# General Information

## SCOPE OF THE CONFERENCE

The 53rd Magnetism and Magnetic Materials Conference is sponsored jointly by the Physics Conferences Inc. and the Magnetics Society of the IEEE, in cooperation with The American Physical Society. Members of the international scientific and engineering communities interested in recent developments in fundamental and applied magnetism are invited to attend the Conference and contribute to its technical sessions. Sessions will include invited and contributed papers, oral and poster presentations and invited symposia. This Conference provides an outstanding opportunity for participants to meet their colleagues and discuss new and improved as well as controversial developments.

## AUSTIN, TEXAS

Known as the Live Music Capital of the World, Austin is also the state capital of Texas and is the gateway to the Texas Hill Country with its rolling hills and sparkling waterways. The people of Austin pride themselves on being far from ordinary and, in fact, they celebrate being "weird." Austin is a hot spot for creativity and embraces its community of musicians, artists, entrepreneurs and progressive thinkers. Each night during the summer 1.5 million bats take flight from underneath the Ann Richards Congress Avenue Bridge. For more travel and visitor information about Austin, please visit the website: www.austintexas.org.

## WEATHER

In November, Austin has an average high temperature of 70°F and an average low of 45°F. Keep in mind that the Conference session rooms may be air-conditioned and will most likely be chilly, so please dress appropriately.

## TRANSPORTATION

The Austin-Bergstrom International Airport is located 7 miles (or 15–20 minutes) from the Hilton Austin.

There are several methods of ground transportation that you can choose to take you to and from the airport and Hilton Austin. The rates listed below are based on a typical minimum charge and are not guaranteed. Please contact the service provider for exact fares.

**Shared Van Service:**

• SuperShuttle: Austin Direct Phone #: (512) 258-3826
National Phone #: (800) 258-3826
$13.00 USD per person per trip

**Ground Transportation:**

• Yellow Cab: (512) 452-9999

• Austin Cab: (512) 478-2222

• Lone Star: (512) 836-4900
$25.00 USD minimum charge

## HOTEL

The new Hilton Austin is a stunning Hill Country design that utilizes local native woods and stone and features an eclectic collection of Texas artwork. The location is convenient to the Texas State Capitol and Historic Sixth Street, dining and entertainment venues, galleries, and museums.

These special hotel room rates have been secured for MMM Conference attendees:

$144.00 USD - Single or Double
$164.00 USD - Triple
$184.00 USD - Quad

All rates are subject to additional state and local taxes. **Hotel room reservations must be made and confirmed prior to the cutoff date of October 13th.** Rooms may be offered for three days prior to and following the Conference at these lower rates, based on availability when you make your hotel room reservations. **In addition, should you need to check out earlier than you expected, there will be an early checkout fee imposed by the hotel.** The hotel will reconfirm your checkout date with you when you check in at the beginning of the conference.

**Please note: Based upon previous experience with MMM Conferences, the hotel's MMM room block may sell out prior to October 13th. Therefore, you should make your room reservations several weeks before the cut-off date.**

Please visit www.magnetism.org to obtain the link for making your hotel reservation online or to download and print the Hotel Reservation Form.

**HELP KEEP YOUR CONFERENCE FEES DOWN:** Costs for the Conference meeting space are minimized by meeting pre-established targets for room occupancy at the Conference hotel. Please support the Steering Committee and Advisory Committee in their attempt to keep your Conference registration fees as low as possible by booking your room at the Hilton Austin for the 2008 MMM Conference before the cutoff date of October 13th. **Your hotel room reservation must be received no later than October 13th in order for you to receive the special MMM Conference rates.**

## CONFERENCE REGISTRATION

The Advance Registration Form and complete instructions for registering can be found on the MMM Conference homepage at: *www.magnetism.org*. Advance Registration via the web is the most convenient way to register and is highly recommended. This year there are two registration rates: Advance and Onsite. **"Advance Registration" at the lower fees will be available until October 13th. After October 13th, the higher "Onsite Registration" fees will be in effect, even if paid in advance of arriving onsite.**

**Registration Fees:**

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| **Advance Registration Fees** | |
| Full Registrant | $470.00 (US Dollars) |
| Student/Unemployed Retiree | $225.00 (US Dollars) |
| **Onsite Registration Fees** | |
| Full Registrant | $570.00 (US Dollars) |
| Student/Unemployed Retiree | $275.00 (US Dollars) |

**NOTE: The 2008 MMM Advance Program will be available only on the website in advance of the Conference**, and in printed form **only** onsite. Therefore, the Advance Program will NOT be mailed to anyone in advance of the Conference. In addition, this year the **Abstracts Book will be distributed onsite only as a CD.** Additional copies of the Abstracts CD may also be purchased onsite, but NOT in advance of the Conference.



Full Registration includes the Proceedings on a CD-ROM. For an **additional** $25.00 USD the Full Registrant can receive the Print version instead of the CD. The cost to receive **both the CD and Print** versions is $50.00 USD over the standard Full Registration fee. **Students and Unemployed Retirees who register at the lower fees will NOT receive a copy of the Proceedings.**

**Registration Hours:**

The Conference Registration Desks will be located in the Foyer of the Austin Grand Ballroom on 6th Floor of the hotel. The hours of operation will be:

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| Monday, November 10th | 4:00 PM – 8:00 PM |
| Tuesday, November 11th | 7:00 AM – 5:00 PM |
| Wednesday, November 12th | 8:30 AM – 2:00 PM |
| Thursday, November 13th | 8:30 AM – 2:00 PM |
| Friday, November 14th | 8:30 AM – 12:00 Noon |

**Registration Cancellation Policy:** Cancellations of advance registrations must be submitted in writing and received at YesEvents no later than Monday, October 13, 2008. Refunds of the original payment, less a $75 service fee, will be made 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.**

**Reminders:**

- All attendees will be required to wear MMM Conference name badges to enter the Technical Sessions and Exhibits.
- The use of cameras, videotaping and/or recording devices in the technical sessions (including Poster Sessions) is strictly prohibited.

## VISA REQUIREMENTS FOR ENTRY INTO THE USA:

Participants requiring visas must initiate the application process many months in advance of their departure date. The US has updated its visa policies to increase security, so it may take you longer to apply for and receive your visa than it used to. For details that apply specifically to your country and to schedule an interview appointment, pay fees, etc. please go to your nearest US Consulate or Embassy. **Review your visa status now** to determine if you need a US visa or visa renewal.

To receive a personal letter of invitation to attend the Conference, contact the 2008 MMM Conference by Email at: *2008MMM@courtesyassoc.com*. **Be sure to provide your complete mailing address so that a signed letter of invitation can then be mailed to you via standard mail service. NOTE:** The Conference CANNOT contact or intervene with any U.S. Embassy or Consulate office abroad on your behalf.

## CONFERENCE SYMPOSIA

The conference program includes seven symposia addressing topics at the forefront of research in magnetism and its applications:

- Frontiers in Biomagnetism
- Spin Transport and Single Spin Manipulation
- New Developments in Magnetic Microscopy
- Discrete Track and Bit Patterned Media
- Reconstruction and Emergence at Interfaces of Complex Oxides
- Recent Developments in Spin Torque Transfer
- Microwave Assisted Magnetization Reversal

## MONDAY EVENING SESSION

On Monday evening November 10, 2008, before the start of the conference, there will be a special session on "The New Fe-As Based High-Tc Superconductors and Related Materials." The session will include invited presentations by Professor Masahiro Hirano of the Tokyo Institute of Technology and Professor Xianhui Chen of the University of Science and Technology of China. There will also be an opportunity for short presentations by others of new results on this rapidly developing subject as well as an open discussion. Further information will be posted on the Conference website in September.

## TUESDAY EVENING OPENING RECEPTION

On Tuesday, the first full day of the 2008 MMM Conference, there will be an Opening Reception held from 5:30 PM–7:00 PM in the Austin Grand Ballroom and Foyer on the 6th Floor of the hotel. The IEEE Magnetics Society has been very generous in helping to fund this event.

## WEDNESDAY EVENING OPEN FORUM ON MICROMAGNETIC MODELING

Micromagnetic numerical simulation is an important tool for understanding the response of magnetic systems to external stimuli. There is broad interest from the academic community, magnetic storage and sensors industry, and government research laboratories to improve the accuracy of solutions and predictive power of such simulations. While significant progress has been made during the past two decades, the need for predictive models has also intensified. Industrial applications are continuing to employ more complex engineered materials and device structures. Academic studies of magnetics continue to push the limits of large signal excitations and fast dynamics.

The 2008 MMM Conference Program Committee has scheduled an Open Forum on Micromagnetic Modeling on Wednesday evening from 8:00-10:00 PM to further the pace of development in simulation algorithms and alignment with needs of the user community. The session will employ a panel discussion format that will open with short presentations and remarks by leading authorities in this discipline, followed by interactive "Q & A" discussions. The goal is to identify trends in simulation algorithms that can lead to more powerful tools as well as trends in the user community needs. In addition to refreshments prior to the Forum, all Conference participants will receive at the Registration Desks a CD containing copies of the introductory presentations and a collection of seminal papers on micromagnetic simulations to provide a background for the discussion. The 2008 MMM Conference is grateful to the IEEE Magnetics Society for its support of this new session, the handout, and the dessert reception beforehand.

## WOMEN IN MAGNETISM NETWORKING EVENT

There will be a Women's Networking Reception with beverages and light snacks on Wednesday beginning at 5:30 PM in Meeting Room 410. At the reception there will be the opportunity to form dinner groups so that women working in magnetism can get to know one another better. All graduate students, researchers, and retirees are encouraged to attend. For questions, contact Patricia Sparks at Harvey Mudd College (*sparks@hmc.edu*). The 2008 MMM Conference is especially grateful to the IEEE Magnetics Society for their sponsorship of this special event.



## BIERSTUBE AND COFFEE

Complimentary coffee service will be available on Tuesday through Friday mornings in the Austin Grand Ballroom and Foyer from 7:00 AM–9:30 AM. On Wednesday and Thursday evenings, the Bierstube will be held from 5:00–6:00 PM in the Austin Grand Ballroom. These two Bierstubes will again be sponsored through the generosity of Williams Advanced Materials, who will have a booth in the exhibits area as well.

## PUBLICATIONS ROOM

The Publications Room, where authors can check the status of their manuscripts, will be located in Meeting Room 404 (adjacent to the Governor's Ballroom) on the 4th Floor of the hotel. The status of all papers can be found here and authors should check periodically on their individual papers if they have questions. This room will be open as follows:

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| Tuesday – Thursday | 9:00 AM – 5:00 PM |
| Friday | 9:00 AM – 12:00 Noon |

## SPEAKER PRACTICE ROOM

**Speakers are reminded that the Conference is planning an all-electronic presentation format. Speakers may use Meeting Room 415 (behind the Governor's Ballroom) on the 4th floor of the hotel** to practice their presentations. Audiovisual equipment (LCD projector and screen) will be available for authors to use from Monday late afternoon until Friday at 1:00 PM. Speakers are urged to use this facility to practice their presentation, either alone or with colleagues.

## LCD PROJECTORS

This year **only LCD projectors** will be available for oral presentations. Authors are expected to bring their presentation on their own laptop computer, and 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 adaptor to your computer. Macintosh users must make sure that "mirroring" is activated.**

There will also be a switchbox so that a speaker can set up his/her laptop during the question period of the previous speaker. **Each speaker will be solely responsible for promptly connecting to the projector.** The presentation timer will begin immediately after the introduction by the Session Chair, and there will not be time to reboot your computer. You are therefore STRONGLY ENCOURAGED to test your laptop connections and screen resolution settings with the projectors in the Speaker Practice Room or in the assigned room for your talk before start of the session. **There will be no technical support provided. In case of laptop failure, it would be prudent to bring a copy of your presentation on flash memory.**

## SESSION CHAIRS

Session Chairs are expected to attend the Session Chair's Breakfast on the morning of the session which they are chairing. If you are chairing a session, please bring your laptop computer to the meeting or arrange to borrow one during your session. Further details will be emailed to Session Chairs a few weeks before the meeting.

## POSTER SESSIONS

The hours of the Poster Sessions are 8:00 AM–12:00 Noon and 1:00 PM–5:00 PM. Authors should set up their materials at least half-an-hour before session start times. They must be by their posters from 8:00 AM–9:00 AM and 11:00 AM–12:00 Noon for the morning sessions, and from 1:00 PM–2:00 PM and 4:00 PM– 5:00 PM for the afternoon sessions. Guidelines for preparation of Posters are found at: *http://www.magnetism.org/poster.pdf*. **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 Coordinators will discard materials that are not removed, in order to prepare for the next session. REMEMBER,** there is **only one hour between the morning and afternoon poster sessions** and the Conference Staff will remove and destroy your presentation if you do not safely remove it yourself and on time.

## EXHIBITS

An exhibition of related services, equipment, materials, and software will be held as a part of the Conference. The exhibits will be located adjacent to the poster sessions and internet lounge in the Austin Grand Ballroom. Individuals and organizations who are interested in purchasing booth space should contact Lauren Westcott, Exhibits Coordinator at Courtesy Associate, by e-mail at *2008MMM@courtesyassoc.com*; or by Fax at 202-331-0111. The Exhibitor Prospectus and Application Form are now available on the MMM website at *www.magnetism.org*.

## BEST STUDENT PRESENTATION AWARD

This year, there is a competition for the best student presentation at the 53rd MMM Conference to recognize and encourage excellence in graduate studies in the field of magnetism. This award is available to any full time graduate student who is expected to graduate within one year of the Conference. The student's area of research may either be theoretical or experimental in any of the general technical and scientific areas normally presented as part of the Conference. This award consists of a one-year fellowship of $1000 for the award winner and a one-year fellowship of $250 to each of the remaining finalists. The students listed below are the finalists for the 53rd MMM Conference:

**AF-06**
Sara Jean Gamble, "Modification of the Electronic Structure of a Ferromagnet in Extreme Terahertz Fields"

**BE-05**
Lihui Zhou, "Oscillatory magnetic exchange coupling at the atomic level: a direct real-space study by a sub-Kelvin spin-polarized STM"

**HE-14**
Joanna S. Bettinger, "Room Temperature Photo-Induced Magnetization of Spinel (Mn,Zn,Fe)3O4 Thin Films"

**AB-08**
Ioan Mihai Miron, "The domain wall spin torque-meter"

**GF-04**
Chunsheng Liu, "Calculation of intrinsic damping in half metals"

**GB-09**
Li Gao, "Spin transfer induced microwave emission in MgO based magnetic tunnel junctions"

Their extended abstracts will be posted during the conference.



For the 52nd MMM Conference in Tampa, the best student presentation award went to Matthew Vannette; the other finalists were J. D. Burton (CB-03), Jiexuan He (CE-09), Ajit Patra (CH-11) and Xiaohang Zhang (FG-02).

**Best 52nd MMM Conference Best Student Presentation Winner**
**Matthew Vannette**
(Iowa State University)
for his presentation:
**"Distinguishing local moment vs. itinerant ferromagnets: dynamic magnetic susceptibility"**

***CONGRATULATIONS!***

## BEST POSTER PRESENTATION

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

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

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

This is the list of the winners from the Tampa Meeting:

**Best 52nd MMM Conference Poster Presentation Winners**

**AR-18**
**Magnetization reversal process and single domain stability of Co/Pt multilayer dot**
*N. Kikuchi[1]; T. Kato[1]; S. Okamoto[1]; O. Kitakami[1]; N. Tezuka[2]; S. Sugimoto[2]*
1. IMRAM Tohoku University, Sendai, Japan.
2. Department of Materials Science, Tohoku University, Sendai, Japan.

**BU-01**
**Crystallization and Thermal-Magnetic Treatment of Co-Rich HiTPerm-type Alloys with Ni and Mn Additions**
*P. R. Ohodnicki[1]; S. Park[1]; D. E. Laughlin[1]; M. E. McHenry[1]; V. Keylin[2]; M. A. Willard[3]*
1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, USA.
2. Magnetics, Division of Spang and Company, Pittsburgh, PA, USA.
3. Code 6355, Naval Research Labs, Washington, DC, USA.

**CP-12**

**Relation between non-adiabaticity and damping in Permalloy studied by current-induced spin structure transformations**

*T. A. Moore[1]; L. Heyne[1]; D. Backes[1, 2]; S. Krzyk[1]; M. Kläui[1]; U. Rüdiger[1]; L. J. Heyderman[2]; A. F. Rodriguez[3]; F. Nolting[3]; T. O. Mentes[4]; M. Á. Niño[4]; A. Locatelli[4]; K. Kirsch[5]; R. Mattheis[5]*

1. Fachbereich Physik, Universität Konstanz, Konstanz, Germany.
2. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, Villigen, Switzerland.
3. Swiss Light Source, Paul Scherrer Institut, Villigen, Switzerland.
4. Sincrotrone Trieste, Trieste, Italy.
5. Institute of Photonic Technology, Jena, Germany.

**DQ-04**

**Deposition of hexagonal ferrites by the ATLAD technique - gateway to new and exotic ferrite materials**

*A. L. Geiler[1]; S. D. Yoon[1]; Y. Chen[1]; C. N. Chinnasamy[1]; Z. Chen[1]; V. G. Harris[1]; C. Vittoria[1]*

1. Center for Microwave Magnetic Materials and Integrated Circuits, Department of Electrical and Computer Engineering, Northeastern University, Boston, MA, USA.

**EP-05**

**Micro Total Analysis System for hematopoietic stem/progenitor cell separation and counting**

*J. F. Loureiro[1, 2]; M. Mercier[1, 2]; S. Cardoso[1, 2]; P. P. Freitas[1, 2]; C. L. Silva[3]; J. M. Cabral[3]*

1. INESC-Microsystems and Nanotechnologies, Lisbon, Portugal.
2. Instituto Superior Técnico (IST), Lisbon, Portugal.
3. CEBQ - IST, Lisbon, Portugal.

**FP-13**

**Examination of the optimum arrangement of magnetic sensors for nondestructive crack system in distribution line.**

*G. Owada[1]; T. Nonaka[2]; F. Sato[1]; H. Matsuki[1]; T. Sato[3]*

1. Graduate School of Engineering, Tohoku University, Sendai, Japan.
2. Hachinohe National College of Technology, Sendai, Japan.
3. NEC TOKIN Corporation, Sendai, Japan.

**GR-09**

**Magnetic transmission X-ray microscopy of field-driven magnetization processes in Permalloy structures**

*D. A. Allwood[1]; M. T. Bryan[1]; P. W. Fry[2]; P. Fischer[3]*

1. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom.
2. Centre for Nanoscience and Technology, University of Sheffield, Sheffield, United Kingdom.
3. LBNL/CXRO, Berkeley, CA, USA.

**HR-03**

**Magnetoelectric Properties of the High Curie Temperature Relaxor Composite Sr1.9Ca0.1NaNb5O15-CoFe2O4**

*W. Liu[1, 2]; C. Mak[1]; K. Wong[1]; C. Lo[1]; S. Or[1]; W. Zhou[2]; A. Hauser[2]; F. Yang[2]; R. Sooryakumar[2]*

1. Department of applied physics, The Hong Kong Polytechnic University, Hong Kong, China.
2. Department of physics, The Ohio State University , Columbus, OH, USA.



## FUTURE CONFERENCES

**INTERMAG Conference**
May 4–8, 2009, Sacramento, California

**2010 (11th) Joint MMM/Intermag Conference**
January 17–21, 2010, Washington, DC

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

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

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

## ADDITIONAL INFORMATION

If you would like to receive more information about the 53rd MMM Conference, to be placed on the Conference Mailing List, or to update your mailing address, please contact Janis Bennett at: *magnet@aip.org*; Telephone: 516-576-2403; Fax: 516-576-2223. The latest information on the 2008 MMM Conference can be found on the Web at the Conference homepage at: *http://www.magnetism.org*.

## CONFERENCE ORGANIZATION

**Steering Committee 53rd MMM Conference**

Chairman . . . . . Daniel Reich
Chairman Elect . . . . . Kevin O'Grady
Past Chairman . . . . . Dieter Weller
Treasurer . . . . . Julie Borchers
Program Co-Chairmen. . . . . Paul Crowell, Ned Tabat
Members . . . . . Thomas Ambrose, Christian Back, William Bailey, Zvonimir Bandic, Katayun Barmak, Larry Bennett, Kristen Buchanan, Zbigniew Celinski, Jeff Childress, Robert Compton, Thomas Crawford, Pallavi Dhagat, Viatcheslav Dobrovitski, Peter Eames, Harry Edelman, Claudia Felser, Kai-Zhong Gao, Olle Heinonen, Axel Hoffmann, David Howe, Jason Jansecky, Ron Jansen, Berend Jonker, David Keavney, Sang-Koog Kim, Ilya Krivorotov, Chris Leighton, Bin Lu, Sadamichi Maekawa, Michael McHenry, Robert McMichael, Jagadeesh Moodera, Oleg Mryasov, Amanda Petford-Long, Prem Piramanayagam, Justin Shaw, Jing Shi, John Snyder, Hariharan Srikanth, Mark Stiles, Jonathan Sun, Kiyonori Suzuki, Kenichi Takano, Jan-Ulrich Thiele, Tom Thompson, Mark Tondra, Maxim Tsoi, Evgeny Tsymbal, Shoogo Ueno, John Unguris, Jan Van Ek, Matt Willard, and Shufeng Zhang.

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| Publications Chairman | Michael McHenry |
| Publications Editors | Oleg Mryasov, Justin Shaw, Hariharan Srikanth, Kiyonori Suzuki, Thomas Thomson, Matthew A. Willard |
| Exhibits Chairman | Bruce Terris |
| Publicity | Yumi Ijiri |
| Student Support Coordinator | James C. Eckert |
| Awards Coordinator | Kaizhong Gao |
| IEEE Representative | Douglas Lavers |
| PCI/AIP Representative | Mark Cassar |
| Editor, J. Appl. Phys. | James Viccaro |
| Conference Management | Diane Melton, Ann Shafran, Lauren Westcott; Courtesy Associates |
| PCI/AIP Coordinators | Janis Bennett, Linda Boniello, Christine Urso |

**Advisory Committee 53rd MMM Conference**

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| Chairman | D. Weller |
| Vice Chair | D. Reich |
| Chair Elect | K. O'Grady |
| Executive Secretary/Treasurer | J. Borchers |
| Recording Secretary | D. Melton |
| Term Expires **December 2008:** | E. Cardelli, C-L. Chien, B. Hillebrands, Y. Idzerda, Y. Ijiri, R. Indeck, M. McHenry, H. Muraoka, K. O'Grady, P. Schiffer |
| Term Expires **February 2010:** | P. Crowell, L. Folks, B. Gurney, V Harris, C. Leighton, K. Liu, S. Majetich, C. Patton, T. Suzuki, R. Victora |
| Term Expires **December 2010:** | P. Andrei, J. Borchers, E. Fullerton, R. McMichael, D. Reich, J. Rhyne, M. Stiles, N. Tabat, B. Terris, J-U. Thiele |

**Sponsoring Society Representatives**

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| Physics Conferences Inc. (AIP) | M. Cassar |
| IEEE Magnetics Society | D. Lavers |



## CONFERENCE PROGRAM

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| Mon Eve. 7:00 p.m. | XA | Special session on the new Fe-As based high-Tc superconductors | Salon G |
| Tuesday 9:00 a.m. | AA | Symposium on new horizons in biomagnetism | Salon C |
| | AB | Domain wall motion in nanowires | Salon G |
| | AC | Perpendicular media I | Salon A |
| | AD | Magnetic tunnel junctions I | Salon B |
| | AE | Semiconductor spin injection | Salon D |
| | AF | Ultrafast processes and switching | Salon E |
| | AG | Soft magnetic crystalline alloys | 400/402 |
| | AH | Superconductivity I | 410 |
| 8:00 a.m. | AP | CMR oxides I: Bulk and nanoparticles | Austin Ballroom |
| | AQ | Rare-earth transition metal borides I | Austin Ballroom |
| | AR | Spin torque effects in nanostructures | Austin Ballroom |
| | AS | Spin torque and other excitations in magnetic nanostructures | Austin Ballroom |
| | AT | CMR oxides II: Films and heterostructures | Austin Ballroom |
| | AU | Magnetic microscopy and imaging I | Austin Ballroom |
| | AV | Ferrite, garnets I | Austin Ballroom |
| | AW | New applications | Austin Ballroom |
| Tuesday 2:00 p.m. | BA | Symposium on spin transport and single spin manipulation | Salon C |
| | BB | Domain wall motion | Salon G |
| | BC | Recording heads I | Salon A |
| | BD | Anisotropy in multilayers and surfaces | Salon B |
| | BE | Itinerant magnetism and electronic structure | Salon D |
| | BF | Nonlinear dynamics | Salon E |
| | BG | Magnetic microscopy and imaging II | 400/402 |
| | BH | Low dimensional systems and critical phenomena | 410 |
| 1:00 p.m. | BP | Multiferroics I: Films and nanostructures | Austin Ballroom |
| | BQ | Intermetallic and other hard magnetic materials I | Austin Ballroom |
| | BR | Magnetic tunnel junctions: MgO based | Austin Ballroom |
| | BS | Biomagnetism | Austin Ballroom |
| | BT | Intermetallics and other hard magnetic materials II | Austin Ballroom |
| | BU | Magnetic materials for therapy applications | Austin Ballroom |
| | BV | Amorphous and nanostructured materials I | Austin Ballroom |
| | BW | Multiferroics II: BiFeO3 | Austin Ballroom |

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| Tues. Eve. 5:30 p.m. | | Opening Reception | Austin Ballroom |
| Wednesday 9:00 a.m. | CA | Symposium on new developments in magnetic microscopy | Salon C |
| | CB | Spin transfer torque: Ferromagnets and antiferromagnets | Salon G |
| | CC | High anisotropy perpendicular media I | Salon A |
| | CD | Magnetic tunnel junctions II | Salon B |
| | CE | Hybrid semiconductor/Ferromagnet heterostructures | Salon D |
| | CF | Complex magnetic oxides | Salon E |
| | CG | Applications of magnetic nanoparticles to biology | 400/402 |
| | CH | Magnetoresistance, magnetoimpedance, and Hall effect | 410 |
| 8:00 a.m. | CP | Domain walls and vortices | Austin Ballroom |
| | CQ | CMR oxides III: Transport | Austin Ballroom |
| | CR | Multiferroics III: Bulk oxides | Austin Ballroom |
| | CS | 4f-, 5f- and strongly correlated systems I | Austin Ballroom |
| | CT | MRAM and magnetic tunnel junctions | Austin Ballroom |
| | CU | Magnetic sensors I (not for magnetic recording) | Austin Ballroom |
| | CV | Microwave and millimeter wave devices | Austin Ballroom |
| | CW | Recording systems and patterned media I | Austin Ballroom |
| | CX | Magneto-caloric materials I | Austin Ballroom |
| Wednesday 2:00 p.m | DA | Symposium on discrete track and bit patterned media | Salon C |
| | DB | Spin-torque-induced switching in nanomagnets | Salon G |
| | DC | MRAM | Salon A |
| | DD | Halfmetallic Heusler compounds | Salon B |
| | DE | Magnetic semiconductors | Salon D |
| | DF | Vortex dynamics | Salon E |
| | DG | Multiferroics | 400/402 |
| | DH | Exchange bias I | 410 |
| 1:00 p.m. | DP | Fundamental properties | Austin Ballroom |
| | DQ | Magnetic nanoparticles for biological applications | Austin Ballroom |
| | DR | Magnetic fluids and separation | Austin Ballroom |
| | DS | Ferrites, garnets II | Austin Ballroom |
| | DT | Recording heads II | Austin Ballroom |
| | DU | Electronic structure and itinerant magnetism | Austin Ballroom |



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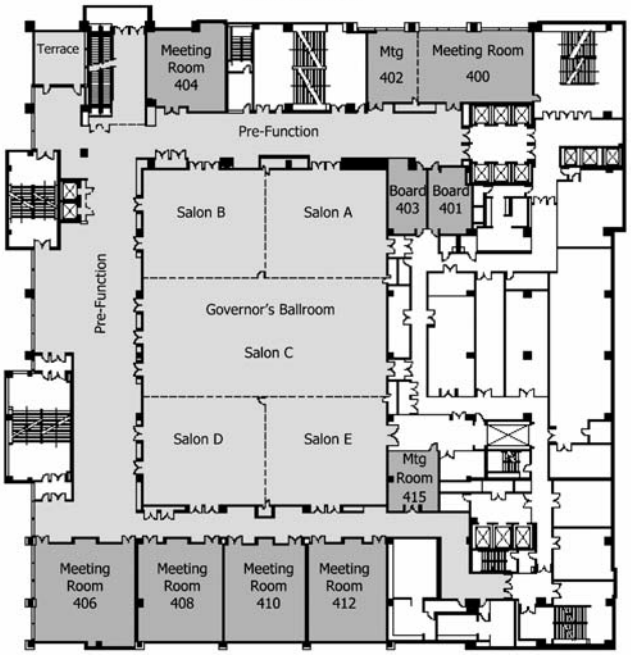
| | DV | Instrumentation and measurement techniques | Austin Ballroom |
| | DW | Numerical methods and hysteresis modeling | Austin Ballroom |
| Wed. Eve. 8:00 p.m. | XB | Open forum on micromagnetic modeling | Salon G |
| Thursday 9:00 a.m. | EA | Symposium on reconstruction and emergence at interfaces of complex oxides | Salon C |
| | EB | Spin transfer torque: Theory and experiment | Salon G |
| | EC | Alternative magnetic recording | Salon A |
| | ED | Magnetic tunnel junctions III | Salon B |
| | EE | Spin injection in metals | Salon D |
| | EF | Novel magnetic nanoparticles | Salon E |
| | EG | Patterned films I | 400/402 |
| | EH | Numerical methods and magnetic simulations | 410 |
| 8:00 a.m. | EP | 4f, 5f- and strongly correlated systems II | Austin Ballroom |
| | EQ | Magnetic semiconductors: Group IV and III-V | Austin Ballroom |
| | ER | Superconductivity II | Austin Ballroom |
| | ES | Magneto-optic and new magnetic materials | Austin Ballroom |
| | ET | Perpendicular media II | Austin Ballroom |
| | EU | Dynamics and damping | Austin Ballroom |
| | EV | Multilayers and superlattices | Austin Ballroom |
| | EW | Semiconductor spin injection and transport | Austin Ballroom |
| Thursday 2:00 p.m. | FA | Symposium on recent developments in spin torque transfer | Salon C |
| | FB | Magnetic sensors II (not for magnetic recording) | Salon G |
| | FC | Recording systems and patterned media II | Salon A |
| | FD | Half-metallic ferromagnetism | Salon B |
| | FE | Domains and soft magnetic materials | Salon D |
| | FF | Spin waves and resonances | Salon E |
| | FG | Multilayers, interfaces, and surfaces | 400/402 |
| | FH | Rare-earth transition metal borides II | 410 |
| 1:00 p.m. | FP | Magnetic tunnel junctions and spin injection | Austin Ballroom |
| | FQ | Thin film growth and characterization | Austin Ballroom |
| | FR | Nanoparticles and nanostructures | Austin Ballroom |
| | FS | Magnetic semiconductors: Oxides | Austin Ballroom |

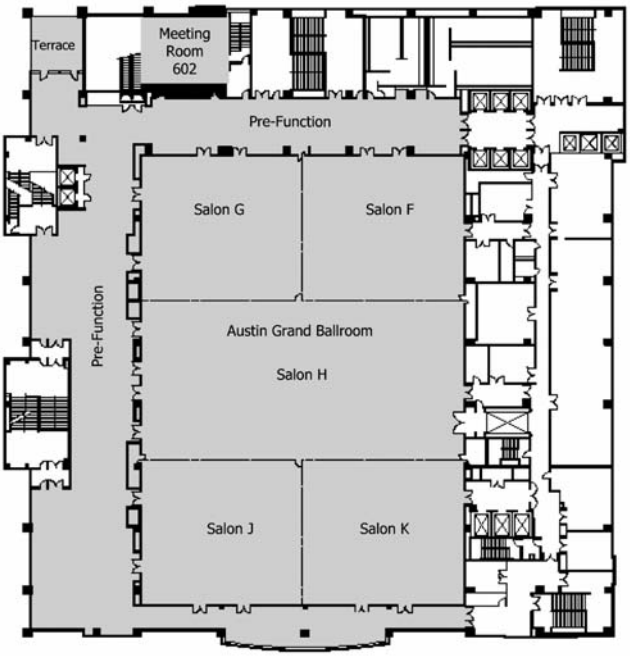
| | | | |
|---|---|---|---|
| | FT | Patterned films II | Austin Ballroom |
| | FU | Exchange bias II | Austin Ballroom |
| Friday 9:00 a.m. | GA | Symposium on microwave-assisted magnetization reversal | Salon C |
| | GB | Spin-torque oscillators | Salon G |
| | GC | Nanostructured permanent magnet materials | Salon A |
| | GD | Magnetic nanostructures: Measurement, fabrication, and modeling | Salon B |
| | GE | Molecular magnets | Salon D |
| | GF | Damping mechanisms and measurement | Salon E |
| | GG | Galfenol magnetostrictive alloys | 400/402 |
| | GH | Spin glasses and spin dynamics in correlated systems | 410 |
| 8:00 a.m. | GP | Heads-media interface and tribology | Austin Ballroom |
| | GQ | High anisotropy perpendicular recording media II | Austin Ballroom |
| | GR | Motors and actuators I | Austin Ballroom |
| | GS | Micromagnetic simulations and methods | Austin Ballroom |
| | GT | Magnetoresistance, magnetoimpedance, Hall effect, and half metals | Austin Ballroom |
| | GU | Magneto-elastic materials | Austin Ballroom |
| | GV | Power, shielding, and levitation | Austin Ballroom |
| Friday 2:00 p.m. | HA | Intermetallics and other hardmetallic materials III | Salon A |
| | HB | Amorphous and nanocrystalline materials II | Salon B |
| | HC | Magneto-caloric materials II | Salon D |
| | HD | 4f-, 5f- and strongly correlated systems III | Salon E |
| | HE | Ferrites, garnets and microwave materials | 400/402 |
| | HF | Motor and actuators II | 410 |



HILTON AUSTIN CONVENTION CENTER HOTEL
FOURTH FLOOR




HILTON AUSTIN CONVENTION CENTER HOTEL
SIXTH FLOOR



MONDAY EVENING 7:00 SALON G

## Session XA
## SPECIAL SESSION ON THE NEW Fe-As BASED HIGH-Tc SUPERCONDUCTORS AND RELATED MATERIALS

Chia-Ling Chien, Chair

**7:00**

**XA-01. Discovery and Progress in the New High Tc Superconductors LnTMAsO.** *M. Hirano[1] 1. Tokyo Inst. of Technology, Tokyo, Japan*

**7:40**

**XA-02. The Phase Diagram of Fe-based High-Tc Superconductors.** *X. Chen[1] 1. University of Science and Technology of China, Beijing, China*

TUESDAY MORNING 9:00 SALON C

## Session AA
## SYMPOSIUM ON NEW HORIZONS IN BIOMAGNETISM

Shoogo Ueno, Chair

**9:00**

**AA-01. Biomagnetism In Nanotechnology MRI Imaging. *(Invited)*** *F.S. Prato[1]*, C. Lamare[2], S. Dhanvantari[1], D.E. Goldhawk[1] and R.T. Thompson[1] *1. Diagnostic Imaging, Lawson Imaging, London, ON, Canada; 2. Department of Physics, University of Waterloo, Waterloo, ON, Canada*

**9:36**

**AA-02. Micro-engineered local field control for high-sensitivity multispectral MRI. *(Invited)*** *G. Zabow[1,2]*, S. Dodd[2], J. Moreland[1] and A. Koretsky[2] *1. National Institute of Standards and Tech., Boulder, CO; 2. National Institutes of Health, Bethesda, MD*

**10:12**

**AA-03. High Resolution SQUID microscopy for imaging biomagnetic fields and magnetic particle detection. *(Invited)*** *F.J. Baudenbacher[1] 1. BME and Physics, Vanderbilt University, Nashville, TN*

**10:48**

**AA-04. Magnetic Micro- and Nanoparticles in Biology and Medicine. *(Invited)*** *J. Dobson[1,2] 1. Institute for Science and Technology in Medicine, Keele University, Stoke-on-Trent, United Kingdom; 2. Department of Materials Science and Engineering, University of Florida, Gainesville, FL*



**11:24**

**AA-05. Magnetic positioning of nerve cells. *(Invited)*** *D.A. Allwood[1]*, M.T. Bryan[2], P.W. Fry[3], P. Fischer[4], T. Schrefl[1] and J.W. Haycock[2] *1. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 2. The Kroto Research Institute, University of Sheffield, Sheffield, United Kingdom; 3. Centre for Nanoscience and Technology, University of Sheffield, Sheffield, United Kingdom; 4. Center for X-Ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA*

TUESDAY MORNING 9:00 SALON G

## Session AB
## DOMAIN WALL MOTION IN NANO-WIRES

Yaroslaw Bazaliy, Chair

**9:00**

**AB-01. Thermally and spin-torque assisted domain wall depinning from a single defect in FePt monolayers and spin-valves.** *A.P. Mihai[1,2]*, J. Attané[1,2], L. Vila[1] and A. Marty[1] *1. INAC, SP2M, CEA, Grenoble, France; 2. Université Joseph Fourier, Grenoble, France*

**9:12**

**AB-02. Perpendicular Pt / CoFeB / Pt, a tunable system for domain-wall dynamics.** *R. Lavrijsen[1]*, G. Malinowski[1], J. Kohlhepp[1], H. Swagten[1] and B. Koopmans[1] *1. Applied Physics, Technical University of Eindhoven, Eindhoven, Netherlands*

**9:24**

**AB-03. Role of pinning in current driven DW motion in wires with perpendicular anisotropy.** *C. Burrowes[1]*, D. Ravelosona[1], M. Nguyen Ngoc[1], C. Chappert[1] and E. Fullerton[2] *1. Institut d'electronique Fondamentale, UMR CNRS 8622, Orsay, France; 2. University of California San Diego, CMRR, San Diego, CA*

**9:36**

**AB-04. Current-driven domain wall motion in amorphous TbFeCo nanowires with perpendicular magnetic anisotropy.** *X. Liu[1]* and A. Morisako[1] *1. Department of Information Engineering, Shinshu University, Nagano, Japan*

**9:48**

**AB-05. Controlled motion of multiple domain walls in permalloy nanowires.** *M. Hayashi[1]*, L. Thomas[1], R. Moriya[1], C. Rettner[1], X. Jiang[1], B. Bergman[1] and S. Parkin[1] *1. IBM Research, San Jose, CA*

**10:00**

**AB-06. Creation, propagation and detection of magnetic domain walls for data storage applications.** *D. Read[1]*, L.A. O'Brien[1], D. Petit[1], H.T. Zeng[1], E.R. Lewis[1], L. Thevenard[1], J. Sampaio[1], A. Jausovec[1] and R.P. Cowburn[1] *1. Department of Physics, Imperial College London, London, United Kingdom*

**10:12**

**AB-07. Real time measurement of domain wall motion in ferromagnetic nano-wires by using tunnel magnetoresistance effect.** *T. Ochiai*[1], H. Ahisda[1], K. Nagasaka[1] and A. Tanaka[1] *1. Fujitsu Ltd., Kawasaki-shi, Kanagawa, Japan*

**10:24**

**AB-08. The domain wall spin torque-meter.** ***I. Miron***[1], P. Zermatten[1], G. Gaudin[1], S. Auffret[1], B. Rodmacq[1] and A. Schuhl[1] *1. SPINTEC / INAC / CEA-CNRS, Grenoble, France*

**10:36**

**AB-09. Resonant Domain Wall Movement in Linear Notches with Varying Restoring Force.** *S. Lepadatu*[1], A. Potenza[2], H. Marchetto[2], T.R. Charlton[3], S. Langridge[3], S.S. Dhesi[2] and C.H. Marrows[1] *1. The University of Leeds, Leeds, United Kingdom; 2. Diamond Light Source, Didcot, United Kingdom; 3. ISIS, RAL, Didcot, United Kingdom*

**10:48**

**AB-10. Role of the perpendicular spin current to assist the Current driven Domain Wall motion in spin valve nanostripes.** S. Laribi[1,2], *A. Anane*[1], J. Grollier[1], V. Cros[1], C. Deranlot[1], G. Faini[3] and A. Fert[1] *1. Unité Mixte de Physique CNRS/Thales and Université Paris Sud 11, Route départementale 128, Palaiseau, France; 2. ST Microelectronics, 850 Rue Jean Monnet, Crolles, France; 3. Phynano team, Laboratoire de Photonique et Nanostructures, LPN-CNRS, Route de Nozay, Marcoussis, France*

**11:00**

**AB-11. Current induced microwave oscillation of a geometrically confined domain wall.** *K. Matsushita*[1], J. Sato[1] and H. Imamura[1] *1. Nanotechnology Research Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan*

**11:12**

**AB-12. Critical vortex core size required for nucleation of stable vortex or antivortex during domain wall motion in magnetic thin-film nanostripes.** *S. Kim*[1], Y. Choi[1], J. Lee[1] and M. Yoo[1] *1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, South Korea*

**11:24**

**AB-13. Current-assisted vortex chirality transition in a layered circular ring.** *C. Nam*[1], B. Ng[1], F. Castaño[1] and C. Ross[1] *1. Materials Science and Engineering, MIT, Cambridge, MA*

**11:36**

**AB-14. Domain wall pinning by a curved conduit.** *E. Lewis*[1], D. Petit[1], D.E. Read[1], H.T. Zeng[1], L.A. O'Brien[1], J. Sampaio[1], A.V. Jausovec[1] and R.P. Cowburn[1] *1. Physics, Imperial College London, London, United Kingdom*



**11:48**

**AB-15. Current Induced Magnetization Switching in Epitaxial Half-metallic Chromium Dioxide (CrO2) Nanocontacts.** *X. Zou*[1] and G. Xiao[1] *1. Physics Department, Brown University, Providence, RI*

**TUESDAY MORNING 9:00** **SALON A**

## Session AC
# PERPENDICULAR MEDIA I
Shanlin Duan, Chair

**9:00**

**AC-01. Topology and Elemental Distribution in Co alloy+Oxide Perpendicular Media.** *D. Laughlin*[1,2], N.T. Nuhfer[2], S. Park[1,2], H. Yuan[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 Department, Carnegie Mellon University, Pittsburgh, PA*

**9:12**

**AC-02. Reduction of Magnetic Grain Size of Perpendicular Recording Media with CoCrW Seed Layer.** *R. Inamura*[1], Y. Toyoda[1], T. Tanaka[1] and T. Uzumaki[1] *1. Fujitsu Labs., Atsugi, Japan*

**9:24**

**AC-03. CoRuCr-oxide intermediate layers for grain size reduction and improved lattice matching.** *S. Piramanayagam*[1] and K. Srinivasan[1] *1. A*STAR (Agency for Science Technology and Research), Data Storage Institute, Singapore, Singapore*

**9:36**

**AC-04. Microstructure and magnetic properties of perpendicular media with reduced grain size.** *H. Yuan*[1,2] and D.E. Laughlin[1,2] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*

**9:48**

**AC-05. Ru/FeCoB crystalline soft magnetic underlayers with high anisotropy field for CoPtCr-$SiO_2$ granular perpendicular magnetic recording media.** *T. Matsuu*[1], K. Hirata[1], A. Hashimoto[1], S. Matsunuma[2], T. Inoue[2], T. Doi[2] and S. Nakagawa[1] *1. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan; 2. Hitachi Maxell, Ltd., Ibaraki, Japan*

**10:00**

**AC-06. A Novel Crystalline Soft Magnetic Intermediate Layer for Perpendicular Recording Media.** *S. Park*[1,2], J. Zhu[1,3] and D. Laughlin[1,2] *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 Department, Carnegie Mellon University, Pittsburgh, PA*

**10:12**

**AC-07. Effects of non-uniform exchange and magnetostatic coupling constants on the determination of intrinsic switching field distributions.** Y. Liu[1], K.A. Dahmen[1], O. Hovorka[2] and *A. Berger[2] 1. Physics, University of Illinois at Urbana-Champaign, Urbana, IL; 2. CIC nanoGUNE Consolider, Donostia - San Sebastian, Spain*

**10:24**

**AC-08. New patterned media recording scheme based on precessional reversal.** *B. Livshitz*[1,2], H.N. Bertram[2,3] and V. Lomakin[1,2] *1. ECE, UCSD, San Diego, CA; 2. CMRR, UCSD, San Diego, CA; 3. Hitachi San Jose Reseach Center, Hitachi GST, San Jose, CA*

**10:36**

**AC-09. Magnetic Reversal of Exchange Spring Media with High and Low Moment Soft Layer.** *N. Supper*[1], D. Margulies[1], Y. Ikeda[1] and K. Takano[1] *1. Hitachi Global Storage Technologies, San Jose, CA*

**10:48**

**AC-10. Effects of exchange coupling between cap layer and oxide layer on the recording performance in perpendicular media.** *K. Zhang*[1], G. Choe[1] and S. Duan[1] *1. Hitachi Global Storage Technologies, San Jose, CA*

**11:00**

**AC-11. Role of Surface Domain Wall in Nucleation for composite media.** *S. Mukherjee*[1] and L. Berger[2] *1. Seagate Research, Pittsburgh, PA; 2. Carnegie-Mellon University, Pittsburgh, PA*

**11:12**

**AC-12. An approach to understand the effect of interlayer coupling in composite media using anomalous Hall effect measurement.** *S. Das*[1], K. Tanahashi[1] and H. Suzuki[1] *1. Hitachi Central Research Laboratory, Odawara, Kanagawa, Japan*

**11:24**

**AC-13. Switching behaviour of perpendicular magnetic recording media measured with polarized small-angle neutron scattering.** *S.J. Lister*[1], M.P. Wismayer[1], V. Venkataramana[1], S.L. Lee[1], T. Thomson[2] and J. Kohlbrecher[3] *1. School of Physics & Astronomy, University of St. Andrews, St. Andrews, Fife, United Kingdom; 2. School of Computer Science, University of Manchester, Manchester M13 9PL, United Kingdom; 3. Laboratory for Neutron Scattering, ETHZ & PSI, CH-5232 Villigen PSI, Switzerland*

**11:36**

**AC-14. Switching volume change and recording performance correlation for weakly coupled exchange spring media.** *Y. Ikeda*[1], G. Choe[2], K. Zhang[2] and K. Takano[1] *1. San Jose Research Center, Hitachi GST, San Jose, CA; 2. Media Development, Hitachi GST, San Jose, CA*



**11:48**

**AC-15. Magnetization reversal of Exchange Coupled Composite media measured by XMCD.** *H. Hou*[1], M. Lin[1], Y. Wu[1], R. Liao[1], C. Lai[1], H. Lin[2], F. Chang[2], C. Lee[3] and R. Chen[3] *1. National Tsing Hua University, Hsing Chu, Taiwan; 2. National Synchrotron Radiation Research Center, Hsing Chu, Taiwan; 3. China Steel Corporation, Kao Hsiung, Taiwan*

**TUESDAY MORNING 9:00** **SALON B**

## Session AD
# MAGNETIC TUNNEL JUNCTION I
Guoxing Miao, Chair

**9:00**

**AD-01. Three-dimensional atom probe studies of MgO-based magnetic tunnel junction structures optimized for read head application.** ***(Invited)*** *S. Pinitsoontorn*[1], A. Cerezo[2], A.K. Petford-Long[3], L. Folks[4], M. Carey[4] and D. Mauri[5] *1. Physics, Khon Kaen University, Khon Kaen, Thailand; 2. Materials, University of Oxford, Oxford, United Kingdom; 3. Argonne National Laboratory, Argonne, IL; 4. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA; 5. Hitachi Global Storage Technologies, San Jose, CA*

**9:36**

**AD-02. Manipulating the crystallographic properties of Fe/MgO/Fe trilayers.** H. Zhang[1], *A. Morisako*[1], H. Matsuoka[1] and X. Liu[1] *1. Department of Information Engineering, Shinshu University, Nagano, Japan*

**9:48**

**AD-03. Correlation effects in the magnetoresistance of Fe/MgO/Fe tunnel junctions.** *S. Mirhosseini*[1], K.K. Saha[2], A. Ernst[1], J. Henk[1] and P. Bruno[3] *1. Theory Department, Max-Planck-Institut für Mikrostrukturphysik, Halle (Saale), Germany; 2. Oak Ridge National Laboratory, Oak Ridge, TN; 3. Theory Group, European Synchrotron Radiation Facility, Grenoble, France*

**10:00**

**AD-04. Experimental evidence of Interface Resonance States in Single Crystal Magnetic Tunnel Junctions.** *P. Zermatten*[1], G. Gaudin[1], M. Miron[1], C. Tiusan[2], F. Greullet[2], M. Hehn[2] and A. Schuhl[1] *1. SPINTEC, CNRS/CEA, Grenoble, France; 2. Laboratoire de Physique des Matériaux, UMR7556, CNRS, Nancy, France*

**10:12**

**AD-05. Temperature dependence of Spin Transfer induced high frequency response of MgO based magnetic tunnel junctions.** *B. Georges*[1], J. Grollier[1], V. Cros[1], A. Fert[1], A. Fukushima[2], H. Kubota[2], K. Yakushijin[2], S. Yuasa[2] and K. Ando[2] *1. Unite Mixte de Physique CNRS/Thales, Palaiseau, France; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

**10:24**

**AD-06. Understanding spin tunneling in CoFeB alloys.** *P.V. Paluskar*[1], J.J. Attema[2], G.A. de Wijs[2], R. Lavrijsen[1], M. Sicot[1], E. Snoeck[4], S. Fiddy[3], J.T. Kohlhepp[1], H.J. Swagten[1], R.A. de Groot[2] and B. Koopmans[1] *1. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands; 2. ESM, Theoretical Physics,, Radboud University Nijmegen, Nijmegen, Netherlands; 3. Station 7.1, Daresbury Labs, CCLRC, Daresbury, United Kingdom; 4. CEMES, CNRS, Toulouse, France*

**10:36**

**AD-07. 75% inverse TMR at room temperature in $Fe_4N$/MgO/CoFeB-MTJs.** *Y. Komasaki*[1], M. Tsunoda[1], S. Isogami[1] and M. Takahashi[2,1] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan*

**10:48**

**AD-08. New fabrication process for ultra-thin crystalline MgO barrier and resultant giant TMR with low RA in CoFeB/MgO/CoFeB MTJs.** *S. Isogami*[1], M. Tsunoda[1], K. Komagaki[2], M. Sato[3], K. Sunaga[2], Y. Uehara[2] and M. Takahashi[4] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Fujitsu Ltd., Nagano, Japan; 3. Fujitsu Laboratories Ltd., Nagano, Japan; 4. New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan*

**11:00**

**AD-09. Single-band tight-binding model for Fe-MgO-Fe magnetic tunnel junction devices.** *T.Z. Raza*[1,3] and H. Raza[2] *1. Electrical and Computer Engineering, Purdue University, West Lafayette, IN; 2. Electrical and Computer Engineering, Cornell University, Ithaca, NY; 3. NSF Network for Computational Nanotechnology, West Lafayette, IN*

**11:12**

**AD-10. Annealing Time Dependence in MgO Based Magnetic Tunnel Junctions.** *W. Wang*[1], C. Ni[2], X. Fan[1], P. Parsons[1], Q. Wen[3], H. Zhang[3] and J.Q. Xiao[1] *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Materials Science and Engineering, University of Delaware, Newark, DE; 3. School of Microelectronic and Solid-State Electronic, University of Electronic Science and Technology of China, Chengdu, China*

**11:24**

**AD-11. Relationship between tunnel magnetoresistance and structural characteristic for CoFeB/MgO/CoFeB pseudo-spin-valves annealed at high temperature: A route to over 600% at room temperature.** *H. Gan*[1], S. Ikeda[1], J. Hayakawa[2], K. Miura[2,1], H. Hasegawa[1,2], J. Park[1], H. Yamamoto[2], F. Matsukura[1] and H. Ohno[1] *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Advanced Research Laboratory, Hitachi, Ltd., Tokyo, Japan*



**11:36**

**AD-12. Study of Dielectric Breakdown Distributions in Magnetic Tunneling Junction with MgO Barrier.** *T. Min*[1] *1. MagIC Technologies, Milpitas, CA*

**11:48**

**AD-13. Pressure Sensor based on magnetic tunnel junctions.** *D. Meyners*[1], T. von Hofe[1], M. Rührig[3], M. Vieth[3], S. Schmitt[2] and E. Quandt[1] *1. Institute for Material Science, Christian-Albrechts University, Kiel, Germany; 2. Technology Development, Infineon Technologies AG, Munich, Germany; 3. CT MM 1, Siemens AG, Erlangen, Germany*

## TUESDAY MORNING 9:00 — SALON D

### Session AE
## SEMICONDUCTOR SPIN INJECTION
Michel de Jong, Chair

**9:00**

**AE-01. Electrical injection, detection and modulation of spin currents in silicon using a lateral transport geometry.** ***(Invited)*** *O. van 't Erve*[1], C. Awo-Affouda[1], G. Kioseoglou[1], A.T. Hanbicki[1], M. Holub[1], C.H. Li[1], P.E. Thompson[1] and B.T. Jonker[1] *1. Code 6361, Naval Research Laboratory, Washington, DC*

**9:36**

**AE-02. High Spin Polarization at Heusler-alloy/silicon Interface.** *K. Abe*[1], Y. Miura[1], Y. Shiozawa[1] and M. Shirai[1] *1. RIEC, Tohoku University, Sendai, Japan*

**9:48**

**AE-03. Electrical Spin injection into Silicon: a comparison between Fe/Schottky and Fe/$Al_2O_3$ tunnel contacts.** *A. Hanbicki*[1], G. Kioseoglou[1], O.M. van 't Erve[1], C.H. Li[1], P.E. Thompson[1], R. Goswami[1], G. Spanos[1] and B.T. Jonker[1] *1. Naval Research Laboratory, Washington, DC*

**10:00**

**AE-04. Ferromagnetic Kisaki transistor as spin-injector into Silicon.** *M. van Veenhuizen*[1] and J. Moodera[2] *1. physics, MIT, Cambridge, MA; 2. Francis Bitter Magnet Laboratory, MIT, Cambridge, MA*

**10:12**

**AE-05. Coherence and phase control of electrically injected spins using ultrafast current pulses.** ***(Invited)*** *G. Guntherodt*[1,2], L. Schreiber[1,3], C. Schwark[1,2], J. Moritz[1,2], B. Beschoten[1,2], M. Lepsa[2,4], C. Adelmann[5] and C. Palmstrom[5] *1. Physikal. Institut IIA, RWTH Aachen University, 52056 Aachen, Germany; 2. Virtual Institute for Spin Electronics (ViSel), Aachen - Jülich – Göttingen, Germany; 3. Kavli Institute of Nanoscience, Delft University of Technology, 2600 GA Delft, Netherlands; 4. Institute of Bio- and Nanosystems (IBN-1), Research Center Jülich GmbH, 52425 Jülich, Germany; 5. Department of Chemical Engineering and Material Science, University of Minnesota, Minneapolis, MN*

**10:48**

**AE-06. Electrical spin injection and detection through CoFeB/MgO electrodes in n-GaAs channel.** *T. Inokuchi*[1], T. Marukame[1], M. Ishikawa[1], H. Sugiyama[1] and Y. Saito[1] *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Japan*

**11:00**

**AE-07. Enhancement of the spin accumulation at the interface between a magnetic tunnel junction and a semiconductor.** *M. Tran*[1], H. Jaffrès[1], C. Deranlot[1], J. George[1], A. Fert[1], A. Miard[2] and A. Lemaitre[2] *1. Unité Mixte de Physique CNRS-Thales, Palaiseau, France; 2. Laboratoire de Photonique et de Nanostructure, CNRS, Marcoussis, France*

**11:12**

**AE-08. Spin-dependent transport in Zinc-Blende MnAs nanoparticles / GaAs semiconductor hybrid structures.** *P. Nam Hai*[1], B. Yu[1], S. Ohya[1,2], M. Tanaka[1,2], S.E. Barnes[3,4] and S. Maekawa[5] *1. Department of Electrical Engineering and Information Systems, The University of Tokyo, 7-3-1 Hongo, Bunkyo-Ku, Tokyo, Japan; 2. Japan Science and Technology Corporation, 4-1-8 Honcho, Kawaguchi, Saitama, Japan; 3. Physics Department, University of Miami, Coral Gables, FL; 4. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 5. Institute for Materials Research, Tohoku University, Sendai, Japan*

**11:24**

**AE-09. Robustness of spin polarization in graphene-based spin valves.** *M. Shiraishi*[1,2], M. Ohishi[1], R. Nouchi[1], T. Nozaki[1], T. Shinjo[1] and Y. Suzuki[1] *1. Osaka University, Toyonaka, Osaka, Japan; 2. JST-PRESTO, Kawaguchi, Japan*

**11:36**

**AE-10. Correlation of microstructure and magnetotransport in organic semiconductor spin valve structures.** *Y. Liu*[1], S.M. Waston[2], T. Lee[3], J.M. Gorham[4], H.D. Fairbrother[4], H.E. Katz[3], J.A. Borchers[2] and D.H. Reich[1] *1. Physics and Astronomy, The Johns Hopkins University, Baltimore, MD; 2. NIST Center for Neutron Research, Gaithersburg, MD; 3. Materials Science and Engineering, The Johns Hopkins University, Baltimore, MD; 4. Chemistry, The Johns Hopkins University, Baltimore, MD*

**11:48**

**AE-11. The origin of large magnetoresistance in rubrene-Co nano-composites.** *D. Hatanaka*[1], S. Tanabe[1], H. Kusai[1], R. Nouchi[1], T. Nozaki[1], T. Shinjo[1], Y. Suzuki[1] and M. Shiraishi[1,2] *1. Graduate School of Engineering Science, Osaka University, Toyonaka-shi, Osaka, Japan; 2. JST-PRESTO, Kawaguchi, Japan*



**TUESDAY MORNING 9:00** **SALON E**

## Session AF
# ULTRAFAST PROCESSES AND SWITCHING
Georg Woltersdorf, Chair

**9:00**

**AF-01. Ultrafast demagnetization induced by interlayer spin angular momentum transfer.** *G. Malinowski*[1], F. Dalla Longa[1], J.H. Rietjens[1], P.V. Paluskar[1], R. Huijink[1], H.M. Swagten[1] and B. Koopmans[1] *1. Group Physics of Nanostructures Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

**9:12**

**AF-02. Ultrafast thermo-magnetic writing across ferrimagnetic compensation points.** *A. Tsukamoto*[1,2], D. Stanciu[3], A. Kimel[3], F. Hansteen[3], A. Kirilyuk[3], A. Itoh[1] and T. Rasing[3] *1. College of Science and Technology Nihon University, Funabashi, Chiba, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Saitama, Japan; 3. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands*

**9:24**

**AF-03. Time-resolved and energy-dispersed spin manipulation in ferromagnets and clusters under influence of femtosecond laser pulses.** *G. Zhang*[1], Y. Bai[1,3], T. Hartenstein[2], G. Lefkidis[2] and W. Hübner[2] *1. Department of Physics, Indiana State University, Terre Haute, IN; 2. Department of Physics and OPTIMAS Research Center, Kaiserslautern University of Technology, Kaiserslautern, Germany; 3. Center for Instruction, Research, and Technology, Indiana State University, Terre Haute, IN*

**9:36**

**AF-04. Nonlocal Ultrafast Magnetization Dynamics in the High Fluence Limit.** *B. Koopmans*[1], F. Dalla Longa[1] and G. Malinowski[1] *1. Group Physics of Nanostructures Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

**9:48**

**AF-05. Two relaxation times model for ferromagnetic metals and half metals.** *M.G. Muenzenberg*[1], G.M. Müller[1], J. Walowski[1], A. Gupta[2], A.V. Ramos[3], K. Gehrke[4], V. Moshnyaga[4], K. Samwer[4], J. Schmalhorst[5], A. Thomas[5], A. Hütten[5], G. Reiss[5], G.X. Miao[6,2] and J.S. Moodera[6] *1. IV. Phys. Institute, Goettingen University, Goettingen, Germany; 2. MINT Center, University of Alabama, Tuscaloosa, AL; 3. DSM/DRECAM/SPCSI, CEA Saclay, Gif-Sur-Yvette, France; 4. I. Phys. Institute, Goettingen University, Goettingen, France; 5. Department of Physics, University of Bielefeld, Bielefeld, Germany; 6. Francis Bitter Magnet Laboratory, MIT, Cambridge, MA*

**10:00**

**AF-06. Modification of the Electronic Structure of a Ferromagnet in Extreme Terahertz Fields.** ***S.J. Gamble***[1,2], M.H. Burkhardt[3,2], A. Kashuba[4], R. Allenspach[5], S. Parkin[6], H.C. Siegmann[1] and J. Stöhr[3] *1. Pulse Center, Stanford Linear Accelerator Center, Menlo Park, CA; 2. Applied Physics, Stanford University, Stanford, CA; 3. Stanford Synchrotron Radiation Laboratory, Menlo Park, CA; 4. Bogolyubov Institute for Theoretical Physics, Kiev, Ukraine; 5. IBM Research, Zurich Research Laboratory, Ruschlikon, Switzerland; 6. IBM Almaden Research Center, San Jose, CA*

**10:12**

**AF-07. Ultrafast Demagnetization and Transfer of Angular Momentum in Nickel.** ***(Invited)*** *C. Stamm*[1], N. Pontius[1], T. Kachel[1], T. Quast[1], K. Holldack[1], M. Wietstruk[1], R. Mitzner[1,2], S. Khan[1,3], H.A. Dürr[1] and W. Eberhardt[1] *1. BESSY GmbH, Berlin, Germany; 2. Physikalisches Institut der Universität Münster, Münster, Germany; 3. Institut für Experimentalphysik, Universität Hamburg, Hamburg, Germany*

**10:48**

**AF-08. Dynamic Switching of Single Domain and ECC Media Under AC Field at Microwave Frequency.** *K. Gao*[1] and M. Benakli[1] *1. Research and Technology Development, Seagate Technology, Bloomington, MN*

**11:00**

**AF-09. Noise enhanced stability in magnetic systems.** *M. Trapanese*[1] *1. Dipartimento di Ingegneria Elettrica, Elettronica e delle Telecomunicazioni, Università di Palermo, Palermo, Italy*

**11:12**

**AF-10. Non-exponential magnetization thermal decay of a single-domain particle: numerical computations with dynamic Fokker-Planck equation.** *K. Zhang*[1] *1. Hitachi Global Storage Technologies, San Jose, CA*

**11:24**

**AF-11. Exact determination of nucleation fields and nucleation modes in 2-phased magnetic nano-systems.** *G. Zhao*[1,2], H. Zhang[1] and Y. Feng[2] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China; 2. Department of Physics, National University of Singapore, Singapore, Singapore*

**11:36**

**AF-12. Micromagnetic analysis of the switching field of CoCrPt-SiO2 and CoPt-TiO2 layers.** J. Lee[1], *J. Fidler*[1], D. Suess[1], T. Schrefl[3], S. Park[4] and K. Oh[2] *1. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 2. Department of Materials Science and Engineering, Seoul National University, Seoul, South Korea; 3. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 4. Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, South Korea*



**TUESDAY MORNING 9:00** **400/402**

## Session AG
# SOFT MAGNETIC CRYSTALLINE ALLOYS
Victorino Franco, Chair

**9:00**

**AG-01. Controlled Oxidation of FeCo Magnetic Nanoparticles (MNPs) to Produce Faceted FeCo/ferrite Nanocomposites for RF Heating Applications.** K.N. Collier[1,2], K.J. Miller[1], Y. Qin[3], D.E. Laughlin[1] and *M.E. McHenry*[1,2] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

**9:12**

**AG-02. Isothermal Oxidation Behaviors of FeCoV and FeCoVNb Alloys.** *Z. Turgut*[1,2], J.C. Horwath[2], M. Huang[1,2], J.E. Coate[2] and R.T. Fingers[2] *1. UES Inc., Dayton, OH; 2. AFRL, Wright-Patterson AFB, OH*

**9:24**

**AG-03. Fluoride Insulator Material of Iron Powder for Compacted Magnetic Core.** *T. Imagawa*[1], Y. Satsuu[1] and M. Komuro[1] *1. Hitachi-ARL, Hitachi, Ibaraki, Japan*

**9:36**

**AG-04. Effects of Si content on the magnetic properties of Fe-Si alloy powder cores.** P. Jang[1], *B. Lee*[1] and I. Jeong[2] *1. Div. of Applied Science, Cheongju University, Cheongju, Chungcheongbuk-do, South Korea; 2. R&D Center, Changsung Corp., Incheon, South Korea*

**9:48**

**AG-05. Powder Compacts of $Nd_2Fe_{17}N_x$ exhibiting $\mu$" > 1 at 1-18 GHz.** *N. Imaoka*[1,2], M. Tada[1], T. Nakagawa[1] and M. Abe[1] *1. Physical Electronics, Tokyo Institute of Technology, Meguro, Tokyo, Japan; 2. Central R&D Laboratories, Asahi Kasei Corporation, Fuji, Shizuoka, Japan*

**10:00**

**AG-06. The effect of boron addition on the atomic structure and magnetism of FeGaB thin films investigated by extended x-ray absorption fine structure.** *A. Yang*[1], J. Lou[1], C. Vittoria[1], N.X. Sun[1] and V.G. Harris[1] *1. Center for Microwave Magnetic Materials and Integrated Circuits, Electrical and Computer Engineering, Northeastern University, Boston, MA*

**10:12**

**AG-07. Magnetic entropy change and refrigerant capacity in GdFeAl compound.** *Q. Dong*[1], B. Shen[1], J. Chen[1], J. Shen[1,2], H. Zhang[1] and J. Sun[1] *1. State Key Laboratory for Magnetism, Beijing National Laboratory for Condensed Matter Physics and Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. School of Material Science and Engineering, Hebei University of Technology, Tianjin, China*

**10:24**

**AG-08. Lift-Off Phenomenon in Magnetostriction of Electrical Steels.** *T. Hilgert*[1], L. Vandevelde[1] and J. Melkebeek[1] *1. Department of Electrical Energy, Systems and Automation, Ghent University, Gent, Oost-Vlaanderen, Belgium*

**10:36**

**AG-09. Control of the number of {110} grains and magnetic induction in inhibitor-free 3% Si-Fe strips.** *S. Kim*[1], J. Soh[1] and N. Heo[1] *1. Advanced Materials Research Group, Korea Electric Power Research Institute, Daejeon, CN, South Korea*

