and their electrically-induced modulation of transport and magnetic properties. Y. Chao[1], C.X. Gang[1], F.J. Bo[1] and *Y.J. Bo*[1,2] *1. School of Physics, Peking University, Beijing, China; 2. State Key Laboratory for Mesoscopic Physics, School of Physics, Peking University, Beijing, China*

FP-15. Variation of electronic properties with growth temperature of epitaxially grown MnAs thin films on GaAs(001) substrates. *J. Song*[1,2], Y. Cui[2], J. Lee[2] and J.B. Ketterson[2] *1. Physics, Chungnam National University, Daejeon, Republic of Korea; 2. Physics and Astronomy and Material Research Center, Northwestern University, Evanston, IL*

FP-16. Formation of FeSi thin films and ferromagnetic properties. *Y. Shin*[1], T.A. Doung[1] and S. Cho[1] *1. Physics, University of Ulsan, Ulsan, Republic of Korea*

THURSDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session FQ
PERMANENT MAGNET PROCESSING AND CHARACTERIZATION I (POSTER SESSION)

Balamurugan Balasubramanian, Co-Chair
Ralph Skomski, Co-Chair

FQ-01. Microstructure and properties of Dy2O3-doped Nd-Fe-B magnets. *L. Zheng*[1,2], K. Zhang[1], Y. Li[1], X. Wang[1], M. Zhu[1] and W. Li[1] *1. Institute of Functional Materials, Central Iron & Steel Research Institute, Beijing, China; 2. College of Equipment Manufacture, Hebei University of Engineering, Handan, Hebei, China*

FQ-02. The effect of Dy Source Size on magnetic properties and microstructure of sintered Nd-Fe-B magnet prepared by two-alloy method. *C. Yan*[1,2], S. Guo[1,2], R. Chen[1,2], D. Lee[1,2] and A. Yan[1,2] *1. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China; 2. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*

FQ-03. Fabrication and domain structure of $Sm(Co,Cu,Fe,Zr)_x$ thick permanent films prepared by magnetron sputtering. Y. Zhang[1,2], J. Song[1,2], X. Qi[1,2], J. Du[1,2], W. Xia[1,2], *J. Zhang*[1,2], A. Yan[1,2] and P. Liu[3] *1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 3. Physics, University of Texas at Arlington, Arlington, TX*

FQ-04. A study on the phase evolution and magnetic properties of $Nd_{9.5-1.5x}Fe_{bal.}Ti_{2.5}Zr_{0.5}B_{15+2x}$ (x=0-4) bulk magnets. *H.W. Chang*[1], T.H. Hsiao[2], C.C. Hsieh[2], C.W. Shih[2], W.C. Chang[2] and C.C. Shaw[3] *1. Department of Physics, Tunghai University, Taichung, Taiwan; 2. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 3. Supermax Co. Ltd., Taipei, Taiwan*

FQ-05. Design and synthesis of alloyed rare-earth (R,Ce)2Fe14B permanent magnets for cost and performance. *A. Alam*[1], R. McCallum[1] and D. Johnson[1] *1. Ames Laboratory, Ames, IA*

FQ-06. A facile approach for preparing Nd2Fe14B alloy particles of various sizes via spray drying. *Y. Baek*[1], J. Lee[1], D. Kim[1] and C. Choi[1] *1. Korea Institute of Materials Science, Changwon, Republic of Korea*

FQ-07. Magnetization reversal process of Nd-Cu infiltrated nanocrystalline magnets studied by scanning transmission x-ray microscopy (STXM) and small angle neutron scattering (SANS). *K. Ono*[1], M. Yano[2], A. Manabe[2], N. Miyamoto[2], T. Shoji[2], A. Kato[2], Y. Kaneko[3], T. Araki[3], H. Nozaki[3], M. Harada[3], J. Raabe[4] and J. Kohlbrecher[4] *1. KEK, Tsukuba, Japan; 2. Toyota Motor Corporation, Toyota, Japan; 3. Toyota Central R&D Labs. Inc., Aichi, Japan; 4. Paul Scherrer Institut (PSI), Villigen, Switzerland*

FQ-08. Ferromagnetic short-range and long-range ordering in rapidly cooled Nd-Fe-Co-Al ribbons. *L.T. Phan*[1], Y. Zhang[1], D. Huu[2], N. Dan[2], T. Thanh[1,2], P. Zhang[1] and S. Yu[1] *1. Department of Physics, Chungbuk National University, Cheongju, Republic of Korea; 2. Institute of Materials Science, Chungbuk National University, Cheongju, Republic of Korea*

FQ-09. Microstructural Origins of Highly Coercive Co-Pt Alloys at Near-Eutectoid Composition. *P. Ghatwai*[1], M. Hrdy[1], T. Iamsasri[2], W.A. Soffa[1] and J.A. Floro[1] *1. Materials Science and Engineering, University of Virginia, Charlottesville, VA; 2. Materials Science and Engineering, University of Florida, Gainesville, FL*

FQ-10. Influence of La-Co substitution on the structure and magnetic properties of low temperature sintering M-type barium ferrites. *J. Li*[1], H. Zhang[1], Y. Li[1], Q. Li[1] and Y. Ma[1] *1. State Key Laboratory of Electronic Films and Integrated Devices, University of Electronic Science and Technology of China, Cheng Du, Sichuan, China*

FQ-11. Giant Barkhausen jumps in exchange biased bulk nanocomposites sinterd fom core-shell Fe_3O_4-CoO nanoparticles. T. Gaudisson[1,2], S. Ammar[2], M. LoBue[1] and *F. Mazaleyrat*[1] *1. SATIE, ENS Cachan, Cachan, France; 2. ITODYS, Universite Paris Diderot, Paris, France*

FQ-12. Effect of ambient aging on heat-treated mechanically alloyed MnAlC powders. *O. Obi*[1], L. Burns[2], M. Sawicki[1], D. Kaplan[1], A.M. Arango[3], L.H. Lewis[3] and V.G. Harris[1,3] *1. Center for Microwave Magnetic Materials and Integrated Circuits, Department of Electrical and Computer, Northeastern University, Boston, MA; 2. Metamagnetics Inc., Canton, ME; 3. Department of Chemical Engineering, Northeastern University, Boston, MA*

FQ-13. Formation of α"-$Fe_{16}N_2$ in iron foil using nitrogen ion implantation. *Y. Jiang*[1], Y. Wang[2] and J. Wang[1] *1. Department of Electrical and Computer Engineering, The Center for Micromagnetics and Information Technology (MINT), Minneapolis, MN; 2. Materials Science and Technology Division, Los Alamos National Laboratory, Los Alamos, NM*

FQ-14. Coercivity enhancement in MnBi particles. Y. Yang[1], X. Ma[1], C.s. Wang[1], H.l. Du[1], J.z. Han[1], Y.C. Yang[1] and *J.b. Yang*[1] *1. Peking University,School of Physics, Beijing, China*

FQ-15. Infusion of rare earth Tb3+ ions in nanocrystalline Sr-hexagonal structure. M.L. Mane[1], *S.E. Shirsath*[2], R.H. Kadam[3], X. Liu[2] and A. Morisako[2] *1. Physics, S.G.R.G. Shinde Mahavidyalaya Paranda, Osmanabad, India; 2. Spin Device Technology Center, Faculty of Engineering, Shinshu University, Nagano 38-8553, Japan, Nagano, Japan; 3. Physics, Materials Science Research Laboratory, SKM, Gunjoti, Osmanabad 413613 MS, India, Osmanabad, India*

FQ-16. Heavy Transition-Metal Substitutions in Fe and Co. *E.S. Krage*[1], P. Manchanda[2], P.K. Sahota[2], R. Skomski[3,4], A. Kashyap[2], I.A. Al-Omari[5] and D.J. Sellmyer[3,4] *1. Physics, South Dakota State University, Brookings, SD; 2. School of Basic Sciences, Indian Institute of Technology, Mandi, India; 3. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 4. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 5. Department of Physics, Sultan Qaboos Universiy, Muscat, Sultanate, Oman*

THURSDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session FR
MAGNETOELECTRIC MATERIALS AND DEVICES III (POSTER SESSION)

Jian Zhu, Chair

FR-01. Evidence for the Highest Magnetoelectric Coupling in Hexaferrite at Room Temperature. *K. Ebnabbasi*[1], M. Mohebbi[1] and C. Vittoria[1] *1. Electrical Engineering, Northeastern University, Boston, MA*

FR-02. Magnetoelectric effect in AlN/FeGa bi-layer thin films. N.B. Simhachalam[1] and *L. Malkinski*[1] *1. Advanced Materials Research Institute, New Orleans, LA*

FR-03. Heterojunction of multiferroic $HoMnO_3$ on Nb-doped $SrTiO_3$ *T. Han*[1], S. Pan[1], C. Chen[1] and J.G. Lin[2] *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan*

FR-04. In-plane anisotropic converse magnetoelectric effect in FeGa/PVDF heterostructure films. Z. Zhenghu[1,2], *Z. Qingfeng*[1,2], D. Guohong[1,2], C. Bin[1,2], Z. Xiaoshan[1,2], Y. Huali[1,2], L. Yiwei[1,2] and L. Run-Wei[1,2] *1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Ningbo, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Ningbo, China*

FR-05. Electric-voltage control of magnetism in Fe/$BaTiO_3$ heterostructured multiferroics. G. Venkataiah[1], E. Wada[1], H. Taniguchi[1], M. Itoh[1] and *T. Taniyama*[1] *1. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

FR-06. Wide/narrow band voltage tuning of FMR with bistable magnetization switching in energy-efficient microwave magnetoelectric composites. *M. Liu*[1,2], Z. Zhou[2], B. Howe[1], G.J. Brown[1] and N.X. Sun[2] *1. Materials and Manufacturing Directorate, Air Force Research Laboratory, Dayton, OH; 2. Electrical and Computer Engineering Department, Northeastern Univeristy, Boston, MA*

FR-07. Vortex converse magnetoelectric effect in ring-shaped magnetostrictive/piezoelectric laminate. S. Zhang[1], *C. Leung*[1], S. Or[1] and S. Ho[1] *1. The Hong Kong Polytechnic University, Kowloon, Hong Kong*

FR-08. Large E-field tunability of microwave ferromagnetic properties in Fe50Co50-Hf/PZN-PT multiferroic composites. S. Li[1,2], M. Liu[3], J. Lou[4], L. Wang[2], W. Shao[1], S. Xu[1], S. Chen[1], L. Xia[1], *T. Nan*[4], Z. Zhou[4], N. Sun[4] and J. Duh[5] *1. College of Physics Science, Qingdao University, Qingdao, Shandong, China; 2. Physics, Fujian Normal University, Fuzhou, Fujian, China; 3. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 4. Electrical and Computer Engineering Department, Northeastern University, Boston, MA; 5. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

FR-09. An investigation on the magneto-electric coupling in BaTiO3 on Zn1-xCoxO thin film systems. A. Sundararaj[1], *S. Ramaswamy*[1], T. Yadavalli[1], H.A. Therese[1], C. Gopalakrishnan[1] and A. Karthikeyan[2] *1. Nanotechnology Research Center, SRM University, Chennai, Tamil Nadu, India; 2. Department of Physics, SRM University, Chennai, Tamil Nadu, India*

FR-10. High current sensitivity and large magnetoelectric effect in ring-type magnetoelectric composite based on concentric magnetostrictive composite ring and piezoelectric ceramic ring. *C. Leung*[1], S. Or[1] and S. Ho[1] *1. The Hong Kong Polytechnic University, Kowloon, Hong Kong*

FR-11. Magnetoelectric effect of La0.7Sr0.3MnO3 -BaTiO3 core-shell nanocomposite. *C. Nayek*[1], K. Sahoo[1] and P. Murugavel[1] *1. Physics, IIT Madras, Chennai, Tamilnadu, India*

FR-12. Magnetic field induced polarization and magnetoelectric effect of Ba0.8Ca0.2TiO3-Ni0.2Cu0.3Zn0.5Fe2O4 ferrite nanomultiferroic. *S. Katlakunta*[1], K. Praveena[1] and S.R. Murthy[1] *1. Department of Physics, Osmania University, Hyderabad, India*

FR-13. Magnetoelectric susceptibility tensor of multiferroic $TbMnO_3$ with cycloidal antiferromagnetic structure in external field. *I.V. Bychkov*[1], D.A. Kuzmin[1], S.J. Lamekhov[1] and V.G. Shavrov[2] *1. Chelyabinsk State University, Chelyabinsk, Russian Federation; 2. The Institute of Radioengineering and Electronics of RAS, Moscow, Russian Federation*

FR-14. Dielectric and ferromagnetic resonance study of BaTiO3-NiFe2O4 magnetoelectric nanocomposite. *T. Garg*[1,2], D.B. Murty[1], G. Sreenivasulu[1] and G. Srinivasan[1] *1. Physics Department, Oakland University, Rochester Hills, MI; 2. Metallurgical Engineering & Materials Science Department, Indian Institute of Technology Bombay, Mumbai, India*

FR-15. Strain induced Magnetic Properties of Multiferroic GdMnO3 thin film fabricated by Pulsed Laser Deposition. *P. Negi*[1], H. Kumar[1], H.M. Agrawal[1], R.C. Srivastava[1] and K. Asokan[2] *1. Department of Physics, G. B. Pant University of Ag. and Tech. Pantnagar, Uttarakhand, India, Pantnagar, Uttarakhand, India; 2. Material Science Group, Inter-University Accelerator Centre, New Delhi, New Delhi, Delhi, India*

FR-16. The manipulation of magnetic properties by resistive switching effect in $CeO_2/La_{0.7}(Sr_{0.1}Ca_{0.9})_{0.3}MnO_3$ system. C. Xuegang[1], F. Jianbo[1], Y. Yunbo[1] and *Y. Jinbo*[1,2] *1. School of Physics, Peking University, Beijing, Beijing, China; 2. State Key Laboratory for Mesoscopic Physics, School of Physics, Peking University, Beijing, Beijing, China*

THURSDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session FS
PATTERNED FILMS AND NANOPARTICLES III: NANOMAGNET ARRAYS (POSTER SESSION)

Vivian Ng, Co-Chair
Joseph Davies, Co-Chair

FS-01. An Artificial Magnetic Quasicrystal. *D. Shi*[1], A. Stein[2], S. Morley[1], J. Morgan[1], P. Olmsted[1], G. Burnell[1] and C. Marrows[1] *1. University of Leeds, Leeds, United Kingdom; 2. Brookhaven National Laboratory, Upton, NY*

FS-02. Effect of substrate temperature on ordering of two-dimensional spin ice. *S. Greaves*[1] and H. Muraoka[1] *1. RIEC, Tohoku University, Sendai, Japan*

FS-03. Thermal-Athermal Crossover of Artificial Spin Ice. *S.A. Morley*[1], A. Stein[2], M.T. Bryan[3], D.A. Allwood[3], J.P. Morgan[1] and C.H. Marrows[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY; 3. Department of Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom*

FS-04. Observation of tunable magnetic dipoles by MFM in nanomodulated continuous ferromagnetic film. *T.S. Maity*[1] and S. Roy[1] *1. Micropower-Nanomagnetics Group, Microsystems Center, Tyndall National Institute, Cork, Ireland*

FS-05. Single-domain shape anisotropy in near-macroscopic Ni80Fe20 thin film rectangles. *Y. Li*[1] and W.B. Bailey[1] *1. Applied Physics and Applied Mathematics, Columbia University, New York, NY*

FS-06. Standing spin waves in circular Permalloy dots at extremely high frequencies. S.V. Nedukh[1], S.I. Tarapov[1], D.P. Belozorov[2], A.A. Kharchenko[1], V.O. Golub[3], I.V. Kilimchuk[3], O.Y. Salyuk[3], E.V. Tartakovskaya[3], S.A. Bunyaev[4] and *G.N. Kakazei*[3,4] *1. Institute of Radiophysics and Electronics NAS of Ukraine, Kharkov, Ukraine; 2. National Scientific Center "Kharkov Institute of Physics and Technology", Kharkov, Ukraine; 3. Institute of Magnetism NAS of Ukraine, Kiev, Ukraine; 4. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal*

FS-07. Anisotropic Magneto-Resistance in $Ni_{80}Fe_{20}$ Antidot Arrays Prepared by Bottom-up and Top-down Nanolithography. *M. Coisson*[1], G. Barrera[1], L. Boarino[1], F. Celegato[1], E. Enrico[1], P. Tiberto[1] and F. Vinai[1] *1. Electromagnetics, INRIM, Torino, Italy*

FS-08. A micromagnetic study of permalloy square lattice dot array. *J. Jiang*[1], Y. Wang[1], D. Liu[1] and X. Han[1] *1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics Chinese Academy of Sciences, Beijing, China*

FS-09. Magnetization dynamics of buckling domain structures in patterned thin films. *C. Patschureck*[1,2], K. Lenz[3], M.O. Liedke[3], M. Lutz[4], T. Strache[3], I. Mö nch[5], R. Schä fer[1,2], L. Schultz[1,2] and J. McCord[6] *1. Institute for Metallic Materials, IFW Dresden, Dresden, Germany; 2. Department of Mechanical Engineering, TU Dresden, Dresden, Germany; 3. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 4. Institute for Solid State Research, IFW Dresden, Dresden, Germany; 5. Institute for Integrative Nanosciences, IFW Dresden, Dresden, Germany; 6. Institute for Material Science, CAU Kiel, Kiel, Germany*

FS-10. Effect of direct current polarity on the magnetization reversal of high aspect ratio spin valve. *C. Kuo*[1], C. Chao[1], L. Horng[1], 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*

FS-11. Non-reciprocal Electromagnetic wave propagation in Permalloy nano-strips.B.K. Kuanr[1,2], *A.V. Kuanr*[3], R.E. Camley[1] and Z.E. Celinski[1] *1. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Electronics Department, Zakir Husain Delhi College, Delhi, India; 3. Physics Department, Rajguru College of Applied Science for Women, Delhi, India*

FS-12. Magnetic and ferromagnetic resonance Investigation in Nickel Nanohills thin films with different thickness.S. Michea[1], *J. Briones*[1,2], C. Gallardo[1,2], J.M. Vargas[3], J. Denardin[1,2], R. Rodriguez-Suarez[4] and L. Spinu[3] *1. Departamento de Fisica, Universidad de Santiago, Santiago, Chile; 2. Center for the Development of Nanoscience and Nanotechnology (CEDENNA), Universidad de Santiago, Santiago, Chile; 3. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA; 4. Facultad de Física, Pontificia Universidad Catolica de Chile, Santiago, Chile*

FS-13. Study of finite size effects and magnetic frustration in patterned Iron oxide thin films.G.G. Philip[1], *S. Ramaswamy*[1], T. Yadavalli[1], H.A. Therese[1] and C. Gopalakrishnan[1] *1. Nanotechnology Research Center, SRM University, Chennai, Tamil Nadu, India*

FS-14. Withdrawn.

FS-15. The Direction-dependent magnetic and thermal annealing effects in Fe90¬X10(X=Pt and Pd) nanowires and nanotubes. *N. Ahmad*[1,2], C. Junyang[1], J. Iqbal[2], S. Dawei[1] and H. Xiufeng[1] *1. Institute of Physics of Beijing, Beijing, China; 2. International Islamic University of Islambad, Islambad, Pakistan*

FS-16. Correlation between site preference and magnetic characteristics of self assembled strontium ferrite dot array on functionalized multi-walled carbon nanotubes.A. Ghasemi[1], X. Liu[1] and *A. Morisako*[1] *1. Shinshu University, Nagano, Japan*

THURSDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session FT
SPIN TORQUE AND DOMAIN WALL DEVICES II (POSTER SESSION)

Dafiné Ravelosona, Chair

FT-01. A Magnetic Droplet Spin Torque Oscillator. *S. Mohseni*[1,2], S.R. Sani[1,2], J. Persson[2], T. Nguyen[1], S. Chung[1], Y. Pogoryelov[3], P.K. Muduli[3], E. Iaccoca[3], A. Eklund[4], R.K. Dumas[3], S. Bonetti[5], A. Deac[6], M. Hoefer[7] and J. Åkerman[1,3] *1. Materials Physics, School of ICT, Royal Institute of Technology, Kista, Sweden; 2. NanOsc AB, Kista, Sweden; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 4. Devices and Circuits, School of ICT, Royal Institute of Technology, Kista, Sweden; 5. Stanford Institute for Energy and Materials Science, School of ICT, Royal Institute of Technology, Stanford, MA; 6. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf e. V., Dresden, Germany; 7. Department of Mathematics, North Carolina State University, Raleigh, NC*

FT-02. Magnetization dynamics of spin-torque oscillator coupled with a nano-sized media. *H. Arai*[1], T. Taniguchi[1] and H. Imamura[1] *1. National Institute of AIST, Tsukuba, Ibaraki, Japan*

FT-03. Field-free spin torque oscillator with free synthetic ferrimagnet. *Y. Zhou*[1], J. Xiao[2], G. Bauer[4,5] and F. Zhang[1,3] *1. Physics, The University of Hong Kong, China; 2. Physics, Fudan University, Shanghai, China; 3. Center of Theoretical and Computational Physics, The University of Hong Kong, China; 4. Institute for Materials Research, Tohoku University, Sendai, Japan; 5. Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands*

FT-04. Intrinsic low-frequency noise in magnetic tunnel junctions caused by nonlinear thermal excitation. *S. Miwa*[1], H. Kubota[2], K. Yakushiji[2], S. Ishibashi[1], E. Tamura[1], T. Saruya[2], A. Fukushima[2], S. Yuasa[2] and Y. Suzuki[1] *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 2. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan*

FT-05. High speed switching by pulse current with duration down to subnanoseconds in CoFeB/MgO based magnetic tunnel junctions with perpendicular easy axis. *K. Miura*[1,2], M. Yamanouchi[1,3], H. Sato[1], S. Ikeda[1,3], F. Matsukura[1,4] and H. Ohno[1,3] *1. Center for Spintronics Integrated Systems, Tohoku University, Miyagi, Japan; 2. Hitachi Central Research Laboratory, Tokyo, Japan; 3. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Miyagi, Japan; 4. WPI Advanced Institute for Materials Research, Tohoku University, Miyagi, Japan*

FT-06. Phase Lock of Serial Spin Torque Oscillators at Non-zero Temperature. *T. Qu*[1] and R.H. Victora[2] *1. Department of Physics, University of Minnesota, Minneapolis, MN; 2. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

FT-07. Switching current and energy barrier analysis of dynamic switching in perpendicular MTJ. *D. Saida*[1], N. Shimomura[1], M. Amano[1], E. Kitagawa[1], S. Kashiwada[1], C. Kamata[1], T. Daibou[1], S. Yamashita[2], K. Mukherjee[2], S. Miwa[2], Y. Suzuki[2], J. Ito[1], S. Fujita[1] and H. Yoda[1] *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Kanagawa, Japan; 2. Faculty of Engineering Science, Osaka University, Osaka, Japan*

FT-08. Double-mode vortex dynamics in nano-contact spin-torque oscillators. *Y. Pogoryelov*[1], S.R. Sani[2,3], M. Mohseni[2,3], J. Persson[3] and J. Åkerman[1,2] *1. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 2. Material Physics, Royal Institute of Technology (KTH), Kista, Sweden; 3. NanOsc AB, Kista, Sweden*

FT-09. Computational study of spin-torque oscillator interactions for non-Boolean computing applications. *G. Csaba*[1] and W. Porod[1] *1. NDnano, University of Notre Dame, Notre Dame, IN*

FT-10. Bias-dependence of the Spin-Transfer Torques in MgO-based Magnetic Tunnel Junctions.S. Boyn[1], *J. Grollier*[1], J. Sampaio[1], V. Cros[1], R. Matsumoto[1,2], A. Fukushima[2], H. Kubota[2], K. Yakushiji[2] and S. Yuasa[2] *1. Unité Mixte CNRS/Thales, Palaiseau, France; 2. AIST, Tsukuba, Japan*

FT-11. Linewidth broadening of vortex based spin transfer nano-oscillators. *E. Grimaldi*[1], P. Bortolotti[1], A. Dussaux[1], J. Grollier[1], A. Fukushima[2], H. Kubota[2], K. Yakushiji[2], S. Yuasa[2], V. Cros[1] and A. Fert[1] *1. Unité Mixte de Physique CNRS Thales, Palaiseau, France; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

FT-12. Magnetization switching of Current-perpendicular-to-plane Giant magneto resistance with Gd-Fe ferri magnet using unipolar current injection. *K. Aoshima*[1], Y. Otsuka[2], K. Machida[1], K. Kuga[1], H. Kikuchi[1] and N. Shimidzu[1] *1. Science and Technology Research Laboratories, Japan broadcastiing corp., Tokyo, Japan; 2. Department of Industrial Chemistry, Graduate School of Engineering, Tokai University. Kitakaname, Hiratsuka-shi, Kanagawa, Japan, Hiratsuka-city, Kanagawa, Japan*

FT-13. Transition between creep and flow regimes of purely current-induced domain-wall motion in Pt/Co/Pt stripes. *S. Je*[1], S. Yoo[1,2], B. Min[2], K. Shin[2] and S. Choe[1] *1. Department of Physics and Astronomy, Seoul National University, Seoul, Republic of Korea; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Republic of Korea*

FT-14. Velocity of current-driven domain wall motion in soft-hard exchanged nanowires. *X. Liu*[1], K. Shindo[1], A. Kagami[1] and A. Morisako[1] *1. Department of Information Engineering, Shinshu University, Nagano, Japan*

FT-15. Large efficiency of vertical spin current injection for Domain Wall manipulation in Magnetic Tunnel Junctions.P. Metaxas[1], *J. Grollier*[1], J. Sampaio[1], R. Matsumoto[1,2], A. Chanthbouala[1], A. Khvalkovskiy[1], A. Anane[1], V. Cros[1], A. Fert[1], K. Zvezdin[3], A. Fukushima[2], K. Yakushiji[2], H. Kubota[2] and S. Yuasa[2] *1. Unité Mixte CNRS/Thales, Palaiseau, France; 2. AIST, Tsukuba, Japan; 3. Istituto P.M., Turin, Italy*

THURSDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session FU
MOTORS AND ACTUATORS VII (POSTER SESSION)

Luc Dupre, Chair

FU-01. Reducing Cogging Torque Method by Slot-Opening shift for Permanent Magnet Motors. *T. Liu*[1], S. Huang[1] and J. Gao[1] *1. Department of Electrical and Information Engineering, Hunan University, Changsha, China*

FU-02. Design Comparison of SPM Motors for High Speed Machine Tool Applications. *C. Hwang*[1], Y. Chen[1] and C. Liu[2] *1. Electric Engineering, Feng Chia University, Taichung, Taiwan; 2. Electrical Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan*

FU-03. Optimum Design of CW-SynRM and Loss and Efficiency Evaluations by Coupled Preisach Models & FEM and Experiment.J. Lee[1], *H. Song*[1] and S. Jang[1] *1. Hanbat National University, Daejoen, Republic of Korea*

FU-04. Calculation and Analysis of Iron Loss in Hybrid Excitation Machine under DC-biased Magnetic Induction and Sinusoidal Induction. *X. Fu*[1,2], M. Lin[1,2], H. Yu[1,2] and D. Xu[1] *1. School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China; 2. Engineering Research Center for Motion Control of MOE, Southeast University, Nanjing, Jiangsu, China*

FU-05. Demagnetization Current Evaluations Using Finite Element Method and Magnetic Equivalent Circuit modeling in a Pole Changing Memory Motor.J. Lee[1], P. Lee[1] and *S. Jang*[1] *1. Electrical Engineering, Hanbat National University, Daejoen, Republic of Korea*

FU-06. Loss and Efficiency Comparisons of PMA-, CW-, Normal SynRMs by Coupled Preisach Models and FEM and Experiment.J. Lee[1], *M. Jun*[1] and W. Byen[1] *1. Electrical Engineering, Hanbat National University, Daejoen, Republic of Korea*

FU-07. Research on Hybrid Excitation Linear Motor. *Q. Lu*[1], Y. Ye[1] and Y. Fang[1] *1. College of Electrical Engineering, Zhejiang University, Hangzhou, China*

FU-08. Comparison of Primary-Permanent-Magnet and Secondary-Permanent-Magnet Linear Generators for Wave Energy converters. *L. Huang*[1], H. Yu[1], M. Hu[1], C. Liu[1] and Q. Liu[1] *1. Southeast University, Nanjing, China*

FU-09. A Non-Bearing Permanent-Magnet Motor for An Axial Blood Pump. *F. Wang*[1], W. Wu[1], Z. Wang[1] and J. Ji[1] *1. Biomedical Engineering, Jiangsu University, Zhenjiang, China*

FU-10. Magnetic-core loss reduction in distributed winding permanent magnet synchronous motor with stator teeth dimension variation according to magnetic saturation. *C. Han*[1], S. Jang[1], J. Choi[1], J. Ahn[1] and H. Park[1] *1. Dept. of Electrical Engineering, Chungnam National University, Daejeon, Republic of Korea*

THURSDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session FV
MAGNETIC NANOPARTICLES AND BIOMEDICAL APPLICATIONS I (POSTER SESSION)