**10:48**

**AG-10. Correlation between the Mgnetostriction and the Loss in 3% Silicon-iron Grain-oriented Electrical Steel.** *O. Kwon*[1], K. Ha[1], J. Kim[1] and J. Kim[1] *1. Technical Research Laboratories, Pohang, Gyeongbuk, South Korea*

**11:00**

**AG-11. An equivalent stress for the influence of multiaxial stress on the magnetic behavior.** *L. Daniel*[1] and O. Hubert[2] *1. Laboratoire de Génie Electrique de Paris (LGEP), CNRS (UMR 8507) ; SUPELEC ; Univ Paris-Sud ; UPMC, Gif sur Yvette Cedex, France; 2. LMT-Cachan, ENS Cachan ; CNRS ; UPMC ; PRES Universud Paris, Cachan Cedex, France*

**11:12**

**AG-12. Magnetic Anisotropy induced by High energy ball milling of Fe2MnAl.** V. Attatappa[1], H. Bhargava[1], L. Nambakkat[1] and *V. Kanippoth*[1] *1. Department of Physics, Mohanlal Sukhadia University, Udaipur, Rajasthan, India*

**11:24**

**AG-13. Calculation of Eddy-Current Loss in Multi-Layer Magnetic Films Considering Displacement Current.** *D. Yao*[1] and C.R. Sullivan[1] *1. Thayer School of Engineering, Dartmouth College, Hanover, NH*

**11:36**

**AG-14. Ru/FeCoB double layered film with high in-plane magnetic anisotropy field of 500 Oe.** *K. Hirata*[1], T. Matsuu[1], A. Hashimoto[1] and S. Nakagawa[1] *1. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*



**11:48**

**AG-15. Magnetic stability of Fe-rich FeCu alloy with structural alteration of nucleated Cu phase: ab initio study.** *H. Choi*[1] and Y. Chung[1] *1. Department of Material Science and Engineering, Hanyang University, Seoul, South Korea*

## TUESDAY MORNING 9:00

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### Session AH
## SUPERCONDUCTIVITY I
Mark Laver, Chair

**9:00**

**AH-01. Inelastic neutron scattering study of $LaO_{0.9}F_{0.1}FeAs$ and $PrO_{0.8}F_{0.2}FeAs$.** *W. Stein*[1], F. Tang[1], A. Schneidewind[2,1], T. Unruh[2], G. Behr[3], H. Klauss[1] and M. Loewenhaupt[1] *1. IFP, TU-Dresden, Dresden, Germany; 2. FRM2, Garching, Germany; 3. IFW, Dresden, Germany*

**9:12**

**AH-02. Synthesis of SmFeAsO by an easy and versatile route and its physical property characterization.** *V. Awana*[1], A. Vajpayee[1], M. Mudgel[1], A. Pal[1], R. Meena[1] and H. Kishan[1] *1. NPL, New Delhi, Delhi, India*

**9:24**

**AH-03. Superconducting gap of FeAs-based superconductor SmFeAsO0.85F0.15.** *T. Chen*[1], Z. Tesanovic[1], R. Liu[2], X. Chen[2] and C. Chien[1] *1. Physics and Astronomy, the Johns Hopkins University, Baltimore, MD; 2. Hefei National Laboratory for Physical Science at Microscale and Department of Physics, University of Science and Technology of China, Hefei, Anhui, China*

**9:36**

**AH-04. Spin Wave Scattering and Interface Magnetism in Superconducting-Ferromagnet-Superconducting Tunnel Junctions.** *G.A. Alvarez*[1], X. Wang[1], P. Germanas[1] and S. Dou[1] *1. Institute of Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, NSW, Australia*

**9:48**

**AH-05. Static Field Cooled Magnetization of a $YBa_2Cu_3O_7$ Film Evaluated by a $Pr_{0.7}Ca_{0.3}MnO_3$ Overlayer.** *J. Sakai*[1] *1. LEMA, Universite Francois Rabelais, Tours, France*

**10:00**

**AH-06. Evidence for strong correlation between spin and charge dynamics in La2Cu1-xLixO4.** *E. Park*[1], T. Park[1,2], J.L. Sarrao[2] and J.D. Thompson[2] *1. Physics, Sungkyunkwan University, Suwon, South Korea; 2. Condensed Matter and Thermal Physics, Los Alamos National Laboratory, Los Alamos, NM*

**10:12**

**AH-07. Magnetic flux oscillations in partially irradiated $Bi_2Sr_2CaCu_2O_{8+\delta}$ crystals.** *D. Barness*[1], M. Sinvani[1], A. Shaulov[1], C. Trautmann[2], T. Tamegai[3] and Y. Yeshurun[1] *1. Department of Physics, Bar-Ilan University, Ramat-Gan, Israel; 2. Gesellschaft für Schwerionenforschung (GSI), Darmstadt, Germany; 3. Department of Applied Physics, The University of Tokyo, Tokyo, Japan*

**10:24**

**AH-08. Effect of rare earth doping on the superconducting properties of MgB2.** G.D. Varma[1], *N. Ojha*[1] and H.K. Singh[2] *1. Physics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India; 2. Quantum Hall Resistance Standard & Superconducting Devices Group, National Physical Laboratory, New Delhi, New Delhi, India*

**10:36**

**AH-09. Towards MgB2 Superconductor-based Electronics.** *M. Costache*[1], B. Moeckly[2] and J. Moodera[1] *1. MIT, Cambridge, MA; 2. Superconductor Technologies, Inc., Santa Barbara, CA*

**10:48**

**AH-10. Long-Range Proximity Effect in Nanowires Investigated by I-V Measurements.** *H. Liu*[1], Z. Ye[1], W. Wu[1] and K. Rathnayaka[1] *1. Physics, Texas A&M University, College Station, TX*

**11:00**

**AH-11. Vortex Pinning by Inhomogeneous Magnetic Field.** *I. Lyuksyutov*[1] *1. Department of Physics, Texas A&M University, College Station, TX*

**11:12**

**AH-12. Topological Confinement and Superconductivity.** *K.A. Al-Hassanieh*[1], C.D. Batista[1], P. Sengupta[1] and A.E. Feiguin[2,3] *1. Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM; 2. Department of Physics, The University of Maryland, College Park, MD; 3. Microsoft Project Q, The University of California, Santa Barbara, CA*

**TUESDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session AP
## CMR OXIDES I: BULK AND NANOPARTICLES (POSTER SESSION)
Bogdan Dabrowski, Chair

**AP-01. Paramagnetic spin dynamics in the non-homogeneous crystals of low-doped lanthanum manganites.** *M. Auslender*[1], A.I. Shames[2], E. Rozenberg[2], G. Gorodetsky[2] and Y.M. Mukovskii[3] *1. Ben Gurion University, Beer Sheva, Israel; 2. Physics, Ben Gurion University, Beer Sheva, Israel; 3. Steel and Alloys Institute, Moscow, Russian Federation*



**AP-02. Investigation of Valence States of Transition-metal Ions in Ferromagnetic Double Perovskite $La_2MnNiO_6$ by Using Synchrotron Radiation.** *J. Kang*[1], G. Kim[1], H.J. Lee[1], D.H. Kim[1], S. Kolesnik[2], B. Dabrowski[2], H. Lee[3], J.Y. Kim[3], J.E. Lee[4], B.J. Kim[4] and B.I. Min[4] *1. Physics, The Catholic University of Korea, Bucheon, South Korea; 2. Physics, Northern Illinois University, DeKalb, IL; 3. Pohang Accelerator Laboratory, POSTECH, Pohang, South Korea; 4. Physics, POSTECH, Pohang, South Korea*

**AP-03. Anomalous temperature dependence of the magnetization in $La_{0.84}Sr_{0.16}MnO_3$** *M. Marysko*[1], Z. Jirak[1], P. Novak[1] and M.M. Savosta[2] *1. Institute of Physics, Praha, Czech Republic; 2. Donetsk Institute of Physics and Technics, Donetsk, Ukraine*

**AP-04. Positron annihilation spectroscopy and transport properties of double perovskite compounds Sr2-xGdxFeMoO6.** *X. Wu*[1], Y. Hu[1], B. Qian[1] and Q. Lu[2] *1. Lab of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 2. Physics, Henan Normal University, Xinxiang, China*

**AP-05. Magnetocaloric dependence of A-site cation-disordering in Y and Sr co-doped La2/3Ca1/3MnO3 compounds.** G. Liu[1,2], Q. Ji[1], *B. Qian*[1], H. Cai[1], X. Wu[1] and G. Luo[2] *1. Physics, Nanjing University, Nanjing, China; 2. School of Materials Science and Engineering, Nanchang University, Nanchang, China*

**AP-06. Cr-doping Effect on the orbital fluctuation of heavily doped $Nd_{1-x}Sr_xMnO_3$ ($x \approx 0.625$).** *R. Tasaki*[1], S. Fukushima[1], M. Akaki[1], D. Akahoshi[1] and H. Kuwahara[1] *1. Physics, Sophia University, Tokyo, Japan*

**AP-07. Exchange bias in phase-separated ferromagnetic-nanodomain Pr5/8Ca3/8MnO3 single crystal.** *G. Cao*[1], J. Zhang[1], S. Cao[1] and X. Shen[1] *1. Physics, Shanghai University, Shanghai, Shanghai, China*

**AP-08. Field Induced Magnetic Phase Transitions in $(Sm_{1-x}Gd_x)_{0.55}Sr_{0.45}MnO_3$** *F.N. Bukhanko*[1], V.I. Valkov[1], B.M. Todris[1], V.I. Kamenev[1], V.P. Dyakonov[1], S.V. Vasil`ev[1], E.A. Dvornikov[1], A.N. Magazinskiy[1] and Z.F. Kravchenko[1] *1. Electronic Properties of Metals, Donetsk Phys. & Techn. Institue, NASU, Donetsk, Donetsk, Ukraine*

**AP-09. Effect of Local Jahn-Teller Distortions on Field -Induced Magnetic Phase Transitions in $(Sm_{1-x}Gd_x)_{0.55}Sr_{0.45}MnO_3$** *F.N. Bukhanko*[1], V.I. Valkov[1], B.M. Todris[1], V.I. Kamenev[1], V.P. Dyakonov[1], S.V. Vasil`ev[1], E.A. Dvornikov[1], A.N. Magazinskiy[1] and Z.F. Kravchenko[1] *1. Electronic Properties of Metals, Donetsk Phys. & Techn. Institue, NASU, Donetsk, Donetsk, Ukraine*

**AP-10. Magnetic and transport properties of polycrystalline La0.45Sr0.55Mn1-xCoxO3.** *Y. Ying*[1], N. Dai[1], T. Eom[1] and Y. Lee[1] *1. Physics, Quantum Photonic Science Research Center and BK21 Program Division of Advanced Research and Education in Physics, Hanyang University, Seoul, South Korea*

**AP-11. Synthesis and ESR studies of Bi0.55Ca0.45MnO3 nanoparticles.** J. Kurian[1] and *R. Singh*[1] *1. School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

**AP-12. Magnetic properties of La0.67Ca0.33MnO3 nanoplatelets.** *D. De*[1,2], S. Ram[2], A. Banerjee[3], A. Gupta[3] and S.K. Roy[1] *1. MME, Indian Institute of Technology, Kharagpur, West Bengal, India; 2. MSC, Indian Institute of Technology, Kharagpur, West Bengal, India; 3. UGC-DAE Consortium for Scientific Research, Indore Centre, Indore, Madhya Pradesh, India*

**TUESDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session AQ
## RARE-EARTH TRANSITION METAL BORIDES I (POSTER SESSION)

Melania Marinescu, Chair

**AQ-01. An *in-situ* neutron diffraction study of magnetic hardening in $Fe_3B/Nd_2Fe_{14}B$ nanocomposite magnets induced by rapid thermal annealing.** *K. Suzuki*[1], J.S. Garitaonandia[2], J.C. Shih[1], G.J. Cuello[3], T. Shoji[4], A. Kato[4] and S. Tajima[5] *1. Department of Materials Engineering, Monash University, Clayton, VIC, Australia; 2. Fisika Aplikatua II Saila, Euskal Herriko Unibertsitatea, Bilbao, Spain; 3. Institute Laue Langevin, Grenoble, France; 4. Advanced Material Engineering Div., Toyota Motor Corporation, Susono, Shizuoka, Japan; 5. Toyota Central R & D Laboratories Inc., Nagakute, Aichi, Japan*

**AQ-02. Magnetic properties of NdFeB sintered magnet with Dy segregation.** *H. Suzuki*[1], Y. Satsu[1] and M. Komuro[1] *1. Advanced Research Laboratory, Hitachi Ltd., Omika, Ibaraki, Japan*

**AQ-03. Electrochemical corrosion behavior of Nd-Fe-B permanent magnets with modified microstructure.** W. Liu[1], *M. Yue*[1], D. Zhang[1], J. Zhang[1] and X. Liu[2] *1. College of Material Scicence and Engineering, Beijing University of Technology, Beijing, China; 2. Center for the Physics of Materials and Department of Physics, McGill University, Montreal, QC, Canada*

**AQ-04. Preparation, structural and magnetic properties of Nd-Fe-B-based nano-particles.** M. Yue[1], Y. Wang[1], N. Poudyal[1], C. Rong[1] and *J. Liu*[1] *1. University of Texas at Arlington, Arlington, TX*

**AQ-05. Microstructure and magnetic properties of multilayer Ta/[NdFeB/MoCu]n/Ta thin films.** *H. Chiriac*[1], M. Grigoras[1], N. Lupu[1], M. Urse[1] and V. Buta[1] *1. MDM Department, National Institute of R&D for Technical Physics, Iasi, Romania*

**AQ-06. Interfacial state and magnetic properties of Nd-Fe-B / Nd thin films.** *S. Sugimoto*[1], M. Matsuura[1], R. Goto[1] and N. Tezuka[1] *1. Department of Materials Science, Graduate School of Engineering, Tohoku University, Sendai, Japan*



**AQ-07. PLD-fabricated anisotropic Nd-Fe-B thick films with Ga additive.** *S. Tsutsumi*[1], T. Yanai[1], M. Nakano[1], H. Fukunaga[1] and F. Yamashita[2] *1. Department of Electrical and Electronic Engineering, Nagasaki Univercity, Nagasaki, Japan; 2. Rotary Component Basic Technology Development Division, Minebea Co, Sizuoka, Japan*

**AQ-08. Magnetic properties and microstructure of multi-layered nanocomposite thick film-magnets prepared by PLD method.** *H. Fukunaga*[1], K. Nakayama[1], Y. Sakai[1], M. Nakano[1], T. Yanai[1], M. Ishimaru[2], M. Itakura[2] and F. Yamashita[3] *1. Dept. of Electrical Engineering and Electronics, Nagasaki University, Nagasaki, Japan; 2. Dept. of Applied Science for Electronics and Materials, Kyushu University, Kasuga, Fukuoka, Japan; 3. Rotary Component Basic Technology Development Division, Minebea Co., Ltd., Fukuroi, Shizuoka, Japan*

**AQ-09. Exchange Interaction in Rapidly Solidified Nanocrystalline RE-(Fe/Co)-B Hard Magnetic Alloys.** *Z. Liu*[1,2], D. Zeng[2] and H. Davies[1] *1. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 2. School of Materials Science and Engineering, South China University of Technology, Guangzhou, China*

**AQ-10. Magnetic Properties of Melt-Spun Nd-Fe-B-Nb Magnets.** *S. Kobayashi*[1], T. Fukuzaki[2] and R. Tamura[1,2] *1. Department of Materials Science and Technology, Tokyo University of Science, Noda-shi, Chiba-ken, Japan; 2. Polyscale Technology Research Center, Tokyo University of Science, Noda-shi, Chiba-ken, Japan*

**AQ-11. Easy axis orientation of Nd-Fe-B melt-spun magnets caused by hot-rolling.** *M. Takezawa*[1], T. Mihara[1], Y. Morimoto[1], J. Yamasaki[1] and M. Yagi[2] *1. Dept. of Appl. Sci. for Integ. Syst. Engin., Kyushu Institute of Technology, Kitakyushu, Japan; 2. Energy Electronics Laboratory, Sojo University, Kumamoto, Japan*

**AQ-12. High magnetic properties of nanocomposite ribbons made with Mischmetals-Fe-Ti-B alloys.** *H. Chang*[1,2], C.H. Chen[1], C.W. Chang[1], C.C. Hsieh[1], Z.H. Guo[1] and W.C. Chang[1] *1. Department of Physics, National Chung Cheng University, Chia-Yi, 621, Taiwan; 2. Department of Physics, Tunghai University, Taichung, Taiwan*

**AQ-13. Magnetic properties of Sn substituted $Nd_2Fe_{14}B/Fe_3B$ nanocomposite.** *R. Madugundo*[1] and S. Ram[1] *1. Materials Science Centre, Indian Institute of Technology Kharagpur, Kharagpur, West Bengal, India*

**TUESDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session AR
## SPIN TORQUE EFFECTS IN NANOSTRUCTURES (POSTER SESSION)

Li Gao, Chair

**AR-01. Spin Transfer Torque in Electrodeposited Co/Cu Multilayered Nanowire Arrays.** *L. Tan*[1], X. Huang[1] and B.J. Stadler[1] *1. University of Minnesota, Minneapolis, MN*

**AR-02. Current driven magnetization reversal in microstructured spin valve with CIP configuration.** *C. Kuo*[1], C. Chao[1], J. Ou[1], L. Horng[1], T. Wu[2], M. Tsunoda[3], M. Takahashi[3] and J. Wu[1] *1. Physics, National Changhua University of Education, Changhua City, Taiwan; 2. Humanities and Sciences, National Yunlin University of Science and Technology, Yunliu City, Taiwan; 3. Electronic Engineering, Tohoku University, Sendai, Japan*

**AR-03. Current-Induced Flip-Flop of Magnetization in Magnetic Tunnel Junction with Perpendicular Magnetic Layers and Polarization-Enhancement Layers.** *W. Kim*[1], K. Lee[2] and T. Lee[1] *1. Korea Advanced Institute of Science and Technology, Daejeon, South Korea; 2. Korea University, Seoul, South Korea*

**AR-04. LLG study of the effect of pulse width on spin-transfer torque magnetization switching.** *R. Sugano*[1], M. Ichimura[1], S. Takahashi[2] and S. Maekawa[2] *1. Advanced Research Laboratory, Hitachi, Ltd., Kokubunji-shi, Tokyo, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

**AR-05. Reduction of spin-transfer switching current in MgO-based magnetic tunnel junctions using Co-Fe-(Cr, V)-B free layer having low saturation magnetization.** *H. Kubota*[1], A. Fukushima[1], K. Yakushiji[1], S. Yuasa[1], K. Ando[1], M. Oogane[2], S. Yakata[1], Y. Ando[2] and T. Miyazaki[3] *1. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan; 2. Department of Applied Physics, Tohoku University, Sendai, Miyagi, Japan; 3. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

**AR-06. Spin transfer torque in magnetic tunnel junctions with synthetic ferrimagnetic free layer.** *M. Ichimura*[1], T. Hamada[1], H. Imamura[2], S. Takahashi[3] and S. Maekawa[3] *1. Advanced Res. Lab., Hitachi, Ltd., Tokyo, Japan; 2. AIST, Tsukuba, Japan; 3. IMR, Tohoku Univ., Sendai, Japan*

**AR-07. Sweep-rate dependence of current-driven dynamics in magnetic nanopillars.** *B. O'Gorman*[1], S. Dietze[1] and M. Tsoi[1] *1. University of Texas at Austin, Austin, TX*

**AR-08. Non-stationary signal processing of multiple oscillatory modes excited by spin-polarized current in nanoscale exchange-bias spin valves.** *G. Siracusano*[1], G. Finocchio[1], I. Krivorotov[2], L. Torres[3], G. Consolo[1] and B. Azzerboni[1] *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Department of Physics and Astronomy, University of California, Irvine, CA; 3. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain*

**AR-09. Reduction in critical current of current-induced switching in magnetostatic coupled pseudo spin valve nanopillars.** *M. Wu*[1], A. Aziz[1], M. Ali[2], M. Hickey[2] and M.G. Blamire[1] *1. Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

**AR-10. Spin Transfer Dynamics in Almost Symmetric Magnetic Nanopillars.** W.L. Lim[1], A.E. Higgins[1] and *S. Urazhdin*[1] *1. West Virginia University, Morgantown, WV*



**AR-11. Relationship between free layer structure and asymmetry of current-induced magnetization switching in magnetic tunnel junction.** *Y. Lee*[1], M. Kurasawa[1], C. Yoshida[1], M. Aoki[1] and Y. Sugiyama[1] *1. Fujitsu Laboratories Ltd., Atsugi, Japan*

**AR-12. Search for current-driven magnetoresistive effects in multilayers containing ferromagnetic and antiferromagnetic layers.** *Z. Wei*[1], A. Sharma[2], J. Bass[2] and M. Tsoi[1] *1. University of Texas at Austin, Austin, TX; 2. Michigan State University, East Lansing, MI*

**AR-13. Effect of polarized current on the exchange bias in a current-in-plane spin valve.** *X. Tang*[1], H. Zhang[1], H. Su[1], Y. Jing[1], Z. Zhong[1] and J. Sheng[2] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, Chengdu, Sichuan, China; 2. Department of Physics and Astronomy, Newark, DE*

**AR-14. Current—perpendicular-to-plane magnetoresistance of a domain wall confined in a nano-oxide-layer.** *J. Sato*[1], K. Matsushita[1] and H. Imamura[1] *1. Nanotechnology Research Institute (NRI), Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

**AR-15. Effect of disorder on the bias dependence of spin torque in Magnetic Tunnel Junctions.** *Y. Tang*[1], A. Kalitsov[2] and N. Kioussis[1] *1. Department of Physics, California State University, Northridge, Northridge, CA; 2. Institut Neel, Grenoble, France*

**AR-16. Spin induced excitations in coupled magnetic layers.** *D. Gusakova*[1,2], D. Houssameddine[1], U. Ebels[1], M. Cyrille[2], B. Delaët[2], B. Dieny[1] and L. Buda-Prejbeanu[1,3] *1. CEA-INAC/CNRS/UJF/INPG, SPINTEC, Grenoble, France; 2. CEA-LETI-MINATEC, Grenoble, France; 3. Institut Polytechnique de Grenoble, Grenoble, France*

**AR-17. Micromagnetic computation of interface conductance of spin-transfer driven ferromagnetic resonance in nanopillar spin valves.** *M. Carpentieri*[1] and L. Torres[2] *1. Elettronica, Informatica e Sistemistica, University of Calabria, Arcavacata di Rende, Cosenza, Italy; 2. Fisica Aplicada, University of Salamanca, Salamanca, Spain*

**TUESDAY MORNING 8:00** — **AUSTIN BALLROOM**

## Session AS
# SPIN TORQUE AND OTHER EXCITATIONS IN MAGNETIC NANOSTRUCTURES (POSTER SESSION)

Maxim Tsoi, Chair

**AS-01. Modeling stability phase diagrams in spin-valves with perpendicular anisotropy Co/Ni layers.** *A.M. Deac*[1,2], W.H. Rippard[1], J.M. Shaw[1], R. Heindl[1] and M. Schneider[3,1] *1. Electromagnetics Division, National Institute of Standards and Technology (NIST), Boulder, CO; 2. Institut fuer Festkoerperforschung, Forschungszentrum Juelich GmbH, Juelich, Germany; 3. Department of Physics, University of Montana, Missoula, MT*

**AS-02. Current-Induced Magnetic Excitation of Synthetic Antiferromagnet.** *S. Lee*[1] and K. Lee[1] *1. Dept. of Mater. Sci. & Eng., Korea University, Seoul, South Korea*

**AS-03. Temperature dependence of spin-troque point contacts with perpendicular free layers.** *M.L. Schneider*[1], W.H. Rippard[2], A.M. Deac[2] and J.M. Shaw[2] *1. Physics and Astronomy, University of Montana, Missoula, MT; 2. Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO*

**AS-04. Mode excitation by AC spin torque for point contacts with in- and out of plane magnetizations.** *M.R. Pufall*[1,2], W.H. Rippard[2], M.L. Schneider[3] and J. Shaw[2] *1. Dept. of Physics, University of Denver, Denver, CO; 2. Electromagnetics Division, NIST, Boulder, CO; 3. Dept. of Physics, University of Montana, Missoula, MT*

**AS-05. Analytical and Numerical Modeling of Nonlinear Spin-Transfer Frequency Modulators.** G. Consolo[1], *V. Puliafito*[1], G. Finocchio[1], L. Lopez-Diaz[2] and B. Azzerboni[1] *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Departamento de Fisica Aplicada, University of Salamanca, Salamanca, Spain*

**AS-06. Precession modes excited by spin-transfer in a pinned synthetic antiferromagnetic layer.** *A.M. Deac*[1,3], T.J. Silva[1], W.H. Rippard[1], J.A. Katine[2], M.J. Carey[2] and M. Schneider[4] *1. Electromagnetics Division, National Institute of Standards and Technology (NIST), Boulder, CO; 2. Hitachi San Jose Research Center, San Jose, CA; 3. Institut fuer Festkoerperforschung, Forschungszentrum Juelich GmbH, Juelich, Germany; 4. Department of Physics, University of Montana, Missoula, MT*

**AS-07. Spin Torque based Magnetic Content Addressable Memory.** *W. Wang*[1] and Z. Jiang[1] *1. Electrical Engineering, University of Wisconsin - Milwaukee, Milwaukee, WI*

**AS-08. Magnetic Coupled Spin-torque Devices and 400MHz Ring Oscillator Design.** *L. Leem*[1] and J.S. Harris[1] *1. Electrical Engineering, Stanford University, Stanford, CA*

**AS-09. Spin torque transfer operated spintronic logic circuit.** *X. Yao*[1], Y. Zhang[1], X. Wang[1] and J.P. Wang[1] *1. MINT Center, ECE Department, Univ. of Minnesota, Minneapolis, MN*

**AS-10. Detection of current-induced resonance of magnetic vortices using tunnel magnetoresistance.** *T. Nozaki*[1], H. Kubota[2], S. Yuasa[2], M. Shiraishi[1], T. Shinjo[1] and Y. Suzuki[1] *1. Materials Engineering Science, Osaka University, Osaka, Japan; 2. National Institute of Advanced Industrial Science and Technology(AIST), Tsukuba, Japan*

**AS-11. Spin-polarized current stimulation of 100 nm dual vortex Co/Cu/Py spin valve nanopillars.** *A. Lyle*[1,2], Y. Hong[1,2], B.C. Choi[3], G.S. Abo[1,2], H. Han[1,2], J. Jalli[1,2], S. Bae[1,2], J. Lee[1,2], P. LeClaire[1], R. Syslo[2], G.W. Donohoe[4] and S. Gee[5] *1. MINT Center, University of Alabama, Tuscaloosa, AL; 2. Electrical and Computer Engineering, University of Alabama, Tuscalosoa, AL; 3. Physics and Astronomy, University of Victoria, Victoria, BC, Canada; 4. Electrical and Computer Engineering, University of Idaho, Moscow, ID; 5. Seagate Technology, Bloomington, MN*



**AS-12. Domain wall motion under spatially varying non-uniform transverse magnetic field for field driven memory applications.** *C. You*[1] *1. Department of Physics, Inha University, Incheon, South Korea*

**AS-13. Domain wall depinning in half-ring series wires with varied linewidth.** *K. Cheng*[1,2], C. Yu[1], S. Lee[1], Y. Liou[1], Y. Yao[3] and J. Huang[2] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Department of Materials Science and Engineering, National Tsing-Hua University, Hsinchu, Taiwan; 3. Department of Materials Engineering, Tatung University, Taipei, Taiwan*

**AS-14. Analysis of the domain wall resistance by magneto-transport in centipede-like structures consisting of different shape anisotropic Py wires.** *T. Chung*[1] and S. Hsu.[1] *1. Department of Electrophysics, National Chiao Tung University, Hsinchu, Taiwan*

**AS-15. In-situ observation of magnetic domain wall motion in magnetic nanowires by magneto-optical imaging.** *Y. Miyamoto*[1], K. Machida[1], N. Funabashi[1], N. Kawamura[1], K. Aoshima[1], K. Kuga[1] and N. Shimidzu[1] *1. Science & Technical Research Labs., NHK (Japan Broadcasting Corporation), Tokyo, Japan*

**AS-16. Current-Driven Domain Wall Motion in Co/Ni Wires with Perpendicular Magnetic Anisotropy.** *H. Tanigawa*[1], T. Koyama[1], N. Ohshima[2], S. Fukami[2], N. Ishiwata[2], S. Kasai[1] and T. Ono[1] *1. Graduate School of Science, Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 2. Device Platforms Research Laboratories, NEC Corportaion, Sagamihara, Kanagawa, Japan*

**TUESDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session AT
## CMR OXIDES II: FILMS AND HETEROSTRUCTURES (POSTER SESSION)

Tiffany Santos, Chair

**AT-01. Strong photovoltaic effect at low temperature in La0.7Sr0.3MnO3–δ /SrTiO3-Nb heterojunction.** *J. Shen*[1,2], J. Gao[1], F. Hu[3] and J. Sun[3] *1. Department of Physics, The University of Hong Kong, Hong Kong, China; 2. Material Science and Engineering, Hebei University of Technology, Tianjin, China; 3. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

**AT-02. Voltage control of magnetic and electrical properties of La0.7Ca0.3MnO3/PMN-PT structures.** S. Zhigao[1,2], *G. Ju*[1], S. Yuping[2] and S. Wenhai[2] *1. Department of Physics, The University of Hong Kong, Hong Kong, China; 2. Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Science, Hefei, China*

**AT-03. Magneto-transport properties of c-axis oriented $La_{0.7}Sr_{0.3}MnO_3$ thin films on MgO-buffered $SiO_2$/Si substrates.** *Y. Kang*[1], G. Shin[1], S. Lee[1], D. Yoo[1], A. Ulyanov[1] and S. Yoo[1] *1. Materials Science and Engineering, Seoul National University, Seoul, South Korea*

**AT-04. Anomalous behaviors of the MnO6 octahedron in perovskite colossal magnetoresistance material under strain effect.** *C. Wu*[1] and H. Chou[1] *1. National Sun Yat-sen University, Kaohsiung, Taiwan*

**AT-05. Phase separation induced by cation disorder and strain in (La,Y)2/3(Sr,Ca)1/3MnO3 films.** H. Cai[1], X. Wu[1], *B. Qian*[1], Z. Wang[1], X. Lu[1] and J. Gao[2] *1. Physics, Nanjing University, Nanjing, China; 2. Physics, The University of Hong Kong, Hong Kong, China*

**AT-06. Scanning Tunneling Microscopy and Spectroscopy (STM/STS) studies of annealing effects in colossal magneto resistance (CMR) manganite films.** *A. Rana*[1], K. Bogle[2], R. Kale[1] and S. Ogale[2] *1. Nanotechnology Lab, Defence Institute of Advanced Technology (Deemed University), Pune, Maharashtra, India; 2. Physical and Materials Chemistry Division, National Chemical Laboratory (NCL), Pune, Maharashtra, India*

**AT-07. Electronic and Magnetic Reconstructions at the Interface between Ferromagnetic and Nonmagnetic Oxides.** *J. Park*[1], D.R. Lee[2], Y. Choi[3], J.W. Freeland[3], K. Lee[1], S.K. Sihna[4,5] and A.M. Goldman[6] *1. Department of Physics, Pohang University of Science and Technology, Pohang, Gyeongbuk, South Korea; 2. Pohang Accelerator Laboratory, Pohang, Gyeongbuk, South Korea; 3. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 4. Department of Physics, University of California, San Diego, CA; 5. Los Alamos National Laboratory, Los Alamos, NM; 6. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN*

**AT-08. Thickness dependent weak ferromagnetism and insulator metal transition in $Nd_{0.37}Sr_{0.63}MnO_3$ thin films.** *R. Prasad*[1], P.K. Siwach[1], M.P. Singh[3], P. Fournier[3], A. Kaur[2] and H.K. Singh[1] *1. QHRS and Superconducting Devices Group, National Physical Laboratory, New Delhi, India; 2. Department of Physics and Astrophysics, University of Delhi, Delhi-110007, India; 3. Département de Physique, Université de Sherbrooke, Sherbrooke-J1K 2R1, QC, Canada*

**AT-09. X-ray Photoemission study in Re0.7Ca0.3MnO3 epitaxial thin films.** *T. Hsu*[1], A. Mani[2], C. Chuang[3,4], C. Chen[4], M. Lin[3,5] and J. Lin[1] *1. Center for Condensed Sciences, National Taiwan University, Taipei, Taiwan; 2. Materials Science Division, Indira Gandhi Centre for Atomic Research, Kalpakkam, India; 3. Department of Physics, National Taiwan University, Taipei, Taiwan; 4. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 5. Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan*



**AT-10. Magnetic and transport properties of epitaxial $La_{0.47}Ce_{0.20}Ca_{0.33}MnO_{3-\delta}$ films.** *W.J. Ren*[1], J.L. Yang[1], Y.Q. Zhang[1], D. Li[1], Z.H. Wang[1], X.G. Zhao[1] and Z.D. Zhang[1] *1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*

**AT-11. Anisotropic magnetoresistance and planar Hall effect in epitaxial films of $La_{0.7}Ca_{0.3}MnO_3$** N. Naftalis[1], *Y. Bason*[1], J. Hoffman[2], C. Ahn[2] and L. Klein[1] *1. Physics, Bar-Ilan University, Ramat Gan, Israel; 2. Applied Physics, Yale University, New-Haven, CT*

**TUESDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session AU
# MAGNETIC MICROSCOPY AND IMAGING I (POSTER SESSION)
Mihaela Tanase, Chair

**AU-01. Structure and charge ordering behavior of the colossal magnetoresistive manganite $Nd_{0.5}Sr_{0.5}MnO_3$** *Z. Luo*[1], D.J. Miller[2] and J.F. Mitchell[2] *1. Microscopy and Imaging Center, Texas A&M University, College Station, TX; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL*

**AU-02. High-resolution transmission electron microscopy and bulk magnetometry study of LaFe11.5Si1.5 compound.** *J. Zou*[1,2], B. Shen[2] and W. Li[1] *1. Division of Functional Materials, Central Iron and Steel Research Institute, Beijing, China; 2. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

**AU-03. Surface magnetic structure of epitaxial magnetite thin films grown on MgO(001).** *E. Kaji*[1], A. Subagyo[1] and K. Sueoka[1] *1. Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Japan*

**AU-04. X-rays and Magnetism – A Perfect Match.** *H. Ohldag*[1], Y.M. Acremann[2], E. Arenholz[3], A. Scholl[3] and J. Stohr[1] *1. SSRL, SLAC, Menlo Park, CA; 2. PULSE, SLAC, Menlo Park, CA; 3. ALS, LBNL, Berkeley, CA*

**AU-05. Instrumentation for the investigation of switching field distribution on permalloy ($Ni_{81}Fe_{19}$) nanoscale structures.** *J.R. Bates*[1], C.V. Cojocaru[1], Y. Miyahara[1] and P. Grütter[1] *1. Physics, McGill University, Montreal, QC, Canada*

**AU-06. Setup of a new Brillouin light scattering apparatus with submicrometric lateral resolution and application to the study of localised spin waves in nanomagnets.** G. Gubbiotti[1], M. Madami[1], S. Tacchi[1], *G. Carlotti*[1], G. Capuzzo[2] and P. Vavassori[2,3] *1. Dipartimento di Fisica, University of Perugia, Perugia, Italy; 2. Dipartimento di Fisica, University of Ferrara, Ferrara, Italy; 3. CIC nanoGUNE Consolider, San Sebastian, Spain*

**AU-07. Development and Testing of our In-situ Torque Apparatus for Magnetic Force Microscopy Measurements Comparing Solid and Hollow Torque Transducer Response for High Alloy Stainless Steel.** *C.L. Milby*[1] and D.S. Boley[1] *1. Physics, Western Illinois University, Macomb, IL*

**AU-08. High-resolution and High-coercivity FePt L10 Magnetic Force Microscopy Nanoprobes to Study Next-generation Magnetic Recording Media.** *N. Amos*[1], A. Lavrenov[1], R. Fernandez[1], R. Ikkawi[1], D. Litvinov[2] and S. Khizroev[1] *1. Electrical Engineering, University of California-Riverside, Riverside, CA; 2. Center for Nanomagnetic Systems, University of Houston, Houston, TX*

**AU-09. Heat-assisted high speed MOSLM with rare earth-transition metal in broadband wavelength.** *J. Heo*[1], J. Kim[1], T. Miyazawa[1] and M. Inoue[1] *1. Toyohashi University of Technology, Toyohashi, Aichi, Japan*

**TUESDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session AV
## FERRITES, GARNETS I (POSTER SESSION)
Pavol Kabos, Chair

**AV-01. Magnetic and structural properties of Co0.8MnxFe2.2-xO4 (x=0.2, 0.4, 0.6, 0.8) polycrystalline powders synthesized by sol-gel process.** *Z. Lu*[1], Z. Li[1] and Y. Li[1] *1. Hebei University of Technology, Tianjin, China*

**AV-02. Structural and Magnetic Properties of Electrospun Nickel Zinc Ferrite Nanofiber.** *J. Nam*[1], Y. Joo[1], J. Cho[1], M. Chun[1] and B. Kim[1] *1. Advanced Materials & Components Laboratory, Korea Institute of Ceramic Engineering and Technology, Seoul, South Korea*

**AV-03. Synthesis of thin ferrite films for RF applications by metal organic decomposition.** *V.V. Zagorodnii*[1,2], A.J. Hutchison[1] and Z.J. Celinski[1] *1. Center for Magnetism and Magnetic Nanostructures, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. On leave from National Taras Shevchenko University, Kyiv, Ukraine*

**AV-04. Frequency-dependent Complex Permittivity and Permeability of Iron-based Powders in 2-18 GHz.** *R. Yang*[1], S. Hsu[1] and C. Lin[2] *1. Dept. of Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 2. Dept. of Materials Science and Engineering, Feng Chia University, Taichung, Taiwan*

**AV-05. The effect of proton irradiation on magnetic properties of lithium ferrites.** *S. Hyun*[1], T. Kouh[1], S. Kim[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, South Korea*



**AV-06. Room temperature ferromagnetic ordering in indium substituted nano nickel zinc ferrite.** *S. Thakur*[1], S.C. Katyal[1], M. Singh[2], A.K. Gupta[3] and V.R. Reddy[3] *1. Physics, JUIT, Solan, Himachal Pradesh, India; 2. Physics, H.P.University, Shimla, Himachal Pradesh, India; 3. UGC-DAE Consitorium, University, Indore, Madhay Pradesh, India*

**AV-07. Microwave-Induced Combustion Synthesis of Li0.5Fe2.5-xMgxO4 Powder and Their Characterization.** *Y. Fu*[1] and C. Lin[2] *1. Department of Materials Science and Engineering, National Dong-Hwa University, Hualien, Taiwan; 2. Department of Graduate School of Optomechatronic and Materials, Wu-Feng Institute of Technology, Chiayi, Taiwan*

**AV-08. Faceting and magnetic response of $Mn_{3-x}Mg_xO_4$ (x=0 and 0.6) thin films grown on MgO(001) and (011) by molecular beam epitaxy.** Y. Tseng[1], K. Kuo[1] and *G. Chern*[1] *1. SPIN Research Center and Physics Department, National Chung Cheng University, Chia-Yi, Taiwan*

**AV-09. Resonantly enhanced stripe-line technique to measure microwave permeability of thin films.** *S.N. Starostenko*[1], K.N. Rozanov[1] and A.V. Osipov[1] *1. ITAE (former SCAPE), Moscow, Russian Federation*

**AV-10. Permeability calculation in composite media with low filler concentration: A new method based on effective media theory (EMT).** *J. Jiang*[1], L. Zhen[1], X. Wei[1], Y. Gong[1], W. Shao[1] and C. Xu[1] *1. School of Materials Science and Engineering, Harbin Institute of Technology, Harbin, China*

**AV-11. Magnetic and optical properties of RF- sputtered zinc ferrite thin films.** M. Sultan[1] and *R. Singh*[1] *1. School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

**AV-12. FEM Analysis on Power Loss Mechanism of $Fe_{55}Al_{18}O_{27}$ Thin Films for Conduction Noise through Microstrip Line.** G. Ryu[1] and *S. Kim*[1] *1. Department of Materials Engineering, Chungbuk National University, Cheongju, South Korea*

**AV-13. Ab-initio study on manganese substituted barium M-type hexaferrite.** *X. Zuo*[1], A. Geiler[2], A. Yang[2], C. Vittoria[2] and V.G. Harris[2] *1. College of Information Technical Science, Nankai University, Tianjin, Tianjin, China; 2. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA*

**AV-14. Superparamagnetic polymer nanocomposites for microwave applications.** *M.J. Miner*[1], S. Skidmore[2], T. Weller[2] and H. Srikanth[1] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Electrical Engineering, University of South Florida, Tampa, FL*

**AV-15. Low loss Z-type Barium ferrite (Co2Z) for T-DMB antenna application.** *S. Bae*[1], Y. Hong[1], J. Lee[1], J. Jalli[1], G.S. Abo[1], A. Lyle[1], W. Seong[2] and J. Keum[2] *1. MINT Center and Department of Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL; 2. E.M.W. Antenna Co., Ltd., Seoul, South Korea*

**AV-16. Bounds on the dynamic magnetic properties of multiresonant composites in exchange resonance model.** *P. Zhou*[1] and L. Deng[1] *1. School of Microelectronics and Solidstate Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

**TUESDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session AW
## NEW APPLICATIONS (POSTER SESSION)
Peter Mach, Chair

**AW-01. High Performance Induction Heating of FeCo Nanoparticles for the RF Curing of Epoxy Composites.** *K.J. Miller*[1], H.B. Soll-Morris[1], K.N. Collier[1,2], R. Swaminathan[3] and M.E. McHenry[1,4] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Intel Corporation, Chandler, AZ; 4. Physics, Carnegie Mellon University, Pittsburgh, PA*

**AW-02. Magnetorheological Carbonyl Iron Particles Doublely Wrapped with Polymer and Carbon Nanotube.** S. Ko[1], J. Lim[1], B. Park[1] and *H. Choi*[1] *1. Department of Polymer Science and Engineering, Inha University, Incheon, South Korea*

**AW-03. Magnetic field driven nanowire rotation in suspensions.** *L. Sun*[1], K. Keshoju[1] and H. Xing[1] *1. Mechanical Engineering, University of Houston, Houston, TX*

**AW-04. Sagnac Interferometric Switch Utilizing Faraday Rotation.** *S. Kemmet*[1], M. Mina[1] and R.J. Weber[1] *1. Electrical and Computer Engineering, Iowa State University, Ames, IA*

**AW-05. Minimum Inductance Coils for Magneto-Optic Switching.** *J. Tioh*[1], M. Mina[1] and R.J. Weber[1] *1. Electrical and Computer Engineering, Iowa State University, Ames, IA*

**AW-06. Development of new magnetic circuit for slim microspeakers.** *C. Lee*[1], J. Kwon[1] and S. Hwang[1] *1. Mechanical Engineering, Pusan National University, Busan, Busan, South Korea*

**AW-07. FeCoCrV alloy by the powder metallurgy route.** *J. Leicht*[1], D. Rodrigues[1], N.A. Castro[1], F.G. Landgraf[2] and V.C. Ferrao Jr[3] *1. Metallurgy, IPT, Sao Paulo, Sao Paulo, Brazil; 2. Metallurgy, EPUSP, Sao Paulo, Sao Paulo, Brazil; 3. THEMA, Jandira, Sao Paulo, Brazil*

**AW-08. Study of electromagnetic wave absorption characteristics and component parameters of laminating-type magnetic wood with stainless steel and ferrite powder for use as building materials.** *H. Oka*[1], K. Tanaka[1], K. Kubota[1], H. Osada[1] and F.P. Dawson[2] *1. Electric & Electronic Engineering, Iwate University, Morioka, Japan; 2. Electrical & Computer Engineering, University of Toronto, Toronto, ON, Canada*



**AW-09. Magnetic field amplifier using high-$T_c$ bulk superconductor.** *S. Choi*[1], S. Matsumoto[1] and T. Kiyoshi[1] *1. Magnet development group, National Institute for Materials Science, Tsukuba, Ibaraki, Japan*

**TUESDAY AFTERNOON 2:00** **SALON C**

## Session BA
## SYMPOSIUM ON SPIN TRANSPORT AND SINGLE SPIN MANIPULATION
Nitin Samarth, Chair

**2:00**

**BA-01. Manipulating Single Spins and Coherence in Diamond.** ***(Invited)*** R. Hanson[1,3], V.V. Dobrovitski[2], A.E. Feiguin[1] and *D.D. Awschalom*[1] *1. California NanoSystems Institute, University of California, Santa Barbara, CA; 2. Ames Laboratory and Iowa State University, Ames, IA; 3. Kavli Institute of Nanoscience, Delft, Netherlands*

**2:36**

**BA-02. Control of electron and hole spins in self-assembled InGaAs quantum dots.** ***(Invited)*** *G. Abstreiter*[1], J.J. Finley[1], D. Heiss[1] and V. Jovanov[1] *1. Walter Schottky Institut, TUM, Garching, Germany*

**3:12**

**BA-03. Electrical control of single spins in semiconductor nanostructures.** ***(Invited)*** *M.E. Flatté*[1,2], J. Pingenot[1,2], J. Tang[1,2], J. Levy[3], A. De[1,2] and C.E. Pryor[1,2] *1. Physics and Astronomy, University of Iowa, Iowa City, IA; 2. Optical Science and Technology Center, University of Iowa, Iowa City, IA; 3. Physics and Astronomy, University of Pittsburgh, Pittsburgh, PA*

**3:48**

**BA-04. Electrically tunable spin polarization in a carbon-nanotube spin diode.** ***(Invited)*** C.A. Merchant[1] and *N. Markovic*[1] *1. Physics and Astronomy, Johns Hopkins University, Baltimore, MD*

**4:24**

**BA-05. Coupling of Spin and Orbital Motion of Electrons in Carbon Nanotubes.** ***(Invited)*** *F. Kuemmeth*[1,2], S. Ilani[3,2], D.C. Ralph[2] and P.L. McEuen[2] *1. Department of Physics, Harvard University, Cambridge, MA; 2. Department of Physics, Cornell University, Ithaca, NY; 3. Department of Condensed Matter Physics, Weizmann Institute of Science, Rehovot, Israel*

TUESDAY AFTERNOON 2:00

SALON G

## Session BB
# DOMAIN WALL MOTION
Vitali Metlushko, Chair

**2:00**

**BB-01. The four distinct dynamic modes in the field-driven domain wall motions in soft ferromagnetic nanowires.** *J. Yang*[1], G.S. Beach[1] and J.L. Erskine[1] *1. Department of Physics, The University of Texas at Austin, Austin, TX*

**2:12**

**BB-02. Effect of anisotropy constant distribution on domain wall motion.** *S. Lee*[1], Y. Cho[1], U. Pi[1], J. Bae[1] and S. Seo[1] *1. SDL, SAIT, Youngin-si, Gyunggi-do, South Korea*

**2:24**

**BB-03. Motion of a vortex domain wall in a rough magnetic nanowire.** *P. Mellado*[1], D. Clarke[1] and O. Tchernyshyov[1] *1. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD*

**2:36**

**BB-04. Current and Field Induced Domain-Wall Depinning in Curved Permalloy Nanowires.** *G. Nahrwold*[1], L. Bocklage[1], T. Matsuyama[1], B. Krüger[2], J.M. Scholtyssek[1], U. Merkt[1] and G. Meier[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 2. I. Institute for Theoretical Physics, University of Hamburg, Hamburg, Germany*

**2:48**

**BB-05. Thermal stability of domain wall memory.** *S. Bance*[1], T. Schrefl[1], G. Hrkac[1], A. Goncharov[1], J. Dean[1], M. Bashir[1] and D.A. Allwood[1] *1. Engineering Materials, University of Sheffield, Sheffield, United Kingdom*

**3:00**

**BB-06. Magnetic configurations and magnetization reversal in thin ferromagnetic rings.** *G.D. Chaves-O'Flynn*[1], A.D. Kent[1] and D.L. Stein[1] *1. Physics, New York University, New York, NY*



**3:12**

**BB-07. Experimental suppression of Walker breakdown in transverse domain wall motion.** *E. Lewis*[1], D. Petit[1], A.V. Jausovec[1], H.T. Zeng[1], D.E. Read[1], L.A. O'Brien[1], J. Sampaio[1] and R.P. Cowburn[1] *1. Physics, Imperial College London, London, United Kingdom*

**3:24**

**BB-08. Current-excited magnetic domain and domain walls motion in small magnetic field observed by means of Lorentz microscopy.** *Y. Togawa*[1], T. Kimura[1,2], K. Harada[1,3], T. Akashi[3,4], T. Matsuda[3], A. Tonomura[1,3] and Y. Otani[1,2] *1. Advanced Science Institute, Institute of Physical and Chemical Research (RIKEN), Wako, Saitama, Japan; 2. Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan; 3. Advanced Research Laboratory, Hitachi, Ltd., Hatoyama, Japan; 4. Hitachi High-Technologies Co., Hitachinaka, Japan*

**3:36**

**BB-09. Field- and Current-induced Domain Wall Motion in Permalloy Nanowires probed by single shot Kerr-microscopy.** *P. Möhrke*[1], T.A. Moore[2,1], M. Kläui[1], S. Krzyk[1], J. Rhensius[3,1], D. Backes[3,1], L.J. Heyderman[3] and U. Rüdiger[1] *1. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 2. SPINTEC, CEA Grenoble, Grenoble, France; 3. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, Villingen, Switzerland*

**3:48**

**BB-10. Domain wall motion and spin structure transformations in Permalloy nanowires induced by current and field.** *T.A. Moore*[1,2], M. Kläui[2], P. Möhrke[2], L. Heyne[2], D. Backes[2,3], J. Rhensius[2,3], U. Rüdiger[2], L.J. Heyderman[3] and J. Thiele[4] *1. SPINTEC, Grenoble, France; 2. Fachbereich Physik, University of Konstanz, Konstanz, Germany; 3. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, Villigen, Switzerland; 4. Hitachi Global Storage Industries, San Jose, CA*

**4:00**

**BB-11. Domain wall in ferromagnetic nanowires moving in a high applied field.** *D. Clarke*[1], G. Chern[1] and O. Tchernyshyov[1] *1. Johns Hopkins University, Baltimore, MD*

**4:12**

**BB-12. Magnetic domain wall velocity surge above Walker breakdown.** *G. Beach*[1], J. Yang[1], C. Knutson[1], M. Tsoi[1] and J. Erskine[1] *1. The University of Texas at Austin, Austin, TX*

**4:24**

**BB-13. Controlling anti-vortices for fast domain wall motion in nanowires.** *A. Kunz*[1], S.C. Reiff[1], E.C. Breitbach[1] and A.J. Smith[1]*1. Physics, Marquette University, Milwaukee, WI*

**4:36**

**BB-14. Tuning the domain-wall velocity by a perpendicular magnetic field.** *J. He*[1] and S. Zhang[1]*1. Department of Physics, University of Arizona, Tucson, AZ*

**4:48**

**BB-15. Domain wall dynamics in the ferromagnetic semiconductor (Ga,Mn)As.** V. Jeudy[1,2], A. Dourlat[1], A. Lemaître[3] and *C. Gourdon*[1]*1. Institut des Nanosciences de Paris, Université Pierre et Marie Curie-Paris 6 and CNRS, Paris, France; 2. Université de Cergy-Pontoise, Cergy-Pontoise, France; 3. Laboratoire de Photonique et Nanostructures, CNRS, Marcoussis, France*

## TUESDAY AFTERNOON 2:00 SALON A

### Session BC
## RECORDING HEADS I
Adam Torabi, Chair

**2:00**

**BC-01. "All-Heusler" alloy CPP-GMR read heads for narrow-track magnetic recording. *(Invited)*** *K. Nikolaev*[1], P. Kolbo[1], T. Pokhil[1], X. Peng[1], Y. Chen[1], T. Ambrose[2] and O. Mryasov[2]*1. Seagate Technology, Bloomington, MN; 2. Seagate Technology, Pittsburgh, PA*

**2:36**

**BC-02. Enhancement of CPP-GMR by using Co–Fe–Ge high-resistivity ferromagnetic material for a narrow-gap read head.** *A. Jogo*[1], K. Nagasaka[1], H. Oshima[1], Y. Shimizu[1], S. Eguchi[1] and A. Tanaka[1]*1. Storage Systems Laboratories, Fujitsu Laboratories ltd, Atsugi, Kanagawa, Japan*

**2:48**

**BC-03. Enhancement of spin-torque critical currents in CPP-GMR spin-valves with synthetic-ferrimagnet free-layer.** *N. Smith*[1], M.J. Carey[1], S. Maat[1] and J.R. Childress[1]*1. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*



**3:00**

**BC-04. Low noise dual free layer magneto-resistive sensor.** *Y. Zhou*[1]*1. R&D, Headway Technology, Milpitas, CA*

**3:12**

**BC-05. The MR origin of FeCo nanocontacts with CPP spin-valve structure. *(Invited)*** *M. Takagishi*[1], H.N. Fuke[1], S. Hashimoto[1], H. Iwasaki[1], S. Kawasaki[2], R. Shiozaki[2] and M. Sahashi[2]*1. Corporate Research & Development Center, Toshiba Corporation, 1, Komukai Toshiba-cho, Saiwai-ku, Kawasaki 212-85, Japan; 2. Department of Electronic Engineering, Tohoku University, Aoba-yama 05, Sendai 980-8579, Japan*

**3:48**

**BC-06. Effects of Pinning Defects on Current-Perpendicular-to-Plane Magnetic Recording Head.** *L.L. Chen*[1], F. Liu[1], K. Stoev[1], S. Li[1], M. Ho[1] and S. Mao[1]*1. Western Digital Corp, Fremont, CA*

**4:00**

**BC-07. Intrinsic asymmetry and angular dependence of the junction resistance for high TMR read sensors.** *VB. Sapozhnikov*[1], K. Gao[1] and Y. Chen[1]*1. Seagate Technology, Minneapolis, MN*

**4:12**

**BC-08. Impact of Leading Edge Bevel on Perpendicular Writer Performance.** *S. Song*[1], L. Zhong[1], M. Ho[1], K. Stoev[1] and S. Mao[1]*1. Magnetic Head Operations, Western Digital Corporation, Fremont, CA*

**4:24**

**BC-09. Cross-track performance of wrap around shield writer with capped media beyond 500 Gb/in2 recording.** *S. Das*[1], M. Sugiyama[1], A. Nakamura[1], H. Hoshiya[1] and K. Nakamoto[1]*1. Hitachi Central Research Laboratory, Odawara, Kanagawa, Japan*

**4:36**

**BC-10. Effect of Ion-beam Etching Damage in Fe-Co Tapered Main Pole.** *Y. Ohsawa*[1,2], K. Yamakawa[2] and H. Muraoka[2]*1. CR&D center, Toshiba Corp., Kawasaki, Japan; 2. RIEC, Tohoku Univ., Sendai, Japan*

**4:48**

**BC-11. Analysis of Writer Pole Remanence of a Tapered Main Pole Head.** *M. Maeda*[1], H. Kobayashi[2], J. Toda[1], Y. Sato[2] and S. Eguchi[1] *1. Magnetic Device Laboratory, Fujitsu Laboratories Ltd., Atsugi, Kanagawa, Japan; 2. Autonomous System Laboratory, Fujitsu Laboratories Ltd., Atsugi, Kanagawa, Japan*

**TUESDAY AFTERNOON 2:00** **SALON B**

## Session BD
# ANISOTROPY IN MULTILAYERS AND SURFACES

Dario Arena, Chair

**2:00**

**BD-01. Voltage induced large magnetic anisotropy change in ultrathin Fe/MgO/Polyimide/ITO junctions.** ***(Invited)*** *T. Maruyama*[1], K. Ohta[1], T. Nozaki[1], T. Shinjo[1], M. Shiraishi[1], S. Mizukami[2], Y. Ando[3] and Y. Suzuki[1] *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 2. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan; 3. Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

**2:36**

**BD-02. 400-Fold Reduction in Saturation Field by Interlayering.** *J. Bonevich*[1], P. Pong[1], C. Beauchamp[1], G. Stafford[1], W.F. Egelhoff[1], J. Unguris[2] and R.D. McMichael[2] *1. Metallurgy Division, NIST, Gaithersburg, MD; 2. Center for Nanoscale Science and Technology, NIST, Gaithersburg, MD*

**2:48**

**BD-03. Ferromagnetic resonance study of ion irradiated Co/Ni multilayers with perpendicular magnetic anisotropy.** *J.L. Beaujour*[1], A.D. Kent[1], D. Ravelosona[2], E.E. Fullerton[3], Y. Samson[4] and C. Beigné[4] *1. Department of Physics, New York University, New York, NY; 2. Institut d'Electronique Fondamentale, UMR CNRS 8622, Université Paris Sud, Orsay, France; 3. Center for Magnetic Recording Research, University of California, San Diego, CA; 4. CEA Grenoble, DRFMC/SP2M, Grenoble, France*

**3:00**

**BD-04. Magneto-optical measurement of spin dynamics in perpendicular anisotropy Co/Pd multilayers with varying Co layer thickness.** *Z. Liu*[1], H. Schmidt[1], O. Hellwig[2] and B. Terris[2] *1. Electrical Engineering, University of California Santa Cruz, Santa Cruz, CA; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*



**3:12**

**BD-05. Domain wall dynamics in a spin-reorientation transition system Au/Co/Au.** *K.A. Seu*[1,2], S. Roy[1], S. Park[3], C.M. Falco[4] and S.D. Kevan[2] *1. Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, CA; 2. Physics, University of Oregon, Eugene, OR; 3. Department of Physics, Pusan National University, Busan 609-735, South Korea; 4. College of Optical Sciences, University of Arizona, Tucson, AZ*

**3:24**

**BD-06. Magnetic anisotropy and the cone state in Co/Pt multilayer films.** H. Stillrich[1], C. Menk[1], R. Frömter[1] and *H. Oepen*[1] *1. Institut für Angewandte Physik, Universität Hamburg, Hamburg, Hamburg, Germany*

**3:36**

**BD-07. Frustrated magnetization reversal in Co/Pt multilayers.** *J.E. Davies*[1,2], O. Hellwig[3], E.E. Fullerton[3,4], M. Winklhofer[5], R.D. Shull[1] and K. Liu[2] *1. Metallurgy/Magnetic Materials, NIST, Gaithersburg, MD; 2. Physics Department, University of California, Davis, CA; 3. Hitachi Global Storage Technologies, San Jose, CA; 4. Center for Magnetic Recording, University of California, San Diego, CA; 5. Department of Geosciences, University of Munich, München, Germany*

**3:48**

**BD-08. Design of Co/Pd multilayer system with antiferromagnetic-to-ferromagnetic phase transition.** *J. Thiele*[1], T. Hauet[2] and O. Hellwig[2] *1. Research & Technology Development, Seagate Technology, Fremont, CA; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

**4:00**

**BD-09. Strain-modulated Transition Temperatures in Epitaxial Thin Films of FeRh.** *J. Kim*[1], P. Ryan[1], Y. Ding[2], D. Arena[2], L.H. Lewis[3], C. Kinane[4], B. Hickey[4], C. Marrows[4] and M. Ali[4] *1. μ-CAT Consortium, Advanced Photon Source, Argonne, IL; 2. National Synchrotron Light Source, Brookhaven National Lab, Upton, NY; 3. Dept. of Chemical Engineering, Northeastern University, Boston, MA; 4. School of Physics and Astronomy, University of Leeds, Leeds, Yorkshire, United Kingdom*

**4:12**

**BD-10. Alternating out-of-plane and in-plane magnetization in $(Rh/Fe_{1-x}Co_x)_N/Rh(001)$ multilayers.** F. Yildiz[1], *M. Przybylski*[1] and J. Kirschner[1] *1. Experimental I, Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany*

**4:24**

**BD-11. Perpendicular magnetic anisotropy of ultrathin FeCo alloy films on Pd(001) surface: First principles study.** D. Kim[1] and *J. Hong*[1] *1. Physics, Pukyong National University, Busan, South Korea*

**4:36**

**BD-12. Role of spin-orbit coupling in spin-spiral structures in Fe monolayer on W(110): A first-principles noncollinear magnetism study.** *K. Nakamura*[1], T. Akiyama[1], T. Ito[1] and A.J. Freeman[2] *1. Physics Engineering, Mie University, Tsu, Mie, Japan; 2. Physics and Astronomy, Northwestern University, Evanston, IL*

**4:48**

**BD-13. Magnetic anisotropy of single 3d-spins on CuN surface.** *A.B. Shick*[1], F. Maca[1] and A.I. Lichtenstein[2] *1. CMT, Institute of Physics ASCR, Prague, Czech Republic; 2. University of Hamburg, Hamburg, Germany*

TUESDAY AFTERNOON 2:00 SALON D

## Session BE
## ITINERANT MAGNETISM AND ELECTRONIC STRUCTURE

Julian Velev, Chair

**2:00**

**BE-01. Quasiparticle self-consistent *GW* method applied to localized and itinerant magnets. *(Invited)*** *M. van Schilfgaarde*[1] and T. Kotani[1] *1. School of Materials, Arizona State University, Tempe, AZ*

**2:36**

**BE-02. Ferromagnetism in Transition metals.** *C. Chaves*[1] and A. Troper[1,2] *1. Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, RJ, Brazil; 2. Universidade do Estado do Rio de Janeiro, Rio de Janeiro, RJ, Brazil*

**2:48**

**BE-03. Spin wave dispersion in ferromagnetic Co and Ni.** *J.M. Rejcek*[1], N.G. Fazleev[1] and J.L. Fry[1] *1. Physics, University of Texas at Arlington, Arlington, TX*



**3:00**

**BE-04. Invar effect and non-collinear magnetism in CuFe alloys.** *M. Eisenbach*[1] and G. Stocks[2] *1. National Center for Computational Sciences, Oak Ridge National Lab, Oak Ridge, TN; 2. Material Sciences and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN*

**3:12**

**BE-05. Oscillatory magnetic exchange coupling at the atomic level: a direct real-space study by a subkelvin spin-polarized STM. *(Invited)* *L. Zhou***[1], F. Meier[1], J. Wiebe[1] and R. Wiesendanger[1] *1. Institute of Applied Physics and Microstructure Research Center, University of Hamburg, Hamburg, Germany*

**3:48**

**BE-06. Femtosecond and sub-femtosecond magnetization dynamics in diluted ferromagnetic metals.** *A. Tagliaferri*[1], V. Bisogni[2] and N.B. Brookes[2] *1. Politecnico di Milano, Milano, Italy; 2. ESRF, Grenoble, France*

**4:00**

**BE-07. High energy photoemission spectroscopy as a tool for non-destructive depth profiling of Heusler compounds.** *A. Gloskovskii*[1], G.H. Fecher[1], S. Chadov[1], S. Ouardi[1], B. Balke[1], C.A. Jenkins[1], C. Felser[1], E. Ikenaga[2], S. Ueda[3], K. Kobayashi[3], M. Mertin[4], F. Schäfers[4] and M. Gorgoi[4] *1. Institut für Anorganische Chemie und Analytische Chemie, Johannes Gutenberg-Universität Mainz, Mainz, Germany; 2. Japan Synchrotron Radiation Research Institute, SPring-8, Hyogo, Japan; 3. National Institute for Materials Science, SPring-8, Hyogo, Japan; 4. BESSY GmbH, Berlin, Germany*

**4:12**

**BE-08. Calculated Electronic and Magnetic Structure of Rutile Phase $V_{1-x}Cr_xO_2$** *M.E. Williams*[2], W.H. Butler[1], C.K. Mewes[1], H. Sims[1] and M. Chshiev[1] *1. MINT Center, University of Alabama, Tuscaloosa, AL; 2. Math and Computer Science, University of Maryland Eastern Shore, Princess Anne, MD*

**4:24**

**BE-09. Ferromagnetism in $LaCoO_3$ Epitaxial Thin Films.** *V.V. Mehta*[1,2], M. Liberati[1,2], F. Wong[1], R.V. Chopdekar[1,3], E. Arenholz[4] and Y. Suzuki[1,2] *1. Department of Materials Science and Engineering, UC Berkeley, Berkeley, CA; 2. Material Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. School of Applied Physics, Cornell University, Ithaca, NY; 4. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

TUESDAY AFTERNOON 2:00 SALON E

## Session BF
## NONLINEAR DYNAMICS
Radik Lopusnik, Chair

**2:00**

**BF-01. New Nonlinear Modes Excited by Spin-Polarized Current in Ferromagnetic Nano-Contacts.** ***(Invited)*** *M. Hoefer*[1], T.J. Silva[1] and M.D. Stiles[2] *1. NIST, Boulder, Boulder, CO; 2. NIST, Gaithersburg, Gaithersburg, MD*

**2:36**

**BF-02. Methods of nonlinear dynamics in the theory of spin-torque excitations.** ***(Invited)*** *C. Serpico*[1], G. Bertotti[2], I.D. Mayergoyz[3], M. d'Aquino[4] and R. Bonin[5] *1. Dept. of Electrical Engineering, University of Naples Federico II, Napoli, NA, Italy; 2. INRIM, Torino, TO, Italy; 3. Dept. of Electrical and Computer Eng. and UMIACS, University of Maryland, College Park, MD; 4. Dip. per le Tecnologie, Università di Napoli Parthenope, Napoli, NA, Italy; 5. Osservatorio Astronomico della Valle d'Aosta, Nus, Aosta, Italy*

**3:12**

**BF-03. Influence of the Oersted field on the current-induced magnetization dynamics of nanodisks.** A. Kakay[1], *R. Hertel*[1], S. Gliga[1], R. Lehndorff[1], D.E. Bürgler[1] and C.M. Schneider[1] *1. Institute of Solid State Research, Julich Research Center, Julich, Germany*

**3:24**

**BF-04. The Hamiltonian coefficients in nonlinear spin wave dynamics.** *P. Krivosik*[1,2] and C.E. Patton[1] *1. Colorado State University, Fort Collins, CO; 2. Slovak University of Technology, Bratislava, Slovakia*

**3:36**

**BF-05. Nonlinear Effects in Microstrip Structures with Permalloy Ribbons: Instability Thresholds and FMR Frequency Shifts.** *Y.V. Khivintsev*[1,2], R.E. Camley[1] and Z.J. Celinski[1] *1. Center for Magnetism and Magnetic Nanostructures, University of Colorado, Colorado Springs, Colorado Springs, CO; 2. Kotel'nikov SBIRE RAS, Saratov, Russian Federation*



**3:48**

**BF-06. Interaction of magnetic solitons with potential barriers and wells.** *U. Hansen*[1], V.E. Demidov[1] and S.O. Demokritov[1] *1. University of Muenster, Muenster, Germany*

**4:00**

**BF-07. Stability of weakly dissipative Bose-Einstein condensate of parametrically pumped magnons.** *V. Tyberkevych*[1] and A. Slavin[1] *1. Department of Physics, Oakland University, Rochester, MI*

**4:12**

**BF-08. Microwave-assisted spin wave hybridization in patterned ferromagnets.** *V. Novosad*[1], S. Chui[2], F.Y. Fradin[1], M. Grimsditch[1] and S.D. Bader[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Bartol Research Institute, University of Delaware, Newark, DE*

**4:24**

**BF-09. Time- and vector-resolved Kerr measurements of large angle precessional reorientation in a 2×2 $\mu m^2$ ferromagnetic element.** *P.S. Keatley*[1], V.V. Kruglyak[1], A. Neudert[1], R.J. Hicken[1], J.R. Childress[2] and J.A. Katine[2] *1. School of Physics, University of Exeter, Exeter, United Kingdom; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

**4:36**

**BF-10. Direct Brillouin light scattering observation of microwave three magnon confluence process in nonlinear spin wave dynamics for yttrium iron garnet films.** *C.L. Ordóñez-Romero*[1,2], W. Tong[1], B.A. Kalinikos[1,3] and C.E. Patton[1] *1. Physics, Colorado State University, Fort Collins, CO; 2. Centro de Ciencias Aplicadas y Desarrollo Tecnológico, Universidad Nacional Autónoma de México, México D.F., D.F., Mexico; 3. St. Petersburg Electrotechnical University, St. Petersburg, Russian Federation*

TUESDAY AFTERNOON 2:00 400/402

## Session BG
## MAGNETIC MICROSCOPY AND IMAGING II
June Lau, Chair

**2:00**

**BG-01. Imaging of Vortex Gyration Driven by a DC Spin-Polarized Current.** *X. Yu*[1], V.S. Pribiag[2], Y. Acremann[3], A. Tulapurkar[4], V. Chembrolu[1], T. Tyliszczak[5], K. Chou[5], Z. Li[2], R. Buhrman[2], H.C. Siegmann[3] and J. Stöhr[4] *1. Stanford University, Stanford, CA; 2. Cornell University, Ithaca, NY; 3. Pulse Institute, Menlo Park, CA; 4. Stanford Synchrotron Radiation Laboratory, Menlo Park, CA; 5. Advanced Light Source, Berkeley, CA*

**2:12**

**BG-02. X-ray diffraction study of magnetic states in patterned nanoscopic elements.** *F.Y. Ogrin*[1], G. van der Laan[2], G. Beutier[2], C. Tieg[3] and E. Sirotkin[1] *1. University of Exeter, Exeter, United Kingdom; 2. Diamond Light Source, Oxfordshire, United Kingdom; 3. ESRF, Grenoble, United Kingdom*

**2:24**

**BG-03. Remanent States and Magnetization Reversal of Nanopatterned Spin Valve Elements using Off-Axis Electron Holography.** *K. He*[1], D.J. Smith[2] and M.R. McCartney[2] *1. School of Materials, Arizona State University, Tempe, AZ; 2. Department of Physics, Arizona State University, Tempe, AZ*

**2:36**

**BG-04. Exchange bias and pinning in patterned ferromagnetic-antiferromagnetic heterostructures.** *M. Tanase*[1], A.K. Petford-Long[1] and O.G. Heinonen[2] *1. Materials Science Division, Argonne National Laboratory, Lemont, IL; 2. Seagate Research, Bloomington, MN*

**2:48**

**BG-05. Tomographic reconstruction of 3-D Magnetic Induction using Lorentz Microscopy.** *C. Phatak*[1], M. De Graef[1], A. Petford-Long[2], M. Tanase[2] and A. Imre[2] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Argonne National Laboratory, Argonne, IL*

**3:00**

**BG-06. Observation of in-plane domain structure and magnetization process in writer pole for perpendicular recording heads by electron holography.** *K. Hirata*[1], J. Kim[2], Y. Ishida[1], D. Shindo[3], M. Takahashi[4] and A. Tonomura[2,5] *1. Head Business Group, TDK Corporation, Saku, Nagano, Japan; 2. Initial Research Project, Okinawa Institute of Science and Technology, Kunigami, Okinawa, Japan; 3. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Miyagi, Japan; 4. New Industry Creation Hatchery Center, Tohoku University, Sendai, Miyagi, Japan; 5. Advanced Research Laboratory, Hitachi Ltd., Hatoyama, Saitama, Japan*

**3:12**

**BG-07. Imaging submicron ferroelectric domains using slow electrons.** *S. Cherifi*[1], S. Fusil[2], R. Hertel[3], H. Béa[2], M. Bibes[2] and A. Barthélémy[2] *1. Nanoscience, Institut Néel, CNRS-UJF, Grenoble, France; 2. Unité Mixte de Physique CNRS-Thales, Palaiseau, France; 3. Electronic Properties (IFF-9), Institut für Festkörperforschung, Forschungszentrum Jülich GmbH, Jülich, Germany*



**3:24**

**BG-08. Hot electron transport and quantitative study of ballistic electron magnetic imaging on Co/Cu multilayers.** *S. Rohart*[1], K. Andreas[1], T. André[1] and M. Jacques[1] *1. Laboratoire de Physique des Solides, Orsay, France*

**3:36**

**BG-09. Ballistic electron emission on pyramidal ferromagnet-semiconductor heterostructures for spin-filtering STM.** *I.J. Vera Marún*[1] and R. Jansen[1] *1. MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

**3:48**

**BG-10. Investigations on a Permalloy Keeper Layer for the Readout of Magnetically Stored Data based on the Magneto-optical Kerr Effect.** *K. Wu*[1], S. Rudolf[2] and H.H. Gatzen[1] *1. Institute for Microtechnology, Leibniz Universität Hannover, Garbsen, Lower Saxony, Germany; 2. Institute for Metallic Materials, Leibniz Institute for Solid State and Materials Research Dresden, Dresden, Saxons, Germany*

**4:00**

**BG-11. Growth, Interfacial Structure and Chemistry of CoFe2O4 Thin Films on SrTiO3 and MgO substrates.** *S. Xie*[1,2], J. Cheng[1,3], B.W. Wessels[1,3] and V.P. Dravid[1,3] *1. Department of Materials Science and Engineering, Northwestern University, Evanston, IL; 2. EPIC-NUANCE Center, Northwestern University, Evanston, IL; 3. Materials Research Center, Northwestern University, Evanston, IL*

**4:12**

**BG-12. Backscattered electron limitations on magnetic imaging resolution in SEMPA.** *J. Unguris*[1] and S. Chung[1,2] *1. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 2. Maryland NanoCenter, University of Maryland, College Park, MD*

**4:24**

**BG-13. Dynamical Measurements with a Nuclear Magnetic Resonance Force Microscope.** *H. Chia*[1], M. Monti[1], Y. Lee[2], W. Lu[1], J. Choi[3] and J.T. Markert[1] *1. Department of Physics, University of Texas at Austin, Austin, TX; 2. Department of Mechanical Engineering, University of Texas at Austin, Austin, TX; 3. Mechanical Metrology Group, Division of Physical Metrology, KRISS, Daejon 305-340, South Korea*

**4:36**

**BG-14. A Compact, Wide Temperature Range (300mK-300K) Magnetic Force Microscope using High Resolution Fibre Interferometer.** *O. Karci*[1], A. Oral[2] and M. Dede[3] *1. R&D, NanoMagnetics Instruments Ltd, Oxford, United Kingdom; 2. Natural Sciences and Engineering Department, Sabanci University, Istanbul, Turkey; 3. Physics Department, Bilkent University, Ankara, Turkey*

**4:48**

**BG-15. Magnetic force microscopy of alternating magnetic field by frequency modulation of tip oscillation.** *H. Saito*[1], S. Ishio[1], H. Ikeya[1], G. Egawa[1] and S. Yoshimura[1] *1. Faculty of Engineering and Resource Science, Akita University, Akita, Akita, Japan*

## TUESDAY AFTERNOON 2:00 410

### Session BH
## LOW-DIMENSIONAL SYSTEMS AND CRITICAL PHENOMENA

V. Dobrovitski, Chair

**2:00**

**BH-01. Bose-Einstein condensation of magnons confined to a nanoparticle.** *L.H. Bennett*[1,4], E. Della Torre[1,4], P.R. Johnson[2] and R.E. Watson[3] *1. ECE, George Washington University, Ashburn, VA; 2. CAS, American University, Washington, DC; 3. Physics, Brookhaven National Laboratory, Upton, NY; 4. Metallurgy, NIST, Gaithersburg, MD*

**2:12**

**BH-02. Exotic vortex effect on the alternating order around impurities in antiferromagnets.** *R. Vaia*[1] and A. Cuccoli[2] *1. Istituto dei Sistemi Complessi, Consiglio Nazionale delle Ricerche, Sesto Fiorentino, FI, Italy; 2. Dipartimento di Fisica, Università di Firenze, Sesto Fiorentino, FI, Italy*

**2:24**

**BH-03. Thermal properties and critical behavior of transition-metal magnetic monoxides MnO, CoO, NiO.** *A. Oleaga*[1], M. Massot[1], A. Salazar[1], D. Prabhakaran[2], M. Martin[3], P. Berthet[4] and G. Dhalenne[4] *1. Física Aplicada I, Escuela Tecnica Superior de Ingenieria/Universidad del País Vasco UPV/EHU, Bilbao, Spain; 2. Department of Physics, Clarendon Laboratory, University of Oxford, Oxford, United Kingdom; 3. Insitut für Physikalische Chemie, RWTH Aachen, Aachen, Germany; 4. UMR8182, ICMMO/LPCES, Université Paris Sud and CNRS, Orsay, France*



**2:36**

**BH-04. Magnetism on quasi-2D triangular lattices.** ***(Invited)*** *M.D. Johannes*[1] and I.I. Mazin[1] *1. Center for Computational Materials Science, Naval Research Laboratory, Washington, DC*

**3:12**

**BH-05. Exchange and dipolar interaction in ultrathin films and nanostructures.** *G. Bayreuther*[1] and R. Meier[1] *1. Inst. f. Exp. Physik, Universitaet Regensburg, Regensburg, Germany*

**3:24**

**BH-06. Raman Studies of doped Magnetite above and below the Verwey Transition.** L. Gasparov[1], *A. Rush*[1], T. Pekarek[1], N. Patel[1] and H. Berger[2] *1. Chemistry and Physics, University of North Florida, Jacksonville, FL; 2. EPFL, Lausanne, Switzerland*

**3:36**

**BH-07. On the origin of strong perpendicular anisotropy in $Fe_{1-x}Co_x$ alloy films grown on Pd(001), Ir(001) and Rh(001).** F. Yildiz[1], *M. Przybylski*[1] and J. Kirschner[1] *1. Experimental I, Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany*

**3:48**

**BH-08. Comparative studies of Co nanowires of different diameters electroplated into porous aluminum oxide membranes.** *Z. Ye*[1], H. Liu[1], Z. Luo[2], H. Lee[1], W. Wu[1], D.G. Naugle[1] and I. Lyuksyutov[1] *1. Physics, Texas A & M University, College Station, TX; 2. Microscopy and Imaging Center, Texas A & M University, College Station, TX*

**4:00**

**BH-09. Proximity effects in multilayered ferromagnet/superconductor nanostructures.** N.G. Fazleev[1,2], *Y.N. Proshin*[2], M.G. Khusainov[2,3] and R.G. Luchkin[2] *1. Physics, University of Texas at Arlington, Arlington, TX; 2. Physics, Kazan State University, Kazan, Russian Federation; 3. Vostok Branch, Kazan State Technical University, Chistopol', Russian Federation*

**4:12**

**BH-10. Magnetic Phase Transition in Ultrathin Helimagnetic Ho Films.** F. Cinti[1], *A. Cuccoli*[1] and A. Rettori[1] *1. Dipartimento di Fisica, Universita' di Firenze, Sesto Fiorentino (FI), Italy*

**4:24**

**BH-11. Exploring Magnon Heat Transport and Thermal Spin Currents in Ferromagnetic Thin Films.** *A.D. Avery*[1], R. Sultan[1], M.R. Pufall[1] and B.L. Zink[1] *1. Department of Physics & Astronomy, University of Denver, Denver, CO*

**4:36**

**BH-12. Mangetic phase transition for 3D Heisenberg weak random anisotropy model: Monte Carlo study.** *H.M. Nguyen*[1] and Y.P. Hsiao[1] *1. Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan*

**4:48**

**BH-13. Magnetization Fluctuations in NiO nanoparticles.** *S.K. Mishra*[1] and V. Subrahmanyam[1] *1. Physics, IIT Kanpur, Kanpur, U.P., India*

**TUESDAY AFTERNOON 1:00** **AUSTIN BALLROOM**

## Session BP
## MULTIFERROICS I: FILMS AND NANOSTRUCTURES (POSTER SESSION)
Christian Binek, Chair

**BP-01. Surface magnetoelectric effect in ferromagnetic metal films.** C. Duan[2], R.F. Sabirianov[4,3], Z. Zhu[2], J. Chu[2], S.S. Jaswal[1,3] and *E. Tsymbal*[1,3] *1. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Key Laboratory of Polarized Materials and Devices, Ministry of Education, East China Normal University, Shanghai, China; 3. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 4. Department of Physics, University of Nebraska, Omaha, NE*

**BP-02. Artificially controlled magnetic domain structures in ferromagnetic dots/ferroelectric heterostructures.** *T. Taniyama*[1,2], K. Akasaka[1], D. Fu[3,1] and M. Itoh[1] *1. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan; 3. ERATO, Japan Science and Technology Agency, Kawaguchi, Japan*

**BP-03. Effect of the Ni80Fe20 inserted layers on multiferroic property for [NiFe/AlN]n multilayers.** *D. Wei*[1], Y. Yao[2] and D. Hung[3] *1. Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan; 2. Department of Materials Engineering, Tatung University, Taipei, Taiwan; 3. Ming Chuan University, Taipei, Taiwan*

**BP-04. Relationships between magneto-capacitance-voltage characteristics and magneto-resistance of Au/$Cr_2O_3$/$Cr_2O_{3-x}$/FeCr/$CeO_2$/Si MIS capacitor.** *T. Yokota*[1], S. Murata[1], S. Kito[1] and M. Gomi[1] *1. Environmental and Materials Engineering, Nagoya Institute of Technology, Nagoya, Aichi, Japan*



**BP-05. Structural analysis of interfacial strained epitaxial $BiMnO_3$ films fabricated by chemical solution deposition.** *T. Harima*[1], H. Naganuma[1], H. Shima[1], S. Okamura[1], A. Kovacs[2] and Y. Hirotsu[2] *1. Tokyo University of Science, Tokyo, Japan; 2. ISIR Osaka University, Osaka, Japan*

**BP-06. Magnetic properties of $SrTiO_3$-buffered $Ba(Fe_{0.2}Zr_{0.8})O_{3-\delta}$ films on Si(001) substrates.** *H. Kanatani*[1] and T. Matsui[1] *1. Graduate School of Engineering, Osaka Prefecture University, Sakai, Osaka, Japan*

**BP-07. Effect of valence state on structure and magnetic properties of $Ba(Fe_{0.5}Mn_{0.5})O_{3-\delta}$ single-crystal films on $SrTiO_3$ substrates.** *K. Katsube*[1] and T. Matsui[1] *1. Graduate School of Engineering, Osaka Prefecture University, Sakai, Osaka, Japan*

**BP-08. Soft x-ray absorption spectroscopy and magnetic circular dichroism study of core@shell ferromagnetic nanoparticles : BaTiO3@X (X= γ-Fe2O3, Fe3O4, Fe, α-Fe2O3).** *D.H. Kim*[1], H.J. Lee[1], G. Kim[1], Y.S. Koo[2], J.H. Jung[2], H. Lee[3], J.Y. Kim[3] and J.S. Kang[1] *1. Department of Physics, The Catholic University, Bucheon, South Korea; 2. Department of Physics, Inha University, Incheon, South Korea; 3. Pohang Accelerator Laboratory, POSTECH, Pohang, South Korea*

**BP-09. Wide-Bandwidth Vortex Electric Current Sensor Based on Ring-Shaped Magnetoelectric Laminate of Terfenol-D/Epoxy Magnetostrictive Composite and PZT Piezoelectric Ceramic.** *C. Leung*[1], C. Lo[1] and S. Or[1] *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

**BP-10. Electromagnetic Properties of Ferroelectric/Ferromagnetic Composite Materials base on LTCC Technology.** *W. Ling*[1], H. Zhang[1], Y. Li[1], Y. He[1] and L. Peng[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

**BP-11. Spin-spray deposited multiferroic composite $Fe_3O_4$/Pb(Zr,Ti)$O_3$ with strong microwave magnetoelectric effect.** *M. Liu*[1], O. Obi[1], J. Lou[1] and N.X. Sun[1] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA*

**TUESDAY AFTERNOON 1:00** **AUSTIN BALLROOM**

## Session BQ
## INTERMETALLIC AND OTHER HARD MAGNETIC MATERIALS I (POSTER SESSION)
Kevin Coffey, Chair

**BQ-01. Effects of $SiO_2$ underlayer on the formation of (001)-oriented FePt nanoparticles.** Y. Wu[1], *L. Wang*[1] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

**BQ-02. Magnetic assembles of FePt (001) nanoparticles with ultrathin SiO2 addition.** K. You[1], *D. Wei*[2] and Y. Yao[3] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan; 3. Department of Materials Engineering, Tatung University, Taipei, Taiwan*

**BQ-03. Microstructure and magnetic properties of FePt films on anodized aluminum oxide membranes.** *S. Chen*[1], Y. Yao[2], J. Wu[1] and C. Yu[3] *1. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Materials Engineering, Tatung University, Taipei, Taiwan; 3. Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

**BQ-04. Spacer layer effect and microstructure on multilayer $[(FePt)_x/Os]_n$ films.** *S. Chen*[1], Y. Yao[2], J. Wu[1], Y. Teng[3] and C. Yu[3] *1. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Materials Engineering, Tatung University, Taipei, Taiwan; 3. Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

**BQ-05. Effects of heating rates of rapid thermal annealing on the microstructures and magnetic properties of FePt thin films.** *S. Chen*[1,2], T. Sun[1], T. Kuo[1] and P. Kuo[3] *1. Department of Materials Engineering, Ming Chi University of Technology, Taipei, Taiwan; 2. Center for Nanostorage Research, National Taiwan University, Taipei, Taiwan; 3. Institute of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan*

**BQ-06. Evolution of residual strain with ordering transformation in FePt films via XRD analysis.** *S. Hsiao*[1,3], S. Chen[1], H. Huang[1], Y. Hsu[1], F. Yaun[2] and H. Lee[3] *1. Materials Science and Engineering, Feng Chia University, Taichung, Taiwan; 2. Institute of Physics, Academia Sinica, Taipei, Taiwan; 3. National Synchrotron Radiation Research Center, HsinChu, Taiwan*

**BQ-07. A new metastable tetragonal phase in sputtered $Fe_3Pt$ thin films.** *S. Hsiao*[1,3], S. Chen[1], Y. Hsu[1], F. Yaun[2], T. Chin[1] and H. Lee[3] *1. Feng Chia University, Taichung, Taiwan; 2. Institute of Physics, Academia Sinica, Taipei, Taiwan; 3. National Synchrotron Radiation Research Center, HsinChu, Taiwan*

**BQ-08. Abnormal evolution of phase and magnetism in high temperature annealed CoPt thin films.** *F. Yuan*[1], H. Huang[2], S. Hsiao[2], W. Liao[3], S. Chen[2], H. Lee[3] and Y. Yao[4] *1. Physics, Acdemia Sinica, taipei, Taiwan; 2. Materials Science and Engineering, Feng Chia University, Taichung, Taiwan; 3. National Synchrotron Radiation Research Center, HsinChu, Taiwan; 4. Materials and Engineering, Tatung University, Taipei, Taiwan*

**BQ-09. Thermal process effect on microstructure and magnetic properties of epitaxial FePd (001) multilayer films.** *S. Fong*[1], D. Wei[2] and Y. Yao[3] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan; 3. Department of Materials Engineering, Tatung University, Taipei, Taiwan*



**BQ-10. Fabrication and characterization of novel ordered alloy "$L1_0$-FeNi"** *M. Mizuguchi*[1], S. Sekiya[1], S. Mitani[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

**BQ-11. Anisotropic properties in Fe-Pt thick film magnets.** *S. Shibata*[1], T. Yanai[1], M. Nakano[1] and H. Fukunaga[1] *1. Electrical and Electronic Engineering, Nagasaki University, Nagasaki, Japan*

**BQ-12. Fabrication and properties of FePt thick films for micro-undulator.** *P. Jang*[1], K. Seomoon[1], B. Lee[1], S. Choi[2] and K. Rhie[2] *1. Div. of Applied Science, Cheongju University, Cheongju, Chungcheongbuk-do, South Korea; 2. Department of Display, Semiconductor and Physics, Korea university, Chochiwon, South Korea*

**BQ-13. Effect of B content on the magnetic properties, phase evolution, and aftereffect of nanocrystalline FeCoPtB ribbons.** C.W. Chang[1], H.W. Chang[2], *C. Hsieh*[1], Z.H. Guo[1,3] and W.C. Chang[1] *1. Department of Physics, National Chung-Cheng University, Chia-Yi, 621, Taiwan; 2. Department of Physics, Tunghai University, Taichung, 40704, Taiwan; 3. Institute of Functional Materials, Central Iron and Steel Research Institute, Beijing, 100081, China*

**TUESDAY AFTERNOON 1:00** — **AUSTIN BALLROOM**

## Session BR
## MAGNETIC TUNNEL JUNCTIONS - MgO BASED (POSTER SESSION)

Xiufeng Han, Chair
Seiji Mitani, Chair

**BR-01. Half-metallic behavior of Co2MnSi/Co2CrAl/MgO junction and its coherent tunneling conductance:A first-principles study.** *Y. Miura*[1], K. Abe[1] and M. Shirai[1] *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

**BR-02. Atom probe tomography of CoFeB-MgO magnetic tunnel junctions.** *D.K. Schreiber*[1,2], Y. Choi[3], A.K. Petford-Long[2], A.N. Chiaramonti[2], D.N. Seidman[1] and D.D. Djayaprawira[3] *1. Materials Science and Engineering, Northwestern University, Evanston, IL; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Electronic Devices Engineering Headquarters, Canon ANELVA Corporation, Kanagawa, Japan*

**BR-03. Magnetic properties of MgO-based RE-TM perpendicular magnetic tunnel junctions.** L. Ye[1], C. Lee[1,2], J. Lai[1,3] 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; 3. Graduate School of Optoelectronics, National Yunlin University of Science and Technology, Douliou, Taiwan*

**BR-04. Fabrication of MgO-based Magnetic Tunnel Junctions with CoCrPt Perpendicularly Magnetized Electrodes.** *D. Watanabe*[1], S. Mizukami[1], M. Oogane[2], Y. Ando[2] and T. Miyazaki[1] *1. WPI-AIMR, Tohoku University, Sendai, Miyagi, Japan; 2. Department of Applied Physics, Tohoku University, Sendai, Miyagi, Japan*

**BR-05. Inelastic tunneling spectra of MgO barrier magnetic tunnel junctions showing large magnon contribution.** *B. Do*[1], T. Nozaki[1], A. Fukushima[2], H. Kubota[2], T. Nagahama[2], S. Yuasa[2], M. Shiraishi[1] and Y. Suzuki[1,2] *1. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 2. National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan*

**BR-06. Formation of hydroxide at an interface in CoFeB/MgO/CoFeB tunnel junction.** S. Lee[1], *Y. Jang*[1], K. Lee[1], S. Yoon[1], B. Cho[1], Y. Cho[2], K. Kim[2] and K. Kim[2] *1. Materials Science and Technology, Gwangju-Institue of Science and Technology, Gwangju, South Korea; 2. Material and Device Laboratory, Samsung Advanced Institute of Technology (SAIT), Suwon, South Korea*

**BR-07. TMR effect in a spin filter structure of TiN/γ-$Fe_2O_3$/MgO/Fe.** *H. Yanagihara*[1], J. Hagiwara[1], T. Nagahama[2], A. Fukushima[2], S. Yuasa[2] and E. Kita[1] *1. Applied Physics, Univ. Tsukuba, Tsukuba, Japan; 2. AIST, Tsukuba, Japan*

**BR-08. Tunnel Magnetoresistance for Magnetic Tunnel Junctions with a $Co_2FeAl_{0.5}Si_{0.5}$ Full Heusler Electrodes fabricated by MBE system.** *N. Tezuka*[1], N. Ikeda[1], F. Mitsuhashi[1] and S. Sugimoto[1] *1. Department of Materials Science, Tohoku University, Sendai, Japan*

**BR-09. MgO-based Double Barrier Magnetic Tunnel Junction with Very Thin Free Layer.** *G. Feng*[1], S. Dijken[1] and J.M. Coey[1] *1. CRANN and Physics Department, Trinity College Dublin, Dublin, Ireland*

**BR-10. The influence of buffer layer on tunnel magnetoresistance in full-Heusler alloy $Co_2Fe(Al_{0.5},Si_{0.5})$/MgO/$Co_2Fe(Al_{0.5},Si_{0.5})$ tunnel junctions.** *M. Ishikawa*[1], T. Marukame[1], T. Inokuchi[1], H. Sugiyama[1] and Y. Saito[1] *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

**BR-11. The effect of pinhole formation/growth on the tunnel magnetoresistance of MgO-based magnetic tunnel junctions.** *J.M. Teixeira*[1], J. Ventura[1], F. Carpinteiro[1], J.P. Araújo[1], J.B. Sousa[1], P. Wisniowski[2] and P.P. Freitas[2] *1. Physics, IN, IFIMUP unit - Oporto University, Oporto, Oporto, Portugal; 2. Physics, IN, INESC-MN unit - IST, Lisbon, Lisbon, Portugal*

**BR-12. Influence of pinned layer coupling on magnetization switching of magnetic tunnel junction.** *C. Huang*[1,2], Y. Wu[3], K. Wu[1,2], J. Wu[1,2] and L. Horng[1,2] *1. Department of Physics, National Changhua University of Education, Changhua, Taiwan; 2. Taiwan SPIN Research Center, National Changhua University of Education, Changhua, Taiwan; 3. Graduate Institute of Photonics, National Changhua University of Education, Changhua, Taiwan*



**BR-13. Enhancement of tunneling magnetoresistance by optimization of magnetic and top layer thicknesses in CoFeB/MgO/CoFeB magnetic tunnel junctions.** *W. Pong*[1], M. Shmoueli[2], A. Castillo[2] and W.F. Egelhoff[2] *1. Department of Electrical and Electronic Engineering, University of Hong Kong, Hong Kong, China; 2. Metallurgy Division, National Institute of Standards and Technology, Gaithersburg, MD*

**BR-14. Electrical and magnetic properties of defect-mediated magnetic tunnel junctions using MgO.** *K. Nam*[1], S. Oh[1], W. Kim[1], J. Jeong[1], D. Kim[1], S. Lee[1], Y. Kim[1], K. Kim[1], J. Lee[1], I. Yeo[1], U. Chung[1] and J. Moon[1] *1. Process Development Team, Semiconductor R&D Division, Samsung Electronics Co., Ltd., Yongin-City, Gyeonggi-Do, South Korea*

**BR-15. Theoretical study on the stability of magnetic structures of Heusler alloys, Co2MnAl and Co2MnSi.** *A. Sakuma*[1], Y. Toga[1] and H. Tsuchiura[1] *1. Applied Physics, Tohoku University, Sendai, Japan*

**BR-16. Tunnel magnetoresistance in MgO - $Al_2O_3$ composite magnetic tunnel junctions.** *O. Schebaum*[1], V. Drewello[1], A. Auge[1], A. Thomas[1] and G. Reiss[1] *1. Thin films & physics of nanostructures, Bielefeld University, Bielefeld, Germany*

**BR-17. Enhanced Magneto-Coulomb Effect in Asymmetric Ferromagnetic Single Electron Transistors.** *M. Jalil*[1], S. Tan[2] and M. Ma[1] *1. Department of Electrical and Computer Engineering, Information Storage Materials Laboratory, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

**BR-18. Influence of magnetic insulator in Tunneling Magnetoresistance of double-barrier tunnel junctions.** *P. Chang*[1] and C. Chang[1] *1. Physics, National Taiwan University, Taipei, Taiwan*

**TUESDAY AFTERNOON 1:00** **AUSTIN BALLROOM**

## Session BS
## BIOMAGNETISM (POSTER SESSION)

Shoogo Ueno, Co-Chair
Frank Prato, Co-Chair

**BS-01. Calculating the Electric Field in Real Human Head by Transcranial Magnetic Stimulation with Shield Plate.** M. Lu[1] and *S. Ueno*[2] *1. University of Lisbon, Lisbon, Portugal; 2. Kyushu University, Fukuoka, Japan*

**BS-02. Comparison of stem cells labeling using paramagnetic and superparamagnetic MRI contrast agents.** *C. Yang*[1,3], J. Hsiao[1,2], M. Tai[4], S. Chen[5], Y. Wang[2], Y. Chen[2], J. Wang[1] and H. Liu[2] *1. Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; 2. Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan; 3. Department of Medical Imaging, Yun-Lin Branch, National Taiwan University Hospital, Yun-Lin, Taiwan; 4. Department of Science, Taipei Municipal University of Education, Taipei, Taiwan; 5. Musculoskeletal Disease Center, J.L. Pettis VA Medical Center and Department of Biochemistry, Loma Linda University, Loma Linda, CA*

**BS-03. Quantitative MRI System Phantom.** *S.E. Russek*[1] and R. Usselman[1] *1. National Institute of Standards and Technology, Boulder, CO*

**BS-04. Effect of Transcranial Magnetic Stimulation on Force of Finger Pinch.** *M. Odagaki*[1], H. Fukuda[1] and O. Hiwaki[1] *1. Hiroshima City University, Hiroshima, Japan*

**BS-05. Effects of stimulus parameters and tissue inhomogeneity on nerve excitation processes in magnetic stimulation of the brain.** *A. Hyodo*[1,2], S. Tsuyama[1], K. Iramina[1] and S. Ueno[1] *1. Kyushu University, Fukuoka, Japan; 2. Nihon Kohden Co., Tokyo, Japan*

**BS-06. Brain activity during bilateral rapid alternate finger tapping measured with magnetoencephalography.** *H. Fukuda*[1], M. Odagaki[1], A. Kodabashi[2], T. Fujimoto[2] and O. Hiwaki[1] *1. Graduate School of Information Sciences, Hiroshima City University, Hiroshima, Japan; 2. Fujimoto Hayasuzu Hospital, Miyakonojo, Japan*

**BS-07. A Method for Estimation of Stimulated Brain Sites Based on Columnar Structure of Cerebral Cortex in Transcranial Magnetic Stimulation.** *O. Hiwaki*[1] and T. Inoue[1] *1. Graduate School of Information Sciences, Hiroshima City University, Hiroshima, Japan*

**BS-08. Disturbance of Visual Search by Stimulating to PPC in the Brain using Transcranial Magnetic Stimulation.** *K. Iramina*[1,2], G. Sheng[1], T. Hayami[3], A. Hyodo[2] and S. Ueno[4] *1. Department of Intelligent Systems, Kyushu University, Fukuoka, Fukuoka, Japan; 2. Department os Systems Life Sciences, Kyushu University, Fukuoka, Fukuoka, Japan; 3. Digital Medicine Initiative, Kyushu University, Fukuoka, Fukuoka, Japan; 4. Department of Applied Quantum Physics, Kyushu University, Fukuoka, Fukuoka, Japan*

**BS-09. Effects of coil configurations on the induced eddy current by Transcranial Magnetic Stimulation.** S. Tsuyama[1], A. Hyodo[2], T. Hayami[3], S. Ueno[4] and *K. Iramina*[1,2] *1. Department of Intelligent Systems, Kyushu University, Fukuoka, Fukuoka, Japan; 2. Department of Systems Life Sciences, Kyshu University, Fukuoka, Japan; 3. Digital Medicine Initiative, Kyshu University, Fukuoka, Japan; 4. Department of Applied Quantum Physics, Kyshu University, Fukuoka, Japan*



**BS-10. Measurements of Evoked EEG by Transcranial Magnetic Stimulation Applied to Motor Cortex and Posterior Parietal Cortex.** *M. Iwahashi*[1], Y. Koyama[1], A. Hyodo[1], T. Hayami[1], S. Ueno[1] and K. Iramina[1] *1. Kyushu Univ., Fukuoka, Japan*

**TUESDAY AFTERNOON 1:00** **AUSTIN BALLROOM**

## Session BT
## INTERMETALLICS AND OTHER HARD MAGNETIC MATERIALS II (POSTER SESSION)

J. Ping Liu, Chair

**BT-01. Vanadium substitution effect on magnetic properties of NdFe10.5Mo1.5-xVx and their nitrides.** *Y. Shan*[1], H. Du[1], G. Tian[1], J. Han[1], C. Wang[1], S. Liu[1] and Y. Yang[1] *1. School of Physics, Peking University, Beijing, China*

**BT-02. Effects of hydrostatic pressure and substitutions on magnetism of $Lu_2Fe_{17}$-based intermetallics.** *E.A. Tereshina*[1,2], A.V. Andreev[1], J. Kamarád[1], O. Isnard[3], T. Komatsubara[4] and I. Satoh[4] *1. Institute of Physics ASCR, Prague, Czech Republic; 2. Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic; 3. Institut Néel, CNRS / University J. Fourier, Grenoble, France; 4. Institute for Materials Research, Tohoku University, Sendai, Japan*

**BT-03. Change in the direction of anisotropy in PLD-fabricated Sm-Co thick film magnets.** *K. Yamaguchi*[1], T. Yanai[1], M. Nakano[1], H. Fukunaga[1] and F. Yamashita[2] *1. Electrical and Electronic Engineering, Nagasaki University, Nagasaki, Japan; 2. Rotary Component Basic Technology Development Division, Minebea Co., Ltd, Shizuoka, Japan*

**BT-04. Stabilization of $TbCu_7$-type SmCo ribbons by Nb or Ta substitution and rapid quenching.** Z.H. Guo[1,2], H.W. Chang[3], C.W. Chang[1], *C.C. Hsieh*[1], A.C. Sun[4], W.C. Chang[1], W. Pan[2] and W. Li[2] *1. Department of Physics, National Chung-Cheng University, Chia-Yi, Taiwan; 2. Division of Functional Materials, Central Iron & Steel Research Institute, Beijing, China; 3. Department of Physics, Tunghai University, Taichung, Taiwan; 4. Department of Physics, National Taiwan University, Taipei, Taiwan*

**BT-05. Magnetic properties and Structure of bulk nanocrystalline Sm(Co,Fe,Cu,Zr)7.5 sintered magnet.** D. Zhang[1], M. Yue[1], J. Yang[1], G. Xu[1], W. Liu[1], J. Zhang[1] and *X. Liu*[2] *1. Beijing University of Technology, Beijing, China; 2. McGill University, Montreal, QC, Canada*

**BT-06. Sm2Co17-based magnets with superhigh fracture toughness and excellent hard-magnetic properties.** *L. Li*[1,2], A. Yan[1], Y. Sun[1] and G. Zhang[2] *1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Science, Ningbo, China; 2. The State Key Laboratory for Powder Metallurgy, The Central South University, Chang Sha, China*

**BT-07. High temperature magnetic properties of nanocrystalline PrCo5 and YCo5 alloys obtained by mechanical milling.** J.T. Elizalde Galindo[2], *F.J. Rivera-Gómez*[1] and J.A. Matutes-Aquino[1] *1. Física de Materiales, Centro de Investigación en Materiales Avanzados, S.C, México, Chihuahua, Mexico; 2. Ciencias Básicas, Universidad Autónoma de Ciudad Juárez, Chihuahua, Chihuahua, Mexico*

**BT-08. Nanocrystalline magnetic Y0.5Sm0.5Co5 ribbons obtained by Melt Spinning.** *J.L. Hidalgo-González*[1], F.J. Rivera-Gómez[1] and J.A. Matutes-Aquino[1] *1. Física de Materiales, Centro de Investigación en Materiales Avanzados, S. C, Chihuahua, Chihuahua, Mexico*

**BT-09. Pulse annealing of anisotropic SmFeN powder.** *Y. Shibata*[1], T. Yanai[1], M. Nakano[1] and H. Fukunaga[1] *1. Department of Electrical Engineering and Electronics, Nagasaki University, Nagasaki 852-8521, Japan*

**BT-10. Co80Ni20 and Co anisotropic metal nanoparticles for the bottom-up preparation of new permanent magnets.** *Y. Soumare*[1], J. Piquemal[1], G. Viau[2], C. Garcia[2], T. Maurer[3], F. Ott[3] and G. Chaboussant[3] *1. Laboratoire ITODYS, University of Paris Diderot (Paris 7), Paris Cedex 05, France; 2. Laboratoire de Physique et Chimie des Nano-objets, University of Toulouse, INSA, Toulouse, France; 3. Laboratoire Léon Brillouin, CEA Saclay, Gif sur Yvette, France*

**BT-11. Study on strengthening and toughening of Sintered rare-earth permanent magnets.** *A. Li*[1], H. Wang[1], W. Pan[1] and W. Li[1] *1. Central Iron & Steel Research Institute, Beijing, China*

**BT-12. Effect of Rare Earth Doping on Magnetic Properties of Cobalt Ferrite Nanocrystals.** *Y. Cedeño-Mattei*[1], O. Perales-Pérez[2], P. Voyles[3] and O. Uwakweh[2] *1. Chemistry, UPR - Mayaguez, Mayaguez, PR; 2. Engineering Science & Materials, UPR - Mayaguez, Mayaguez, PR; 3. Materials Science & Engineering, University of Wisconsin - Madison, Madison, WI*

**BT-13. The sintering properties and interfacial investigation of barium ferrite and ceramic Co-firing system for the application of LTCC technology.** *Y. Li*[1], Y. Liu[1], H. Zhang[1] and L. Han[1] *1. State Key Laboratory of Electronic Thin Film and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

**BT-14. The exchange biaslike effect in tetragonal spinels $Cu_{1-x}Zn_xCr_2O_4$(x=0.1, 0.3).** L. Yan[1], *W. Ren*[2], Z. Sun[1], J. Shen[1] and F. Wang[1] *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Hong Kong University of Science and Technology, Hong Kong, China*



TUESDAY AFTERNOON 1:00 — AUSTIN BALLROOM

## Session BU
# MAGNETIC MATERIALS FOR THERAPY APPLICATIONS (POSTER SESSION)

Yasushi Takemura, Chair

**BU-01. Remote Triggered Drug Release System By Magnetic Nanoparticles For Combined Hyperthermia and Chemotherapy.** *D. Kim*[1,2], L.M. Blue[2], D.E. Nikles[3] and C.S. Brazel[2] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Department of Chemical and Biological Engineering, University of Alabama, Tuscaloosa, AL; 3. Department of Chemistry, University of Alabama, Tuscaloosa, AL*

**BU-02. Heating Characteristics of Thermosensitive Magnetic Powder in Agar Phantom for Hyperthermia Cancer Therapy.** *T. Takura*[1], F. Sato[1,2], H. Matsuki[2] and T. Sato[3] *1. Dept. of Electrical and Communication Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Dept. of Biomedical Engineering, Graduate School of Biomedical Engineering, Tohoku University, Sendai, Miyagi, Japan; 3. NEC Tokin Corp., Sendai, Miyagi, Japan*

**BU-03. Self-heating properties and their evaluation by ac/dc hysteresis loops of $Fe_3O_4$ and other nanoparticles for hyperthermia application.** *A. Hirukawa*[1], T. Yamada[1] and Y. Takemura[1] *1. Yokohama National University, Yokohama, Jordan*

**BU-04. Highly thermosensitive hyperthermia mediators of $La_{0.7}Sr_{0.3}Mn_{1-x}Cu_xO_3$ utilizing steep magnetization change by first order magnetic phase transition.** *T. Nakagawa*[1], N. Hirako[1], M. Tada[1], H. Handa[2] and M. Abe[1] *1. Department of Physical Electronics, Tokyo Institute of Technology, Meguro-ku, Japan; 2. Integrated Research Institute, Tokyo Institute of Technology, Yokohama, Japan*

**BU-05. Modeling of temperature profile during magnetic thermotherapy for cancer treatment.** *C.A. Sawyer*[1], A.H. Habib[1], K.N. Collier[1], K. Miller[1], C.L. Ondeck[1] and M.E. McHenry[1] *1. Materials Sc. and Engg., Carnegie Mellon University, Pittsburgh, PA*

**BU-06. Hydrogen Protons Relaxation Time and Heat Generation By Succimer $M^{2+}Fe_2^{3+}O_4$ (M=Mn, Fe, Co) Spinel Nanoparticles Towards Multifunctional Nanoplatform For Cancer Treatment.** *D. Kim*[1,2], H. Zeng[3], T. Ng[3], D.E. Nikles[4] and C.S. Brazel[2] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Department of Chemical and Biological Engineering, University of Alabama, Tuscaloosa, AL; 3. Department of Medicine and Comprehensive Cancer Center, University of Alabama at Birmingham, Birmingham, AL; 4. Department of Chemistry, University of Alabama, Tuscaloosa, AL*

**BU-07. Detection of a diabetic sural nerve from the magnetic field after electric stimulation.** *T. Hayami*[1], K. Iramina[2], A. Hyodo[3], X. Chen[1] and K. Sunagawa[1] *1. Digital Medicine Initiative, Kyushu University, Fukuoka, Japan; 2. Graduate School of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan; 3. Graduate School of Systems Life Sciences, Kyushu University, Fukuoka, Japan*

**BU-08. Duplex Communicatable Implanted Antenna for Magnetic Direct Feeding Method FES.** *K. Kato*[1], Y. Kohata[2], F. Sato[2], H. Matsuki[1], Y. Handa[3] and T. Satoh[4] *1. Department of Biomedical Engineering, Graduate School of Biomedical Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Department of Electrical and Communication Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 3. Graduate School of Medicine, Tohoku University, Sendai, Miyagi, Japan; 4. NEC TOKIN Corp., Sendai, Miyagi, Japan*

**BU-09. Effects of Radio Frequency Magnetic Fields on the Optical Absorption, Fluorescence and Titration Properties of Horse Spleen Ferritin.** O. Cespedes[1] and *S. Ueno*[1] *1. Department of Applied Quantum Physics, Kyushu University, Fukuoka, Japan*

**BU-10. Development of Wireless Communication System Using Magnetic Field in Real-time Internal Radiation Dose Measurement System.** *K. Shinohe*[1], T. Takura[1], F. Sato[1], H. Matsuki[2], S. Yamada[3] and T. Satoh[4] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan; 3. Graduate School of Medicine, Tohoku University, Sendai, Japan; 4. NEC TOKIN Corp., Sendai, Japan*

**TUESDAY AFTERNOON 1:00** **AUSTIN BALLROOM**

## Session BV
# AMORPHOUS AND NANOSTRUCTURED MATERIALS (POSTER SESSION)

Maria Daniil, Co-Chair
Thomas Ambrose, Co-Chair

**BV-01. Missing row and surface relaxation induced ferromagnetic phase stabilization of Fe(x)Pt(1-x) (110) surface alloy; first-principles calculation.** *M. Kim*[1] and H. Kim[2] *1. Energy System Research, Ajou University, Suwon, South Korea; 2. Physics, Sookmyung Women's University, Seoul, South Korea*

**BV-02. Observation of two magnetic transition temperatures in ultra-thin Fe/Al nanostructures.** *R. Brajpuriya*[1], S. Tripathi[1], A. Sharma[1], S. Chuadhari[1] and T. Shripathi[1] *1. UDCSR, UDCSR, Indore, M.P., India*

**BV-03. Magnetoimpedance studies in Al and V doped FINEMET alloy.** D. Sandhya[1], *K. Kamala Bharathi*[1] and M. Garimella[1] *1. IIT Madras, Chennai, Tamil Nadu, India*



**BV-04. Magnetic properties of Fe-based ribbons with controlled permeability prepared by continuous pulse annealing under tensile stress.** *K. Takagi*[1], T. Yanai[1], K. Takahashi[1], M. Nakano[1], Y. Yoshizawa[2] and H. Fukunaga[1] *1. Department of Electrical Engineering and Electronics, Nagasaki University, Nagasaki 852-8521, Japan; 2. Advanced Electronics Research Laboratory, Hitachi Metals Ltd, Kumagaya, Japan*

**BV-05. Outer shell structure in nearly zero magnetostrictive amorphous microwires.** T.A. Óvári[1] and *H. Chiriac*[1] *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

**BV-06. To enhance an efficiency of power supply circuit by the use of Fe-P-B-Nb type ultra low loss glassy metal core.** *H. Matsumoto*[1], A. Urata[1] and Y. Yamada[1] *1. Research and Development Unit, NEC TOKIN Corporation, Sendai, Japan*

**BV-07. New high Bs nanocrystalline alloys with high amorphous-forming ability.** *A. Urata*[1], H. Matsumoto[1], S. Sato[1] and A. Makino[2] *1. NEC TOKIN Corporation, Sendai, Miyagi, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

**BV-08. Magnetic properties and exchange bias in Mn2O3/Mn3O4 nanoparticles.** W. Zhenhua[1,2], G. Dianyu[1,2], H. Weijin[1,2], *R. Weijun*[1,2] and Z. Zhidong[1,2] *1. Institute of Metal Research, Shenyang, China; 2. International Centre for Materials Physics, Chinese Academy of Sciences, Shenyang, China*

**BV-09. Constant permeability of Fe-B-Si-Nb bulk glassy alloy by $B_2O_3$ flux melting and Cu mold casting.** *T. Bitoh*[1] and D. Shibata[1] *1. Department of Machine Intelligence and System Engineering, Akita Prefectural University, Yurihonjo, Japan*

**BV-10. Cluster spin-glass state and Kondo behavior in Sm-based bulk metallic glasses.** C. Lu[1], *S. Dong*[1], K. Wang[1] and J. Liu[1] *1. Physics, Nanjing University, Nanjing, China*

**BV-11. Synthesis and Characterization of Metastable Nanocrystalline Cobalt.** *C.M. Osorio-Cantillo*[1] and O. Perales-Perez[2] *1. Chemistry, UPR-Mayaguez, Mayaguez, PR; 2. Engineering Science and Materials, UPR-Mayaguez, Mayaguez, PR*

**BV-12. Effect of Annealing on the Magnetic and Microwave Electromagnetic Characteristics of Glass-covered Microwires.** *Y. Di*[1], B. Jia[1] and X. Liao[1] *1. School of Metallurgy and Materials Engineering, Chongqing University of Science and Technology, Chongqing, Chongqing, China*

**BV-13. Crystallization Kinetics of Soft Magnetic Amorphous FeBSi Ribbons.** *O. Moscoso*[1], A. Rosales Rivera[1] and P. Pineda Gómez[1] *1. Laboratorio de Magnetismo y Materiales Avanzados, Universidad Nacional de Colombia, Sede Manizales, Manizales, Caldas, Colombia*

**BV-14. The change of giant magneto impedance effects due to ion irradiation in the Co-based amorphous ribbon.** *D. Park*[1], K. Huh[1], G. Kim[1], C. Kim[1] and Y. Cheong[1] *1. NMTD, KAERI, Taejeon, South Korea*

**BV-15. Synthesis and characterization of FeCo nanoparticles used for biotechnology.** K. Zhang[1], T. Holloway[1], *R. Bah*[1] and A.K. Pradhan[1] *1. Ceneter for Materials Research, Norfolk State University, Norfolk, VA*

**BV-16. Magnetic properties of Fe-B-Si-(Ta,Y) amorphous ribbons with high thermal stability.** I. Betancourt[1] and *S. Baez*[1] *1. Materials Research Institute, UNAM, Mexico, DF, Mexico*

**BV-17. Study of some shielding properties of the composite textile material with amorphous microwire.** *O. Baltag*[1] *1. Faculty of Biomedical Engineering, Gr.T.Popa Univ. of Medicine and Pharmacy, Iasi, Romania*

**BV-18. Exchange bias behavior of nano-crystalline FeCuNbSiB ribbons.** *J. He*[1], D. Zhao[1], X. Wang[1] and Q. Yao[2] *1. Division of Functional Material Research, Central Iron & Steel Research Institute, Beijing, China; 2. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Science, Shenyang, China*

**BV-19. Synthesis and magnetization dynamics of Ag-coated $Fe_3O_4$ core-shell nanoparticles.** *K. Mohan Kant*[1,3], B. Tiwari[1,2], K. Sethupathi[1] and M.S. Ramachandra Rao[1,2] *1. Department of Physics, Indian Institute of Technology Madras, Chennai, India; 2. Materials Science Research Centre, Indian Institute of Technology Madras, Chennai, Tamilnadu, India; 3. Fuel Cells and Solid State Chemistry Department, Riso Denmark Technical University, Roskilde, Denmark*

**BV-20. High temperature coercive field behavior of Fe-Zr powder.** D. Mishra[1], *P. Alagarsamy*[1] and A. Srinivasan[1] *1. Physics, Indian Institute of Technology Guwahati, Guwahati, Assam, India*

**BV-21. Effect of surface domain structure on wall mobility in amorphous microwires.** *H. Chiriac*[1], T.A. Óvári[1] and M. Tibu[1] *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

TUESDAY AFTERNOON 1:00 — AUSTIN BALLROOM

## Session BW
## MULTIFERROICS II: $BiFeO_3$ (POSTER SESSION)

Pavol Krivosik, Chair

**BW-01. Enhancement of magnetic properties in multiferroic $BiFeO_3$ films with excess iron.** *H. Naganuma*[1], T. Okubo[1], S. Sekiguchi[1] and S. Okamura[1] *1. Tokyo University of Science, Tokyo, Japan*



**BW-02. Dielectric constant at x-band microwave frequencies for multiferroic BiFeO3 thin films.** *F.B. Abdul Ahad*[1], D. Hung[2], Y. Yao[3], S. Lee[1], F. Yuan[1] and Y. Chen[1] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Department of Information and Telcomunication Engineering, Ming Chuan University, Taipei, Taiwan; 3. Department of Materials Engineering, Tatung University, Taipei, Taiwan*

**BW-03. Integration of Novel Multiferroic Thin Films on GaN/Sapphire and GaAs Substrates for High Frequency Device Applications.** *P. Kovur*[1], S. Chakrabarti[1] and V.R. Palkar[1] *1. Center of Excellence in Nanoelectronics, Electrical Engineering, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India*

**BW-04. Spray Pyrolysis deposited multiferroic $BiFeO_3$ films.** *P.K. Siwach*[1], H.K. Singh[1], J. Singh[2] and O.N. Srivastava[2] *1. QHRS and Superconducting Devices Group, National Physical Laboratory, New Delhi, India; 2. Physics Department, Banaras Hindu University, Varanasi, India*

**BW-05. Anomalous low-temperature magnetic ordering induced spin phonon coupling and magnon light scattering in Epitaxial BiFeO3 thin films.** *M.K. Singh*[1], R. Katiyar[1] and W. Prellier[2] *1. University of Puerto Rico, San Juan, PR; 2. Laboratoire CRISMAT, CNRS UMR 6508, ENSICAEN, 6 Bd du Maréchal Juin, F-14050, Caen Cedex, France*

**BW-06. Withdrawn**

**BW-07. Effect of diamagnetic Pb doping on the crystal structure and multiferroic properties of the BiFeO3 perovskite.** X. Zhang[1], *Y. Sui*[1,2], X. Wang[1], J. Mao[1] and R. Zhu[1] *1. Physics, Harbin Institute of Technology, Harbin, Heilongjiang, China; 2. International Center for Materials Physics, Academia Sinica, Taipei 106, Taiwan*

**BW-08. Room temperature multiferroic properties of Eu doped BiFeO3.** *P. Uniyal*[1] and K.L. Yadav[1] *1. Physics, IITR, Roorkee, Uttarakhand, India*

**BW-09. Crystal structure and multiferroic property of $BiFeO_3$ nanopowder.** *S. Han*[1], K. Kim[2], K. Kim[1], H. Kim[1], J. Kim[2] and C. Cheon[2] *1. Materials Science and Engineering, KAIST, Daejeon, South Korea; 2. Semiconductor and Display Engineering, Hoseo University, Asan, South Korea*

**BW-10. Detailed Magnetic Studies of Magnetoelectrically coupled BF-LF-PT.** *A. Singh*[1] and R. Chatterjee[1] *1. Physics, Indian Institute of Technology(Delhi), New Delhi, India*

**BW-11. $Bi_{1/2}Sr_{1/2}FeO_3$ – a novel room-temperature multiferroic material.** *K. Balamurugan*[1], N. Harish Kumar[1] and N. Santhosh P.[1] *1. Physics, Indian Institute of Technology Madras, Chennai, Tamilnadu, India*

**BW-12. Comparative investigations of room temperature magnetoelectricity in (Bi0.9La0.1)FeO3-Sr(Fe0.5Nb0.5)O3 and (Bi0.9La0.1)FeO3-Pb(Fe0.5Nb0.5)O3 single-phase solid solution systems.** *H. Paik*[1] and K. No[1] *1. Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea*

WEDNESDAY MORNING 9:00 — SALON C

## Session CA
## SYMPOSIUM ON NEW DEVELOPMENTS IN MAGNETIC MICROSCOPY

John Unguris, Chair

**9:00**

**CA-01. Magnetic soft X-ray microscopy: A promising path towards imaging spin dynamics at fundamental length and time scales.** ***(Invited)*** *P. Fischer*[1] *1. CXRO, LBNL, Berkeley, CA*

**9:36**

**CA-02. Complex spin structures on the verge of instability—Imaging and manipulation by spin-polarized STM.** ***(Invited)*** *M. Bode*[1] *1. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

**10:12**

**CA-03. Magnetic Vortex/Antivortex Dynamics Probed by Micromagnetic Simulation and X-ray Microscopy.** ***(Invited)*** *M. Bolte*[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany*

**10:48**

**CA-04. High Resolution Magnetic Imaging: MFM, SEMPA, and Alternatives.** ***(Invited)*** *J. Ahner*[1] *1. Seagate Technology, Pittsburgh, PA*

WEDNESDAY MORNING 9:00 — SALON G

## Session CB
## SPIN-TRANSFER-TORQUE: FERROMAGNETS AND ANTIFERROMAGNETS

Fred Mancoff, Chair

**9:00**

**CB-01. Spin-wave interference in spin torque oscillators.** *X. Chen*[1] and R.H. Victora[2] *1. Department of Physics, University of Minnesota, Minneapolis, MN; 2. Department of Electrical & Computer Engineering, University of Minnesota, Minneapolis, MN*



**9:12**

**CB-02. Amplitude-Phase Coupling in a Spin-Transfer Nano-Oscillator.** *K. Kudo*[1], T. Nagasawa[1], R. Sato[1] and K. Mizushima[1] *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Kanagawa, Japan*

**9:24**

**CB-03. Spin-Torque-Induced Rotational Dynamics of a Magnetic Vortex Dipole.** *G. Finocchio*[1], O. Ozatay[3,4], L. Torres[2], R. Buhrman[4], D. Ralph[4] and B. Azzerboni[1] *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain; 3. Hitachi GST, San Jose Res. Ctr., San Jose, CA; 4. Cornell University, Ithaca, NY*

**9:36**

**CB-04. Antiferromagnetic spintronics.** ***(Invited)*** *P.M. Haney*[1], R.A. Duine[2], A.S. Nunez[3], M.D. Stiles[1] and A.H. MacDonald[4] *1. Center for Nanoscale Science and Technology, National Institute for Standards and Technology, Gaithersburg, MD; 2. Institute for Theoretical Physics, Utrecht University, Utrecht, Netherlands; 3. Departamento de Fisica, Universidad de Santiago de Chile, Santiago, Chile; 4. Department of Physics, The University of Texas at Austin, Austin, TX*

**10:12**

**CB-05. Spin-transfer interactions in exchange-biased spin valves.** J. Basset[1,2], *Z. Wei*[1], A. Sharma[3], J. Bass[3] and M. Tsoi[1] *1. University of Texas at Austin, Austin, TX; 2. University Joseph Fourier, Grenoble, France; 3. Michigan State University, East Lansing, MI*

**10:24**

**CB-06. Time domain studies of transient features of spin-torque driven vortex oscillations.** *V. Pribiag*[1,2], B.J. Williams[3], D.C. Ralph[2] and R.A. Buhrman[1] *1. Applied & Engineering Physics, Cornell University, Ithaca, NY; 2. Physics, Cornell University, Ithaca, NY; 3. Physics, UT Dallas, Dallas, TX*

**10:36**

**CB-07. Magnetization excitations in partially-patterned magnetic nanopillars induced by a d.c. spin polarized current.** *N. Theodoropoulou*[1], A. Sharma[1], W.P. Pratt[1] and J. Bass[1] *1. Physics and Astronomy, Michigan State University, East Lansing, MI*

**10:48**

**CB-08. Spin torques in antiferromagnetic spin valve and domain wall.** ***(Invited)*** *K. Xia*[1], Y. Xu[1] and S. Wang[1] *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

**11:24**

**CB-09. Current-induced magnetization dynamics in single magnetic-layer nanopillars.** *N. Müsgens*[1,2], T. Maassen[1,2], M. Bückins[3], J. Mayer[3], B. Beschoten[1,2] and G. Güntherodt[1,2] *1. Physics Institute II A, RWTH Aachen University, Aachen, Germany; 2. Virtual Institute for Spinelectronics (VISel), Jülich-Aachen-Göttingen, Germany; 3. Central Facility for Electron Microscopy, RWTH Aachen University, Aachen, Germany*

**11:36**

**CB-10. Current-induced spin wave Doppler shift.** V. Vlaminck[1] and *M. Bailleul*[1] *1. Institut de Physique et Chimie des Matériaux de Strasbourg, CNRS-ULP, Strasbourg, France*

**11:48**

**CB-11. The feature of STT microwave oscillation relates on confinement of domain wall.** *H. Suzuki*[1], H. Endo[1], T. Nakamura[1], T. Tanaka[1], M. Doi[1], H.N. Fuke[2], M. Takagishi[2], H. Iwasaki[2] and M. Sahashi[1] *1. Department of Electronic Engineering, Tohoku University, Sendai, Japan; 2. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

**WEDNESDAY MORNING 9:00** **SALON A**

## Session CC
## HIGH ANISOTROPY PERPENDICULAR MEDIA I

Shaoping Li, Chair

**9:00**

**CC-01. Exchange coupled FePt-TiO2 composite media with small grain size.** *T. Zhou*[1], B. Lim[1], J. Hu[1], P. Lwin[1] and B. Liu[1] *1. Data Storage Institute, Singapore, Singapore*

**9:12**

**CC-02. Structural and magnetic properties of $L1_0$ FePt film with Ag heat sink layer.** *J. Chen*[1], J. Hu[2], B. Lim[2] and G. Ju[3] *1. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore; 3. Seagate, Pittsburgh, PA*



**9:24**

**CC-03. FePt:C ultra-thin films for perpendicular magnetic recording media.** *E. Liu*[1], Y. Ding[1] and J. Chen[2] *1. School of Mechanical & Aerospace Engineering, Nanyang Technological University, Singapore, Singapore; 2. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

**9:36**

**CC-04. Magnetic Correlations in Nanocomposite FePt:Au and FePt:C Films.** *T.A. George*[1], R. Skomski[1] and D.J. Sellmyer[1] *1. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE*

**9:48**

**CC-05. Perpendicular Magnetization of FePt:C thin film on a new underlayer of Pt/MgO(p) thin film.** *S. Lee*[1] and J. Park[1] *1. Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, South Korea*

**10:00**

**CC-06. Granular $L1_0$ FePt:X (X= $Ta_2O_5$, $TiO_2$, C) (001) nanocomopsite films with small grain size for high density magnetic recording.** *J. Chen*[1], B. Lim[2], J. Hu[2], Y. Ding[2], G. Chow[1] and G. Ju[3] *1. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore; 3. Seagate, Pittsburgh, PA*

**10:12**

**CC-07. FePt-C nanogranular films for perpendicular magnetic recording.** *P. Alagarsamy*[1], Y. Takahashi[1] and K. Hono[1] *1. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Ibaraki, Japan*

**10:24**

**CC-08. Granular L10 FePt-X Media with High Anisotropy.** *Y. Peng*[1], G. Ju[1], M. Nassirou[1] and X. Wu[1] *1. Seagate Technology, Pittsburgh, PA*

**10:36**

**CC-09. Underlayer and Interlayer Interdiffusion Control for the Development of FePt type Exchange Coupled Composite Media.** *H. Wang*[1], H. Zhao[1], A. Das[2], M. Racine[2], M. Imakawa[2] and J.P. Wang[1] *1. The Center for Micromagnetics and Information Technologies (MINT) and Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Thin Film Materials Division, Heraeus Inc., Chandler, AZ*

**10:48**

**CC-10. Antiferromagnetic Iridium-Manganese Intermediate Layers for Perpendicular Recording Media.** ***(Invited)*** *K. Srinivasan*[1], S.N. Piramanayagam[1], R. Sbiaa[1], Y. Kay[1], H. Tan[1] and S. Wong[1] *1. Spintronics, Media and Interface Division, Data Storage Institute, Singapore, Singapore*

**11:24**

**CC-11. Magnetic properties of pressure graded Co/Pd multilayers.** J.E. Davies[1], *S.M. Watson*[2], B.J. Kirby[2], J. Lau[1], G.T. Zimanyi[3], K. Liu[3], D. Suess[4], R.D. Shull[1] and J.A. Borchers[2] *1. Metallurgy/Magnetic Materials, NIST, Gaithersburg, MD; 2. NIST Center for Neutron Research, NIST, Gaithersburg, MD; 3. Physics Department, University of California, Davis, CA; 4. Institute of Solid State Physics, Vienna University of Technology, Orsay, France*

**11:36**

**CC-12. Ultrahigh-$H_c$ granular media with $[CoB/Pt]_n$+oxygen multilayer film.** *H. Nemoto*[1], I. Takekuma[1], K. Tanahashi[1] and R. Nakatani[2] *1. Central Research Laboratory, Hitachi, Ltd., Odawara, Japan; 2. Graduate School of Engineering, Osaka University, Osaka, Japan*

**11:48**

**CC-13. Fabrication of $L1_1$ type (Co-Ni)-Pt ordered alloy films by sputter deposition for bit-patterned media.** *H. Sato*[2,1], T. Shimatsu[1], H. Kataoka[1,3], H. Aoi[1], O. Kitakami[2] and S. Okamoto[2] *1. RIEC, Tohoku University, Sendai, Miyagi, Japan; 2. IMRAM, Tohoku University, Sendai, Miyagi, Japan; 3. Fuji Electric Device Technology, Co., Ltd, Matsumoto, Nagano, Japan*

**WEDNESDAY MORNING 9:00** **SALON B**

## Session CD
## MAGNETIC TUNNEL JUNCTIONS II
Evgeny Tsymbal, Chair

**9:00**

**CD-01. Large tunnel magnetoresistance effect in double magnetic tunnel junctions using half-metallic Heusler alloy electrodes.** *Y. Ohdaira*[1], M. Oogane[1] and Y. Ando[1] *1. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*



**9:12**

**CD-02. Realization of large TMR using pure spin filtering barriers with no ferromagnetic electrodes involved.** *G. Miao*[1,2], M. Muller[1], J. Chang[1,2] and J.S. Moodera[1] *1. Francis Bitter Magnetic Laboratory, MIT, Cambridge, MA; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, South Korea*

**9:24**

**CD-03. Spatially resolved measurements of magneto-Coulomb blockade in magnetic tunnel junctions.** *K. Dempsey*[1], A.T. Hindmarch[1], H. Wei[2], C.H. Marrows[2], X. Han[2] and Q. Qin[1] *1. Leeds University, Leeds, United Kingdom; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

**9:36**

**CD-04. Interface and magnetic characterization of ultrathin EuO films with XRS and XMCD.** *E. Negusse*[1], J. Dvorak[1], J. Holroyd[1], M. Liberati[1,3], Y.U. Idzerda[1], T.S. Santos[2], J.S. Moodera[2] and E. Arenholz[3] *1. Physics, Montana State University, Bozeman, MT; 2. Francis Bitter Magnet Lab, Massachusetts Institute of Technology, Cambridge, MA; 3. Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, CA*

**9:48**

**CD-05. Tunnel magnetoresistance effect in magnetic tunnel junctions with Co-Mn-Si Heusler alloy electrode.** *M. Oogane*[1], N. Hirose[1], Y. Sakuraba[2] and Y. Ando[1] *1. Tohoku University, Sendai, Japan; 2. Tohoku University, IMR, Sendai, Japan*

**10:00**

**CD-06. Double perovskite Sr2FeMoO6 thin films: Effect of Substrate and substrate temperature on structural, electrical and magnetic properties.** D. Teotia[1] and *D. Kaur*[1] *1. Physics, IIT Roorkee, Roorkee, Uttrakhand, India*

**10:12**

**CD-07. Tunnel barrier enhanced voltage signals generated by magnetization precession of a single ferromagnetic layer.** ***(Invited)*** T. Moriyama[1], R. Cao[1], X. Fan[1], G. Xuan[2], B. Nikolić[1], Y. Tserkovnyak[3], J. Kolodzey[2] and *J.Q. Xiao*[1] *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Electrical and Computer Engineering, University of Delaware, Newark, DE; 3. Physics and Astronomy, UCLA, Los Angles, CA*

**10:48**

**CD-08. Role of Interface Properties on Spin Polarized Tunneling in Cu/Al2O3/Co Junctions with Interfacial Ultra Thin Co layer.** *D. Choi*[1], J. Moodera[2], A. Michel[3] and T. Kim[1] *1. Department of Physics, Ewha Womans University, Seoul, South Korea; 2. Francis Bitter Magnet Lab, MIT, Cambridge, MA; 3. Department of Physics, Université de Poitiers, Futuroscope-Chasseneuil, France*

**11:00**

**CD-09. Field-Like Spin Torque Term Governs Enhanced Synchronization in Magnetic Tunnel Junction based Spin Torque Oscillator.** *Y. Zhou*[1] and J. Åkerman[1] *1. Institute of Microelectronics and Information Technology, Royal Institute of Technology, Stockholm-Kista, Sweden*