Anit Giri, Co-Chair
D. Bahadur, Co-Chair

FV-01. Cytotoxicity and effect on cell viability of nickel nanowires. *J.E. Perez*[1], M.F. Contreras[1], J. Kosel[1] and T. Ravasi[1] *1. King Abdullah University of Science and Technology, Thuwal, Jeddah, Saudi Arabia*

FV-02. Characterization of Magnetic Markers for Liquid-Phase Detection of Biological Targets. *Y. Higuchi*[1], S. Uchida[1], T. Yoshida[1] and K. Enpuku[1] *1. Kyushu University, Fukuoka, Japan*

FV-03. Hyperthermia effect in $CoFe_2O_4$-$MnFe_2O_4$ nanoparticles studied by field-induced Mössbauer spectroscopy. *M. Kim*[1], S. Hyun[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Republic of Korea*

FV-04. Self-controlled heating characteristics of a new magnetic material for hyperthermia therapy applications. M. Barati[1], *K. Suzuki*[1], C. Selomulya[2] and J.S. Garitaonandia[3] *1. Materials Engineering, Monash University, Clayton, VIC, Australia; 2. Chemical Engineering, Monash University, Clayton, VIC, Australia; 3. Zientzia eta Teknologia Fakultatea, Euskal Herriko Unibertsitatea, Bilbao, Biscay, Spain*

FV-05. Quick measurement of solution velocity for laminar flow via single magnetic bead trapped by gradient field for the medical application. *S. Park*[1], N. Kim[1], H. Jung[1,2], R. Hwang[1,3], Y. Jo[1], Y. Song[1,4] and Y. Pak[1] *1. Advanced Institutes of Convergence Technology, Seoul National University, Suwon-si, Gyeonggi-do, Republic of Korea; 2. Department of Physics, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; 3. Department of Chemistry, Stony Brook University, Stony Brook, NY; 4. Department of Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University, Suwon-si, Gyeonggi-do, Republic of Korea*

FV-06. Fe3O4 dendritic nanoadsorbents for growth inhibition of bacterial pathogens. *S. Singh*[1] and D. Bahadur[1] *1. Metallurgical Engg. & Materials Science, Indian Institute of Technology Bombay, Mumbai, Maharasthra, India*

FV-07. Magnetic labeling of immune cells depending on polymer coating of Fe-oxide nanoparticles. *J.H. Min*[1,3], K. Kim[2], H. Yoon[1,3], H.A. Cho[1,3], J. Wu[3], K. Lee[2] and Y.K. Kim[1,3] *1. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. Global Research Laboratory, Department of Biochemistry, Division of Brain Korea, College of Medicine, Korea University, Seoul, Republic of Korea; 3. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Republic of Korea*

FV-08. Characterization of the photodynamic therapies and hyperthermia on mesenchymal stem cells lineage using chloroaluminum phthalocyanine-magnetic nanoemulsion. L.B. de Paula[1,2], F.L. Primo[1], A.C. Fernandes[1], M.R. Pinto[3], P.C. Morais[4] and *A.C. Tedesco*[1] *1. Departamento de Química, Centro de Nanobiotecnologia e Engenharia Tecidual, Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, Universidade de São Paulo (FFCLRP-USP), Ribeirão Preto-SP 14040-901, Ribeirão Preto, São Paulo, Brazil; 2. Departamento de Genética, Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo (FMRP-USP), Ribeirão Preto-SP 14049-900, Ribeirão Preto, São Paulo, Brazil; 3. Departamento de Química, Laboratório de Enzimologia, Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, Universidade de São Paulo (FFCLR-USP), Ribeirão Preto-SP 14040-901, Ribeirão Preto, São Paulo, Brazil; 4. Instituto de Física, Núcleo de Física Aplicada, Universidade de Brasília, Brasília-DF 70910-900, Brasília, Distrito Federal, Brazil*

FV-09. Cell patterning using magnetic domain walls of ferromagnetic diamond-shape thin film. *T. Ger*[1], C. Huang[2] and M. Lai[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*

FV-10. Simple strategy for magnetic labeling of living cells with magnetic nanoparticles and collagen. *C. Huang*[1], T. Ger[2] and M. Lai[1] *1. Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Hsinchu City, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu City, Taiwan*

FV-11. Dynamic micro-containers as micro-vacuums for collecting nanomaterials after clinical treatments. *D.S. Choi*[1], J. Park[1], K. Xu[1], I. Jeon[2] and Y. Kim[2] *1. Chemical and Materials Engineering, University of Idaho, Moscow, ID; 2. Materials Science and Engineering, Korea University, Seoul, Republic of Korea*

FV-12. GSAR (Giant Specific Absorption Rate) in Fe-Ni microdisks. *E.A. Vitol*[1,2], E.A. Rozhkova[2] and V. Novosad[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

FV-13. Manipulation and detection of single nanoparticles using MOKE magnetometry. *A. Beguivin*[1], D.C. Cox[2,3], O. Kazakova[2] and R.P. Cowburn[1] *1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 2. Quantum Detection Group, National Physical Laboratory, Teddington, United Kingdom; 3. Advanced Technology Institute, University of Surrey, Guildford, United Kingdom*

FV-14. Structural and Magnetic Properties of Multifunctional Gold, Silica, and C225 antibody triply coated Superparamagnetic Iron Oxide nanoparticles. *G. Liang*[1], C. Li[2] and M.P. Melancon[2] *1. Physics, Sam Houston State University, Huntsville, TX; 2. Imaging Physics, The University of Texas MD Anderson Cancer Center, Houston, TX*

THURSDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session FW
MAGNETIC SENSORS AND MICROWAVE DEVICES II (POSTER SESSION)

Masaaki Takezawa, Co-Chair
Hiroaki Kikuchi, Co-Chair

FW-01. Spin-valve sensor arrays for magnetic biolabel detection. *Y. Liang*[1], Y. Wang[1], D. Litvinov[1,2] and S. Khizroev[3] *1. Department of Chemical and Biomolecular Engineering, University of Houston, Houston, TX; 2. Department of Electrical and Computer Engineering, University of Houston, Houston, TX; 3. Department of Electrical and Computer Engineering, Florida International University, Miami, FL*

FW-02. Detection of 10 nm superparamagnetic magnetite nanoparticles using exchanged-biased GMR sensors in Wheatstone bridge. *L. Li*[1], K.Y. Mak[1], C.W. Leung[2], S.M. Ng[2], Z.Q. Lei[1] and T. Pong P.W[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, China; 2. Department of Applied Physics, Hong Kong Polytechnic University, Hong Kong, China*

FW-03. CMOS Differential MAGFET Biosensor for Magnetic Particle Detection. *B. Zhang*[1], C. Korman[1] and M. Zaghloul[1] *1. George Washington University, Washington, DC*

FW-04. Magneto-impedance biosensor with enhanced sensitivity for highly sensitive detection of superparamagnetic nanoparticles. J. Devkota[1], A. Ruiz[1], P. Mukherjee[1], H. Srikanth[1], *M.H. Phan*[1], C. Wang[2] and S. Mohapatra[2] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Department of Internal Medicine, University of South Florida, Tampa, FL*

FW-05. Nanostructured biosensor consist of cobalt line array on Permalloy film. *T. Kuo*[1], J.J. Chiang[2], H. Huang[2], M. Lai[1] and C. Huang[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*

FW-06. Microwave High Power Nonlinear Phase Shifter; A planar Device. *B.K. Kuanr*[1,2], A.V. Kuanr[3], R.E. Camley[1] and Z. Celinski[1] *1. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Electronics Department, Zakir Husain Delhi College, Delhi, India; 3. Physics Department, Shaheed Rajguru College of Applied Sciences For Women, Delhi, India*

FW-07. Study of FMR Frequency Shift Through Electromagnetic Simulation and Its Application to Analyze Integrated Ferromagnetic Noise Suppressor. *S. Muroga*[1], Y. Asazuma[1] and M. Yamaguchi[1,2] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan*

FW-08. YIG Tuned Opto-Electronic Oscillator. X. Zhang[1] and *X. Han*[1] *1. Electrical Engineering, Yale University, New Haven, CT*

FW-09. Magneto-inductive wave transmission in periodic chains of cylinder-shaped ferrite cores and chip capacitors. *K. Shin*[1] and Y. Kim[1] *1. Dept. of Information and Communication Eng., Kyungsung University, Pusan, Republic of Korea*

FW-10. Sensing Hysteresis in Split-Drain Magnetic Field-Effect Transistor. *Z. Yang*[1], S. Siu[2], W. Tam[2], C. Kok[2], C. Leung[3], H. Wong[4] and P. Pong[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, China; 2. Canaan Semiconductor Limited, Hong Kong, China; 3. Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong, China; 4. Department of Electronic Engineering, City University of Hong Kong, China*

FW-11. Effects of edge shape on properties of stepped giant magnetoimpedance. *H. Kikuchi*[1], J. Kumano[1], T. Nakai[2], S. Hashi[3] and K. Ishiyama[3] *1. Iwate University, Morioka, Iwate, Japan; 2. Industrial Technology Institute, Miyagi Prefectural Government, Sendai, Miyagi, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan*

FW-12. Withdrawn.

FW-13. Impedance Measuring to Detect Fractures in Steel Frames Using Resonance Circuit on Fire Resistive Covering. T. Tsuruta[1], K. Yamazaki[1], *K. Ishikawa*[2] and A. Haga[2] *1. Takenaka Corp, Inzai, Chiba, Japan; 2. Tohoku-Gakuin Univ, Tagajyo, Miyagi, Japan*

FW-14. Characterizing Coercive Frce Anisotropy in Rolled Steels with the Moving Magnet Hysteresis Comparator. *I.J. Garshelis*[1] and G. Crevecoeur[2] *1. Magnova, Inc., Pittsfield, MA; 2. Department of Electrical Energy, Systems and Automation, Ghent University, Ghent, Belgium*

FW-15. Developement of a high speed wireless magnetic motion capture system up to 100 Hz. *S. Hashi*[1], T. Kuboki[1], S. Yabukami[2], H. Kanetaka[1], K. Ishiyama[1], T. Ozawa[2], K. Takashima[1], Y. Kitamura[1] and Y. Itoh[3] *1. Tohoku University, Sendai, Japan; 2. Tohoku Gakuin University, Tagajo, Japan; 3. Osaka University, Suita, Japan*

FW-16. Giant coercivity and the electronic structure of epsilon iron oxide. *M. Yoshikiyo*[1], A. Namai[1] and S. Ohkoshi[1,2] *1. Department of Chemistry, The University of Tokyo, Tokyo, Japan; 2. CREST, JST, Tokyo, Japan*

THURSDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session FX
NOVEL APPLICATIONS (POSTER SESSION)
Robert Hicken, Chair

FX-01. A New Low Radiation Wireless Transmission System in Mobile Phone Application Based on Magnetic Resonant Coupling. Q. Chen[1], S. Ho[1] and *W. Fu*[1] *1. Electrical Engineering, The Polytechnic University of Hong Kong*

FX-02. Electromagnetic viability control of aquatics by the combination of weak electric currents and 10 T magnetic fields. *Y. Mizukawa*[1] and M. Iwasaka[1,2] *1. Chiba University, Chiba, Japan; 2. JST PRESTO, Kwaguchi, Japan*

FX-03. A Novel GMR Device for Detecting Damages of Reinforcement Ferrous Components Embedded in Concrete Structures. *C. Lo*[1] *1. Iowa State Univ, Ames, IA*

FX-04. How to investigate the magnetic/electric properties of a single magnetic nanoparticle using solid state nanopore device. *S. Park*[1], H. Jung[1,2], S. Moon[3], D. Park[1], Y. Song[1,3] and Y. Pak[1] *1. Advanced Institutes of Convergence Technology, Seoul National University, Suwon-si, Gyeonggi-do, Republic of Korea; 2. Department of Physics, Cambridge University, Cambridge, Cambridgeshire, United Kingdom; 3. Department of Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University, Suwon-si, Gyeonggi-do, Republic of Korea*

FX-05. Magnetic Properties Measurement of Electrical Steel Sheet under DC-Biased Condition until High Flux Density using Closed-Type Single Sheet Tester. *N. Takahashi*[1], R. Nishimoto[1] and M. Nakano[1] *1. Electrical and Electronic Eng., Okayama University, Okayama, Japan*

FX-06. Magneto-optical Kerr effect enhanced by surface plasmon resonance in Co/Au bilayer. *H. Huang*[1], T. Kuo[1], J.J. Chiang[1] and M. Lai[1] *1. Department of Power Mechanical Engineering National Tsing Hua University, Hsinchu, Taiwan*

FX-07. Three Dimensional Identification of Crack Location in Conducting Slabs Using Wavelets. S. Abd-El-Hafiz[2] and *A. Adly*[1] *1. Elect. Power & Machines Dept., Cairo University, Giza, Egypt; 2. Engineering Mathematics Department, Cairo University, Giza, Egypt*

FX-08. Magnetic anisotropies and second-order magneto-optic Kerr effect in $Co_2Fe_{0.4}Mn_{0.6}Si$: Comparison of experimental techniques. F. Heussner[1], *B. Khodadadi*[2], S. Schä fer[2], S. Paul[2], T. Mewes[2], T. Sebastian[1,3], B. Hillebrands[1], T. Kubota[4], M. Oogane[5], H. Naganuma[5] and Y. Ando[5] *1. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. MINT Center, University of Alabama, Tuscaloosa, AL; 3. Graduate School Materials Science in Mainz, Kaiserslautern, Germany; 4. WPI-Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 5. Graduate School of Engineering, Tohoku University, Sendai, Japan*

FX-09. Drag Reduction of Laminar Airflow in Circular Pipe with Magnetic Field. *H. Tani*[1], H. Matsui[2], S. Koganezawa[1] and N. Tagawa[1] *1. Mechanical Engineering Dept., Kansai University, Suita-shi, Osaka, Japan; 2. Undergraduate School, Kansai University, Suita-shi, Osaka, Japan*

FX-10. The development of superconducting magnetic lens for focusing the ion beam. *S. Choi*[1], T. Kiyoshi[2], S. Lee[3], B. Lee[1], J. Yoon[1], J. Ok[1], J. Park[1], M. Won[1] and J. Kang[4] *1. Busan Center, Korea Basic Science Institute, Busan, Republic of Korea; 2. National Institute for Materials Science, Tsukuba, Japan; 3. Kyungpook National University, Daegu, Republic of Korea; 4. Korea Institute of Radiological and Medical Science, Seoul, Republic of Korea*

FX-11. Cell patterning on magnetic cell scaffolds. *C. Lee*[1,2], Y. Chen[1] and M. Lai[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*

FX-12. Fabrication of microlens arrays by utilizing magnetic hydrodynamic instability of ferrofluid droplets. *C. Lee*[1], Y. Chen[1] and M. Lai[1] *1. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan*

FX-13. Magneto-optical Switches for Transparent Networks: Challenges and New Implementations. *J. Tioh*[1], M. Mina[2] and R.J. Weber[2] *1. Maxim Integrated Inc., Dallas, TX; 2. Electrical and Computer Engineering, Iowa State University, Ames, IA*

FX-14. Bi-axial alignment control of hexagonal organic crystals by diamagnetic torques. *M. Iwasaka*[1,2], Y. Mizukawa[1], K. Suzuki[3], T. Toyota[4] and T. Sugawara[3,4] *1. Chiba University, Chiba, Japan; 2. JST, Kawaguchi, Japan; 3. Kanagawa University, Hadano, Japan; 4. University of Tokyo, Tokyo, Japan*

FX-15. Ferromagnetic-plating-based system for estimating residual strain of aluminum alloys. *K. Kinoshita*[1] and Y. Fujita[2] *1. Energy Conversion Science, Kyoto University, Kyoto, Japan; 2. Mechanical Engineering, Yamaguchi University, Ube, Japan*

FX-16. A new mechanism for the generation of a pushing force using a magnetic spiral-type machine in therapy and diagnosis. *S. Kim*[1], J. Shin[1], S. Hashi[1] and K. Ishiyama[1] *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

FRIDAY MORNING 8:00 GRAND CD

Session GA
SYMPOSIUM ON PROGRESS IN HEAT ASSISTED MAGNETIC RECORDING
Kaizhong Gao, Chair

8:00

GA-01. Heat Assisted Magnetic Recording: Progress and Challenges. ***(Invited)*** *E. Gage*[1], C. Peng[1], X. Wang[1], K. Gao[1], H. Zhou[1], A. Itagi[1], M. Seigler[1], A.Q. Wu[1], Y. Kubota[1], T. Klemmer[1], T. Rausch[1], Y. Peng[1], D. Karns[1], X. Zhu[1], Y. Ding[1], E. Chang[1], Y. Zhao[1], G. Ju[1] and J. Thiele[1] *1. Seagate Technology, Bloomington, MN*

8:36

GA-02. Characterization of Head and Media Performance in HAMR. ***(Invited)*** *M. Gibbons*[1], M. Alex[2], A. Anjan[3], M. Morelli[1], X. Wu[1], E. Champion[2], J. Saha[1], C. Wolf[2] and R. Acharya[3] *1. MHO, Western Digital, Fremont, CA; 2. ATO, Western Digital, San Jose, CA; 3. MO, Western Digital, San Jose, CA*

9:12

GA-03. TAMR Recording and Superparamagnetic Effect. ***(Invited)*** *X. Lou*[1], E. Jin[1], Y. Wang[1], T. Maletzky[1], J. Smyth[1] and M. Dovek[1] *1. TDK/Headway Technologies, Milpitas, CA*

9:48

GA-04. Optimizing Thermally-Assisted Recording and FePt-Based Recording Media. ***(Invited)*** *B.C. Stipe*[1], B. Richard[1], H. Richter[1], G. Zeltzer[1], O. Mosendz[1], S. Pisana[1], G. Parker[1], J. Reiner[1], T. Santos[1], D. Weller[1] and O. Hellwig[1] *1. HGST, San Jose, CA*

10:24

GA-05. Microstructure control of L10 ordered FePt granular film for HAMR application. ***(Invited)*** *J. Hu*[1], T. Zhou[1], W. Phyoe[1], K. Cher[1] and J. Shi[1] *1. Data Storage Institute, Agency for Science, Technology and Research (A*STAR), Singapore*

FRIDAY MORNING 8:00 REGENCY A

Session GC
MAGNETIC IMAGING I
Dong-Hyun Kim, Chair

8:00

GC-01. Microscopy With a Spin-Polarized Electron Beam. ***(Invited)*** *A. Schmid*[1] *1. MSD, LBNL, Berkeley, CA*

8:36

GC-02. Sub-nanometer Scale Studies of Nanoparticle Magnetism by Aberration Corrected Electron Microscopy and Spectroscopy. J. Gazquez[1,2], J. Salafranca[1,2], N. Perez[3], A. Labarta[3], S.T. Pantelides[4,2], S.J. Pennycook[2], X. Batlle[3] and *M. Varela*[2,1] *1. Universidad Complutense, Madrid, Spain; 2. Oak Ridge National Laboratory, Oak Ridge, TN; 3. Universidad de Barcelona, Barcelona, Spain; 4. Vanderbilt University, Nashville, TN*

8:48

GC-03. Characterization of Ni-Zn-Co Ferrites produced by spin-spray plating. *D. Zhang*[1], N.M. Ray[1], W.T. Petuskey[2], D.J. Smith[3] and M.R. McCartney[3] *1. School of Engineering for Matter, Transport, and Energy, Arizona State University, Tempe, AZ; 2. Department of Chemistry & Biochemistry, Arizona State University, Tempe, AZ; 3. Department of Physics, Arizona State University, Tempe, AZ*

9:00

GC-04. Interplay between intrinsic and stacking-fault magnetic domains in bi-layered manganites. *M. Hossain*[1], M.H. Burkhardt[1], S. Sarkar[1], H. Ohldag[2], Y. Chuang[3], A. Scholl[3], A.T. Young[3], A. Doran[3], D.S. Dessau[4], H. Zheng[5], J.F. Mitchell[5], H.A. Durr[1] and J. Stohr[1] *1. Stanford Institute for Materials and Energy Sciences (SIMES), SLAC National Accelerator Lab, Menlo Park, CA; 2. Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory, Menlo Park, CA; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Department of Physics, University of Colorado, Boulder, CO; 5. Materials Science Division, Argonne National Laboratory, Argonne, IL*

9:12

GC-05. Withdrawn

9:24

GC-06. Sub-micron mapping of GHz magnetic susceptibility using scanning transmission x-ray microscopy. *C. Cheng*[1] and W.E. Bailey[1] *1. Columbia University, New York, NY*

9:36

GC-07. Femtosecond Single-Shot Imaging of Nanoscale Ferromagnetic Order in Co/Pd Multilayers Using Resonant X-Ray Holography. *T. Wang*[1,2], D. Zhu[3,4], B. Wu[2,4], C. Graves[2,4], O. Hellwig[5], W. Schlotter[3], J. Turner[3], Y. Acremann[6], C. Boeglin[7], G. Grübel[8], S. Eisebitt[9,10], J. Lüning[11,12], J. Stöhr[2,3] and A. Scherz[2] *1. Department of Materials Science and Engineering, Stanford University, Stanford, CA; 2. Stanford Institute for Materials and Energy Science, SLAC National Accelerator Laboratory, Menlo Park, CA; 3. Linac Coherent Light Source, SLAC National Accelerator Laboratory, Menlo Park, CA; 4. Department of Applied Physics, Stanford University, Stanford, CA; 5. San Jose Research Center, HGST, a Wester Digital Company, San Jose, CA; 6. Laboratorium f. Festkörperphysik, ETH Zürich, Zürich, Switzerland; 7. Institut de Physique et de Chimie des Matériaux de Strasbourg, Universitié de Strasbourg, Strasbourg, France; 8. Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; 9. Institut für Optik und Atomare Physik, Technische Universität Berlin, Berlin, Germany; 10. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany; 11. Laboratoire de Chimie Physique - Matèire et Rayonnement, Université Pierre et Marie Curie, Paris, France; 12. Synchrotron SOLEIL, Gif-sur-Yvette Cedex, France*

9:48

GC-08. Temperature evolution of surface magnetic domains across the AF-FM transition in FeRh thin films. *C. Baldasseroni*[1], C. Bordel[2], A. Scholl[3], A.X. Gray[4], A.M. Kaiser[6], F. Kronast[5], J. Herrero-Albillos[7], C.M. Schneider[6], C.S. Fadley[3] and F. Hellman[2] *1. Materials Science and Engineering, University of California Berkeley, Berkeley, CA; 2. Physics, University of California Berkeley, Berkeley, CA; 3. Lawrence Berkeley National Laboratory, Berkeley, CA; 4. SLAC National Accelerator Laboratory, Menlo Park, CA; 5. Helmholtz-Zentrum Berlinfür Materialien und Energie, Berlin, Germany; 6. Forschungszentrum Jülich, Jülich, Germany; 7. Centro Universitario de la Defensa, Zaragoza, Spain*

10:00

GC-09. Photoelectron Emission Microscopy of FeNi Alloys Processed by High-pressure Torsion. *T. Ohtsuki*[1], M. Kotsugi[1], T. Ohkochi[1], S. Lee[2], Z. Horita[2] and K. Takanashi[3] *1. Japan Synchrotron Radiation Research Institute, Hyogo, Japan; 2. Department of Material Science and Engineering, Faculty of Engineering, Kyusyu University, Fukuoka, Japan; 3. Institute for Material Research, Tohoku University, Sendai, Japan*

10:12

GC-10. Temperature Dependent High Resolution Imaging of the Domain Structure of LSMO Thin Films via SEMPA. *R.M. Reeve*[1], M. König[1], C. Mix[1], M. Foerster[1], G. Jakob[1] and M. Kläui[1] *1. Institut für Physik, Johannes Gutenberg-Universität Mainz, Mainz, Germany*

10:24

GC-11. Spectroscopy and imaging of edge modes in Permalloy nanodisks. *F. Guo*[1,2], L.M. Belova[3] 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; 3. Department of Materials Science and Engineering, Royal Institute of Technology, Stockholm, Sweden*

10:36

GC-12. Field Estimation of a NML Clock Line Using Switching Statistics of Different Aspect Ratio Nanomagnets. *M.A. Siddiq*[1], G.H. Bernstein[1], M.T. Niemier[2], G. Csaba[1], X.S. Hu[2] and W. Porod[1] *1. Electrical Engineering, University of Notre Dame, Notre Dame, IN; 2. Computer Science and Engineering, University of Notre Dame, Notre Dame, IN*

10:48

GC-13. Domain structures in epitaxial Ni rings with transverse magnetoelastic anisotropy. *E. Corredor*[1,2], D. Coffey[1,2], J. Arnaudas[3,2], C. Ross[4] and M. Ciria[1,2] *1. Instituto de Ciencia de Materiales de Aragón, Consejo Superior de Investigaciones Científicas, Zaragoza, Spain; 2. Departamento de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain; 3. Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza, Spain; 4. Materials Science and Engineering Department, MIT, Cambridge, MA*

FRIDAY MORNING 8:00 — REGENCY B

Session GD
MOTORS, GENERATORS AND ACTUATORS I
Jonathan Bird, Chair

8:00

GD-01. A Novel Winding Configuration for Switched Reluctance Motors. *W. Hua*[1], H. Hua[1], Z. Wu[1] and M. Cheng[1] *1. School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China*

8:12

GD-02. Cogging Torque Reduction Method for Single-Phase Brushless DC Motor. Y. Park[1,2], J. Cho[2], S. Song[2], J. So[1], D. Chung[1] and *D. Kim*[1] *1. Sunchon National University, Sunchon, Republic of Korea; 2. Korea Electronics Technology Institute, Gwangju, Republic of Korea*

8:24

GD-03. A New Fault-tolerant Switched Reluctance Motor with reliable fault detection capability. *K. Lu*[1] *1. Department of Energy Technology, Aalborg University, Aalborg, Denmark*

8:36

GD-04. Thermal Influence on the Magnetic Properties and Iron Losses in Small Slot-Less Permanent Magnet Synchronous Machines. *A. Krings*[1], S. Mousavi[2], O. Wallmark[1] and J. Soulard[1] *1. Electrical Energy Conversion (E2C), KTH Royal Institute of Technology, Stockholm, Stockholm, Sweden; 2. Electromagnetic Engineering (ETK), KTH Royal Institute of Technology, Stockholm, Stockholm, Sweden*

8:48

GD-05. Copper losses and conductor optimizatiom high-speed PM machines with air-gap windings. *A. Borisavljevic*[1] and E. Lomonova[1] *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

9:00

GD-06. Ironless Multi-stages Axial-Flux Permanent Magnet Generator for Offshore Wind Power Application. *Z. Zhang*[1] *1. Norwegian University of Science and Technology, Trondheim, Norway*

9:12

GD-07. Experimental Investigations of Field-Excitation Motor Based on Flux Switching Concepts.E. Sulaiman[1,2] and *M. Ahmad*[2] *1. Electrical & Computer Sciences Engineering, Nagoya Institute of Technology, Nagoya, Aichi, Japan; 2. Electrical & Electronics Engineering, University Tun Hussein Onn Malaysia, Batu Pahat, Johor, Malaysia*

9:24

GD-08. Analytical analysis and experimental validation for predicting Back-EMF's harmonics in Doubly-Salient Field-Excited Switched-Flux Machines. *B. Gaussens*[1,2], E. Hoang[1], O. De la Barriè re[1], J. Saint-Michel[2], P. Manfe[2], M. Lé crivain[1] and M. Gabsi[1] *1. SATIE, ENS Cachan, Cachan, France; 2. Leroy Somer - Emerson Group, Angoulême, France*

9:36

GD-09. Eddy-Current Loss Prediction in Rotor Magnets of a Low Speed Permanent Magnet Synchronous Generator used in Wind Energy Conversion System. *C. Wang*[1], Z. Chen[1], J. Yao[2] and X. Liu[1] *1. Department of Energy Technology, Aalborg University, Aalborg East, Denmark; 2. College of Electrical Engineering, Chongqing University, Shapingba District, Chongqing, China*

9:48

GD-10. Magnetizer design for optimizing magnetization orientation of ring-type magnet in surface-mounted permanent magnet motor.S. Lim[1], S. Oh[1], *S. Min*[1] and J. Hong[1] *1. Automotive Engineering, Hanyang University, Seoul, Republic of Korea*

10:00

GD-11. Experimental Results and 3D Finite Element Analysis of the AC Homopolar Motor. *E.L. Severson*[1], R. Nilssen[2], T. Undeland[2] and N. Mohan[1] *1. Electrical Engineering, University of Minnesota, Minneapolis, MN; 2. Electric Power Engineering, Norwegian University of Science and Technology, Trondheim, Norway*

FRIDAY MORNING 8:00 — REGENCY C

Session GE
ANISOTROPY AND EXCHANGE COUPLING IN CO, CO/PD AND CO/NI BASED MULTILAYERS

Thomas Hauet, Chair

8:00

GE-01. SEMPA observation of depth dependent anisotropy of graded Co/Pd multilayers. *A.L. Balk*[1,2], J.E. Davies[3], S.R. Bowden[1,2], A.J. Lintel[4,1], K. Liu[5], R.D. Shull[6] and J. Unguris[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; 3. Advanced Technology Group, N.V.E. Corporation, Eden Prairie, MN; 4. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 5. Department of Physics, University of California, Davis, CA; 6. Magnetic Materials Group, M.M.L., National Institute of Standards and Technology, Gaithersburg, MD*

8:12

GE-02. Brillouin light scattering study of spin waves in exchange-coupled [Co/Pd]-NiFe films with tunable magnetization tilt angle. *S. Tacchi*[1,2], M. Pini[3], A. Rettori[4,5], G. Gubbiotti[6,1], G. Carlotti[1,5], M. Madami[1,2], T.N. Anh Nguyen[7], R.K. Dumas[8] and J. Åkerman[7,8] *1. Dipartimento di Fisica, Università di Perugia, I-06123 Perugia, Italy; 2. CNISM, Unità di Perugia, I-06123 Perugia, Italy; 3. CNR-ISC, Istituto dei Sistemi Complessi, Unità di Firenze, I-50019 Sesto Fiorentino (FI), Italy; 4. Dipartimento di Fisica, Università di Firenze, I-50019 Sesto Fiorentino (FI), Italy; 5. CNR-NANO, Istituto Nanoscienze, Centro S3, I-41125 Modena, Italy; 6. CNR-IOM, Istituto Officina dei Materiali, Unità di Perugia, I-06123 Perugia, Italy; 7. Materials Physics, Royal Institute of Technology (KTH), 164 40 Kista, Sweden; 8. Department of Physics, University of Gothenburg, 412 96 Gothenburg, Sweden*

8:24

GE-03. Low temperature coupling in [Co/Pd]/Cu/[Co/Ni] spin valves with perpendicular magnetic anisotropy*. *J.E. Davies*[1], D. Gilbert[2], M. Mohseni[3,4], R.K. Dumas[5], J. Åkerman[3,5] and K. Liu[2] *1. Advanced Technology, NVE Corp., Eden Prairie, MN; 2. Physics Department, University of California, Davis, CA; 3. Materials Physics, Royal Institute of Technology (KTH), Kista, Sweden; 4. NanOsc AB, Kista, Sweden; 5. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

8:36

GE-04. Quantifying exchange coupling in competing anisotropy systems. *C. Morrison*[1], J.J. Miles[1], T.N. Anh Nguyen[2], R.K. Dumas[3], Y. Fang[3], J. Åkerman[2,3] and T. Thomson[1] *1. School of Computer Science, University of Manchester, Manchester, United Kingdom; 2. Materials Physics, Royal Institute of Technology (KTH), Stockholm-Kista, Sweden; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

8:48

GE-05. Tunable resonant properties of perpendicular anisotropy [Co/Pd]/Fe/[Co/Pd] multilayers. *M.J. Pechan*[1], J. Dou[1], E. Shipton[2], N. Eibagi[2] and E.E. Fullerton[2] *1. Physics, Miami University, Oxford, OH; 2. Center for Magnetic Recording Research, UC San Diego, La Jolla, CA*

9:00

GE-06. Anisotropy Tuning of Co/Pd Multilayers by In Situ Modification of Interfaces. *C. Barton*[1], C. Morrison[1] and T. Thomson[1] *1. School of Computer Science, University of Manchester, Manchester, M13 9PL, Lancs, United Kingdom*

9:12

GE-07. Tunable spin configuration in [Co/Ni]-NiFe exchange spring structures. *S. Chung*[1], S. Mohseni[1,2], V. Fallahi[1], T.N. Nguyen[1], N. Benatmane[1], R.K. Dumas[3] and J. Åkerman[1,3] *1. Materials Physics, School of ICT, Royal Institute of Technology, Stochholm, Sweden; 2. NanOsc AB, Stochholm, Sweden; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 4. Department of Optics and Laser Engineering, University of Bonab, Bonab, Islamic Republic of Iran*

9:24

GE-08. Interlayer exchange coupling in perpendicularly magnetic anisotropic $L1_1$-CoPt/Ru/$L1_1$—CoPt multilayers. F. Yuan[1], *J. Hsu*[1,2], C. Chiu[3] and A. Sun[3] *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Graduate Institute of Applied Physics, National Taiwan University, Taipei, Taiwan; 3. Chemical Engineering and Materials Science, Yuan Ze University, Chung-Li, Taiwan*

9:36

GE-09. Perpendicular magnetic anisotropy driven by annealing and measurement temperatures in Pt/Co/MgO. F. Fettar[1], *H. Garad*[1], L. Ortega[2], O. Proux[1], B. Dieny[3], S. Auffrey[3] and B. Rodmacq[3] *1. Institut Neel, CNRS-UJF, Grenoble, France; 2. LPS, CNRS, Orsay, France; 3. Spintec, CEA-CNRS-UJF, Grenoble, France*

9:48

GE-10. Influence of Pt spacer thickness on the domain nucleation in ultrathin Co/Pt/Co trilayers. *R.D. Shull*[1], Y.L. Iunin[2,1], Y.P. Kabanov[2], V.I. Nikitenko[2,1], O.V. Skryabina[2] and C.L. Chien[3] *1. National Institute of Standards & Technology, Gaithersburg, MD; 2. Institute of Solid State Physics, Russian Academy of Science, Chernogolovka, Russian Federation; 3. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD*

10:00

GE-11. Crossover between in-plane and perpendicular anisotropy in Ta/CoxFe100-x/MgO sandwiched structures as a function of Co composition. *S. Ahn*[1], J. Currivan[1,2], M.A. Baldo[1], C.A. Ross[1] and G.S. Beach[1] *1. Massachusetts Institute of Technology, Cambridge, MA; 2. Harvard University, Cambridge, MA*

10:12

GE-12. Enhanced perpendicular magnetic anisotropy in Ta|CoFeB|MgO by nitrogen doping the Ta underlayer. *J. Sinha*[1], M. Hayashi[1], M. Kodzuka[1], M. Yamanouchi[2,3], S. Fukami[2], S. Mitani[1], K. Hono[1] and H. Ohno[2,3] *1. National Institute for Materials Science, Tsukuba 305-0047, Japan; 2. Center for Spintronics Integrated Systems, Tohoku University, Sendai 980-8577, Japan; 3. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai 980-8577, Japan*

10:24

GE-13. Scaling of the anomalous Hall effect in perpendicular CoFeB/Pt multilayers. W. Shaobing[1,2], Y. Xiaofei[1] and *Z. Tao*[2] *1. Electronic Science and Technology, Huazhong University of Science & Technology, Wuhan, Hubei, China; 2. Institute of Physics and Beijing National Laboratory for Condensed Matter Physics, Chinese Academy of Sciences, Beijing, China*

10:36

GE-14. Surface and bulk exchange stiffness in hcp-Co thin films. C. Eyrich[1], M. Arora[1], F. Rashidi[1], W. Huttema[1], *E. Girt*[1], B. Heinrich[2], D. Broun[1], O. Myrasov[2] and O. Karis[3] *1. Physics, Simon Fraser University, Burnaby, BC, Canada; 2. Physics, University of Alabama, Tuscaloosa, AL; 3. Physics and Astronomy, Uppsala University, Uppsala, Sweden*

10:48

GE-15. Forcing of out-of-plane magnetic anisotropy in ultrathin Co films by ion irradiation. *A. Maziewski*[1], P. Mazalski[1], Z. Kurant[1], O. Liedke[2], J. Fassbender[2], L. Baczewski[3] and A. Wawro[3] *1. Faculty of Physics, University of Bialystok, Bialystok, Poland; 2. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 3. Institute of Physics, Polish Academy of Science, Warszawa, Poland*

FRIDAY MORNING 8:00

REGENCY D

Session GF
MAGNETIC LOGIC
Russell Cowburn, Chair

8:00

GF-01. Experimental Realization of a Nanomagnet Full Adder Using Slanted-Edge Input Magnets. *E. Varga*[1], M.T. Niemier[1], G. Csaba[1], G.H. Bernstein[1] and W. Porod[1] *1. Center for Nano Science and Technology, NDNano, University of Notre Dame, Notre Dame, IN*

8:12

GF-02. Experimental Demonstration of a 1-bit Full Adder in Perpendicular Nanomagnetic Logic. *S. Breitkreutz*[1], J. Kiermaier[1], I. Eichwald[1], C. Hildbrand[1], G. Csaba[2], D. Schmitt-Landsiedel[1] and M. Becherer[1] *1. Lehrstuhl für Technische Elektronik, Technische Universität München, Munich, Germany; 2. Center for Nano Science and Technology, University of Notre Dame, Notre Dame, IN*

8:24

GF-03. Scaling of out-of-plane ratchet scheme for ultra-dense 3D shift register data storage. *D.C. Petit*[1], R. Lavrijsen[1], J. Lee[1], R. Mansell[1], A. Fernandez-Pacheco[1] and R.P. Cowburn[1] *1. Physics Department, University of Cambridge, Cambridge, United Kingdom*

8:36

GF-04. Spin Waves with High Quality Factor toward Threshold Logic. *S. Nakamura*[1], H. Morise[1] and T. Kondo[1] *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Japan*

8:48

GF-05. Novel Nonvolatile L1/L2/L3 Cache Memory Hierarchy using Nonvolatile-SRAM with voltage-induced magnetization switching and ultra low-write-energy MTJ. *S. Fujita*[1], H. Noguchi[1], K. Nomura[1], K. Abe[1], E. Kitagawa[1], N. Shimomura[1] and J. Ito[1] *1. Corporate R&D Center, Toshiba, Kawasaki, Kanagawa, Japan*

9:00

GF-06. Demonstration of Field-Coupled Input Scheme on Line of Nanomagnets. *M.A. Siddiq*[1], G.H. Bernstein[1], M.T. Niemier[2], X.S. Hu[2], G. Csaba[1] and W. Porod[1] *1. Electrical Engineering, University of Notre Dame, Notre Dame, IN; 2. Computer Science and Engineering, University of Notre Dame, Notre Dame, IN*

9:12

GF-07. Toward Practical Nanomagnet Logic Systems. ***(Invited)*** *G.H. Bernstein*[1,3], P. Li[1], F. Shah[1], M. Siddiq[1], E. Varga[1], K. Butler[1], V. Sankar[1], G. Csaba[1,3], X.S. Hu[2,3], M. Niemier[2,3], J. Nahas[1,3], A. Orlov[1,3] and W. Porod[1,3] *1. Department of Electrical Engineering, University of Notre Dame, Notre Dame, IN; 2. Department of Computer Science and Engineering, University of Notre Dame, Notre Dame, IN; 3. Center for Nano Science and Technology, University of Notre Dame, Notre Dame, IN*

9:48

GF-08. In-plane dipolar-only ratchet scheme for ultra-dense 3D data storage. *D.C. Petit*[1], R. Lavrijsen[1], J. Lee[1], R. Mansell[1], A. Fernandez-Pacheco[1] and R.P. Cowburn[1] *1. Physics Department, University of Cambridge, Cambridge, United Kingdom*

10:00

GF-09. Spin-Current Operation in a Non-Magnetic Nano-Ring. *A. Hirohata*[1,2], A.J. Vick[1], R.M. Abdullah[1], H. Hui[3], H. Liu[3] and T.F. Alhuwaymel[1] *1. Department of Electronics, University of York, York, United Kingdom; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan; 3. Department of Electronic Engineering, City University of Hong Kong, Kowloon, Hong Kong*

10:12

GF-10. Towards a Signal Crossing in double-layer Nanomagnetic Logic. *I. Eichwald*[1], J. Wu[1], S. Breitkreutz[1], J. Kiermaier[1], G. Csaba[2], D. Schmitt-Landsiedel[1] and M. Becherer[1] *1. Lehrstuhl für Technische Elektronik, Technische Universität München, München, Germany; 2. Center for Nano Science and Technology, University of Notre Dame, Notre Dame, IN*

10:24

GF-11. Advances in Nanomagnetic Logic. ***(Invited)*** B. Lambson[1], Z. Gu[1], D. Carlton[2], S. Dhuey[2], A. Scholl[2] and *J. Bokor*[1] *1. UC Berkeley, Berkeley, CA; 2. Lawrence Berkeley National Laboratory, Berkeley, CA*

FRIDAY MORNING 8:00

CRYSTAL A

Session GG
SOFT MAGNETIC MATERIALS FOR MICROWAVE APPLICATIONS V
Manh-Huong Phan, Chair

8:00

GG-01. CMOS-compatible and scalable deposition of nanocrystalline zinc ferrite thin films to improve the per area inductance of integrated RF inductor. *R. Sai*[1,2], K.J. Vinoy[3], N. Bhat[1,3] and S.A. Shivashankar[1,2] *1. Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore, Karnataka, India; 2. Materials Research Centre, Indian Institute of Science, Bangalore, Karnataka, India; 3. Electrical Communication Engineering, Indian Institute of Science, Bangalore, Karnataka, India*

8:12

GG-02. Electromagnetic Characterization of Micro-structured Ferrite Materials: Coarse and Fine Composites of Barium and Strontium in SU-8 Photoresist. L. Chao[1], S. Olusegun[2], F. Berisford[2], *M.N. Afsar*[1], K.A. Korolev[1] and J.D. Williams[2] *1. Electrical and Computer Engineering, Tufts University, Medford, MA; 2. Electrical and Computer Engineering, University of Alabama, Huntsville, AL*

8:24

GG-03. Enhanced multiferroic properties of Rare earth (Gd, La) doped Bismuth ferrite nanofibers. G.G. Philip[1], *S. Ramaswamy*[1], T. Yadavalli[1], H.A. Therese[1] and C. Gopalakrishnan[1] *1. Nanotechnology Research Center, SRM University, Chennai, Tamil Nadu, India*

8:36

GG-04. Microwave and Millimeter wave Measurement of Electrical and Magnetic Properties of Oxide based Nanopowders. A. Sharma[1], L. Chao[1] and *M.N. Afsar*[1] *1. Electrical and Computer Engineering, Tufts University, Medford, MA*

8:48

GG-05. Microwave Permittivity and Permeability of Spin-Spray Deposited Ni-Zn-Ferrite Thin Film Sample. L. Chao[1], S. Stoute[2], Z. Zhou[2], *M.N. Afsar*[1] and N.X. Sun[2] *1. Electrical and Computer Engineering, Tufts University, Medford, MA; 2. Electrical and Computer Engineering, Northeastern University, Boston, MA*

9:00

GG-06. Phase Identification and Temperature-dependent Magnetization of Ti-rich Titanomagnetite in Different Atmospheres. *S. Lan*[1], C. Groschner[1], J. Runco[1], A. Wise[1], D.E. Laughlin[1], M. Diaz-Michelena[2] and M.E. McHenry[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Space Programs and Space Sciences Department, Instituto Nacional de Técnica Aeroespacial (INTA), Madrid, Spain*

9:12

GG-07. Structural and magnetic properties of a barium hexaferrite/ferroelectric thin film bilayers on Pt. *Y. Nie*[1,2], I. Harward[1], D. Chen[1,3], K. Linderman[1] and Z. Celinski[1] *1. Center for Magnetism and Magnetic Nanostructures, Univ. of Colorado, Colorado Springs, Colorado Springs, CO; 2. Department of Microelectronic Science and Technology, Huazhong University of Science and Technology, Wuhan, Hubei, China; 3. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

9:24

GG-08. High field-dependence of the surface spin magnetization in core-shell ferrite nanoparticles. *R. Aquino*[1], F.G. Silva[2,3], G. Ballon[4], J. Depeyrot[3], E. Dubois[2], Y.L. Raikher[5], A. Sulpice[6], F.A. Tourinho[3] and R. Perzynski[2] *1. FUP - UnB Planaltina, Universidade de Brasília, Planaltina, Brazil; 2. PECSA-UMR, 7195, Université Pierre et Marie Curie, Paris, France; 3. Complex Fluids Group, Universidade de Brasília, Brasília, DF, Brazil; 4. LNCMI-T, UPR 3228, CNRS-UJF-UPS-INSA, Toulouse, France; 5. Institute of Continuous Media Mechanics, Ural Branch of RAS, Perm, Russian Federation; 6. CRETA, CNRS-UJF BP166, Grenoble, France*

9:36

GG-09. Improved Waveguide Based Technique for Measurement of Magnetic and Electrical Properties of Powdered Ferrite Samples at Microwave Frequency. *A. Sharma*[1] and M.N. Afsar[1] *1. Electrical Engineering, Tufts University, Medford, MA*

FRIDAY MORNING 8:00 CRYSTAL B

Session GH
MAGNETIC NANOPARTICLES AND BIOMEDICAL APPLICATIONS II
E. Rozhkova, Chair

8:00

GH-01. Engineering of magnetic nanoparticles for hyperthermia cancer therapy. *C.B. Sato*[1,2], H. Wender[2], C. Mateus[2] and F. Garcia[2] *1. Brazilian Synchrotron Light Laboratory, Brazilian Center for Research in Energy and Materials, Campinas, São Paulo, Brazil; 2. Physics Institute Gleb Wataghin, State University of Campinas, Campinas, São Paulo, Brazil*

8:12

GH-02. Control of bacterial cells growths by magnetic hyperthermia. M. Bañ obre-Ló pez[1], D. Rodrigues[2], B. Espiñ a[1], J. Azeredo[2] and *J. Rivas*[1,3] *1. International Nanotechnology Laboratory (INL), Braga, Portugal; 2. Institute for Biotechnology and Bioengineering, University of Minho, Braga, Portugal; 3. Applied Physics, Univ. Santiago de Compostela, Santiago de Compostela, Spain*

8:24

GH-03. Study of Specific Absorption Rate of Strontium Doped Lanthanum Manganite and Other Magnetic Nanoparticles for Self Controlled Hyperthermia Applications. *S. Manzoor*[1], A. Ahmed[1], S.N. Ahmad[2] and S.A. Shaheen[1,3] *1. Physics, COMSATS Institute of Information Technology, Islamabad, ICT, Pakistan; 2. National Center for Physics, Quaid-i-Azam University, Islamabad, Pakistan; 3. Physics, Florida State University, Tallahassee, FL*

8:36

GH-04. Effect of Internal Magnetic Structure of Iron Oxide Magnetic Nanoparticles on the Field Dependence of the SLP for Hyperthermia. *C. Dennis*[1], J.A. Borchers[1], K.L. Krycka[1], A.J. Jackson[1,2], C. Gruettner[3] and R. Ivkov[4] *1. NIST, Gaithersburg, MD; 2. Department of Chemical Engineering, University of Delaware, Newark, DE; 3. Micromod Partikeltechnologie, GmbH, Rostock-Warnemünde, Germany; 4. Department of Radiation Oncology and Molecular Sciences, Johns Hopkins University Medical School, Baltimore, MD*

8:48

GH-05. Effect of the Viscosity and Hydrodynamic Size on Magnetic Particles for Hyperthermia. O. Whear[1], A.G. Roca[1], *G. Vallejo-Fernandez*[1], S. Hussain[2], J. Timmis[2], V. Patel[2] and K. O'Grady[2] *1. Department of Physics, The University of York, York, Yorkshire, United Kingdom; 2. Liquids Research Ltd, Bangor, United Kingdom*

9:00

GH-06. Highly stable amine functionalized iron oxide nanoparticles designed for magnetic particle imaging (MPI). *H. Arami*[1] and K.M. Krishnan[1] *1. Materials Science and Engineering, University of Washington at Seattle, Seattle, WA*

9:12

GH-07. Effect of amine functionalization on the magnetic behavior of dextran-coated iron oxide nanoparticles. *Z. Boekelheide*[1], C. Gruettner[2], R. Ivkov[3] and C. Dennis[1] *1. Material Measurement Laboratory, NIST, Gaithersburg, MD; 2. Micromod Partikeltechnologie, GmbH, 18119 Rostock-Warnemünde, Germany; 3. Department of Radiation Oncology and Molecular Sciences, Johns Hopkins University Medical School, Baltimore, MD*

9:24

GH-08. Cell patterning using magnetic micro/nano thin films for biochip applications. *T. Ger*[1], C. Huang[2], M. Lai[2] and Z. Wei[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*

9:36

GH-09. Magneto-plasmonic Barcode Nanowires for Osteosarcoma Cell Imaging, Control, and Separation. *A. Sharma*[1], Y. Zhu[2], S. Thor[3], A. Hubel[2] and B. Stadler[1,3] *1. Electrical and Computer Engineering, University of Minnesota, Twin Cities, Minneapolis, MN; 2. Mechanical Engineering, University of Minnesota, Minneapolis, MN; 3. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

9:48

GH-10. ON-Chip Cell Sorting Using an Autonomous Microfluidic Magnetic Device. *O. Osman*[1], J. Pivetal[1], M. Frenea-Robin[2], N. Haddour[1], L. Zanini[3,4], G. Reyne[4], N. Dempsey[3], F. Dumas-Bouchiat[3] and F. Buret[1] *1. Bioélectromagnétisme and Microsystems, Laboratoire AMPERE, Ecully, France; 2. Laboratoire AMPERE, Lyon, France; 3. Institut NEEL, Grenoble, France; 4. G2Elab, Saint-Martin d'Hères, France*

10:00

GH-11. A magnetic biosensor system for detection of E. coli. *F. Li*[1] and J. Kosel[1] *1. King Abdullah University of Science and Technology, Thuwal, Jeddah, Saudi Arabia*

10:12

GH-12. Integrated magnetic microdevice to probe the mechanobiology of engineered 3D microtissues. *R. Zhao*[1], T. Boudou[2], W. Wang[1], C.S. Chen[2] and D.H. Reich[1] *1. Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 2. Bioengineering, University of Pennsylvania, Philadelphia, PA*

10:24

GH-13. Measuring brain activity with Magnetoresistive Sensors integrated in Micromachined Probe Needles. *J. Amaral*[1,2], J. Gaspar[3], V. Pinto[4], N. Sousa[4], S. Cardoso[1,2] and P.P. Freitas[1,2] *1. INESC-MN, Lisboa, Portugal; 2. Instituto Superior Técnico, Universidade Técnica de Lisboa, Lisbon, Portugal; 3. International Iberian Nanotecnology Laboratory, Braga, Portugal; 4. Life and Health Sciences Research Institute, Braga, Portugal*

FRIDAY MORNING 8:00

CRYSTAL C

Session GI
LOW-DIMENSIONAL SYSTEMS I
Sean Langridge, Chair

8:00

GI-01. Perpendicular Magnetization and Generic Realization of the Ising Model in Artificial Spin Ice. *S. Zhang*[1], J. Li[1], I. Gilbert[1], J. Bartell[1], M.J. Erickson[2], Y. Pan[1], P.E. Lammert[1], C. Nisoli[3], K.K. Kohli[1], R. Misra[1], V.H. Crespi[1], N. Samarth[1], C. Leighton[2] and P. Schiffer[1] *1. Physics and Materials Research Institute, Pennsylvania State University, University Park, PA; 2. Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 3. Theoretical Division and Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM*

8:12

GI-02. Large magnetic thermal conductivity in a Haldane chain material Ni(C_3H_{10}N_2)_2NO_2ClO_4. *X. Sun*[1], X. Liu[1], L. Chen[2], Z. Zhao[1] and X. Zhao[3] *1. Hefei National Laboratory for Physical Sciences at the Microscale, University of Science and Technology of China, Hefei, Anhui, China; 2. Department of Physics, University of Science and Technology of China, Hefei, Anhui, China; 3. School of Physical Sciences, University of Science and Technology of China, Hefei, Anhui, China*

8:24

GI-03. Solving the Phase Diagram of the Quantum Magnet SrCu2(BO3)2. *S. Haravifard*[1,2], T.F. Rosenbaum[2], G. Srajer[1], B.D. Gaulin[3,4], J.C. Lang[1], D.M. Silevitch[2], A. Banerjee[2] and .A. Dabkowska[4] *1. Magnetic Materials, Argonne National Laboratory, Argonne, IL; 2. James Franck Institute, University of Chicago, Chicago, IL; 3. Physics and Astronomy, McMaster University, Hamilton, ON, Canada; 4. Brockhouse Institute for Material Research, Hamilton, ON, Canada*

8:36

GI-04. Theory of electrically-tunable coupling between magnetic clusters on graphene. *H. Chen*[1], Q. Niu[1], Z. Zhang[2] and A.H. MacDonald[1] *1. Department of Physics, University of Texas at Austin, Austin, TX; 2. ICQD/HFNL, University of Science and Technology of China, Hefei, Anhui, China*

8:48

GI-05. Anomalous Hall Effect Measurements of B20 MnSi Nanowires to Detect Magnetic Skyrmions. *J. DeGrave*[1] and S. Jin[1] *1. Chemistry, University of Wisconsin Madison, Madison, WI*

9:00

GI-06. Magnetic properties of sub-nanometer sized Ni particles in a Ag matrix. *A. Garcia Prieto*[1], M. Fdez-Gubieda[1], J. Alonso[1], I. Orue[1] and G. Aquilanti[2] *1. Universidad del País Vasco UPV/EHU, Bilbao, Spain; 2. Sincrotrone Trieste S.C.p.A., Basovizza Trieste, Italy*

9:12

GI-07. From particulate-like to flaky-faceted La0.7Sr0.3MnO3 by citrate chelating: Consequences for magnetism and RF hyperthermia. S. Khatavkar[1], O. Game[3], M. Biswal[3], C. Rao[2], A. Jadhav[3], P. Yadav[3], *S.N. Kale*[2] and S. Ogale[3] *1. Department of Electronic Science, Fergusson College, Pune, MH, India; 2. Department of Applied Physics, Defence Institute of Advanced Technology, Pune, MH, India; 3. Physical and Materials Chemistry Division, National Chemical Laboratory, Pune, MH, India*

9:24

GI-08. Magnetic, transport properties and electronic density of states of the two dimensional Perovskite compounds $Sr_{2-x}Gd_xCoO_4$ *Q. Yao*[1], X. Wang[2], H. Kimura[1], H. Qiu[1], S. Dou[2] and H. Zhao[1] *1. Environment and Energy Materials Research Division, National Institute for Materails Science, Tsukuba, Ibaraki, Japan; 2. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia*

9:36

GI-09. Melting of Hexagonal Skyrmion States in Chiral Magnets. *R. Stamps*[1] and M. Ambrose[2] *1. University of Glasgow, Glasgow, United Kingdom; 2. University of Western Australia, Perth, WA, Australia*

9:48

GI-10. Fresnel zone plate for diffractive focusing electron wave and spin waves in two-dimensional systems. *W. Tang*[1,2], D. Paganin[2] and W. Wan[3] *1. College of Material Science and Engineering, Chongqing University, Chongqing, Chongqing, China; 2. School of Physics, Monash University, Clayton, VIC, Australia; 3. Ernest Orlando Lawrence Berkeley National Laboratory, Berkeley, CA*

10:00

GI-11. Spin alignment of surface oxidized Ni_xCo_{1-x}/Cu(001). *W. Pan*[1], Y. Shih[1], C. Tsai[1], C. Su[1], D. Wei[2], Y. Chan[2] and H. Chang[2] *1. Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. National Synchrotron Radiation Center, Hsin-Chu, Taiwan*

10:12

GI-12. Exchange Interaction of Widely-Separated Transition Metal Dopants in Diamond. *V.R. Kortan*[1], C. Sahin[1] and M.E. Flatté [1] *1. Physics, University of Iowa, Iowa City, IA*

10:24

GI-13. Formation and decay of two dimensional skyrmion lattices. *A. Bergman*[1], D. Yudin[1], A. Taroni[1], L. Nordströ m[1] and O. Eriksson[1] *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden*

10:36

GI-14. Optical Faraday rotation with graphene. *J.C. Martinez*[1,2], M.B. Jalil[1,2] and S. Tan[2,1] *1. Dept of Electrical Engineering, National University of Singapore, Singapore; 2. Data Storage Institute, Singapore*

FRIDAY MORNING 9:00 **RIVERSIDE CENTER**

Session GP
DOMAIN WALL AND VORTEX DYNAMICS I (POSTER SESSION)

Joo-Von Kim, Chair

GP-01. Analytical study of phase and amplitude of vortex gyration using a microwave spectroscopy. *M. Goto*[1], K. Sekiguchi[1,2] and Y. Nozaki[1,3] *1. Department of Physics, Keio University, 3-14-1, Hiyoshi, Kohokuku, Yokohama, Kanagawa, Japan; 2. PRESTO JST, 4-1-8, Honcho, Kawaguchi, Saitama, Japan; 3. CREST JST, 5, Sanbancho, Chiyodaku, Tokyo, Japan*

GP-02. From Non-linear to linear gyroscopic motion of coupled vortices in spin-transfer nanocontacts. *G. Hrkac*[2,3], D. Hahn[5], L. Saharan[1], J. Kim[4], T. Devolder[4], C. Chappert[4] and T. Schrefl[5] *1. Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 2. University of Exeter, CEMPS, Exeter, United Kingdom; 3. Institute for Analysis and Scientific Computing, Vienna University of Technology, Vienna, Austria; 4. 2Institut d'Electronique Fondamentale, Universite Paris-Sud, Paris, France; 5. St. Poelten University of Applied Sciences, St Poelten, Austria*