**11:12**

**CD-10. Multiferroic tunnel junctions: prediction of four resistance states from first-principles.** *J. Velev*[1], C. Duan[2], A. Smogunov[3,4], E. Tosatti[3,4], S.S. Jaswal[1] and E.Y. Tsymbal[1] *1. Department of Physics and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Key Laboratory of Polarized Materials and Devices, East China Normal University, Shanghai, China; 3. International Centre for Theoretical Physics (ICTP), Trieste, Italy; 4. International School for Advanced Studies (SISSA) and CNR/DEMOCRITOS National Simulation Center, Trieste, Italy*

**11:24**

**CD-11. The band gap of ultra-thin amorphous and well-ordered Al2O3 films on CoAl(100) measured by scanning tunneling microscopy.** *V. Rose*[1] and R. Franchy[2] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Institut for Surfaces and Interfaces, Research Center Juelich, Juelich, Germany*

**11:36**

**CD-12. High spin polarization of Co75Fe25 bulk alloys using PCAR complemented by TMR measurements with an alumina barrier.** *S.V. Karthik*[1], T.M. Nakatani[1,2], A. Rajanikanth[1], Y.K. Takahashi[1] and K. Hono[1,2] *1. Magnetic Materials Center, National Institute for Materials Science, Sengen, Tsukuba, Japan; 2. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan*

**11:48**

**CD-13. The influence of oxygen on structure and magnetic properties of full Heusler Co2MnAl films and magnetic tunnel junctions.** *J. Qiu*[1], V. Ko[1], P. Luo[1], W. Yeo[1], L. An[1], B. Zong[1] and G. Han[1] *1. SMI Division, Data Storage Institute, Singapore, Singapore*



**WEDNESDAY MORNING 9:00** **SALON D**

## Session CE
# HYBRID SEMICONDUCTOR / FERROMAGNET HETEROSTRUCTURES

Olaf van 't Erve, Chair

**9:00**

**CE-01. Induced Ferromagnetic Order at Room Temperature in (Ga,Mn)As.** M. Sperl[1], *F. Maccherozzi*[2], M. Soda[1], G. Panaccione[2], G. Rossi[2], S. Polesya[3], H. Ebert[3], U. Wurstbauer[1], G. Woltersdorf[1], W. Wegscheider[1], G. Bayreuther[1] and C. Back[1] *1. Institut für Experimentelle Physik, Universitaet Regensburg, Regensburg, Germany; 2. ILaboratorio Nazionale TASC, INFM-CNR, Trieste, Italy; 3. Department of Chemistry, Ludwig-Maximilians University Munich, Muenchen, Germany*

**9:12**

**CE-02. Manipulating the magnetic properties of micromachined GaMnAs.** *H. Choi*[1], C. Yang[1] and Y. Park[1] *1. Department of Physics and Astronomy, Seoul National University, Seoul, South Korea*

**9:24**

**CE-03. Current induced domain wall motion in GaMnAs tracks.** J. Adam[2,4], N. Vernier[1,2], L. Thévenard[3], A. Lemaitre[3], *J. Ferré*[2] and G. Faini[3] *1. IEF, Université Paris-Sud, Orsay, France; 2. LPS, Université Paris-Sud, Orsay, France; 3. LPN, CNRS, Marcoussis, France; 4. GEMAC, Université de Versailles-Saint Quentin, Versailles, France*

**9:36**

**CE-04. Exchange Coupling and Spin-dependent Transport in Ferromagnetic Semiconductor Exchange Spring Devices.** ***(Invited)*** *M. Zhu*[1], M.J. Wilson[1], B. Sheu[1], P. Mitra[1], P. Schiffer[1] and N. Samarth[1] *1. Department of Physics and Materials Research Institute, Pennsylvania State University, University Park, PA*

**10:12**

**CE-05. Ferromagnetic Resonance Study of MnAs/(Ga,Mn)As Bilayers.** *M. Cubukcu*[1], H. vonBardeleben[1], K. Khazen[1], J. Cantin[1], M. Zhu[2], M. Wilson[2], P. Schiffer[2] and N. Samarth[2] *1. Institut des NanoSciences de Paris-Université Paris 6, Paris, France; 2. Dept of Physics, Materials Research Institute, The Pennsylvania State University, Pennsylvania, PA*

**10:24**

**CE-06. Intershell exchange and sequential electrically injected spin populations of InAs quantum dot shell state.** *G. Kioseoglou*[1], C.H. Li[1], A.T. Hanbicki[1], B.T. Jonker[1], M. Korkusinski[2], P. Hawrylak[2], M. Yasar[3] and A. Petrou[3] *1. Code 6361, Naval Research Lab, Washington, DC; 2. Institute for Microstructural Sciences, National Research Council, Ottawa, ON, Canada; 3. Physics, SUNY Buffalo, Buffalo, NY*

**10:36**

**CE-07. Investigation of an effective magnetic field involved in photo-induced precession of magnetization in (Ga,Mn)As.** *S. Kobayashi*[1], Y. Hashimoto[1] and H. Munekata[1] *1. Imaging Science and Engineering Lab., Tokyo Insutitute of Technology, Yokohama, Japan*

**10:48**

**CE-08. Electrically-Pumped Spin-Polarized Lasers.** ***(Invited)*** *M. Holub*[1] *1. Naval Research Laboratory, Washington, DC*

**11:24**

**CE-09. Tunneling magnetoresistance in Fe/$GaO_x$/$Ga_{1-x}Mn_xAs$ magnetic tunnel diodes.** *H. Saito*[1,2], S. Yuasa[1] and K. Ando[1] *1. Nanoelectronics, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan; 2. PRESTO, Japan Science and Technology Agency, Tokyo, Japan*

**11:36**

**CE-10. Magnetic tunnel junctions with Co:TiO2 ferromagnetic semiconductor electrodes.** *Y.L. Lee*[1], I.J. Vera Marún[1], M.P. de Jong[1] and R. Jansen[1] *1. MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

**11:48**

**CE-11. Corrections to spin lifetimes estimated by Hanle measurements in Fe/GaAs lateral spin transport heterostructures.** *C. Awo-Affouda*[1], O.M. van't Erve[1], M. Holub[1], C.H. Li[1], A.T. Hanbicki[1], G. Kioseoglou[1] and B.T. Jonker[1] *1. Naval Research Laboratory, Washington, DC*



WEDNESDAY MORNING 9:00 SALON E

## Session CF
## COMPLEX MAGNETIC OXIDES
Maria Varela, Chair

**9:00**

**CF-01. Enhanced ordering temperatures in antiferromagnetic $(LaMnO_3)_m/(SrMnO_3)_{2m}$ superlattices.** *S.J. May*[1], J.L. Robertson[2], P.J. Ryan[3], T.S. Santos[4], S. te Velthuis[1], J.W. Kim[3], J.N. Eckstein[5], S.D. Bader[1,4] and A. Bhattacharya[1,4] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. High Flux Isotope Reactor, Oak Ridge National Laboratory, Oak, TN; 3. MUCAT, Ames Laboratory, Ames, IA; 4. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 5. Department of Physics, University of Illinois, Urbana-Champaign, IL*

**9:12**

**CF-02. Independent Behavior of the Antiferromagnetic and Ferromagnetic Properties in Perovksite Oxide Superlattices.** *Y. Takamura*[1], F. Yang[1], N. Kemik[1], M.D. Biegalski[2], H.M. Christen[2,3] and E. Arenholz[4] *1. Chemical Engineering and Materials Science, UC Davis, Davis, CA; 2. Center for Nanophase Materials Science, Oak Ridge National Laboratory, Oak Ridge, TN; 3. Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN; 4. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

**9:24**

**CF-03. Magnetic Characteristics of Complex Oxide F/S/F Trilayers.** C. Visani[1], Z. Sefrioui[1], N.M. Nemes[1], C. Leon[1], J. Santamaria[1], *S. te Velthuis*[2], A. Hoffmann[2], M. Garcia-Hernandez[3], M.R. Fitzsimmons[4] and B.J. Kirby[4] *1. Universidad Complutense de Madrid, Madrid, Spain; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain; 4. Los Alamos National Laboratory, Los Alamos, NM*

**9:36**

**CF-04. Structure, Magnetism, and Transport in $SrTiO_3$(001) / $La_{1-x}Sr_xCoO_3$: Evidence for Interfacial Magnetic Phase Separation.** ***(Invited)*** M. Torija[1], M. Sharma[1], J. Gazquez[2], M. Varela[2], M. Fitzsimmons[3], V. Orlyanchik[4], M. Weissman[4], C. He[1], M. Laver[5], B. Maranville[5], J. Borchers[5] and *C. Leighton*[1] *1. University of Minnesota, Minneapolis, MN; 2. Oak Ridge National Lab, Oak Ridge, TN; 3. Los Alamos National Lab, Los Alamos, NM; 4. University of Illinois, Urbana-Champaign, IL; 5. National Institute for Standards and Technology, Gaithersburg, MD*

**10:12**

**CF-05. Magnetic Circular Dichroism Spectroscopy of Epitaxial La0.7Sr0.3MnO3 Thin Films.** *G.A. Gehring*[1], T.K. Nath[2] and J.R. Neal[1] *1. The Department of Physics and Astronomy, The University of Sheffield, Sheffield, United Kingdom; 2. Department of Physics and Meteorology, Indian Institute of Technology, Kharagpur, India*

**10:24**

**CF-06. Creating an Antiferromagnetic Metal in $La_{1-x}Sr_xMnO_3$ by Digital Synthesis.** *T. Santos*[1], S.J. May[2], A. Bhattacharya[1,2] and J.L. Robertson[3] *1. Center for Nanoscale Materials, Argonne National Lab, Argonne, IL; 2. Materials Science Division, Argonne National Lab, Argonne, IL; 3. High Flux Isotope Reactor, Oak Ridge National Lab, Oak Ridge, TN*

**10:36**

**CF-07. Effects of B-site ordering on the magnetic properties of $Sr_2CrReO_6$ thin films.** Y. Sugimoto[1], K. Yoshimoto[1], F. Kato[1], J. Zhong[1,2], *Y. Takeda*[1] and H. Asano[1] *1. Dept. of Cryst. Mat. Sci., Nagoya University, Nagoya, Japan; 2. Venture Business Laboratory, Nagoya University, Nagoya, Japan*

**10:48**

**CF-08. Anisotropic magnetoresistance in La0.65Ca0.35MnO3 polycrystalline and epitaxial thin film samples.** *M. Egilmez*[1], R. Ma[1], K.H. Chow[1] and J.A. Jung[1] *1. Physics, University of Alberta, Edmonton, AB, Canada*

**11:00**

**CF-09. Magneto-Transmission Spectra and Colossal Magnetoresistance Effect in La(0.7)Pb(0.3)MnO(3-δ) Epitaxial Thin Film.** S.T. Malak[1], . Clayton-Cox[1], J.R. Scheuermann[1], J. Stehlik[1] and *J. Wang*[1] *1. Department of Physics, Applied Physics, and Astronomy, Binghamton University, Binghamton, NY*

**11:12**

**CF-10. Universal magnetic behavior of the electron-doped $SrMnO_3$ cubic perovskite by various A-site and B-site substitutions.** *S. Kolesnik*[1], B. Dabrowski[1,2] and O. Chmaissem[1,2] *1. Department of Physics, Northern Illinois University, Dekalb, IL; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL*



**11:24**

**CF-11. New Phase transition in Pr1-xCaxMnO3: evidence for electrical polarization in charge ordered manganites.** *J.P. Araujo*[1], A.L. Lopes[2,7], V.S. Amaral[3], J.G. Correia[4,7], Y. Tomioka[5] and Y. Tokura[6] *1. Departamento de Física, IFIMUP, Universidade do Porto, Porto, Portugal; 2. Centro de Física Nuclear, Universidade de Lisboa, Lisboa, Portugal; 3. Departamento Física, CICECO, Universidade de Aveiro, Aveiro, Portugal; 4. Instituto Tecnólogico Nuclear, Sacavém, Portugal; 5. CERC, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan; 6. Department of Applied Physics, University of Tokyo, Tokyo, Japan; 7. CERN EP, Geneva, Switzerland*

**11:36**

**CF-12. Oxygen vacancy order, electronic orbital order and magnetism in La1-xSrxMnO3-d.** *B. Dabrowski*[1] *1. Physics, Northern Illinois University, DeKalb, IL*

**11:48**

**CF-13. Paramagnetic spin correlations and spin dynamics in doped manganites as the precursors of their magnetic ordering.** *E. Rozenberg*[1], M. Auslender[1], A.I. Shames[1], Y.M. Mukovskii[2] and A. Gedanken[3] *1. Physics, BGU of the Negev, Beer-Sheva, Israel; 2. Moscow Steel and Alloys Institute, Moscow 119049, Russian Federation; 3. Chemistry, BIU, Ramat-Gan 52900, Israel*

**WEDNESDAY MORNING 9:00** **400/402**

## Session CG
# APPLICATIONS OF MAGNETIC NANOPARTICLES TO BIOLOGY

Jian Ping Wang, Chair

**9:00**

**CG-01. Magnetic Micro-Barcodes for High-Throughput Biological Assays.** *B. Hong*[1], T. Hayward[1], J. Jeong[2], J. Palfreyman[1], J. Cooper[1], T. Mitrelias[1], J. Llandro[1], K.P. Kopper[1], S. Steinmüller[1], T. Trypiniotis[1], T. Bland[1] and C. Barnes[1] *1. Department of Physics, University of Cambridge, Cambridge, United Kingdom; 2. Department of Materials Engineering, Chungnam National University, Daejeon, South Korea*

**9:12**

**CG-02. Magnetophoresis of $Fe_3O_4$ Nanorods.** J. Lim[1], *D.X. Tan*[2], C.G. Lanni[2], F. Lanni[3], R.D. Tilton[1,4] and S.A. Majetich[2] *1. Department of Chemical Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Department of Physics, Carnegie Mellon University, Pittsburgh, PA; 3. Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA; 4. Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA*

**9:24**

**CG-03. Synchronized swimming of magnetic micro-bead pairs.** S. Bhat[1], T. Kurzweg[1], A. Guez[1] and *G. Friedman*[1] *1. ECE Department, Drexel University, Philadelphia, PA*

**9:36**

**CG-04. Ferromagnetic micro-swimmers: Experimental prototype.** *F.Y. Ogrin*[1], P.G. Petrov[1] and C.P. Winlove[1] *1. University of Exeter, Exeter, United Kingdom*

**9:48**

**CG-05. Single molecule manipulation monitoring using magnetic tweezers and MR sensors.** *R.C. Chaves*[1,2], S. Cardoso[1,2] and P.P. Freitas[1,2] *1. INESC-MN & IN, Lisbon, Portugal; 2. IST, Lisbon, Portugal*

**10:00**

**CG-06. Functionalization-Induced Improvement of Technical Magnetic Properties in Fe3O4 Nanoparticles.** *D.K. Nagesha*[1], B.D. Plouffe[2], M. Phan[2], L.H. Lewis[2], S. Sridhar[1] and S.K. Murthy[2] *1. Physics, Northeastern University, Boston, MA; 2. Chemical Engineering, Northeastern University, Boston, MA*

**10:12**

**CG-07. The "sonic wave emission by magnetically stimulated particles" and its application to sentinel lymph node mapping.** *K. Kakegawa*[1], T. Ueda[2], M. Tada[1], T. Nakagawa[1], H. Handa[3,2] and M. Abe[1,2] *1. Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan; 2. Integrated Research Institute, Tokyo Institute of Technology, Tokyo, Japan; 3. Biological Information, Tokyo Institute of Technology, Tokyo, Japan*

**10:24**

**CG-08. An Fe-Based Novel Drug Delivery System with Heparin-Coated Magnetic Nanoparticles.** *H. Khurshid*[1], S.H. Kim[2], M.J. Bonder[1], G.C. Hadjipanayis[1], K.L. Kiick[2] and R.A. Sikes[3] *1. Physics and Astronomy, University of DE, Newark, DE; 2. Material Science and Engineering, Univeristy of DE, Newark, DE; 3. Biological Sciences, Univeristy of DE, Newark, DE*



**10:36**

**CG-09. Synthesis of Magnetic Porous Hollow Silica Nanotubes for Drug Delivery.** H. Ma[1], M.A. DeCoster[2], J. McNamara[2], D. Caruntu[1], J. Chen[3], C.J. O'Connor[1] and *W. Zhou*[1] *1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA; 2. Biomedical Engineering and Institute for Micromanufacturing, Louisiana Tech University, Ruston, LA; 3. Key Lab for Nanomaterials, Ministry of Education, Beijing University of Chemical Technology, Beijing, China*

**10:48**

**CG-10. Investigation of the dynamic response of cells to locally applied forces using magnetic micropost arrays.** *C.M. Lamb*[1], N.J. Sniadecki[2], C.S. Chen[3] and D.H. Reich[1] *1. Physics, Johns Hopkins University, Baltimore, MD; 2. Mechanical Engineering, University of Washington, Seattle, WA; 3. BioEngineering, University of Pennsylvania, Philadelphia, PA*

**11:00**

**CG-11. The Influence of Size and Surface Functionality on the Magnetic and Heating Properties of Iron Oxide Nanoparticles.** *C. Dennis*[1], A.J. Jackson[2,3], J.A. Borchers[2], C. Lau[1,3], A.R. Foreman[4], C. Gruettner[5] and R. Ivkov[4,6] *1. NIST, Gaithersburg, MD; 2. NCNR, NIST, Gaithersburg, MD; 3. Department of Materials Science and Engineering, University of Maryland, College Park, MD; 4. Triton BioSystems, Inc., Chelmsford, MA; 5. Micromod Partikeltechnologie GmbH, Rostock-Warnemuende, Germany; 6. Department of Radiation Oncology and Molecular Radiation Sciences, Johns Hopkins University, Baltimore, MD*

**11:12**

**CG-12. Experimental and theoretical investigation of cubic FeCo nanoparticles for magnetic hyperthermia.** *Y. Jing*[1], H. Sohn[1], T. Kline[1], R.H. Victora[1] and J.P. Wang[1] *1. Electrical Engineering, University of Minnesota, Minneapolis, MN*

**11:24**

**CG-13. A Study Of The Dependence Of Tumor Volume On The Optimum Dosage Of Ferromagnetic Nanoparticles In Cancer Therapy Using MFH.** M. Pavel[1,2] and *A. Stancu*[1] *1. "Alexandru Ioan Cuza" University, Iasi, Romania; 2. University of Medicine and Pharmacy "Gr. T. Popa", Iasi, Romania*

**11:36**

**CG-14. AC magnetically induced heating of solid state superparamagnetic ferrite nanoparticles and its physical characteristics for hyperthermia.** *S. Lee*[1], S. Bae[1], M. Jeun[1], T. Koshi[2] and Y. Takemura[2] *1. Electrical and Computer Engineering, National Unversity of Singapore, Singapore, Singapore; 2. Electrical and Computer Engineering, Yokohama National University, Yokohama, Japan*

**11:48**

**CG-15. Theory of Magnetic Fluid Heating with an Alternating Magnetic Field with Temperature Dependent Materials Properties for Self-Regulated Heating.** C.L. Ondeck[1,2], A.H. Habib[1], C.A. Sawyer[1], P. Ohodnicki[1], K. Miller[1] and *M.E. McHenry[1,3]1. Materials Science and Engineering, Carnegie Mellon University, McMurray, PA; 2. Biomedical and Health Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Department of Physics, Carnegie Mellon University, Pittsburgh, PA*

WEDNESDAY MORNING 9:00 410

## Session CH
# MAGNETORESISTANCE, MAGNETOIMPEDANCE, AND HALL EFFECT

Ching-Ray Chang, Chair

**9:00**

**CH-01. Unraveling positive and negative organic magnetoresistance.** *W. Wagemans*[1], F.L. Bloom[1], M. Kemerink[1] and B. Koopmans[1]*1. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

**9:12**

**CH-02. Current-perpendicular-to-plane giant magnetoresistance in $Co_x$–$C_{1-x}$ granular film.** X. Zhang[1,2], *X. Zhang*[1,2], L. Wu[1,2] and C. Wan[1,2]*1. Laboratory of Advanced Materials, Department of Materials Science and Engineering, Tsinghua University, Beijing 100084, China; 2. Beijing National Center for Electron Microscopy, Beijing 100084, China*

**9:24**

**CH-03. Mechanism of giant tunnel magnetoresistance in fullerene-cobalt granular thin films.** I. Sugai[1], S. Sakai[2], *S. Mitani*[1], M. Mizuguchi[1], K. Takanashi[1,2], Y. Matsumoto[2], H. Naramoto[2], P.V. Avramov[2], S. Okayasu[2] and Y. Maeda[2,3]*1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Japan; 3. Department of Energy Science and Technology, Kyoto University, Kyoto, Japan*

**9:36**

**CH-04. Magneto-transport Properties of Ag and Co Nanoparticles Embedded in a Carbon Matrix.** *P. Liu*[1], Y. Huang[1], M.J. Bonder[1] and G.C. Hadjipanayis[1]*1. Department of Physics & Astronomy, University of Delaware, Newark, DE*



**9:48**

**CH-05. Controlled metal-insulator transition in ultra thin (Ga,Mn)As.** *R. Gareev*[1], M. Schlapps[1], J. Sadowski[1,2], M. Sperl[1], A. Petukhov[3] and W. Wegscheider[1]*1. University of Regensburg, Regensburg, Germany; 2. Lund University, Lund, Sweden; 3. South Dakota School of Mines and Technology, Rapid City, SD*

**10:00**

**CH-06. Weak Localization in Ferromagnetic Semiconductors.** *I. Garate*[1] and A. MacDonald[1]*1. Physics Department, University of Texas at Austin, Austin, TX*

**10:12**

**CH-07. Magnetoresistance and anomalous Hall effect in the variable range hopping transport of $(In_{1-x}Co_x)_2O_{3-v}$ oxide ferromagnetic semiconductor.** R. Qiao[1], T. Xu[1], Z. Liu[2], Y. Zhang[1], L. Mei[1], Y. Tian[1,3], Y. Qiang[3] and *S. Yan*[1]*1. School of Physics, Shandong University, Jinan, Shandong, China; 2. State Key Lab Metastable Mat Sci & Technol, Yanshan University, Qinhuangdao, Hebei, China; 3. Department of Physics, University of Idaho, Moscow, ID*

**10:24**

**CH-08. High Sensitivity, Multi-Functional Micro-Hall Sensors Fabricated using InAlSb/InAsSb/InAlSb Heterostructures.** *M. Bando*[1], T. Ohashi[1], M. Dede[2], R. Akram[2], A. Oral[3], S. Park[4,9], M. Abe[5,8], H. Handa[6,8], I. Shibasaki[7] and A. Sandhu[1,4]*1. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan; 2. Department of Physics, Bilkent University, Bilkent, Ankara, Turkey; 3. Faculty of Engineering and Natural Sciences, Sabanci University, Istanbul, Turkey; 4. Quantum Nanoelectronics Research Center, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan; 5. Department of Physical Electronics, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan; 6. Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan; 7. Asahikasei Corporation, Fuji, Shizuoka, Japan; 8. Integrated Research Institute, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan; 9. Tokyo Tech Global COE Program on Evolving Education and Research Center For Spatio-Temporal Biological Network, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan*

**10:36**

**CH-09. High frequency giant magneto-impedance in NiFe/Cu multilayered nanowires.** *H. Chiriac*[1], P. Pascariu[1], G. Ababei[1], O. Dragos[1] and N. Lupu[1]*1. Magnetic Materials and Devices, National Institute of Research and Development for Technical Physics, Iasi, Romania*

**10:48**

**CH-10. Spin-orbit scattering and anomalous Hall effect in the epitaxial $L1_0$-ordered ferromagnets FePd and FePt.** *K.M. Seemann*[1], A. Aziz[2], F. Kronast[3], J. Miguel[4], W. Kuch[4], M.G. Blamire[2], A.T. Hindmarch[1], B.J. Hickey[1] and C.H. Marrows[1] *1. E.C. Stoner Laboratory, School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 3. BESSY, Berlin, Germany; 4. Institut für Experimentalphysik, Freie Universität Berlin, Berlin, Germany*

**11:00**

**CH-11. Electron-magnon scattering and magnetization switching detection in FePt thin films and nanostructures.** *A.P. Mihai*[1,2], J. Attané[1,2], A. Marty[1], L. Vila[1], J. Pillet[1], C. Beigné[1], P. Warin[1] and Y. Samson[1] *1. INAC, SP2M, CEA, Grenoble, France; 2. Université Joseph Fourier, Grenoble, France*

**11:12**

**CH-12. Spin valves based on $L1_0$ FePt fixed layer with tilted anisotropy.** *C. Zha*[1], J. Persson[1], S. Bonetti[1] and J. Åkerman[1] *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology (KTH), Stockholm, Sweden*

**11:24**

**CH-13. Effects of NiFe and Co insertion on the perpendicular anisotropy, soft layer coercivity and GMR in perpendicularly magnetized [Pd/Co]/Cu/[Co/Pd] pseudo spin-valves.** *N. Thiyagarajah*[1], S. Bae[1], H. Joo[2] and D. Hwang[2] *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Department of Computer and Electronic Physics, Sangji University, Wonju, South Korea*

**11:36**

**CH-14. Enhancement of the magnetorefractive effect in tunnelling nanocomposites due to multiple interference and substrate resonance features.** R.T. Mennicke[1], A.E. Carmichael[1], *S.M. Thompson*[1], J.A. Matthew[1], K. Takanashi[2] and K. Yakushiji[2] *1. Physics, University of York, York, United Kingdom; 2. IMR, Tohoku University, Sendai, Japan*



WEDNESDAY MORNING 8:00 AUSTIN BALLROOM

## Session CP
## DOMAIN WALLS AND VORTICES (POSTER SESSION)

Andrew Kunz, Chair

**CP-01. Non-linear motion of magnetic vortices.** *A. Drews*[1], B. Krüger[2], S. Bohlens[2], G. Meier[1] and M. Bolte[1] *1. Institut für Angewandte Physik und Mikrostrukturzentrum, Universität Hamburg, Hamburg, Germany; 2. I. Institut für Theoretische Physik, Universität Hamburg, Hamburg, Germany*

**CP-02. Real-time detection of the current-induced dynamics of the magnetic vortex core by using TMR effect.** S. Kasai[1], K. Nakano[1], N. Ohshima[2], K. Kobayashi[1], Y. Nakatani[3] and *T. Ono*[1] *1. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 2. Device Platforms Research Labotarory, NEC Corporations, Sagamihara, Kanagawa, Japan; 3. Division of the Computer Science, University of Electro-Communications, Chofu, Tokyo, Japan*

**CP-03. Effect of Non-adiabatic Spin Torque on Spin-Diode Effect of Magnetization Vortex.** *J. Moon*[1], M. Jung[2] and K. Lee[1] *1. Dept. of Mater. Sci. & Eng., Korea University, Seoul, South Korea; 2. Dept. of Physics, Sogang University, Seoul, South Korea*

**CP-04. Stochasticity in nanostructured magnetic materials.** *D.J. Keavney*[1], X. Cheng[1] and K. Buchanan[2,3] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 3. Dept. of Physics, Colorado State University, Ft. Collins, CO*

**CP-05. Edge Roughness effect on the magnetization reversal process of spin valve submicron wires.** *T. Chiang*[1,2], C. Yu[1], Y. Chen[1], D. Chen[1], K. Cheng[1], S. Huang[1] and S. Lee[1] *1. Physics, Academia Sinica, Taipei, Taiwan; 2. Physics, National Taiwan University, Taipei, Taiwan*

**CP-06. Micromagnetic Study of Magnetic Domain Wall Collision in Ferromagnetic Nanowire.** *D. Djuhana*[1], H. Piao[1], S. Oh[1], S. Yu[1] and D. Kim[1] *1. Physics, Chungbuk National University, Cheongju, Chungbuk, South Korea*

**CP-07. Depinning field and activation volume at notches of ferromagnetic nanowire with perpendicular magnetic anisotropy.** *K. Kim*[1], J. Lee[1,2], C. Lee[3], Y. Cho[3], S. Seo[3], K. Shin[2] and S. Choe[1] *1. Physics and Astronomy, Seoul National University, Seoul, South Korea; 2. Nano-Device Research Center, Korea Institute of Science and Technology, Seoul, South Korea; 3. Samsung Advanced Institute of Technology, Yongin, South Korea*

**CP-08. Domain wall internal structure and dynamics in soft magnetic nanostripes.** *K. Gusliyenko*[1], J. Lee[1] and S. Kim[1] *1. Research Center for Spin Dynamics & Spin-Wave Devices, and Nanospinics Laboratory, Department of Materials Science and Engineering, Seoul National University, Seoul, South Korea*

**CP-09. Optimum conditions for microwave-assisted magnetization reversal of 30-nm-thick Permalloy film with lateral size of 2×0.2 $\mu m^2$ fabricated on 0.2-μm-wide coplanar waveguide.** Y. Nozaki[1], *K. Tateishi*[1], S. Shiraishi[1] and K. Matsuyama[1] *1. Dept. of Electronics, Kyushu University, Fukuoka, Japan*

**CP-10. Generation of nanoseconds duration magnetic pulse field for switching experiments on a single nanodot.** *N. Kikuchi*[1], S. Okamoto[1] and O. Kitakami[1] *1. IMRAM Tohoku University, Sendai, Japan*

**WEDNESDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session CQ
## CMR OXIDES III: TRANSPORT (POSTER SESSION)
Steve May, Chair

**CQ-01. Rectifying behavior and interfacial potential in $La_{0.7}Ca_{0.3}MnO_3$/Si junctions.** *F. Hu*[1], J. Wang[1], J. Shen[1], J. Sun[1], B. Shen[1] and J. Gao[2] *1. State Key Laboratory of Magnetism, Institute of Physics & Center of Condensed Matter Physics, Chinese Academy of Sciences, Beijing, Beijing, China; 2. Department of Physics, The University of Hong Kong, Hong Kong, China*

**CQ-02. Correlation between electroresistance and magnetoresistance in slight oxygen-deficent Nd0.7Sr0.3MnO3-δ polycrystalline ceramics.** *P.C. Yang*[1], H. Den[1], H. Wang[1], C.J. Wen[2] and F.X. Han[2] *1. Faculty of Physics & Electronic Technology, Hubei University, Wuhan, China; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

**CQ-03. Effect of heat treatment on electroresistance in Nd0.67Sr0.33MnO3 ceramics.** *S. Chen*[1], Q. Dai[1], H. Deng[1] and C. Yang[1] *1. Hubei University, Wuhan, China*

**CQ-04. Frequency response analysis of magnetoresistive manganite films exhibiting electric-pulse-induced resistance switching.** *T. Nakamura*[1], T. Yokoyama[1], K. Homma[1] and K. Tachibana[1] *1. Department of Electronic Science and Engineering, Kyoto University, Kyoto, Japan*

**CQ-05. Resistive switching behavior in manganite oxides.** *T. Hsu*[1], H. Lee[1] and J. Lin[1] *1. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan*



**CQ-06. Magnetotransport properties of Ru–layered perovskites : $Sr_3BRuO_7$ (B = Mn and Ti).** S.S. Pillai[1] and *P.N. Santhosh*[1] *1. Physics, Indian Institute of Technology, Madras, Chennai, Tamilnadu, India*

**CQ-07. Non-stoichiometry, point defects and magnetoresistance of Sr2FeMoO6-d.** *J. Toepfer*[1] and R. Kircheisen[1] *1. SciTec, Univ. Appl. Sciences Jena, Jena, Germany*

**CQ-08. Anomalous magnetism and charge transport in dielectric $La_{1-x}Ca_xMnO_3$ ($x \le x_c \sim 0.22$).** *Y.M. Mukovskiy*[1], M.A. Anisimov[2], A.D. Bozhko[2], A.L. Chernobrovkin[2], S.V. Demishev[2], V.Y. Ivanov[2], R.V. Privezentzev[1], N.A. Samarin[2], A.V. Semeno[2], N.E. Sluchanko[2] and V.V. Glushkov[2] *1. Synthesis Lab., Moscow State Steel and Alloys Institute, Moscow, Russian Federation; 2. A.M.Prokhorov General Physics Institute of RAS, Moscow, Russian Federation*

**CQ-09. Colossal Electroresistance Effect in La1-xCaxMnO3.** Z.H. Zhou[1], *X.J. Luo*[1], G.H. Rao[2] and C.P. Yang[1] *1. Faculty of Physics & Electronic Technology, Hubei University, Wuhan, Hubei, China; 2. The Institute of Physics, Chinese Academy of Sciences, Beijing, Beijing, China*

**CQ-10. Effect of doping-induced local lattice distortion on charge transport mechanism of La0.85Zr0.15Mn1-xGaxO3.** *D. Ling*[1], J. Cheng[1], C. Lee[1] and F. Chien[1] *1. Department of Physics, Tamkang University, Tamsui, Taiwan*

**CQ-11. Verification of percolating nature of ferromagnetic-paramagnetic transition in bulk manganite La(0.75)Ca(0.25)MnO3 with current-pulse conductivity study.** B. Belevtsev[1] and *V. Krasovytskiy*[1,2] *1. Institute for Low Temperature Physics and Engineering, Kharkov, Ukraine; 2. Physics, Texas A&M University, College Station, TX*

**CQ-12. Correlated polaron transport and metal-insulator transition in $La_{1-x}Sr_xMnO_3$.** *N.B. Srivastava*[1], L.N. Singh[2] and C.M. Srivastava[3] *1. Department of Physics, R.J. College, Univ. of Mumbai, Mumbai, Maharashtra, India; 2. Department of Physics, Dr. Babasaheb Ambedkar Technological University, Lonere 402103, Maharashtra, India; 3. Department of Physics, Indian Institute of Technology, Bombay, Mumbai 400076, Maharashtra, India*

**CQ-13. Effect of carrier density on the magnetically tunable properties in self-doped La0.9MnO3/STON heteroepitaxial junctions.** *Z. Wang*[1,2], G. Yu[1], D. Gu[1], L. Qiu[1], L. Wang[2] and J. Gao[2] *1. Physics Department, Nanjing University, Nanjing, China; 2. Physics Department, The University of Hong Kong, Hong Kong, China*

WEDNESDAY MORNING 8:00 AUSTIN BALLROOM

## Session CR
## MULTIFERROICS III: BULK OXIDES (POSTER SESSION)
Manh-Huong Phan, Chair

**CR-01. Does ferroelectric polarization in LiCu2O2 uniquely originate from spiral-spin order?** M. Qin[1], Y. Guo[1], *S. Dong*[1], K. Wang[1] and J. Liu[1] *1. Physics, Nanjing University, Nanjing, China*

**CR-02. Comparison of the low temperature *H-T* phase diagrams of hexagonal Ho- and $DyMnO_3$** *M.D. Vannette*[1], S. Nandi[1], A. Kressyig[1], J.Q. Yan[1], A.I. Goldman[1] and R. Prozorov[1] *1. Physics and Astronomy, Ames Laboratory/Iowa State University, Ames, IA*

**CR-03. Phase transitions in $Er_{1-x}Lu_xFe_2O_4$** *J. Kim*[1], J. Ahn[1], C. Jung[1] and B. Lee[1] *1. Physics, Hankuk University of Foreign Studies, Yongin, Kyungki, South Korea*

**CR-04. Synthesis structural and magnetic with electronic structure calculation of $La_2NiMnO_6$ produced by combustion method.** P.L. Cunha[1], D.A. Landínez-Téllez[2], J.A. Rodríguez[3] and *J. Aguiar*[4] *1. Physics, UFPE, Recife, Pernambuco, Brazil; 2. Physics, UNAL, Bogota, Colombia; 3. Physics, UNAL, Bogota, Colombia; 4. Physics, UFPE, Recife, Pernambuco, Brazil*

**CR-05. Negative magnetization induced by proton irradiation in the $CoCr_2O_4$ Multiferroic materials.** *K. Choi*[1], S. Kim[1] and C. Kim[1] *1. Physics, Kookmin Univ., Seoul, South Korea*

**CR-06. Magnetic spin-glass state in ferroelectric relaxor type solid solutions: multiferroic relaxor.** *Z. Cheng*[1], X. Wang[1], S. Zhang[2] and T.R. Shrout[2] *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Keiraville, NSW, Australia; 2. Materials Research Institute, Pennsylvania State University, University Park, PA*

**CR-07. Study of Multiferroic properties of Al doped $CuFeO_2$ by Mössbauer spectroscopy.** *D. Choi*[1], I. Shim[1] and C. Kim[1] *1. Physics, Kookmin University, Seoul, South Korea*

**CR-08. Structural and transport properties of Bi-substituted $Co_2MnO_4$** R. Kumar[1], S.K. Arora[2], *I.V. Shvets*[2], N.E. Rajeevan[3], P.P. Pradyumnan[3] and D.K. Shukla[4] *1. Materials Science Division, IUAC, New Delhi 110067, India; 2. Centre for Adaptive Nanostructures and Nanodevices (CRANN), School of Physics, Trinity College Dublin, Dublin, Ireland; 3. Department of Physics, University of Calicut, Calicut 673635, Kerala, India; 4. Deaprtment of Physics, Aligarh Muslim University, Aligarh 202002, U.P., India*



**CR-09. Magnetic properties of oxide multiferroics Pb(Fe1/2Nb1/2)O3 and 0.3 Pb(Fe1/2Nb1/2)O3 - 0.7 Pb(Mg1/2W1/2)O3.** *Z. Trontelj*[1], Z. Jagličić[1], J. Luznik[1], A. Levstik[2], C. Filipič[2], V. Bobnar[2], J. Holz[2], V. Laguta[3], P. Cevc[2] and R. Blinc[2] *1. IMFM, Ljubljana, Slovenia; 2. IJS, Ljubljana, Slovenia; 3. IPMS, Ukrainian Academy of Sciences, Kijev, Ukraine*

**CR-10. Electric polarization enhancement in the multiferroic spinel $CoCr_2O_4$ with the site mixing effects.** *I. Kim*[1], Y. Oh[1], S. Chun[1], K. Kim[1], J. Lee[2], K. Ko[2], J. Park[2] and J. Chung[3] *1. FPRD & Department of Physics and Astronomy, Seoul National University, Seoul, South Korea; 2. eSSC & Department of Physics, Pohang University of Science and Technology (POSTECH), Pohang, South Korea; 3. Department of Physics, Korea University, Seoul, South Korea*

WEDNESDAY MORNING 8:00 AUSTIN BALLROOM

## Session CS
## 4f-, 5f- AND STRONGLY CORRELATED SYSTEMS - I (POSTER SESSION)
Heinrich Nakotte, Chair

**CS-01. Magnetic behaviour and phase diagram of $Gd_4(Co_{1-x}Cu_x)_3$ compounds.** *T.M. Seixas*[1], M.A. Salgueiro da Silva[1], H.F. Braun[2] and G. Eska[2] *1. Departamento de Física, Faculdade de Ciências da Universidade do Porto, Porto, Portugal; 2. Physikalisches Institut, Universitaet Bayreuth, D-95440 Bayreuth, Germany*

**CS-02. Field-induced and spontaneous magnetostriction in $(Lu_{0.8}Ce_{0.2})_2Fe_{17}$** *A.V. Andreev*[1], K. Koyama[2], E.A. Tereshina[1,3] and K. Watanabe[2] *1. Institute of Physics, Academy of Sciences, Prague, Czech Republic; 2. Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic*

**CS-03. Temperature dependence of magnetic hyperfine interactions in anti-ferromagnetic compounds $CeT_2Si_2$, with T = Pd, Rh.** *G.A. Cabrera-Pasca*[2], R.N. Saxena[1], A.W. Carbonari[1] and J. Mestnik-Filho[1] *1. CRPq, IPEN-CNEN/SP, Sao Paulo, Sao Paulo, Brazil; 2. Instituto de Fisica, Universidade de Sao Paulo, Sao Paulo, Sao Paulo, Brazil*

**CS-04. Magnetic ground state at the ytterbium site in $YbNiAl_4$** B. Saensunon[1], K. Nishimura[3], *D.H. Ryan*[2], W.D. Hutchison[1] and G.A. Stewart[1] *1. School of Physical, Environmental & Mathematical Sciences, University of New South Wales, Canberra, ACT, Australia; 2. Centre for the Physics of Materials and Physics Department, McGill University, Montreal, QC, Canada; 3. Graduate School of Science and Engineering, University of Toyama, Toyama, Japan*

**CS-05. Low-temperature metamagnetic states in single crystal $TbNi_2B_2C$ studied by torque magnetometry.** *D.D. Rathnayaka*[1], D.G. Naugle[1], B.I. BelevtsevI[2], P.C. Canfield[3] and S.L. Bud'ko[3] *1. Physics Department, Texas A&M University, College Station, TX; 2. B.I. Verkin Institute for Low Temperature Physics and Engineering, Kharkov, Ukraine; 3. Physics Department, Ames Laboratory and Iowa State University, Ames, IA*

**CS-06. Systematic study of bulk Ce 4f-electronic structure in weakly hybridized regime: Ce 3d-4f resonant photoemission spectroscopy on $CeNiGe_{2-x}Si_x$** *H. Im*[1], T. Ito[2,3], S. Kimura[2,3], K. Lee[1], C. Lee[1] and Y. Kwon[1] *1. Physics, Sungkyunkwan University, Suwon, South Korea; 2. UVSOR Facility, Institute for Molecular Science, Okazaki, Japan; 3. School of Physical Sciences, The Graduate University for Advanced Studies, Okazaki, Japan*

**CS-07. Magnetic properties in heavy-fermion compounds $CePtGe_{2-x}Si_x$** *Y. Kwon*[1], C. Lee[1] and S. Kim[1] *1. Department of Physics, Sungkyunkwan University, Suwon, Gyeonggido, South Korea*

**CS-08. Magnetic properties of $PrCr_2Si_2C$ single crystal.** *M. Janatova*[1], J. Poltierova Vejpravova[1] and M. Divis[1] *1. DCMP, Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic*

**CS-09. Magnetic properties of heavy fermion system $Ce_{1-x}Gd_xCoSi_3$** *J. Hong*[1], J. Lim[1] and Y. Kwon[1] *1. Department of Physics, Sungkyunkwan university, Suwon, Gyeonggido, South Korea*

**WEDNESDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session CT
# MRAM AND MAGNETIC TUNNEL JUNCTIONS (POSTER SESSION)
Jiexuan He, Chair

**CT-01. Performance of a shape-varying MTJ for high speed MRAM.** *H. Honjo*[1], S. Fukami[1], R. Nebashi[1], T. Suzuki[1], N. Ishiwata[1], S. Miura[1] and T. Sugibayashi[1] *1. NEC, Sagamihara, Japan*

**CT-02. Novel nonvolatile SRAM architecture using MOSFET-based spin-transistors.** *Y. Shuto*[1,3], S. Yamamoto[2,3] and S. Sugahara[1,3] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 2. Department of Information Processing, Tokyo Institute of Technology, Yokohama, Japan; 3. CREST, Japan Science and Technology Agency, Kawaguchi, Japan*

**CT-03. Magnetization reversal at low current density using a perpendicular polarizer.** *C. Papusoi*[1], D. Houssameddine[1], B. Delaët[2], B. Rodmacq[1], F. Ponthenier[2], U. Ebels[1], R. Sousa[1], M. Cyrille[2], L. Prejbeanu-Buda[1,3] and B. Dieny[1] *1. CEA-INAC/CNRS/UJF/INPG, SPINTEC, Grenoble, France; 2. CEA-LETI-MINATEC, Grenoble, France; 3. Institut Polytechnique de Grenoble, Grenoble, France*



**CT-04. Analysis and design of nonvolatile SRAM using magnetic tunnel junctions with current-induced magnetization switching technology.** *S. Yamamoto*[1,3] and S. Sugahara[2,3] *1. Department of Information Processing, Tokyo Institute of Technology, Yokohama, Japan; 2. ISEL, Tokyo Institute of Technology, Yokohama, Japan; 3. CREST, JST, Kawaguchi, Japan*

**CT-05. Magnetoresistance modulation in nickel coated vertically aligned carbon nanotubes.** *E. Titus*[1], M.K. Singh[1] and J. Gracio[1] *1. Nanotechnology Research Division, Dept. of Mechanical Engineering, University of Aveiro, Aveiro, Portugal*

**CT-06. A Study of Design of Novel PTP MRAM for High Capacity Device.** *H. Won*[1], G. Park[1], D. Kim[1] and J. Han[1] *1. Electrical Engineering, A.E.M. Lab. Pusan National Univesity, Busan, South Korea*

**CT-07. Study of dipolar interactions in array of magnetic random access memory cells.** *D. Cimpoesu*[1,3], L. Spinu[1,2] and A. Stancu[3] *1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA; 2. Department of Physics, University of New Orleans, New Orleans, LA; 3. Department of Physics, "Al. I. Cuza" University, Iasi, Romania*

**CT-08. Magnetic and structural properties of nitrogen-doped CoFe for a ferromagnetic electrode.** *K. Kim*[1], J. Koo[1], I. Shin[1], J. Lee[1] and J. Hong[1] *1. Physics, Hanyang University, Seoul, South Korea*

**CT-09. Energy Surface Analysis and Critical Points on Synthetic Antiferromagnet.** *A. Plamada*[1] and A. Stancu[1] *1. Department of Physics, Alexandru Ioan Cuza University, Iasi, Romania*

**CT-10. Direct imaging of the structural change generated by dielectric breakdown in MgO based magnetic tunnel junctions.** *A. Thomas*[1], V. Drewello[1], M. Schaefers[1], A. Weddemann[1], G. Reiss[1], G. Eilers[2], M. Muenzenberg[2], K. Thiel[2] and M. Seibt[2] *1. D2, Bielefeld University, Bielefeld, Germany; 2. IV. Phys. Inst., Goettingen University, Goettingen, Germany*

**CT-11. Effect of Interface Roughness on Magnetoresistance and Magnetization Switching in Double-Barrier Magnetic Tunnel Junction.** *J. Rhee*[1], S. Lee[1], J. Hwang[1], H. Yim[1], B. Chun[2] and Y. Kim[3] *1. Physics, Sookmyung Women's University, Seoul 140-742, South Korea; 2. CRANN, School of Physics, Trinity College, Dublin 2, Ireland; 3. Department of Materials Science and Engineering,, Korea University, Seoul 136-713, South Korea*

**CT-12. Electrical Random Telegraph Noise for Current-Perpendicular-to-Plane Magnetic Tunnel Junctions.** *F. Liu*[1], R. Kemshetti[1], Y. Ding[1], P. Rana[1] and S. Mao[1] *1. Western Digital Corporation, Fremont, CA*

**CT-13. Spin structures in 100 nm ring magnetic tunnel junctions induced by spin currents.** *F.Q. Zhu*[1], H. Wei[2], X. Hang[2], Z. Wen[2] and C. Chien[1] *1. Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 2. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

**CT-14. Magnetic and Resistive Switchings in MgO-based Tunnel Junctions.** *J.M. Teixeira*[1], J. Ventura[1], R. Fermento[1], J.P. Araújo[1], J.B. Sousa[1], P. Wisniowski[2] and P.P. Freitas[2] *1. Physics, IN, IFIMUP unit - Oporto University, Oporto, Oporto, Portugal; 2. Physics, IN, INESC-MN unit - IST, Lisbon, Lisbon, Portugal*

WEDNESDAY MORNING 8:00 AUSTIN BALLROOM

## Session CU
## MAGNETIC SENSORS I (NOT FOR MAGNETIC RECORDING) (POSTER SESSION)
David Pappas, Chair

**CU-01. Magnetic Markers Detection using PCB Fluxgate Array.** *M. Janosek*[1], P. Ripka[1] and A. Platil[1] *1. Dpt. of Measurement, Czech Technical University in Prague, FEE, Praha 6, Czech Republic*

**CU-02. Deducing Local ELF Field Values From Large Sense Coil Fluxmeter Measurements.** *A.A. Adly*[1], M.M. Abdel-Aziz[1] and N.S. Hosny[1] *1. Elect. Power & Machines, Cairo University, Giza, Egypt*

**CU-03. A miniature and ultra low-power search coil optimized for a 20 mHz to 2 kHz frequency range.** E. Paperno[1] and *A. Grosz*[1] *1. Electrical and Computer Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel*

**CU-04. Quantifiable Magnetic Beads Detection Using Cross Type Spin Valve Sensors.** *J. Suh*[1], S. Jung[1] and M. Chung[1] *1. Neural Interface Research Team, Electronics and Telecommunications Research Institute, Daejeon, South Korea*

**CU-05. Quantitative detection of magnetic particles in a chromatographic membrane by a giant magnetoresistance sensor.** *K. Lee*[1], S. Lee[1], B. Cho[1] and J. Kim[2] *1. School of Photonics, MSE, GIST, Gwangju, South Korea; 2. Advanced Technology Research Group, LG Micron, Ansan-si, South Korea*

**CU-06. Planar Hall single bead detection sensor for bio-applications.** *H. Tran Quang*[1], S. Oh[1], L. Phong[1], B. Tu[2], N. Duc[2], J. Jeong[1] and C. Kim[1] *1. Department of Materials Science and Engineering, Chungnam National University, Daejeon, South Korea; 2. Department of Nano Magnetic Materials and Devices, Faculty of Physics Engineering, College of Technology, Vietnam National University, Hanoi, Viet Nam*

**CU-07. Planar Hall sensor detection of toxA gene DNA Hybridized with coloured magnetic microspheres.** *B. Bajaj*[1], J.R. Jeong[1], C. Kim[1] and C. Lee[2] *1. Department of Material Science and Engineering, Chungnam National University, Yuseong, South Korea; 2. Department of Chemical Engineering, Chungnam National University, Daejeon, South Korea*



**CU-08. Ultrasensistive $Ni_{77}Fe_{14}Cu_5Mo_4/Co_{50}Fe_{50}/Al_2O_3/Co_{50}Fe_{50}/Ni_{77}Fe_{14}Cu_5Mo_4$ magnetic tunnel junction field sensors.** *W. Pong*[1], M. Shmoueli[2], A. Castillo[2] and W.F. Egelhoff[2] *1. Department of Electrical and Electronic Engineering, University of Hong Kong, Hong Kong, China; 2. Metallurgy Division, National Institute of Standards and Technology, Gaithersburg, MD*

**CU-09. Automated System for the Calibration of Magnetometers.** *V. Petrucha*[1], P. Ripka[1], P. Kaspar[1] and J. Merayo[2] *1. Dept. of Measurement, CTU Prague, FEE, Prague, Czech Republic; 2. National Space Institute, DTU Space, Lyngby, Denmark*

**CU-10. Planar coil type temperature sensor with thermosensitive magnetic ferrite core.** *T. Nonaka*[1], K. Maita[1], F. Sato[2], H. Matsuki[2] and T. Sato[3] *1. Hachinohe National College of Technology, Hachinohe, Aomori, Japan; 2. Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 3. NEC TOKIN Corporation, Sendai, Miyagi, Japan*

**CU-11. Reactance Simulation for Defects in Steam Generator Tube with Outside Ferrite Sludge.** *K. Ryu*[1], D. Son[2], D. Park[3], J. Jung[4] and Y. Kim[5] *1. Div. of Metrology for Quality Life, Korea Research Institute of Standards and Science, Daejeon, South Korea; 2. Department of Physics, Hannam University, Daejeon, South Korea; 3. Nuclear Materials Tech. Develop. Team, Korea Atomic Energy Research Institute, Daejeon, South Korea; 4. Div. of Physical Metrology, KRISS, Daejeon, South Korea; 5. Div. of Metrology for Quality Life, Korea Research Institute of Standards and Science, Daejeon, South Korea*

**CU-12. Haptic Sensor with Temperature And Electric Sensitivity Utilizing Magnetic Compound Fluid (MCF) Rubber.** Z. Yaoyang[1], K. Shimada[1] and *Y. Ido*[2] *1. Faculty of Symbiotic Systems Science, Fukushima University, Fukushima, Japan; 2. Nagoya Institute of Technology, Nagoya, Japan*

WEDNESDAY MORNING 8:00 AUSTIN BALLROOM

## Session CV
## MICROWAVE AND MILLIMETER WAVE DEVICES (POSTER SESSION)
Albrecht Jander, Chair

**CV-01. Coherent Dynamics of a Microwave Emitting Nanomagnet Oscillator in a Cavity.** *O. Soykal*[1] and M.E. Flatté[1] *1. Department of Physics and Astronomy, University of Iowa, Iowa City, IA*

**CV-02. Ferromagnetic Resonance in Coplanar Waveguides with Micron Sized Permalloy Elements.** Y.V. Khivintsev[1,2], R. Adam[3], C.M. Schneider[3], B.V. McGrath[1], R.E. Camley[1] and *Z.J. Celinski*[1] *1. Center for Magnetism and Magnetic Nanostructures, University of Colorado, Colorado Springs, Colorado Springs, CO; 2. Kotel'nikov SBIRE RAS, Saratov, Russian Federation; 3. Institute of Solid State Research, Research Center Juelich, Juelich, Germany*

**CV-03. Enhancement of the spin wave lifetime in permalloy (Py) films by parametric pumping.** G.A. Melkov[1], Y.V. Kobljanskiy[1], R.A. Slipec[1], A.V. Talalaevskij[1] and *A.N. Slavin*[2] *1. Faculty of Radiophysics, Kiev National Taras Shevchenko University, Kiev, Ukraine; 2. Department of Physics, Oakland University, Rochester, MI*

**CV-04. Spin Wave Propagation in Lossless Cylindrical Magnonic Waveguides.** *H. Xi*[1], X. Wang[1], Y. Zheng[1] and P.J. Ryan[1] *1. Memory Products Group R&D, Seagate Technology, Bloomington, MN*

**CV-05. Nonreciprocal Isolator Using a Coplanar Waveguide and Ferromagnetic Nanowires.** B.K. Kuanr[1], *V. Veerakumar*[1], R.E. Camley[1] and Z.J. Celinski[1] *1. Center for Magnetism and Magnetic Nanostructures, University of Colorado, Colorado Springs, Colorado Springs, CO*

**CV-06. Nonreciprocal Microwave Devices Based on Attenuated Total Reflection.** *T. Fal*[1] and R.E. Camley[1] *1. Center for Magnetism and Magnetic Nanostructures, University of Colorado, Colorado Springs, Colorado Springs, CO*

**CV-07. Electrostatically tunable (011)YIG/(011) PMN-PT microwave multiferroic composites with large tunable frequency range.** *J. Lou*[1,2], M. Liu[1,2], D. Reed[1,2], C. Pettiford[1,2] and N.X. Sun[1,2] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Center for Microwave Magnetic Materials and Integrated Circuits, Northeastern University, Boston, MA*

**CV-08. 1.5-μm-band, TM-mode waveguide optical isolator that uses nonreciprocal loss induced by ferromagnetic MnSb.** *T. Amemiya*[1], Y. Ogawa[2], H. Shimizu[3], H. Munekata[2] and Y. Nakano[1] *1. Research Center for Advanced Science and Technology, Univ. of Tokyo, Tokyo, Japan; 2. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 3. Department of Electrical and Electronic Engineering, Tokyo University of Agriculture and Technology, Tokyo, Japan*

**CV-09. Gigahertz (GHz) Frequency Noise Suppression Using Nickel Nanorod Arrays and Permalloy Films.** *B.K. Kuanr*[1], R. Marson[2], M.K. Sanjay[2], R.E. Camley[1] and Z.J. Celinski[1] *1. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Physics, University of Memphis, Memphis, TN*

**CV-10. Electric field tunable FMR frequency shift in a laminated Co2MnAl/GaAs/PMN-PT heterostructure.** *Y. Chen*[1,2], J. Lou[1,2], M. Liu[1,2], M.J. Nedoroscik[1,2], D. Heiman[3], N.X. Sun[1,2], C. Vittoria[1,2] and V.G. Harris[1,2] *1. Center for Microwave Magnetic Materials and Integrated Circuits, Northeastern University, Boston, MA; 2. Electrical and Computer Engineering, Northeastern University, Boston, MA; 3. Physics, Northeastern University, Boston, MA*



**CV-11. X-band dielectric variation of iron-epoxy composites under a magnetic field.** D. Hung[1], *Y. Yao*[2], Y. Yang[3], C. Lin[4], C. Tsay[4], S. Hsu[3] and W. Liang[3] *1. Department of Information and Telecommunication Engineering, Ming Chuan University, Taipei, Taiwan; 2. Department of Materials Engineering, Tatung University, Taipei, Taiwan; 3. Department of Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 4. Department of Material Science and Engineering, Feng Chia University, Taichung, Taiwan*

**CV-12. Circular Patch Antennas with Multilayer Self-biased Ferrite Films at GHz.** G. Yang[1], X. Xing[1], A. Daigle[1], Y. Obi[1], S. Stoute[1], M. Liu[1], K. Naishadham[2] and *N. Sun*[1] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. RF Communications Group, Draper Laboratory, Cambridge, MA*

**CV-13. Withdrawn**

**WEDNESDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session CW
# RECORDING SYSTEMS AND PATTERNED MEDIA I (POSTER SESSION)

Juan Fernandez-de-Castro, Chair

**CW-01. Benefit of discrete track recording at high track density.** *K. Miura*[1], H. Muraoka[1] and H. Aoi[1] *1. RIEC, Tohoku University, Sendai, Miyagi, Japan*

**CW-02. Dot arrays of $L1_1$ type Co-Pt ordered alloy perpendicular films.** T. Shimatsu[1], *H. Sato*[2,1], K. Mitsuzuka[1], H. Kataoka[1,3], H. Aoi[1], N. Kikuchi[2] and O. Kitakami[2] *1. RIEC, Tohoku University, Sendai, Miyagi, Japan; 2. IMRAM, Tohoku University, Sendai, Miyagi, Japan; 3. Fuji Electric Device Technology, Co., Ltd, Matsumoto, Nagano, Japan*

**CW-03. Magnetic properties of thin Co-Pt dot arrays with a large uniaxial magnetic anisotropy.** *K. Mitsuzuka*[1], T. Shimatsu[1], N. Kikuchi[2], O. Kitakami[2], H. Muraoka[1] and H. Aoi[1] *1. RIEC, Tohoku University, Sendai, Japan; 2. IMRAM, Tohoku University, Sendai, Japan*

**CW-04. Planariztion of Patterned Magnetic Recording Media for Improved Head Flyability.** *D. Hong*[1], C. Choi[1,2], Y. Oh[1,2], Y. Yoon[1,3], F. Talke[1,3] and S. Jin[1,2] *1. Center for Magnetic Recording Research, University of California at San Diego, La Jolla, CA; 2. Materials Science & Engineering, University of California at San Diego, La Jolla, CA; 3. Mechanical & Aerospace Engineering, University of California at San Diego, La Jolla, CA*

**CW-05. Modification of Magnetic Properties by Ion Beam Irradiation of CGC Perpendicular Media with CoCrPt-oxide.** *J. Yasumori*[1,2], Y. Sonobe[1], K. Miura[2], H. Muraoka[2] and M. Aniya[1] *1. MD Division, Hoya Corporation, Akishima, Tokyo, Japan; 2. RIEC, Tohoku univ., Sendai, Miyagi, Japan*

**CW-06. Magnetic cluster formation with localized exchange interaction.** *H. Endo*[1], Y. Uesaka[1], Y. Nakatani[2], N. Hayashi[3] and H. Fukushima[4] *1. Nihon University, Koriyama, Fukushima, Japan; 2. University of Electro-Communications, Chofu, Japan; 3. Individual Capacity, Tokyo, Japan; 4. Individual Capacity, Chiba, Japan*

**CW-07. Switching field and mechanism of cubic and flat particles.** *Y. Uesaka*[1], H. Endo[1], Y. Nakatani[2], N. Hayashi[3] and H. Fukushima[4] *1. Engineering, Nihon University, Kohriyama, Fukushima, Japan; 2. University of Electro-communications, Chufu, Tokyo, Japan; 3. Independent, Kichijyoji, Tokyo, Japan; 4. Independent, Chiba, Chiba, Japan*

**CW-08. Spherical Barium Ferrite (S-BaFe) 20~22 nm Sized Particles for Particulate Recording Media.** *J. Jalli*[1,2], Y. Hong[1,2], S. Gee[3], J.C. Sur[4], K. An[5] and T. Hyeon[5] *1. Electrical and Computer Enginering, University of Alabama, Tuscaloosa, AL; 2. MINT Center, University of Alabama, Tuscaloosa, AL; 3. Seagate Technology, Bloomington, MN; 4. Division of Physics, Wonkwang University, Iksan, Joen-book, South Korea; 5. School of Chemical Engineering, Seoul National University, Seoul, South Korea*

**CW-09. Thermal Insulator Design for Improving Efficiency of Thermomechanical Actuation.** *H. Li*[1], C. Yin[1] and F. Talke[1] *1. Center for magnetic recording research, La Jolla, CA*

**CW-10. Observation and Study of Off-Track Effect Induced by Thermal Actuated Protrusion of Slider.** *M.J. Lim*[1], S. Leong[1], K. Ng[1], Y. Chen[1], T. Huang[1], C. Ong[1], B. Santoso[1] and Z. Yuan[1] *1. Spintronics, Media and Interface, Data Storage Institute, A*STAR, Singapore, Singapore*

**CW-11. Thermal Asperity Suppression Based on Least-Squares Fitting in Perpendicular Recording Channels.** *P. Kovintavewat*[1] and S. Koonkarnkhai[2] *1. Data Storage Technology Research Unit, Faculty of Science and Technology, Nakhon Pathom Rajabhat University, Mueng District, Nakhon Pathom, Thailand; 2. Department of Electrical Engineering, King Mongkut's University of Technology North Bangkok, Bang-Sei, Bangkok, Thailand*

WEDNESDAY MORNING 8:00 — AUSTIN BALLROOM

## Session CX
## MAGNETO-CALORIC MATERIALS I (POSTER SESSION)

Virgil Provenzano, Co-Chair
Lawrence Bennett, Co-Chair

**CX-01. A first-principles study on the magnetocaloric compound $MnFeP_{2/3}Si_{1/3}$** *X. Liu*[1] and Z. Altounian[1] *1. Physics Department, McGill University, Montreal, QC, Canada*



**CX-02. Magnetocaloric effect around the magnetic phase transition.** *N.A. Oliveira*[1] and P.J. von Ranke[1] *1. Instituto de Física, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil*

**CX-03. Magnetocaloric effect in $(R1_{1-c}R2_c)Co_2$ and under applied pressure.** *N.A. Oliveira*[1] *1. Instituto de Física, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil*

**CX-04. Crystal structure and magnetic transition of MnFePGe compound prepared by spark plasma sintering.** *M. Yue*[1], Z. Li[1], X. Wang[1], D. Liu[1], J. Zhang[1], X. Liu[2] and Z. Altounian[2] *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China; 2. Department of Physics, McGill University, Montreal, QC, Canada*

**CX-05. The magnetocaloric effect in Fe-Zr-B-M (M=Mn, Cr, Co) amorphous systems.** *Y. Fang*[1,2], C. Yeh[1], C. Hsieh[1], C. Chang[1], W. Chang[1] and W. Li[2] *1. Department of Physics, National Chung Cheng University, Ming Hsiung,Chia-Yi, Taiwan; 2. Division of Functional Materials Research, Central Iron and Steel Research Institute, Beijing, China*

**CX-06. Effect of substitution of Co for Fe on the magnetic hysteresis loss and the refrigerant capacity in the La0.5Pr0.5Fe11.5Si1.5 compounds.** *J. Shen*[1,2], Y. Li[1], F. Hu[2] and J. Sun[2] *1. School of Material Science and Engineering, Hebei University of Technology, Tianjin, China; 2. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

**CX-07. Magnetic entropy change and magnetic properties on Ni-Mn-Ga alloy by substitution of V.** *S. Min*[1], Y. Zhang[1], S. Yu[1], K. Lee[2] and Y. Kim[3] *1. BK21 Physics Program and Department of Physics, Chungbuk National University, Cheongju, South Korea; 2. Industrial Consulting Team, Korean Research Institute of Standard and Science, Taejon, South Korea; 3. Division of Materials and Engineering, Korea Institute of Science and Technology, Seoul, South Korea*

**CX-08. Monte Carlo study of the coupled magnetostructural phase transitions in Heusler Ni-Mn-X (X= In, Sn, Sb) alloys.** *V. Buchelnikov*[1], S. Taskaev[1], V. Sokolovskiy[1] and P. Entel[2] *1. Condensed Matter Physics Department, Chelyabinsk State University, Chelyabinsk, Russian Federation; 2. Physics Department, University of Duisburg-Essen, Duisburg, Germany*

**CX-09. Magnetic Properties and Magnetocaloric Effect of the Re-entrant ferromagnet PrMn2Ge0.8Si1.2.** J. Wang[1,2], S.J. Campbell[1], *R. Zeng*[3], S. Dou[3] and S.J. Kennedy[2] *1. School of PEMS (Physics), UNSW@ADFA, Canberra, ACT, Australia; 2. Bragg Institute, ANSTO, Sydney, NSW, Australia; 3. Institute for Superconductivity and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia*

**CX-10. Magnetocaloric effects in the La(Fe, Si)13 intermetallics doped by different elements.** *L. Jia*[1], J. Sun[1], J. Shen[1], Q. Dong[1], J. Zou[1], B. Gao[1], T. Zhao[1], F. Hu[1] and B. Shen[1] *1. Institute of Physics,Chinese of Academy of Sciences, Beijing, China*

**CX-11. Influence of the substitution of Cu for Si on magnetic entropy change and hysteresis loss in $LaFe_{11.8}(Si_{1-x}Cu_x)_{1.2}$ compounds.** B. Gao[1], *F. Hu*[1], J. Shen[1], J. Wang[1], J. Sun[1] and B. Shen[1] *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, Beijing, China*

**CX-12. Effect of structure and magnetic properties of LaFe13-xSixHy intermetallic compounds by hydrogen absorption under negative pressure.** *F. Bin*[1], S. Puji[1], B. Bo[1], L. Yi[1], Y. Rongchang[1] and C. Yongqin[1] *1. School of Materials Science and Engineering, University of Science and Technology of Beijing, 100083, P R China, Beijing, China*

**CX-13. Spin glass behavior and magnetocaloric effect in amorphous alloys Ce2Fe23-xMnxB3.** F. Wang[1], *J. Shen*[1,2], J. Sun[1] and B. Shen[1] *1. Institute of Physics,Chinese Academy of Sciences, Beijing, China; 2. School of Material Science and Engineering, Hebei University of Technology, TianJin, China*