GP-03. Effect of perpendicular uniaxial anisotropy on annihilation fields and shape of magnetic vortex cores. *E.R. Novais*[1], S. Allende[3], D. Altbir[3], P. Landeros[4], F. Garcia[2] and A.P. Guimaraes[1] *1. CBPF, Rio de Janeiro, RJ, Brazil; 2. LNLS, Campinas, SP, Brazil; 3. Physics Department, USACH, Santiago, Chile; 4. Physics Department, UTFSM, Valparaiso, Chile*

GP-04. Intrinsic and Thermal Activated Linewidths of Spin-Transfer-Driven Vortex Self-oscillations. *L. Torres*[1], G. Finocchio[2], M. Carpentieri[3], E. Martinez[1], L. Lopez-Diaz[1], A. Hernandez-Lopez[1] and D. Aurelio[1] *1. Dept. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain; 2. Dipartimento di Fisica della Materia e Ingegneria Elettronica, Universita degli Studi di Messina, Messina, Italy; 3. Dipartimento di Elettrotecnica ed Elettronica, Politecnico di Bari, Bari, Italy*

GP-05. Nonlinear characteristics of a current-driven vortex gyrotropic mode. *F.H. Iunes Sanches*[1], V.S. Tiberkevich[1], J. Sinha[2], K.Y. Guslienko[3,4], M. Hayashi[2] and A.N. Slavin[1] *1. Physics, Oakland University, Rochester, MI; 2. National Institute for Materials Science, Tsukuba-City, Ibaraki, Japan; 3. Universidad del Pais Vasco, UPV/EHU, San Sebastian, Spain; 4. IKERBASQUE, The Basque Foundation for Science, Bilbao, Spain*

GP-06. Inductive detection of magnetic vortex gyration. *H.H. Langner*[1], L. Bocklage[2,1], T. Matsuyama[1] and G. Meier[1] *1. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Hamburg, Germany; 2. Deutsches Elektronen Synchrotron, Hamburg, Germany*

GP-07. Nonlinear impact of the vortex chirality and core polarity on its dynamics. *E. Grimaldi*[1], P. Bortolotti[1], A. Dussaux[1], J. Grollier[1], A. Fukushima[2], H. Kubota[2], K. Yakushiji[2], S. Yuasa[2], V. Cros[1] and A. Fert[1] *1. Unité Mixte de Physique CNRS Thales, Palaiseau, France; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

GP-08. Effect of damping on the gyration frequency of vortex oscillations in spin transfer nanocontacts. *D. Hahn*[1], T. Schrefl[1], G. Hrkac[2,3] and D. Praetorius[4] *1. St. Pölten University of Applied Sciences, St. Pölten, Lower Austria, Austria; 2. Department of Engineering Materials, University of Sheffield, Sheffield S1 4DU, United Kingdom; 3. CEMPS, University of Exeter, Exeter EX4 4QF, United Kingdom; 4. Institute for Analysis and Scientific Computing, Vienna University of Technology, Vienna, Austria*

GP-09. Coupling of magnetic vortices. G. Fior[2], A.P. Guimaraes[1], E.R. Novais[1], J.P. Sinnecker[1] and *F. Garcia*[2] *1. CBPF, Rio de Janeiro, RJ, Brazil; 2. LNLS, Campinas, SP, Brazil*

GP-10. Spin transfer induced dynamics of coupled vortices in nanopillar devices. N. Locatelli[1], *V. Cros*[1], A. Hamadeh[2], G. de Loubens[2], M. Munoz[4], P. Bortolotti[1], V.V. Naletov[2], A.V. Khvalkovskiy[1], P.N. Skirdov[3], K.A. Zvezdin[3], S. Girod[1], J. Grollier[1], O. Klein[2] and A. Fert[1] *1. CNRS/Thales, Palaiseau, France; 2. SPEC-CEA, Gif-sur-Yvette, France; 3. A.M. Prokhorov, General Physics Institute, Moscow, Russian Federation; 4. CSIC, Madrid, Spain*

GP-11. Time-resolved Imaging of the Gyrotropic Motion of Magnetic Bubbles. *F. Büttner*[1,2], C. Moutafis[3], M. Schneider[2], C.M. Gü nther[2], J. Mohanty[2], J. Geilhufe[4], C.v. Korff Schmising[2], M. Foerster[1], T. Schulz[1], J. Franken[5], H. Swagten[5], M. Klä ui[1] and S. Eisebitt[2,4] *1. Institute of Physics, University of Mainz, Mainz, Germany; 2. Institut für Optik und Atomare Physik, Technische Universität Berlin, Berlin, Germany; 3. Swiss Light Source, Paul Scherrer Institute, Villigen PSI, Switzerland; 4. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany; 5. Technical University Eindhoven, Eindhoven, Netherlands*

GP-12. Dynamics of topological solitons in perpendicular magnetic anisotropy nanostructures. *C. Moutafis*[1], A. Bisig[2,3], F. Bü ttner[4,5], M. Foerster[4], M.A. Mawass[4], J. Franken[7], R. Lavrijsen[8], H. Swagten[7], M. Weigand[9,3], J. Raabe[6] and M. Klä ui[4,2] *1. Swiss Light Source, Paul Scherrer Institut, Villigen - PSI, Switzerland; 2. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 3. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 4. Institute of Physics, Johannes Gutenberg-University Mainz, 55099 Mainz, Germany; 5. Institut für Optik und Atomare Physik, TU Berlin, Berlin, Germany; 6. Paul Scherrer Institut, Villigen - PSI, Switzerland; 7. Technical University Eindhoven, Eindhoven, Netherlands; 8. University of Cambridge, Cambridge, United Kingdom; 9. Helmholtz Zentrum Berlin, Berlin, Germany*

GP-13. Magnetization Process of circle Magnetic Thin Film Devices at High Temperature. *Z. Wei*[2], Y. Chen[1], H. Huang[2], T. Ger[2], J.J. Chiang[2], T. Kuo[1] and C. Huang[2] *1. Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Taiwan, Hsinchu, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*

GP-14. Absorption spectroscopy of the gyrotropic eigenmode of isolated magnetic antivortices. *M. Pues*[1], M. Martens[1], T. Kamionka[1] and G. Meier[1] *1. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany*

GP-15. Control of sub-nanosecond precessional switching in STTRAM cells. *B. Lacoste*[1], R.C. Sousa[1], L.D. Buda-Prejbeanu[1], M. Marins de Castro[1], T. Devolder[2], C. Ducruet[3], A. Chavent[1], A. Mejdoubi[1], S. Auffret[1], U. Ebels[1], B. Rodmacq[1] and B. Dieny[1] *1. SPINTEC, Grenoble, France; 2. Institut d'Electronique Fondamentale, Orsay, France; 3. Crocus Technologie, Grenoble, France*

GP-16. Field tuning of ferromagnetic domain walls on elastically coupled ferroelectric domain boundaries. *K. Franke*[1], T. Lahtinen[1] and S. van Dijken[1] *1. Aalto University, Espoo, Finland*

FRIDAY MORNING 9:00 **RIVERSIDE CENTER**

Session GQ
MOTORS AND ACTUATORS VIII (POSTER SESSION)
Vincent Mazauric, Chair

GQ-01. Design Considerations of Linear Electromagnetic Actuator for Hybrid-Type Active Mount Damper. *Y. Shin*[1], S. Moon[1], J. Kim[2], H. Jo[2] and H. Cho[3] *1. Korea Institute of Machinery and Materials, Daejeon, Republic of Korea; 2. Chungnam National University, Daejeon, Republic of Korea; 3. Dept. Electric, Electronic, and Commucation Eng. Edu., Chungnam National Univ., Daejeon, Republic of Korea*

GQ-02. Analytical Prediction on Electromagnetic Characteristics in Passive Compulsator. *J. Li*[1] and L. Lv[1] *1. Xi'an Jiaotong University, High Voltage and Insulation Institute, School of Electrical Engineering, P.R. China, China*

GQ-03. Investigation and Countermeasures for Demagnetization in Line Start Permanent Magnet Synchronous Motors. J. Shen[1], *P. Li*[1], M. Jin[1] and G. Yang[1] *1. Dept. of Electrical Engineering, Zhejiang University, Hangzhou, China*

GQ-04. Integrated Design Method of a Tubular Permanent Magnet Actuator with Cooling System for an Active Secondary Suspension of a High Speed Train. *J. Woo*[1], D. Yoo[1], N. Park[1], Y. Park[1], K. Park[1], W. Yoo[2] and H. Hur[2] *1. School of Mechanical Engineering, Yonsei University, Seoul, Republic of Korea; 2. Korea Railroad Research Institute, Gyeonggi-do, Republic of Korea*

GQ-05. Multi-Objective Robust Optimal Design of Switched Reluctance Motor Assisted by Worst-Case Scenario and FEM. *Z. Ren*[1], B. Xia[1] and C. Koh[1] *1. School of Electrical & Computer Engineering, Chungbuk National University, Cheongju, Republic of Korea*

GQ-06. Performance Improvement of a Linear Actuator for Mobile Phones. *J. Nam*[1], T. Yeon[1] and G. Jang[1] *1. Dept. of Mechanical Engineering, PREM Lab., Hanyang University, Seoul, Republic of Korea*

GQ-07. Investigating a Super High Speed Motor-gnerator for Microturbine Using Amorphous Core. *D. Hong*[1], B. Woo[1], Y. Jeong[1], D. Joo[1] and D. Koo[1] *1. Korea Electrotechnology Research Institute, Changwon, Republic of Korea*

GQ-08. Optimum Design of High Temperature Superconducting Generator. *M.. Hsieh*[1] and C. Lin[1] *1. Systems and Naval Mechatronic Eng., National Cheng Kung University, Tainan, Taiwan*

GQ-09. Motoring/generating performance evaluation of coreless double-sided Halbach PM Synchronous machine for flywheel energy storage system. *J. Choi*[1], S. Jang[1], Y. Park[1], S. Sung[1] and D. You[2] *1. Electrical Engineering, Chungnam National University, Daejeon, Republic of Korea; 2. Chungnam Provincial Cheongyang College, Chungnam, Republic of Korea*

GQ-10. Evaluation of 3-dimensional Magnetic Force and Mechanical Deformation for Contacted Ferromagnetic Bodies in Heavy Ion Accelerator Magnet Using Virtual Air-gap Scheme. *I. Kim*[1], W. Kim[1], J. Kang[2], B. Hong[2] and S. Lee[1] *1. School of Electrical Eng. and Computer Science, Kyungpook National Univ., Daegu, Republic of Korea; 2. Lab. of Accelerator Development, Korea Institute of Radiological & Medical Sciences, Seoul, Republic of Korea*

FRIDAY MORNING 9:00

RIVERSIDE CENTER

Session GR
MOTORS AND ACTUATORS IX (POSTER SESSION)

Amgad El-Deib, Chair

GR-01. Design and Comparison of Brushless Doubly-Fed Machines with Different Rotor Types.M.. Hsieh[1], *I. Lin*[1] and D.G. Dorrell[2] *1. Systems and Naval Mechatronic Eng., National Cheng Kung University, Tainan, Taiwan; 2. School of Electrical, Mechanical and Mechatronic Systems, University of Technology Sydney, Sydney, NSW, Australia*

GR-02. Design of High Speed Permanent Magnet Synchronous Motor according to mechanical Structure of Magnetic Rotor. *J. Ahn*[1], S. Jang[1], C. Park[2], J. Choi[1], C. Han[1] and H. Park[1] *1. Dept. Of Electrical Engineering, Chungnam Nat'l Univ., 220, Gung-dong, Yuseong-gu, Daejeon, Republic of Korea; 2. Dept. of Robot and Intelligent Machinery, Korea Institute of Machinery and Materials, 104 Sinseong-ro, Yuseong-gu, Daejeon, Republic of Korea*

GR-03. Development of Copper Die Casting High Speed Induction Motor for Spindle. *D. Hong*[1], J. Choi[1], Y. Chun[1], B. Woo[1] and D. Koo[1] *1. Korea Electrotechnology Research Institute, Changwon, Republic of Korea*

GR-04. Development of Tubular Permanent Magnet Actuators for an Active Suspension System of a Railway Vehicle. *D. Ahn*[1], J. Choi[1], N. Park[1], W. You[2], H. Hur[2] and Y. Baek[1] *1. Yonsei University, Seoul, Republic of Korea; 2. Korea Railroad Research Institute, Gyeonggi-do, Republic of Korea*

GR-05. Characteristics Comparison of Double-side Permanent Magnet Synchronous Motor/Generator according to Magnetization Pattern for Flywheel Energy Storage System using Analytical Method. *K. Kim*[1], S. Jang[1], J. Choi[1], H. Park[1] and C. Han[1] *1. Chungnam National uuiversity, Daejeon, Republic of Korea*

GR-06. Evaluation of Permanent Magnet Motors Manufactured Using Post-Assembly Magnetization. *M.. Hsieh*[1] and Y. Hsu[1] *1. Systems and Naval Mechatronic Eng., National Cheng Kung University, Tainan, Taiwan*

GR-07. Analytical Modeling of Air-Gap Field Distributions in Permanent Magnet Embedded Salient Pole Wind Generator. *Y. Guo*[1], H. Lin[1], J. Yan[1] and Y. Huang[1] *1. Southeast University, Nanjing, China*

GR-08. Size Optimization of PMa-SynRM for improving torque density using TRUST. *Y. Jeong*[1], Y. Kim[2] and S. Jung[1] *1. SungKyunKwan University, Suwon, Republic of Korea; 2. Chosun University, Gwangju, Republic of Korea*

GR-09. Sensorless control of the switched reluctance linear generator.H. Chen[1], Q. Wang[1] and *X. Liu*[1] *1. China University of Mining & Technology, Xuzhou, China*

GR-10. Modeling of A Switched Reluctance Motor Under Stator Winding Fault Condition.H. Chen[1], S. Lu[1] and *Q. Wang*[1] *1. China University of Mining & Technology, Xuzhou, China*

GR-11. Temperature Effects on the Performance of Interior Permanent Magnet Electric Machines. *S. Lin*[1,2], X. Hu[1], E. Dlala[1], M. Christini[1], S. Stanton[1], T. Wu[2], L. Chow[2] and K. Zhang[2] *1. ANSYS, Pittsburgh, PA; 2. University of Central Florida, Orlando, FL*

FRIDAY MORNING 9:00 RIVERSIDE CENTER

Session GS
MOTORS AND PERMANENT MAGNET MACHINES (POSTER SESSION)

S.G. Sankar, Co-Chair
Elena Lomonova, Co-Chair

GS-01. Simulation of Doubly Salient Memory Motor Using Improved Time Stepping Finite Element Method Coupled with Simplified Hysteresis Model, Accounting for the Variation of Neutral Point Potential. *C. Wei*[1], H. Zhang[1], Y. Gong[1] and Y. Zhang[1] *1. Department of Automation, Shanghai University, Shanghai, China*

GS-02. A Novel Line-start Post-assembly Magnetized Permanent Magnet Synchronous Motor. *S. Ho*[1], H. Li[1] and W. Fu[1] *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

GS-03. A Novel Design for Mobile Phone's Microspeaker Module with a Smaller Volume. *P. Sun*[1], D. Xu[1], J. Kwon[2] and S. Hwang[1] *1. Mechcnial Engineering College, Pusan National University, Busan, Busan, Republic of Korea; 2. Research and Development Center, EM-TECH, Anyang, Gyeonggi-do, Republic of Korea*

GS-04. Control Strategies of Electrical Variable Transmission Machines for Wind Energy Conversion Systems. Y. Zhu[1], *M. Cheng*[1], W. Hua[1] and W. Wang[1] *1. School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China*

GS-05. Diagnosis of Inter-turn Fault for Permanent Magnet Synchronous Generator Based on FE Analysis. H. Jun[1], *Z.J. Zhong*[1] and C. Ming[1] *1. Southeast University, Nanjing, China*

GS-06. A Sensorless Control Method of a Dual-structure Permanent Magnet Machine at Low Speed and Standstill. *S. Niu*[1], S. Ho[1] and W. Fu[1] *1. The Hong Kong Polytechnic University, Hong Kong, China*

GS-07. Design to improve the high-Speed performance of 120kW class IPMSM considering the mechanical stress. *K. Lee*[1] and J. Lee[1] *1. Electrical Engineering, Hanyang University, Seoul, Republic of Korea*

GS-08. Torque Calculations and Experimental Verifications of Axial-Field Permanent Magnet Couplings Based on Transfer Relations Theorem. *J. Choi*[1], H. Shin[1], S. Jang[1] and H. Cho[1] *1. Chungnam National University, Dae-jeon, Republic of Korea*

GS-09. A Novel Fault-tolerant PM Motor. *L. Yumeng*[1], Z. Jing[1] and C. Zhen[1] *1. School of Automation, Beijing Institute of Technology, Beijing, China*

GS-10. Loss Analysis According to the Commutation Method of NdFeB Permanent Magnet BLDC Motor. *T. Jeong*[1], K. Lee[1], I. Jang[2], C. Jin[2] and J. Lee[1] *1. Electrical Engineering, Hanyang University, Seoul, Republic of Korea; 2. Electrical Engineering, Samsungtechwin, Seongnam, Republic of Korea*

GS-11. Evaluation of Cross-Coupling Inductances in Multi-Segmented Plate Permanent Magnet Linear Motor. *M. Ma*[1], L. Li[1] and Q. Chen[1] *1. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, China*

GS-12. Influence of Inductance and Flux Linkage Variation on Operation Performance in Pass-through Section for Multi-Segmented Linear PM Motor. *M. Ma*[1], L. Li[1] and Q. Chen[1] *1. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, China*

GS-13. A Novel Concept and Proof of Magnetostrictive Motor. *J. Park*[1], O. Oh[1], E. Yoo[1] and Y. Park[1] *1. Chungnam National University, Daejeon, Republic of Korea*

GS-14. Inductance Calculation in IPMSM Considering Magnetic Saturation. *W. Kim*[1] *1. Material & Device Research Center, Samsung Electronics, Gyeonggi-do, Republic of Korea*

GS-15. Effectiveness Evaluation of Magnetic Skew Techniques for Reducing Cogging Torque of Brushless PM Motor. *Z. Gaing*[1], C. Lin[1] and M. Tsai[2] *1. Electrical Engineering, Kao Yuan University, Kaohsiung, Taiwan; 2. Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan*

FRIDAY MORNING 9:00 RIVERSIDE CENTER

Session GT
MAGNETOCALORIC MATERIALS III (POSTER SESSION)

Yaroslav Mudryk, Chair

GT-01. Magnetocaloric effect in the rare earth intermetallic compounds RCoNi (R = Gd, Tb, Dy and Ho). *R. Mondal*[1], R. Nirmala[1], J. Chelvane[2] and A.K. Nigam[3] *1. Physics, Indian Institute of Technology Madras, Chennai, India; 2. Defence Metallurgical Research Laboratory, Hyderabad, India; 3. Tata Institute of Fundamental Research, Mumbai, India*

GT-02. Enhanced refrigerant capacity and table-like magnetocaloric effect in LaFeCoSi based composites. *I. Skorvanek*[1], J. Marcin[1], P. Gebara[2] and P. Pawlik[2] *1. Magnetism, Institute of Experimental Physics Slov. Acad. Sci., Kosice, Slovakia; 2. Czestochowa University of Technology, Czestochowa, Poland*

GT-03. Magnetic properties and magnetocaloric effect in $Mn_{1.22-x}Zr_xSb$ compounds.Y.b. Yang[1], X.G. Chen[1], R. Wu[1], J.Z. Wei[1], Y.C. Yang[1] and *J.B. Yang*[1,2] *1. School of Physics, Peking University, Beijing, China; 2. State Key Laboratory for Mesoscopic Physics, Deparment of Physics, Peking University, Beijing, China*

GT-04. Magnetic properties and magnetocaloric effects in $GdCo_9Si_2$ compound with multiple magnetic phase transitions.*Z. Zhigang*[1], Z. Xichun[1], F. Victorino[2], Z. Jiliang[3], L. Zhongwu[1] and Z. Dechang[1] *1. South China University of Technology, Guangzhou, China; 2. Sevilla University, Sevilla, Spain; 3. City University of Hong Kong, China*

GT-05. Magnetocaloric effect and critical behavior in textured Mn5Ge3-xAlx ribbons.*Y. Shi*[1], T. Zheng[1], J. Fan[1], D. Shi[1] and L. Lv[2] *1. Department of Applied Physics, Nanjing University of Aeronautics and Astronautics, Nanjing, Jiangsu, China; 2. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, Jiangsu, China*

GT-06. Magnetic and martensitic phase transitions in epitaxial Ni-Mn-In Based Thin Films.*A. Sokolov*[1], L. Zhang[1], I. Dubenko[2], T. Samanta[2], S. Stadler[3] and N. Ali[2] *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. Department of Physics, Southern Illinois University Carbondale, Carbondale, IL; 3. Department of Physics & Astronomy, Louisiana State University, Baton Rouge, LA*

GT-07. Microstructure, martensitic transitions, magnetocaloric and exchange bias properties in Fe-doped Ni-Mn-Sn melt-spun ribbons.*X.G. Zhao*[1,2], B. Li[2], C.W. Shih[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. Shenyang National Laboratory for Materials Science and International Center for Materials Physics, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, Liaoning, China*

GT-08. Influence of particle size on the hydrogenation in $La(Fe,Si)_{13}$ compounds.H. Zhang[1], Y. Long[1], E. Niu[2], X. Shao[2], *J. Shen*[3], F. Hu[2], J. Sun[2] and B. Shen[2] *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China; 2. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 3. Key laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China*

GT-09. The metal-insulator phase transition in the strained GdBiTe3.*T.V. Quang*[1] and M. Kim[2,3] *1. Department of Physics, Ajou University, Suwon, Republic of Korea; 2. Division of Energy System Research, Ajou University, Suwon, Republic of Korea; 3. Department of Nano Physics, Sookmyung Women's University, Seoul, Republic of Korea*

GT-10. Crystal structure and magnetic properties of $(Mn_{1-x}Fe_x)_5Sn_3$ compounds (x=0-0.55).X.J. Hui[1], X.y. Hua[1], Y.w. Yun[1], D.h. Lin[1], *Y.j. Bo*[1], Z. Yan[1] and Y.y. Chang[1] *1. School of Physics, Peking University, Beijing, China*

GT-11. Numerical analysis of different active magnetic regenerator (AMR) configurations.*D.A. Vuarnoz*[1] and T. Kawanami[1] *1. Mechanical Eng., Kobe Uniersity, Kobe, Japan*

GT-12. Effect of post-annealing on the phase transitions and magnetocaloric properties in bulk Ni44Mn45Sn11 alloy.*R. Wang*[1,2], L. Xu[1], M. Lee[2], Z. Sun[3], J. Huang[2] and C. Yang[1] *1. Faculty of Physics & Electric Technology, Hubei University, Wuhan, Christmas Island; 2. National Cheng Kung University, Tainan, Taiwan; 3. Wuhan University of Technology, Wuhan, China*

FRIDAY MORNING 9:00 — RIVERSIDE CENTER

Session GU
4F-, 5F- AND STRONGLY CORRELATED SYSTEMS (POSTER SESSION)

Filip Ronning, Co-Chair
Kirill Belashchenko, Co-Chair

GU-01. Magnetic states and exchange interactions in GdScGe: ab initio study.*X. Liu*[1,2], Z. Altounian[2] and P. Liu[1] *1. Physics, University of Texas at Arlington, Arlington, TX; 2. Physics department, McGill University, Montreal, QC, Canada*

GU-02. Explaining the doublet groundstate in $PrNiGe_2$ through an analysis of the magnetocaloric effect.*J.L. Snyman*[1] and A.M. Strydom[1] *1. Physics Department, University of Johannesburg, Johannesburg, Gauteng, South Africa*

GU-03. Effect of Ge substitution of Si on the magnetic hyperfine field properties of $LaMn_2Si_2$ compound using PAC spectroscopy with ^{140}Ce probe nuclei.*B. Bosch-Santos*[1], A.W. Carbonari[1], G.A. Cabrera-Pasca[1], M.S. Costa[1] and R.N. Saxena[1] *1. CRPq, IPEN/USP, Sao Paulo, Sao Paulo, Brazil*

GU-04. Electroresistance and current-induced metastable states in thin films of half-doped manganite $Pr_{0.5}Sr_{0.5}MnO_3$J. Wang[1], L. Chen[1], *Y. Jiang*[1] and J. Gao[1] *1. Department of Physics, The University of Hong Kong*

GU-05. High-field magnetization and magnetoelasticity of a $HoFe_5Al_7$ single crystal.A.V. Andreev[1], *D.I. Gorbunov*[1,2], M.D. Kuz'min[3], Y. Skourski[4], S. Yasin[4], Z. Arnold[1], S. Zherlitsyn[4] and J. Wosnitza[4] *1. Institute of Physics, Academy of Sciences, Prague, Czech Republic; 2. DCMP, Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic; 3. Leibniz-Institut für Festkörper- und Werkstoffforschung, Dresden, Germany; 4. Dresden High Magnetic Field Laboratory, Helmholtz-Zentrum Dresden Rossendorf, Dresden, Germany*

GU-06. Magnetic structure of GdNiSn.*N.R. Lee-Hone*[1], D. Ryan[1], P. Lemoine[2] and A. Verniè re[3] *1. Physics, McGill, St-Placide, QC, Canada; 2. University of Manitoba, Winnipeg, MB, Canada; 3. Institut Jean Lamour, Nancy, France*

GU-07. The crystal structure and magnetic properties of giant unit cell $Pr_{117}Co_{52}Ge_{112}$ *J. Liu*[1,2], V. Smetana[1,3], V.K. Pecharsky[1,2], K.A. Gschneidner, Jr.[1,2] and G.J. Miller[1,3] *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*

GU-08. Extreme doping sensitivity of the ordering direction in $GdCo_{12-x}Fe_xB_6$ *N.R. Lee-Hone*[1], D. Ryan[1], O. Isnard[2], L.V. Diop[2] and J.M. Cadogan[3] *1. Physics, McGill, Montreal, QC, Canada; 2. MCMF, Institut Néel CNRS/UJF, Grenoble, France; 3. School of Physical, Environmental and Mathematical Sciences, The University of New South Wales, Canberra, ACT, Australia*

GU-09. Investigation of spin ordering in antiferromagnetic $Fe_{1-x}Mn_xPO_4$ with Mössbauer spectroscopy. *W. Kwon*[1], B. Lee[2] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Republic of Korea; 2. Department of Physics, Hankuk University of Foreign Studies, Yongin, Kyungki, Republic of Korea*

GU-10. Magnetic States of UCuGe1-xSnx Compounds Found by 119Sn Mössbauer Spectroscopy. *V. Krylov*[1] *1. Institute of Nuclear Physics, Moscow State University, Moscow, Russian Federation*

GU-11. Temperature Dependent Sign Reversal of Magnetocrystalline Anisotropy in Bulk and Nanoparticles of $La_{0.85}Sr_{0.15}MnO_3$ K.S. Bhagyashree[1] and *S.V. Bhat*[1] *1. Physics, Indian Institute of Science, Bangalore, Karnataka, India*

GU-12. Magnetic hyperfine fields in antiferromagnetic RGa_2 (R = Ce, Pr, Nd, Sm, Gd, Tb, Dy, Ho, Er) studied by ^{111}Cd perturbed angular correlations. *F.H. Cavalcante*[1,2], L.F. Pereira[2], A.W. Carbonari[1], J.T. Cavalcante[2], H. Saitovitch[2], R.N. Saxena[1] and M. Forker[1,3] *1. CRPq, IPEN, São Paulo, SP, Brazil; 2. EXP, CBPF, Rio de Janeiro, RJ, Brazil; 3. Helmholtz Institut für Strahlen-und Kernphysik, Universität Bonn, Bonn, Germany*

GU-13. 119Sn Mössbauer Spectroscopy of 3d-, 4f-, and U-Intermetallic Compounds. *V. Krylov*[1] *1. Institute of Nuclear Physics, Moscow State University, Moscow, Russian Federation*

GU-14. Complex magnetic behavior of polycrystalline Eu5Si3 compound. S.M. Patil[1], *P.L. Paulose*[2] and E.V. Sampathkumaran[2] *1. Wilson College, Mumbai, India; 2. Tata Institute of Fundamental Research, Mumbai, India*

GU-15. Magnetic properties of $Ho_{1-x}Er_xAl_2$ alloys. *M. Khan*[1], D. Paudyal[1], K.A. Gschneidner, Jr.[1,2] and V.K. Pecharsky[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*

GU-16. Study of the Crystal Symmetries and Magnetic Structures of $Ni_{1-x}Co_xTiO_3$ Solid Solutions. Y. Fujioka[1], *J. Frantti*[1], A. Llobet[2], G. King[2] and J. Siewenie[2] *1. Department of Applied Physics, Aalto University, Otaniemi, Espoo, Finland; 2. Los Alamos Neutron Science Center, Los Alamos National Laboratory, Los Alamos, NM*

FRIDAY MORNING 9:00

RIVERSIDE CENTER

Session GV
FUNDAMENTAL PROPERTIES AND COOPERATIVE PHENOMENA II (POSTER SESSION)

Alexander Serga, Co-Chair
Hendrik Ohldag, Co-Chair

GV-01. Rounding of a first-order magnetic phase transition in Ni-doped $La_{0.7}Ca_{0.3}MnO_3$ *L.T. Phan*[1], P. Zhang[1], T. Thanh[1,2], Y. Zhang[1], D. Grinting[1], S. Yu[1] and D. Tuan[3] *1. Department of Physics, Chungbuk National University, Cheongju, Republic of Korea; 2. Institute of Materials Science, Vietnam Academy of Science and Technology, Hanoi, Viet Nam; 3. Department of Physics, University of Ulsan, Ulsan, Republic of Korea*

GV-02. Phase transition temperature and paramagnetic effect of Al1-xCrxK(SO4)2 12H2O (x=0, 0.07, and 0.2) crystals studied by 27Al NMR relaxation time. *C.L. Chang*[1], S. Jeong[2] and Y. Paik[3] *1. Department of Physics, Yonsei University, Seoul 120-749, Republic of Korea; 2. School of Nanoscience and Technology, Pusan National University, Miryang 627-706, Republic of Korea; 3. Solid State Analysis Team, Korea Basic Science Institute, Daegu 702-701, Republic of Korea*

GV-03. Magnetocaloric effect in $LaFe_{10-x}B_xSi_3$ amorphous ribbons with a second-order phase transition. *T. Thanh*[1,2], N. Yen[2], P. Thanh[2], N. Dan[2], P. Zhang[1], L. Phan[1] and S. Yu[1] *1. Department of Physics, Chungbuk National University, Cheongju, Republic of Korea; 2. Institute of Materials Science, Vietnam Academy of Science and Technology, HaNoi, Viet Nam*

GV-04. Nonuniversal critical behaviors in disorder-destroyed charge-ordering system of $Pr_{0.3}Nd_{0.2}Sr_{0.5}MnO_3$ perovskite manganite. *P. Zhang*[1], T. Thanh[1,2], T. Phan[1] and S. Yu[1] *1. Department of Physics, Chungbuk National University, Cheongju, Chungbuk, Republic of Korea; 2. Institute of Materials Science, Vietnam Academy of Science and Technology, Hanoi, Viet Nam*

GV-05. Quantum critical behaviour in the $(Cr_{0.975}Si_{0.025})_{1-y}Mo_y$ alloy system. *C.J. Sheppard*[1], A.R. Prinsloo[1], R.P. Fernando[1], A.M. Strydom[1], A.M. Venter[2] and V.K. Peterson[3] *1. Physics, University of Johannesburg, Johannesburg, Gauteng, South Africa; 2. Research and Development Division, Necsa, Pretoria, Guateng, South Africa; 3. Bragg Institute, ANSTO, Kirrawee, NSW, Australia*

GV-06. Temperature Sweep Rate and Light Intensity Dependence of LITH-FORC Diagram in 1D spin crossover compounds.C.M. Jureschi[1], *A. Rotaru*[1], J. Linares[2], Y. Garcia[3] and G. Rotaru[4] *1. Electrical Engineering and Computer Science, Stefan cel Mare University, Suceava, Romania; 2. Groupe d'Etude de la Matière Condensée (GEMaC), Université de Versailles St. Quentin en Yvelines, Versailles, France; 3. Institute of Condensed Matter and Nanosciences, Université Catholique de Louvain, Louvain la Neuve, Belgium; 4. Laboratory for Protection and Physiology, EMPA Materials Science and Technology, St Gallen, Switzerland*

GV-07. Chiral nature of forbidden states in artificial spin ice. *H. Riahi*[1], F. Montaigne[1], N. Rougemaille[2], B. Canals[2], J. Toussaint[2], M. Hehn[1] and D. Lacour[1] *1. P2M, Institut Jean Lamour (IJL), VANDOEUVRE LES NANCY Cedex (France), France; 2. Institut Néel, CNRS-UJF, Grenoble, France*

GV-08. Complex magnetism in geometrically frustrated spin-chain $Ca_3Co_2O_6$ probed by transverse susceptibility and magnetocaloric effect. *N.S. Bingham*[1], M. Phan[1], S. Cheong[2] and H. Srikanth[1] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Rutgers Center for Emergent Materials, Rutgers University, Piscataway, NJ*

GV-09. Impact of anisotropy on kagome artificial spin systems. *F. Montaigne*[1], B. Canals[2], M. Hehn[1], D. Lacour[1], A. Locatelli[3], S. Mc Murtry[1], T. Mentes[3], H. Riahi[1], N. Rougemaille[2] and B. Santos Burgos[3] *1. Institut Jean Lamour, Université de Lorraine - CNRS, Vandoeuvre lès Nancy, France; 2. Institut Néel, CNRS, Grenoble, France; 3. ELETTRA, Sincrotrone Trieste, Trieste, Italy*

GV-10. The evolution of the magnetic properties of $Mn_5(Sn_{1-x}Sb_x)_3$ compounds (x=0-0.4).X.J. Hui[1], X.Y. Hua[1], Y.W. Yun[1], D.H. Lin[1], *Y.J. Bo*[1], Z. Yan[1] and Y.Y. Chang[1] *1. School of Physics, Peking University, Beijing, China*

GV-11. Anomalous electronic and magnetic properties of the $Eu_2Ru_2O_7$ pyrochlore.S. Muñ oz Pé rez[1], R. Cobas[2], S. Cadogan[2], *J. Albino Aguiar*[3,4], C. Frontera[5], T. Puig[5], G. Long[6], M. DeMarco[6,7], D. Coffey[7] and X. Obradors[5] *1. Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. School of Physical, Environmental and Mathematical Sciences, The University of New South Wales, Canberra, ACT, Australia; 3. Departmento de Fisica, Universidade Federal de Pernambuco, Recife, Pernambuco, Brazil; 4. Pós-Graduação em Ciência de Materiais, Universidade Federal de Pernambuco, Recife, Pernambuco, Brazil; 5. Institut de Ciència dels Materials de Barcelona, CSIC, Barcelona, Catalunya, Spain; 6. Department of Physics, State University of New York, New York, NY; 7. Department of Physics, Buffalo State College, New York, NY*

GV-12. Ground State Ordering in Square Ice via Simplified Field Protocols. *J.P. Morgan*[1], A. Bellew[1], Z. Budrikis[2,3], J. Akerman[1,4], A. Stein[5], P. Politi[6], R.L. Stamps[7], R.L. Evans[1], S. Langridge[8] and C.H. Marrows[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, Yorkshire, United Kingdom; 2. ISI Foundation, Turin, Italy; 3. University of Western Australia, Crawley, WA, Australia; 4. ISOM, Universidad Politécnica de Madrid, Madrid, Spain; 5. CFN, BNL, Upton, NY; 6. CNR, Florence, Italy; 7. SUPA, University of Glasgow, Glasgow, United Kingdom; 8. ISIS, Rutherford Appleton Laboratory, Chilton, United Kingdom*

GV-13. Investigation of the origin of glassiness in La0.5Sr0.5CoO3. *K. Manna*[1], S. Elizabeth[1] and P. Kumar[1] *1. Physics, Indian Institute of Science, Bangalore, Karnataka, India*

GV-14. Temperature dependence of magnetic properties of epitaxial Pr0.67Sr0.33MnO3 film under strained status. *B. Zhang*[1,2], W. Lv[2], W. Song[3], T. Venkatesan[2], J. Chen[1] and G. Chow[1] *1. Department of Materials Science and Engineering, National University of Singapore, Singapore; 2. NUSNNI-Nanocore, National University of Singapore, Singapore; 3. Data Storage Institute, Agency for Science, Technology and Research (A*STAR), Singapore*

GV-15. Freezing of the octahedral tilt near ferromagnetic transition and appearance of a glassy phase at low temperature driven by the tilt instabilities in SrRuO3.C. Sow[1], D. Samal[1], *P. Kumar*[1], A.K. Bera[2] and S.M. Yusuf[2] *1. Department of Physics, Indian Institute of Science, Bangalore, Karnataka, India; 2. Solid State Physics Division, Bhabha Atomic Research Centre, Mumbai, Maharashtra, India*

GV-16. On the Verwey and Spin-glass transitions in magnetite nanoparticles. *K.L. López Maldonado*[1], P. De la Presa[2], E. Flores Tavizó n[1], J.F. Hernández Paz[1], J.R. Farias Mancilla[1], P.G. Mani-González[1], J.A. Matutes Aquino[3] and J.T. Elizalde Galindo[1] *1. Physics and Mathematics, Universidad Autónoma de Ciudad Juárez, Juárez, Chihuahua, Mexico; 2. Instituto de Magnetismo Aplicado-UCM-ADIF,CSIC, Madrid, Spain; 3. Centro de Investigación en Materiales Avanzados, Chihuahua, Chihuahua, Mexico*

FRIDAY MORNING 9:00 — **RIVERSIDE CENTER**

Session GW
MULTIFERROIC MATERIALS II (POSTER SESSION)

John Burton, Co-Chair
Ming Liu, Co-Chair

GW-01. Magnetic and ferroelectric properties of epitaxial Bi2FeMnO6 thin films. *P. Liu*[1], Z. Cheng[1], X. Wang[1], Y. Du[1], F. Hong[1] and S. Dou[1] *1. Institute for Superconducting and Electronic Materials, Wollongong, NSW, Australia*

GW-02. Origin of ferromagnetism in ferroelectric PbTiO3.L. Thi Mai Oanh[1], *D. Duc Dung*[2] and N. Van Minh[1] *1. Center for Nano science and Technology and Department of Physics, Hanoi National University of Education, Hanoi, 136 Xuan Thuy Road, Cau Giay, Viet Nam; 2. Department of General Physics, School of Engineering Physics, Hanoi University of Science and Technology, Hanoi, 1 Dai Co Viet Road, Viet Nam*

GW-03. Low temperature antiferromagnetic transition in BiFe0.5Mn0.5O3. *D. Cortie*[1,2], A.P. Stampfl[2], F. Klose[2], X. Wang[1], Y. Du[1], H. Zhao[3], H. Kimura[3] and Z.X. Cheng[2] *1. The Institute for Superconducting and Electronic Materials, The University of Wollongong, NSW, 2522, Wollongong, NSW, Australia; 2. The Bragg Institute, Australian Nuclear Science and Technology Organisation, Lucas Heights, NSW 2234, Sydney, NSW, Australia; 3. National Institute for Materials Science, Sengen 1-2-1, Tsukuba, Japan, Sengen, Tsukuba, Japan*

GW-04. Ferroelectric poling on the magnetic properties of $Pr_{0.5}Sr_{0.5}MnO_3$ films.C. Xuegang[1], Y. Yunbo[1] and *Y. Jinbo*[1,2] *1. School of Physics, Peking University, Beijing, China; 2. State Key Laborator for Mesoscopic Physics, School of Physics, Peking University, Beijing, China*

GW-05. Effects of La substitution on structure and magnetic properties of sol gel prepared $BiFeO_3$ *S. Pittala*[1] and S. Sanyadanam[1] *1. School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

GW-06. Influence of different grinding balls and Co-additive on the electromagnetic properties of Bi-modified 0.4PZT+0.6NiCuZn-ferrite composites. *L. Jia*[1], H. Zhang[1], X. Wu[1] and B. Liu[1] *1. University of Electronic Science and Technology of China, Chengdu, China*

GW-07. Enhanced Visible Light Photocatalytic Properties of Ca-doped BiFeO3 Below and Above the Solubility Limit. *W.R. Osman*[1], P. Shaikh[2], A. Ramadan[1], S. Attia[3] and S. Ogale[2] *1. Physics Department, Faculty of Science-Alexandria Univeresity, Alexandria, Egypt; 2. Physical and Materials Chemistry Division, National Chemical Labortery(CSIR-NCL), Pune, India; 3. Materials Science Department,, Institute of Graduate Studies and Research, Alexandria University, Alexandria, Egypt*

GW-08. Ferroelectric, magnetic, and photovoltaic properties of $BiFeO_3$ multiferroic thin films grown on Pt(111) buffered glass substrates. *H.W. Chang*[1], S.H. Tien[1], C.R. Wang[1], C.S. Tu[2] and S.U. Jen[3] *1. Department of Physics, Tunghai University, Taichung, Taiwan; 2. Department of Physics, Fu Jen Catholic University, Taipei, Taiwan; 3. Institute of Physics, Academia Sinica, Taipei, Taiwan*

GW-09. Photo-induced electric phenomena in antiferromagnetic $BiFeO_3$ ceramics. *C. Hung*[1], . Tu[2], M. Chiang[2], C. Lin[2] and C. Tu[1,2] *1. Graduate Institute of Applied Science and Engineering, Fu Jen Catholic University, Taipei, Taiwan; 2. Department of Physics, Fu Jen Catholic University, Taipei, Taiwan*

GW-10. Effect of internal strain/stress on the photovoltaic properties of highly textured multiferroic $BiFeO_3$(001) films. *H.W. Chang*[1], P.H. Chen[1], C.R. Wang[1], C.S. Tu[2], C.S. Ku[3], H.Y. Lee[3] and S.U. Jen[4] *1. Department of Physics, Tunghai University, Taichung, Taiwan; 2. Department of Physics, Fu Jen Catholic University, Taipei, Taiwan; 3. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 4. Institute of Physics, Academia Sinica, Taipei, Taiwan*

GW-11. The ferroelectricity of Bi0.9Pb0.1FeO3 films grown on atomic flat SrRuO3/SrTiO3 substrates.K. Liu[1], C. Wu[1], C. Wu[1], M. Bohra[1], A. Pyatakov[2,3], Y. Chen[4], C. Yu[5], S. Sun[5], H. Hsu[6] and *H. Chou*[1] *1. Physics, Natl Sun Yat-Sen University, Kaohsiung, Taiwan; 2. Physics, M. V. Lomonsosov Moscow State University, Moscow, Russian Federation; 3. A. M. Prokhorov General Physics Institute, Russian Academy of Science, Moscow, Russian Federation; 4. Physics, National Cheng Kung University, Tainan, Taiwan; 5. Applied Physics, National Kaohsiung University, Kaohsiung, Taiwan; 6. Applied Physics, National Pintung University of Education, Pintung, Taiwan*

GW-12. Magnetic and Structural Properties for epitaxial growth of $BiFeO_3$ thin films on $SrTiO_3$/Si(100) substrates. *N. Theodoropoulou*[1], R.P. Laughlin[1], D.A. Currie[1], A. Dedigama[1], R. Contreras-Guererro[1], W. Priyantha[1] and R. Droopad[1] *1. Physics, Texas State University, San Marcos, TX*

GW-13. Investigation of transition metal substituted BaTiO3 ceramics. *N. Maikhuri*[1], A. Panwar[1] and A.K. Jha[1,2] *1. Department of Applied Physics, Delhi Technological University, Delhi, India; 2. Department of Applied Sciences, Ambedkar Institute of Technology, Delhi, India*

GW-14. Exchange Bias with Thick Multiferroic BiFeO3 Films of Various Orientations. *F. Bai*[1], G. Yu[1], L. Jin[1], Z. Zhong[1] and H. Zhang[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

GW-15. Magnetic properties and electronic structures in LaMnO3/SrTiO3 superlattices.H. Liu[1], *S. Dong*[2] and J. Liu[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 2. Department of Physics, Southeast University, Nanjing, Jiangsu, China*

GW-16. Magnetic and EPR Studies of Electron-Hole Asymmetry in Bulk and Nanoparticles of Bi1-xCaxMnO3(x = 0.4, 0.6): A Comparison. *G. Singh*[1] and S.V. Bhat[1] *1. Physics, Indian Institute of Science, Bangalore, Karnataka, India*

FRIDAY MORNING 9:00

RIVERSIDE CENTER

Session GX
EXCHANGE BIAS III (POSTER SESSION)

Miguel Marioni, Co-Chair
Yu Shiratsuchi, Co-Chair

GX-01. Exchange bias of ion milled NiFe/IrMn structures. *F. Liu*[1], J. Currivan[1,2], Y. Jang[1,3] and C.A. Ross[1] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. Physics, Harvard, Cambridge, MA; 3. Samsung Advanced Institute of Technology, Seoul, Republic of Korea*

GX-02. Exchange bias effect in NiMnSb/CrN heterostructures deposited by magnetron sputtering. H. Sharma[1], R. Barman[1], N. Choudhary[1] and *D. Kaur*[1] *1. Department of Physics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India*

GX-03. Exchange bias between multiferroic $HoMnO_3$ and ferromagnetic $SrRuO_3$ films. *T. Han*[1] and J.G. Lin[2] *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan*

GX-04. Exchange bias in $La_{0.7}Sr_{0.3}MnO_3$/NiO and $LaMnO_3$/NiO interfaces. X.K. Ning[1], Z.J. Wang[1], Y.Q. Zhang[1] and *Z.D. Zhang*[1] *1. Institute of Metal Research, Chinese Academy of Sciences, ShenYang, China*

GX-05. Altering the exchange bias in CoFe/(Co,Fe)O bilayers by changing the antiferromagnet's magnetism via interfacial ion-beam bombardment and different single crystalline MgO substrates. *C. Shueh*[1], R. Desautels[2], W. Chen[3], T. Wu[3], J. van Lierop[2] and K. Lin[1] *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 2. Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 3. Taiwan Spin Research Center, National Yunlin University of Science and Technology, Yunlin, Taiwan*

GX-06. Asymmetric magnetization reversal in double-shifted $[Co/Ni]_N$/FeMn exchange biased systems with perpendicular magnetic annisotropy. G. Wang[1], H. Zhao[1], *Z. Zhang*[1], B. Ma[1] and Q. Jin[1,2] *1. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 2. Department of Physics, East China Normal University, Shanghai, China*

GX-07. Perpendicular magnetic anisotropy and exchange bias in sputter-deposited CoO/CoPt multilayers. *J. Wang*[1], T. Sannomiya[1], J. Shi[1] and Y. Nakamura[1] *1. Department of Metallurgy and Ceramics Science, Tokyo Institute of Technology, Tokyo, Tokyo, Japan*

GX-08. Exchange bias control of magnetization dynamics – directional damping and temperature effects in the Py/IrMn system. *F. Macia*[1], S. Garagnani[1], A.D. Kent[1] and E. Wahlströ m[2,1] *1. Physics, NYU, New York, NY; 2. Physics, Norwegian University of Science and Technology, Trondheim, Norway*

GX-09. Ferromagnetic Resonance Characterization of Exchange Bias in Synthetic Antiferromagnets. *D. Backes*[1], J. Langer[2], B. Kardasz[3] and A.D. Kent[1,3] *1. Department of Physics, New York University, New York, NY; 2. Singulus Technologies AG, Kahl am Main, Germany; 3. Spin Transfer Technologies, Boston, MA*

GX-10. Exchange bias characteristic in single dot $[Co/Pd]_5$/FeMn nano-pillars. *N. Thiyagarajah*[1], L. Lin[1] and S. Bae[1] *1. Biomagnetics Laboratory, Electrical & Computer Engineering, National University of Singapore, Singapore*

GX-11. Grain Size Effects in Exchange Bias Elements. R. Carpenter[1], A. Vick[1], *G. Vallejo-Fernandez*[1,2], A. Hirohata[3] and K. O'Grady[1] *1. Department of Physics, The University of York, York, United Kingdom; 2. The York JEOL Nanocentre, The University of York, York, United Kingdom; 3. Department of Electronics, The University of York, York, United Kingdom*

GX-12. Effect of deposition order on angular dependent magnetization reversal in NiFe/FeMn bilayer with noncollinear uniaxial and unidirectional anisotropies. K. Kim[1], H. Choi[2], S. Jo[2], J. Kim[3] and *C. You*[2] *1. Neutron Science Division, Korea Atomic Energy Research Institute, Daejeon, Republic of Korea; 2. Dept. of Physics, Inha University, Incheon, Republic of Korea; 3. IPCMS, CNRS, Strasbourg, France*

GX-13. Exchange Bias in all-Manganite La0.7Sr0.3MnO3/SrMnO3/La0.7Sr0.3MnO3 Trilayers. *M. Jungbauer*[1], S. Huehn[1], M. Michelmann[1], C. Balani[1] and V. Moshnyaga[1] *1. I. Physical Institute, Universtaet Goettingen, Goettingen, Germany*

GX-14. High exchange bias originated from (1-102) plane of Cr_2O_3 *Y. Sato*[1], N. Shimomura[1], T. Ashida[1], T. Nozaki[1] and M. Sahashi[1] *1. Electronic Engineering, Tohoku University, Sendai, Japan*

GX-15. Effect of Ge and Al substitutions on exchange bias in Ni-Mn-Sb alloy. M. Lee[2], *R. Wang*[1,2], L. Xu[1], J. Huang[2], V. Marchenkov[3] and C. Yang[1] *1. Faculty of Physics & Electric Technology, Hubei University, Wuhan, Christmas Island; 2. Department of Physics, National Cheng Kung University, Tainan, Taiwan; 3. Institute of Metal Physics, Ekaterinburg, Russian Federation*

GX-16. Spin dynamics and criteria for onset of exchange bias in superspin glass Fe/γ-Fe_2O_3 core-shell nanoparticles. *S. Chandra*[1], H. Khurshid[1,2], W. Li[2], G.C. Hadjipanayis[2], M.H. Phan[1] and H. Srikanth[1] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Physics and Astronomy, University of Delaware, Newark, DE*

FRIDAY MORNING 9:00 RIVERSIDE CENTER

Session GY
MAGNETO-OPTICAL MATERIALS II (POSTER SESSION)
Masaki Mizuguchi, Chair

GY-01. Positive magnetoresistance and photovoltaic effects of Co-doped amorphous carbon/silicon heterostructures. *Y. Jiang*[1] and J. Gao[1] *1. Physics, Hongkong University, Hong Kong, China*

GY-02. Substituted Yttrium Iron Garnet On Silicon With High Faraday Rotation. *A. Block*[1] and B. Stadler[1] *1. University of Minnesota, Minneapolis, MN*

GY-03. Tuning Faraday angle of Ce:YIG film with the deposition and annealing atmosphere. *Q. Yang*[1], H. Zhang[1] and Q. Wen[1] *1. University of Electronic Science and Technology of China, Chengdu, China*

GY-04. Preparation of $Y_{0.5}Bi_{2.5}Fe_5O_{12}$ Films on Glass Substrates by Metal-Organic Decomposition Method. *T. Ishibashi*[1], T. Yoshida[1], T. Kobayashi[1], S. Ikehara[2] and T. Nishi[2] *1. Nagaoka University of Technology, Niigata, Japan; 2. Kobe City College of Technology, Hyogo, Japan*

GY-05. Observations of new phenomena in cyano-bridged bimetal assemblies. *S. Ohkoshi*[1,2] *1. The University of Tokyo, Tokyo, Japan; 2. CREST, JST, Tokyo, Japan*

GY-06. Large refractive index in $Bi(Fe_{0.9}Co_{0.1})O_3$ epitaxial films. *S. Hiromi*[1], K. Nishida[1], T. Yamamoto[1], T. Tadokoro[2], K. Tsutsumi[3] and H. Naganuma[4] *1. National Defense of Academy, Yokosuka, Kanagawa, Japan; 2. Techno-Synergy, Inc, Hachioji, Tokyo, Japan; 3. Tohoku University, Sendai, Miyagi, Japan; 4. J. A. Woollam Japan, Suginami, Tokyo, Japan*

GY-07. Patterned sputtered cerium-substituted yttrium iron garnet films on non-garnet substrates for integrated optical circuits. *T. Goto*[1], Y. Eto[2], K. Kobayashi[2], M. Inoue[2] and C.A. Ross[1] *1. Department of Materials and Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Toyohashi, Aichi, Japan*

FRIDAY AFTERNOON 1:30 GRAND CD

Session HA
SYMPOSIUM ON MAGNETIC NANOMATERIALS FOR THERAPEUTIC APPLICATIONS
Olga Kazakova, Chair

1:30

HA-01. Magnetic nanoparticle hyperthermia: Requirements for non-invasive cancer therapy. ***(Invited)*** *R. Ivkov*[1], D. Bordelon[1], R. Goldstein[2], V. Nemkov[2], M. Wabler[1], J. Mihalic[3], C. Gruettner[4] and T. DeWeese[1] *1. Radiation Oncology, Johns Hopkins School of Medicine, Johns Hopkins University, MD; 2. AMF Life Systems, Inc., Auburn Hills, MI; 3. Environmental Health Sciences, Johns Hopkins School of Public Health, Baltimore, MD; 4. Micromod Partikeltechnologie, GmbH, Rostock, Germany*

2:06

HA-02. Manipulation of Cells using Au-capped Ni Nanowires. ***(Invited)*** A. Sharma[1], Y. Zhu[4], E. Hansen[3], M. Hein[1], S. Thor[2], C. Lam[3], A. Hubel[4] and *B. Stadler*[1,2] *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 3. Neurosurgery, University of Minnesota, Minneapolis, MN; 4. Mechanical Engineering, University of Minnesota, Minneapolis, MN*

2:42

HA-03. Plant virus drug delivery and virus-based ferrofluids. ***(Invited)*** *A. Bittner*[1,2] *1. nanoGUNE, San Sebastian, Spain; 2. Ikerbasque, Bilbao, Spain*

3:18

HA-04. Multifunctional Magnetic-Photonic Core-Shell Nanoparticles for Cancer Immunotherapy. ***(Invited)*** *Y. Kim*[1,2], J. Min[1,2], J. Wu[2], N. Cho[3,2], T. Cheong[3,2] and S. Seong[3,2] *1. Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Republic of Korea; 3. Microbiology and Immunology, Seoul National University, Seoul, Republic of Korea*

3:54

HA-05. Multifunctional magnetic nanoparticles as intracellular actuators for Neural Guidance. ***(Invited)*** *G. Goya*[1,3], M. Calatayud[1], C. Riggio[2], V. Raffa[2], B. Sanz[1], T.E. Torres[1,4] and M. Ibarra[1,3] *1. Instituto de Nanociencia de Aragon, Universidad de Zaragoza, Zaragoza, Zaragoza, Spain; 2. Scuola Superiore Sant'Anna, Universita di Pisa, Pisa, Italy; 3. Departamento de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Zaragoza, Spain; 4. Laboratorio de Microscopias Avanzadas (LMA), Universidad de Zaragoza, Zaragoza, Zaragoza, Spain*

FRIDAY AFTERNOON 1:30 GRAND AB

Session HB
PATTERNED FILMS AND NANOPARTICLES IV: BIT PATTERNED MEDIA, ANTIDOTS AND MAGNETIC LOGIC

Kathryn Krycka, Chair

1:30

HB-01. Fabrication and Reversal Mechanisms of Coupled Bi-Component Magnetic Dots. *G. Shimon*[1,2], A.O. Adeyeye[1,2] and C.A. Ross[2,3] *1. Electrical and Computer Engineering, National University of Singapore; 2. Singapore-MIT Alliance, Singapore; 3. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

1:42

HB-02. Depth dependent magnetization study of composite bit patterned media. *N. Eibagi*[1], S. Chen[2], H. Guo[2], J. Dou[3], J.J. Kan[1], S.S. Sinha[2], E.E. Fullerton[1] and M. Pechan[3] *1. Center for Magnetic Recording Research, UC San Diego, La Jolla, CA; 2. Physics, UC San Diego, La Jolla, CA; 3. Physics, Miami University, Oxford, OH*

1:54

HB-03. Change in the Angle Dependence of Switching Field of FePt Bit Patterned Media Induced by Etching Damage. *A. Kikitsu*[1], T. Maeda[1], Y. Kamata[1] and H. Hieda[1] *1. Toshiba Corp. R&D Center, Kawasaki, Japan*

2:06

HB-04. Understanding the contribution of trench material to the dipolar and exchange interactions in bit patterned media. *N. Thiyagarajah*[1], N. Yakovlev[2], W. Zhai[2], H. Chen[2], M. Asbahi[2], J. Yang[2] and V. Ng[1] *1. Information Storage Materials Lab, Electrical & Computer Engineering Dept., National University of Singapore, Singapore; 2. Institute of Materials Research and Engineering, A-star, Singapore*

2:18

HB-05. Magnetic thin films deposited on 10 nm hole arrays. *T. Wen*[1], R.A. Booth[1] and S.A. Majetich[1] *1. Physics, Carnegie Mellon University, Pittsburgh, PA*

2:30

HB-06. Ordered arrays of magnetic antidots prepared by Nano-Focused Ion Beam lithography. *J. Garcia-Martin*[1], R.P. del Real[2], A. Kaidatzis[1], F. Espinosa[1], R. Alvaro[1], J.V. Anguita[1] and M. Vazquez[2] *1. IMM-Instituto de Microelectronica de Madrid, CSIC, Tres Cantos, Madrid, Spain; 2. ICMM-Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain*

2:42

HB-07. Static and Dynamic Behaviors of Fe Filled $Ni_{80}Fe_{20}$ Antidot Nanostructures. *X. Liu*[1], J. Ding[1] and A.O. Adeyeye[1] *1. Electrical and Computer Engineering, Information Storage Materials Laboratory, Singapore*

2:54

HB-08. Effect Of Topology On The Extraordinary Hall Effect In Nano-patterned Ni(SiO2) Thin Granular Films. *J. Briones*[1,2], S. Michea[1,2], C. Gallardo[1,2] and J.C. Denardin[1,2] *1. Departamento de Fisica, Universidad de Santiago de Chile, Santiago, Chile; 2. Centro para el Desarrollo de la Nanociencia y la Nanotecnologia, Santiago, Chile*