**CX-14. Magnetocaloric effect and spin reorientation transition in single-crystal $Er_2(Co_{0.4}Fe_{0.6})_{17}$** *M. Ilyn*[1], A. Andreev[2], V. Zhukova[1], A. Zhukov[1], A. Tishin[3] and J. Gonzalez[1] *1. Department of Material Physics, Chemistry Faculty, Universidad del Pais Vasco, San Sebastian, Spain; 2. Institute of Physics, Academy of Science, Prague, Czech Republic; 3. Department of Physics, Moscow State University, Moscow, Russian Federation*

**CX-15. Magnetic properties and magnetocaloric effect of (Mn1-xNix)3Sn2 (X = 0 to 0.5) compounds.** *R. Zeng*[1], J. Wang[2], L. Lu[1], W. Li[1], J. Kim[1], J. Horvat[1], D. Shi[1], S. Campbell[2], H. Liu[1] and S. Dou[1] *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. School of Physical, Environmental and Mathematical Sciences,, The University of New South Wales, The Australian Defense Force Academy, Canberra ACT 2600, Canberra, ACT, Australia*

**CX-16. Magnetic ordering in the rare earth intermetallic compound $Tb_2Ti_3Ge_4$: Magnetization and Neutron Diffraction Studies.** S.K. Malik[1], *J. Lamsal*[2], R.L. de Almeida[1], S. Quezado[1], W.B. Yelon[3], V.O. Garlea[4], A.V. Morozkin[5] and R. Nirmala[6] *1. International Center for Condensed Matter Physics (ICCMP), Brasilia, Brazil; 2. Department of Physics and Astronomy, University of Missouri-Columbia, Columbia, MO; 3. Materials Research Center and Department of Chemistry, Missouri University of Science and Technology, Rolla, MO; 4. Neutron Scattering Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN; 5. Department of Chemistry, Moscow Lomonosov State University, Moscow, Russian Federation; 6. Indian Institute of Technology Madras, Chennai, India*

**CX-17. Enhanced micro-hardness and large magnetic entropy change for Gd1-xNix alloys.** W. Huang[1], X. Zhong[1], X. Zhou[1], H. Yu[1], *D. Zeng*[1] and Z. Liu[1] *1. School of Materials Science & Engineering, South China University of Technology, Guangzhou, Guangdong, China*



**CX-18. Large magnetic entropy change with small thermal hysteresis near room temperature in metamagnetic alloys $Ni_{51}Mn_{49-x}In_x$** *F. Hu*[1], J. Wang[1], J. Shen[1], B. Gao[1], J. Sun[1] and B. Shen[1] *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, Beijing, China*

**CX-19. The magnetocaloric effect in materials with a second order phase transition: Are $T_C$ and $T_{peak}$ necessarily coincident?** *V. Franco*[1], A. Conde[1], M.D. Kuz'min[2] and J.M. Romero-Enrique[3] *1. Department of Condensed Matter Physics, Sevilla University, Sevilla, Spain; 2. Leibniz-Institut für Festkörper-und Werkstoffforschung, Dresden, Germany; 3. Dpto. Física Atómica, Molecular y Nuclear. Área de Física Teórica, Sevilla University, Sevilla, Spain*

**WEDNESDAY AFTERNOON 2:00** **SALON C**

## Session DA
# SYMPOSIUM ON DISCRETE TRACK AND BIT PATTERNED MEDIA

Jan-Ulrich Thiele, Chair

**2:00**

**DA-01. Recording studies on discrete track media.** ***(Invited)*** *A. Moser*[1] *1. Western Digital Media, San Jose, CA*

**2:36**

**DA-02. From nano-imprint lithography to self-assembly - pattern generation for bit patterned media beyond 1 Tbit/in2.** ***(Invited)*** *X. Yang*[1], S. Xiao[1], K. Lee[2], D. Kuo[2] and D. Weller[2] *1. Seagate Research, Pittsburgh, PA; 2. Seagate Technology, Fremont, CA*

**3:12**

**DA-03. Write Synchronization in Bit Patterned Media.** ***(Invited)*** *Y. Tang*[1], K. Moon[1], H. Lee[1], M. Moneck[2], J. Zhu[2] and N. Takahashi[3] *1. Samsung Information Systems America, San Jose, CA; 2. ECE, Carnegie Mellon University, Pittsburgh, PA; 3. Fuji Electric Device Technology Co., Ltd., Nagano, Japan*

**3:48**

**DA-04. Manufacturing Strategies for Discrete Track and Bit-patterned Media.** ***(Invited)*** *D. Kercher*[1] *1. Hitachi San Jose Research, San Jose, CA*

**4:24**

**DA-05. Patterned Magnetic Media Made by Self-Assembled Block Copolymer Lithography.** ***(Invited)*** *C. Ross*[1] *1. MIT, Cambridge, MA*

WEDNESDAY AFTERNOON 2:00

SALON G

## Session DB
# SPIN-TORQUE INDUCED SWITCHING IN NANOMAGNETS

Guohan Hu, Chair

**2:00**

**DB-01. Reduction of intrinsic spin-transfer current density in spin valve nanopillars with perpendicular magnetic anisotropy.** *R. Heindl*[1], W.H. Rippard[1], A. Deac[1], J.M. Shaw[1] and S.E. Russek[1] *1. Electromagnetics Division - Magnetics Group, National Institute of Standards and Technology (NIST), Boulder, CO*

**2:12**

**DB-02. Back-hopping after Spin Torque Transfer Induced Magnetization Switching in Magnetic Tunneling Junction Cells.** *T. Min*[1], J. Sun[2], R. Beach[1], D. Tang[1] and P. Wang[1] *1. MagIC Technologies, Milpitas, CA; 2. IBM TJ Watson Research Center, Yorktown Heights, NY*

**2:24**

**DB-03. Evidence for activated back-hopping in nanosecond time-domain studies of spin-torque switched MgO magnetic tunnel junctions.** *J.Z. Sun*[1], M.C. Gaidis[1], G. Hu[1], E.J. O'Sullivan[1], S.L. Brown[1], J.J. Nowak[1], P.L. Trouilloud[1] and D.C. Worledge[1] *1. IBM-MagIC MRAM Alliance, IBM T. J. Watson Research Center, Yorktown Heights, NY*

**2:36**

**DB-04. Coherent nanomagnet control via ultrashort spin torque pulses.** ***(Invited)*** *S. Garzon*[1], L. Ye[1], T.M. Crawford[1], R.A. Webb[1], M. Covington[2] and S. Kaka[2] *1. Department of Physics & Astronomy and USC Nanocenter, University of South Carolina, Columbia, SC; 2. Seagate Research, Pittsburgh, PA*

**3:12**

**DB-05. Effective damping measurements with ultrafast spin torque pulses.** *L. Ye*[1], S. Garzon[1], R.A. Webb[1], T.M. Crawford[1], M. Covington[2] and S. Kaka[2] *1. Department of Physics and Astronomy and USC Nanocenter, University of South Carolina, Columbia, SC; 2. Seagate Research, Pittsburgh, PA*



**3:24**

**DB-06. Parameter dependence of the spin transfer torque in magnetic tunnel junctions measured by time resolved magneto transport.** 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. Department of Physics, Bielefeld University, Bielefeld, Germany; 3. Singulus Nano Deposition Technologies GmbH, Kahl am Main, Germany*

**3:36**

**DB-07. Spin-current-induced Dynamics in Ferromagnetic Nanopillars of Lateral Spin-Valve Structures.** *J. Laloë*[1], T. Yang[1], Y. Fukuma[1], T. Kimura[1,2], M. Morota[2] and Y. Otani[1,2] *1. Advanced Science Institute, RIKEN, Wako, Saitama, Japan; 2. Institute for Solid State Physics, University of Tokyo, Kashiwa, Chiba, Japan*

**3:48**

**DB-08. Influence of spin transfer torques on the Stoner-Wohlfarth astroid.** ***(Invited)*** *E.E. Fullerton*[1], Y. Henry[2], S. Mangin[3], J. Cucchiara[3], I. Tudosa[1], D. Ravelosona[4] and J. Katine[5] *1. UC San Diego, La Jolla, CA; 2. IPCMS, CNRS, Strasbourg, France; 3. LPM, Nancy- Université CNRS, Nancy, France; 4. Institut d'Electronique Fondamentale, Université Paris Sud, Orsay, France; 5. Hitachi Global Storage Technologies, San Jose, CA*

**4:24**

**DB-09. Combined Angular Effects of Spin Polarization and Magnetic Field on Magnetic Element Switching.** *X. Wang*[1], W. Zhu[1], H. Xi[1], Z. Gao[1] and D. Dimitrov[1] *1. Seagate Technology, Bloomington, MN*

**4:36**

**DB-10. Spin-transfer torque magnetization switching under magnetic field applied along easy and hard axis in MgO-based magnetic tunnel junctions.** *K. Miura*[1,2], J. Hayakawa[1], S. Ikeda[2], R. Sugano[1], R. Sasaki[2], M. Yamanouchi[1], H. Hasegawa[2,1], K. Ito[1], T. Hamada[1], H. Takahashi[1] and H. Ohno[2] *1. Advanced Research Laboratory, Hitachi, Ltd., Tokyo, Japan; 2. Laboratory for Nanoelectronics and Spintronics Research Institute of Electrical Communication, Tohoku University, Miyagi, Japan*

**4:48**

**DB-11. Spin-transfer induced switching in nanomagnetic spin-valve devices composed of Co/Pt multilayers with perpendicular magnetic anisotropy.** *J. Park*[1], M.T. Moneck[2], C. Park[3] and J. Zhu[2] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Western Digital Coporation, Fremont, CA*

WEDNESDAY AFTERNOON 2:00

SALON A

## Session DC
## MRAM
Janusz Nowak, Chair

**2:00**

**DC-01. Real-time reversal of a ferromagnetic-antiferromagnetic bilayer pinning direction.** *J. Hérault*[1], R.C. Sousa[1], Y. Conraux[2], C. Ducruet[1], I.L. Prejbeanu[2], B. Delaët[3], M.C. Cyrille[3], O. Redon[3], J.P. Nozières[2] and B. Dieny[1] *1. SPINTEC, CEA, CNRS, UJF, INPG ; CEA/INAC, Grenoble, France; 2. Crocus Technology, Grenoble, France; 3. CEA-LETI, MINATEC, Grenoble, France*

**2:12**

**DC-02. A Scalable Field Switching MRAM Design.** *T. Min*[1], D. Heim[1], Q. Chen[1] and P. Wang[1] *1. MagIC Technologies, Milpitas, CA*

**2:24**

**DC-03. Thermal Stability of SPRAM (Spin transfer torque RAM) with CoFeB-based synthetic ferrimagnetic free layers.** *K. Ito*[1], J. Hayakawa[1], K. Miura[1,3], M. Yamanouchi[1], R. Sugano[1], M. Ichimura[1], R. Takemura[2], T. Kawahara[2], S. Ikeda[3], H. Hasegawa[3], T. Meguro[3], R. Sasaki[3], H. Takahashi[1], H. Matsuoka[1] and H. Ohno[3] *1. Advanced Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan; 2. Central Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan*

**2:36**

**DC-04. Magnetic Reliability of Toggle MRAM.** ***(Invited)*** *D. Worledge*[1], D.W. Abraham[1], S. Brown[1], J.K. DeBrosse[1], R. Forguites[1], M.C. Gaidis[1], E. Galligan[1], G. Hu[1], J. Hummel[1], Y. Lu[1], J. Nowak[1], E.J. O'Sullivan[1], R.P. Robertazzi[1], P.L. Trouilloud[1], G.P. Wright[1] and W.J. Gallagher[1] *1. T.J. Watson Research Center, IBM Research Division, Yorktown Heights, NY*

**3:12**

**DC-05. Defects in 16Mb toggle MRAM.** *J.J. Nowak*[1], R. Robertazzi[1], M. Gaidis[1], E. O'Sullivan[1], D.W. Abraham[1], S.L. Brown[1], E. Galligan[1], G. Hu[1], J. Hummel[1], E. Joseph[1], Y. Lu[1], T. Maffit[3], P. Rice[2], T. Topuria[2], P. Trouilloud[1], G. Wright[1], J. Debrosse[3], D. Worledge[1] and W. Gallagher[1] *1. TJ Watson Research Center, IBM, Yorktown Heights, NY; 2. Almaden Research Center, IBM, San Jose, CA; 3. System and Technology Group, IBM, Essex Junction, VT*



**3:24**

**DC-06. Origin of Thermal Degradation in MRAM Toggle Freelayers.** *D. Abraham*[1] and G. Hu[1] *1. IBM T.J. Watson Research Center, Yorktown Heights, NY*

**3:36**

**DC-07. Advantage of Perpendicular MRAM using Spin Transfer Torque Switching for a high density non-volatile memory.** *T. Kai*[1], J. Ozeki[1], M. Nakayama[1], H. Aikawa[1], S. Ikegawa[1] and H. Yoda[1] *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Japan*

**3:48**

**DC-08. Probing the write-disturb boundaries of toggle MRAM.** *P.L. Trouilloud*[1], D.C. Worledge[1] and W.J. Gallagher[1] *1. IBM Research Division, T.J. Watson Research Center, Yorktown Heights, NY*

**4:00**

**DC-09. Noise Issues and Solutions for Ultralow Field Sensors based on MTJs.** *W. Pong*[1], M. Shmoueli[2], W.F. Egelhoff[2], R. McMichael[3], A. Edelstein[4], J. Burnette[4], G. Fischer[4] and E. Nowak[5] *1. Department of Electrical and Electronic Engineering, University of Hong Kong, Hong Kong, China; 2. Magnetic Materials Group, National Institute of Standards and Technology, Gaithersburg, MD; 3. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 4. U.S. Army Research Laboratory, Adelphi, MD; 5. Department of Physics and Astronomy, University of Delaware, Newark, DE*

**4:12**

**DC-10. Effect of patterning on the saturation magnetization in MgO based nanopillars.** *S. Cornelissen*[1,4], L. Bianchini[2], A. Helmer[2], T. Devolder[2], J. Kim[2], M. Op de Beeck[1], G. Hrkac[3], T. Schrefl[3], L. Lagae[1,5] and C. Chappert[2] *1. NEXTNS, IMEC, Heverlee(Leuven), Belgium; 2. Institut d'electronique fondamentale, UMR CNRS 8622, UPS, Orsay cedex, France; 3. Department of engineering materials, University of Sheffield, Sheffield, United Kingdom; 4. ESAT, KULeuven, Leuven, Vlaams Brabant, Belgium; 5. Natuurkunde en sterrekunde, KULeuven, Leuven, Vlaams Brabant, Belgium*

**4:24**

**DC-11. Novel type of reconfigurable magnetic logic created by ion bombardment induced magnetic patterning of magnetic tunnel junctions.** *V. Hoeink*[1], D. Meyners[1], J. Schmalhorst[1], G. Reiss[1], D. Engel[2], T. Weis[2] and A. Ehresmann[2] *1. Bielefeld University, Bielefeld, Germany; 2. Kassel University, Kassel, Germany*

**4:36**

**DC-12. Oxidation of magnesium deposited by ion beam sputtering for STT-MRAM MTJs.** *K. Buchanan*[1], P. Lima[1], Y. Zhou[1], R. Trowell[1], J. Macneil[1] and G. Proudfoot[2]*1. Aviza Technology, Newport, United Kingdom; 2. TFD Consulting Ltd, Wantage, United Kingdom*

**4:48**

**DC-13. Verilog-A Behavioral Model for Circuit Simulation of Toggle MRAM.** *L. Engelbrecht*[1], A. Jander[1] and P. Dhagat[1]*1. Oregon State University, Corvallis, OR*

## WEDNESDAY AFTERNOON 2:00 — SALON B

### Session DD
## HALFMETALLIC HEUSLER COMPOUNDS
Burkard Hillebrands, Chair

**2:00**

**DD-01. Optimization of Band Matching Conditions in All Heusler Alloy Spin Valve GMR Structures.** *T. Ambrose*[1], O. Mryasov[1] and K. Nikolaev[2]*1. Seagate Research, Pittsburgh, PA; 2. Seagate Technology, Minneapolis, MN*

**2:12**

**DD-02. Spin-dependent tunneling characteristics of $Co_2MnGe$/MgO/CoFe tunnel junctions.** *T. Taira*[1], T. Ishikawa[1], K. Matsuda[1], T. Uemura[1] and M. Yamamoto[1]*1. Division of Electronics for Informatics, Hokkaido University, Sapporo, Japan*

**2:24**

**DD-03. Analysis of $L2_1$-ordering in full-Heusler $Co_2FeSi$ alloy thin films formed by rapid thermal annealing.** *Y. Takamura*[1], R. Nakane[2] and S. Sugahara[1,3]*1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 2. Department of Electrical Engineering and Information Systems, The University of Tokyo, Tokyo, Japan; 3. CREST, Japan Science and Technology Agency, Kawaguchi, Japan*

**2:36**

**DD-04. Magnetic and Atomic Ordering in Polycrystalline $Co_2MnSi$ Films.** S. Ladak[2], N.P. Aley[2] and *A. Hirohata*[1]*1. Department of Electronics, University of York, York, United Kingdom; 2. Department of Physics, University of York, York, United Kingdom*



**2:48**

**DD-05. Current-perpendicular-to-plane giant magnetoresistance in spin valves with $Co_2FeAl_{0.5}Si_{0.5}$ Heusler alloy.** *T. Furubayashi*[1], K. Kodama[2], H. Sukegawa[1], Y.K. Takahashi[1], K. Inomata[1] and K. Hono[1,2]*1. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Japan; 2. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan*

**3:00**

**DD-06. Brillouin Light Scattering Investigations on $Co_2MnAl_xSi_{1-x}$ Heusler Thin Films.** *T. Kubota*[1], J. Hamrle[2], Y. Sakuraba[3], O. Gaier[2], M. Oogane[1], A. Sakuma[1], B. Hillebrands[2], K. Takanashi[3] and Y. Ando[1]*1. Department of Applied Physics, Tohoku university, Sendai, Miyagi, Japan; 2. Fachbereich Physik and Forschungsschwerpunkt MINAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 3. Institute for Material Research, Tohoku University, Sendai, Miyagi, Japan*

**3:12**

**DD-07. Half-metallic electronic structure of $Co_2MnSi$ electrodes proved by tunneling spectroscopy.** ***(Invited)*** *T. Ishikawa*[1], N. Itabashi[1], T. Taira[1], K. Matsuda[1], T. Uemura[1] and M. Yamamoto[1]*1. Division of Electronics for Informatics, Hokkaido University, Sapporo, Japan*

**3:48**

**DD-08. Magnetic properties of epitaxially-grown $Fe_3Si$/Ge(111) layers with atomically flat interfaces.** *Y. Ando*[1], K. Kasahara[1], K. Ueda[1], K. Hamaya[1], Y. Nozaki[1], T. Sadoh[1], Y. Maeda[2], K. Matsuyama[1] and M. Miyao[1]*1. Department of Electronic, Kyushu University, Fukuoka, Japan; 2. Department of Energy Science and Technology, Kyoto University, Kyoto, Japan*

**4:00**

**DD-09. Origin of the gap formation in half metallic half Heuslers.** *N. Charles*[2,1], C. Liu[1], C.K. Mewes[1] and W.H. Butler[1]*1. Center for Materials for Information Technology, Tuscaloosa, AL; 2. Department of Physics, Grambling State University, Grambling, LA*

**4:12**

**DD-10. Rational Design of Half-Metallic Heterostructures.** *W.H. Butler*[1], C.K. Mewes[1] and C. Liu[1]*1. MINT Center, University of Alabama, Tuscaloosa, AL*

**4:24**

**DD-11. Heusler compounds: Correlated materials?** *C. Felser*[1], G.H. Fecher[1], S. Chadov[1], K. Doll[2], M. Jansen[2] and H. Ebert[3] *1. Institute of Inorganic Chemistry, Johannes Gutenberg University, Mainz, Germany; 2. Solid State Chemistry, Max Planck Institute for Solid State Research, Stuttgart, Germany; 3. Department Chemie und Biochemie, Ludwig-Maximilians-Universität München, Munich, Germany*

**4:36**

**DD-12. Ferromagnetism and critical thickness of zinc-blende CrSb on NaCl and KCl substrates.** *S. Li*[1], J. Fang[2], S. Cao[3], Q. Chen[3], B. Hu[3], Z. Huang[1], F. Zhang[4] and Y. Du[4] *1. Physics, Fujian Normal University, Fuzhou, Fujian, China; 2. Center for Materials Analysis, Nanjing University, Nanjing, Jiangsu, China; 3. Fujian Key Laboratory of Polymer Materials, Fujian Normal University, Fuzhou, Fujian, China; 4. National Laboratory of Solid State Microstructure, Nanjing University, Nanjing, Jiangsu, China*

WEDNESDAY AFTERNOON 2:00 — SALON D

## Session DE
## MAGNETIC SEMICONDUCTORS
Connie Li, Chair

**2:00**

**DE-01. Room temperature ferromagnetism without "element specific ferromagnetism"? A detailed XMCD study on doped ZnO.** *E.J. Goering*[1], T. Tietze[1], G. Schuetz[1], G. Jakob[2], S. Brück[2] and H. Adrian[2] *1. Schuetz, Max-Planck-Institute for Metals Research, Stuttgart, Germany; 2. Institute of Physics, Johannes Gutenberg-University, Mainz, Germany*

**2:12**

**DE-02. Magneto-optically observed hysteresis in ZnO Based Dilute Magnetic Semiconductors.** *G.A. Gehring*[1], J.R. Neal[1], D.S. Score[1], A.J. Behan[1], A. Mokhtari[1], H.J. Blythe[1] and A.M. Fox[1] *1. The Department of Physics and Astronomy, The University of Sheffield, Sheffield, United Kingdom*

**2:24**

**DE-03. Electronic structure and magnetic interactions in highly Co doped ZnO.** *R. Knut*[1], M. Wikberg[2], V. Coleman[1,3], D. Iusan[1], B. Sanyal[1], G. Westin[3], K. Lashgari[1], P. Svedlindh[2], O. Eriksson[1] and O. Karis[1] *1. Department of Physics and Materials Science, Uppsala University, Uppsala, Sweden; 2. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden; 3. Department of Materials Chemistry, Uppsala University, Uppsala, Sweden*



**2:36**

**DE-04. Theory of ferromagnetism in 3d-doped wide-gap oxides *(Invited)*.** *H. Raebiger*[1], S. Lany[1] and A. Zunger[1] *1. National Renewable Energy Laboratory, Golden, CO*

**3:12**

**DE-05. Anomalous Ferromagnetism in Fe-implanted ZnO.** *L.C. Pereira*[1,2], U. Wahl[2,3], J.P. Araújo[1] and J.G. Correia[3,4] *1. IN-IFIMUP, Universidade do Porto, Oporto, Portugal; 2. Instituto Tecnológico e Nuclear, Sacavém, Portugal; 3. Centro de Física Nuclear, Universidade de Lisboa, Lisbon, Portugal; 4. CERN-PH, Geneva, Switzerland*

**3:24**

**DE-06. Role of dopant, defect and host oxide in the observed room temperature ferromagnetism: Co-ZnO versus Co-CeO2.** *L.R. Shah*[1], H. Zhu[1], W. Wang[1], T. Zhu[2], Y.Q. Song[3], Q.y. Wen[3], H.W. Zhang[3], B. Ali[1], I. Shah[1,4] and J.Q. Xiao[1] *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 3. School of Microelectronic and Solid-state Electronic, University of Electronic Science and Technology of China, Chengdu, China; 4. Department of Materials Sciences, University of Delaware, Newark, DE*

**3:36**

**DE-07. Transition from n-type to p-type destroys ferromagnetism in semiconducting $Sn_{1-x}Co_xO_2$ and $Sn_{1-x}Cr_xO_2$ nanoparticles.** *C.B. Van Komen*[1], M.S. Seehra[2] and A. Punnoose[1] *1. Physics, Boise State University, Boise, ID; 2. Physics, West Virginia University, Morgantown, WV*

**3:48**

**DE-08. Magnetism of TiO and TiO2 Nanoclusters.** *X. Wei*[1,2], R. Skomski[1,2], B. Balamurugan[1,2], S. Ducharme[1,2] and D.J. Sellmyer[1,2] *1. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, lincoln, NE*

**4:00**

**DE-09. Disorder and many-body effects in transport and optical conductivities of diluted magnetic semiconductors.** *F. Kyrychenko*[1] and C.A. Ullrich[1] *1. Department of Physics and Astronomy, University of Missouri - Columbia, Columbia, MO*

**4:12**

**DE-10. Hydrogenation enhanced magnetic and electrical properties in Mn-doped amorphous Si thin films.** *J. Yao*[1], S. Li[1] and T. Chin[2,3] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Materials Science and Engineering, Feng Chia University, Taichun, Taiwan; 3. National Nano-Devices Lab., National Applied Research Laboratories, Hsinchu, Taiwan*

**4:24**

**DE-11. Origins of ferromagnetism in high-Tc Mn-ions implanted Si.** *V. Ko*[1,2], K. Teo[3], M. MacKenzie[5], I. MacLaren[5], T. Liu[4], J. Chapman[5], T. Liew[1] and T. Chong[1] *1. Data Storage Institute, Singapore, Singapore; 2. NUS Graduate School for Integrative Sciences and Engineering, National University of Singapore, Singapore, Singapore; 3. Information Storage Materials Laboratory, Electrical & Computer Engineering Department, National University of Singapore, Singapore, Singapore; 4. Singapore Synchrotron Light Source, National University of Singapore, Singapore, Singapore; 5. Department of Physics and Astronomy, University of Glasgow, Glasgow, Scotland, United Kingdom*

**4:36**

**DE-12. Magnetic moments of Mn in amorphous Si and Ge: theory and experiment.** L. Zeng[1], E. Helgren[1], J. Cao[4], R. Wu[4], C. Piamonteze[3], E. Arenholz[3], D.J. Smith[2] and *F. Hellman*[1] *1. Physics, UC Berkeley, Berkeley, CA; 2. Physics, Arizona State University, Tempe, AZ; 3. Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, CA; 4. Physics, UC Irvine, Irvine, CA*

**4:48**

**DE-13. Inhomogeneous Cr distribution and superparamagnetic properties of (Zn,Cr)Te.** *S. Kuroda*[1], K. Ishikawa[1], M. Mitome[2] and Y. Bando[2] *1. Institute of Materials Science, University of Tsukuba, Tsukuba, Ibaraki, Japan; 2. Advanced Materials and Nanomaterials Laboratories, National Institute for Materials Science, Tsukuba, Ibaraki, Japan*

**WEDNESDAY AFTERNOON 2:00** **SALON E**

## Session DF
# VORTEX DYNAMICS
Konstantin Guslienko, Chair

**2:00**

**DF-01. Vortex random access memory (VRAM) as new MRAM scheme.** *S. Kim*[1], K. Lee[1], Y. Yu[1], Y. Choi[1], H. Jung[1] and D. Jeong[1] *1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, South Korea*



**2:12**

**DF-02. SIMULTANEOUS CURRENT- AND FIELD-INDUCED MAGNETIC ANTIVORTEX CORE SWITCHING AS WRITE PROCESS IN RANDOM ACCESS MEMORIES.** *A. Drews*[1], B. Krüger[2], S. Bohlens[2], T. Kamionka[1], B. Güde[1], G. Meier[1] and M. Bolte[1] *1. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany; 2. I. Institut für Theoretische Physik, Universität Hamburg, Hamburg, Germany*

**2:24**

**DF-03. A Current Controlled Random-Access Memory Based On Magnetic Vortex Handedness.** *S. Bohlens*[1], B. Krüger[1], A. Drews[2], M.A. Bolte[2], G. Meier[2], U. Merkt[2] and D. Pfannkuche[1] *1. I. Institut für Theoretische Physik, Universität Hamburg, Hamburg, Germany; 2. Institut für Angewandte Physik, Universität Hamburg, Hamburg, Germany*

**2:36**

**DF-04. Universal criterion for vortex-core reversal in soft magnetic nanodots: Critical velocity of vortex gyrotropic motion.** *K. Lee*[1], S. Kim[1], Y. Yu[1], K. Guslienko[1] and P. Fischer[2] *1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, South Korea; 2. Center for X-Ray Optics, Lawrence Berkeley National Lab, 1 Cyclotron Road, Mail Stop 2R0400, Berkeley, CA*

**2:48**

**DF-05. Reversal of the vortex core polarization by rotating magnetic fields.** *M. Curcic*[1], B. Van Waeyenberge[1,2], M. Weigand[1], A. Vansteenkiste[2], V. Sackmann[1], H. Stoll[1], M. Faehnle[1], T. Tyliszczak[3], G. Woltersdorf[4], C. Back[4] and G. Schuetz[1] *1. Max Planck Institute for Metals Research, Stuttgart, Germany; 2. Department of Subatomic and Radiation Physics, Ghent University, Ghent, Belgium; 3. Advanced Light Source, LBNL, Berkeley, CA; 4. Department of Physics, Regensburg University, Regensburg, Germany*

**3:00**

**DF-06. Polarity reversal of magnetic vortex core by in-plane pulsed magnetic field.** *X. Cheng*[1], D.J. Keavney[1] and K.S. Buchanan[2,3] *1. Advanced Photon Source, Argonne National Lab, Argonne, IL; 2. Center for Nanoscale Materials, Argonne National Lab, Argonne, IL; 3. Department of Physics, Colorado State University, Fort Collins, CO*

**3:12**

**DF-07. Switching of the vortex core polarization by monopolar magnetic field pulses.** *M. Weigand*[1], M. Curcic[1], B. Van Waeyenberge[3], A. Vansteenkiste[3], V. Sackmann[1], H. Stoll[1], T. Tyliszczak[2], D. Bertwistle[4], K. Kaznatcheev[4], G. Woltersdorf[5], C.H. Back[5] and G. Schütz[1] *1. Max Planck Institute for Metals Research, Stuttgart, Germany; 2. Advanced Light Source, LBNL, Berkeley, CA; 3. Department of Subatomic and Radiation Physics, Ghent University, Ghent, Belgium; 4. Canadian Light Source, Saskatoon, SK, Canada; 5. Department of Physics, Regensburg University, Regensburg, Germany*

**3:24**

**DF-08. Reduction of the vortex core switching current with an elliptic nanodot.** *Y. Nakatani*[1], A. Thiaville[2], K. Yamada[3], S. Kasai[3], K. Kobayashi[3] and T. Ono[3] *1. Department of Computer Science, University of Electro-Communications, Chofu, Tokyo, Japan; 2. LPS, CNRS & Universite Paris Sud, Orsay, France; 3. Kyoto University, Uji, Kyoto, Japan*

**3:36**

**DF-09. Direct experimental evidence for the dynamic vortex-antivortex (VA) creation and annihilation model for vortex core switching.** *H. Stoll*[1], A. Vansteenkiste[2], M. Weigand[1], B. Van Waeyenberge[1,2], M. Curcic[1], V. Sackmann[1], K. Chou[3], T. Tyliszczak[3], G. Woltersdorf[4], C.H. Back[4] and G. Schuetz[1] *1. MPI for Metals Research, Stuttgart, Germany; 2. Department Subatomic and Radiation Physics, Ghent University, Ghent, Belgium; 3. Advanced Light Source, LBNL, Berkeley, CA; 4. Department of Physics, Regensburg University, Regensburg, Germany*

**3:48**

**DF-10. Probing vortex core dynamics using current induced resonant excitation of a trapped domain wall.** ***(Invited)*** *R. Moriya*[1], L. Thomas[1], M. Hayashi[1], Y.B. Bazaliy[2,3], C. Rettner[1] and S. Parkin[1] *1. IBM Research, San Jose, CA; 2. University of South Carolina, Columbia, SC; 3. Institute of Magnetism, National Academy of Science of Ukraine, Kyiv, Ukraine*

**4:24**

**DF-11. Spin-Transfer Induced Vortex Oscillations in Circular Nanopillar Spin Valves: Comparison between Micromagnetic and Analytical Calculations.** *A.V. Khvalkovskiy*[1,2], J. Grollier[1], K. Zvezdin[2], V. Cros[1] and A. Fert[1] *1. UMP CNRS-Thales, Palaiseau, France; 2. A.M. Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russian Federation*



**4:36**

**DF-12. Spin-torque FMR studies on vortex dynamics in a nanopillar.** *R. Lehndorff*[1], D.E. Buergler[1], A. Kakay[1], S. Gliga[1], R. Hertel[1], Z.J. Celinski[2] and C.M. Schneider[1] *1. Institut fuer Festkoerperforschung and JARA-FIT, Forschungszentrum Juelich, Juelich, Germany; 2. Center for Magnetism and Magnetic Nanostructures, University of Colorado at Colorado Springs, Colorado Springs, CO*

**4:48**

**DF-13. Dynamic origin of the azimuthal spin-wave modes splitting in vortex state of ferromagnetic dots.** *K. Gusliyenko*[1], A.N. Slavin[2], V. Tiberkevich[2] and S. Kim[1] *1. Research Center for Spin Dynamics & Spin-Wave Devices, and Nanospinics Laboratory, Dept. Materials Science and Engineering, Seoul National University, Seoul, South Korea; 2. Department of Physics, Oakland University, Rochester, MI*

## WEDNESDAY AFTERNOON 2:00 — 400/402

### Session DG
## MULTIFERROICS
Arun Gupta, Chair

**2:00**

**DG-01. Nature of the Exchange Coupling in a Ferromagnet / Multiferroic Antiferromagnet Multilayer.** *B.J. Kirby*[1], D. Kan[2], A. Luykx[2], M. Murakami[2] and I. Takeuchi[2] *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Materials Science & Engineering, University of Maryland, College Park, MD*

**2:12**

**DG-02. High frequency characterization of $NiFe_2O_4$/$BiFeO_3$ composite multiferroics.** *N. Benatmane*[2,1], S.P. Crane[3], R. Ramesh[3] and T.W. Clinton[1] *1. Seagate Research, Seagate Technology, Pittsburgh, PA; 2. Physics Department, Georgetown university, Washington, DC; 3. Department of Materials Science and Engineering, UC Berkeley, Berkeley, CA*

**2:24**

**DG-03. Magnetic field-induced electric polarization in an organic quantum magnet.** *V. Zapf*[1], F. Wolff-Fabris[1], M. Kenzelmann[2], F. Balakirev[1] and Y. Chen[3] *1. Los Alamos National Lab, Los Alamos, NM; 2. Paul Scherrer Institute, Villigen, Switzerland; 3. NIST Center for Neutron Research, Gaithersburg, MD*

**2:36**

**DG-04. Predicted and Measured Permeability Variations of Bi-Layered Magnetostrictive/PVDF Composite Materials for Tunable Microwave Applications.** R. Smaali[1], S. De Blasi[1], P. Gelin[1], *P. Quéffélec*[1] and B. Viala[2] *1. LabSTICC UMR-CNRS 3192, 29238 Brest Cedex 3, France; 2. CEA-LETI –MINATEC, 38054 GRENOBLE Cedex 9, France*

**2:48**

**DG-05. Structural, magnetic and ferroelectric properties of MPB phase of $BiCoO_3$-$BiFeO_3$ solid solution film.** *H. Naganuma*[1], S. Yasui[2], K. Nishida[3], T. Iijima[4], H. Funakubo[2], S. Okamura[5] and Y. Ando[1] *1. Tohoku University, Sendai, Japan; 2. Tokyo Institute of Technology, Yokohama, Japan; 3. National Defense Academy of Japan, Yokosuka, Japan; 4. AIST, Tsukuba, Japan; 5. Tokyo University of Science, Tokyo, Japan*

**3:00**

**DG-06. Magnetoelectric effect at the Fe3O4/BaTiO3 (001) interface: A first-principles study.** *M.K. Niranjan*[1], J.P. Velev[1], C.G. Duan[2], S.S. Jaswal[1] and E.Y. Tsymbal[1] *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. Key Laboratory of Polarized Materials and Devices, East China Normal University, Shanghai 200062, China, Shanghai, China*

**3:12**

**DG-07. Fabrication and Properties of Multiferroic Nanowire Heterostructures.** *G. Kim*[1,2], A. Gupta[1], A. Tatarenko[3] and G. Srinivasan[3] *1. MINT Center, U of Alabama, Tuscaloosa, AL; 2. Department of Electrical and Computer Engineering, U of Alabama, Tuscaloosa, AL; 3. Department of Physics, Oakland University, Rochester, MI*

**3:24**

**DG-08. Reentrant spiral magnetic order and ferroelectricity in Multiferroic Mn1-xFexWO4 (x=0.035).** *R.P. Chaudhury*[1], B. Lorenz[1], Y. Wang[1], Y. Sun[1], C. Chu[1,2], F. Ye[3], J. Fernandez-Baca[3], H. Mook[3] and J. Lynn[4] *1. Physics, University Of Houston, Houston, TX; 2. Hong Kong University of Science and Technology, Hong Kong University, Hong Kong, China; 3. Oak Ridge National Laboratory, Oak Ridge National Laboratory, Oak Ridge, TN; 4. NIST, Center for Neutron Research, Gaithersburg, MD*

**3:36**

**DG-09. Magnetoelectric effects in Fe3O4 – BaTiO3 heterostructures.** *G.E. Sterbinsky*[1,2], D.J. Keavney[3] and B.W. Wessels[1,2] *1. Dept. of Materials Science and Engineering, Northwestern University, Evanston, IL; 2. Materials Research Center, Northwestern University, Evanston, IL; 3. Advanced Photon Source, Argonne National Laboratory, EvanstonArgonne, IL*



**3:48**

**DG-10. Multiferroic nature of the BLZT-CFO composite thin films.** *E. Delgado*[1,2], C. Ostos[3], M.L. Martinez-Sarrion[3], L. Mestres[3], D. Lederman[2], P. Prieto[4], G. Abril[5], J.M. Hernandez[5] and J. Tejada[5] *1. Departamento de Fisica, Universidad del Valle, Cali, Colombia; 2. Department of Physics, West Virginia University, Morgantown, WV; 3. Departamento de Quimica Inorganica, Universidad de Barcelona, Barcelona, Spain; 4. Centro de Excelencia de Nuevos Materiales, Universidad del Valle, Cali, Colombia; 5. Departamento de Fisica Fundamental, Universidad de Barcelona, Barcelona, Spain*

**4:00**

**DG-11. (Sr,Mn)TiO_3 - a mgnetoelectric multiglass.** V.V. Shvartsman[1], *S. Bedanta*[1], P. Borisov[1], W. Kleemann[1], A. Tkach[2] and P.M. Vilarinho[2] *1. Angewandte Physik, Universität Duisburg-Essen, Duisburg, Germany; 2. Department of Ceramics and Glass Engineering, University of Aveiro, Aveiro, Portugal*

**4:12**

**DG-12. Ferroelectric and ferromagnetic properties of Gd and Nd doped nickel ferrite.** *K. Kamala Bharathi*[1], J. Arout Chelvane[2] and M. Garimella[1] *1. IIT Madras, Chennai, Tamil Nadu, India; 2. Advanced Magnetics Laboratory, DMRL, HYDERABAD, India*

**4:24**

**DG-13. Resonant Magnetoelectric Effect in Composite of Piezoelectric Ceramic and Ferromagnetic Constant-elasticity Alloy.** *L. Bian*[1,2], Y. Wen[1,2] and P. Li[1,2] *1. The Key Laboratory for Optoelectronic Technology & Systems, Ministry of Education, Chongqing, China; 2. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*

**4:36**

**DG-14. C-V Characteristics of Multiferroic $Bi_{0.7}Dy_{0.3}FeO_3$ thin films directly integrated on <100>Silicon.** *P. Kovur*[1], S.P. Duttagupta[1], S. Chakrabarti[1] and V.R. Palkar[1] *1. Center of Excellence in Nanoelectronics, Electrical Engineering, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India*

**4:48**

**DG-15. Giant microwave tunability in FeGaB/PMN-PT multiferroic composites.** *J. Lou*[1,2], D. Reed[1,2], C. Pettiford[1,2], M. Liu[1,2] and N.X. Sun[1,2] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Center for Microwave Magnetic Materials and Integrated Circuits, Northeastern University, Boston, MA*

WEDNESDAY AFTERNOON 2:00

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## Session DH
# EXCHANGE BIAS I
Kai Liu, Chair

**2:00**

**DH-01. The magnetic depth profile of an exchange biased magnetic multilayer.** *S. Langridge*[1], T.R. Charlton[1], M. Ali[2], C.H. Marrows[2] and B.J. Hickey[2] *1. Rutherford Appleton Laboratory, ISIS, Didcot, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

**2:12**

**DH-02. Origin of uncompensated moments in antiferromagnets and their role in exchange bias.** *I.V. Roshchin*[1,2], Z. Li[2,5], C.W. Miller[2,3], M. Varela[4], S.J. Pennycook[4], M. Zhernenkov[6], M.R. Fitzsimmons[6] and I.K. Schuller[2] *1. Physics Department, Texas A&M University, College Station, TX; 2. Physics Department, University of California, San Diego, La Jolla, CA; 3. Physics Department, University of South Florida, Tampa, FL; 4. Oak Ridge National Laboratory, Oak Ridge, TN; 5. Brion Technologies, Santa Clara, CA; 6. Los Alamos Neutron Science Center, Los Alamos National Laboratory, Los Alamos, NM*

**2:24**

**DH-03. Correlation between exchange anisotropy and interfacial uncompensated antiferromagnetic spins in Mn-Ir/$Co_{100-x}Fe_x$ bilayers.** *M. Tsunoda*[1], H. Takahashi[1], T. Nakamura[2], C. Mitsumata[3] and M. Takahashi[1] *1. Department of Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. JASRI/SPring-8, Sayo-cho, Japan; 3. Advanced Electronics Research Labo., Hitachi Metals, Kumagaya, Japan*

**2:36**

**DH-04. Magnetic Anisotropy of Exchange-Biased Co/$FeF_2$, Ni/$FeF_2$ and Fe/$FeF_2$ Bilayers.** *D. Lederman*[1], P. Dutta[1], H. Shi[1,2] and M.S. Seehra[1] *1. Department of Physics, West Virginia University, Morgantown, WV; 2. Department of Physics and Astronomy, Sonoma State University, Rohnert Park, CA*

**2:48**

**DH-05. Chemical Order-Induced Magnetic Exchange Bias in FePt3 Films.** *D. Lott*[1], F. Klose[2], H. Ambaye[3], G.J. Mankey[4], P. LeClair[4], M. Walock[4], Z. Lu[4], M. Wolff[5], H.M. Christen[3], B.C. Sales[3], A. Schreyer[1] and V. Lauter[3] *1. GKSS Research Center, Geesthacht, Germany; 2. Bragg Institute, ANSTO, Menai, NSW, Australia; 3. Oak Ridge National Laboratory, Oak Ridge, TN; 4. MINT Center, University of Alabama, Tuscaloosa, AL; 5. Department of Physics, Ruhr-University Bochum, Bochum, Germany*



**3:00**

**DH-06. Temperature dependence of the training effect in exchange coupled all ferromagnetic bilayers.** *S. Polisetty*[1], S. Sahoo[1], A. Berger[2] and C. Binek[1] *1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. CIC nanoGUNE Consolider, Donostia, Spain*

**3:12**

**DH-07. Coercivity Enhancement for FeMn/SmCo/FeMn Trilayers.** *S. Demirtas*[1], M.R. Hossu[2], A.R. Koymen[2] and M.B. Salamon[1] *1. Department of Physics, University Texas at Dallas, Richardson, TX; 2. Department of Physics, University of Texas at Arlington, Arlington, TX*

**3:24**

**DH-08. Mechanisms for "exchange bias" in exchange spring superlattices.** *K. Dumesnil*[1], M.R. Fitzsimmons[2] and C. Dufour[1] *1. LPM, Vandoeuvre les Nancy, France; 2. LANSCE, Los Alamos National Laboratory, Los Alamos, NM*

**3:36**

**DH-09. Origin of the Coercivity in CoFe/IrMn Exchange Bias Systems.** G. Vallejo-Fernandez[1], L.E. Fernandez-Outon[1], N.P. Aley[1] and *K. O'Grady*[1] *1. Physics, The University of York, York, North Yorkshire, United Kingdom*

**3:48**

**DH-10. Correlation between the exchange bias and ferromagnetic domain size in Mn-Ir/Co-Fe bilayers.** *H. Takahashi*[1], M. Tsunoda[1], K. Fukumoto[2], T. Nakamura[2], K. Arai[3], T. Kinoshita[2,4] and M. Takahashi[5,1] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. JASRI/SPring-8, Sayou-cho, Japan; 3. Institute for Solid State Physics, University of Tokyo, Tokyo, Japan; 4. CREST, Japan Science and Technology Agency, Saitama, Japan; 5. New Industry Creation Hatchery Center, Tohoku University, Sendai, Japan*

**4:00**

**DH-11. Defect mediated tuning of exchange bias in IrMn/CoFe nanostructure.** *N.N. Shams*[1], M. Rahman[1] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing-hua University, Hsinchu, Taiwan*

**4:12**

**DH-12. Enhanced Exchange Bias of Co/CoO Films on Periodically Modulated Substrates.** *Y. Hao*[1], F.Q. Zhu[2], S. Chang[1], J. He[1], C. Chien[2] and P.C. Searson[3] *1. Mateirals Science and Engineering, University of Texas at Arlington, Arlington, TX; 2. Physics, Johns Hopkins University, Baltimore, MD; 3. Materials Science and Engineering, Johns Hopkins University, Baltimore, MD*

**4:24**

**DH-13. Unexpectedly Long-Range Influence on Thin-Film Magnetization Reversal by a rectangular Array of FeMn Pinning Films.** Y.P. Kabanov[2], V.I. Nikitenko[1,2], O.A. Tichomirov[2], W.F. Egelhoff[1], A.J. Shapiro[1] and *R.D. Shull*[1] *1. NIST, Gaithersburg, MD; 2. Institute of Solid State Physics, RAS, Chernogolovka, Russian Federation*

**4:36**

**DH-14. Reversal Mechanisms of Exchange Biased Co/IrMn Elliptical Dots.** *R.K. Dumas*[1], F.J. Castaño[2], B. Ng[2], C.A. Ross[2] and K. Liu[1] *1. Physics Department, University of California, Davis, CA; 2. Materials Science and Engineering Department, Massachusetts Institute of Technology, Boston, MA*

**4:48**

**DH-15. Magnetization Dynamics in Exchange-Biased Co/IrMn Square Elements.** E. Girgis[1], J. Rudge[1], J. Kolthammer[1], C.A. Ross[2] and *B.C. Choi*[1] *1. Department of Physics and Astronomy, University of Victoria, Victoria, BC, Canada; 2. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

## WEDNESDAY AFTERNOON 1:00 — AUSTIN BALLROOM

### Session DP
## FUNDAMENTAL PROPERTIES (POSTER SESSION)

Bruce Harmon, Co-Chair
Oleg Mryasov, Co-Chair



**DP-01. Critical Behavior of the Magnetization in the Spin-gapped System $NiCl_2$-4SC$(NH_2)_2$** *A. Paduan-Filho*[1], K.A. Al-Hassaniech[2], P. Sengupta[2], V.S. Zapf[2], M. Jaime[2], A.H. Lacerda[2] and M. Kenzelmann[3] *1. Instituto de Fisica, Sao Paulo, Brazil; 2. National High Magnetic Field Laboratory, Los Alamos, NM; 3. Laboratory for Solid State Physics, Zurich, Switzerland*

**DP-02. Effect of particle size on magnetic and magneto-optical properties of $CoFe_2O_4$ nanoparticles.** M.K. Surendra[1,2], K. Mohankant[1,2] and *M.S. Ramachandra Rao*[1,2] *1. Department of Physics, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India; 2. Materials Science and Research Centre, Indian Institute of Technology Madras, Chennai, Tamilnadu, India*

**DP-03. Thermal properties and critical behaviour of $KMnF_3$** A. Salazar[1], M. Massot[1], *A. Oleaga*[1], A. Pawlak[2] and W. Schranz[3] *1. Física Aplicada I, Escuela Tecnica Superior de Ingenieria/Universidad del País Vasco UPV/EHU, Bilbao, Spain; 2. Institute of Physics, A. Mickiewicz University, Poznan, Poland; 3. Faculty of Physics, University of Vienna, Wien, Austria*

**DP-04. $^{119}$Sn Mössbauer Spectroscopy investigation of $Nd_3Cu_4Sn_4$, $Nd_3Ag_4Sn_4$ and $Ho_3Cu_4Sn_4$** *C.J. Voyer*[1] and D.H. Ryan[1] *1. Center for the Physics of Materials, McGill University, Montreal, QC, Canada*

**DP-05. Studying of the influence of γ radiation on magnetic properties of Sr0.8La0.2O.6Fe1.7Co0.3O3 ferrite magnetic materials.** *G.M. Nguyen*[1], K.T. Doan[1], T.T. Co[1,2] and P.H. Le[1] *1. Materials, HCMC Institute Of Physics, Hochiminh, Viet Nam; 2. Can Tho University, Cantho, Viet Nam*

**DP-06. Breaking of a certain replica symmetry of metamagnetic character.** M. Zarei[1], *A. Yazdani*[1], S. Zarini[1], M. Hesani[1] and M. Ghazanfari[1] *1. Physics, Tarbiat Modares University, Tehran, Iran*

**DP-07. Universal Scaling Behavior of Barkhausen Avalanches in Fe and Ni-Fe Alloy Thin Films.** *H. Lee*[1], K. Ryu[1], I. Kang[2] and S. Shin[1] *1. Center for Nanospinics of Spintronic Materials, Korea Advanced Institute of Science and Technology, Daejeon, South Korea; 2. Korea Science Academy, Busan, South Korea*

**DP-08. Magnetic ordering in the spinel compound $LiMn_{2-x}Li_xO_4$ (x =0, 0.04).** *J. Gaddy*[1], J. Lamsal[1], M. Petrovic[1], W. Montfrooij[1] and T. Vojta[2] *1. Physics & Astronomy, University of Missouri, Columbia, MO; 2. Physics, Missouri University of Science and Technology, Rolla, MO*

**DP-09. Dynamics of three electrons in a quantum wire.** *J. Lee*[1] and L.E. Reichl[2] *1. KIST, Seoul, South Korea; 2. University of Texas, Austin, Austin, TX*

**DP-10. Long range magnetic ordering with giant magnetic moments in Pt doped NiMn thin films.** *Y. Öner*[1], M. Ozdemir[2], C. Basaran[3], B. Aktas[3] and T. Sato[4] *1. Department of Physics, Istanbul Technical University, Istanbul, Turkey; 2. Department of Physics, Marmara University, Istanbul, Turkey; 3. Department of Physics, Gebze Advanced Technology, Koaeli, Turkey; 4. Department of Instrumentation Engineering, Keio University, Kanagawa, Japan*

**DP-11. Studies on magnetic dynamical behaviors of $Fe_{1-x}Cd_xCr_2S_4$ (0.1≤x≤0.9) system.** L. Yan[1], *W. Ren*[2], J. Shen[1] and F. Wang[1] *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Physics, Hong Kong University of Science and Technology, Hong Kong, China*

**DP-12. Electron paramagnetic resonance insights in to the suppression of charge order in nanoscale manganites.** *S.V. Bhat*[1], S.S. Rao[1], K.N. Anuradha[1] and A. Sharma[1] *1. Physics, Indian Institute of Science, Bangalore, Karnataka, India*

**DP-13. Mossbauer study of First Order Phase Transition in $LaVO_3$** *S. Yoon*[1] *1. Department of Physics, Gunsan National University, Gunsan, South Korea*

**DP-14. Surface spin wave quantization in a stripe domain continuous film by Brillouin light scattering.** *S. Ha*[1], J. Yoon[1], S. Lee[1], C. You[1], M. Jung[2] and Y. Kim[3] *1. Physics, Inha University, Incheon, South Korea; 2. Physics, Sogang University, Seoul, South Korea; 3. Materials Science and Engineering, Korea University, Seoul, South Korea*

**DP-15. Model simulation of ferromagnetism in nitrogen embedded ZnO:N thin films.** *S. Sun*[1], C. Yu[2] and H. Chou[3] *1. Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Applied Physics, National Chiayi University, Chiayi, Taiwan; 3. Physics, National Sun Yat-Sen University, Kaohsiung, Taiwan*

**DP-16. Mössbauer study of magnetic structure of cation-deficient iron sulfide $Fe_{0.92}S$.** *W. Kim*[1], I. Park[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, South Korea*

**DP-17. Theoretical and Experimental Results of Electronic Transport of Spin Quantum Cross Structure Devices.** *K. Kondo*[1], H. Kaiju[1] and A. Ishibashi[1] *1. Laboratory of Quantum Electronics, Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan*

**DP-18. Self-similar band structure and spin-polarized transport in Quasiperiodic cascade junctions of ferromagnet and semiconductor.** J. Li[1], R. Zhang[1], *R. Peng*[1], X. Wu[1], D. Li[1], Q. Hu[1] and M. Wang[1] *1. National Laboratory of Solid State Microstructures, Nanjing, China*

**DP-19. Unusual negative magnetization in $Ba_2CoO_2Cu_2Te_2$** *D. Parker*[1] and S.J. Clarke[1] *1. Inorganic Chemistry, University of Oxford, Oxford, United Kingdom*

**DP-20. Superconducting and magnetic properties of Ni/Pb multilayer nanowires.** *L. Lin*[1,3], Y. Chi[2], T. Chen[2], S. Shyu[2] and S. Lee[1] *1. Physics, Academia Sinica, Taipei, Taiwan; 2. Chemistry, Academia Sinica, Taipei, Taiwan; 3. Materials Science and Engineering, National Tsing Hua University, HsinChu, Taiwan*

**DP-21. Magnetic Properties and Spin Dynamics of Oxo-Centered $\{Mn_3O\}$ - Type Spin Triangles.** Z. Jang[1], *S. Yoon*[2], K. Han[2] and B. Suh[2] *1. Physics, Kookmin University, Seoul, South Korea; 2. Physics, The Catholic University of Korea, Bucheon, South Korea*

**DP-22. Study of Spin Dynamics in a Hexanuclear Manganese Ring and its 3D Network.** *S. Yoon*[1], B. Suh[1] and Z. Jang[2] *1. Physics, The Catholic University of Korea, Bucheon, South Korea; 2. Physics, Kookmin University, Seoul, South Korea*



WEDNESDAY AFTERNOON 1:00 — AUSTIN BALLROOM

## Session DQ
# MAGNETIC NANOPARTICLES FOR BIOLOGICAL APPLICATIONS (POSTER SESSION)

Sara Majetich, Chair

**DQ-01. Translocation of Magnetic Beads Using Patterned Magnetic Pathway for Biosensor Applications.** *A. Sarella*[1], K. Kim[1], J.R. Jeong[1] and C. Kim[1] *1. Chungnam National University, Daejeon, South Korea*

**DQ-02. Ferromagnetic microdisks as magnetic carriers for biomedical applications.** *E. Rozhkova*[2], V. Novosad[1], D. Kim[1], R. Divan[1], T. Rajh[1] and S.D. Bader[2,1] *1. Center for Nanoscale Materials, Argonne National Laboratory, Argoinne, IL; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL*

**DQ-03. Digital Magnetic Tagging for Multiplexed Suspension-based Biochemical Assays.** *T. Mitrelias*[1], T. Trypiniotis[1], K. Vyas[1], B. Hong[1], J. Palfreyman[1], T.J. Hayward[1], C.W. Barnes[1], P.A. Robertson[2], J.C. Bland[1] and M. Bradley[3] *1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 2. Engineering Department, University of Cambridge, Cambridge, United Kingdom; 3. School of Chemistry, University of Edinburgh, Edinburgh, United Kingdom*

**DQ-04. Controlled synthetic conditions of FePt nanoparticles with high magnetization for biomedical applications.** *D.H. Wei*[1], Y. Yao[2], D. Hung[3], P. Chen[4] and C. Ho[4] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Department of Materials Engineering, Tatung University, Taipei, Taiwan; 3. Ming Chuan University, Taipei, Taiwan; 4. Tunghai University, Taichung, Taiwan*

**DQ-05. PEGlyated mesoporous silica-coated superparamamagentic FePt nanoparticles for fluorescence/MRI dual imaging.** *T. Tsai*[1], P. Lai[1], J. Tsai[2] and M. Liao[1] *1. Department of Chemistry, National Chung Hsing University, Taichung, Taiwan; 2. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

**DQ-06. Chemical Synthesis of FePt/Fe-oxide Composite Nanoparticles with High Alternate Current Magnetic Susceptibility for Biomedical Applications.** *Y. Kitamoto*[1] and J. He[1] *1. Department of Innovative and Engineered Materials, Tokyo Institute of Technology, Yokohama, Japan*

**DQ-07. Synthesis of SERS Active Magnetic Nanoparticles for Cell Labeling and Sorting.** *S. Charan*[1], C. Kuo[1], P. Drake[2], Y. Lin[2], L. Tay[3] and P. Chen[1] *1. Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan; 2. ITRI, HsinChu, Taiwan; 3. IMS, National Research Council, Ottawa, ON, Canada*

**DQ-08. Poly(styrene-co-vinylbenzylchloride-co-divinylbenzene) Coated Iron Oxide: Synthesis and Effects on Size and Morphology.** *J.R. Marin*[1,2], M.D. Shultz[3], S.H. Naik[3], J. Wilkins[3], J.M. Laza[2], J.L. Vilas[2], L.M. Leon[2] and E.E. Carpenter[3] *1. Formulación y Transformación de Polímeros, GAIKER Centro Tecnológico, Zamudio, Bizkaia, Spain; 2. Basque Country University, Leioa, Bizkaia, Spain; 3. Chemistry, Virginia Commonwealth University, Richmond, VA*

**DQ-09. Detection of magnetic nanoparticle labeled HeLa cells using MgO based magnetic tunnel junction sensors.** *W. Shen*[1], B.D. Schrag[3], M.J. Carter[3], C. Xu[2] and G. Xiao[1] *1. Physics Department, Brown University, Providence, RI; 2. Chemistry Department, Brown University, Providence, RI; 3. Micro Magnetics, Inc., Fall River, MA*

**DQ-10. Magnetic properties of ferritin nanoparticles in PVA fiber.** *Y. Hyun*[1], M. Seo[1], N. Dai[1], Y. Lee[1], K. Kim[2], M. Shin[3] and S. Kim[3] *1. Department of Physics, Hanyang University, Seoul, South Korea; 2. Department of Physics, Sunmoon University, Asan, South Korea; 3. Biomedical Engineering, Hanyang University, Seoul, South Korea*

**DQ-11. Pharmacokinetics of intravenously injected Tc-99m labeled ferrite nanobeads.** *C. Fu*[1], Y. Wang[2,3], M. Chuang[3], Y. Guo[1] and T. Cham[3] *1. Physics Department, National Taiwan University, Taipei, Taiwan; 2. Department of Nuclear Medicine,, Buddhish Dalin TzuChi General Hospital,, Chia-Yi, Taiwan; 3. Faculty of Pharmacy, Kaohsiung Medical University,, Kaohsiung, Taiwan*

**DQ-12. Application of Radical Chain Reactions to Drug Release Controlling of Liposomal Carriers Under High Magnetic Fields.** *H. Nakagawa*[1], S. Ueno[2], T. Shiina[3], M. Kotani[4] and S. Kubota[1] *1. Department of Life Sciences, The University of Tokyo, Tokyo, Japan; 2. Department of Applied Quantum Physics, Kyushu University, Fukuoka, Japan; 3. Department of Computer Science, University of Tsukuba, Tsukuba, Japan; 4. Department of Electronic Engineering, Tokyo Denki University, Tokyo, Japan*

**WEDNESDAY AFTERNOON 1:00** **AUSTIN BALLROOM**

## Session DR
## MAGNETIC FLUIDS AND SEPARATION (POSTER SESSION)
Valentyn Norosad, Chair

**DR-01. RF transmission properties of magnetic fluid with transverse magnetic field.** Y. Kim[2], H. Kim[2] and *K. Shin*[1] *1. Department of Multimedia Engineering, Kyungsung University, Pusan, None, South Korea; 2. Department of Electrical Engineering, Pukyong University, Pusan, South Korea*



**DR-02. Magnetic-field modulated light transmittance in suspension of ferromagnetic microdisks.** *V. Novosad*[1], S. Chui[2], V.G. Yefremenko[1], J. Pearson[1] and S.D. Bader[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Bartol Research Institute, University of Delaware, Newark, DE*

**DR-03. Variations of optical transmittance with magnetic fields in nano-size FePt ferrofluid.** *K. Wu*[1], Y. Yao[2] and C. Chang[1] *1. Department of Physics, Fu Jen University, Hsinchuang, Taipei Hsien, Taiwan; 2. Department of Materials Engineering, Tatung University, Taipei, Taiwan*

**DR-04. Suspensions of Magnetic Nanoparticles in Polymer Liquid Crystals: A new type of Ferronematic.** *D.I. Santiago-Quiñones*[1] and C. Rinaldi[1] *1. Chemical Engineering, University of Puerto Rico, Mayaguez, Mayaguez, PR*

**DR-05. Origin of Magnetic Anomalies in the Liquid, Mixed and Frozen States of Ferrofluids.** M.B. Morales[1], N.A. Frey[1], *M.H. Phan*[1] and H. Srikanth[1] *1. Department of Physics, University of South Florida, Tampa, FL*

**DR-06. AC SUSCEPTIBILITY STUDY OF A MAGNETITE MAGNETIC FLUID.** O.E. Ayala-Valenzuela[1], J.T. Elizalde Galindo[2], C.E. Botez[3] and *J.A. Matutes-Aquino*[1] *1. Física de Materiales, Centro de Investigación en Materiales Avanzados, S.C., Chihuahua, Chihuahua, Mexico; 2. Departamento de Ciencias Básicas, Universidad Autónoma de Ciudad Juárez, Ciudad Juárez, Chihuahua, Mexico; 3. Department of Physics, University of Texas at El Paso, El Paso, TX*

**DR-07. Finite-Element Analysis for Cooling Effect of Magnetic Fluid with Alternating Magnetic Field.** *S. Lee*[1], J. Joo[1] and N. Kim[1] *1. School of Electrical Eng. and Computer Science, Kyungpook National University, Daegu, South Korea*

**DR-08. Numerical modeling of magnetic liquids in EWOD devices by multiphase lattice Boltzmann equation.** *L. Clime*[1], D. Brassard[1] and T. Veres[1] *1. Industrial Materials Institute, NRC, Boucherville, QC, Canada*

**DR-09. Real observation and computer simulation of microstructure formation of magnetic and nonmagnetic particles in magnetic functional fluids.** *Y. Ido*[1], T. Inagaki[2], H. Kikura[3] and M. Aritomi[3] *1. Nagoya Institute of Technology, Nagoya, Japan; 2. Toyota Motor Corporation, Toyota, Japan; 3. Tokyo Intitute of Technology, Tokyo, Japan*

**DR-10. Magnetic fluid micromixer with rotating magnetic field.** C. Lee[1], *C. San*[2] and M. Lai[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*

WEDNESDAY AFTERNOON 1:00

AUSTIN BALLROOM

## Session DS
## FERRITES, GARNETS II (POSTER SESSION)

Mingzhong Wu, Chair

**DS-01. Growth and Characterization of 144 μm Thick Barium Ferrite Single Crystalline Film for Microwave Device Application.** *J. Jalli*[1,2], Y. Hong[1,2], S. Bae[1,2], J. Lee[1,2], M. Kothakonda[1,2], G.S. Abo[1,2], A. Lyle[1,2], S. Gee[3], H. Lee[2,4], T. Mewes[2,4], J.C. Sur[5] and S. Lee[6] *1. Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL; 2. MINT Center, University of Alabama, Tuscaloosa, AL; 3. Seagate Technology, Bloomington, MN; 4. Physics and Anstronomy, University of Alabama, Tuscaloosa, AL; 5. Division of Physics, Wonkwang University, Iksan, Joen-book, South Korea; 6. Department of Physics, Sogang University, Seoul, South Korea*

**DS-02. Novel Ni-Mn-Co ferrite for GHz chip devices.** *J. Lee*[1], Y. Hong[1], S. Bae[1], J. Jalli[1], W. Seong[2], S. Park[2] and C. Choi[3] *1. MINT Center and Department of Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL; 2. E.M.W. Antenna Co. Ltd., Seoul, South Korea; 3. Korea Institute of Materials Science, Changwon, South Korea*

**DS-03. Study on Microwave properties of Low Temperature Fired NiZnCu Gyromagnetic Ferrite.** *Y. Liu*[1], Y. Li[1], H. Zhang[1] and Q. Yang[1] *1. State Key Laboratory of Electronic Thin Film and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

**DS-04. The Magnetic and Electrical Properties of $Fe_{3-x}Cr_xO_4$ Films Grown on MgO(001) by Molecular Beam Epitaxy.** *d. Lee*[1], C. Hwang[2] and G. Chern[2] *1. Electrical Engineering, DAYEH University, Changhua, Taiwan; 2. Physics, National Chung Cheng University, Chia-Yi, Taiwan*

**DS-05. Gigahertz Range Complex Permittivity and Permeability of Iron-based Composite Absorbers by Cavity Perturbation Method.** *R. Yang*[1], W. Liang[1], C. Tsay[2], D. Hung[3] and Y. Yao[3] *1. Dept. of Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 2. Dept. of Materials Science and Engineering, Feng Chia University, Taichuang, Taiwan; 3. Institute of Physics, Academia, Taipei, Taiwan*

**DS-06. One Parameter Control of the Size of Iron Oxide Nanoparticles Synthesized in Reverse Micelles.** *M.D. Shultz*[1,2], W. Braxton[3], C. Taylor[3] and E.E. Carpenter[2] *1. Anvil: the materials forge, Inc., Ashland, VA; 2. Chemistry, Virginia Commonwealth University, Richmond, VA; 3. Chemistry and Physics, Virginia State University, Petersburg, VA*

**DS-07. Mossbauer Study of MnFe2-2xAl2xO4 (0≤ x ≤0.5).** *K.M. Batoo*[1], S. Kumar[2], C.G. Lee[2] and .. Alimuddin[1] *1. Department of Applied Physics, Aligarh Muslim University, Aligarh, UP, India; 2. School of Nano & Advanced Materials Engineering, Changwon National University, Changwon, Gyeongsagnam, South Korea*

**DS-08. Magnetic Properties of Monodisperse Magnetite and Cobalt-Substituted Ferrite Nanoparticles.** *V. Calero-DdelC*[1] and C. Rinaldi[1] *1. Chemical Engineering, University of Puerto Rico, Mayaguez, Mayaguez, PR*