3:06

HB-09. Highly stable signal propagation in consecutively tuned nanomagnet array for Magnetic Quantum-dot Cellular Automata. *Z. Li*[1] and K.M. Krishnan[1] *1. Materials Science and Engineering Department, University of Washington, Seattle, WA*

3:18

HB-10. Magnetic Superlattice Nanostructures Constructively Patterned by Reduction through Low Energy Proton Irradiation. S. Kim[1], S. Lee[1], J. Ko[1], J. Son[1] and *J. Hong*[1] *1. Materials Science and Engineering, Yonsei University, Seoul, Republic of Korea*

3:54

HB-11. Information Transport in Field-coupled Nanomagnetic Logic Devices. *J. Kiermaier*[1], S. Breitkreutz[1], I. Eichwald[1], M. Engelstä dter[1], X. Ju[2], G. Csaba[3], D. Schmitt-Landsiedel[1] and M. Becherer[1] *1. Lehrstuhl für Technische Elektronik, Technische Universität München, Munich, Germany; 2. Lehrstuhl für Nanoelektronik, Technische Universität München, Munich, Germany; 3. Center for Nano Science and Technology, University of Notre Dame, Notre Dame, IN*

4:06

HB-12. Closely spaced nanomagnets by dual e-beam exposure for low-energy NML. *F.A. Shah*[1], G. Csaba[1], K. Butler[1] and G.H. Bernstein[1] *1. Electrical Engineering, University of Notre Dame, Notre Dame, IN*

4:18

HB-13. Reduction of Clocking Power by High Permeability Dielectrics in Nanomagnet Logic Circuits. *P. Li*[1], G. Csaba[1], V.K. Sankar[1], X.S. Hu[2], M.T. Niemier[2], W. Porod[1] and G.H. Bernstein[1] *1. Department of Electrical Engineering, University of Notre Dame, Notre Dame, IN; 2. Department of Computer Science and Engineering, University of Notre Dame, Notre Dame, IN*

FRIDAY AFTERNOON 1:30 REGENCY A

Session HC
MAGNETIC IMAGING II: NEW APPLICATIONS
David Keavney, Chair

1:30

HC-01. Magnetic Particle Force Microscopy. *J. Alldredge*[1] and J. Mooreland[1] *1. NIST, Boulder, CO*

1:42

HC-02. Torsional Resonance mode Magnetic Force Microscopy: Enabling higher lateral resolution magnetic imaging without topography-related effects. *A. Kaidatzis*[1] and J. Garcí a-Martí n[1] *1. IMM-Instituto de Microelectronica de Madrid (CNM-CSIC), Tres Cantos, Madrid, Spain*

1:54

HC-03. Local Domain Stability and Exchange-Spring Behavior in TbFe/(Co/Pt)$_5$ Systems. *H.J. Hug*[1,2], S. Romer[1], S. Oezer[2], N. Joshi[2], K. Thorwarth[1], H. Rohrmann[3] and M.A. Marioni[1] *1. NanoScale Materials Science, Empa, Swiss Federal Laboratories for Materials Science and Technology, Duebendorf, Switzerland; 2. Department of Physics, University of Basel, Basel, Switzerland; 3. Oerlikon Balzers, Balzers, Liechtenstein*

2:06

HC-04. AC magnetic field assisted alternating magnetic force microscopy: Imaging of magnetic field response of soft magnetic Fe_3O_4 nano particles. *H. Saito*[1], X. Li[1], Y. Kinoshita[2], G. Egawa[1], S. Yoshimura[1], G. Li[3], W. Lu[4] and B. Yan[4] *1. Graduate School of Engineering and Resource Science, Akita University, Akita, Japan; 2. Venture Business Laboratory, Akita University, Akita, Japan; 3. School of Physics Science and Technology, Southwest University, Chongqing, China; 4. School of Materials Science and Engineering, Tongji University, Shanghai, China*

2:18

HC-05. Magnetic scanning probe calibration using epitaxial graphene Hall sensor. *V. Panchal*[1,2], O. Iglesias-Freire[3], A. Asenjo[3] and O. Kazakova[1] *1. Quantum Detection, National Physical Laboratory, Middlesex, United Kingdom; 2. Physics, Royal Holloway, University of London, Egham, United Kingdom; 3. Instituto de Ciencia de Materiales de Madrid, Universidad Autónoma, Madrid, Spain*

2:30

HC-06. Measurement of Microscopic RF Field Distribution with a MFM Tip Exploiting a Beat Signal from a Coplanar Waveguide. *Y. Endo*[1], M. Fukushima[1], K. Arai[1], K. Yanagi[1], Y. Shimada[1] and M. Yamaguchi[1,2] *1. Department of Electrical Engineering, Tohoku University, Sendai, Japan; 2. NICHe, Tohoku University, Sendai, Japan*

2:42

HC-07. Electromagnetic Manipulation System for Control of Micro/Nanostructures with Five Degrees of Freedom. ***(Invited)*** *S. Schürle*[1], B.E. Kratochvil[1], E. Sandro[1] and B.J. Nelson[1] *1. ETH, Eth, Switzerland*

3:18

HC-08. Real-time pose detection for medical magnetic devices. *C. Di Natali*[1], G. Bassani[1], M. Beccani[1] and P. Valdastri[1] *1. STORM Lab, Mechanical Engineering Department, Vanderbilt University, Nashville, TN*

3:30

HC-09. Microwave-Induced Thermoacoustic Tomography: Hybrid FDTD Modeling and Experimental Study. *R. Jacobs*[1], H. Huang[1], X. Chen[1], Y.J. Deng[1] and M. Golkowski[1] *1. Electrical Engineering, Bioengineering, University of Colorado-Denver and Anschutz Medical Campus, Denver, CO*

3:42

HC-10. The Observed Linearity and Detection Response of Magnetic Fluid Concentration Magnetometry - A Complete Theoretical and Experimental Description. *T. Mercer*[1,2] and P.R. Bissell[1,2] *1. Jeremiah Horrocks Institute for Mathematics, Physics & Astrophysics, University of Central Lancashire, Preston, United Kingdom; 2. Centre for Materials Science, University of Central Lancashire, Preston, United Kingdom*

3:54

HC-11. Magnetic Resonance Force Microscopy detected Long-lived Spin Magnetization Signal by Electron Spin Saturation. *L. Chen*[1], J.G. Longenecker[1], E.W. Moore[1] and J.A. Marohn[1] *1. Chemistry and Chemical Biology, Cornell University, Ithaca, NY*

4:06

HC-12. Withdrawn.

4:18

HC-13. Data base of extraterresterial magnetic minerals, test and magnetic simulations. *A. Fernández*[1], R. Sanz[1], M. Diaz-Michelena[1], M. McHenry[2], C. Aroca[3] and M. Maicas[3] *1. Space Programs and Space Sciencies, INTA, Torrejon de Ardoz, Spain; 2. Materials Sciencies and Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. ISOM, Polythecnical University of Madrid, Madrid, Spain*

FRIDAY AFTERNOON 1:30

REGENCY B

Session HD
MOTORS, GENERATORS AND ACTUATORS II
Thomas Wu, Chair

1:30

HD-01. A Novel Optimized Instantaneous Torque Ripple Minimization Method with Current Profiling in Switched Reluctance Motors. *S. Ghousia*[1] and N.C. Kar[1] *1. Electrical and Computer Engineering, University of Windsor, Windsor, ON, Canada*

1:42

HD-02. Uni- and Bidirectionnal Flux Variation Loci Method for Analytical Prediction of Iron Losses in Doubly-Salient Field-Excited Switched-Flux Machines. *B. Gaussens*[1,2], E. Hoang[1], O. De la Barriè re[1], J. Saint-Michel[2], P. Manfe[2], M. Lé crivain[1] and M. Gabsi[1] *1. SATIE, ENS Cachan, Cachan, France; 2. Leroy Somer - Emerson Group, Angoulême, France*

1:54

HD-03. Fundamental Design of a Consequent-Pole Transverse-Flux Motor for Direct-Drive Systems. *Y. Ueda*[1], H. Takahashi[1], T. Akiba[1] and M. Yoshida[1] *1. Machine System Laboratory, Corporate R&D Center, Toshiba Corp., Kawasaki, Japan*

2:06

HD-04. Modeling of Spherical Magnetic Structures Using the Magnetic Charge Model. *B. van Ninhuijs*[1], T.E. Motoasca[1], B.L. Gysen[1] and E.A. Lomonova[1] *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

2:18

HD-05. Conductor Optimization for Slotted High-Speed Machines. *A. Douvali*[1], A. Borisavljevic[1] and E. Lomonova[1] *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

2:30

HD-06. Rotor Lamination Core Design Change to Less Harmonic Distortion in Hybrid Excitation Motor for Main Spindle Drive in Machine Tools. *S. Muthubabu*[1], T. Kosaka[1] and N. Matsui[1] *1. Computer Science and Engineering, Nagoya Institute of Technology, Nagoya, Aichi, Japan*

2:42

HD-07. Design and test of a thermomagnetic motor using a Gadolinium rotor. *V. Franzitta*[1], A. Viola[1] and T. Marco[2] *1. Dipartimento dell'Energia, Palermo University, Palermo, Italy; 2. Dipartimento di Ingegneria Elettrica, Palermo University, Palermo, Italy*

2:54

HD-08. A Flux Focusing Axial Magnetic Gear.J. Bird[1] and *V.M. Acharya*[1] *1. Electrical and Computer Engineering, UNC Charlotte, Charlotte, NC*

3:06

HD-09. Proposal of double-sided transverse flux type linear synchronous motor and thrust design considering an effect of magnetic saturation. *S. Jung-Seob*[1], K. Takafumi[1] and K. Houng-Joong[2] *1. The University of Tokyo, Tokyo, Japan; 2. KOVERY Co. Ltd, Suwon, Republic of Korea*

3:18

HD-10. Withdrawn.

3:30

HD-11. Study of a moving-permanent magnet actuator for a active suspension system. M.A. da Silveira[1], *A.F. Flores Filho*[2], P. Eckert[2] and V. Rinaldi[3] *1. Electrical Engineering, Lutheran Univeristy of Brazil, Canoas, Rio Grande do Sul, Brazil; 2. Department of Electrical Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; 3. Electricity Company of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*

3:42

HD-12. Research on the Electromagnetic Performance of an Arc-Structured Permanent Magnet Synchronous Machine Used for Scanning System. *J. Zhao*[1], H. Hu[1], Z. Chen[1], X. Liu[1] and Y. Li[1] *1. School of Automation, Beijing Institute of Technology, Beijing, China*

FRIDAY AFTERNOON 1:30

REGENCY C

Session HE
CONTROL, PROPULSION, SHIELDING, AND MEMS FOR MAGNETIC DEVICES I

Pete Eames, Chair

1:30

HE-01. Limits to On-Chip Power Conversion with Thin Film Inductors. ***(Invited)*** *P. Herget*[1], N. Wang[2], E.J. O'Sullivan[2], B.C. Webb[2], L.T. Romankiw[2], R. Fontana[1], G. Decad[1] and W.J. Gallagher[2] *1. IBM Almaden Research Center, San Jose, CA; 2. IBM T.J. Watson Research Center, Yorktown Heights, NY*

2:06

HE-02. Complex Permeability Measurements of Radial-Anisotropy Thin-Film Magnetic Toroidal Cores. *J. Qiu*[1], H. Syed[1] and C.R. Sullivan[1] *1. Thayer School of Engineering at Dartmouth, Hanover, NH*

2:18

HE-03. Increasing energy efficiency of saturated-core Fault Current Limiters with permanent magnets. *J.C. Knott*[1,2] and J.W. Moscrop[1] *1. Faculty of Engineering, University of Wollongong, Gwynneville, NSW, Australia; 2. Institute for Superconducting and Electronic Materials, University of Wollongong, Gwynneville, NSW, Australia*

2:30

HE-04. Efficient Magnetically Coupled Wireless Power Supply for Medical Implants with a High Tolerance to Coupling Coefficient Drift. *A. Czarnecki*[1,2], B.L. Mclaughlin[2], N. Sun[1] and A.L. Kindle[2] *1. EECE, Northeastern University, Boston, MA; 2. CS Draper Laboratory, Cambridge, MA*

2:42

HE-05. Design of a transverse flux machine for power generation from seawaves. *A. Viola*[1], V. Franzitta[1] and M. Trapanese[2] *1. Dipartimento di Ingegneria dell'Energia, Palermo University, Palermo, Italy; 2. Dipartimento di Ingegneria Elettrica, Palermo University, Palermo, Italy*

2:54

HE-06. Batch Magnetic Patterning of Hard Magnetic Films Using Pulsed Magnetic Fields and Soft Magnetizing Heads. *O.D. Oniku*[1], R. Regojo[1], W.C. Patterson[1], K. Steiner[1] and D.P. Arnold[1] *1. Electrical and Computer Engineering, University of Florida, Gainesville, FL*

3:06

HE-07. Steering of Magnetic Micro-swimmers. *Y. Li*[1], H. Lin[1] and C. Chen[1] *1. National Chiao Tung University, Hsinchu, Taiwan*

3:18

HE-08. Fast magnetic field modelling for shielding systems. *L. Giaccone*[1], O. Khan[1], M. Manca[1] and C. Ragusa[1] *1. Energy Department, Politecnico di Torino, Torino, Italy*

3:30

HE-09. Laser-manipulated iron oxide nanoparticles for enhanced electromagnetic shielding applications. V. Rao[1], H. Singh[1], R. Kitture[1] and *S.N. Kale*[1] *1. Department of Applied Physics, Defence Institute of Advanced Technology, Pune, MH, India*

3:42

HE-10. Desktop Shielding System. *A.U. Mahgoub*[1], I. Sasada[1], T. Takeda[2] and M. Shimada[2] *1. Applied Science for Electronics and Materials, Kyushu University, Kasuga-Shi, Fukuoka, Japan; 2. Nippon Steel Materials Co., Ltd, Sotokanda, Tokyo, Japan*

3:54

HE-11. Experimental verification of the linear relationship between stress and the reciprocal of the peak Barkhausen voltage in ASTM A36 steel. *O. Kypris*[1], I.C. Nlebedim[2,1] and D.C. Jiles[1,2] *1. Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Ames Laboratory, US Department of Energy, Iowa State University, Ames, IA*

4:06

HE-12. Three-axis Magnetic Field Induction Sensor Realized on Buckled Cantilever Plate. *A. Alfadhel*[1], A. Carreñ o[1], I. Foulds[1] and J. Kosel[1] *1. King Abdullah University of Science and Technology (KAUST), Physical Science and Engineering Division, Thuwal 23955-6900, Saudi Arabia*

4:18

HE-13. Design and performances of a high temperature superconducting axial flux generator. *M. Trapanese*[1], V. Franzitta[2] and A. Viola[2] *1. Dipartimento di Ingegneria Elettrica, Elettronica e delle Telecomunicazioni, Università di Palermo, Palermo, Italy; 2. Dipartimento di Ingegneria dell'Energia, Università di Palermo, Palermo, Italy*

FRIDAY AFTERNOON 1:30

REGENCY D

Session HF
MULTIFERROIC MATERIALS III

Shireen Adenwalla, Chair

1:30

HF-01. Room-Temperature Magnetoelectric Properties of Fe Doped BaZr0.05Ti0.95O3. M. Kumari[1], C. Prakash[2] and *R. Chatterjee*[1] *1. Physics Department, IIT Delhi, New Delhi, Delhi, India; 2. Directorate of ER&IPR, DRDO Bhawan, New Delhi, Delhi, India*

1:42

HF-02. Magnetodielectric properties of coexisting phases in manganite. *S. Dash*[1,2], A. Banerjee[2] and P. Chaddah[2] *1. Physics, National Institute of Technology, Rourkela, Odisha, India; 2. UGC-DAE CSR, University Campus Khandwa Road, Indore, MP, India*

1:54

HF-03. Neutron Diffraction Study on the Frustrated Multiferroic TbMn1-xFexO3. *F. Hong*[1], Z. Cheng[1], J. Wang[1,2], A. Studer[2], X. Wang[1] and S. Dou[1] *1. Institute for Superconducting & Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. Bragg Institute, Australian Nuclear Science and Technology Organisation, Lucas Heights, NSW, Australia*

2:06

HF-04. Strongly Coupled Multi-Ferroic Perovskites Sr1-xBaxMnO3. *B. Dabrowski*[1], J. Mais[1], O. Chmaissem[1], D. Brown[1], S. Kolesnik[1] and E. Markiewicz[2] *1. Physics, Northern Illinois University, DeKalb, IL; 2. Institute of Molecular Physics, Polish Academy of Sciences, Poznan, Poland*

2:18

HF-05. Magnetic Field Induced Ferroelectric Transition of Quasi One-Dimensional Frustrated Quantum Spin Chain System Rb2Cu2Mo3O12. *Y. Yasui*[1,2], Y. Yanagisawa[2], R. Okazaki[2], I. Terasaki[2], Y. Yamaguchi[3] and T. Kimura[3] *1. Physics, Meiji University, Kawasaki, Japan; 2. Physics, Nagoya University, Nagoya, Japan; 3. Graduate School of Engineering Science, Osaka University, Osaka, Japan*

2:30

HF-06. Microstructure and Magnetic Properties of $BiFeO_3$-Nanoparticles $CoFe_2O_4$ Composite Thin Films. *K. Sone*[1], M. Ito[1], S. Sekiguchi[1], H. Naganuma[2], T. Miyazaki[3], T. Nakajima[1] and S. Okamura[1] *1. Applied Physics, Tokyo University of Science, Shinjuku Tokyo, Japan; 2. Applied Physics, Tohoku University, Sendai, Japan; 3. Instrumental Analysis, Tohoku University, Sendai, Japan*

2:42

HF-07. Structural, magnetic and ferroelectric properties of epitaxial La-doped-PZT/LSMO multiferroic heterostructures. *M. Hordagoda*[1], D. Mukherjee[1], N. Bingham[1], D. Ghosh[2], J.L. Jones[2], H. Srikanth[1], P. Mukherjee[1] and S. Witanachchi[1] *1. Department of Physics and Center for Integrated Functional Materials (CIFM), University of South Florida, Tampa, FL; 2. Department of Materials Science and Engineering, University of Florida, Gainesville, FL*

2:54

HF-08. Spontaneous exchange bias in a nanocomposite of BiFeO3 - Bi2Fe4O9. *S. Roy*[2], T.S. Maity[2], S. Goswami[1] and D. Bhattacharya[1] *1. Nanostructured Materials Division, CSIR-Central Glass and Ceramic Research Institute, Kolkata, India; 2. Micropower-Nanomagnetics Group, Microsystems Center, Tyndall National Institute, Cork, Ireland*

3:06

HF-09. Multiferroic Structural Correlations in $Co_{0.9}Fe_{0.1}/BiFeO_3$ *J. Unguris*[1], D.T. Pierce[1], S.R. Bowden[1], M. Trassin[2], J.T. Heron[3], J.D. Clarkson[3], S.J. Suresha[4] and R. Ramesh[2,3] *1. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 2. Department of Physics, University of California, Berkeley, CA; 3. Department of Materials Science and Engineering, University of California, Berkeley, CA; 4. Materials Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA*

3:18

HF-10. Magnetic field dependence of perpendicular electron transport in a room temperature multiferroic. *S. Roy*[1], B. Noheda[2] and T. Banerjee[1] *1. Physics of Nanodevices Group,, University of Groningen, Groningen, Netherlands; 2. Solid State Materials for Electronics, University of Groningen, Groningen, Netherlands*

3:30

HF-11. The complex multiferroic phase diagram of single-crystalline $Co_xMn_{1-x}WO_4$ *K. Liang*[1], Y.Q. Wang[1], Y.Y. Sun[1], B. Lorenz[1], F. Ye[2], J.A. Fernandez-Baca[2,3], H.A. Mook[2] and C.W. Chu[1,4] *1. Physics, University of Houston, Houston, TX; 2. Neutron Scattering Science Division, Oak Ridge National Laboratory, Oak Ridge, TN; 3. Department of Physics and Astronomy, The University of Tennessee, Knoxville, TN; 4. Lawrence Berkeley National Laboratory, Berkeley, CA*

3:42

HF-12. Digital Dopant Cation Ordering in Low Dimensional Layered Perovskite Films. *B. Nelson-Cheeseman*[1,2], J. Rondinelli[3], H. Zhou[4], M. Nikiforov[5], A. Cammarata[3], E. Barnes[6], A. Shah[7], J. Hoffman[2], V. Gopalan[6] and A. Bhattacharya[2,5] *1. School of Engineering, University of St. Thomas, St. Paul, MN; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Dept of Materials Science and Engineering, Drexel University, Philadelphia, PA; 4. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 5. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 6. Dept of Materials Science and Engineering, Penn State University, University Park, PA; 7. Materials Research Laboratory, University of Illinois, Urbana-Champaign, IL*

3:54

HF-13. Structural reorientation transition below TN in Bi1-xDyxFeO3. *A. Gaur*[1], S. Barik[1], S. Sahoo[1] and R. Katiyar[1] *1. Department of Physics, Univeristy of Puerto Rico, San Juan, Puerto Rico*

4:06

HF-14. A New Platform for Multiferroic Composite Materials: Electrospun Janus-type Ceramic Nanofibers. *J.D. Starr*[1] and J.S. Andrew[1] *1. Materials Science & Engineering, University of Florida, Gainesville, FL*

4:18

HF-15. High symmetric $SrRuO_3$ (00l) thin films: a perfectly lattice-matched electrodes for multiferroic $BiFeO_3$ M. Bohra[1], C.P. Wu[1], H.J. Yeh[1], C.T. Wu[1], K.C. Liu[1], S.J. Sun[2], H.S. Hsu[3] and *H. Chou*[1] *1. Department of Physics, National Sun Yat-Sen University, Kaohsiung, Taiwan; 2. Department of Applied Physics, National Kaohsiung University, Kaohsiung, Taiwan, Kaohsiung, Taiwan; 3. Department of Applied Physics, National Pintung University of Education, Pintung 900, Taiwan, Pintung, Taiwan*

FRIDAY AFTERNOON 1:30

CRYSTAL A

Session HG
SOFT MAGNETIC MATERIALS VI: NANOSTRUCTURING, CHARACTERIZATION AND APPLICATIONS

Francis Johnson, Chair

1:30

HG-01. Tailoring of domain wall dynamics in amorphous microwires by annealing.K. Chichay[1], V. Zhukova[2], V. Rodionova[1,3], M. Ipatov[2], A. Talaat[2], J. Blanco[4] and *A.P. Zhukov*[2,5] *1. Immanuel Kant Baltic Federal University, Kaliningrad,, Russian Federation; 2. Phys. Mater., UPV/EHU, San Sebastián, Spain; 3. Physics, Faculty of Physics, Moscow State University, Moscow, Russian Federation; 4. Dpto. de Física Aplicada, EUPDS, UPV/EHU, San Sebastian, Spain; 5. Ikerbasque, Basque Foundation for Science, Bilbao, Spain*

1:42

HG-02. Microstructure and magnetic behavior of nanocrystalline $(Fe,Co,Ni)_{81}Nb_7B_{12}$ glass-coated microwires. *N. Lupu*[1], H. Chiriac[1], S. Corodeanu[1] and I. Skorvanek[2] *1. Magnetic Materials and Devices, National Institute of R&D for Technical Physics, Iasi, Romania; 2. Institute of Experimental Physics, Slovak Academy of Sciences, Košice, Slovakia*

1:54

HG-03. Microstructure and magnetic properties of FINEMET nanowires. *H. Chiriac*[1], S. Corodeanu[1], T. Ovari[1] and N. Lupu[1] *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

2:06

HG-04. Tuning injection and propagation of single domain wall in cylindrical magnetic wires. ***(Invited)*** *M. Vázquez*[1], A. Jimenez[1] and R.P. del Real[1] *1. Instituto de Ciencia de Materiales de Madrid (CSIC), Madrid, Spain*

2:42

HG-05. Ion irradiation effects and magnetization reversal in $(Ni_{80}Fe_{20})_{100-X}Co_X$ nanowires and nanotubes. *N. Ahmad*[1,2], C. Junyang[1], J. Iqbal[2], S. Dawei[1] and H. Xiufeng[1] *1. Institute of Physics, Beijing, China; 2. Physics, International Islamic University, Islambad, Pakistan*

2:54

HG-06. Nonuniform spin configurations in ferromagnetic nanowires liable to mechanical deformations. *O. Alexey*[1,3], A. Samardak[1,3], E. Sukovatitsina[1], E. Modin[1], M. Stebliy[1], F. Nasirpouri[2] and L. Chebotkevich[1,3] *1. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation; 2. Department of Materials Engineering, Sahand University of Technology, Tabriz, Islamic Republic of Iran; 3. Institute of Automation and Control Processes, Vladivostok, Russian Federation*

3:06

HG-07. Hysteresis measurement of individual multilayered Fe-Ga/Cu nanowires using magnetic force microscopy. *J. Park*[1], M. Reddy[2], B.J. Stadler[2] and A.B. Flatau[1] *1. Aerospace Engineering, University of Maryland, College Park, MD; 2. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

3:18

HG-08. Synthesis of bulk FeHfO soft magnetic material and its loss characterization at MHz frequency. *Y. Zhou*[1], X. Kou[1], M. Mu[2], A. Muhammad[1], B.S. Harris[1], P.E. Parsons[1], H. Zhu[3], F.C. Lee[2] and J.Q. Xiao[1] *1. Department of Physics and Astronomy, University of Delaware, Newark, DE; 2. Center for Power Electronics System, Virginia Polytechnic and State University, Blacksburg, VA; 3. Spectrum Magnetics LLC., Wilmington, DE*

3:30

HG-09. Enhanced GMI effect in soft ferromagnetic amorphous ribbons with pulsed laser deposition of cobalt ferrite. A. Ruiz[1], D. Mukherjee[1], J. Devkota[1], M. Hordagoda[1], P. Mukherjee[1], S. Witanachchi[1], H. Srikanth[1] and *M.H. Phan*[1] *1. Department of Physics, University of South Florida, Tampa, FL*

3:42

HG-10. Two-current Model of the Composition Dependence of Resistivity in Amorphous $(Fe_{100-x}Co_x)_{89-y}Zr_7B_4Cu_y$ Alloys Using a Rigid-band Assumption. *S. Shen*[1], P.R. Ohodnicki[2], S.J. Kernion[1] and M.E. McHenry[1] *1. Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Chemistry and Surface Science Division, National Energy Technology Laboratory (NETL), Pittsburgh, PA*

3:54

HG-11. Electroless-Plated, Amorphous, Co-based Magnetic Films for On-Chip Inductors. *N. Wang*[1], E.J. O'Sullivan[1], L.T. Romankiw[1] and W.J. Gallagher[1] *1. IBM T. J. Watson Research Center, Yorktown Heights, NY*

4:06

HG-12. Synthesis, fabrication, and performance of monolithic magnetic nanoparticle and silica nanocomposite inductor cores. *M. Rowe*[1], S. Sullivan[1], B. Lorenzetti[1], M. Zhang[1], T. Hattori[2], D. Okamoto[3] and M. Kondo[3] *1. Toyota Research Institute North America, Ann Arbor, MI; 2. Toyota Central Research and Development, Inc., Nagakute, Aichi, Japan; 3. Toyota Motor Corporation, Toyota, Aichi, Japan*

4:18

HG-13. Effect of RKKY coupling on zigzag domain walls in CoFeB / Cu / CoFeB bilayers. *R. Mansell*[1], D. Petit[1], A. Fernandez-Pacheco[1], N. Steinke[1], J. Lee[1], R. Lavrijsen[1], G.A. Jones[1], C.H. Barnes[1] and R.P. Cowburn[1] *1. Department of Physics, University of Cambridge, Cambridge, United Kingdom*

FRIDAY AFTERNOON 1:30 — CRYSTAL B

Session HH
MAGNETIC NANOPARTICLES III
Souad Ammar, Chair

1:30

HH-01. Stabilizing Vortices in Interacting Nano-Objects: A Chemical Approach. *L. Lacroix*[1], C. Gatel[2], F. Hue[3], J. Carrey[1] and B. Chaudret[1] *1. LPCNO, Toulouse, France; 2. CEMES, Toulouse, France; 3. University of Cambridge, Cambridge, United Kingdom*

1:42

HH-02. Mapping Magnetic Fields of Fe_3O_4 Nanostructures by Electron Holography. *K. He*[1] and J. Cumings[1] *1. Department of Materials Science and Engineering, University of Maryland, College Park, MD*

1:54

HH-03. Correlating Material-Specific Layers and Magnetic Distributions within Fe3O4|γ-Mn2O3 Core-Shell Nanoparticles. *K.L. Krycka*[1], J.A. Borchers[1], M. Laver[4], G. Salazar-Alvarez[2], J. Sort[3], A. Lopez-Ortega[4], M. Estrader[4] and J. Nogues[3,4] *1. NIST Center for Neutron Research, Gaithersburg, MD; 2. Materials and Environmental Chemistry, Stockholm University, Stockholm, Sweden; 3. ICREA, Universitat Autonoma de Barcelona, Bellaterra, Spain; 4. CIN2, Universitat Autonoma de Barcelona, Bellaterra, Spain*