**DS-09. Magnetization studies on 200 MeV Ag ion irradiated nanocrystalline Co0.6Zn0.4Fe2O4.** *S.N. Dolia*[1], M.S. Dhawan[1], A.S. Prasad[1], R. Kumar[2], M.P. Sharma[1], S. Chander[3], R.K. Singhal[1] and V.R. Reddy[4] *1. Department of Physics, University of Rajasthan, Jaipur, Rajasthan, India; 2. Material Science Division, Inter-University Accelerator Centre, New Delhi 110 067, India; 3. Sobhasaria Engineering College, Sikar, Rajasthan, India; 4. UGC-DAE Consortium for Scientific Research, Khandwa Road, Indore 452 017, MP, India*

**DS-10. Tuning magnetic properties of yttrium iron garnet (YIG) film with oxygen partial pressure in sputtering and annealing process.** *Q. Yang*[1], H. Zhang[1], Y. Liu[1] and Q. Wen[1] *1. University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

**DS-11. The Effect of CeO2 buffer layer to the magnetic and microstructure of yttrium iron garnet (YIG) film on Si substrate.** *Q. Yang*[1], H. Zhang[1], Y. Liu[1] and Q. Wen[1] *1. University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

**DS-12. Domain-acoustic echo phenomenon in europium garnet and iron borate.** *G.I. Mamniashvili*[1], Y.G. Sharimanov[1], A.M. Pohorily[2] and O.M. Kuzmak[2] *1. Department of Condensed Matter Physics, Andronikashvili Institute of Physics, Tbilisi, Georgia; 2. Department of Thin Films, Institute of Magnetism, Kyiv, Ukraine*

**DS-13. High-frequency loss characteristics through numerical analysis for semiconducting soft magnetic films in the near-field electromagnetic wave.** *S. Kim*[1], J. Lee[2] and K. Lee[3] *1. Center for Energy-Materials Research Center, Korea Institute of Science & Technology, Seoul, South Korea; 2. Center for Energy-Materials Research Center, Korea Institute of Science & Technology, Seoul, South Korea; 3. R&D Center, Chang Sung Corporation, Seoul, South Korea*

**DS-14. The origin of the double-triangle hysteresis loops in $ErFeO_3$ near the low temperature erbium ordering transition.** *L.T. Tsymbal*[1], Y. Bazaliy[2,3] and G.N. Kakazei[3,4] *1. O. Galkin Donetsk Physics and Technology Institute, Donetsk, Ukraine; 2. University of South Carolina, Columbia, SC; 3. Institute of Magnetism, Kyiv, Ukraine; 4. Universidade do Porto, Porto, Portugal*

**DS-15. Tunable Magnetic and Magnetotransport Properties in Epitaxial $Fe_{3-x}Zn_xO_4$ Thin Films.** D. Venkateshvaran[1,2], A. Boger[1], S.B. Goennenwein[1], M. Rao[2,3], *M. Opel*[1] and R. Gross[1,4] *1. Walther-Meissner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 2. Materials Science Research Centre, Indian Institute of Technology Madras, Chennai, India; 3. Department of Physics, Indian Institute of Technology Madras, Chennai, India; 4. Physik-Department, Technische Universität München, Garching, Germany*

WEDNESDAY AFTERNOON 1:00 AUSTIN BALLROOM

## Session DT
## RECORDING HEADS II (POSTER SESSION)
Samuel Yuan, Chair

**DT-01. Spin-polarized electronic structures and transport properties of Fe-Co alloys: ab initio study.** *Y. Kota*[1], T. Takahashi[1], H. Tsuchiura[1] and A. Sakuma[1] *1. Applied Physics, Tohoku University, Sendai, Japan*

**DT-02. Direct resistive measurement on nano-conductive channel in Nano-Oxide-Layer.** *S. Kawasaki*[1], Y. Watanabe[1], T. Hino[1], M. Doi[1] and M. Sahashi[1] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan*

**DT-03. Significant enhancement of electromigration-induced failure lifetime due to an ultra-thin Co insertion at the NiFe/Cu interface in GMR spin-valve read sensors.** *J. Jiang*[1], S. Bae[1] and H. Ryu[2] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. IT Convergence & Components Laboratory, ETRI, Daejon, South Korea*

**DT-04. Writer Pole Structure and Materials for High Density and High Data Rate Perpendicular Recording Heads With Robust Reliability.** *D. Han*[1], C. Rea[1], J. Xue[1], P. Czoschke[1], L. Jia[1], J. Fernandez-de-Castro[1], V. Inturi[1], M. Kief[1], H. Yin[1], J. Price[1], T. Clinton[2] and N. Benatmane[2] *1. Recording Heads, Seagate Technology, Minneapolis, MN; 2. Seagate Research, Seagate Technology, Pittsburgh, PA*

**DT-05. Damping constants for FeCo single crystal thin films investigated by Q-band ferromagnetic resonance analysis.** *Y. Sudo*[1], K. Kobayashi[1], N. Fujita[1], M. Ohtake[2], N. Inaba[1], M. Futamoto[2] and F. Kirino[3] *1. Yamagata University, Yamagata, Yonezawa, Japan; 2. Chuo University, Tokyo, Bunkyo-ku, Japan; 3. National University of Fine Arts and Music, Tokyo, Taito-ku, Japan*

**DT-06. Measurement of high data rate performance in perpendicular magnetic recording.** *W. Lin*[1], J. Zhu[1] and T. Pan[2] *1. ECE, CMU, Pittsburgh, PA; 2. Western Digital Corporation, Fremont, CA*

**DT-07. Preparation of Soft Magnetic FeCo-based Films for Writers.** X. Wang[1], F. Zheng[1], Z. Liu[1], X. Liu[2], D. Wei[3] and *F. Wei*[1] *1. Research Institute of Magnetic Materials, Lanzhou University, Lanzhou, Gansu, China; 2. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, Gansu, China; 3. Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China*



**DT-08. Pole design optimization of shielded planar writer for 2 Tbit/in$^2$ recording.** *K. Yamakawa*[1], Y. Ohsawa[1,2], S. Greaves[1] and H. Muraoka[1] *1. RIEC, Tohoku University, Sendai, Japan; 2. Corporate R&D Center, Toshiba Corp., Kawasaki, Japan*

**DT-09. Micromagnetic simulation of various pole-tip design PMR heads.** *K. Takano*[1], L. Guan[1], Y. Zhou[1], Y. Liu[1], J. Smyth[1] and M. Dovek[1] *1. Bldg-3, Headway Technologies, Milpitas, CA*

WEDNESDAY AFTERNOON 1:00 AUSTIN BALLROOM

## Session DU
## ELECTRONIC STRUCTURE AND ITINERANT MAGNETISM (POSTER SESSION)
Ralph Skomski, Co-Chair
Alexander Shick, Co-Chair

**DU-01. Magnetic, Structural, and Electronic Properties of Nanosized LaFeO3 Powders.** *D.A. Landinez Tellez*[1], J.V. Barros[2], J. Albino Aguiar[2], J. Arbey Rodriguez[1] and J. Roa-Rojas[1] *1. Fisica, Universidad Nacional de Colombia, Bogota, DC, Colombia; 2. Fisica, Universidade Federal de Pernambuco, Recife, PE, Brazil*

**DU-02. Electronic structures and magnetic properties of $La_2MnNiO_6$: a ferromagnetic insulator.** *B. Kim*[1], J. Lee[1], H. Choi[1], B. Kim[1] and B. Min[1] *1. Physics, POSTECH, Pohang, South Korea*

**DU-03. The magnetic hyperfine interaction in $FeCr_{2-x}Al_xS_4$(x=0.3, 0.5).** *C. Kim*[1], S. Kim[1] and C. Kim[1] *1. Physics, Kookmin University, Seoul, South Korea*

**DU-04. Mössbauer studies for spinel-type $ACr_2S_4$ (A=Cd and Fe).** *B. Son*[1], B. Lee[2] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, South Korea; 2. Physics, Hankuk University of Foreign Studies, Yongin, Kyungki, South Korea*

**DU-05. Soft X-ray Synchrotron Radiation Spectroscopy Study of Cubic Perovskite $SrMn_{1-x}Fe_XO_3$** *H. Lee*[1], D.H. Kim[1], G. Kim[1], J.S. Kang[1], B. Dabrowski[2], S. Kolesnik[2], H. Lee[3], J.Y. Kim[3], J.E. Lee[4] and B.I. Min[4] *1. Physics, The Catholic Univ. of Korea, Bucheon, South Korea; 2. Department of Physics, Northern Illinois University, DeKalb, IL; 3. Pohang Accelerator Laboratory, Pohang, South Korea; 4. Department of Physics, POSTECH, Pohang, South Korea*

**DU-06. Electronic structures and magnetic properties of the compounds $Ce_{n+1}Co_{3n+5}B_{2n}$ (n=0, 1, 2, 3 and ∞).** *T. Ito*[1] and H. Ido[1] *1. Electronic Engineering, Tohoku Gakuin University, Tagajo, Miyagi, Japan*

**DU-07. Incommensurate spiral structure and competing exchange interactions in Mn3Si.** *M. Hortamani*[1] *1. Theory, Max Planck Institute of Microstructure Physics, Halle, Germany*

**DU-08. Stability of ferromagnetic state of epitaxially grown ordered FeRh thin films.** *I. Suzuki*[1], T. Koike[1], M. Itoh[1] and T. Taniyama[1,2] *1. Tokyo Institute of Technology, Yokohama, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan*

**DU-09. First-principles calculations for the electrical conductivities of transition metal alloys.** *A. Sakuma*[1], T. Takahashi[1], Y. Kota[1] and H. Tsuchiura[1] *1. Applied Physics, Tohoku University, Sendai, Japan*

**DU-10. Metal-insulator transition in NdNiO3 thin films under anisotropic strain.** Y. Chang[1], *B. Lee*[2] and C. Jung[2] *1. Physics and Astronomy, Seoul National University, Seoul, South Korea; 2. Department of Physics, Hankuk University of Foreign Studies, Yongin, Gyounggi-Do, South Korea*

**DU-11. Electronic Structures and Hall effect in a Low-doped $La_{0.9}Hf_{0.1}MnO_3$ Epitaxial Film.** L. Wang[1] and *J. Gao*[1] *1. Physics, The University of Hong Kong, Hong Kong, China*

**DU-12. Predicted half-metallicity with no net magnetization in $Ca_{0.75}Cr_{0.25}As$ from a first-principle study.** *J. Lee*[1], B. Bialek[1] and M. Kim[2] *1. Physics, Inha University, Incheon, South Korea; 2. Division of Energy Systems Research, Ajou University, Suwon, South Korea*

**DU-13. Magnetic and electronic properties of $\alpha$-$NaMnO_2$** G. Zhang[1], *Z. Zeng*[1], L. Zou[1] and H. Lin[2] *1. Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, China; 2. Department of Physics and Institute of Theoretical Physics, The Chinese University of Hong Kong, Hong Kong, China*

**DU-14. Large anisotropic magnetoresistance in ruthenium based Heusler alloys.** *S. Mizusaki*[1], A. Douzono[1], T. Ohnishi[1], Y. Nagata[1], T.C. Ozawa[2] and Y. Noro[3] *1. EEE, Aoyama Gakuin University, Sagamihara, Japan; 2. Nanoscale Materials Center, National Institute for Materials Science, Tsukuba, Japan; 3. Kawazoe Frontier Technologies, Co. Ltd., Yokohama, Japan*

**DU-15. Calculation of electronic structures and magnetic moments of $Nd_2Fe_{14}B$ and $Dy_2Fe_{14}B$ by using linear-combination-of-pseudo-atomic-orbital method.** *I. Kitagawa*[1] *1. Advanced Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan*

WEDNESDAY AFTERNOON 1:00 AUSTIN BALLROOM

## Session DV
## INSTRUMENTATION AND MEASUREMENT TECHNIQUES (POSTER SESSION)
Joachim Ahner, Chair

**DV-01. A new method for high-frequency characterization of patterned ferromagnetic thin-films.** *H. Zhang*[1], C. Song[1] and P. Wang[1] *1. Department of Electrical and Computer Engineering, Clemson University, Clemson, SC*

**DV-02. A broad-band ferromagnetic resonance system based on a vector network analyzer.** *A.J. Hutchison*[1], T. O'Keevan[1] and Z. Celinski[1] *1. Center for Magnetism and Magnetic Nanostructures, UCCS, Colorado Springs, CO*



**DV-03. Rough measurement of thin film permeability by contacting probes.** *S. Yabukami*[1] *1. Tohoku-Gakuin University, Tagajo, Japan*

**DV-04. Giant Asymmetry in Reflectivity from Magnetic Thin Films near Critical Incidence Angle between Opposite Circular Polarizations.** *D. Jeong*[1], S. Kim[1], K. Lee[1], Y. Yu[1], S. Mun[2] and J.B. Kortright[3] *1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, South Korea; 2. Department of Applied Physics, Hanyang University, Ansan,Kyeonggi 426-791, South Korea; 3. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA*

**DV-05. Observation of In Plane Magnetization Reversal Using Polarization Dependent Magnetooptical Kerr Effect.** *H. Ohldag*[1] and F.U. Hillebrecht[2] *1. SSRL, SLAC, Menlo Park, CA; 2. Inst. f. Solid State Res., Research Center Julich, Julich, Germany*

**DV-06. Advances in Kerr Magnetometry: Deep sub-millimeter resolution combined with high magnetic fields.** *C. Mathieu*[1] and F. Vajda[2] *1. Seagate, Bloomington, MN; 2. ADE, KLA-Tencor, Westwood, MA*

**DV-07. 1D/2D loss measurements up to high inductions.** C. Appino[1], F. Fiorillo[1] and *C. Ragusa*[2] *1. INRiM, Torino, Italy; 2. Electrical Engineering Department, Politecnico di Torino, Torino, Italy*

**DV-08. Fatigue damage assessment by the continuous examination of the magnetomechanical and mechanical behavior.** *L. Vandenbossche*[1] and L. Dupre[1] *1. Electrical Energy, Systems and Automation, Ghent University, GENT, Belgium*

**DV-09. Assessment of Shot Peening Uniformity by Magnetic Drag Force Measurements.** *I.J. Garshelis*[1,2], S.P. Tollens[2], J. Cuseo[2] and R.J. Kari[2] *1. Magnova, Inc., Pittsfield, MA; 2. MagCanica Inc., San Diego, CA*

**DV-10. Characterization of Magnetic Property Depth Profiles of Surface-modified Materials using a Model-based Swept Frequency Modulation Field Technique.** *C.C. Lo*[1] *1. Center for NDE, Iowa State University, Ames, IA*

WEDNESDAY AFTERNOON 1:00 AUSTIN BALLROOM

## Session DW
## NUMERICAL METHODS AND HYSTERESIS MODELING (POSTER SESSION)
Markus Bolte, Chair

**DW-01. An homogenisation framework based on inclusion problems.** *L. Daniel*[1] and R. Corcolle[1] *1. Laboratoire de Génie Electrique de Paris (LGEP), CNRS (UMR 8507); SUPELEC; Univ. Paris-Sud; UPMC, Gif sur Yvette Cedex, France*

**DW-02. Meso hysteresis model for ferromagnetic materials by minimization of the micromagnetic free energy.** *A. van den Berg*[1], L. Dupré[1], B. Van de Wiele[1] and G. Crevecoeur[1] *1. Electrical Energy, Systems & Automisation, Ghent University, Gent, Belgium*

**DW-03. Hysteresis modeling of exchange-bias nanoscale spin valves.** *B. Azzerboni*[1], E. Cardelli[2] and G. Finocchio[1] *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Ingegneria Industriale, University of Perugia, Perugia, Italy*

**DW-04. Micromagnetic calculation of hysteresis loops in exchange-coupled nanolayers.** *G. Zhao*[1], C. Huang[1,2] and L. Chen[2] *1. College of Physics and Electronic Engineering, Sichuan Normal University, Chengdu, Sichuan, China; 2. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore*

**DW-05. Non-iterative parameter identification technique for the Energetic Model of hysteresis.** *A. Petru*[1] and A. Adedoyin[1] *1. Electrical and Computer Engineering, Florida State University, Tallahassee, FL*

**DW-06. Time and temperature effects on the magnetic memory of vector Preisach-type models of hysteresis.** *A. Adedoyin*[1] and A. Petru[1] *1. Florida State University, Tallahassee, FL*

**DW-07. Identification of local magnetic material degradation from global electromagnetic measurements.** *G. Crevecoeur*[1], L. Dupré[1] and R. Van de Walle[2] *1. Departement of Electrical Energy, Systems and Automation, Ghent University, Ghent, Belgium; 2. Department of Electronics and Information Systems, Ghent University, Ghent, Belgium*

**DW-08. Effects of Crystalline and Elastic Anisotropies on Coercivity of Longitudinally Oriented CoCrPt Thin Films Grown on CrW Underlayer.** X. Liu[1], Z. Li[1], W. Shi[1], *F. Wei*[1], D. Wei[2] and X. Liu[3] *1. Research Institute of Magnetic Materials, Lanzhou University, Lanzhou, China; 2. Lab of Advanced Materials, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China; 3. Key Lab.of Education Ministry on Magnetism and Magnetic Materials, Lanzhou University, Lanzhou, China*

**DW-09. Dynamic hysteresis of non-integer dimensional magnetic aggregates.** M. Sun[1], *S. Dong*[1] and J. Liu[1] *1. Physics, Nanjing University, Nanjing, China*

**DW-10. Harmonic Iron Loss Analysis for Electrical Steel Under Alternating Magnetic Field.** *S. Hong*[1], Y. Eum[2], C. Koh[2] and T.M. Jahns[3] *1. System and Control, Hoseo University, Asan, Chungnam, South Korea; 2. Electrical Engineering, Chungbuk National University, Cheongju, Chungbuk, South Korea; 3. WEMPEC, UW Madison, Madison, WI*

**DW-11. Single-domain ferromagnetic particle hysteresis investigated with a Random Anisotropy Ising model.** C. Enachescu[1] and *A. Stancu*[1] *1. Department of Physics, Alexandru Ioan Cuza University, Iasi, Romania*



**DW-12. FORC analysis of magnetostrictive materials.** *P. Postolache*[1], I. Dumitru[1], O.F. Caltun[1] and A. Stancu[1] *1. Department of Solid State and Theoretical Physics, "Alexandru Ioan Cuza" University, Iasi, Iasi, Romania*

**DW-13. Shape Formation of Ferrofluid Under External Magnetic Fields using Level Set Method.** *Y. Kim*[1], H. Choi[2] and I. Park[1] *1. School of Information and Communication Engineering Sungkyunkwan University, Suwon, Kyeonggi-do, South Korea; 2. School of Electronic and Electrical Engineering Kyungpook National University, Sangju, Kyungpook-do, South Korea*

**DW-14. Utilizing Particle Swarm Optimization In The Field Computation Of Nonlinear Media Subject To Mechanical Stress.** *A.A. Adly*[1] and S.K. Abd-El-Hafiz[2] *1. Elect. Power & Machines, Cairo University, Giza, Egypt; 2. Engineering Mathematics, Cairo University, Giza, Egypt*

**WEDNESDAY EVENING 7:00** — **SALON G**

## Session XB
## OPEN FORUM ON MICROMAGNETIC MODELING

Paul Crowell, Co-Chair
Ned Tabat, Co-Chair

**THURSDAY MORNING 9:00** — **SALON C**

## Session EA
## SYMPOSIUM ON RECONSTRUCTION AND EMERGENCE AT INTERFACES OF COMPLEX OXIDES

Anand Bhattacharya, Chair

**9:00**

**EA-01. Exchange Bias with Multiferroic BiFeO3 Epitaxial Thin Films.** ***(Invited)*** *A. Barthélémy*[1], H. Béa[1,4], M. Bibes[1], G. Catalan[2], S. Fusil[1], S. Petit[3], F. Ott[3], K. Bouzehouane[1], P. Paruch[4], B. Warot[5], E. Jacquet[1] and J. Scott[2] *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Center for Ferroics, University of Cambridge, Cambridge, United Kingdom; 3. LLB CEA/CNRS, Saclay, France; 4. DPMC, University of Geneva, Geneva, Switzerland; 5. CEMES, Toulouse, France*

**9:36**

**EA-02. Electrical Field control of ferromagnetism using Multiferroics.** ***(Invited)*** *R. Ramesh*[1] *1. Materials Science and Engineering and Physics, University of California, Berkeley, Berkeley, CA*

**10:12**

**EA-03. Interfaces and Tunable Conductivity in $LaTiO_3$ Thin Films.** ***(Invited)*** *Y. Suzuki*[1], F. Wong[1], R. Chopdekar[1], V. Mehta[1], S. Baek[2] and C. Eom[2] *1. Materials Science & Engineering, UC Berkeley, Berkeley, CA; 2. Materials Science & Engineering, University of Wisconsin, Madison, WI*

**10:48**

**EA-04. Structural Studies of The Interfaces Between Insulating Metal Oxides.** ***(Invited)*** *S.A. Pauli*[1], C.M. Schlepütz[1], D. Martoccia[1], M. Björck[1] and P.R. Willmott[1] *1. Swiss Light Source, Paul Scherrer Institut, Villigen, Switzerland*

**11:24**

**EA-05. Emergence of a Fermi resonance with ferromagnetism at the LaMnO3-SrMnO3 interface.** ***(Invited)*** *P. Abbamonte*[1] *1. Physics, University of Illinois, Urbana, IL*

THURSDAY MORNING 9:00 SALON G

## Session EB
## SPIN TRANSFER TORQUE: THEORY AND EXPERIMENT

Daniel Worledge, Chair

**9:00**

**EB-01. Nonequilibrium Properties of Spin Transfer Torque and Tunnel Magnetoresistance in Magnetic Tunnel Junctions.** *M. Chshiev*[1,2], A. Kalitsov[3], I. Theodonis[4], N. Kioussis[5] and W.H. Butler[2] *1. SPINTEC, URA 2512 CEA/CNRS/INAC, Grenoble, France; 2. MINT Center, University of Alabama, Tuscaloosa, AL; 3. Institut Neel, Grenoble, France; 4. Department of Physics, National Technical University, Athens, Greece; 5. Department of Physics, California State University, Northridge, CA*

**9:12**

**EB-02. Influence of bulk magnons on spin transfer torque in magnetic tunnel junctions.** *A. Manchon*[1] and S. Zhang[1] *1. Department of Physics, University of Arizona, Tucson, AZ*

**9:24**

**EB-03. Invariant Form of the Spin-Transfer Switching Condition.** *I.A. Sodemann*[1] and Y.B. Bazaliy[1,2] *1. Physics and Astronomy, University of South Carolina, Columbia, SC; 2. Institute of Magnetism, National Academy of Science, Kyiv, Ukraine*



**9:36**

**EB-04. Slonczewski windmill with dissipation and asymmetry.** *Y. Bazaliy*[1] *1. Physics and Astronomy, University of South Carolina, Columbia, SC*

**9:48**

**EB-05. Spin torques in ferromagnets with Rashba interactions.** *S. Zhang*[1] and A. Manchon[1] *1. Department of Physics, University of Arizona, Tucson, AZ*

**10:00**

**EB-06. Perpendicular Spin Torques in Magnetic Tunnel Junctions.** *Z. Li*[1], Z. Diao[1], S.M. Watts[1], X. Tang[1], D. Apalkov[1], S. Wang[1], A. Driskill-Smith[1], E. Chen[1], Y. Huai[1] and S. Zhang[2] *1. Grandis, Inc., Milpitas, CA; 2. Physics, University of Missouri-Columbia, Columbia, MO*

**10:12**

**EB-07. Critical Properties of MgO Tunnel Junctions for Spin-Transfer MRAM.** ***(Invited)*** *F. Mancoff*[1], N. Rizzo[1], R. Dave[1], P. Mather[1], B. Butcher[1], K. Smith[1], J. Slaughter[1] and S. Tehrani[1] *1. EverSpin Technologies, Inc., Chandler, AZ*

**10:48**

**EB-08. Dependence of critical current of spin transfer torque-driven magnetization dynamics on free layer thickness.** *T. Taniguchi*[1,2] and H. Imamura[1] *1. Nanotechnology Research Institute, National Institute of Advanced Science and Technology, Tsukuba, Ibaraki, Japan; 2. Institute of Applied Physics, University of Tsukuba, Ibaraki, Japan*

**11:00**

**EB-09. The characterization of thermal stability for spin transfer torque RAM (STT-RAM).** *S.M. Watts*[1], Z. Li[1], D. Apalkov[1], S. Wang[1], X. Tang[1], Z. Diao[1], E. Chen[1] and Y. Huai[1] *1. Grandis, Inc., Milpitas, CA*

**11:12**

**EB-10. Understanding of Correlations between Switching Field and Switching Current in Spin Transfer Torque Magnetic Tunnel Junction.** *X. Zhu*[1] and S. Kang[1] *1. Qualcomm Incorporation, San Diego, CA*

**11:24**

**EB-11. Magnetoresistance and spin torque study of dual spin valve devices.** *A. Aziz*[1], M.C. Wu[1], M.G. Blamire[1], M.C. Hickey[2], M. Ali[2] and B.J. Hickey[2] *1. Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

**11:36**

**EB-12. Stable Spin transfer switching in magnetic tunnel junctions with perpendicular magnetic anisotropy.** *M. Nakayama*[1], T. Kai[1], H. Yoda[1], S. Ikegawa[1], T. Nagase[1], H. Aikawa[1] and N. Shimomura[1] *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

**11:48**

**EB-13. Reduction of critical current for spin transfer switching in spin valves with perpendicular anisotropy using an in-plane spin polarizer.** *R. Law*[1], E. Tan[1], R. Sbiaa[1], T. Liew[1] and T. Chong[1] *1. Data Storage Institute, A*STAR (Agency for Science, Technology and Research), Singapore, Singapore*

THURSDAY MORNING 9:00 SALON A

## Session EC
## ALTERNATIVE MAGNETIC RECORDING
Mourad Benakli, Chair

**9:00**

**EC-01. Magneto-Optic Writing using the Ridge Waveguide.** *B.C. Stipe*[1], J. Katine[1], H. Yang[1], J. Thiele[1], C. Poon[1], T. Strand[1] and B. Terris[1] *1. Hitachi Global Storage Technologies, San Jose, CA*

**9:12**

**EC-02. Effect of gradient alignment in heat assisted magnetic recording.** *N.J. Gokemeijer*[1], H. Zhou[1], D. Karns[1], S. Batra[1], M. Mallary[1], T. McDaniel[1], M. Seigler[1], G. Ju[1], Y. Peng[1], M. Xiao[1] and E. Gage[1] *1. RTD, Seagate Technology, LLC, Pittsburgh, PA*

**9:24**

**EC-03. Thermally assisted magnetic recording characteristics in granular perpendicular media.** *H. Shiino*[1], M. Kawana[1], E. Miyashita[1], S. Watanabe[2] and N. Hayashi[1] *1. NHK Science & Technical Research Laboratories, Setagaya-ku, Tokyo, Japan; 2. Fuji Electric Advanced Technology Co., Ltd., Matsumoto, Nagano, Japan*



**9:36**

**EC-04. Heat-Assisted Domain Transfer in Magnetic Nanowires with Perpendicular Anisotropy.** *O. Ozatay*[1], A. Moser[1], J. Katine[1], T. Hauet[1], L. Folks[1], R. Payne[1] and B. Terris[1] *1. Hitachi Global Storage Technologies, San Jose, CA*

**9:48**

**EC-05. Temperature Distribution and Response to Heat Pulse for Thermally Assisted Recording for Particle Recording Media with Surface Plasmon Antenna.** *K. Nakagawa*[1], Y. Ashizawa[1] and A. Itoh[1] *1. College of Science and Technology, Nihon University, Funabashi, Japan*

**10:00**

**EC-06. Atomistic Simulation of Elliptical Reversal Modes at Elevated Temperatures.** J. Barker[1], *R.F. Evans*[1], N. Kazantseva[1], D. Hinzke[1], U. Nowak[2] and R.W. Chantrell[1] *1. Physics, University Of York, York, England, United Kingdom; 2. Fachbereich Physik, Universität Konstanz, Konstanz, Germany*

**10:12**

**EC-07. Excitation and Dephasing of Circularly Polarized Plasmon Modes in Spherical Nanoshells for Application in All-Optical Magnetic Recording.** *I. Mayergoyz*[1], P. McAvoy[1], G. Lang[1], D. Bowen[1] and C. Krafft[2] *1. Electrical and Computer Engineering and UMIACS, University of Maryland College Park, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD*

**10:24**

**EC-08. Simulations of RF field-assisted recording in 3 Tb/in$^2$ patterned media.** *S. Greaves*[1], H. Muraoka[1] and Y. Kanai[2] *1. RIEC, Tohoku University, Sendai, Japan; 2. IEE, Niigata Institute of Technology, Kashiwazaki, Japan*

**10:36**

**EC-09. Microwave-assisted 3D multilayer magnetic recording.** *M.A. Bashir*[1], T. Schrefl[1], D. Suess[2], J. Dean[1], G. Hrkac[1], A. Goncharov[1], D. Allwood[1], S. Bance[1] and J. Fidler[2] *1. Department of Engineering Materials, University Of Sheffield, Sheffield, United Kingdom; 2. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria*

**10:48**

**EC-10. Microwave assisted magnetization reversal and multilevel recording in composite media.** *S. Li*[1,2], B. Livshitz[1,2], E.E. Fullerton[1,2], H. Bertram[2,3], M. Schabes[3] and V. Lomakin[1,2] *1. Department of Electrical and Computer Engineering, University of California San Diego, La Jolla, CA; 2. Center of Magnetic Recording Research, University of California San Diego, La Jolla, CA; 3. Hitachi San Jose Research Center, Hitachi GST, San Jose, CA*

**11:00**

**EC-11. Switching Mechanism of Microwave Assisted Magnetic Recording.** *M. Igarashi*[1], Y. Suzuki[1], H. Miyamoto[1], Y. Maruyama[2] and Y. Shiroishi[2] *1. Hitachi, Ltd., Kokubunji, Tokyo, Japan; 2. Hitachi Global Storage Technologies, Odawara, Japan*

**11:12**

**EC-12. Microwave assisted magnetic recording at lower transverse oscillating field.** *C. Goh*[1], Z. Yuan[1], T. Zhou[1], L. Wang[1] and B. Liu[1] *1. Data Storage Institute, Singapore, Singapore*

**11:24**

**EC-13. Medium damping constant and performance characteristics in microwave assisted magnetic recording with circular AC field.** *Y. Wang*[1], Y. Tang[2] and J. Zhu[1] *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Hitachi Global Storage Technologies, San Jose, CA*

**11:36**

**EC-14. Numerical study on microwave-assisted magnetization reversal of several-tens-nm-wide magnetic particle with perpendicular anisotropy.** *Y. Nozaki*[1], M. Ohta[1], N. Narita[1] and K. Matsuyama[1] *1. Dept. of Electronics, Kyushu University, Fukuoka, Japan*

**11:48**

**EC-15. Influences of Eddy Current in Microwave Oscillation Layer of MAMR.** *E. Uda*[1], N. Udagawa[1], K. Yoshida[1] and Y. Kanai[2] *1. Electrical Engineering and Electronics, Kogakuin Univ., Tokyo, Japan; 2. Information and Electronics Engineering, Niigata Institute of Technology, Kashiwazaki, Japan*



THURSDAY MORNING 9:00

SALON B

## Session ED
# MAGNETIC TUNNEL JUNCTIONS III
Markus Muenzenberg, Chair

**9:00**

**ED-01. Tunnel magnetoresistance properties of double MgO barrier magnetic tunnel junctions with CoFeB electrodes.** *S. Ikeda*[1], W. Shiga[1], J. Hayakawa[2], K. Miura[2,1], H. Hasegawa[1,2], J. Park[1], H. Gan[1], H. Yamamoto[2], F. Matsukura[1] and H. Ohno[1] *1. RIEC, Tohoku Univ., Sendai, Japan; 2. Advanced Research Laboratory, Hitachi, Ltd., Tokyo, Japan*

**9:12**

**ED-02. Current induced resistance change of magnetic tunnel junctions with ultra-thin MgO tunnel barriers.** *P. Krzysteczko*[1], X. Kou[1,2], K. Rott[1], A. Thomas[1] and G. Reiss[1] *1. Thin Films & Physics of Nanostructures, Bielefeld University, Bielefeld, Germany; 2. School of Physical Science and Technology, Lanzhou University, Lanzhou, China*

**9:24**

**ED-03. A first principles study of the impact of oxide layer boron on tunneling magnetoresistance in FeCoB/MgO(B)/FeCoB junctions.** *D. Stewart*[1] *1. Cornell Nanoscale Facility, Cornell University, Ithaca, NY*

**9:36**

**ED-04. The role of boron in obtaining high magnetoresistance in ultra-thin Mg(B)O tunnel junctions.** ***(Invited)*** *J.C. Read*[1], J.J. Cha[1], W.F. Egelhoff, Jr.[2], P.Y. Huang[3], H. Tseng[1], Y. Li[1], A.M. Castillo[2], P.J. Chen[2], D.A. Muller[1] and R.A. Buhrman[1] *1. School of Applied & Engineering Physics, Cornell University, Ithaca, NY; 2. Magnetic Materials Group, National Institute of Standards and Technology, Gaithersburg, MD; 3. Department of Physics, Carleton College, Northfield, MN*

**10:12**

**ED-05. Structural characterizations of $Co_2MnSi$/MgO/$Co_2MnSi$ magnetic tunnel junctions.** *T. Nakatani*[1], Y. Takahashi[2], K. Hono[2,1], T. Ishikawa[3] and M. Yamamoto[3] *1. University of Tsukuba, Tsukuba, Japan; 2. National Institute for Materials Science, Tsukuba, Japan; 3. Hokkaido University, Sapporo, Japan*

**10:24**

**ED-06. Tunnel magnetoresistance effect and tunneling conductance in magnetic tunnel junctions with full-Heusler $Co_2FeAl_{0.5}Si_{0.5}$ Electrodes.** *H. Sukegawa*[1], W. Wang[1], R. Shan[1] and K. Inomata[1] *1. Magnetic Material Center, National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan*

**10:36**

**ED-07. Tunneling spectroscopy of $Co_2Cr_{0.6}Fe_{0.4}Al$/MgO/CoFe magnetic tunnel junctions.** *K. Yonemura*[1], T. Ishikawa[1], N. Itabashi[1], K. Matsuda[1], T. Uemura[1] and M. Yamamoto[1] *1. Division of Electronics for Informatics, Hokkaido University, Sapporo, Japan*

**10:48**

**ED-08. Tunnel magnetoresistance in $Co_2 FeAl_{0.5}Si_{0.5}$/MgO/$Co_2 FeAl_{0.5}Si_{0.5}$ magnetic tunneling junctions prepared on Si/$SiO_2$substrates.** *W. Wang*[1], H. Sukegawa[1], R. Shan[1] and K. Inomata[1] *1. Magnetic Material Center, National Institute for Materials Science (NIMS), Tsukuba, Japan*

**11:00**

**ED-09. High energy high resolution photoemission spectroscopy of Heusler compounds.** *A. Gloskovskii*[1], G.H. Fecher[1], S. Chadov[1], S. Ouardi[1], B. Balke[1], C.A. Jenkins[1], C. Felser[1], T. Ishikawa[2], M. Yamamoto[2], K. Inomata[3], Y. Yamashita[4], H. Yoshikawa[4], S. Ueda[4] and K. Kobayashi[4] *1. Institut für Anorganische Chemie und Analytische Chemie, Johannes Gutenberg-Universität Mainz, Mainz, Germany; 2. Division of Electronics for Informatics, Hokkaido University, Sapporo, Japan; 3. National Institute for Materials Science, Tsukuba, Japan; 4. National Institute for Materials Science, SPring-8, Hyogo, Japan*

**11:12**

**ED-10. Investigations on the MTJ interface Co2MnSi-MgO using electron spectroscopy with x-ray standing waves and hard x-rays.** *B. Balke*[1], C. Papp[1], C.A. Jenkins[2], A. Gloskovskii[2], G.H. Fecher[2] and C.S. Fadley[1] *1. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. University of Mainz, Mainz, Germany*

**11:24**

**ED-11. Oscillatory tunnel magenetoresistance in MgO magnetic tunnel junctions with a synthetic free layer.** *B. Min*[1], I. Shin[1], J. Lee[1], K. Shin[1], J. Langer[2], J. Wrona[2], B. Ocker[2], K. Lee[3] and H. Lee[4] *1. Korea Institute of Science and Technology (KIST), Seoul, South Korea; 2. Singulus Nano Deposition Technologies GmbH, Kahl am Main, Germany; 3. Korea University, Seoul, South Korea; 4. Pohang University of Science and Technology (POSTECH), Pohang, South Korea*



**11:36**

**ED-12. Relation between Barrier and Transport Properties of Heusler based Tunneling Junctions.** *C. Herbort*[1], E. Arbelo Jorge[1] and M. Jourdan[1] *1. Institute of Physics, Johannes Gutenberg University, 55099 Mainz, Germany*

**11:48**

**ED-13. Experimental study of time-dependent switching current in MgO based magnetic tunnel junction.** *W. Zhu*[1], X. Wang[1] and D. Dimitrov[1] *1. Seagate, Bloomington, MN*

THURSDAY MORNING 9:00 SALON D

## Session EE
## SPIN INJECTION IN METALS
Yoshichika Otani, Chair

**9:00**

**EE-01. Non-Local Spin Transport and Spin Motive Force in Magnetic Nanostructures. *(Invited)*** *S. Maekawa*[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

**9:36**

**EE-02. Magnetic thermopower effect in single Cobalt nanowires.** R.A. Silva[1], L.C. Sampaio[1], *A.P. Guimaraes*[1] and J. Wegrowe[2] *1. CBPF, Rio de Janeiro, RJ, Brazil; 2. Laboratoire des Solides Irradiés, Ecole Polytechnique, Palaiseau, France*

**9:48**

**EE-03. Nonlinear effective spin-mixing conductance in NiFe/Pt thin films.** *R. Cao*[1], X. Fan[1], T. Moriyama[1] and J.Q. Xiao[1] *1. Department of Physics and Astronomy, University of Delaware, Newark, DE*

**10:00**

**EE-04. Effect of DC bias on the spin signal in metallic lateral spin valves with transparent junctions.** *F. Casanova*[1], A. Sharoni[1] and I.K. Schuller[1] *1. Physics, University of California, San Diego, La Jolla, CA*

**10:12**

**EE-05. Correlation between magnetic anisotropy and structural properties in strained MnAs thin films.** *M. Wikberg*[1], M. Ottoson[2], J. Sadowski[3], R. Knut[4], O. Karis[4] and P. Svedlindh[1] *1. Engineering Sciences, Solid State Physics, Uppsala University, Uppsala, Sweden; 2. Materials Chemistry, Uppsala University, Uppsala, Sweden; 3. MAX-Lab, Lund University, Lund, Sweden; 4. Physics and Materials Science, Uppsala University, Uppsala, Sweden*

**10:24**

**EE-06. Observation of the spin Hall effect via negative non-local resistance in mesoscopic gold Hall bars.** *G. Mihajlovic*[1], J.E. Pearson[1], A. Hoffmann[1] and S.D. Bader[1] *1. Materials Science Division, Argone National Laboratory, Argonne, IL*

**10:36**

**EE-07. Spin Hall and Nernst-Ettingshausen effects in FePt/Au lateral structures.** T. Seki[1], Y. Hasegawa[1], *S. Mitani*[1], I. Sugai[1], K. Takanashi[1], S. Takahashi[1] and S. Maekawa[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

**10:48**

**EE-08. Influence of a DC bias current on the Co/Cu/Co non-local spin valves.** *X.J. Wang*[1], H. Zou[1], L.E. Ocola[2], R. Divan[2] and Y. Ji[1] *1. Department of Physics and Astronomy, University of Delaware, Newark, DE; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

**11:00**

**EE-09. Effect of chemical ordering on interlayer exchange coupling in Co-Mn-Si based epitaxial trilayer structures.** *S. Bosu*[1], Y. Sakuraba[1], K. Saito[1], H. Wang[1], S. Mitani[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

**11:12**

**EE-10. High spin polarization of $Co_2MnGa_{0.5}Sn_{0.5}$ Heusler alloy.** *B. Varaprasad*[1,2], A. Rajanikanth[2], Y.K. Takahashi[2] and K. Hono[2,1] *1. Graduate School of Pure and Applied sciences, University of Tsukuba, Tsukuba, Ibaraki, Japan; 2. NIMS, Tsukuba, Ibaraki, Japan*

**11:24**

**EE-11. Spin Hall Effects in Nb, Mo, Pd, and Pt nanowires.** *M. Morota*[1,3], K. Ohnishi[1], T. Kimura[1,2] and Y. Otani[1,2] *1. Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan; 2. Advanced Science Institute, RIKEN, Wako, Japan; 3. Institute of Applied Physics, University of Tsukuba, Tsukuba, Japan*



**11:36**

**EE-12. Ab Initio Calculation of Intrinsic Spin Hall Conductivity of Pd and Au.** *G. Guo*[1] *1. Department of Physics, National Taiwan University, Taipei, Taiwan*

**11:48**

**EE-13. Spin polarization of Mn atoms in the paramagnetic CuMn alloys induced by a Co layer.** *M. Abes*[1], D. Atkinson[1], B. Tanner[1], T. Charlton[2], S. Langridge[2], T. Hase[3], M. Ali[4], C. Marrows[4], A. Neudert[5] and R. Hicken[5] *1. Department of Physics, Durham University, Durham, United Kingdom; 2. ISIS, Rutherford Appleton Laboratory, Chilton, Oxfordshire, OX11 0QX, United Kingdom; 3. Department of Physics, University of Warwick, Coventry, CV4 7AL, United Kingdom; 4. Department of Physics and Astronomy, University of Leeds, Leeds, LS2 9JT, United Kingdom; 5. School of Physics, University of Exeter, Exeter, EX4 4QL, United Kingdom*

THURSDAY MORNING 9:00 SALON E

## Session EF
## NOVEL MAGNETIC NANOPARTICLES
Stephen Russek, Chair

**9:00**

**EF-01. Carrier Spin polarization in Fe3O4-CdS Hybrid Nanoparticles.** *S. Delikanli*[1], W. Falls[1], M. Yasar[1], A. Petrou[1] and H. Zeng[1] *1. Physics, University at Buffalo, SUNY, Buffalo, NY*

**9:12**

**EF-02. Anomalous Magnetism and Exchange Bias in Coupled Au-$Fe_3O_4$ Nanoparticles.** N.A. Frey[1], M. Phan[1], S. Srinath[2], C. Wang[3], S. Sun[3] and *H. Srikanth*[1] *1. Department of Physics, University of South Florida, Tampa, FL; 2. School of Physics, University of Hyderabad, Hyderabad, India; 3. Department of Chemistry, Brown University, Providence, RI*

**9:24**

**EF-03. Synthetic Antiferromagnetic Nanoparticles with Tunable Susceptibility.** *W. Hu*[1], R.J. Wilson[1], C.M. Earhart[1] and S.X. Wang[1,2] *1. Materials Science & Engineering, Stanford University, Stanford, CA; 2. Electrical Engineering, Stanford University, Stanford, CA*

**9:36**

**EF-04. Fabrication of Heuslar Fe3Si Nanoparticles.** *Y. Jing*[1], Y. Xu[1] and J.P. Wang[1] *1. Electrical Engineering, University of Minnesota, Minneapolis, MN*

**9:48**

**EF-05. Magnetic and structural properties of Co and CoPt nanoparticles grown in the presence of nitrogen.** *A. Brenac*[1], D. Le Roy[1], L. Notin[1], R. Morel[1], O. Plantevin[2] and O. Bikondoa[3] *1. INAC, CEA-Grenoble, Grenoble, France; 2. CSNSM, CNRS/IN2P3 – Université Paris XI, Orsay, France; 3. Surface and Interface Science Group, ESRF, Grenoble, France*

**10:00**

**EF-06. Site Determination of Zn Doping in Protein Encapsulated $Zn_xFe_{3-x}O_4$ Nanoparticles.** *V. Pool*[1,4], M. Klem[2,4], J. Holroyd[1], H. Li[1,4], T. Harris[2,4], E. Arenholz[5], T. Douglas[2,4], M. Young[3,4] and Y.U. Idzerda[1,4] *1. Dept. of Physics, Montana State University, Bozeman, MT; 2. Dept. of Chem. and Biochem., Montana State University, Bozeman, MT; 3. Dept. of Plant Sciences and Pathology, Montana State University, Bozeman, MT; 4. Center for Bio-inspired Nanomaterials, Montana State University, Bozeman, MT; 5. Advanced Light Source, Lawrence Berkeley Nat. Lab., Berkeley, CA*

**10:12**

**EF-07. The effect of the sputtering gas (Ar, Xe) on FePt clusters formation, structural and magnetic properties.** *V. Cantelli*[1], J. Grenzer[1], J. von Borany[1] and J. Fassbender[1] *1. Institute of Ion Beam Physics and Materials Research, Forschungszentrum Dresden-Rossendorf, Dresden, Germany*

**10:24**

**EF-08. Coercive field and energy barriers in partially disordered FePt nanoparticles.** G.R. Aranda[1], *R. Yanes*[2], O. Chubykalo-Fesenko[2], J. González[3], J.J. del Val[3,1], Y.K. Takahashi[4] and K. Hono[4] *1. Unidad de Física de Materiales, Centro Mixto CSIC-UPV/EHU, San Sebastián, Gipuzkoa, Spain; 2. Instituto de Ciencia de Materiales de Madrid (ICMM), CSIC, Madrid, Madrid, Spain; 3. Dpto. Física de Materiales, Fac. Química, UPV/EHU, San Sebastián, Gipuzkoa, Spain; 4. National Institute for Material Science, Tsukuba, Japan*

**10:36**

**EF-09. Magnetic and Structural Properties on Nano-composites of FePt/FeRh.** Y. Hnin[1], T. Ajay[1] and *T. Suzuki*[1] *1. Toyota Technological Institute, Nagoya, Japan*



**10:48**

**EF-10. Size dependence of magnetic parameters and surface disorder in magnetite nanoparticles.** *M.S. Seehra*[1], S. Pal[1], P. Dutta[1], N. Shah[2] and G.P. Huffman[2] *1. Physics Department, West Virginia University, Morgantown, WV; 2. Chemical Engineering, University of Kentucky, Lexington, KY*

**11:00**

**EF-11. Millimeter wave absorption of $\varepsilon$-$Ga_xFe_{2-x}O_3$ nanoparticles.** *A. Namai*[1], S. Sakurai[1] and S. Ohkoshi[1] *1. Department of Chemistry, The University of Tokyo, Tokyo, Japan*

**11:12**

**EF-12. Spin dynamics in $CoFe_2O_4$ nanoparticles.** R.D. Desautels[1] and *J. van Lierop*[1] *1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada*

**11:24**

**EF-13. Size control and huge magnetic coercive field of $\varepsilon$-$Fe_2O_3$ nanoparticle.** *S. Sakurai*[1,2], K. Hashimoto[2] and S. Ohkoshi[1] *1. School of Science, The University of Tokyo, Tokyo, Japan; 2. School of Engineering, The University of Tokyo, Tokyo, Japan*

**11:36**

**EF-14. Magnetic Properties of Fe deposited on a MnAs/GaAs(001) template.** *S. Tacchi*[1], J. Milano[2], M. Madami[1], G. Gubbiotti[1], G. Carlotti[1], M. Marangolo[3], V.H. Etgens[3], M. Pini[4] and R. Stamps[5] *1. Dipartimento di Fisica, CNISM, Università di Perugia, Perugia, Italy; 2. CNEA-Centro Atomico Bariloche and Instituto Balseiro-UNCuyo, Bariloche, Argentina; 3. Institut des NanoSciences de Paris, Universitè Paris 6, Paris, France; 4. Istituto dei Sistemi Complessi, CNR, Firenze, Italy; 5. School of Physics, University of Western Australia, Crawley, WA, Australia*

**11:48**

**EF-15. Fast Superparamagnetic Response of Mono-Dispersed Fe Nanoparticle Assembly.** *T. Ogawa*[1,2], H. Yang[3], D. Hasegawa[2] and M. Takahashi[3] *1. Center for Research Strategy&Support (CRESS), Tohoku University, Sendai, Japan; 2. Department of Electronic Engineering, Tohoku University, Sendai, Japan; 3. New Industry Creation Hatchery Center (NICHe), Tohoku University, Sendai, Japan*

THURSDAY MORNING 9:00

400/402

## Session EG
# PATTERNED FILMS I
Hans Nembach, Chair

**9:00**

**EG-01. Neutron Reflectivity Study of Magnetic Correlations within Spintronic Nanopillars.** *K.L. Krycka*[1], B.B. Maranville[1], J.A. Borchers[1], F.J. Castaño[2], B.G. Ng[2] and C.A. Ross[2] *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

**9:12**

**EG-02. Delocalized versus localized magnetization reversal in template-grown Ni and $Ni_{80}Fe_{20}$ nanowires.** *D.C. Leitão*[1,2], C.T. Sousa[1], J. Ventura[1], J.B. Sousa[1], K.R. Pirota[2], M. Vazquez[2] and J.E. Araujo[1] *1. IN-IFIMUP, Porto, Portugal; 2. ICMM-CSIC, Madrid, Spain*

**9:24**

**EG-03. Thermal stability of single nanoplatelets: beyond the coherent reversal model.** J. Adam[1,2], *S. Rohart*[1], J. Jamet[1], A. Mougin[1], J. Ferré[1], H. Bernas[3] and G. Faini[4] *1. Laboratoire de Physique des Solides, Orsay, France; 2. GEMAC, Versailles, France; 3. CSNSM, Orsay, France; 4. LPN, Marcoussis, France*

**9:36**

**EG-04. Properties of Ferromagnetic Film with Embedded Magnetic Nanowires.** *S. Goolaup*[1], A. Adeyeye[1] and N. Singh[2] *1. National University of Singapore, Singapore, Singapore; 2. Institute of Microelectronics, Singapore, Singapore*

**9:48**

**EG-05. Nonuniform magnetization in the thickness dependence of the FMR of permalloy nanoellipse arrays.** *M. Pardavi-Horvath*[1], F.J. Castaño[2], B.G. Ng[2] and C.A. Ross[2] *1. SEAS ECE, The George Washington University, Washington, DC; 2. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*



**10:00**

**EG-06. Angular Dependence of Vortex Annihilation Fields in Asymmetric Co Nanodots*.** *R.K. Dumas*[1], T. Gredig[2,3], C. Li[2], I.K. Schuller[2] and K. Liu[1] *1. UC Davis Physics, Davis, CA; 2. Physics Department, UC San Diego, La Jolla, CA; 3. Physics Department, CSU-Long Beach, Long Beach, CA*

**10:12**

**EG-07. Nano-optics with spin waves at microwave frequencies.** V.E. Demidov[1], *S.O. Demokritov*[1], K. Rott[2], P. Krzysteczko[2] and G. Reiss[2] *1. Institute for Applied Physics, University of Muenster, Muenster, Germany; 2. Department of Physics, Bielefeld University, Bielefeld, Germany*

**10:24**

**EG-08. Ferromagnetic resonance study in electrodeposited cobalt antidot arrays.** L.G. Abracado[1], J.P. Sinnecker[2], *A.P. Guimaraes*[1], E.R. Spada[3], A.S. da Rocha[3], E.F. Jasinski[3] and M.L. Sartorelli[3] *1. CBPF, Rio de Janeiro, RJ, Brazil; 2. Instituto de Fisica, UFRJ, Rio de Janeiro, RJ, Brazil; 3. Depto. de Fisica, UFSC, Florianopolis, SC, Brazil*

**10:36**

**EG-09. Detecting dynamic magnetic information beyond the optical spatial resolution in a Ni nanomagnet array.** *Z. Liu*[1], R. Brandt[1], H. Schmidt[1], B. Hansen[2], A. Hawkins[2], B. Harteneck[3], S. Cabrini[3] and J. Bokor[3] *1. Electrical Engineering, University of California Santa Cruz, Santa Cruz, CA; 2. Electrical and Computer Engineering, Brigham Young University, Provo, UT; 3. Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA*

**10:48**

**EG-10. Field Dependence of Collective Spin Modes in Transversely Magnetized Stripes with Homogeneous and Alternating Width.** G. Gubbiotti[1], S. Tacchi[1], M. Madami[1], G. Carlotti[1], S. Goolaup[2], A.O. Adeyeye[2], H.T. Nguyen[3] and *M.G. Cottam*[3] *1. Università di Perugia, Perugia, Italy; 2. National University of Singapore, Singapore, Singapore; 3. University of Western Ontario, London, ON, Canada*

**11:00**

**EG-11. Engineering coercivity in epitaxial Laves phase rare earth - transition metal multilayers.** *A.R. Buckingham*[1], K. Wang[1], D. Wang[1], G.J. Bowden[1], R.C. Ward[2] and P.A. de Groot[1] *1. Physics and Astronomy, University of Southampton, Southampton, United Kingdom; 2. Clarendon Laboratory, University of Oxford, Oxford, United Kingdom*

**11:12**

**EG-12. The Use of Patterned Magnetic Films to Retain and Orient Micro-Components during Fluidic Self-Assembly.** D.I. Cheng[1], J.J. Rumpler[1], J.M. Perkins[1], C.G. Fonstad[1], E.S. Cramer[2], R. Zuneska[2] and *F.J. Cadieu*[2]*1. Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA; 2. Physcis, Queens College of CUNY, Flushing, NY*

**11:24**

**EG-13. Permalloy Arrays via Stenciling and Magnetron Sputtering to Investigate Nanoscale Magnetic Switching.** *C.V. Cojocaru*[1], J.R. Bates[1], Y. Miyahara[1] and P. Grutter[1]*1. Physics Department, McGill University, Montreal, QC, Canada*

**11:36**

**EG-14. Possible Approach to Patterned Media using Self-Assembled Nanoparticles.** *S. Kang*[1], W. Xu[1], R. Horton[1], S. Shi[1], R.M. Metzger[1], D.E. Nikles[1] and J.W. Harrell[1]*1. MINT Center, The University of Alabama, Tuscaloosa, AL*

**11:48**

**EG-15. RIE-based Pattern Transfer of Self-assembled Nanoparticle Arrays for Bit-patterned Media.** *C.R. Hogg*[1], S.A. Majetich[1] and J.A. Bain[2]*1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

## THURSDAY MORNING 9:00 410

### Session EH
## NUMERICAL METHODS AND MAGNETIC SIMULATIONS
Olle Heinonen, Chair

**9:00**

**EH-01. Calculation of the Temperature Dependence of Surface Anisotropy with a Constrained Monte Carlo Method.** *R.F. Evans*[1], P. Asselin[2], R. Yanes[3], D. Hinzke[1], O. Chubykalo-Fesenko[3], U. Nowak[4] and R.W. Chantrell[1]*1. Physics, University Of York, York, England, United Kingdom; 2. Seagate Research, Pittsburgh, PA; 3. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain; 4. Fachbereich Physik, Universität Konstanz, Konstanz, Germany*



**9:12**

**EH-02. Unconditionally Stable Numerical Method with Improved Convergence for Landau-Lifshitz Equation.** *M. Cho*[1], W. Nam[1] and Y. Lee[1]*1. Quantum Photonic Science Research Center, Hanyang University, Seoul, South Korea*

**9:24**

**EH-03. A new approach to (quasi) periodic boundary conditions: the macro geometry.** G. Bordignon[1], T. Fischbacher[2], *M. Franchin*[1], A. Knittel[2], P. de Groot[1] and H. Fangohr[2]*1. School of Physics & Astronomy, University of Southampton, Southampton, United Kingdom; 2. School of Engineering Sciences, University of Southampton, Southampton, United Kingdom*

**9:36**

**EH-04. Scriptability and interactivity in parallel micromagnetic simulations.** *T. Fischbacher*[1], M. Franchin[1], G. Bordignon[1], A. Knittel[1] and H. Fangohr[1]*1. University of Southampton, Southampton, United Kingdom*

**9:48**

**EH-05. Compression of Boundary Element Matrix in Micromagnetic Simulations.** *A. Knittel*[1], M. Franchin[2,1], G. Bordignon[2,1], T. Fischbacher[1], S. Bending[3] and H. Fangohr[1]*1. School of Engineering Sciences, University of Southampton, Southampton, United Kingdom; 2. School of Physics and Astronomy, University of Southampton, Southampton, United Kingdom; 3. Department of Physics, University of Bath, Bath, United Kingdom*

**10:00**

**EH-06. Image Treatment of an Axial Magnetic Dipole in the Presence of Two Fused Superconducting Spheres.** *D. Palaniappan*[1]*1. Mathematics, Texas A&M University, College Station, TX*

**10:12**

**EH-07. Spectral Micromagnetic Analysis of Switching Processes.** *M. d'Aquino*[1], C. Serpico[2], G. Bertotti[3], T. Schrefl[4] and I.D. Mayergoyz[5]*1. Dipartimento per le Tecnologie, Università di Napoli "Parthenope", Napoli, Italy; 2. Dipartimento di Ingegneria Elettrica, Università di Napoli "Federico II", Napoli, Italy; 3. Istituto Nazionale di Ricerca Metrologica (INRiM), Torino, Italy; 4. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 5. ECE Department and UMIACS, University of Maryland, College Park, MD*

**10:24**

**EH-08. Investigation of slanted and V-shaped domain walls in MnAs films.** R.H. Engel-Herbert[1] and *T. Hesjedal*[2] *1. Materials Department, UCSB, Santa Barbara, CA; 2. ECE Department, University of Waterloo, Waterloo, ON, Canada*

**10:36**

**EH-09. Dzyaloshinski-Moriya Micromagnetics of Magnetic Surface Alloys.** *R. Skomski*[1], J. Honolka[2], S. Bornemann[3], H. Ebert[3] and A. Enders[1] *1. Nebraska Center for Materials and Nanoscience and Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany; 3. Ludwig-Maximilians Universität München, München, Germany*

**10:48**

**EH-10. Analytical and Experimental Analysis of Noise Passage through Hysteretic Systems.** *M. Dimian*[1], E. Coca[1] and V. Popa[1] *1. Electrical and Computer Engineering, Stefan cel Mare University, Suceava, Romania*

**11:00**

**EH-11. Micromagnetic simulation of Henkel plots and recoil loops of the Nd2Fe14B/α-Fe exchange-coupled nanocomposite magnets.** *C. Rong*[1] and J. Liu[1] *1. Department of Physics, University of Texas at Arlington, Arlington, TX*

**11:12**

**EH-12. Magnetization-dependent vector model and single domain nanostructures.** *A. Faba*[1], E. Cardelli[1], E. Della Torre[2], M. Carpentieri[3] and G. Drisaldi[1] *1. Industrial Engineering, University of Perugia, Perugia, Italy; 2. Institute for Magnetic Research, The George Washington University, Washington, WA; 3. University of Calabria, Arcavacata di Rende (CS), Calabria, Italy*

**11:24**

**EH-13. Experimental properties of an efficient stress-dependent magnetostriction model.** *D. Davino*[1], A. Giustiniani[2] and C. Visone[1] *1. Engineering Department, University of Sannio, Benevento, Italy; 2. DIIIE, University of Salerno, Salerno, Italy*

**11:36**

**EH-14. Inhomogeneous Magnetization Processes in Electrodeposited Iron Thin Films on GaAs.** *S. Majumder*[1], A.S. Arrott[1] and K.L. Kavanagh[1] *1. Physics, Simon Fraser University, Burnaby, BC, Canada*



**11:48**

**EH-15. A behavioral model of axisymmetrically configured magnetorheological fluid with Lekner summation.** *K. Jang*[1], J. Seok[2], B. Min[1] and S. Lee[1] *1. Mechanical Enginnering, Yonsei University, Seoul, South Korea; 2. Mechanical Enginnering, Chung-Ang University, Seoul, South Korea*

**THURSDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session EP
## 4f-, 5f- AND STRONGLY CORRELATED SYSTEMS II (POSTER SESSION)

Julie Borchers, Chair

**EP-01. Hybridization effects and magnetism in UPdSn and UCuSn.** K. Kothapalli[1,2], F. Nasreen[1], S. El-Khatib[2], S. Vogel[3], A. Llobet[3], H. Reiche[3], I. Swainsson[5], E. Bruck[4], *J. Peterson*[1] and H. Nakotte[1] *1. Physics, New Mexico State University, Los Alamos, NM; 2. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 3. LANSCE-LC, Los Alamos National Laboratory, Los Alamos, NM; 4. Van der Waals-Zeeman Institute, University of Amsterdam, Amsterdam, Netherlands; 5. Chalk River Laboratories, AECL, Chalk River, ON, Canada*

**EP-02. Complex Conductivity of UTX Compounds in High Magnetic Fields.** *A.M. Alsmadi*[1], S. Adak[2], F. Nasreen[2], H. Nakotte[2], C.H. Mielke[3], R. McDonald[3], V. Zapf[3] and A. Lacerda[3] *1. Dept. Of Physics, The Hashemite University, Zarqa, Jordan; 2. Dept. Of Physics, New Mexico State University, Las Cruces, NM; 3. National High Magnetic Field Laboratory, Pulse Field Facility, Los Alamos National Laboratory, Los Alamos, NM*

**EP-03. Effect of hydrogen doping in UTX compounds.** *S. Maskova*[1], L. Havela[1], E. Santava[2] and K. Miliyanchuk[3] *1. Department of Condensed Matter Physics, Charles University, Prague, Czech Republic; 2. Institute of Physics, Academy of Sciences of the Czech Republic, Prague, Czech Republic; 3. Department of Inorganic Chemistry, Ivan Franko National University of Lviv, Lviv, Ukraine*

**EP-04. Magnetic phase transitions in CePtSn under ambient and hydrostatic pressures.** *J. Prokleska*[1], M. Misek[1], B. Detlefs[2], P. Javorsky[1] and V. Sechovsky[1] *1. Dept. of Condensed Matter Physics, Charles University,, Prague, Czech Republic; 2. ESRF, Grenoble, France*

**EP-05. Electronic structures and magnetic properties of RB4 (R= Gd, Tb, Dy, Yb, Pr).** *H. Choi*[1], A. Laref[1], J. Shim[2], S. Kwon[1] and B. Min[1] *1. Pohang University of Science and Technology, Pohang, Kyungbuk, South Korea; 2. Rutgers University, Piscataway, NJ*

**EP-06. Anisotropic magnetic phase transition and magnetoresistance of $HoB_4$ single crystal.** *J. Kim*[1], N. Sung[1] and B. Cho[1] *1. School of Photonics, Dept. of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Gwangju, South Korea*

**EP-07. Magnetic order of the rare earth sub-lattice in h-$YbMnO_3$** H.A. Salama[1], *D.H. Ryan*[2] and G.A. Stewart[1] *1. School of Physical, Environmental & Mathematical Sciences, University of New South Wales, Canberra, ACT, Australia; 2. Centre for the Physics of Materials and Physics Department, McGill University, Montreal, QC, Canada*

THURSDAY MORNING 8:00 AUSTIN BALLROOM

## Session EQ
## MAGNETIC SEMICONDUCTORS GROUP IV AND III-V (POSTER SESSION)
Aubrey Hanbicki, Chair

**EQ-01. Spectra broadening in Point-Contact Andreev Reflection Measurement on (Ga,Mn)As.** *Y. Chiu*[1], T. Chiang[1,2], S. Huang[1,3], H. Jaffrès[4,5], A. Lemaitre[6], J. George[4,5] and S. Lee[1] *1. Institute of Physics, Academia Sinica, Nankang, Taipei, Taiwan; 2. Department of Physics, National Taiwan University, Taipei, Taiwan; 3. Department of Physics, National Chiao Tung University, Hsinchu, Taiwan; 4. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 5. Université Paris-Sud 11, Orsay, France; 6. Laboratoire de Photonique et de Nanostructure, CNRS, Marcoussis, France*

**EQ-02. Magneto-transport properties of (Ga,Mn)As based trilayer structures with different thicknesses of (In,Ga)As spacer layer.** *H. Lee*[1], S. Chung[1], S. Lee[1], X. Liu[2] and J.K. Furdyna[2] *1. Physics, Korea University, Seoul, South Korea; 2. Physics, University of Notre Dame, Notre Dame, IN*

**EQ-03. Transport properties of (Ga,Mn)As under local magnetic field induced by Co nanodot.** J. Suh[1], *J. Chang*[1], S. Han[1], E. Kim[2], M.V. Sapozhnikov[3] and A.A. Fraerman[3] *1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, South Korea; 2. Quantum-Function Spinics Lab. And Dept. of Physics, Hanyang University, Seoul, South Korea; 3. Institute for physics of microstructures, Russian academy of sciences, Nizhny Novgorod, Russian Federation*

**EQ-04. Quantitative analysis of angle dependence of planar Hall effect observed in ferromagnetic GaMnAs film.** *J. Kim*[1], T. Yoo[1], S. Chung[1], S. Lee[1], X. Liu[2] and J.K. Furdyna[2] *1. Physics, Korea University, Seoul, South Korea; 2. Physics, University of Notre Dame, Notre Dame, IN*



**EQ-05. Ac susceptibility of (Ga,Mn)As probed by the anomalous Hall effect.** *Y. Nishitani*[1], D. Chiba[2,1], F. Matsukura[1,2] and H. Ohno[1,2] *1. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan; 2. Semiconductor Spintronics Project, Exploratory Reserch for Advanced Technology, Japan Science and Technology Agency, Tokyo, Chiyoda-ku, Japan*

**EQ-06. Mapping a magnetization switching field in $Ga_{0.98}Mn_{0.02}As$ wires with a scanning laser magneto-optical microscope.** *J. Aoyama*[1], Y. Hashimoto[1], S. Kobayashi[1] and H. Munekata[1] *1. Imaging Science and Engineering Lab., Tokyo Institute of Technology, Yokohama, Japan*

**EQ-07. High-temperature ferromagnetism in highly Mn doped $[(In_yGa_{1-y})_{1-x}Mn_x]As$ ($x$=0.20-0.40) with inhomogeneous Mn distribution.** *M. Yokoyama*[1], S. Ohya[1] and M. Tanaka[1] *1. Deptartment of Electrical Engineering and Information Systems, The University of Tokyo, Tokyo, Japan*

**EQ-08. FMR investigations on $Ga_{0.955}Mn_{0.045}As$.** *M. Chipara*[1], S. Balascuta[2], X. Liu[3], R. Skomski[4], J.M. Furdyna[3] and D.J. Sellmyer[4] *1. Physics and Geology, The University of Texas Pan American, Edinburg, TX; 2. Physics, Arizona State University, Tempe, AZ; 3. Physics, University of Notre Dame, Notre Dame, IN; 4. Physics and Astronomy, University of Nebraska, Lincoln, NE*

**EQ-09. Ferromagnetism in Un-doped GaN Nanowires.** *H. Xing*[1], S. Delikanli[1] and H. Zeng[1] *1. Department of Physics, University at Buffalo, SUNY, Buffalo, NY*

**EQ-10. Synthesis of Co-doped AlN nanorods by arc discharge.** *Y. Songlin*[1], G. Runsheng[1] and Y. Ronghai[1] *1. Department of Materials Science and Engineering, Tsinghua University, Beijing, China*

**EQ-11. Weak Ferromagnetism in Mn-doped GaN thin films grown by RF magneto-sputtering.** W.A. Iwamoto[1], *P.G. Pagliuso*[1], C. Rettori[1], H. da Silva[2], A. Pereira[2] and S. Oseroff[3] *1. DEQ, IFGW - Unicamp, Campinas, São Paulo, Brazil; 2. Departamento de Fisica, Unesp, Bauru, São Paulo, Brazil; 3. San Diego State University, San Diego, CA*

**EQ-12. Electronic and magnetic properties of GeMn nanocolumns probed by x-ray spectroscopy and magnetic circular dichroism.** *S. Cherifi*[1], S. Tardif[1,2], J. Cibert[1], M. Jamet[2], T. Devillers[2], A. Barski[2], V. Favre-Nicolin[2], P. Bayle-Guillemaud[2], N. Darowski[3] and D. Schmitz[3] *1. Nanoscience, Institut Neel, CNRS-UJF, Grenoble, France; 2. DSM / INAC / SP2M, CEA, Grenoble, France; 3. BESSY, Hahn-Meitner-Institut, Berlin, Germany*

**EQ-13. First-principles investigation of pressure effects on $Ge_{1-x}Mn_x$** X. Wang[1], M. Ni[1], *Z. Zeng*[1] and H. Lin[2] *1. Key Laboratory of Material Physics, Institute of Solid State Physics, Chinses Academy of Sciences, Hefei, China; 2. Department of Physics and Institute of Theoretical Physics, The Chinese University of Hong Kong, Shatin, Shatin, Hong Kong, China*

**EQ-14. Investigation of hydrogen impurities on Mn doped Si semiconductors.** X. Wang[1], M. Ni[1], Z. Zeng[1] and *H. Lin*[2]*1. Key Laboratory of Material Physics, Institute of Solid State Physics, Chinses Academy of Sciences, Hefei, China; 2. Department of Physics and Institute of Theoretical Physics, The Chinese University of Hong Kong, Shatin, Hong Kong, China*

**EQ-15. Magnetic Properties of M-doped (M = Mn, Cr, or V) $ZnSiN_2$** *J. Rufinus*[1]*1. Science Division, Widener University, Chester, PA*

**EQ-16. The singlet model calculations for the layered III-VI Diluted Magnetic Semiconductor In1 xMnxSe (x = 0.01 and 0.10)*.** *T. Pekarek*[1], D. Meda[1], J. Brewer[1], J. Blackburn[1], J. Garner[1], I. Miotkowski[2] and A. Ramdas[2]*1. Chemistry & Physics, Univ. of N. FL, Jacksonville, FL; 2. Physics, Purdue, W. Lafayette, IN*

**THURSDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session ER
## SUPERCONDUCTIVITY II (POSTER SESSION)
Tingyong Chen, Chair

**ER-01. Magnetic field dependent critical current density of Bi-Sr-Ca-Cu-O superconductor in bulk and tape form with addition of Fe3O4 magnetic nanoparticles.** *R. Abd-Shukor*[1] and W. Kong[1]*1. School of Applied Physics, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia*

**ER-02. Electrically driven spin-polarization in Pr0.7Ca0.3MnO3/YBa2Cu3O7 heterostructure.** *J. Lin*[1], D. Hsu[1], C. Chiang[2] and W. Chan[2]*1. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 2. Department of Physics, Tamkang University, Taipei, Taiwan*

**ER-03. Superconductivity of various borides: The Role of stretched c-parameter.** *M. Mudgel*[1,2], V. Awana[1], G.L. Bhalla[2] and H. Kishan[1]*1. Superconductivity and Cryogenics, National Physical Laboratory, New Delhi, India; 2. Department of Physics and Astrophysics, Delhi University, Delhi, India*

**ER-04. Perpendicular applied magnetic field dependence of Josephson current and measurement of trapped magnetic flux in Nb superconducting thin film by vibrating sample magnetometer.** *N. Watanabe*[1], A. Nakayama[1], S. Abe[1], M. Suda[1], Y. Nishi[1], K. Masuda[1] and C. Sugaya[1]*1. Kanagawa University, Yokohama, Japan*

**ER-05. Analysis of the proximity effect and the interface transparency with perpendicular current in Nb/Ni system.** *S. Huang*[1,2], Y. Chiu[1], J. Liang[3], L. Lin[1], T. Tsai[1], S. Hsu[2] and S. Lee[1]*1. Physics, Academia Sinica, Taipei, Taiwan; 2. Institute of Electrophysics, National Chiao-Tung University, Hsinchu, Taiwan; 3. Department of Physics, Fu Jen Catholic University, Taipei, Taiwan*



**ER-06. Unconventional Kondo-like effect induced by coexistence of superconductivity and magnetism.** *Y. Gao*[1]*1. ShangCheng Technology Co. Ltd., ShangHai, China*

**ER-07. Coexistence of ferromagnetic and cluster glass state in superconducting ferromagnet: $RuSr_2Eu_{1.5}Ce_{0.5}Cu_2O_{10}$** *R. Nigam*[1], A.V. Pan[1] and S.X. Dou[1]*1. Institute for Superconducting and Electronic Materials, University of Wollongong, Northfields Avenue, Wollongong, NSW, Australia*

**ER-08. High-Tc superconductivity related to deep inner orbital coupling in Fe-As based compounds.** N. Chen[1], Y. Liu[1] and *Y. Li*[2]*1. School of Material Science and Engineering, University of Science and Technology Beijing, Beijing, China; 2. University of Puerto Rico at Mayaguez, Mayaguez, PR*

**ER-09. Vortex lattice pinning effects in amorphous Mo3Si superconducting films with ordered arrays of magnetic dots.** D. Pérez de Lara[1], *A. Alija*[2], A. Pérez-Junquera[2], J.M. Colino[3], J.I. Martín[2], E. Navarro[1], M. Vélez[2], J.V. Anguita[4] and J.L. Vicent[1]*1. Física de Materiales, Universidad Complutense, Madrid, Spain; 2. Física, Universidad de Oviedo, Oviedo, Asturias, Spain; 3. Física, Universidad de Castilla - La Mancha, Ciudad Real, Spain; 4. Instituto de Microelectrónica de Madrid - CSIC, Tres Cantos, Madrid, Spain*

**ER-10. Structural, Magnetic and Transport Properties for single crystal of (Sr0.9Ca0.1)3Ru2O7.** B. Qian[1,3], Z. Qu[1], J. Peng[1], *X. Wu*[2] and Z. Mao[1]*1. physics, the university of Tulane, New Orleans, LA; 2. Lab of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 3. Physics, Changshu Institute of Technology, Changshu, China*

**ER-11. Strong Increase of Critical Field and Current in Magnet-Superconductor Hybrids.** *A.E. Ozmetin*[1], D. Rathnayaka[1], D.G. Naugle[1] and I. Lyuksyutov[1]*1. Department of Physics, Texas A&M University, College Station, TX*

**ER-12. Magnetic field-dependent resistance measurements in the superconducting ferromagnets (Ru1-xNbx)Sr2Eu1.4Ce0.6Cu2O10.** *M.E. Botello-Zubiate*[1], O.E. Ayala-Valenzuela[1,2], M. Jaime[2] and J.A. Matutes-Aquino[1]*1. Física de materiales, Centro de Investigación en Materiales Avanzados, S.C, Chihuahua, Chihuahua, Mexico; 2. NHMFL, Los Alamos National Laboratory, Los Alamos, NM*

**ER-13. Superconductivity in a two-dimensional system in a Strong correlated limit.** E.S. Caixeiro[1] and *A. Troper*[1,2]*1. Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, Rio de Janeiro, Brazil; 2. Departamento de Eletronica Quantica, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil*

THURSDAY MORNING 8:00

AUSTIN BALLROOM

## Session ES
# MAGNETO-OPTIC AND NEW MAGNETIC MATERIALS (POSTER SESSION)

Tom Thomson, Co-Chair
Michael Gibbs, Co-Chair

**ES-01. Magneto-optical properties of magnetic Ni grating.** *J. Kim*[1], Y. Lu[1], M. Cho[1], N. Deshpande[1], Y. Lee[1], J. Rhee[2], J. Lee[3] and K. Ho[3] *1. Quantum Photonic Science Research Center and BK21 Program Division of Advanced Research and Education in Physics, Hanyang University, Seoul, South Korea; 2. Department of Physics, Sungkyunkwan University, Suwon, South Korea; 3. Ames Laboratory-U.S. DOE, Iowa State University, Ames, IA*

**ES-02. Magnetically Induced Optical Chirality in Zn-Mn Selenide.** *M.F. Saenger*[1,2], M. Hetterich[3], X. Liu[4], J.K. Furdyna[4], T. Hofmann[1,2], R. Skomski[1,5], D.J. Sellmyer[1,5] and M. Schubert[1,2] *1. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Department of Electrical Engineering, University of Nebraska, Lincoln, NE; 3. Institut für Angewandte Physik and Center for Functional Nanostructures (CFN), Universität Karlsruhe (TH), Karlsruhe, Germany; 4. Department of Physics, University of Notre Dame, Notre Dame, IN; 5. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE*

**ES-03. Magneto-Optical studies of Cd1-x-yMnxCoyTe.** *S. Shen*[1], Y. Um[2], X. Liu[1], Y. Cho[1], J.K. Furdyna[1] and M. Dobrowolska[1] *1. Department of Physics, Univ. of Notre Dame, Notre Dame, IN; 2. Department of Physics, Ulsan University, Ulsan, South Korea*

**ES-04. Enhanced Magneto-Optic Characteristics of Au-Ferromagnetic Nanocomposite Systems Prepared by Aerosol Deposition Method.** *J. Park*[1] and J. Akedo[1] *1. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

**ES-05. Magneto-optical enhancement in gold-magnetite composite films.** K.L. Stokes[1,2] and *F.E. Moolekamp, III*[1,2] *1. Dept. of Physics, University of New Orleans, New Orleans, LA; 2. Advanved Materials Research Institute, University of New Orleans, New Orleans, LA*

**ES-06. Magnetic and magneto-optical properties of epitaxial SrTi0.6Fe0.4O3 films grown on Si substrates using Bi4Ti3O12/CeO2/YSZ and BaTiO3/MgO buffer layers.** *H. Kim*[1], L. Bi[1], H. Paik[2], G.F. Dionne[1,3] and C.A. Ross[1] *1. Material Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. Materials Science and Engineering, Korea Advanced Institute of Science and Technology, DaeJeon, South Korea; 3. Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA*

**ES-07. Thiol-capped ferromagnetic Au nanoparticles investigated by Au L3 x-ray absorption spectroscopy.** *J.S. Garitaonandia*[1], E. Goikolea[1], M. Insausti[1], M. Suzuki[2], N. Kawamura[2], H. Ohsawa[2], I. Gil del Muro[1], K. Suzuki[3], J.D. Cashion[4], C. Gorria[1], F. Plazaola[1] and T. Rojo[1] *1. Zientzia eta Teknologia Fakultatea, University of the Basque Country (UPV/EHU), Bilbao, Spain; 2. Japan Synchrotron Radiation Research Institute (JASRI/SPring-8), Sayou, Japan; 3. Department of Materials Engineering, Monash University, Melbourne, VIC, Australia; 4. School of Physics, Monash University, Melbourne, VIC, Australia*

**ES-08. Confirmation of magnetism in dodecanethiol-capped Au films via magnetotransport.** *B. Knaus*[1], S. Garzon[1] and T.M. Crawford[1] *1. Physics and Astronomy, University of South Carolina, Columbia, SC*

**ES-09. Magnetism of Cr-Doped Diamond.** *J.A. Colon-Santana*[1], R. Skomski[1], V. Singh[2,3], V. Palshin[3], E.I. Meletis[2], Y.B. Losovyj[3], A. Sokolov[1], P.A. Dowben[1] and I. Ketsman[1] *1. Nebraska Center for Materials and Nanoscience and Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Mechanical Engineering Department, Materials Science and Engineering Program, Louisiana State University, Baton Rouge, LA; 3. Center for Advanced Microstructures and Devices, Louisiana State University, Baton Rouge, LA*

**ES-10. Magnetic property of the nano-sized iron silenite $Bi_{25}FeO_{40}$ (BiFeO) synthesized by hydrothermal method.** *Y. Du*[1], X. Wang[1], Z. Cheng[1], M. Shahbazi[1] and S. Dou[1] *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia*

**ES-11. Enhanced Magnetization of $CuCr_2O_4$ Thin Films by Substrate-Induced Strain.** *J.M. Iwata*[1], R.V. Chopdekar[2,1], F.J. Wong[1], B.B. Nelson-Cheeseman[1], E. Arenholz[3], M.F. Toney[4] and Y. Suzuki[1] *1. Materials Science & Engineering, UC Berkeley, Berkeley, CA; 2. School of Applied Physics, Cornell University, Ithaca, NY; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Stanford Synchrotron Radiation Laboratory, Stanford Linear Accelerator Center, Menlo Park, CA*

**ES-12. Anomalous Magnetic Ground State in $NiMn_2O_4$ Thin Films.** *B.B. Nelson-Cheeseman*[1], R.V. Chopdekar[2,1], M.F. Toney[3], E. Arenholz[4] and Y. Suzuki[1] *1. Materials Science and Engineering, University of California, Berkeley, Berkeley, CA; 2. School of Applied and Engineering Physics, Cornell University, Ithaca, NY; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Stanford Synchrotron Radiation Laboratory, Stanford Linear Accelerator Center, Menlo Park, CA*

**ES-13. Magnetic, Transport and Magnetocaloric Properties of double perovskite oxide, $LaCaMnCoO_6$** *R.N. Mahato*[1], K. Sethupathi[1], V. Sankaranarayanan[1], R. Nirmala[1] and A.K. Nigam[2] *1. Department of Physics, Indian Institute of Technology Madras, Chennai, India; 2. Department of Condensed Matter Physics and Materials Science, Tata Institute of Fundamental Research, Mumbai, India*

**ES-14. First-order magnetic phase transition in FeRh-Pt thin films.** *W. Lu*[1], N.T. Nguyen[1] and T. Suzuki[1] *1. Information Storage Materials Laboratory, Toyota Technological Institute, Nagoya, Japan*

**ES-15. Electrical transport and Magnetism in Mo-substituted $R_2Ti_3Ge_4$ (R = Tb, Er) compounds.** R. Nirmala[1], K. Nagamanasa[2] and *A.K. Nigam*[3] *1. Department of Physics, Indian Institute of Technology Madras, Chennai, India; 2. School Of Physical Sciences, Jawaharlal Nehru University, New Delhi, India; 3. Department of Condensed Matter Physics and Materials Science, Tata Institute of Fundamental Research, Mumbai, India*

**ES-16. Local magnetic properties of Gd12Co5Bi and Y12Co5Bi studied by Muon Spin Resonance.** *M. Egilmez*[1], K.H. Chow[1], A.W. MacFarlane[2], I. Fan[1], D.S. Martin[2], A.I. Mansour[1], J.A. Jung[1], B. Hitti[4], D. Arseneau[4], A.V. Tkachuk[3] and A. Mar[3] *1. Physics, University of Alberta, Edmonton, AB, Canada; 2. Chemistry, University of British Columbia, Vancouver, BC, Canada; 3. Chemistry, University of Alberta, Edmonton, AB, Canada; 4. TRIUMF, Vancouver, BC, Canada*

**ES-17. Anisotropy Relaxation of Non-Magnetic Indium Ion Doped Nickel Chromite.** *S. Park*[1], H. Choi[1] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, South Korea*

**ES-18. Ferrimagnetism in strained Fe2As thin films on Si (001).** *Y. Hwang*[1], J. Choi[1], W. Feng[1], J. Kim[1], S. Cho[1] and J. Ketterson[2] *1. Physics, University of Ulsan, Ulsan, South Korea; 2. Physics, Northwestern University, Evanston, IL*

**ES-19. Preparation and magnetic properties of pure Fe16N2 powder.** *S.G. Sankar*[1], B.J. Zande[1], S. Simizu[1] and R.T. Obermyer[1] *1. Advanced Materials Corporation, Pittsburgh, PA*

THURSDAY MORNING 8:00 — AUSTIN BALLROOM

## Session ET
## PERPENDICULAR MEDIA II (POSTER SESSION)
Hua Yuan, Chair

**ET-01. CoCr Based Intermediate Layers for Ru in Perpendicular Magnetic Recording.** *W. Joost*[1], A. Das[1], M. Racine[1] and T. Alford[2] *1. Heraeus TMD, Chandler, AZ; 2. Arizona State University, Tempe, AZ*

**ET-02. Small and highly oriented Ru grains in intermediate layer realized by suppression of relaxation of low-angle grain boundaries for perpendicular recording media.** *N. Itagaki*[1], S. Saito[1] and M. Takahashi[2,1] *1. Electronic Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagki, Japan; 2. New Industry Creation Hatchery Center, Tohoku University, Sendai, Miyagi, Japan*



**ET-03. Uniaxial magnetocrystalline anisotropy for *c*-plane oriented $Co_{100-x}M_x$ (M: Cr, Mo, W) film with stacking faults.** *S. Hinata*[1], R. Yanagisawa[1], S. Saito[1] and M. Takahashi[2] *1. Electronic Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. New Industry Creation Hatchery Center, Tohoku University, Sendai, Miyagi, Japan*

**ET-04. Microstructural difference in CoPt-$TiO_2$/CoCrPt-$SiO_2$ stacked media with stacking order difference and their coercivity.** *S. Park*[1], S. Kim[1] and T. Lee[1] *1. Dept. of Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, South Korea*

**ET-05. Grain size effect on magnetic properties of CoPt with additive SiO2.** *Y. Yang*[1], J. Chen[1] and G. Chow[1] *1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

**ET-06. The study of substrate bias on the magnetic properties and mechanical property of CoCrPt-oxide perpendicular recording media.** *C. Wang*[1] *1. Seagate Technology, Fremont, CA*

**ET-07. Effect of magnetic softness in a soft layer on media properties in hard/soft stacked composite perpendicular media.** *H. Jung*[1], S.S. Malhotra[1], B.R. Acharya[1], G. Bertero[1] and D. Suess[2] *1. Western Digital Media Inc., San Jose, CA; 2. Vienna University of Technology, Vienna, Austria*

**ET-08. Interlayer coupling and switching field of exchange coupled composite media.** *K.K. Pandey*[1], J. Chen[1], J. Hu[2], B. Lim[2] and G. Chow[1] *1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

**ET-09. Effect of PMR Media Nucleation Field on Thermal Stability.** *Z. Shi*[1], K. Tang[1], J. He[1], J. Zhang[1] and S. Duan[1] *1. Hitachi GST, San Jose, CA*

**ET-10. Influence on the recording performance due to the control of oscillatory interlayer interaction in perpendicular recording media.** *K. Shintaku*[1] *1. Akita Research Institute of Advanced Technology, Akita Prefectural R&D Center, Akita, Japan*

THURSDAY MORNING 8:00 — AUSTIN BALLROOM

## Session EU
## DYNAMICS AND DAMPING (POSTER SESSION)
Takahiro Moriyama, Chair

**EU-01. Modeling of soliton dynamics for spin torque nano-oscillators with a perpendicular free layer.** *T. Silva*[1], M. Hoefer[1], M. Schneider[2], W. Rippard[1] and J. Shaw[1] *1. Magnetics Group, NIST, Boulder, CO; 2. Physics and Astronomy Dept., University of Montana, Missoula, MT*

**EU-02. Field dependence of rectification of radio frequency current in a single layered ferromagnetic wire.** *A. Yamaguchi*[1,2], H. Miyajima[1] and Y. Nakatani[3] *1. Keio University, Yokohama, Japan; 2. PRESTO, JST, Honcho Kawaguchi, Japan; 3. University of Electro-communications, Chofugaoka 1-5-1, Chofu, Tokyo, Japan*

**EU-03. Mesofrequency magnetisation reversal dynamics probed by dynamic magneto-optical and dynamic magnetoresistance measurements.** *N. Steinke*[1], J. LLandro[1], B. Hong[1], T.A. Moore[2] and C.H. Barnes[1] *1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 2. SPINTEC, Grenoble, France*

**EU-04. Excitation of magnetization dynamics in patterned thin films using surface acoustic waves.** *A. Baruth*[1] and S. Adenwalla[1] *1. Physics, University of Nebraska - Lincoln, Lincoln, NE*

**EU-05. Frequency modulation effect on microwave assisted magnetization switching.** *S. Okamoto*[1], N. Kikuchi[1] and O. Kitakami[1] *1. IMRAM, Tohoku University, Sendai, Japan*

**EU-06. Multiple NMR spin echoes in magnets: the echo structure and potential applications.** A.M. Akhalkatsi[2], T.A. Gavasheli[2], T.O. Gegechkori[1], *G.I. Mamniashvili*[1], Z.G. Shermadini[1] and W.G. Clark[3] *1. Department of Condensed Matter Physics, Andronikashvili Institute of Physics, Tbilisi, Georgia; 2. Department of Exact Sciences, Tbilisi State University, Tbilisi, Georgia; 3. Department of Physics and Astronomy, UCLA, Los Angeles, CA*

**EU-07. Energy band and band gap engineering of dipole-exchange spin wave modes in nanostripe magnonic crystals by nanostripe-width modulation.** *K. Lee*[1], D. Han[1] and S. Kim[1] *1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, South Korea*

**EU-08. An Experimental Apparatus for X-Ray Spectroscopy of Magnetization Dynamics.** *D. Arena*[1], Y. Ding[1], E. Vescovo[1], S. Zohar[2] and W.E. Bailey[2] *1. National Synchrotron Light Source, Brookhaven National Lab, Upton, NY; 2. Materials Science and Engineering, Dept. of Applied Physics, Columbia University, New York, NY*

**EU-09. Layer resolved magnetization dynamics in coupled magnetic films using time resolved x-ray magnetic circular dichroism with continuous wave excitation.** T. Martin[1], *G. Woltersdorf*[1], C. Stamm[2], H.A. Dürr[2], R. Mattheis[3], C.H. Back[1] and G. Bayreuther[1] *1. Institut für Experimentelle und Angewandte Physik, Universität Regensburg, Regensburg, Germany; 2. Berliner Elektronenspeicherring-Gesellschaft für Synchrotronstrahlung mbH, Berlin, Germany; 3. Institut für Photonische Technologien e. V., Jena, Germany*

**EU-10. Microscopic description of Gilbert damping coefficient based on the s-d model.** *A. Sakuma*[1], N. Yamada[1] and H. Tsuchiura[1] *1. Applied Physics, Tohoku University, Sendai, Japan*



**EU-11. Low damping constant for $Co_2FeAl$ Heusler alloy films and its correlation with density of states.** *S. Mizukami*[1], D. Watanabe[1], M. Oogane[2], Y. Ando[2], Y. Miura[3], M. Shirai[3] and T. Miyazaki[1] *1. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Graduate school of Engineering, Tohoku University, Sendai, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

**EU-12. Effect of temperature on the ferromagnetic resonance linewidth (ΔH) of epitaxial Fe thin films.** B.K. Kuanr[1], *V. Veerakumar*[1], R.E. Camley[1] and Z. Celinski[1] *1. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO*

**THURSDAY MORNING 8:00** **AUSTIN BALLROOM**

## Session EV
## MULTILAYERS AND SUPERLATTICES (POSTER SESSION)
Brian Kirby, Chair

**EV-01. Perpendicular interlayer coupling and magnetic domain structure in $[Co/Pd]_n/Co/Ru/[Co/Pd]_m$ multilayers.** Y. Fu[1], *S. Ishio*[1], T. Wang[1], T. Hasegawa[1] and H. Saito[1] *1. Akita University, Akita, Japan*

**EV-02. The intermixing induced perpendicular magnetic anisotropy in ultrathin Co/Pt multilayers.** C. Su[2], S. Lo[3], J. van Lierop[4], K. Lin[2] and *H. Ouyang*[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. National Chung Hsing University, Taichung, Taiwan; 3. Industrial Technology Research Institute, Hsinchu, Taiwan; 4. University of Manitoba, Winnipeg, MB, Canada*

**EV-03. Antiparallel orange-peel coupling in Co/Ni spin-valves with perpendicular anisotropy.** *A.M. Deac*[1,3], J.M. Shaw[1], W.H. Rippard[1], T.J. Silva[1] and D.H. Smith[2] *1. Electromagnetics Division, National Institute of Standards and Technology (NIST), Boulder, CO; 2. Department of Physics, Arizona State University, Tempe, AZ; 3. Institut fuer Festkoerperforschung, Forschungszentrum Juelich GmbH, Juelich, Germany*

**EV-04. Magnetic phase separation and domain wall transition in coupled $[Co/Pd]_n$ multilayers with perpendicular magnetic anisotropy.** *L.Y. Zhu*[1], D. Clarke[1] and C.L. Chien[1] *1. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD*

**EV-05. Dynamic behavior of a superferromagnetic metal-insulator multilayer observed by magneto-optic Kerr microscopy.** *S. Bedanta*[1], J. Rhensius[1,2], W. Kleemann[1], S. Cardoso[3] and P.P. Freitas[3] *1. Angewandte Physik, Universität Duisburg-Essen, Duisburg, Germany; 2. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 3. INESC, Lisbon, Portugal*

**EV-06. Magnetocaloric properties of Co/Cr superlattices.** *T. Mukherjee*[1], S. Sahoo[1], R. Skomski[1], D.J. Sellmyer[1] and C. Binek[1] *1. Physics & Astronomy, University of Nebraska, Lincoln, Lincoln, NE*

**EV-07. Interlayer exchange coupling in $Co_2FeAl_{0.5}Si_{0.5}$/Cr/$Co_2FeAl_{0.5}Si_{0.5}$ trilayers.** *T. Furubayashi*[1], K. Kodama[2], H.S. Goripati[2], Y.K. Takahashi[1], K. Inomata[1] and K. Hono[1,2] *1. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Japan; 2. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan*

**EV-08. Evaluation of distribution of exchange coupling in CoFe/Ru/CoFe synthetic antiferromagnetic structure after annealing.** *T. Takenaga*[1], H. Takada[1], S. Tomohisa[1], T. Furukawa[1], T. Kuroiwa[1] and K. Yoshiara[1] *1. Advanced Technology R&D Center, Mitsubishi Electric Corp., Amagasaki, Hyogo, Japan*

**EV-09. The alignment of magnetic moments in Gd/NiFe sputtered multilayer films.** *H. Miyagawa*[1,2], F.J. Castaño[1], B.G. Ng[1], C. Nam[1] and C.A. Ross[1] *1. Faculty of Engineering, Kagawa University, Takamatsu, Kagawa, Japan; 2. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

**EV-10. Temperature-dependent interlayer exchange coupling in epitaxial (001) NiO/$Fe_3O_4$/MgO/ $Fe_3O_4$ exchange biased nano-structures.** *H. Wu*[1], O.N. Mryasov[2] and I.V. Shvets[1] *1. CRANN, School of Physics, Trinity College Dublin, Dublin, Ireland; 2. Seagate Technology, Pittsburgh, PA*

THURSDAY MORNING 8:00 AUSTIN BALLROOM

## Session EW
## SEMICONDUCTOR SPIN INJECTION AND TRANSPORT (POSTER SESSION)

Ron Jansen, Chair

**EW-01. Conductance modulation in anisotropic Rashba ring interferometer.** *M.B. Jalil*[1] and S. Tan[2] *1. Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

**EW-02. Magnetically tunable spin filtering in semiconductor nanowires with symmetrically distributed Rashba spin-orbit coupling.** R. Zhang[1], X. Wu[1], *R. Peng*[1], D. Li[1], F. Gao[1], J. Li[1] and M. Wang[1] *1. National Laboratory of Solid State Microstructures, Nanjing, China*

**EW-03. Gate-Controlled Spin-Orbit Interaction in a Double-sided doped InAs Quantum well structure.** K. Kim[1,2], *H. Kim*[1], H. Koo[1], J. Chang[1], S. Han[1] and Y. Kim[2] *1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, 136-791, South Korea; 2. Department of Advanced Material Science and Engineering, Korea University, Seoul, 136-713, South Korea*



**EW-04. Utilizing the Dresselhaus spin-orbit effect to quantify the traversal time of electrons across a tunneling barrier.** M.B. Jalil[1], *M. Jalil*[1] and S. Tan[2] *1. Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institution, Singapore, Singapore*

**EW-05. Generation and electrical detection of spin-polarized currents in cascaded InAs spin-filters.** *J. Jacob*[1], G. Meier[1], S. Peters[1], T. Matsuyama[1] and U. Merkt[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany*

**EW-06. Extraction of the pure spin-polarised current in FM/I/GaAs structure by optical excitation.** *K. Lee*[1], T. Trypiniotis[1], H. Kurebayashi[1], S.N. Holmes[1,2], W.S. Cho[1], J.A. Bland[1], C.H. Barnes[1] and K.H. Shin[3] *1. Cavendish Laboratory, Univ. of Cambridge, Cambridge, United Kingdom; 2. Toshiba Research Europe Limited, Cambridge, United Kingdom; 3. Nano Device Research Centre, Korea Institute of Science and Technology, Seoul, South Korea*

**EW-07. Tunneling magnetoresistance in Ga1-xMnxAs/Al-O/CoFeB hybrid structures.** *G. Du*[1], M.R. Babu[1,3], X. Han[1], J. Deng[2], W. Wang[2] and J. Zhao[2] *1. State Key Laboratory of Magnetism, Institute of Physics, CAS, Beijing, China; 2. State Key Laboratory for Superlattices and Microstructures, Institute of Semiconductors, CAS, Beijing, China; 3. Crystal growth center, Anna University, Chennai, India*

**EW-08. Hot electron transport in fully epitaxial magnetic tunnel transistor with a MgO barrier.** *T. Nagahama*[1], H. Saito[1,2] and S. Yuasa[1] *1. Nano-electronics research institute, AIST, Tsukuba, Ibaraki, Japan; 2. PRESTO, JST, Chiyoda-ku, Tokyo, Japan*

**EW-09. Spin injection through MgO tunnel barrier in an InAs quantum well semiconductor.** *S.H. Shim*[1,2], J. Chang[1,3], Y. Park[1,3], Y. Lee[2], J. Moodera[3] and S. Han[1] *1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, South Korea; 2. National Research Laboratory for Nano Device Physics, Dept. of Physics, Korea University, Seoul, South Korea; 3. Francis Bitter Magnet Laboratory, Massachusetts Institute of Technology, Cambridge, MA*

**EW-10. Effect of polymer processing on spin MR in organic structures.** D. Dhandapani[1], A. Rao[1], N.A. Morley[1], A. Das[2], M. Grell[2] and *M.R. Gibbs*[1] *1. Department of Engineering Materials, University of sheffield, Sheffield, United Kingdom; 2. Department of Physics and Astronomy, University of Sheffield, Sheffield, United Kingdom*

**EW-11. Spin dependent transport properties of MnSi Nanowires.** *S. Kang*[1], J. Battogtoh[1], G. Brewer[2], D. Mckweon[1], I.L. Pegg[1] and J. Philip[1] *1. Vitreous State Laboratory, The Catholic University of America, Washington, DC; 2. Chemistry, The Catholic University of America, Washington, DC*

**EW-12. Superconducting tunneling through a ferromagnetic tunnel barrier: EuS.** *M. Costache*[1], M. Muller[1] and J. Moodera[1] *1. MIT, Cambridge, MA*

**EW-13. Unusual electronic properties of spin capacitor embedded by laser induced Co nanocrystals.** *J. Lee*[1], K. Kim[1], J. Yang[2] and J. Hong[1] *1. Department of Physics, Hanyang University, Seoul, South Korea; 2. Photovolatic technology team, Power & Industrial Systems R&D Center of Hyosung, Gyeonggi-do, South Korea*

THURSDAY AFTERNOON 2:00 SALON C

## Session FA
## SYMPOSIUM ON RECENT DEVELOPMENTS IN SPIN TRANSFER TORQUE

Ilya Krivorotov, Chair

**2:00**

**FA-01. The Spin-Transfer-Torque Vector in MgO-Based Magnetic Tunnel Junctions and All-Metal Spin Valves.** ***(Invited)*** *D. Ralph*[1] *1. Physics Department, Cornell University, Ithaca, NY*

**2:36**

**FA-02. Spin-Transfer Induced Coherent Microwave Emission With Large Power From Nanoscale MgO Tunnel Junctions.** ***(Invited)*** *D. Houssameddine*[1], S.H. Florez[3], J.A. Katine[3], J. Michel[2], U. Ebels[1], D. Mauri[4], O. Ozatay[3], B. Delaet[2], B. Viala[2], L. Folks[3], B.D. Terris[3] and M. Cyrille[2] *1. SPINTEC, CEA, CNRS, UJF, INPG, Grenoble, France; 2. CEA-LETI –MINATEC, Grenoble, France; 3. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA; 4. Hitachi Global Storage Technologies, San Jose, CA*

**3:12**

**FA-03. Spin Transfer Driven Dynamics in Perpendicularly Magnetized CoNi Nanocontacts.** ***(Invited)*** *B. Rippard*[1] *1. NIST, Boulder, CO*

**3:48**

**FA-04. Measurement of phase-locking of a Spin-Transfer Nano-Oscillator to an external signal in the presence of noise : a milestone for the synchronization of a large assembly of STNOs.** ***(Invited)*** *J. Grollier*[1], B. Georges[1], M. Darques[1], V. Cros[1], C. Deranlot[1], B. Marcilhac[1], G. Faini[2] and A. Fert[1] *1. Unité Mixte de Physique CNRS/thales, Palaiseau, France; 2. Laboratoire de Photonique et Nanostructures LPN/CNRS, Marcoussis, France*

**4:24**

**FA-05. Analytic theory of phase-locking of spin torque oscillators and oscillator arrays.** ***(Invited)*** *V. Tyberkevych*[1] and A. Slavin[1] *1. Department of Physics, Oakland University, Rochester, MI*



THURSDAY AFTERNOON 2:00 SALON G

## Session FB
## MAGNETIC SENSORS II (NOT FOR MAGNETIC RECORDING)

Paulo Freitas, Chair

**2:00**

**FB-01. Magneto-Optically Enhanced Surface Plasmon Resonance.** ***(Invited)*** *R.A. Lukaszew*[1,3], C. Clavero[1], R. Wincheski[2], K. Yang[1] and J.R. Skuza[3] *1. Applied Science, College of William and Mary, Williamsburg, VA; 2. NDE, NASA-Langley, Hampton, VA; 3. Physics, College of William and Mary, Williamsburg, VA*

**2:36**

**FB-02. Quadrilayers with Ultrathin Fe for Magneto-Optic Sensing of Microwave Currents.** I. Harward[1], E. Liskova[2], R. Lopusnik[3], *S. Visnovsky*[2] and Z.J. Celinski[1] *1. Center for Magnetism and Magnetic Nanostructures, University of Colorado at Colorado Springs, Corado Springs, CO; 2. Matematics & Physics, Charles University, Prague, Czech Republic; 3. Seagate Technology, Bloomington, MN*

**2:48**

**FB-03. Validation of the MEMS Flux Concentrator Concept for Minimizing the Effect of 1/*f* Noise.** *A. Edelstein*[1], J.E. Burnette[1], G. Fischer[1], K. Olver[1], W. Egelhoff, Jr.[2], E. Nowak[3] and S. Cheng[4] *1. US Army Research Laboratory, Adelphi, MD; 2. National Institute of Standards and Technology, Gaithersburg, MD; 3. Department of Physics and Astronomy, University of Delaware, Newark, DE; 4. Naval Research Laboratory, Washington, DC*

**3:00**

**FB-04. Reaching low frequency pico-Tesla field detection using a spin valve/MEMS hybrid device.** *A.A. Guedes*[1,2], S.B. Patil[1], V. Chu[1], J.P. Conde[1,2] and P.P. Freitas[1,2] *1. Magnetism, INESC-MN, Lisboa, Portugal; 2. Physics, Instituto Superior Tecnico, Lisboa, Portugal*

**3:12**

**FB-05. Field Detection in MgO MTJs with Superparamagnetic Free Layer and Magnetic Flux Concentrators.** *J.M. Almeida*[1,2] and P.P. Freitas[1,2] *1. INESC-MN, Lisbon, Portugal; 2. Physics, IST, Lisbon, Portugal*

**3:24**

**FB-06. Hysteresis loop collapse for linear response in magnetic-tunnel-junction sensors.** *W.F. Egelhoff*[1], P. Pong[1], A.J. Shaprio[1], R.D. McMichael[1] and B. Schrag[2] *1. NIST, Gaithersburg, MD; 2. MicroMagnetics, Falls River, RI*

**3:36**

**FB-07. Exploiting Nonlinearity in a Coupled Core Fluxgate Magnetometer.** *A. Bulsara*[1], V. In[1], J. Neff[1], A. Kho[1], S. Baglio[2] and B. Ando[2] *1. SPAWAR Systems Center, San Diego, CA; 2. Electrical and Elctronic Engineering, Univ di Catania, Catania, Italy*

**3:48**

**FB-08. Highly sensitive "flux-spin" multi channel magnetometers.** *P. Vetoshko*[1], M. Valeiko[2], I. Syvorotka[3] and P. Nikitin[2] *1. Institute of Radioengineering and Electronics, Academy of Science of Russia, Moscow, Russian Federation; 2. General Physics Institute of Russian Academy of Sciences, Moscow, Russian Federation; 3. Institute of Materials, Lviv, Ukraine*

**4:00**

**FB-09. Element Design of Magnetic Rotation Angle Sensor by using Spin-Valve Films.** *Y. Okada*[1] and C. Mitsumata[1] *1. Hitachi Metals, Ltd., Kumagaya-shi, Saitama-ken, Japan*

**4:12**

**FB-10. High sensitivity magnetic gas sensing using magnetic semiconductor nanoparticles.** *A. Thurber*[1], A. Punnoose[1] and K.M. Reddy[1] *1. Physics, Boise State University, Boise, ID*

**4:24**

**FB-11. A Composite Magnetic Sensor Using SAW Resonator and Terfenol-D.** *M. Zheng*[1,2], Y. Wen[1,2] and P. Li[1,2] *1. The Key Lab for Optoelectronic Tech & Sys., Ministry of Education, ChongQing, China; 2. College of Optoelectronic Engineering, Chongqing University, ChongQing, China*

THURSDAY AFTERNOON 2:00 SALON A

## Session FC
# RECORDING SYSTEMS AND PATTERNED MEDIA II

Harry Edelman, Chair

**2:00**

**FC-01. A comparison of nanosphere lithography and block copolymer templating for patterning CoPt/CoPtCr perpendicular media.** *X. Li*[1,2], S. Gupta[1,2], M. Curry[1] and M. Bakker[1] *1. MINT Center, The University of Alabama, Tuscaloosa, AL; 2. MicroFabrication Facility, The University of Alabama, Tuscaloosa, AL*



**2:12**

**FC-02. Planar patterned media fabricated by ion irradiation into $CrPt_3$ ordered alloy films.** *T. Kato*[1], Y. Yamauchi[2], S. Iwata[1], S. Tsunashima[2], K. Matsumoto[3], T. Morikawa[3] and K. Ozaki[4] *1. Department of Quantum Engineering, Nagoya University, Nagoya, Aichi, Japan; 2. Department of Electrical Engineering and Computer Science, Nagoya University, Nagoya, Aichi, Japan; 3. Advanced Technology Department, Yamagata Fujitsu Ltd., Higashine, Yamagata, Japan; 4. Storage Technologies Laboratory, Fujitsu Laboratories Ltd., Akashi, Hyogo, Japan*

**2:24**

**FC-03. Patterned media with composite layers to overcome writability beyond 5 Tb/in$^2$** *R. Sbiaa*[1], K. Aung[1], S. Piramanayagam[1] and E. Tan[1] *1. Data Storage Institute, Singapore, Singapore*

**2:36**

**FC-04. A novel bit-patterned media structure to reduce switching field distribution.** *S. Piramanayagam*[1], K. Aung[1], S. Deng[1,2] and R. Sbiaa[1] *1. A*STAR (Agency for Science Technology and Research), Data Storage Institute, Singapore, Singapore; 2. National University of Singapore, Singapore, Singapore*

**2:48**

**FC-05. Magnetic properties and topography of Gallium-dosed CoCrPt perpendicular media.** *T.W. Clinton*[1], L. Sun[1,2], L. Chang[1,3] and R. Van de Veerdonk[1] *1. Seagate Research, Seagate Technology, Pittsburgh, PA; 2. Department of Physics, University of Maryland, College Park, MD; 3. Department of Electrical & Computer Engineering, University of Houston, Houston, TX*

**3:00**

**FC-06. Planarization of amorphous carbon films on patterned media using gas cluster ion beams.** *N. Toyoda*[1], K. Nagato[2,3], H. Tani[4], Y. Sakane[5], M. Nakao[2], T. Hamaguchi[2] and I. Yamada[1] *1. Incubation center, Graduate school of engineering, University of Hyogo, Himeji, Hyogo, Japan; 2. Department of Engineering Synthesis, School of Engineering, The University of Tokyo, Bunkyo, Tokyo, Japan; 3. Research Fellow of the Japan Society for the Promotion of Science, Chiyoda, Tokyo, Japan; 4. Department of Mechanical Engineering, Kansai University, Suita, Osaka, Japan; 5. Western Digital Media Operations, San Jose, CA*

**3:12**

**FC-07. Magnetic force microscopy (MFM) and spinstand testing of multi-array-per-track discrete bit patterned media fabricated by focused ion beam (FIB).** *Y. Chen*[1], T. Huang[1], S. Leong[1], S. Hu[1], K. Ng[1], Z. Yuan[1], B. Zong[1], J. Shi[1], B. Liu[1] and V. Ng[2] *1. SMI, Data Storage Institute (A*STAR), Singapre, Singapore; 2. ECE Dept, National University of Singapore, Singapore, Singapore*

**3:24**

**FC-08. Bit patterned media with cap layer for high density magnetic recording.** *S. Li*[1,2], B. Livshitz[1,2], E.E. Fullerton[1,2], H. Bertram[2,3], A. Inomata[4] and V. Lomakin[1,2] *1. Department of Electrical and Computer Engineering, University of California San Diego, La Jolla, CA; 2. Center for Magnetic Recording Research, University of California San Diego, La Jolla, CA; 3. Hitachi San Jose Research Center, Hitachi GST, San Jose, CA; 4. Storage and Intelligent Systems Laboratories, Fujitsu Laboratories Ltd, Atsugi, Japan*

**3:36**

**FC-09. Analysis of recording in patterned media with geometry and material fluctuation.** *B. Livshitz*[1,2], A. Inomata[3], H.N. Bertram[2,4] and V. Lomakin[1,2] *1. ECE, UCSD, San Diego, CA; 2. CMRR, UCSD, San Diego, CA; 3. Storage and Intelligent Systems Laboratories, Fujitsu Laboratories Ltd, Atsugi, Japan; 4. Hitachi San Jose Research Center, Hitachi GST, San Jose, CA*

**3:48**

**FC-10. Sidetrack thermal erasure for head random off-track writing.** *M. Benakli*[1] and L. Pust[1] *1. Seagate, Bloomington, MN*

**4:00**

**FC-11. Simpler Decoding for Direct Print Compound Phase Servo Patterns.** *B. Baker*[1] *1. Redwood Technology, Redwood City, CA*

**4:12**

**FC-12. A Runout Measuring Technology with nm Resolution for Spindle Motors Used in HDD.** *J. Huang*[1] and C. Bi[1] *1. MRC, Data storage institute, a-star, Singapore, Singapore*

**4:24**

**FC-13. Three-Dimensional Analyses of Suspension Interconnect of HDD.** *E. Jang*[1] *1. HDD R&D, Samsung Information Systems America, San Jose, CA*

## THURSDAY AFTERNOON 2:00 SALON B

### Session FD
## HALF-METALLIC FERROMAGNETISM
Johan Akerman, Chair

**2:00**

**FD-01. Induced half-metallic state in Cr-based chalcospinels: $CuCr_2S(Se)_{4-x}E_x$ (E=F, Cl, Br), $CuCr_2S(Se)_{4-x}$ and $CdCr_2S(Se)_{4-x}D_x$ (D=N, P, As).** *Y.A. Wang*[1,3], M. Chshiev[3], W.H. Butler[2,3] and A. Gupta[1,3] *1. Dept. of Chemistry, University of Alabama, Tuscaloosa, AL; 2. Dept. of Physics, University of Alabama, Tuscaloosa, AL; 3. MINT Center, University of Alabama, Tuscaloosa, AL*



**2:12**

**FD-02. LEED study of the surface stability of CrO2(110) and CrO2(001).** *P.G. Ivanov*[1] and K.M. Bussmann[1] *1. US Naval Research Laboratory, Washington, DC*

**2:24**

**FD-03. X-ray magnetic circular dichroism of $CrO_2$ (100) and (110) epitaxial films.** *M. Pathak*[1], K. Chetry[1], P.R. LeClair[1], A. Gupta[1] and G.J. Mankey[1] *1. MINT Center, University of Alabama, Tuscaloosa, AL*

**2:36**

**FD-04. Surface ferromagnetism in antiferromagnetic $Cr_2O_3$ thin films.** *X. He*[1], Y. Wang[1], N. Wu[1], S. Sahoo[1], K. Belashchenko[1], A. Caruso[2], E. Vescovo[3], P. Dowben[1], A. Gruverman[1] and C. Binek[1] *1. Physics & Astronomy, University of Nebraska, Lincoln, Lincoln, NE; 2. University of Missouri, Kansas City KS 64110, MO; 3. National Sychrotron Light Source, Upton, NY, NY*

**2:48**

**FD-05. Magnetic and structural properties of half-metallic Sr2FeMoO6 epitaxial films fabricated by ultra-high vacuum sputtering.** *A.J. Hauser*[1], R.A. Ricciardo[2], A. Genc[3], R.E. Williams[3], P.M. Woodward[2], H.L. Fraser[3] and F.Y. Yang[1] *1. Physics, Ohio State University, Columbus, OH; 2. Chemistry, Ohio State University, Columbus, OH; 3. Materials Science and Engineering, Ohio State University, Columbus, OH*

**3:00**

**FD-06. Tunneling magnetoresistance of $Fe_3O_4$ using hexabromobenzene as insulating tunnel barrier.** *W. Wang*[1] and J. Tang[1] *1. Department of Physics & Astronomy, Univ. of Wyoming, Laramie, WY*

**3:12**

**FD-07. Extrinsic component of anisotropic magnetoresistance of magnetite thin films.** *R. Ramos*[1], S.K. Arora[1] and I.V. Shvets[1] *1. School of Physics, Trinity College, Dublin, Ireland*

**3:24**

**FD-08. Amplification magnetoresistance and Hall effect of $Fe_3O_4$-$SiO_2$-Si structure.** X. Wang[1,2], *Y. Sui*[1,3], J. Tang[2], X. Zhang[1], C. Wang[1], Z. Liu[1] and W. Su[1,3] *1. Physics, Harbin Institute of Technology, Harbin, Heilongjiang, China; 2. Physics & Astronomy, University of Wyoming, Laramie, WY; 3. International Center for Materials Physics, Academia Sinica, Shenyang, Liaoning, China*

**3:36**

**FD-09. Field induced resistivity anisotropy in $SrRuO_3$ films.** Y. Shperber[1], *I. Genish*[1], J.W. Reiner[2] and L. Klein[1] *1. Physics, Bar Ilan University, Ramat-Gan, Israel; 2. Applied Physics, Yale University, New Haven, CT*

**3:48**

**FD-10. Magnetoresistance exceeding 1500% in a thin FeSi film.** *N.A. Porter*[1] and C.H. Marrows[1] *1. Condensed Matter, University of Leeds, Leeds, West Yorkshire, United Kingdom*

**4:00**

**FD-11. Composition dependent properties of Fe_3Si films grown on GaAs(113)A substrates.** *P.K. Muduli*[1,2], K.J. Friedland[2], J. Herfort[2], H. Schonherr[2] and K.H. Ploog[2] *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology, Stockholm, Sweden; 2. Paul-Drude-Institute for Solid State electronics,Hausvogteiplatz 5-7, D-10117, Berlin, Germany*

**4:12**

**FD-12. Magnetic and electrical properties of $Ni_{50}Mn_{35}In_{15-x}Si_x$ Heusler alloys.** *A.K. Pathak*[1], I. Dubenko[1], S. Stadler[1] and N. Ali[1] *1. Department of Physics, Southern Illinois University, Carbondale, IL*

## THURSDAY AFTERNOON 2:00 SALON D

### Session FE
# DOMAINS AND SOFT MAGNETIC MATERIALS
Leonard Spinu, Chair

**2:00**

**FE-01. Unusual Tubular Domain Structure and Topological Hysteresis in $CeAgSb_2$ Single Crystals.** ***(Invited)*** *R. Prozorov*[1], S.L. Bud'ko[1] and P.C. Canfield[1] *1. Department of Physics & Astronomy, Iowa State University and Ames Laboratory, Ames, IA*

**2:36**

**FE-02. Spin configuration of hexagonal shaped ferromagnetic elements in a ring network.** *S.Y. Lua*[1,3], S.S. Kushvaha[2], Y. Wu[2], K. Teo[2] and T. Chong[3] *1. NUS Graduate School for Integrative Sciences and Engineering, National University of Singapore, Singapore, Singapore; 2. Information Storage Materials Laboratory, Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 3. A*STAR Data Storage Institute, Singapore, Singapore*



**2:48**

**FE-03. Investigations on the Permeability of Thin-film Soft Magnetic Structures.** *C. Ruffert*[1], M. Bedenbecker[1] and H.H. Gatzen[1] *1. Institute for Microtechnology, Leibniz Universität Hannover, Garbsen, Germany*

**3:00**

**FE-04. Determination of the Three-Dimensional Magnetic Vector Potential by Lorentz Transmission Electron Microscopy.** ***(Invited)*** *M. De Graef*[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

**3:36**

**FE-05. Temperature Stability of Field Induced Anisotropy in Fe,Co-Based Amorphous and Amorphous/Nanocrystalline "Nanocomposites"** P.R. Ohodnicki[1], D.E. Laughlin[1], *M.E. McHenry*[1] and V. Keylin[2] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Magnetics, A Division of Spang & Company, Pittsburgh, PA*

**3:48**

**FE-06. Magnetoimpedance of a Glass Coated Amorphous Microwire.** S. Sinha[1] and *K. Mandal*[1] *1. Materials Science, S. N. Bose National Centre for Basic Sciences, Kolkata, West Bengal, India*

**4:00**

**FE-07. Field-annealed nanocrystalline $Fe_{38}Co_{38}Mo_8B_{15}Cu$ alloys with low coercivity.** J. Marcin[1], J. Turcanova[1], J. Kovac[1], D. Janickovic[2], P. Svec[2] and *I. Skorvanek*[1] *1. Magnetism, Institute of Experimental Physics Slov. Acad. Sci., Kosice, Slovakia; 2. Institute of Physics, Bratislava, Slovakia*

**4:12**

**FE-08. 'In-plane' and 'out-of-plane' uniaxial magnetic anisotropy of amorphous precursors and nanocrystalline FeCuNbSiB alloys.** S.N. Kaul[1] and *G.A. Basheed*[1] *1. Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

**4:24**

**FE-09. Anisotropic Magnetoresistance in single phase and bi-phase microwires.** G. Infante[1], K. Merazzo[1], G. Badini[1], F. Batallán[1] and *M. Vázquez*[1] *1. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain*

THURSDAY AFTERNOON 2:00

SALON E

## Session FF
# SPIN WAVES & RESONANCES
Tim Mewes, Chair

**2:00**

**FF-01. Precession Modes in Exchanged-Coupled Co/Ru/Co Films.** *Z. Li*[1], S. Michalski[1], L. Yue[1], C. Moir[1,2], R. Skomski[1] and R.D. Kirby[1] *1. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE; 2. Physics and Astronomy, University of California - Irvine, Irvine, CA*

**2:12**

**FF-02. Ultrafast Optical Study of Spin Wave Resonance and Relaxation in CoFe/PtMn/CoFe Trilayer Films.** *Y. Ren*[1], C. Wu[1], Y. Gong[1], C. Pettiford[2] and N.X. Sun[2] *1. Physics & Physics, Hunter College of the City University of New York, New York, NY; 2. Electrical and Computer Engineering, Northeastern University, Boston, MA*

**2:24**

**FF-03. Search for nonlocal magnetization dynamics in polycrystalline FM/NM/FM trilayers.** *S. Zohar*[1] and W.E. Bailey[1] *1. Columbia University, New York, NY*

**2:36**

**FF-04. Study of magnons in ultrathin Fe films on W(110).** *Y. Zhang*[1], W. Tang[1,2], J. Prokop[1], I. Tudosa[1,3] and J. Kirschner[1] *1. Max Planck Institute of Microstructure Physics, Halle, Germany; 2. School of Physics, Monash University, Clayton, VIC, Australia; 3. University of California, San Diego, CA*

**2:48**

**FF-05. Spin wave dynamics in a $Ni_{80}Fe_{20}$ antidot lattice.** *B. Botters*[1], S. Neusser[1], K. Nielsch[2], C.A. Ross[3] and D. Grundler[1] *1. Physics Department E10, Technical University Munich, Garching, Bavaria, Germany; 2. Institute of Applied Phyiscs, University Hamburg, Hamburg, Hamburg, Germany; 3. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*



**3:00**

**FF-06. Internal Spin-Wave Confinement in Magnetic Nanowires Due to Zig-Zag Shaped Magnetization.** *J. Topp*[1], J. Podbielski[1], D. Heitmann[1] and D. Grundler[2] *1. Institut fuer Angewandte Physik, Universitaet Hamburg, Hamburg, Germany; 2. Physik-Department, Technische Universitaet Muenchen, Garching b. Muenchen, Germany*

**3:12**

**FF-07. Dispersion and Attenuation in Nano-Structured Magnetostatic Spin Waveguides.** *A. Kozhanov*[1], Z. Griffith[1], M. Rodwell[1], D. Lee[2], S. Wang[2], A. Jacob[3,4] and S. Allen[1] *1. UC Santa Barbara, Santa Barbara, CA; 2. Department of Materials Science and Engineering, Stanford University, Stanford, CA; 3. Technology and Manufacturing Group, Intel Corporation, Santa Clara, CA; 4. Western Institute of Nanoelectronics (WIN), UCLA, Los Angeles, CA*

**3:24**

**FF-08. Spin-Torque Ferromagnetic Resonance Spectroscopy of Permalloy Nanowires.** *C.T. Boone*[1], J. Katine[2], J. Childress[2], J. Zhu[1], X. Cheng[1] and I. Krivorotov[1] *1. Physics, University of California, Irvine, Irvine, CA; 2. Hitachi Global Storage, San Jose, CA*

**3:36**

**FF-09. Propagation of spin waves through domain walls in Permalloy thin-film wires: scattering and interference.** *M. Yan*[1], S. Gliga[1], R. Hertel[1] and C.M. Schneider[1] *1. Institute of Solid State Research, Research Centre Jülich, Jülich, Germany*

**3:48**

**FF-10. Edge mode interactions in patterned pseudo spin valves.** *R.D. McMichael*[1] *1. Center for Nanoscale Science and Technology, NIST, Gaithersburg, MD*

**4:00**

**FF-11. Dissipation of quantized spin waves in nano-scaled magnetic ring structures.** *H. Schultheiss*[1], C.W. Sandweg[1], B. Obry[1], S.J. Hermsdoerfer[1], S. Schaefer[1], V. Tiberkevich[2], B. Leven[1], A.N. Slavin[2] and B. Hillebrands[1] *1. Fachbereich Physik und Forschungsschwerpunkt OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. Department of Physics, Oakland University, Rochester, MI*

**4:12**

**FF-12. Nanoengineered Anti-Crossings in Spin-Wave Cavities.** J. Podbielski[1], D. Heitmann[1] and *D. Grundler[2] 1. Institut fuer Angewandte Physik, Universitaet Hamburg, Hamburg, Hamburg, Germany; 2. Physik-Department, Technische Universitaet Muenchen, Garching b. Muenchen, Germany*

**4:24**

**FF-13. Finite-element computations of resonant modes for small magnetic particles.** *G. Miano*[1], C. Serpico[1], M. d'Aquino[2] and C. Forestiere[1] *1. Department of Electrical Engineering, Università degli Studi di Napoli Federico II, Napoli, Italy; 2. Department of Technology, Università di Napoli Parthenope, Napoli, Italy*

**4:36**

**FF-14. Modification of the thermal spin-wave spectrum in a $Ni_{81}Fe_{19}$ stripe by a domain wall.** *S.J. Hermsdoerfer*[1], C.W. Sandweg[1], H. Schultheiss[1], S. Schäfer[1], B. Leven[1] and B. Hillebrands[1] *1. Fachbereich Physik and Forschungsschwerpunkt OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany*

**4:48**

**FF-15. Path integral analysis of thermal fluctuations in ferromagnetic nanoparticles.** G. Bertotti[1], *C. Serpico*[2], C. Ragusa[3], M. d'Aquino[4], P. Ansalone[3] and I. Mayergoyz[5] *1. INRIM, Torino, TO, Italy; 2. Dept. of Electrical Engineering, University of Naples Federico II, Napoli, NA, Italy; 3. Dept. of Electrical Engineering, Politecnico di Torino, Torino, TO, Italy; 4. Dip. per le Tecnologie, University of Naples Parthenope, Napoli, NA, Italy; 5. Dept. of Electrical and Computer Eng. and UMIACS, University of Maryland, College Park, MD*

THURSDAY AFTERNOON 2:00 — 400/402

## Session FG
# MULTILAYERS, INTERFACES, AND SURFACES

Casey Miller, Chair

**2:00**

**FG-01. Manipulation of superconductivity by domain wall arrangements in ferromagnet-superconductor hybrids.** *L.Y. Zhu*[1], T.Y. Chen[1] and C.L. Chien[1] *1. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD*



**2:12**

**FG-02. Adjustable Superconducting Anisotropy in MoGe - Permalloy Hybrids.** *G. Karapetrov*[1], A. Belkin[1,2], V. Novosad[1], M. Iavarone[1] and J.E. Pearson[1] *1. Materials Science Division, Argonne National Lab, Argonne, IL; 2. Physics Division, Illinois Institute of Technology, Chicago, IL*

**2:24**

**FG-03. Structural and magnetic properties of CoFeB/MgO multilayers.** M. Vadala[1], K. Zhernenkov[1], B. Toperverg[1], *H. Zabel*[1], H. Kubota[2] and S. Yuasa[2] *1. Physics and Astronomy, Ruhr-University Bochum, Bochum, Germany; 2. Nanoelectronics Research Institute, AIST, Tsukuba, Japan*

**2:36**

**FG-04. The Origin of Biquadratic Coupling in Co/Fe/MgO/Fe(001).** *J. Wong*[1], Y. Chaing[1], X. Tan[1], Y. Li[1], K. Pi[1], W. Wang[1], H.W. Tom[1] and R.K. Kawakami[1] *1. Department of Physics and Astronomy, University of California, Riverside, Riverside, CA*

**2:48**

**FG-05. Spatially resolved spectroscopy of MgO-Fe(100)-MgO(100) structure.** *J. Lee*[1,2], C. Krafft[2] and R.D. Gomez[1,2] *1. Electrical and Computer Engineering, University of Maryland, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD*

**3:00**

**FG-06. Entropy change for magnetic phase transition in CoNi/Gd and CoFe/Gd nanolayers.** *M.R. Hossu*[1], Y. Hao[2] and A.R. Koymen[1] *1. Department of Physics, The University of Texas at Arlington, Arlington, TX; 2. Department of Material Science and Engineering, The University of Texas at Arlington, Arlington, TX*

**3:12**

**FG-07. X-Ray Evidence for Mesoscopic Relaxations in Cobalt Nanoislands on Cu(001).** *H.L. Meyerheim*[1], O. Mironets[1], C. Tusche[1], V.S. Stepanyuk[1], P. Zschack[2], H. Hong[3], N. Jeutter[4], R. Felici[4] and J. Kirschner[1] *1. Max-Planck-Institut f. Mikrostrukturphysik, Halle, Germany; 2. APS Argonne National Laboratory, Argonne, IL 60439, IL; 3. University of Illinois at Urbana Champaign, Urbana, IL 61801, IL; 4. European Synchrotron Radiation Facility, F-38043 Grenoble, France*

**3:24**

**FG-08. Characterization of magnetic interface roughness and magnetic domain structure in a magnetic multilayer using soft x-ray resonant magnetic scattering.** *D.R. Lee*[1], J. Park[2], Y. Choi[3], J.W. Freeland[3] and J.S. Jiang[4] *1. Beamline Division, Pohang Accelerator Laboratory, Pohang, Gyeongbuk, South Korea; 2. Department of Physics, Pohang University of Science and Technology, Pohang, Gyeongbuk, South Korea; 3. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 4. Materials Science Division, Argonne National Laboratory, Argonne, IL*

**3:36**

**FG-09. Chirality in Dy/Y multilayer system.** *D. Lott*[1], S.V. Grigoriev[2], Y.O. Chetverikov[2] and A. Schreyer[1] *1. GKSS research center, Geesthacht, Germany; 2. Petersburg Nuclear Physics Institute, Gatchina, Russian Federation*

**3:48**

**FG-10. Exchange coupling in zero-magnetization ferromagnet based systems : a selective XMCD study.** *K. Dumesnil*[1], M. Ungureanu[1], C. Dufour[1], F. Wilhelm[2] and A. Rogalev[2] *1. LPM, Vandoeuvre les Nancy, France; 2. ESRF, Grenoble, France*

**4:00**

**FG-11. Realization of low-loss dual tunable ferrite-ferroelectric layered structures for microwave applications.** *J. Das*[1], Y. Song[1], N. Mo[1] and C.E. Patton[1] *1. Physics, Colorado State University, Fort Collins, CO*

**4:12**

**FG-12. The role of the spin-density wave and disorder in the density of states of sputtered Cr films.** *D.W. Cooke*[1], D.R. Queen[1], Z. Boekelheide[1] and F. Hellman[1] *1. Physics, University of California, Berkeley, CA*

**4:24**

**FG-13. Temperature-dependence x-ray magnetic circular dichroism in ultra thin film Fe on GaAs(001) at the Fe $L_{2,3}$ edges.** *N. Wang*[1], J. Thompson[1], W. Guan[1], W. Li[1], T. Shen[1], S.A. Morton[2] and E. Arenholz[2] *1. Institute for Materials Research, University of Salford, Manchester, United Kingdom; 2. Advanced Light Source Division, Lawrence Berkeley National Laboratory, Berkeley, CA*



**4:36**

**FG-14. The effect of organic under-layer and thickness on morphology and magnetic properties of sputtered Permalloy films.** *S.N. Ahmad*[1] and S.A. Shaheen[1] *1. Physics, Florida State University, Tallahassee, FL*

**4:48**

**FG-15. Surface Effects in Nanoclusters and Cluster-Assembled Thin Films.** *A. Pratt*[1], C.W. Woffinden[1], S.P. Tear[1] and C. Binns[2] *1. Department of Physics, University of York, York, YO10 5DD, United Kingdom; 2. Department of Physics and Astronomy, University of Leicester, Leicester, LE1 7RH, United Kingdom*

## THURSDAY AFTERNOON 2:00 410

### Session FH
## RARE-EARTH TRANSITION METAL BORIDES II
Matt Kramer, Chair

**2:00**

**FH-01. The coercivity and grain boundary chemistry of Nd-Fe-B HDDR powder.** *W. Li*[1], T. Ohkubo[1], K. Hono[1], T. Nishiuchi[2] and S. Hirosawa[2] *1. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Japan; 2. NEOMAX Company, Hitachi Metals, Osaka, Japan*

**2:12**

**FH-02. Correlation of the Energy Product with Evolution of the Nanostructure in the Y,Dy,Nd-(Fe, Co)-B Magnetic Alloy.** *Y.Q. Wu*[1], W. Tang[1], M.J. Kramer[1,2], K.W. Dennis[1], N. Oster[1,2], R.W. McCallum[1,2] and I.E. Anderson[1,2] *1. Ames Laboratory of USDOE, Iowa State University, Ames, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames, IA*

**2:24**

**FH-03. The effect of oxygen in a Nd coat on the surface coercivity of Nd-Fe-B sintered magnets.** *T. Fukagawa*[1], S. Hirosawa[1], T. Ohkubo[2] and K. Hono[2] *1. Magnetic Materials Research Laboratory, Hitachi Metals, Shimamoto Mishima, Osaka, Japan; 2. Magnetic Materials Center, National Institute for Material Science, Tsukuba, Ibaraki, Japan*

**2:36**

**FH-04. Improvement of size and magnetic properties of $Nd_{9.5}Fe_{72.5}Ti_3B_{15}$ bulk magnets by Zr or Nb substitution for Ti.** *H. Chang*[1,2], Y.T. Cheng[1], C.W. Chang[1], C.C. Hsieh[1], Z.H. Guo[1], W.C. Chang[1], A.C. Sun[3] and Y.D. Yao[4] *1. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. Institute of Physics, Academia Sinica, Taipei, Taiwan; 3. Department of Physics, National Taiwan University, Taipei, Taiwan; 4. Department of Materials Engineering, Tatung University, Taipei, Taiwan*

**2:48**

**FH-05. RE-Fe-B Die Upset Magnets with Increased Electrical Resistivity.** *M. Marinescu*[1], A.M. Gabay[2], J. Liu[1] and G.C. Hadjipanayis[2] *1. Electron Energy Corporation, Landisville, PA; 2. Department of Physics & Astronomy, University of Delaware, Newark, DE*

**3:00**

**FH-06. First-Principles Calculation of the Crystal Field Parameter near the Surfaces and the Interfaces of $Nd_2Fe_{14}B$.** *H. Moriya*[1,2], H. Tsuchiura[1] and A. Sakuma[1] *1. Department of Applied Physics, Tohoku University, Sendai, Japan; 2. Mechanical Engineering Research Laboratory, Hitachi, Ltd., Hitachinaka, Japan*