2:06

HH-04. T-dependent high field magnetization of a dilute frozen ferrofluid based on MnFe2O4 nanoparticles: thermal dependence of the surface contribution in high fields. *F. Gomes da Silva*[1,2], R. Aquino[1], J. Depeyrot[1], E. Dubois[2], V.I. Stepanov[3], Y.L. Raikher[3], F.A. Tourinho[1] and R. Perzynski[2]*1. Complex Fluids Group, Universidade de Brasilia, Brasilia, DF, Brazil; 2. PECSA - UMR 7195, Université Pierre et Marie Curie, Paris, France; 3. Mechanics Ural Branch of RAS, Université Pierre et Marie Curie, Perm, Russian Federation*

2:18

HH-05. Magnetism of Zr-Co Nanoclusters. *B. Das*[1,2], B. Balasubramanian[1,2], R. Skomski[1,2], X. Li[2], G.C. Hadjipanayis[3] and D.J. Sellmyer[1,2]*1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 3. Physics and Astronomy, University of Delaware, Newark, DE*

2:30

HH-06. Room temperature ferromagnetism in non-magnetic doped TiO2 nanoparticles. *C. Gomez-Polo*[1], S. Larumbe[1] and J.M. Pastor[1]*1. Departamento de Fisica, Universidad Publica de Navarra, Pamplona, Spain*

2:42

HH-07. *Ab-initio* study of free rutile TiO_2 clusters: Stability and Magnetism.T.H. Rana[1,2], P.K. Sahota[2,4], A.K. Solanki[3], R. Skomski[4] and *A. Kashyap*[2]*1. Department of Physics, The LNM Institute of Information Technology, Jaipur, Rajasthan, India; 2. School of Basic Science, IIT Mandi, Mandi, Himachal Pradesh, India; 3. Malviya National Institute of Technology, Jaipur, Rajasthan, India; 4. Department of Physics and Astronomy and NCMN, University of Nebraska, Lincoln, NE*

2:54

HH-08. Effect of nanoscale metal/semiconductor coating on the magnetic and photoluminescence properties of α-Fe_2O_3 nanowires. *D. Sarkar*[1], G.G. Khan[1], A.K. Singh[1] and K. Mandal[1]*1. Condensed Matter Physics and Material Sciences, S. N. Bose National Centre for Basic Sciences, Kolkata, West Bengal, India*

3:06

HH-09. Electrophoretic Patterning of Magnetic Nanoparticles. *S.D. Oberdick*[1] and S.A. Majetich[1]*1. Physics, Carnegie Mellon University, Pittsburgh, PA*

3:18

HH-10. Self-assembled cobalt and nickel nanowires with diameters in the 3-5 nm range, grown by pulsed laser deposition (PLD). *F.J. Bonilla*[1], F. Vidal[1], Y. Zheng[1], D. Demaille[1], P. Schio[1,2], J. Milano[3], E. Fonda[4], A.J. Oliveira[2] and V.H. Etgens[1]*1. INSP. Institute des Nanosciences de Paris, Paris, France; 2. Departamento de Física, UFSCar, Sao Carlos, Sao Paulo, Brazil; 3. CNEA-CONICET and Instituto Balseiro, San Carlos de Bariloche, Argentina; 4. Synchrotron Soleil, Gif-sur-Yvette, France*

3:30

HH-11. Synthesis and Characterization of Hybrid-Nanostructures of Pt-Fe_3O_4 *H. Khurshid*[1], S. Chandra[1], P. Mukherjee[1] and H. Srikanth[1]*1. Center for Integrated Functional Materials, Department of Physics, University of South Florida, Tampa, FL*

FRIDAY AFTERNOON 1:30 — CRYSTAL C

Session HI
CRITICAL PHENOMENA AND FRUSTRATED MAGNETISM
Axel Enders, Chair

1:30

HI-01. Fluctuations Near the Spin Reorientation Transition in Fe/Ni/Cu(001) Thin Films. *C. Back*[1], M. Kronseder[1] and M. Buchner[1]*1. Universität Regensburg, Regensburg, Germany*

1:42

HI-02. A phonon mediated Bose-Einstein magnon condensation. *A.A. Serga*[1], B.A. Dmytro[2,1], P. Clausen[1], A.V. Chumak[1], G.A. Melkov[2] and B. Hillebrands[1]*1. Fachbereich Physik, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. Radiophysical Department, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*

1:54

HI-03. Evidence of a Griffiths phase in a mixed compound of YFe2 and YFe3. *Y. Oner*[1] and A. Guler[2]*1. Dept.of Physics, Istanbul Technical University, Istanbul, Turkey; 2. Dept of Education, Marmara University, Istanbul, Turkey*

2:06

HI-04. Finite size scaling effects: from exponents to state functions. *J. Amaral*[1,2], J. Heringa[3], E. Brück[3] and V. Amaral[1] *1. Departamento de Fisica and CICECO, Universidade de Aveiro, Aveiro, Portugal; 2. IFIMUP-IN and Dept. Fisica e Astronomia, Faculdade de Ciências, Universidade do Porto, Porto, Portugal; 3. Faculty of Applied Sciences, Delft University of Technology, Delft, Netherlands*

2:18

HI-05. Critical behavior of the magnetic transition in $RMnO_3$ (R=Sm, Tb, Dy, Ho, Er, Tm, Yb, Lu, Y) by means of photopyroelectric calorimetry. *A. Oleaga*[1], A. Salazar[1], D. Prabhakaran[2], J. Cheng[3] and J. Zhou[3] *1. Fisica Aplicada I, Universidad del Pais Vasco UPV/EHU, Bilbao, Spain; 2. Department of Physics, Clarendon Laboratory, University of Oxford, Oxford, United Kingdom; 3. Materials Science and Engineering Program/Mechanical Engineering, University of Texas at Austin, Austin, TX*

2:30

HI-06. Substitution of Y for Pr in $PrMn_2Ge_2$ - the magnetism of $Pr_{0.8}Y_{0.2}Mn_2Ge_2$ *J. Wang*[1,2], S.J. Campbell[3], M. Hofmann[4], S.J. Kennedy[2], M. Avdeev[2], M.F. Md Din[1], R. Zeng[1] and S.X. Dou[1] *1. Institute for Superconducting & Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. Bragg Institute, ANSTO, Sydney, NSW, Australia; 3. School of Physical, Environmental and Mathematical Sciences, The University of New South Wales, Canberra, Sydney, NSW, Australia; 4. FRM-II, Technische Universität München, München, Germany*

2:42

HI-07. Evidence of unconventional magnetic behavior in LaVO3. *M.P. Singh*[1] and F.S. Razavi[1] *1. Department of Physics, Brock University, St Catharines, ON, Canada*

2:54

HI-08. Influence of Gd-doping for Ca on the geometrically frustrated magnetism of the spin-chain compound, Ca3Co2O6. T. Basu[1], K.K. Iyer[1], K. Singh[1], P.L. Paulose[1] and *E.V. Sampathkumaran*[1] *1. DCMPMS, Tata Institute of Fundamental Research, Mumbai, India*

3:06

HI-09. First-principles calculation of the magnetic phase diagram of $Fe_{1-x}Mn_xPt$ alloys. *B.S. Pujari*[1], K.D. Belashchenko[1] and V.P. Antropov[2] *1. University of Nebraska, Lincoln, NE; 2. Ames Laboratory, Ames, IA*

3:18

HI-10. Antiferromagnetically coupled artifical Ising spin sytems. I. Chioar[1], B. Canals[1], O. Fruchart[1], A. Grimm[1], M. Hehn[2], D. Lacour[2], *F. Montaigne*[2], N. Rougemaille[1] and E. Wagner[1] *1. Institut Néel, CNRS, Grenoble, France; 2. Institut Jean Lamour, Université de Lorraine - CNRS, Vandoeuvre lès Nancy, France*

3:30

HI-11. Dynamics of topological defects in an artificial spin-ice lattice. *S. Gliga*[1], A. Kakay[2], R. Hertel[3] and O. Heinonen[4,5] *1. Center for Nanoscale Materials, Argonne National Laboratory, Lemont, IL; 2. Materials Science Division, Argonne National Laboratory, Lemont, IL; 3. Peter Gruenberg Institute, Forschungszentrum Juelich, Juelich, Germany; 4. IPCMS UMR7504, CNRS and UdS, Strasbourg, France; 5. Department of Physics and Astronomy, Northwestern University, Evanston, IL*

FRIDAY AFTERNOON 2:30 — RIVERSIDE CENTER

Session HP
DOMAIN WALL AND VORTEX DYNAMICS II (POSTER SESSION)

Matthew Pufall, Chair

HP-01. Fast field induced domain wall dynamics in MnAs/GaAs films. *L. Thevenard*[1], M. Tortarolo[2], H. Bardeleben[1], M. Eddrief[1], C. Gourdon[1] and V. Etgens[1] *1. Institut des Nanosciences de Paris, Université Pierre et Marie Curie, Paris, France; 2. Synchrotron SOLEIL L'Orme des Merisiers Saint-Aubin, GIF-sur-YVETTE, France*

HP-02. Determination of the damping parameter: Ferromagnetic resonance vs. Domain wall motion. B. Boehm[1], *J. Chauleau*[1], M. Ribow[1], G. Woltersdorf[1] and C.H. Back[1] *1. Regensburg University, Regensburg, Germany*

HP-03. Role of the thermal magnetization fluctuation in depinning of domain wall from the notch in the ferromagnetic nanowire. *S. Ahn*[1,2], K. Moon[1] and S. Choe[1] *1. Seoul National University, Seoul, Republic of Korea; 2. Massachusetts Institute of Technology, Cambridge, MA*

HP-04. A Method for Compensating Joule-Heating Effect in Current-Induced Domain-Wall Motion. *D. Kim*[1], K. Moon[1], S. Yoo[1,2], B. Min[2], K. Shin[2] and S. Choe[1] *1. Center for Subwavelength Optics and Department of Physics, Seoul National University, Seoul, Republic of Korea; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Republic of Korea*

HP-05. Time-resolved observation of thermally activated domain-wall depinning in nanowires. *C. Wuth*[1] and G. Meier[1] *1. Applied Physics, Institut für Angewande Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany*

HP-06. Correction to nonadiabaticity due to Rashba spin-orbit coupling. *K. Kim*[1], S. Lee[2], K. Lee[2] and H. Lee[1] *1. Physics, POSTECH, Kyungbuk, Kyungbuk, Republic of Korea; 2. Materials Sci. & Eng., Korea University, Seoul, Republic of Korea*

HP-07. The role of the Oersted field on the current-driven domain wall dynamics along wires with square cross section. *D. Aurélio*[1], A. Giordano[2], L. Torres[1], G. Finocchio[2] and E. Martinez[1] *1. Applied Physics, University of Salamanca, Salamanca, Spain; 2. Matter Physics and Electronic Engineering, University of Messina, Messina, Italy*

HP-08. Steady domain wall motion in magnetic nanostrips under the influence of Rashba field and spin-polarized currents: traveling wave solutions. *G. Consolo*[1] and V. Puliafito[2] *1. Department of Sciences for Engineering and Architecture, University of Messina, Messina, Italy; 2. Department of Matter Physics and Electronic Engineering, University of Messina, Messina, Italy*

HP-09. Winter magnons in Permalloy dots: from metastable double vortex to stable vortex states. *F.G. Aliev*[1], A. Lara[1], A.A. Awad[1], K.Y. Guslienko[2] and V. Metlushko[3] *1. Universidad Autonoma de Madrid, Madrid, Spain; 2. Universidad del País Vasco, San Sebastian, Spain; 3. University of Illinois at Chicago, Chicago, IL*

FRIDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session HQ
LOW-DIMENSIONAL SYSTEMS II: GRAPHENE AND TOPOLOGICAL INSULATORS (POSTER SESSION)

Marius Costache, Chair

HQ-01. Quantum Monte Carlo study of RKKY interaction in zigzag graphene ribbon. *J. Sun*[1,2], F. Hu[3], H. Tang[2], Z. Huang[4,5], T. Ma[4,6] and H. Lin[2,4] *1. Department of Physics, Peking University, Beijing, China; 2. Department of Physics, The Chinese University of Hong Kong, China; 3. COMP/Department of Applied Physics, Aalto University, School of Science and Technology, Aalto, Finland; 4. Beijing Computational Science Research Center, Beijing, China; 5. Faculty of Physics and Electronic Technology, Hubei University, Wuhan, China; 6. Department of Physics, Beijing Normal University, Beijing, China*

HQ-02. Magneto-transport properties of the ternary topological insulator $(Bi_{0.5}Sb_{0.5})_2Te_3$ in the presence of electrostatic gating and magnetic impurity. *L. Yu*[1], J. Barreda[1], L. Hu[1], P. Xiong[1], T. Guan[2], X. He[2], K. Wu[2] and Y. Li[2] *1. Department of Physics, Florida State University, Tallahassee, FL; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

HQ-03. Magnetic states of Dirac fermions for Gas absorptions on Graphene allotropes 6,6,12-graphyne using first principle calculations. *F.F. Yun*[1] and X. Wang[1] *1. ISEM, University of Wollongong, North Wollongong, NSW, Australia*

HQ-04. Effects of nitrogen defects on the geometric stability and the magnetic property of Co-graphene nanosheets. *S. Lee*[1], M. Lee[1] and Y. Chung[1] *1. Material Science and Engineering, Hanyang University, Seoul, Republic of Korea*

HQ-05. Anisotropic and high field linear magnetoresistive effects in topological insulator Sb2Te3 thin films. *Z. Yue*[1], Q. Chen[1], D. Shi[1], S. Dou[1] and X. Wang[1] *1. Faculty of Engineering, Institute for Superconducting and Electronic Materials, North Wollongong, NSW, Australia*

HQ-06. Room-temperature hysteretic magnetoresistance in graphene/graphite. *W. Lin*[1], C. Deng[1], X. Lin[2], K. Jiang[2], D. Ravelosona[1], C. Chappert[1] and W. Zhao[1] *1. Institut d'Electronique Fondamentale, Université Paris-Sud - CNRS, Orsay, France; 2. Department of Physics and Tsinghua-Foxconn Nanotechnology Research Center, Tsinghua University, Beijing, China*

HQ-07. Orbital-Moment Quenching in Graphene and Hydrocarbon Nanostructures. *R. Skomski*[1], A. Enders[1] and P.A. Dowben[1] *1. Physics and Astronomy, Univ Nebraska, Lincoln, NE*

HQ-08. Magnetic behavior of Reduced graphene oxide/Metal nanocomposites. *P.K. Sahoo*[1], B. Panigrahy[1], D. Li[2] and D. Bahadur[1] *1. Metallurgical Engineering and Material Science, Indian Institute Of Technology Bombay (IIT Bombay), Mumbai, Maharashtra, India; 2. Department of Materials Engineering, Monash University, Clayton Campus, VIC, Australia*

FRIDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session HR
SPIN CURRENTS IN METALS AND SEMICONDUCTORS (POSTER SESSION)

Masashi Shiraishi, Chair

HR-01. Transport and Structural Properties of The Abrupt Fe/GaAs(001) Interface. L.R. Fleet[1], K. Yoshida[2], H. Kobayashi[3], Y. Kaneko[3], S. Matsuzaka[3], Y. Ohno[3], S. Honda[4], J. Inoue[2] and *A. Hirohata[1,5] 1. The University of York, York, United Kingdom; 2. Nagoya University, Nagoya, Japan; 3. RIEC, Tohoku University, Sendai, Japan; 4. University of Tsukuba, Tsukubai, Japan; 5. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan*

HR-02. Large spin accumulation due to spin-charge coupling across a break-junction. *S. Chen*[1], H. Zou[1], S. Chui[1] and Y. Ji[1] *1. Dept. of Physics, University of Delaware, Newark, DE*

HR-03. Effect of Holes and Electric Field on Spin Injection and Transport Through Ferromagnet/Semiconductor Junction. T. Pramanik[1], D. Banerjee[1], S. Ganguly[1] and *D. Saha[1] 1. Electrical Engineering, Indian Institute of Technology Bombay, Mumbai, India*

HR-04. Transient effects on oblique Hanle signals observed in ferromagnet/semiconductor heterojunctions with non-local four-terminal configuration. *T. Akiho*[1], . Shan[1], K. Matsuda[1], M. Yamamoto[1] and T. Uemura[1] *1. Division of Electronics for Informatics, Hokkaido University, Sapporo, Hokkaido, Japan*

HR-05. Spin-orbit coupling parameters in GaAs: accurate estimates by ensemble Monte Carlo simulations. M.D. Hodgson[1], G. Marchetti[1], R. Chantrell[1] and *I. D'Amico[1] 1. Department of Physics, University of York, York, United Kingdom*

HR-06. Tailoring organic heterojunction interfaces and polarized charge injection in spin-OLED. N. Lee[1], Y. Bae[1], *T. Kim*[1], H. Cho[2], C. Lee[2] and E. Ito[3] *1. Department of Physics, Ewha Womans University, Seoul, Republic of Korea; 2. School of Electrical Engineering and Computer Science, Seoul National University, Seoul, Republic of Korea; 3. Flucto-Order Functions Research Team, RIKEN Advanced Science Institute, Wako, Saitama, Japan*

HR-07. Electrical conductivity states in organic films controlled by remanent states of a magnetic electrode. *F. Macia*[1], F. Wang[2], M. Wohlgenannt[2], A.D. Kent[1], M.E. Flatté [2] and N.J. Harmon[2] *1. Physics, NYU, New York, NY; 2. Physics and Astronomy, University of Iowa, Iowa City, IA*

HR-08. EuO Directly on Si: An Optimized Functional Interface for Spin Injection by Passivation of Si (001). *C. Caspers*[1], M. Mü ller[1], S. Flade[1], M. Gorgoi[2] and C.M. Schneider[1,3] *1. Peter Grünberg Institut (PGI-6), Research Center Jülich, 52425 Jülich, Germany; 2. Helmholtz-Zentrum für Materialien und Energie, BESSY II, 12489 Berlin, Germany; 3. Faculty of Physics and Center for Nanointegration Duisburg-Essen (CeNIDE), University of Duisburg-Essen, 47057 Duisburg, Germany*

HR-09. Detection of Inverse Spin Hall Effect in Epitaxial Ferromagnet/Metal Films. *H. Hung*[1], G. Luo[2,3], Y. Chiu[4], P. Chang[5], W. Lee[1], J.G. Lin[3], S. Lee[4], M. Hong[2] and J. Kwo[1] *1. Department of Physics, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Physics, National Taiwan University, Taipei, Taiwan; 3. Center for Condensed Matter of Science, National Taiwan University, Taipei, Taiwan; 4. Institute of Physics, Academia Sinica, Taipei, Taiwan; 5. Department of Mat. Sci. and Eng., National Tsing Hua University, Hsinchu, Taiwan*

HR-10. Tuning the spin pumping characteristics in $Ni_{81}Fe_{19}/CuN_x$ bilayers system by cooper nitride layer. *L. Jin*[1], H. Zhang[1], X. Tang[1] and Z. Zhong[1] *1. University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

HR-11. Quantum spin and Quantum Valley Hall effects in silicene. *M. Tahir*[1] and U. Schwingenschlogl[1] *1. material science, King Abdullah University of Science and Technology (KAUST), jeddah, Jeddah, Saudi Arabia*

HR-12. Rashba Metal Square Ring in a Time-dependent Magnetic Field. *J. Chen*[1], M. Jalil[1,2] and S. Tan[1,3] *1. Electrical and Computer Enginnering, National University of Singapore, Computational Nanoelectronics and Nano-device Laboratory, Singapore; 2. Electrical and Computer Enginnering, National University of Singapore, Information Storage Materials Laboratory, Singapore; 3. Data Storage Institute, Singapore*

HR-13. Robustness of Vortex Memory Readback via Topological Hall Conductivity. *M.B. Jalil*[1,2] and S. Tan[1,3] *1. Computational Nanoelectronics and Nano-device Laboratory, Electrical and Computer Engineering Department, National Univ Singapore, Singapore; 2. Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National Univ Singapore, Singapore; 3. Data Storage Institute, Singapore*

HR-14. Magneto-electric effects in Spin filter tunnel junctions with GdN. *A. Pal*[1], K. Senapati[2], Z.H. Barber[1] and M.G. Blamire[1] *1. Department of Materials Science & Metallurgy, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; 2. School of Physical Sciences, National Institute of Science Education and Research, Bhubaneswar, Orissa, India*

HR-15. Inverse spin Hall effect measurements using ultrathin YIG films grown by pulsed laser deposition. *O. d'Allivy Kelly*[1], A. Anane[1], V. Cros[1], J. Mage[2], R. Bernard[1], E. Jacquet[1], C. Carré té ro[1], C. Deranlot[1] and A. Fert[1] *1. Unité Mixte de Physique CNRS/Thales and Université Paris-Sud 11, Palaiseau, France; 2. Thales Research & Technology France, Plaiseau, France*

HR-16. Current driven modulation of magnetization in Ta/$Ni_{81}Fe_{19}$ bi-layer nanostructures.N. Behera[1], S. Chaudhary[1] and *D.K. Pandya*[1]*1. Thin Film Laboratory, Indian Institute of Technology Delhi, New Delhi-110016, Delhi, India*

FRIDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session HS
MAGNETIC PROPERTIES OF THIN FILMS (POSTER SESSION)

Masato Kotsugi, Co-Chair
Waldemar Macedo, Co-Chair

HS-01. Coupled dipole-exchange spin waves in trilayer nanostripes of Permalloy: Brillouin light scattering and theory. *S. Tacchi*[1], G. Gubbiotti[1,2], M. Madami[1], G. Carlotti[1], K. Nakano[3], T. Ono[3], H.T. Nguyen[4] and M.G. Cottam[4]*1. CNISM-Dipartimento di Fisica, Università di Perugia, Perugia, Italy; 2. Istituto Officina dei Materiali del CNR (CNR-IOM), Unità di Perugia, c/o Dipartimento di Fisica, Perugia, Italy; 3. Laboratory of Nano Spintronics, Institute for Chemical Research,Kyoto University, Kyoto, Japan; 4. Department of Physics and Astronomy, University of Western Ontario, London, ON, Canada*

HS-02. Fabrication of ordered FeNi thin films by sputtering and rapid thermal annealing. *T. Tashiro*[1], M. Mizuguchi[1], T. Kojima[1] and K. Takanashi[1]*1. Institute for Materials Research (IMR), Tohoku University, Sendai, Miyagi, Japan*

HS-03. Magnetic properties and structure analysis of Fe film fabricated on GaAs (001) using PLD and MBE techniques. *X. Xiao*[1], J. Liang[1], Y. Huo[1], J. Zhu[1] and Y. Wu[1]*1. Fudan University, Shanghai, China*

HS-04. Structural and magnetic properties of Fe3O4 prepared by post-oxidation of α-Fe thin films. *J. Sizeland*[1], D. Gilks[1], S. Poon[1], C. Kelley[1], O. Cespedes[2], S. Thompson[1] and V.K. Lazarov[1]*1. Department of Physics, University of York, York, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

HS-05. Volume anisotropy induced by the exchange coupling in Fe/CoO/MgO(001) system.J. Zhu[1], Q. Li[1], J. Li[1] and *Y. Wu*[1]*1. Physics Department, Fudan University, Shanghai, China*

HS-06. Anomalous magnetoresistance in Fe/Cr Fibonacci multilayers. *C. Chesman*[3,1], L.D. Machado[2], M.A. Correa[1], C.G. Bezerra[1], J.E. Pearson[3] and A. Hoffmann[3]*1. Physics, Federal University of Rio Grande do Norte, Natal, Rio Grande do Norte, Brazil; 2. Fisica Aplicada, Unicamp, Campinas, SP, Brazil; 3. Materials Science Division, Argonne National Laboratory, Argonne, IL*

HS-07. Structural and magnetic properties in Husler-type ferromagnet/antiferromagnet bilayers. *N. Fukatani*[1], K. Inagaki[1], T. Miyawaki[1], K. Ueda[1] and H. Asano[1]*1. Nagoya Univ., Nagoya, Japan*

HS-08. Magnetocapacitance properties of multilayered $CoFe_2O_4/BaTiO_3/CoFe_2O_4$ thin films by pulsed laser deposition. *S. Yoon*[1], C. Kim[1] and I. Shim[1]*1. Department of Physics, Kookmin University, Seoul, Republic of Korea*

HS-09. Ga-doping modulation of magnetic anisotropy in FeRh epitaxial thin films. *I. Suzuki*[1], M. Itoh[1] and T. Taniyama[1]*1. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

HS-10. Structural Evidence for Stabilized Ferromagnetism in Epitaxial FeRh Nano-islands. *M. Loving*[1], F. Jimenez-Villacorta[1], B. Kaeswurm[1], D.A. Arena[3], C.H. Marrows[2] and L.H. Lewis[1]*1. Chemical Engineering, Northeastern University, Boston, MA; 2. Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 3. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY*

HS-11. An inverse Bloch-to-Néel transition of magnetic domain wall in magnetic ultrathin flims. *G. Chen*[1] and A. Schmid[1]*1. NCEM, Berkeley Lab, Berkeley, CA*

HS-12. Packings of Os layers for the development of L10 order of FePt in nanoscale [Os-FePt]n multilayer systems. *C. Hsiao*[1], T. Su[1], W. Ouyang[2], H. Ouyang[1], S. Chen[3] and Y. Yao[3]*1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Chung Hua University, Hsinchu, Taiwan; 3. Fu Jen University, Taipei, Taiwan*

HS-13. Structure and Magnetic Properties of Multilayer [Co(x)/Os]n Films. *Y. Yao*[1], D. Chiang[2], Y. Ding[2], H. Ouyang[3], D. Wei[4] and Y. Chen[5]*1. Department of Applied Physics, National Pingtung University of Education, Pingtung, Taiwan; 2. Center of General Education, Ming Hsin University of Science and Technology, Hsin Chu, Taiwan; 3. Department of Material Science and Engineering, National Tsing Hua University, Hsin Chu, Taiwan; 4. Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan; 5. Institute of Physics, Academia Sinica, Taipei, Taiwan*

HS-14. Magneto-mechanical effects in multi-layer magnetic structures deposited on micro-cantilevers. *S. Lim*[1], T. Wallis[1], A. Imtiaz[1] and P. Kabos[1]*1. NIST, Boulder, CO*

HS-15. Alternate helicity in thin dysprosium films. *F.H. Sales*[1], A.L. Dantas[2] and A.S. Carriç o[3]*1. Physics, IFMA, São Luis, Maranhão, Brazil; 2. Physics, UERN, Natal, Rio Grande do Norte, Brazil; 3. Physics, UFRN, Natal, Rio Grande do Norte, Brazil*

FRIDAY AFTERNOON 2:30 RIVERSIDE CENTER

Session HT
CONTROL, PROPULSION, SHIELDING, AND MEMS FOR MAGNETIC DEVICES II (POSTER SESSION)

Marco Trapanese, Chair

HT-01. Fourier Modeling of Magnetic Shields with Linear Permeable Material and Finite Dimensions. *K.J. Pluk*[1], J.W. Jansen[1] and E.A. Lomonova[1] *1. Eindhoven University of Technology, Eindhoven, Netherlands*

HT-02. The Current Source Type Power Transmission and Electric Propulsion For Hybrid Electric Vehicles. *Z. Wang*[1], Y. Zheng[1], Z. Zou[1] and M. Cheng[1] *1. School of Electrical Engineering, Southeast University, Nanjing, China*

HT-03. Novel Brushless Wind Power Generators with Contra-Rotating Rotors. S. Ho[1], *S. Niu*[1] and W. Fu[1] *1. The Hong Kong Polytechnic University, Hong Kong, China*

HT-04. A Novel Structure of Induction Motor with High Power Factor. S. Ho[1], *S. Niu*[1] and W. Fu[1] *1. The Hong Kong Polytechnic University, Hong Kong, China*

HT-05. Analytical Torque Calculations and Experimental Testing of Permanent Magnet Axial Eddy Current Brake. *H. Shin*[1], J. Choi[1], H. Cho[1] and S. Jang[1] *1. Chungnam National University, Daejeon, Republic of Korea*

HT-06. Dynamic Performance Evaluation of 5-DOF Magnetic Levitation and Guidance Device using Electro-Magnetic-Circuit Model. *C. Kim*[1], K. Kim[1], J. Yu[2] and H. Cho[2] *1. Korea Institute of Machinery and Materials, Daejeon, Republic of Korea; 2. Dept. Electric, Electronic, and Commucation Eng. Edu., Chungnam National Univ., Daejeon, Republic of Korea*

HT-07. Parameter design for high efficiency contactless power transmission under low impedance load. *T. Misawa*[1], T. Takura[1], F. Sato[1], T. Sato[2] and H. Matsuki[2] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan*

HT-08. Conducted CM Parasitic Parameter Modeling for PMSM Drive System Considering the Near-field Coupling. *X. Lu*[1], H. Lin[1] and J. Yan[1] *1. School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China*

HT-09. Design and numerical simulation of a magnetostrictive electric power generator. *G. La Rocca*[1], V. Franzitta[2], A. Viola[2] and M. Trapanese[1] *1. Dipartimento di Ingegneria Elettrica, Palermo University, Palermo, Italy; 2. Dipartimento dell'Energia, Palermo University, Palermo, Italy*

HT-10. Experimental Investigation of DC-Bias Related Core Losses in a Boost Inductor. *H. Kosai*[1,2], Z. Turgut[1,2] and J. Scofield[2] *1. UES Inc., Dayton, OH; 2. AFRL, Wright-Patterson AFB, OH*

HT-11. Improvement of Thrust Force Properties of Linear Synchronous Motor for High-Speed Maglev Train. *S. Oh*[1] and H. Lee[1] *1. Electric engineering, Hanyang Univ. Seoul. Korea, Seoul, Republic of Korea*

FRIDAY AFTERNOON 2:30 RIVERSIDE CENTER

Session HU
INDUCTORS AND TRANSFORMERS II (POSTER SESSION)

Hongbin Yu, Chair

HU-01. Effect of Magnetostriction and Extreme-Low Sound Level on Three-Phase Power Transformer Development via Particle Swarm Optimization Method. *C. Hsu*[1], C. Lee[2], Y. Chang[3] and F. Lin[4] *1. Division of Electrical Engineering, Fortune Electric Ltd, Co., Tao-Yuan, Taiwan; 2. Department of Electrical Engineering, Chung Yuan Christian University, Zhong-Li, Taiwan; 3. Department of Electrical Engineering, Chang Gung University, Kwei-Shan, Taiwan; 4. Department of Electrical Engineering, National Central University, Chung-Li, Taiwan*

HU-02. Novel Design and Magnetic Loss Characteristic Analysis of AC Reactors with Super Magnetic Core in Auxiliary Power Supply of Magnetic Levitation Vehicles. *Y. Park*[1], K. Lee[2], S. Jang[1], H. Seo[1] and J. Choi[1] *1. Chungnam National University, Daejoen, Republic of Korea; 2. Daejeon Metropolitan Express Transit Corporation, Daejeon, Republic of Korea*

HU-03. Modeling of the Loss Resistance of Magnetic Cores on the Basis of Low Frequency Data. *M. Freiburg*[1] and F. Jenau[1] *1. Institute of High Voltage Engineering, University of Dortmund, Dortmund, Germany*

HU-04. Carbonyl-iron/epoxy composite magnetic core for planar power inductor used in POL DC-DC converter for package-level power grid. *Y. Sugawa*[1], K. Ishidate[1], M. Sonehara[1] and T. Sato[1] *1. Faculty of Engineering, Shinshu University, Nagano, Japan*

HU-05. Transformer Integrated with LCL Filter for Grid Connected Converters. Z. Wang[1], *S. Wang*[1], J. Qiu[1] and J. Zhu[2] *1. Xi'an Jiaotong University, Xi'an, Shaanxi, China; 2. University of Technology, Sydney, NSW, Australia*

HU-06. Parallel Operation of PV Inverters for Minimizing Circulating Current using Coupled Inductor. *J. Choi*[2,1], B. Byen[1], H. Seo[1], D. Lee[2], H. Kho[2] and G. Choe[1] *1. Electrical Engineering, Konkuk University, Seoul, Republic of Korea; 2. Green IT Development Department, SK C&C, Gyeonggi, Republic of Korea*

HU-07. Effects of High Frequency and Different Structure of Magnetic Properties on Thin Film Core with Amorphous Materials. *C. Hsu*[1], C. Lee[2], C. Lin[2,1], Y. Chang[3], F. Lin[4] and C. Tseng[5] *1. Division of Electrical Engineering, Fortune Electric Ltd, Co., Tao-Yuan, Taiwan; 2. Department of Electrical Engineering, Chung Yuan Christian University, Tao-Yuan, 320, Taiwan; 3. Department of Electrical Engineering, Chang Gung University, Kwei-Shan, 320, Taiwan; 4. Department of Electrical Engineering, National Central University, Tao-Yuan, 320, Taiwan; 5. Division of Physics, Institute of Nuclear Energy Research, Tao-Yuan, 325, Taiwan*

HU-08. Loss Reduction of Saturable Magnetically Controlled Reactor by Improving Structure of Magnetic Valves. *Y. Gao*[1], R. Kurashige[1], M. Nagata[1], H. Dozono[1], K. Muramatsu[1] and B. Chen[2] *1. Department of Electrical and Electronic Engineering, Saga University, Saga, Japan; 2. School of Electrical Engineering, Wuhan University, Wuhan, China*

HU-09. Eddy Current Power Loss Estimation of Edge Burr Affected Magnetic Cores Based on Equivalent Electrical Network in a Wide Range of Magnetising Frequency. *H. Hamzehbahmani*[1], P. Anderson[1], J. Hall[1] and D. Fox[2] *1. Electrical and Electronic ENGIN, Cardiff University, Cardiff, United Kingdom; 2. Cogent Power Ltd., Newport, United Kingdom*

HU-10. Improved high frequency response and quality factor of on-chip ferromagnetic thin film inductors by laminating and patterning Co-Zr-Ta-B Films. *H. Wu*[1], S. Zhao[1], D.S. Gardner[2] and H. Yu[1] *1. Ira A. Fulton Schools of Engineering, Arizona State University, Tempe, AZ; 2. Intel Labs, Intel Corp., Santa Clara, CA*

FRIDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session HV
READER, WRITER, TAPE, OVERCOATS II (POSTER SESSION)

Pierre-Olivier Jubert, Chair

HV-01. Influence of Stripe Height on Critical Current Density of Spin-Torque Noise in Tunneling Magnetoresistive Read Head. Y. Endo[1], *A. Hotta*[1] and M. Yamaguchi[1,2] *1. Department of Electrical Engineering, Graduate School of Engineering, Tohoku University, Aoba-ku,Sendai, Miyagi, Japan; 2. New Industry Creation Hatchery Center, Tohoku University, Aoba-ku,Sendai, Miyagi, Japan*

HV-02. Effect of coil position on magnetization dynamics of multilayered hard disk writer yokes. *W. Yu*[1], P.S. Keatley[1], R.J. Hicken[1], M.A. Gubbins[2], P.J. Czoschke[3] and R. Lopusnik[4] *1. School of Physics, University of Exeter, Exeter, United Kingdom; 2. Research & Development, Seagate Technology, Derry, United Kingdom; 3. Recording Heads Operation, Seagate Technology, Bloomington, MN; 4. SAGE Electrochromics, Inc., Faribault, MN*

HV-03. Analysis of Trailing Shield Dynamic Characteristics for Perpendicular Magnetic Recording Writer. *F. Liu*[1], Z. Li[1], D. Bai[1], S. Li[1], T. Pan[1] and H. Lin[1] *1. Western Digital Corporation, Fremont, CA*

HV-04. New ionic liquid lubricants for magnetic thin film media. *H. Kondo*[1], M. Ito[1], K. Hatsuda[1], K. Yun[1] and M. Watanabe[2] *1. R&D Division, Dexerials Corporation, Kanuma, Tochigi, Japan; 2. Chemistry & Biotechnology, Yokohama National University, Yokohama, Kanagawa, Japan*

HV-05. Film Conformation and Dynamic Properties of Atomistically Architectured Perfluoropolyethers on the Carbon Overcoated Surface. *P. Chung*[1], L.T. Biegler[1] and M.S. Jhon[1,2] *1. Chemical Engineering, Carnegie Mellon Univ, Pittsburgh, PA; 2. School of Advanced Material Science and Engineering, Sungkyunkwan University, Suwon, Republic of Korea*

HV-06. Rheological Analysis on Binary Blends of Perfluoropolyether Lubricants. P. Chung[1], K. Tak[2], I. Moon[2], L.T. Biegler[1] and *M.S. Jhon*[1,3] *1. Chemical Engineering, Carnegie Mellon Univ, Pittsburgh, PA; 2. Chemical and Biomolecular Engineering, Yonsei University, Seoul, Republic of Korea; 3. School of Advanced Material Science and Engineering, Sungkyunkwan University, Suwon, Republic of Korea*

HV-07. An Atomistic Study of Perfluoropolyether Lubricant Thermal Stability in Heat Assisted Magnetic Recording. *R.L. Smith*[1], Y. Jhon[2], L.T. Biegler[1] and M.S. Jhon[1,2] *1. Chemical Engineering, Carnegie Mellon Univ, Pittsburgh, PA; 2. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Republic of Korea*

HV-08. A Thermal Transport Model for Head Disk Interface in Heat Assisted Magnetic Recording. *S. Vemuri*[1], R.L. Smith[1], P. Chung[1] and M.S. Jhon[1,2] *1. Data Storage Systems Center and Department of Chemical Engineering, Carnegie Mellon Univ, Pittsburgh, PA; 2. School of Advanced Material Science and Engineering, Sungkyunkwan University, Suwon, Gyeonggi-do, Republic of Korea*

HV-09. Relationship of Adhesion / Friction Forces and Slider Vibration in Surfing Recording HDI System. *H. Tani*[1], D. Kamei[2] and N. Tagawa[1] *1. Mechanical Engineering Dept., Kansai University, Suita-shi, Osaka, Japan; 2. Graduate School, Kansai University, Suita-shi, Osaka, Japan*

HV-10. A Novel Active-head Slider with a Shear-mode PZT Actuator and Dual Thermal Actuator. *H. Li*[1] and N. Sagawa[1] *1. Hitachi Asia Ltd., Singapore*

HV-11. A Molecular/Continuum Hybridization Model for Lubricant/ABS Systems in Head Disk Interface. *S. Vemuri*[1], R.L. Smith[1], P. Chung[1], L.T. Biegler[1] and M.S. Jhon[1,2] *1. Data Storage Systems Center and Department of Chemical Engineering, Carnegie Mellon Univ, Pittsburgh, PA; 2. School of Advanced Material Science and Engineering, Sungkyunkwan University, Suwon, Gyeonggi-do, Republic of Korea*

HV-12. Quantum Chemical Study of Interactions of Perfluoropolyether with Carbon Surfaces: Effects of Nitrogen Incorporation and Ultraviolet Irradiation. *M. Alam*[1] and H. Zhang[1] *1. Department of Complex Systems Science, Nagoya University, Nagoya, Japan*

HV-13. Enhance coercivity in $L1_1$ CoPt thin film on glass substrate by fine-tuning Pt underlayer. *A. Sun*[1], C. Huang[1], S. Huang[1], J. Hsu[2], F. Yuan[2], H. Lu[3], S. Wang[3], S. Hsiao[4], H. Lee[4] and J. Mei[5] *1. Department of Chemical Engineering & Materials Science, Yuan Ze University, Taoyuan, Taiwan; 2. Department of Physics, National Taiwan University, Taipei, Taiwan; 3. Department of Materials and Mineral Resources Engineering, National Taipei University of Technology, Taipei, Taiwan; 4. National Synchrotron Radiation Research Center (NSRRC), Hsinchu, Taiwan; 5. Department and Institute of Electrical Engineering, Minghsin University of Science and Technology, Hsinchu, Taiwan*

HV-14. Room-temperature magneto-optical recording with optically induced magnetization. *E.Z. Katsnelson*[1] and M.M. Chervinsky[2] *1. Physics&Astronomy, Northwestern University, Evanston, IL; 2. D. I. Mendeleev Institute for Metrology, St Petersburg, Russian Federation*

HV-15. Distribution of Thermal Stability Factor for Barium Ferrite Particles. *O. Shimizu*[1], Y. Kurihashi[1], I. Watanabe[1] and T. Harasawa[1] *1. Recording Media Research Laboratories, FUJIFILM Corporation, Odawara, Kanagawa, Japan*

HV-16. Effect of Thermal Fluctuation on Bit Error Rate for Ba-Ferrite Particulate Media. *Y. Kurihashi*[1], O. Shimizu[1], Y. Murata[1], M. Asai[1] and H. Noguchi[1] *1. Recording Media Research Laboratories, FUJIFILM Corporation, Odawara-shi Kanagawa-ken, Japan*

FRIDAY AFTERNOON 2:30 RIVERSIDE CENTER

Session HW
RECORDING PHYSICS AND MODELING II (POSTER SESSION)
Boris Livshitz, Chair

HW-01. Probabilities of transition jitter at different off-track position. *A. Shiming*[1], O. Chun Lian[1] and Y. Zhimin[1] *1. DSI, Singapore*

HW-02. Readback Spatial Sensitivity Function by Reciprocity Principle and Media Readback Flux. *K. Takano*[1] *1. TDK Corporation, Saku-shi, Nagano, Japan*

HW-03. Detection and Analysis of the Shortest Bit Missing at High Data Rate Recording. *H. Tanabe*[1], D. Sarbanoo[1] and J. Ohno[1] *1. HGST Japan, Ltd., Fujisawa-shi, Kanagawa-ken, Japan*

HW-04. Erase Band Noise and Generation Mechanism Due to an Adjacent Track. *K. Miura*[1], H. Katada[2], M. Oguma[3], H. Muraoka[3] and Y. Nishida[2] *1. Faculty of Engineering, Iwate University, Morioka, Iwate, Japan; 2. HGST Japan, Odawara, Japan; 3. RIEC, Tohoku University, Sendai, Japan*

HW-05. Influence of writing ITI effects in shingled magnetic recording. *H. Nobuhara*[1], Y. Okamoto[1], Y. Nakamura[1], K. Takada[1], M. Yamashita[1], H. Osawa[1] and H. Muraoka[2] *1. Graduate School of Science and Engineering, Ehime University, Matsuyama, Japan; 2. The Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

HW-06. High Frequency Recording With Shielded Planar Heads. *S. Greaves*[1], H. Muraoka[1] and Y. Kanai[2] *1. RIEC, Tohoku University, Sendai, Japan; 2. IEE, Niigata Institute of Technology, Kashiwazaki, Japan*

HW-07. Analysis of the RF signal interference invasion into Hard Disk Drive system and coupled to the read front-end system. *N. Nishiyama*[1], Y. Soga[1], J.T. Contreras[2], A. Wallash[2] and S. Nakamura[3] *1. HGST Japan, Ltd., Fujisawa, Kanagawa, Japan; 2. HGST, Inc., San Jose, CA; 3. Yokohama Research Lab., Hitachi, Yokohama, Kanagawa, Japan*

HW-08. Performance Evaluation of Neuro ITI Canceller for Two-Dimensional Magnetic Recording by Shingled Magnetic Recording. *M. Yamashita*[1], Y. Okamoto[1], Y. Nakamura[1], H. Osawa[1] and H. Muraoka[2] *1. Graduate School of Science and Engineering, Ehime University, Matsuyama, Japan; 2. RIEC, Tohoku University, Sendai, Japan*

HW-09. Micro magnetic exchange tensor and magnetization switching of FePt alloy based thin film nano-structures. *A. Singh*[1,2], O.N. Mryasov[1,2] and S. Gupta[1,3] *1. MINT Center, University of Alabama, Tuscaloosa, AL; 2. Physics, University of Alabama, Tuscaloosa, AL; 3. Metallurgical and Materials Engineering, University of Alabama, Tuscaloosa, AL*

HW-10. Non-Binary LDPC Coding System with Symbol-by-Symbol Turbo Equalization for Shingled Magnetic Recording. Y. Nakamura[1], *J. Ueda*[1], Y. Okamoto[1], H. Osawa[1], H. Aoi[2] and H. Muraoka[2] *1. Graduate School of Science and Engineering, Ehime University, Matsuyama, Ehime, Japan; 2. Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan*

HW-11. Approximation of Channel Models for TDMR. *H. Kamabe*[1] and T. Kato[1] *1. Information Science, Gifu University, Gifu, Japan*

HW-12. Error Event Corrections Using List-NPML Decoding and Error Detection Codes. *S.S. Arslan*[1], J. Lee[1] and T. Goker[1] *1. Advanced R&D Channel Team, Quantum Corporation, Irvine, CA*

HW-13. New Technique on Finding the Path Metrics of the Maximum Likelihood Sequence Decoder. N. Awad[1], *M. Zaki*[1] and P. Davey[1] *1. Plymouth University, Plymouth, United Kingdom*

HW-14. Performance of Soft Input on Low Density Parity Check codes with Parity Encoded by Run Length Limited Codes for Perpendicular Magnetic Recording. *J. Kim*[1] and J. Lee[1] *1. Soongsil unversity, Seoul, Republic of Korea*

HW-15. Joint and Separate Detection-Decoding on BPMR Channels. *T. Wu*[1] and M.A. Armand[1] *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore*

HW-16. Code-Aided Iterative Detection Scheme for Bit Patterned Media Recording Channels with Track Misregistration. *G. Kong*[1,2], W. Xi[1] and S. Choi[2] *1. Data Storage Institute (DSI) A*STAR (Agency for Science, Technology and Research), Singapore; 2. Yonsei University, Seoul, Republic of Korea*

FRIDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session HX
PERMANENT MAGNET PROCESSING, AND CHARACTERIZATION II (POSTER SESSION)

Jinfang Liu, Chair

HX-01. Mechanism of coercivity enhancement of sintered Nd-Fe-B magnets produced by two-alloy method. *C. Yan*[1,2], X. Liu[1,2], S. Guo[1,2], R. Chen[1,2], D. Lee[1,2] and A. Yan[1,2] *1. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, NingBo, Zhejiang, China; 2. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, NingBo, Zhejiang, China*

HX-02. Residual Hydrogen in HDDR Powder and Its Effect on Coercivity of Hot Pressed Compact. M.A. Matin[1], *H. Kwon*[1], J. Lee[2], J. Yu[2], T. Kim[3] and C. Yang[3] *1. Materials Science and Engineering, Pukyong National University, Busan, Republic of Korea; 2. Powder Engineering, Korea Institute of Materials Science, Changwon, Kyungnam, Republic of Korea; 3. School of Advanced Materials Science Engineering, Sungkyunkwon University, Suwon, Suwon, Republic of Korea*

HX-03. Spin wave softening in exchange-coupled periodic nanocomposites and the dipolar interaction. *S. Chui*[1] and A. Belemuk[1] *1. Department of Physics and Astronomy, University Delaware, Newark, DE*

HX-04. Anomalous magnetism in Laves phase compounds $Er_{1-x}Dy_xCo_2$ (x = 0.25, 0.33). *R. Nirmala*[1,2], D. Paudyal[1], Y. Mudryk[1], V.K. Pecharsky[1,3], K.A. Gschneidner Jr.[1,3] and A.K. Nigam[4] *1. The Ames Laboratory USDOE, Iowa State University, Ames, IA; 2. Physics, Indian Institute of Technology Madras, Chennai, India; 3. Department of Materials Science and Engineering, Iowa State University, Ames, IA; 4. DCMPMS, Tata Institute of Fundamental Research, Mumbai, India*

HX-05. Synthesis of nanocrystalline Co-C materials via reactive ball milling. *Z. Turgut*[1,2], N. Bryant[1,3], A. Sheets[1,2], M. Lucas[1,4] and J. Horwath[1] *1. AFRL, Wright-Patterson AFB, OH; 2. UES Inc., Dayton, OH; 3. Wright State University, Dayton, OH; 4. UTC Inc., Dayton, OH*

HX-06. Synthesis and Magnetic Properties of hard-soft $SrAl_2Fe_{10}O_{19}$/x%-$Ni_{0.75}Zn_{0.25}Fe_2O_4$ (x = 10, 20 & 30) magnetic nanocomposite via simple auto-combusiton one pot method. B.K. Rai[1], *L. Wang*[1] and S.R. Mishra[1] *1. Physics, The University of Memphis, Memphis, TN*

HX-07. Fe_2P and FeNi as permanent magnet candidates. *L. Ke*[1], K. Belashchenko[2] and V. Antropov[1] *1. Ames Laboratory USDOE, Ames, IA; 2. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*

HX-08. Synthesis and characterization of core-shell $CoFe_2/CoFe_2O_4$ nanosized. *M.M. Xavier*[1], A.L. Gurgel[2] and A.E. Martinelli[2] *1. Geofísica, UFRN, Natal, RN, Brazil; 2. Engenharia de Materiais, UFRN, Natal, RN, Brazil*

HX-09. Structures and magnetic properties of Co-Zr-Mo-B melt-spun ribbons. *T. Saito*[1], T. Akiyama[1] and M. Itakura[2] *1. Department of Mechanical Science and Engineering, Chiba Institute of Technology, Chiba, Japan; 2. Department of Applied Science for Electronics and Materials, Kyusyu University, Kasuga, Japan*

HX-10. Investigation of magnetic properties of MnBi/α-Fe nanocomposite permanent magnets by micro-magnetic simulation. *L. Yuqing*[1], Y. Ming[1], Z. Jianhua[1], Z. Dongtao[1], L. Weiqiang[1] and Z. Jiuxing[1] *1. Beijing University of Technology, Beijing, China*

HX-11. Anomalous Magnetic Domain Behavior in LTP-MnBi. *P. Nguyen*[1], S. Jin[1] and A. Berkowitz[1] *1. University of California, San Diego, La Jolla, CA*

HX-12. Effect of annealing on the magnetic properties of ball milled Ni50Mn36Fe2Sb12 Heusler system. *R. Sahoo*[1], K.G. Suresh[2], A.K. Nigam[3] and R.V. Ramanujan[4] *1. Physics, IIT Bombay, India, Mumbai, India; 2. Physics, IIT Bombay, Mumbai, India; 3. Physics, TIFR, Mumbai, India; 4. School of Material Science and Engineering, NTU, Singapore*

HX-13. Magnetic, electronic, and atomic structure of high-coercivity cobalt-carbide nanoparticles for permanent-magnet applications. *G.E. Sterbinsky*[1], K.J. Carroll[2], S. Meng[2], H. Yoon[2] and D.A. Arena[1] *1. Photon Sciences, Brookhaven National Laboratory, Upton, NY; 2. Department of Nanoengineering, University of California, San Diego, La Jolla, CA*

HX-14. First principles studies of La-Co substituted strontium ferrite $Sr_{0.5}La_{0.5}Fe_{11.5}Co_{0.5}O_{19}$ *J. Park*[1], Y. Hong[1], L. Liyanage[2], S. Kim[2], J. Lee[1], W. Lee[1] and N. Neveu[1] *1. Department of Electrical and Computer Engineering and MINT Center, The University of Alabama, Tuscaloosa, AL; 2. Department of Physics and Astronomy, Mississippi State University, Starkville, MS*

HX-15. Hf doping effect on hard magnetism of nanocrystalline Zr18-xHfxCo82 ribbons. *I.A. Al-Omari*[1,2], W.Y. Zhang[1,2], L. Yue[1,2], R. Skomski[1,2], J.E. Shield[2,3] and D.J. Sellmyer[1,2] *1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE; 3. Department of Mechanical and Materials Engineering, University of Nebraska-Lincoln, Lincoln, NE*

HX-16. A Stress Analysis Method in the Rotor Design of IPMSM Considering Radial Force. *W. Kim*[1] *1. Material & Device Research Center, Samsung Electronics, Gyeonggi-do, Republic of Korea*

FRIDAY AFTERNOON 2:30

RIVERSIDE CENTER

Session HY
MAGNETIC IMAGING III: NEW INSTRUMENTATION (POSTER SESSION)

Andreas Schmid, Co-Chair
Peter Czoschke, Co-Chair

HY-01. Magnetic domain structures associated with large magnetostriction in Mn3CuN. S. Mori[1], *T. Koyama*[1], K. Kurushima[2], K. Asano[3] and K. Takenaka[3] *1. Materials Science, Osaka Prefecture University, Sakai, Japan; 2. Toray Research Center, Shiga, Japan; 3. Nagoya University, Nagoya, Japan*

HY-02. Coupled Magnetic, Structural, Electronic, and Phase Stabilities of CoNi Nano-rods Realized by TEM and X-ray Magnetic Spectroscopy. *C. Yang*[1] and Y. Tseng[1] *1. Materials Science & Engineering, National Chiao-Tung University, Hsin-Chu, Taiwan*

HY-03. Imaging dichroic materials with multi-wavelength anomalous diffraction. *T. Wang*[1,2], R. Rick[2,4], D. Zhu[3], B. Wu[2,4], O. Hellwig[5], J. Stö hr[2,3] and A. Scherz[2] *1. Department of Materials Science and Engineering, Stanford University, Stanford, CA; 2. Stanford Institute for Materials and Energy Science, SLAC National Accelerator Laboratory, Menlo Park, CA; 3. Linac Coherent Light Source, SLAC National Accelerator Laboratory, Stanford, CA; 4. Department of Applied Physics, Stanford University, Stanford, CA; 5. San Jose Research Center, HGST, a Wester Digital Company, San Jose, CA*

HY-04. Layer Resolved Imaging of Ferromagnetic Domain Nucleation and Propagation in NiFe/Cu/Co Tri-Layers. *S. Zohar*[1], R. Rosenberg[1] and D. Keavney[1] *1. Argonne National Laboratory, Argonne, IL*

HY-05. Three-dimensional display with magnetic hologram composed of a large number of nano-scale magnetic pixels in magnetic thin film with perpendicular magnetization. *Y. Eto*[1], K. Nakamura[1], H. Takagi[1], P. Lim[1] and M. Inoue[1] *1. Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Toyohashi, Aichi, Japan*

HY-06. Switching Behavior of Sharply Pointed Nanomagnets for Logic Applications. *H.S. Dey*[1], G. Csaba[1], X.S. Hu[2], M.T. Niemier[2], G.H. Bernstein[1] and W. Porod[1] *1. Electrical Engineering, University of Notre Dame, Notre Dame, IN; 2. Computer Science and Engineering, University of Notre Dame, Notre Dame, IN*

HY-07. Ballistic Electron Emission Microscopy investigation on Co-HfO2 Granular Thin Films. S. Wang[1], J.K. Goh[2], C. Troadec[2], N. Thiyagarajah[1] and *V. Ng*[1] *1. Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National University Singapore, Singapore; 2. Institute of Materials and Research for Engineering, Singapore*

HY-08. Image Processing Tool to Characterize the Magnetic States of Nano-Magnetic Disks. *R. Panchumarthy*[1], D.K. Karunaratne[2], S. Sarkar[1] and S. Bhanja[2] *1. Computer Science and Engineering, University of South Florida, Tampa, FL; 2. Electrical Engineering, University of South Florida, Tampa, FL*

HY-10. In-situ observation of annealing effect on the irradiation induced magnetic domain structure by XMCD-PEEM. *A. Tohki*[1], K. Aikoh[1], R. Shinoda[1], T. Ohkochi[3], M. Kotsugi[3,4], T. Nakamura[3], T. Kinoshita[3,4], A. Iwase[1] and T. Matsui[2] *1. Department of Materials Science, Osaka Prefecture University, Sakai, Japan; 2. Research Organization for the 21st Century, Osaka Prefecture University, Sakai, Japan; 3. Japan Synchroton Radiation Research Institution, Sayo, Japan; 4. CREST-JST, Kawaguchi, Japan*

HY-11. Magnetization processes in two-dimensional dot arrays of $Ni_{80}Fe_{20}$ films fabricated by Focused Ion Beam lithography. *P. Tiberto*[1], F. Celegato[1], G. Barrera[1], E. Enrico[1], M. Carpentieri[2] and G. Finocchio[3] *1. INRIM, Torino, Italy; 2. Department of Elettrotecnica ed Elettronica, Politecnico di Bari, Bari, Italy; 3. Department of Fisica della Materia e Ingegneria Elettronica, Universita di Messina, Messina, Italy*

HY-12. Study on Domain Structure of the FeCoZr Films from MFM Image by Calculating the Surface Stray Field. G. Yin[1], Y. Lou[1], F. Zheng[1], Z. Li[1], D. Wu[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. Key Laboratory for Advanced Materials, Ministry of Education, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, Beijing, China*

HY-13. Ultrafast and element-selective probe of magnetization dynamics on a tabletop. *P. Grychtol*[1], E. Turgut[1], C. La-O-Vorakiat[1], J. Shaw[4], S. Mathias[2], R. Adam[3], D. Rudolf[3], H. Nembach[4], T. Silva[4], M. Aeschlimann[4], C.M. Schneider[3], H.C. Kapteyn[1] and M.M. Murnane[1] *1. Department of Physics and JILA, University of Colorado, Boulder, CO; 2. Department of Physics, University of Kaiserslautern and Research Center OPTIMAS, Kaiserslautern, Germany; 3. Peter Grünberg Institut PGI-6 & JARA-FIT, Research Center Jülich, Jülich, Germany; 4. Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO*

HY-14. A soft x-ray beamline for sub-ps time-resolved x-ray magnetic circular dichroism. *D.J. Keavney*[1] and R. Reininger[1] *1. Advanced Photon Source, Argonne National Lab, Argonne, IL*

HY-15. Spectrometric detection of magneto-optical hysteresis loop at single magnetic field sweep. *S. Saito*[1], T. Sasaki[1], G. Du[1] and M. Takahashi[2] *1. Department of Electronic Engineering, Tohoku Univ., Sendai, Japan; 2. New Industry Creation Hatchery Center, Tohoku Univ., Sendai, Japan*

HY-16. Versatile SQUID Susceptometer with Multiple Measurement Modes. *D. Hurt*[1], S. Li[1] and A. Amann[1] *1. Quantum Design, San Diego, CA*

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