**3:12**

**FH-07. Magnetic properties and microstructure of gas atomized MRE2(Fe, Co)14B powder with ZrC addition (MRE=Nd+Y+Dy).** *W. Tang*[1], Y.Q. Wu[1], K.W. Dennis[1], N. Oster[1], M.J. Kramer[1], I.E. Anderson[1] and R.W. McCallum[1] *1. Iowa State University, Ames, IA*

**3:24**

**FH-08. $Nd_2Fe_{14}B$/soft magnetic wires nanocomposite magnets with enhanced properties.** *N. Lupu*[1], M. Grigoras[1], M. Lostun[1] and H. Chiriac[1] *1. Magnetic Materials and Devices, National Institute of Research and Development for Technical Physics, Iasi, Romania*

**3:36**

**FH-09. Relationship Between the Supplied Electrical Energy and the Magnetic Properties of Fe3B/Nd2Fe14B Bulk Nanocomposite Magnets Prepared by Spark Plasma Sintering.** *T. Fukuzaki*[1], K. Tanaka[2], K. Nishio[2] and R. Tamura[2,1] *1. Polyscale Technology Research Center, Tokyo University of Science, Noda-shi, Chiba-ken, Japan; 2. Department of Materials Science and Technology, Tokyo University of Science, Noda-shi, Chiba-ken, Japan*



**3:48**

**FH-10. Crystallization Behavior under Pressure of (Nd,Pr)13Fe80Nb1B6 melt-spun ribbons.** *X. Liu*[1], J. Pan[1], P. Guo[1,2] and W. Zhang[1] *1. Ningbo University, Ningbo, China; 2. Ningbo Institute of Materials Science of Technology and Engineering, Ningbo, Zhejiang, China*

**4:00**

**FH-11. Graded Permanent Magnets.** *R. Skomski*[1], G.C. Hadjipanayis[2] and D.J. Sellmyer[1] *1. Nebraska Center for Materials and Nanoscience and Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE*

**4:12**

**FH-12. Crystallographic and magnetic properties of SrM film on various underlayers and substrates.** *A. Kaewrawang*[1], G. Ishida[1], X. Liu[1] and A. Morisako[1] *1. Information Engineering, Shinshu University, Nagano, Nagano, Japan*

**4:24**

**FH-13. Grain-size dependent correlation of spin misalignment in nanocrystalline Gadolinium.** *F. Döbrich*[1], M. Elmas[1], A. Ferdinand[1], J. Markmann[1], M. Sharp[2], J. Kohlbrecher[3], R. Birringer[1] and A. Michels[1] *1. Technical Physics, Universität des Saarlandes, Saarbrücken, Germany; 2. GKSS Forschungszentrum, Geesthacht, Germany; 3. Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland*

**4:36**

**FH-14. Grain-size-dependent magnetic properties of nanocrystalline terbium.** *A. Michels*[1], S. Philippi[1], J. Markmann[1] and R. Birringer[1] *1. Technische Physik, Universitaet des Saarlandes, Saarbruecken, Germany*

THURSDAY AFTERNOON 1:00 — AUSTIN BALLROOM

## Session FP
## MAGNETIC TUNNEL JUNCTIONS AND SPIN INJECTION (POSTER SESSION)

Marius Costache, Chair
John Philip, Chair

**FP-01. Effect of spin dependent interface barrier strength on Andreev reflection in superconductor-ferromagnet junction.** *S.R. Bakaul*[1,2], K. Li[3], G. Han[2] and Y. Wu[1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Spintronic, Media and Interface, Data Storage Institute, Singapore, Singapore; 3. Industrial Materials Institute, Quebec, QC, Canada*

**FP-02. Electric manipulation of spin relaxation using spin-Hall effect.** *K. Ando*[1], S. Takahashi[2], J. Ieda[2], S. Maekawa[2] and E. Saitoh[1]*1. Applied Physics And Physico-Informatics, Keio University, Yokohama, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

**FP-03. Thermo-spin effects in ferromagnetic/paramagnetic metallic films.** *K. Uchida*[1], K. Harii[1], T. Ota[1] and E. Saitoh[1]*1. Department of Applied Physics & Physico-Informatics, Keio University, Yokohama, Japan*

**FP-04. Local generation and detection of spin currents in a nanostructured NiFe system.** *K. Sasage*[1], K. Ando[1], K. Harii[1] and E. Saitoh[1]*1. Applied Physics and Physico-Informatics, Keio University, Yokohama, Kanagawa, Japan*

**FP-05. Correlation effect on the half-metallicity of the Co2FeSi full Heusler alloy ; bulk and surfaces.** *M. Kim*[1] and J. Lee[2]*1. Energy System Research, Ajou University, Suwon, South Korea; 2. Physics, Inha University, Incheon, South Korea*

**FP-06. Electrical Spin Injection and Detection in Semimetallic and Semiconducting Films.** *K. Lee*[1], W. Lee[2], J. Chang[1], S. Han[1], K. Shin[1], W. Jeung[1] and M. Johnson[3]*1. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, South Korea; 2. Department of Materials Science and Engineering, Yonsei University, Seoul, South Korea; 3. Naval Research Laboratory, Washington, DC*

**FP-07. Rectifying characteristics and transport behavior of $La_{0.9}Hf_{0.1}MnO_3$ / Nb-doped $SrTiO_3$ heteroepitaxial junctions.** L. Wang[1] and *J. Gao*[1]*1. Physics, The University of Hong Kong, Hong Kong, China*

**FP-08. Orientation dependence of Schottky barrier heights for $La_{0.6}Sr_{0.4}MnO_3$/Nb:$SrTiO_3$ heterojunctions.** *M. Minohara*[1], Y. Furukawa[2], R. Yasuhara[2], H. Kumigashira[2,3] and M. Oshima[1,4]*1. Graduate School of Arts and Sciences, The University of Tokyo, Tokyo, 153-8902, Japan; 2. Department of Applied Chemistry, The University of Tokyo, Tokyo, 113-8656, Japan; 3. JST-CREST, UTSRRO, The University of Tokyo, Tokyo, 113-8656, Japan; 4. Department of Applied Chemistry, JST-CREST, UTSRRO, The University of Tokyo, Tokyo, 113-8656, Japan*

**FP-09. Magneto- and Electroresistance of La0.7Sr0.3MnO3/Nb(1.0%):SrTiO3 junctions.** *Y. Chen*[1,2] and M. Ziese[2]*1. University of Electronic Science and Technology of China, Chengdu, China; 2. University of Leipzig, Leipzig, Germany*

**FP-10. Spin Polarized Transport in an Asymmetric Ferromagnetic/Quantum Dot/Ferromagnetic System.** *M. Ma*[1], M. Bin Adul Jalil[1] and S. Tan[2]*1. Department of Electrical and Computer Engineering, Information Storage Materials Laboratory, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*



**FP-11. Field-annealing effect on magnetostriction and tunneling magnetoresistance of Co/$AlO_x$/Co/IrMn junctions.** *Y. Chen*[1]*1. Department of Materials Science and Engineering, I-Shou University, Kaohsiung, Taiwan*

**FP-12. Study of Correlation in Tunneling Magnetoresistance with Infrared Magneto-transmission Effect in Magnetic Tunneling Junction Films.** J.R. Scheuermann[1], S.T. Malak[1], Z. Wen[2], X. Han[2] and *J. Wang*[1]*1. Department of Physics, Applied Physics, and Astronomy, Binghamton University, Binghamton, NY; 2. State Key Laboratory of Magnetism, Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Science, Beijing 100190, China*

**FP-13. Spin-transport in the magnetic semiconductor EuO and its integration with Si(100).** *M. Müller*[1], G. Miao[1] and J.S. Moodera[1]*1. Francis Bitter Magnet Laboratory, Massachusetts Institute of Technology, Cambridge, MA*

**FP-14. Current-induced resistance oscillation in (Ga,Mn)As-based double-barrier magnetic tunnel junctions.** *J. Okabayashi*[1], M. Watanabe[1] and J. Yoshino[1]*1. Department of Physcis, Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan*

**FP-15. EuO spin filter thin films by pulsed laser deposition.** *J. Beukers*[1], A. Brinkman[1] and H. Hilgenkamp[1]*1. MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

**FP-16. Manganite-based Magnetic Tunnel Junction with Piezoelectric Barrier.** *A.K. Pradhan*[1], R. Mundle[1], R. Konda[1], D. Sahu[2], J. Huang[2] and D. Nikonov[3]*1. Ceneter for Materials research, Norfolk State University, Norfolk, VA; 2. Department of Materials Science & Engineering, National Cheng Kung University, Tainan, Taiwan; 3. Intel Corp., Santa Clara, CA*

**FP-17. Tunable Coupling in $CrO_2$ Via $RuO_2$ Layers.** *H.R. Sims*[1,2] and W.H. Butler[1,2]*1. Physics, University of Alabama, Tuscaloosa, AL; 2. Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL*

**FP-18. XMCD analysis of LSMO/XTO interfaces (X-Sr, Ba).** *D. Mazumdar*[1] and A. Gupta[1,2]*1. MINT center, University of Alabama, Tuscaloosa, AL; 2. Department of Chemistry, University of Alabama, Tuscaloosa, AL*

**THURSDAY AFTERNOON 1:00** **AUSTIN BALLROOM**

## Session FQ
## THIN FILM GROWTH AND CHARACTERIZATION (POSTER SESSION)
Yaowu Hao, Chair

**FQ-01. Anomalous growth-mode transition during the initial growth of epitaxial $SrRuO_3$ films on single-terminated $SrTiO_3$ (111).** *J. Chang*[1], Y. Park[1], J. Lee[1] and S. Kim[1]*1. Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, College of Engineering, Seoul National University, Seoul, South Korea*

**FQ-02. Preparation and structure characterization of $SmCo_5$(0001) epitaxial thin films grown on Cu(111) underlayers.** *M. Ohtake*[1], Y. Nukaga[1], F. Kirino[2] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan*

**FQ-03. Magnetic Phase Diagram of Ultrathin Fe-Films on Cu(001) obtained using SEMPA in Magnetic DC Field.** *N. Saratz*[1], A. Lichtenberger[1], T. Bähler[1], U. Ramsperger[1] and D. Pescia[1] *1. Laboratory for Solid State Physics, ETH Zurich, Zürich, Switzerland*

**FQ-04. Iron-Nitride Thin Films with Different Phases.** *N. Ji*[1], Y. Xu[1], X. Liu[1] and J.P. Wang[1] *1. The Center for Micromagnetics and Information Technologies (MINT) and Department of Electrical and Computer Engineering, University of Minnesota,, Minneapolis, MN*

**FQ-05. Structure and magnetic properties of Ni and NiFe thin films epitaxially grown on MgO(100) single-crystal substrate.** *T. Tanaka*[1], M. Ohtake[1], F. Kirino[2], N. Inaba[3] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan; 3. Department of Electrical and Electronic Engineering, Yamagata University, Yonezawa, Japan*

**FQ-06. Microstructure and magnetic properties of FeCo epitaxial thin films grown on MgO single-crystal substrates.** *K. Shikada*[1], M. Ohtake[1], F. Kirino[2] and M. Futamoto[1] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan*

**FQ-07. Growth of ultrathin metal films on molecule-adsorbed MgO surface.** T. Kojima[1], K. Oka[1], *M. Mizuguchi*[1], S. Mitani[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

**FQ-08. Growth and transport properties of ferrimagnetic beta-Manganese.** *W. Feng*[1], Y. Hwang[1], J. Kim[1], J. Choi[1], D. Dung[1] and S. Cho[1] *1. Department of Physics, University of Ulsan, Ulsan, South Korea*

**FQ-09. Manipulation of crystal structure and dynamic behavior in GaAs/Ag/Fe system with an ultrathin Fe seed layer.** *C. Yu*[1], C. Tsai[2] and Y. Yao[3] *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Department of Electrical and Computer Engineering, UniversityofCalifornia, Irvine, CA; 3. Department of Materials Engineering, Tatung University, Taipei, Taiwan*

**FQ-10. Hybrid Fe/GaN(0001) Epitaxial System for Spintronics.** J. Wong[1], W. Zhang[1], I.G. Will[1], *Y. Xu*[1], X. Cui[2], Z. Tao[2], X. Li[2], Z. Xie[2] and R. Zhang[2] *1. Spintronics and Nanodevice Laboratory, Department of Electronics, University of York, York, United Kingdom; 2. Key Laboratory of Advanced Photonic and Electronic Materials, Department of Physics, Nanjing University, Nanjing, China*



**FQ-11. Effect of oxygen exposure on the magnetic properties of ultrathin Co/Si(111) films.** *H. Chang*[1,2], J.S. Tsay[3], W.Y. Chang[3], K.T. Huang[1] and Y.D. Yao[4] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Department of Physics, Tunghai University, Taichung, Taiwan; 3. Department of Physics, National Taiwan Normal University, Taipei, Taiwan; 4. Department of Materials Engineering, Tatung University, Taipei, Taiwan*

**FQ-12. Effects of strain on magnetic and magnetotransport properties of Co films on plastic substrates.** *Y. Chen*[1,2], J. McCord[3], R. Kaltofen[2], J. Freudenberger[3] and O. Schmidt[2] *1. University of Electronic Science and Technology of China, Chengdu, China; 2. Institute for Integrative Nanosciences, IFW Dresden, Dresden, Germany; 3. Institute for metallic materials, IFW Dresden, Dresden, Germany*

**FQ-13. Magnetic states for V(001) bcc surface: an ab initio study.** R. Felix-Medina[1], M.A. Leyva-Lucero[1] and *S. Meza Aguilar*[1] *1. Escuela de Ciencias Fisico-Matematicas, Universidad Autonoma de Sinaloa, Culiacan, Sinaloa, Mexico*

**FQ-14. Exchange coupling in a ferromagnetic Fe/EuS bilayer thin film.** *V.V. Volobuev*[1], A.N. Stetsenko[2], A.Y. Sipatov[2] and J. van Lierop[1] *1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. National Technical University "Kharkov Polytechnical Institute", Kharkov, Ukraine*

**THURSDAY AFTERNOON 1:00** **AUSTIN BALLROOM**

## Session FR
## NANOPARTICLES AND NANOSTRUCTURES (POSTER SESSION)

Cindi Dennis, Co-Chair
JW Harrell, Co-Chair

**FR-01. Small angle X-ray and neutron scattering study of disordered and periodic 3-D magnetic protein arrays.** *O. Kasyutich*[1], F. Ogrin[2], C.D. Dewhurst[3], D. Tatchev[4,5], A. Hoell[4] and W. Schwarzacher[1] *1. Physics, Univeristy of Bristol, Bristol, United Kingdom; 2. School of Physics, University of Exeter, Exeter, United Kingdom; 3. Institut Laue-Langevin, Grenoble, France; 4. Helmholtz Centre Berlin for Materials and Energy, Berlin, Germany; 5. Institute of Physical Chemistry, Sofia, Bulgaria*

**FR-02. Electron Magnetic Resonance Spectroscopy and SQuID Magnetometry of Iron Oxide Protein Cages.** *R.J. Usselman*[1], M. Klem[2], M. Young[2], T. Douglas[2], D. Singel[2], S. Russek[1] and R. Goldfarb[1] *1. Magentics Group, NIST, Boulder, CO; 2. Department of Chemistry and Biochemistry, Montana State University, Bozeman, MT*

**FR-03. AC susceptibility studies of magnetic relaxation in nanoparticles of Ni dispersed in silica.** *V. Singh*[1], J. Bonevich[2] and M.S. Seehra[1] *1. Physics Department, West Virginia University, Morgantown, WV; 2. National Institute of Standards and Technology, Gaithersburg, MD*

**FR-04. Synthesis and characterization of magnetic nanoparticles embedded in PVP nanofibre film by electrospinning.** *C. Lin*[1], M. Chung[2] and T. Tsai[2] *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University, Yung-Kang, Taiwan; 2. Department of Electronic Engineering, Southern Taiwan University, Yung-Kang, Taiwan*

**FR-05. High speed magneto-optical valve: Rapid control of the optical transmittance of aqueous solutions by magnetically induced self-assembly of superparamagnetic particle chains.** *S. Park*[1,5], E. Law[2], H. Handa[3,4] and A. Sandhu[1,2] *1. Quantum Nanoelectronics Research Center, Tokyo Institute of Technology, Tokyo, Japan; 2. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Tokyo, Japan; 3. Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology, Yokohama, Japan; 4. Integrated Research Institute, Tokyo Institute of Technology, Tokyo, Japan; 5. Tokyo Tech Global COE Program on Evolving Education and Research Center For Spatio-Temporal Biological Network, Tokyo Institute of Technology, Tokyo, Japan*

**FR-06. Facile Fabrication of Magnetism-controlled Superparamagnetic Nanocomposites for Selective Magnetic Separation.** *S. Park*[1,4], D. Yang[1], T. Lim[1], J. Lee[2], S. Haam[2], Y. Huh[3], J. Lee[4] and S. Lee[1] *1. Dept. of Chemical and Bio Engineering, Kyungwon University, Seongnam, Gyeonggi-do, South Korea; 2. Dept. of Chemical Engineering, Yonsei University, Seoul, South Korea; 3. Dept. of Radiology, Yonsei University, Seoul, South Korea; 4. Advanced Energy Materials Processing Lab., Korea Institute of Science and Technology, Seoul, South Korea*

**FR-07. Magnetic Properties of core-shell structured Ni Nanoparticles.** S. Park[1], *Y. Jo*[1], M. Jung[2], S. Yoon[3], H. Baik[3], J. Choi[3], J. Kim[4], J. Park[4], K. Lee[5] and J. Lee[5] *1. Korea Basic Science Institute, Daejon, South Korea; 2. Sogang University, Seoul, South Korea; 3. Samsung Advanced Institute of Technology, Suwon, South Korea; 4. Pohang University of Science and Technology, Pohang, South Korea; 5. Korea University, Seoul, South Korea*

**FR-08. Fabrication and magnetic properties of 3-dimensional arrays of elongated magnetic particles.** *L.M. Malkinski*[1,2], M. Tanase[2], C. Spinu[2], J. Lim[2], J. Wiley[2], F. Moolekamp III[1], K. Stokes[1,2], P. Schilling[3] and P. Young[4] *1. Department of Physics, University of New Orleans, New Orleans, LA; 2. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA; 3. Department of Mechanical Engineering, University of New Orleans, New Orleans, LA; 4. Department of Physics, Louisiana State University, Baton Rouge, LA*

**FR-09. Size effects in ordered arrays of magnetic nanotubes: Pick your reversal mode.** J. Bachmann[1,2], J. Escrig[3,2], K. Reckwell[1], J.M. Montero Moreno[4,1], J. Jing[2], *D. Görlitz*[1], D. Altbir[3] and K. Nielsch[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 2. Max Planck Institute of Microstructure Physics, Halle, Germany; 3. Physics Department, University of Santiago, Santiago de Chile, Chile; 4. Electrodeposition and Corrosion Laboratory, University of Barcelona, Barcelona, Spain*



**FR-10. Magnetization dynamics in magnetic core-shell nanowires.** J. Lim[1,2], H.N. Pham[1,3], O.C. Trusca[1,3], A. Sarwar[1], D. Cimpoesu[1], J.B. Wiley[1,2] and *L. Spinu*[1,3] *1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA; 2. Department of Chemistry, University of New Orleans, New Orleans, LA; 3. Department of Physics, University of New Orleans, New Orleans, LA*

**FR-11. Structure and magnetic properties in hexagonal arrays of ferromagnetic nanowires.** E. Padrón Hernández[1,2], *A. Azevedo*[1] and S.M. Rezende[1] *1. Departamento de Física - UFPE, Recife, Brazil; 2. Laboratório de Microscopia e Microanálise - CETENE, Recife, Brazil*

**FR-12. The first ternary intermetallic Heusler nanoparticles: Co2FeGa.** *L. Basit*[1], G. Fecher[2] and C. Felser[3] *1. Analytical and Inorganic Chemistry, Johannes Gutenberg-Universität, Mainz, Rheinland-pfalz, Germany; 2. Johannes Gutenberg-Universität Mainz, Institut für Physik, Mainz, Rheinland-pfalz, Germany; 3. University of California, Department of Materials Science and Engineering, Berkeley, CA*

**FR-13. Synthesis and magnetic properties of gold coated iron oxide nanoparticles.** *S. Pal*[1], M.B. Morales[1], M.H. Phan[1], P. Mukherjee[1] and H. Srikanth[1] *1. Center for Integrated Functional Materials & Department of Physics, University of South Florida, Tampa, FL*

**FR-14. Synthesis and Magnetic Properties of Multifunctional CoPtAu Nanoparticles.** *J. Min*[1], J. Wu[2], A. Song[1] and Y. Kim[1] *1. Department of Materials Science and Engineering, Korea University, Seoul, Seoul, South Korea; 2. Institute for Nano Science, Korea University, Seoul, Seoul, South Korea*

**FR-15. NiO nanoparticles dispersed in porous Vycor glass: Effect of the particle size distribution and applied field value.** *W.C. Nunes*[1], N.M. Carneiro[2], R.P. Borges[1], M. Godinho[1,3] and I.O. Mazali[2] *1. Centro de Física da Matéria Condensada, Universidade de Lisboa, Campo Grande, Lisboa, Portugal; 2. Instituto de Química, Universidade Estadual de Campinas - UNICAMP, Campinas, SP, Brazil; 3. Departamento de Física, Universidade de Lisboa, Campo Grande, Lisboa, Portugal*

**FR-16. Characterization of magnetic properties and magnetic state change of α-Fe and ε-Fe3N nanoparticles.** *C. Choi*[1], J. Lee[1], H. Lee[1], X. Dong[2], D. Li[3], Z. Zhang[3] and Y. Hong[4] *1. Korea Institute of Materials Science, Changwon, South Korea; 2. Dalian University of Technology, Dalian, China; 3. Institute of Metal Research, Shenyang, China; 4. University of Alabama, Tuscaloosa, AL*

**FR-17. γ-$Fe_2O_3$ nanoparticle intrinsic magnetism dependence on iron-ion availability during synthesis.** E. Skoropata[1], R.D. Desautels[1] and *J. van Lierop*[1] *1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada*

**FR-18. Influence of the interactions in the magnetic behaviour of Fe-Ag thin films above the percolation limit.** *J. Alonso*[1], M. Fernández-Gubieda[1], L. Fernández Barquín[2], M. Del Pedro[2], J. Barandiaran[1], I. Orue[3] and A. Svalov[1] *1. Electricity and Electronics, UPV/EHU, Leioa, Vizcaya, Spain; 2. CITIMAC, Santander, Spain; 3. SGIKER, UPV/EHU, Leioa, Vizcaya, Spain*

**FR-19. Morphological investigation of mono-dispersed manganese ferrite nanoparticles by impedance measurements.** *S. Yoon*[1], M. Gonzales-Weimuller[2], Y. Lee[2] and K.M. Krishnan[2] *1. Department of Physics, Gunsan National University, Gunsan, South Korea; 2. Department of Material Science and Engineering, University of Washington, Seattle, WA*

**FR-20. Size dependent Ferrites nano-particles; Application to Microwave Devices.** B.K. Kuanr[1], K. Lingam[2], S.K. Mishra[2], V. Veerakumar[1], R.E. Camley[1] and *Z. Celinski*[1] *1. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Department of Physics, University of Memphis, Memphis, TN*

**FR-21. Fabrication of Fe nanoparticles with sizes ranging from 30 nm to 170 nm by gas flow sputtering.** *H. Aoshima*[1], H. Suzuki[1], T. Kobayashi[1], H. Sakuma[1] and K. Ishii[1] *1. Research Division of Functional Materials Design, Utsunomiya University, Utsunomiya, Japan*

**FR-22. Orientation Control and Fixation of $L1_0$-FePt Nanoparticles on Au-Covered Si Substrates.** *Y. Tamada*[1], S. Yamamoto[2], S. Nasu[1] and T. Ono[1] *1. Institute for Chemical Research, Kyoto University, Kyoto, Japan; 2. Institute for Integrated Cell-Material Sciences, Kyoto University, Kyoto, Japan*

THURSDAY AFTERNOON 1:00 AUSTIN BALLROOM

## Session FS
## MAGNETIC SEMICONDUCTORS: OXIDES (POSTER SESSION)

Byoung-Chul Min, Chair
Hidekazu Saito, Chair

**FS-01. Intrinsic point defect driven ferromagnetism in wurtzite zinc oxide.** *X. Zuo*[1], S. Yoon[2], A. Yang[2], C. Vittoria[2] and V.G. Harris[2] *1. College of Information Technical Science, Nankai University, Tianjin, Tianjin, China; 2. Department of Electrical and Computer Engineering, northeastern University, Boston, MA*

**FS-02. Room-temperature Ferromagnetic $Zn_{0.98}Co_{0.02}O$ Diluted Magnetic Semiconducting Thin Films by Hydrothermal Epitaxy.** *Y. Zhang*[1], S. Li[1] and G. Goh[2] *1. The University of New South Wales, Sydney, NSW, Australia; 2. Institute of Materials Research and Engineering, Singapore, Singapore*



**FS-03. Enhancement of Room Temperature Ferromagnetism in C–doped ZnO Films by Nitrogen Codoping.** *J. Yi*[1], L. Shen[3], L. Van[2], S. Thongmee[1], J. Ding[1] and Y. Feng[3] *1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 2. Nanoscience and Nanotechnology Initiative, National University of Singapore, Singapore, Singapore; 3. Physics, National University of Singapore, Singapore, Singapore*

**FS-04. Room Temperature Ferromagnetism in ZnO Doped with Al.** Y. Ma[1], J. Yi[1], *J. Ding*[1], L. Van[1] and L. Zhang[1] *1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

**FS-05. High-temperature ferromagnetism in Co-doped ZnO nanorods prepared by thermal diffusion.** *L.T. Phan*[1], V. Roger[1], D. Cherns[1], D.H. Nguyen[2] and S. Yu[3] *1. University of Bristol, Bristol, United Kingdom; 2. Vietnam Academy of Science and Technology, Hanoi, Viet Nam; 3. Chungbuk National University, Cheongju, South Korea*

**FS-06. Structural and magnetic properties of Fe-doped ZnO films.** *R.P. Borges*[1], A.O. Ankiewicz[2], J.S. Martins[2], A. Saraiva[1], E.R. Zhiteytsev[2], A.P. Gonçalves[1,3], P. Ferreira[4], N.A. Sobolev[2] and M. Godinho[1,5] *1. CFMC-Universidade de Lisboa, Campo Grande, Ed. C8, 1749-016 Lisboa, Portugal; 2. I3N and Departamento de Física, Universidade de Aveiro, 3810-193 Aveiro, Portugal; 3. Departamento de Química, Instituto Tecnológico e Nuclear, 2686-953 Sacavém, Portugal; 4. Departamento de Engenharia Cerâmica e do Vidro, CICECO, Universidade de Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal; 5. Departamento de Física, Universidade de Lisboa, Campo Grande, 1749-016 Lisboa, Portugal*

**FS-07. Room temperature ferromagnetism of conductive and insulating (Al,Co) doped ZnO thin films.** Y. Lee[1], *J. Lee*[1], J. Min[1], C. Yu[2] and J. Lee[3] *1. Physics, National Cheng Kung University, Tainan, Taiwan; 2. Applied Physics, National Chiayi University, Chiayi, Taiwan; 3. Applied physics, National Ping Tung University of Education, Ping Tung, Taiwan*

**FS-08. Magnetic and electronic properties of Ni-doped ZnO.** *W.R. Lopez*[1], R. González[1] and J.A. Rodríguez[2] *1. Physic, Universidad del Norte, Barranqilla, Atlantico, Colombia; 2. Physic, Universidad Nacional de Colombia, Bogotá, Cundinamarca, Colombia*

**FS-09. Electrical transport and ac conductivity properties of hydrogenated annealing V-doped ZnO.** *S. Liu*[1], C. Lin[2] and J.A. Huang[1] *1. Physics, National Cheng-Kung University, Tainan, Taiwan; 2. Mechanical Engineering, Southern Taiwan University of Technology, Tainan, Taiwan*

**FS-10. Microwave-absorption properties of Co-doped ZnO dilute magnetic semiconductor.** *M. Yang*[1], M. Tung[1] and C. Fu[2] *1. Industrial Technology Research Institute, Hisinchu, Taiwan; 2. National Taiwan University, Taipei, Taiwan*

**FS-11. Origin of large positive magnetoresistance in epitaxial Co-doped ZnO ferromagnetic semiconductor.** *Y. Tian*[1,3], Q. Cao[1], J. Deng[1], L. Mei[1,2], S. Yan[1,2] and Y. Qiang[3] *1. School of Physics, Shandong University, Jinan, Shandong, China; 2. National Key Laboratory of Crystal Materials, Shandong University, Jinan, Shandong, China; 3. Department of Physics, University of Idaho, Moscow, ID*

**FS-12. Room temperature anomalous Hall effect in Co doped ZnO thin films in the semiconductor regime.** H. Hsu[1], C. Lin[1], *H. Chou*[1] and J. Huang[2] *1. Department of Physics, National Sun Yat-sen University, Kaohsiung, Taiwan; 2. Department of Physics, National Cheng Kung University, Tainan, Taiwan*

**FS-13. Point defects and magnetic properties of Cu-doped ZnO.** *Y. Kim*[1] and Y. Chung[1] *1. Department of Materials Science and Engineering, Hanyang University, Seoul, South Korea*

**FS-14. The inducement for ferromagnetism in ZnCoO nano-crystalline powder fabricated by sol-gel method.** *S. Lee*[1], Y. Cho[2], S. Kim[3], S. Kim[1] and S. Jeong[1,3] *1. Department of Nano Fusion Technology, Pusan National University, Miryang, South Korea; 2. Research Center for Dielectric and Advanced Matter Physics, Pusan National University, Busan, South Korea; 3. BK21 Team of Nano Fusion Technology, College of Nanoscience and Nanotechnology, Pusan National University, Miryang, South Korea*

**FS-15. Effect of Al and Sb doping on the magnetic properties of ZnMnO and ZnCoO.** *G.D. Varma*[1] and V.K. Sharma[1] *1. Physics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India*

**FS-16. Study of the magnetic transition in bulk $Zn_{0.9}Co_{0.1}O$.** M.E. Mercurio[1], *A.W. Carbonari*[1], M.R. Cordeiro[1] and R.N. Saxena[1] *1. CRPq, IPEN-CNEN/SP, Sao Paulo, Brazil*

**FS-17. Nanosized superparamagnetic precipitates in cobalt-doped ZnO.** *M. Opel*[1], K. Nielsen[1], S. Bauer[1], S.B. Goennenwein[1], J.C. Cezar[2], D. Schmeisser[3], J. Simon[4], W. Mader[4] and R. Gross[1,5] *1. Walther-Meissner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 2. European Synchrotron Radiation Facility, Grenoble, France; 3. Angewandte Physik II, Brandenburgische Technische Universität, Cottbus, Germany; 4. Institut für Anorganische Chemie, Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany; 5. Physik-Department, Technische Universität München, Garching, Germany*

**FS-18. Structural and magnetic properties of chemically synthesized Fe doped ZnO.** *S. Kumar*[1], Y.J. Kim[1], B.H. Koo[1] and C.G. Lee[1] *1. School of Nano & Advanced Materials Engineering, Changwon National University, Changwon, Gyeongsagnam, South Korea*

**FS-19. Oscillation of exchange coupling in Co-doped ZnO nanocluster films.** *Y. Tian*[1,2], R. Souza[1], S. Yan[2] and Y. Qiang[1] *1. Department of Physics, University of Idaho, Moscow, ID; 2. School of Physics, Shandong University, Jinan, Shandong, China*



**FS-20. Ferromagnetism of manganese-doped indium tin oxide films deposited on polyethylene naphthalate substrates.** *T. Nakamura*[1], S. Isozaki[1], K. Tanabe[1] and K. Tachibana[1] *1. Department of Electronic Science and Engineering, Kyoto University, Kyoto, Japan*

**FS-21. Synthesis and Characterization of Ni-doped In2O3 Nanoparticles.** *M.K. Singh*[1], S. Dussan[1], G. Sharma[1] and R. Katiyar[1] *1. University of Puerto Rico, San Juan, PR*

**FS-22. Bipolar Resistive Switching in Co:TiO2 Diluted Magnetic Semiconductor Films.** *K.A. Bogle*[1], M. Bachhav[1], M. Deo[1] and S. Ogale[1] *1. Physical and Materials Chemistry Division, National Chemical Laboratory, Pune -8, Pune, Maharashtra, India*

**FS-23. Electron Paramagnetic Resonance (EPR) study of Cr3+ in Nanoparticles of SnO2.** *S.K. Misra*[1], S.I. Andronenko[1], S. Rao[2], S.V. Bhat[2], C. Van Kormen[3] and A. Punnose[3] *1. Department of Physics, Concordia University, Montreal, QC, Canada; 2. Department of Physics, Indian institute of Science, Bangalore, India; 3. Department of Physics, Boise State University, Boise, ID*

**FS-24. Magnetic properties of V doped TiO2 nano-crystalline film synthesized by liquid phase deposition technique.** *Q. Wen*[1], H. Zhang[1], Q. Yang[1], Y. Li[1], D. Gu[1], W. Wang[2] and J.Q. Xiao[2] *1. State Key Laboratory of Electronic 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*

**FS-25. Room temperature ferromagnetism in Fe doped CeO2 and Co doped CeO2 polycrystalline oxides.** *Q. Wen*[1], H. Zhang[1], Q. Yang[1], X. Tang[1], Y. Liu[1], W. Wang[2] and J.Q. Xiao[2] *1. State Key Laboratory of Electronic 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*

**FS-26. Evolution of ferromagnetism in Mn-doped $BaSnO_3$ with increasing Mn-content.** *K. Balamurugan*[1], N. Harish Kumar[1], J. Arout Chelvane[2] and N. Santhosh P.[1] *1. Physics, Indian Institute of Technology Madras, Chennai, Tamilnadu, India; 2. Advanced Magnetics Group, Defense Metallurgical Research Laboratory, Hyderabad, Andhra Pradesh, India*

**FS-27. Combinatorial fabrication and Magnetic properties of homoepitaxial Co and Li co-doped NiO thin films.** *U. Joshi*[1], K. Itaka[2], Y. Matsumoto[3] and H. Koinuma[2] *1. Physics, Gujarat University, Ahmedabad, Gujarat, India; 2. Advanced Materials, Institute of Solid State Physics, University of Tokyo, Tokyo, Chiba, Japan; 3. Materials and Structures Laboratory, Tokyo Institute of Technology, Tokyo, Yokohama, Japan*

**FS-28. In-situ Mössbauer studies of role of defects on hyperfine interaction in lanthanum strontium iron oxides.** *X. Zhou*[1], J. Yang[2], Q. Cai[2], W. James[2], H.U. Anderson[2], W.B. Yelon[2], J.W. Stevenson[1] and L.R. Pederson[1] *1. Pacific Northwest National Laboratory, Richland, WA; 2. Missouri University of Science and Technology, Rolla, MO*

THURSDAY AFTERNOON 1:00

AUSTIN BALLROOM

## Session FT
# PATTERNED FILMS II (POSTER SESSION)

Alina Deac, Co-Chair
Seok-Hwan Chung, Co-Chair

**FT-01. Non-lithographic fabrication of sub-25 nm magnetic nanodot array with perpendicular anisotropy.** *M. Rahman*[1], N.N. Shams[1] and C. Lai[1] *1. Department of materials science and engineering, National Tsing Hua University, Hsinchu, Taiwan*

**FT-02. Control of Magnetization Reversal by Engineering the Nanostructure of Thin Films with Perpendicular Anisotropy.** *M. Rahman*[1], R.K. Dumas[2], Y. Wu[1], C. Lai[1], N. Eibagi[2] and K. Liu[2] *1. Department of materials science and engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Physics, University of california, Davis, Davis, CA*

**FT-03. The role of defects on the magnetic reversal properties of perpendicularly magnetized nanostructures.** *J. Shaw*[1], M. Olsen[2,1], M. Schneider[2,1], B. Terris[3], O. Hellwig[3], T. Thomson[4] and J. Lau[5] *1. Magnetics Group, NIST, Boulder, CO; 2. Univ. of Montana, Missoula, MT; 3. Hitachi Global Storage Technology, San Jose, CA; 4. Univ. of Manchester, Manchester, United Kingdom; 5. NIST, Gaithersburg, MD*

**FT-04. Strong Alternating Magnetic Field from Magnetic Nanostructures.** *K. Kim*[1], A.E. Ozmetin[1], H. Lee[1], I. Lyuksyutov[1], D.G. Naugle[1] and W. Wu[1] *1. Department of Physics, Texas A&M University, College Station, TX*

**FT-05. Dipolar and exhange interlayer coupling in NiFe/Cu/Co nanodisks.** *G. Gubbiotti*[1], V. Bonanni[2], D. Bisero[2], P. Vavassori[2], M. Madami[1], A. Adeyeye[3], S. Goolaup[3], N. Singh[3], T. Ono[4] and C. Spezzani[5] *1. Diaprtimento di Fisica, CNISM, Unità di Perugia, Perugia, PG, Italy; 2. CNR-INFM S3, CNISM and Dipartimento di Fisica, Università di Ferrara, Ferrara, Italy; 3. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 4. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 5. Sincrotrone Trieste S. C. p. A, Trieste, Italy*

**FT-06. Reduced uniaxial magnetic anisotropy in patterned epitaxial Fe dot arrays.** D. Niu[1], X. Zou[2], I. Will[1], J. Wong[1], J. Wu[2] and *Y. Xu*[1] *1. Department of Electronics, University of York, York, United Kingdom; 2. Department of Physics, The University of York, York, United Kingdom*

**FT-07. Micromagnetic Behavior of Soft Magnetic Nanodisks observed by Scanning Electron Microscopy with Polarization Analysis (SEMPA).** *S. Chung*[1,2], D.T. Pierce[1] and J. Unguris[1] *1. Center for Nanoscale Science and Technology, NIST, Gaithersburg, MD; 2. Maryland NanoCenter, University of Maryland, College Park, MD*



**FT-08. High resolution imaging of geometrically-confined domain walls and vortex cores.** *M. Klaui*[1], D. Backes[1,2], M. Eltschka[1,3], F. Junginger[1,3], L.J. Heyderman[2], T. Kasama[3], R. Dunin-Borkowski[3] and U. Rüdiger[1] *1. Physics, University of Konstanz, Konstanz, Germany; 2. LMN, PSI, Villigen, Switzerland; 3. Materials Sciences, University of Cambridge, Cambridge, United Kingdom*

**FT-09. Meta-stable states and switching routes depending on temperature related with defects on magnetic multilayer rings.** *J. Lee*[1], T.J. Hayward[1], B. Hong[1], J. Llandro[1], K. Cooper[1], D. Anderson[1], J.C. Bland[1], C.W. Barnes[1] and S.N. Holmes[2] *1. Physics, University of Cambridge, Cambridge, United Kingdom; 2. Toshiba Research Europe Limited, Cambridge Research Laboratory, Cambridge, United Kingdom*

**FT-10. Magnetic Properties of Exchange Biased Co/CoO Elongated Nanoring Arrays.** *D. Tripathy*[1], A. Adeyeye[1], N. Singh[2] and R. Stamps[3] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Institute of Microelectronics, Singapore, Singapore; 3. School of Physics, University of Western Australia, Crawley, WA, Australia*

**FT-11. Modelling of nanoscale domain walls formation in arrays of parallel nanowires.** *H. Wu*[1], O.N. Mryasov[2] and I.V. Shvets[1] *1. CRANN, School of Physics, Trinity College Dublin, Dublin, Ireland; 2. Seagate Technology, Pittsburgh, PA*

**FT-12. Depinning field of a periodic domain wall array in vicinal nanowires.** *A.L. Dantas*[1], F.I. Nascimento[1], G.O. Rebouças[2] and A.S. Carriço[2] *1. Departmento de Física, UERN, Mossoro, RN, Brazil; 2. Departamento de Física, UFRN, Natal, RN, Brazil*

**FT-13. High efficiency domain wall gate in Permalloy nanowires.** *D. Petit*[1], A. Jausovec[1], E.R. Lewis[1], H.T. Zeng[1], L. O'Brien[1], D. Read[1] and R.P. Cowburn[1] *1. Physics, Imperial College London, London, United Kingdom*

**FT-14. Local modes and two magnon scattering in ordered permalloy antidot arrays.** S. Martens[1], K. Nielsch[1] and *D. Görlitz*[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany*

**FT-15. Static and Dynamic Magnetic Properties of $Ni_{80}Fe_{20}$ Square Antidot Arrays.** *D.Y. Tse*[1], S.J. Steinmuller[1], T. Trypiniotis[1], D. Anderson[1], G.C. Jones[1], J.C. Bland[1] and C.W. Barnes[1] *1. Department of Physics, University of Cambridge, Cambridge, United Kingdom*

**FT-16. Magnetic domains configurations in perpendicular anisotropy CoCrPt antidot and nanodot arrays made on anodic alumina templates.** *D. Navas*[1], F. Ilievski[1] and C.A. Ross[1] *1. Materials Science and Engineering Department, MIT, Cambridge, MA*

**FT-17. Vibration assisted assembly of ferromagnetic particles on magnetic patterns.** K. Paul[1] and *L. Malkinski*[1] *1. AMRI, University of New Orleans, New Orleans, LA*

**FT-18. Effect of 30keV Ga ion beam irradiation on a first order antiferromagnetic-ferrimagnetic phase transition in $Mn_{2-x}Cr_xSb$ thin films.** *K. Madono*[1], T. Matsui[1], S. Muramatsu[1] and A. Iwase[1] *1. Graduate School of engineering, Osaka Prefecture University, Sakai, Osaka, Japan*

**FT-19. Remanent state and magnetization reversal in exchange-coupled permalloy nanodot chain arrays.** *S.C. Hernandez*[1], J. Dou[1], C. Yu[1], M.J. Pechan[1], L. Folks[2], J.A. Katine[2] and M.J. Carey[2] *1. Department of Physics, Miami University, Oxford, OH; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

THURSDAY AFTERNOON 1:00 — AUSTIN BALLROOM

## Session FU
## EXCHANGE BIAS II (POSTER SESSION)
David Lederman, Chair

**FU-01. Effects of seed layer on the exchange bias characteristics in $[Pd/Co]_5$/FeMn and FeMn/$[Co/Pd]_5$ thin films with perpendicular anisotropy.** *L. Lin*[1], S. Bae[1], W. Ho[2] and J. Kim[3] *1. Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore; 2. Departments of Computer and Electronic Physics, Sangji University, Wonju 660, South Korea; 3. Division of Materials and Chemical engineering, Hanyang University, An-San 426-791, South Korea*

**FU-02. Effects of Co thicknesses and an oscillating perpendicular exchange bias in $[Pt/Co]_4$/NiO multilayers.** J. Guo[1], S. Chung[1], H. Ouyang[1], *K. Lin*[1], E. Vass[2] and J. van Lierop[3] *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 2. Institut for Experimentalphysik, University of Innsbruck, Innsbruck, Austria; 3. Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada*

**FU-03. Effects of Ar gas pressure during sputtering of $Co_{80}Fe_{20}$ insertion on the exchange bias characteristics in $[Pd/Co]_5/Co_{80}Fe_{20}$/FeMn thin films with perpendicular anisotropy.** *S. Kim*[1], S. Bae[1], L. Lin[1], J. Heo[2], H. Joo[2] and K. Lee[2] *1. Electrical and Computer Engineering, Biomagnetics Laboratory (BML) & Information Storage Materials Laboratory (ISML), Singapore, Singapore; 2. Physics, Thin films Lab., Cheonan, Chungnam, South Korea*

**FU-04. Correlating antiferromagnetic spin structures with ion-beam bombardment in exchange-biased NiFe/Mn bilayers.** *K. Lin*[1], T. Chen[1], J. Guo[1], H. Ouyang[1], D. Wei[2] and J. van Lierop[3] *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 2. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 3. Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada*



**FU-05. Study of the exchange anisotropy dispersion; Comparison between H ion irradiation and field annealing.** *S. Lee*[1], Y. Han[1], J. Kang[1] and J. Hong[1] *1. Materials Science and Engineering, Yonsei University, Soeul, South Korea*

**FU-06. Exchange bias of FM/AFM in FePt/FeRh bilayers.** *T. Nguyen*[1], W. Lu[1] and T. Suzuki[1] *1. Information Storage Materials Laboratory, Toyota Technological Institute, Nagoya, Japan*

**FU-07. Thermal hysteresis of FM/AFM compensated bilayers.** *A.L. Dantas*[1], F.I. Nascimento[1], L.L. Oliveira[1], V.D. Mello[1], R.E. Camley[2] and A.S. Carriço[3] *1. Departmento de Fisica, UERN, Mossoro, RN, Brazil; 2. Departament of Physics, UCCS, Colorado Springs, CO; 3. Departamento de Fisica, UFRN, Natal, RN, Brazil*

**FU-08. Contrasting Variation of Exchange Bias with Annealing Temperature in Py/FeMn/CoFe Trilayers.** K. Kim[1], J. Lee[1], H. Choi[2] and *C. You*[2] *1. Neutron Science Division, Korea Atomic Energy Research Institute, Daejeon, South Korea; 2. Department of Physics, Inha University, Incheon, South Korea*

**FU-09. Reorientation of exchange anisotropy in epitaxial (002) $Ir_{20}Mn_{80}/Co_{50}Fe_{50}$ system.** *H. Huang*[1], C. Yang[1] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

**FU-10. Reduction of Interfacial Spin Disorder on IrMn/CoFe Exchange Biased Systems.** *L.E. Fernandez-Outon*[1], N. Aley[1], G. Vallejo-Fernandez[1], K. O'Grady[1], S. Oh[2] and M. Pakala[2] *1. Physics, The University of York, York, United Kingdom; 2. Western Digital, Fremont, CA*

**FU-11. Effective spin Hamiltonian for bulk antiferromagnets Mn3Ir and MnIr.** L. Szunyogh[1], L. Udvardi[1], B. Lazarovits[1,3], *J. Jackson*[2], R. Chantrell[2] and U. Nowak[4] *1. Theoretical Physics, Budapest Universtiy of Technology and Economics, Budapest, Hungary; 2. Physics, University of York, York, United Kingdom; 3. Solid State Physics and Optics, Hungarian Academy of Sciences, Budapest, Hungary; 4. Fachbereich Physik, Universität Konstanz, Konstanz, Germany*

**FU-12. Competition between RKKY and exchange bias coupling interactions in synthetic-antiferromagnet thin film systems.** *K. Srinivasan*[1], S. Wong[1], R. Sbiaa[1] and S.N. Piramanayagam[1] *1. Data Storage Institute, Singapore, Singapore*

**FU-13. Positive exchange bias in CoFe/IrMn multilayers comprising nano-oxide layer.** *J. Rhee*[1], S. Lee[1], J. Hwang[1], H. Yim[1] and B. Chun[2] *1. Physics, Sookmyung Women's University, Seoul, South Korea; 2. CRANN, School of Physics, Trinity College, Dublin 2, Ireland*

**FU-14. Reinforcement of Exchange Biasing of Ultra Thin Antiferromagnetic Oxide Layer.** *K. Sawada*[1], M. Doi[1] and M. Sahashi[1] *1. Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan*

**FU-15. Magnetization Reversal in Exchange Biased Antidot Arrays.** *D. Tripathy*[1], A. Adeyeye[1] and N. Singh[2] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Institute of Microelectronics, Singapore, Singapore*

FRIDAY MORNING 9:00 — SALON C

## Session GA
## SYMPOSIUM ON MICROWAVE ASSISTED MAGNETIZATION REVERSAL
Kristen Buchanan, Chair

**9:00**

**GA-01. Microwave assisted magnetization reversal in individual nanoparticles.** ***(Invited)*** *C. Thirion*[1], C. Raufast[2], T. Crozes[3], V. Dupuis[2], B. Diény[1] and W. Wernsdorfer[3] *1. Spintec/CNRS CEA, Grenoble, France; 2. Département de physique des matériaux, Université Lyon, Villeurbanne, France; 3. Institut Néel / CNRS, Grenoble, France*

**9:36**

**GA-02. Microwave Assisted Magnetic Recording with Circular AC Field Generated by Spin Torque Transfer.** ***(Invited)*** *J. Zhu*[1] and Y. Wang[1] *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

**10:12**

**GA-03. Microwave-assisted magnetization reversal in CoCr granular films.** ***(Invited)*** *M. Wu*[1], C. Nistor[1] and S. Wu[2] *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. Seagate Technology, Fremont, CA*

**10:48**

**GA-04. Nonlinear-Dynamical-System Approach to Microwave-Assisted Magnetization Dynamics.** ***(Invited)*** *G. Bertotti*[1], I.D. Mayergoyz[2], C. Serpico[3], R. Bonin[4] and M. d'Aquino[5] *1. Electromagnetism Division, INRIM, Torino 10135, Italy; 2. Electrical and Computer Engineering Department and UMIACS, University of Maryland, College Park 20742, MD; 3. Department of Electrical Engineering, University of Naples Federico II, Napoli 80125, Italy; 4. Osservatorio Astronomico della Regione Valle d'Aosta, Nus 11020, AO, Italy; 5. Department of Technology, University of Naples Parthenope, Napoli 80143, Italy*



**11:24**

**GA-05. Microwave Assisted Magnetization Reversal: theoretical developments.** ***(Invited)*** *K. Rivkin*[1], W. Scholz[2] and S. Batra[2] *1. Seagate Technology, Edina, MN; 2. Seagate Research, Pittsburgh, PA*

FRIDAY MORNING 9:00 — SALON G

## Session GB
## SPIN-TORQUE OSCILLATORS
David Abraham, Chair

**9:00**

**GB-01. Non-monotonic temperature dependence of spin torque oscillator line widths.** *P.K. Muduli*[1], N. Vreede[1], S. Bonetti[1], F.B. Mancoff[2] and J. Åkerman[1] *1. Department of Microelectronics and Applied Physics, Royal Institute of Technology, Electrum 229, 16440, Kista, Sweden; 2. Technology Solutions Organization, Freescale Semiconductor Inc., Chandler, AZ*

**9:12**

**GB-02. Temperature dependence of generation linewidth in spin-torque auto-oscillators.** *V.S. Tiberkevich*[1], J. Kim[2] and A.N. Slavin[1] *1. Department of Physics, Oakland University, Rochester, MI; 2. Institut d'Electronique Fondamentale, CNRS & Université Paris-Sud, Orsay, France*

**9:24**

**GB-03. Spectral Line Shape of Spin Torque Oscillators.** *I. Krivorotov*[1], C. Boone[1], J. Katine[2], J. Childress[2], J. Zhu[1] and X. Cheng[1] *1. Physics and Astronomy, University of California, Irvine, Irvine, CA; 2. Hitachi Global Storage Technologies, San Jose, CA*

**9:36**

**GB-04. Fokker-Planck theory of stochastic dynamics of spin-torque auto-oscillators.** *J. Kim*[1], V.S. Tiberkevich[2] and A.N. Slavin[2] *1. Institut d'Electronique Fondamentale, CNRS & Université Paris-Sud, Orsay, France; 2. Department of Physics, Oakland University, Rochester, MI*

**9:48**

**GB-05. Magnetic noise spectroscopy in magnetic tunnel junctions.** *Y. Guan*[1], D.W. Abraham[1], M.C. Gaidis[1], G. Hu[1], E.J. O'Sullivan[1], J.J. Nowak[1], P.L. Trouilloud[1], D.C. Worledge[1] and J.Z. Sun[1] *1. IBM-MagIC MRAM Alliance, IBM T. J. Watson Research Center, Yorktown Heights, NY*

**10:00**

**GB-06. Spin-torque oscillator with tilted fixed layer magnetization.** *Y. Zhou*[1], C. Zha[1], S. Bonetti[1], J. Persson[1] and J. Åkerman[1] *1. Institute of Microelectronics and Information Technology, Royal Institute of Technology, Stockholm-Kista, Sweden*

**10:12**

**GB-07. Multi-point-contacts spin-transfer oscillators.** *A. Ruotolo*[1], A. Dussaux[1], B. George[1], V. Cros[1], J. Grollier[1], C. Deranlot[1], S. Fusil[1], K. Bouzehnouane[1] and A. Fert[1] *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France*

**10:24**

**GB-08. Auto-oscillation threshold and linewidth optimization in MgO based spin torque oscillator.** *S. Cornelissen*[1,4], L. Bianchini[2], J. Kim[2], T. Devolder[2], M. Op de Beeck[1], G. Hrkac[3], T. Schrefl[3], L. Lagae[1,5] and C. Chappert[2] *1. NEXTNS, IMEC, Heverlee(Leuven), Belgium; 2. Institut d'electronique fondamentale, UMR CNRS 8622, UPS, Orsay cedex, France; 3. Department of engineering materials, University of Sheffield, Sheffield, United Kingdom; 4. ESAT, KULeuven, Leuven, Vlaams Brabant, Belgium; 5. Natuurkunde en sterrekunde, KULeuven, Leuven, Vlaams Brabant, Belgium*

**10:36**

**GB-09. Dependence of the current induced magnetization excitations on the free layer thickness in MgO based magnetic tunnel junctions.** ***L. Gao***[1], M. Hayashi[1], R. Moriya[1], C. Rettner[1] and S. Parkin[1] *1. IBM Almaden Research Center, San Jose, CA*

**10:48**

**GB-10. External field dependence of spin-torque induced precessions in magnetic tunnel junctions.** *T. Wada*[1], T. Yamane[1], T. Nozaki[1], T. Seki[1], H. Kubota[2], A. Fukushima[2], S. Yuasa[2], M. Shiraishi[1] and Y. Suzuki[1,2] *1. Graduate school of engineering science, Osaka university, Toyonaka, Japan; 2. National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan*

**11:00**

**GB-11. Dependence of spin transfer torque oscillations upon static magnetic field orientation.** *A. Neudert*[1], R.J. Hicken[1], X. Cao[2], R.L. Lamberton[2] and A.B. Johnston[2] *1. School of Physics, University of Exeter, Exeter, United Kingdom; 2. Seagate Technology, Derry, United Kingdom*

**11:12**

**GB-12. Spin-torque diode spectra under a perpendicular-to-plane magnetic field.** *S. Yakata*[1], H. Kubota[1], A. Fukushima[1], K. Yakushiji[1], S. Yuasa[1], K. Ando[1] and Y. Suzuki[1,2] *1. Nanoelectronics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan*



**11:24**

**GB-13. Spin-polarized current-driven excitations in spin-valve nanopillars with a synthetic antiferromagnetic pinned layer.** *D. Houssameddine*[1], D. Gusakova[1,2], B. Delaët[2], U. Ebels[1], M. Cyrille[2], J. Michel[2], L. Buda-Prejbeanua[1], O. Redon[2], B. Dieny[1], B. Ocker[3], J. Langer[3] and W. Maas[3] *1. CEA-INAC/CNRS/UJF/INPG, SPINTEC, Grenoble, France; 2. CEA-LETI–MINATEC, New Orleans, LA; 3. Singulus Technologies, Kahl/Main, Germany*

**11:36**

**GB-14. Effective phase equation for the description of forced dynamics of a nonlinear spin-torque auto-oscillator.** *V. Tyberkevych*[1] and A.N. Slavin[1] *1. Department of Physics, Oakland University, Rochester, MI*

**11:48**

**GB-15. Spin-Wave Analysis of Uniaxial Nanopillar Devices.** R. Bonin[1], *G. Bertotti*[2], C. Serpico[3], M. d'Aquino[4] and I. Mayergoyz[5] *1. Politecnico di Torino – sede di Verrès, Verrès (AO), Italy; 2. Instituto Nazionale di Ricerca Metrologica, Turin, Italy; 3. Department of Electrical Engineering, University of Naples Federico II, Naples, Italy; 4. Department of Technology, University of Naples Parthenope, Naples, Italy; 5. Department of Electrical and Computer Engineering and UMIACS, University of Maryland College Park, College Park, MD*

**FRIDAY MORNING 9:00** **SALON A**

## Session GC
# NANOSTRUCTURED PERMANENT MAGNET MATERIALS

Jeff Shield, Chair

**9:00**

**GC-01. Chemically Synthesized SmCo Nanoblades.** ***(Invited)*** *C.N. Chinnasamy*[1], J.Y. Huang[2], L.H. Lewis[3], B. Latha[1], D. Heiman[4], C. Vittoria[1] and V.G. Harris[1] *1. Center for Microwave and Magnetic Materials, Dept. of Electrical and Computer Engineering, Northeastern University, Boston 02115-5000, MA; 2. Center for Integrated Nanotechnologies, Sandia National Laboratories, Albuquerque, NM 87185, Mexico; 3. Dept. of Chemical Engineering, Northeastern University, Boston 02115, MA; 4. Dept. of Physics, Northeastern University, Boston 02115, MA*

**9:36**

**GC-02. Rapidly solidified Sm-Co nanocomposite permanent magnets.** *J.E. Shield*[1,2], V. Litwinowicz[1], R. Valiveti[1], A. Ingmire[1] and P. Rasmussen[3] *1. Mechanical Engineering, University of Nebraska, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 3. Raymond Central High School, Raymond, NE*

**9:48**

**GC-03. Studies on the Giant Room-Temperature Coercivity in Melt-Spun and High-Energy Milled Sm(Co,Cu,Fe)5 Alloys.** *D. Sultana*[1], A.M. Gabay[1] and G.C. Hadjipanayis[1] *1. Physics and Astronomy, University of Delaware, Newark, DE*

**10:00**

**GC-04. Improvement in Coercivity of Bulk Anisotropic Nanocomposite $Sm(CoFeTi)_{8-10}$ Magnets.** *M. Huang*[1], Z. Turgut[1], Z. Chen[2], J. Liu[3], Y. Shen[5], D. Lee[4], A. Higgins[4], C.H. Chen[4], S. Liu[4], J.C. Horwath[6] and R.T. Fingers[6] *1. Wright-Patterson Air Force Research Laboratory, UES inc, Dayton, OH; 2. Magnequench Inc., Singapore, Singapore; 3. Electron Energy Corporation, Landisville, PA; 4. Magnetics Lab, University of Dayton, Dayton, OH; 5. FutureTek Corp., Dayton, OH; 6. AFRL, Wright-Patterson Air Force Base, Dayton, OH*

**10:12**

**GC-05. High coercivity Sm-Fe melt-spun ribbon.** *T. Saito*[1] and T. Furutani[1] *1. Mechanical Science and Engineering, Chiba Institute of Technology, Narashino, Japan*

**10:24**

**GC-06. Crystal structure and magnetic properties of melt spun $Sm(Co,V)_7$ ribbons.** C. Hsieh[1], *H.W. Chang*[2], C.W. Chang[1], Z.H. Guo[1,3] and W.C. Chang[1] *1. Department of Physics, National Chung-Cheng University, Chia-Yi, Taiwan; 2. Department of Physics, Tunghai University, Taichung, Taiwan; 3. Institute of Functional Materials, Central Iron and Steel Research Institute, Beijing, China*

**10:36**

**GC-07. Effect of Temperature and Vacuum on Magnetic Properties and Compositional Changes of High Temperature Sm-Co Magnets.** *J. Liu*[1], M. Marinescu[1], P. Vora[1], S. Wu[2] and M.P. Harmer[2] *1. Electron Energy Corporation, Landisville, PA; 2. Center for Advanced Materials and Nanotechnology, Lehigh University, Bethlehem, PA*



**10:48**

**GC-08. Investigation of thermal fluctuation effect in exchange-coupled SmCo5/α-Fe nanocomposite magnets.** *C. Rong*[1], Y. Liu[1] and J. Liu[1] *1. Department of Physics, University of Texas at Arlington, Arlington, TX*

**11:00**

**GC-09. Anisotropic $Sm_2(Co,Fe)_{17}$ Nanoparticles Produced by Surfactant-Assisted Ball Milling.** *N. Gunduz Akdogan*[1], G.C. Hadjipanayis[1] and D.J. Sellmyer[2] *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Physics and Astronomy, University of Nebraska, Lincoln, NE*

**11:12**

**GC-10. Bulk Nanocrystalline of [Sm(Co,Fe)z = 5.6 to 14.7] Alloys and the Effect of Fluorine Inclusion.** *C.H. Chen*[1], A.K. Higgins[1], M.Q. Huang[2], J.C. Horwath[3], Y. Shen[4] and S. Liu[4,1] *1. University of Dayton Magnetics Lab, Dayton, OH; 2. UES Inc./Air Force Research Laboratory, Dayton, OH; 3. Air Force Research Laboratory (AFRL), Wright-Patterson Air Force Base, Dayton, OH; 4. FutureTek Corp, Dayton, OH*

**11:24**

**GC-11. Large-Scale Synthesis of Hard Magnetic Sm-Co Nanocrystals and SmCo/Fe Nanocomposite Particles by a Facile Method.** *G.S. Chaubey*[1], N. Poudyal[1], Y. Liu[1], C. Rong[1] and J. Liu[1] *1. Physics, University of Texas at Arlington, Alington, TX*

**11:36**

**GC-12. Microstructure Analysis of a Bilayer Sm-Co/Fe Graded Exchange Spring Permanent Magnet.** *M.J. Kramer*[1], Y.Q. Wu[1], Y. Liu[3], Y. Choi[3], J.S. Jiang[3], Z.L. Wang[4] and J.P. Liu[2] *1. Ames Lab/Mat Sci and Eng, Iowa State University, Ames, IA; 2. Department of Physics, University of Texas at Arlington, Arlington, TX; 3. Materials Science Division, Argonne National Laboratory, Argonne, IL; 4. School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA*

**11:48**

**GC-13. Seedlayer effect on texture and magnetic properties of SmCo5.** *J. Hu*[1], L. Zhang[2], J. Chen[2] and J. Ding[2] *1. Data Storage Institute, Singapore, Singapore; 2. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

FRIDAY MORNING 9:00

SALON B

## Session GD
# MAGNETIC NANOSTRUCTURES: MEASUREMENT, FABRICATION, AND MODELING

Frank Johnson, Chair

**9:00**

**GD-01. Conductive Atomic Force Microscopy measurements of magnetic nanopillars.** *E.R. Evarts*[1], C. Hogg[1], J.A. Bain[2], S.A. Majetich[1], J. Park[3] and J. Zhu[2] *1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

**9:12**

**GD-02. Magnetically Active Nanospirals.** *E. Schubert*[1,2], M. Schubert[1,2], D. Schmidt[1,2], T. Hofmann[1,2], M. Chipara[3], A.J. Villarreal[3], X.H. Wei[1,4], R. Skomski[1,4], S.H. Liou[1,4] and D.J. Sellmyer[1,4] *1. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Department of Electrical Engineering, University of Nebraska, Lincoln, NE; 3. Department of Physics and Geology, University of Texas–Pan American, Edinburg, TX; 4. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE*

**9:24**

**GD-03. Room temperature magnetic stabilization of buried cobalt nanoclusters within a ferromagnetic matrix studied by soft x-ray magnetic circular dichroism.** *A.T. Hindmarch*[1], K.J. Dempsey[1], J.P. Morgan[1], B.J. Hickey[1], D.A. Arena[2] and C.H. Marrows[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY*

**9:36**

**GD-04. Magneto-optic material selectivity to self-organized magnetic nanostructures.** *K. Postava*[1], D. Hrabovsky[1,2], D. Lukas[3], J. Pistora[1], N. Dix[2], M. Rajaram[2], J.M. Roque[2], F. Sánchez[2] and J. Fontcuberta[2] *1. Department of Physics, Technical University of Ostrava, Ostrava - Poruba, Czech Republic; 2. Institut de Ciencia de Materials de Barcelona - CSIC, Universitat Autònoma de Barcelona, Barcelona, Spain; 3. Department of Applied Mathematics, Technical University of Ostrava, Ostrava - Poruba, Czech Republic*

**9:48**

**GD-05. Fabrication of two-dimensional assembly of well-isolated epitaxial Co-nanoparticles on insulating layers.** *M. Mizuguchi*[1], S. Mitani[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*



**10:00**

**GD-06. Co nanostructures arrays in a patterned polymeric template.** *W.d. da Rosa*[1], M. Jaafar[1], A. Asenjo[1] and M. Vázquez[1] *1. Instituto de Ciencias de Materiales de Madrid, Madrid, Spain*

**10:12**

**GD-07. Ferromagnetic nanoparticle monolayers from solution: a novel low-temperature solution-annealing approach.** *T. Gang*[1], S. Kinge[2], W. Naber[1], H. Boschker[1], D. Reinhoudt[2] and W. van der Wiel[1] *1. MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands; 2. University of Twente, Laboratory of Supramolecular Chemistry and Technology, Enschede, Netherlands*

**10:24**

**GD-08. Spin Reorientation Phase Transition in Self-Ordered Arrays of Magnetic Nanowires.** E.V. Tartakovskaya[2], *M. Pardavi-Horvath*[1] and M. Vázquez Villalabeitia[3] *1. SEAS ECE, The George Washington University, Washington, DC; 2. Institute of Magnetism NAS of Ukraine, Kiev, Ukraine; 3. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain*

**10:36**

**GD-09. Magnetic Properties of Nickel Coated Carbon Nanofibers.** L. Sun[1] and *H. Xing*[1] *1. Mechanical Engineering, University of Houston, Houston, TX*

**10:48**

**GD-10. Adjusting the magnetic properties of semiconductor epilayers by the crystallographic orientation of embedded highly anisotropic magnetic nanoclusters.** *C. Lacroix*[1], S. Lambert-Milot[1], P. Desjardins[1], R.A. Masut[1] and D. Ménard[1] *1. Regroupement Québécois sur les Matériaux de Pointe (RQMP), Département de Génie Physique, École Polytechnique de Montréal, Montréal, QC, Canada*

**11:00**

**GD-11. Magnetic Properties of Macroscopic Colloid Crystals of Silica-Coated FePt Nanoparticles with Controllable Interstices for Molecular Separation.** *C.C. Lo*[1], S.C. Tsang[2], C.H. Yu[2], H. Tang[3], H. He[3], V. Castelletto[4], I.W. Hamley[4], T. Narayanan[5] and K. Tam[6] *1. Center for NDE, Iowa State University, Ames, IA; 2. Wolfson Catalysis Centre, Inorganic Chemistry Laboratory, University of Oxford, Oxford, United Kingdom; 3. Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Fudan University, Shanghai, China; 4. Department of Chemistry, University of Reading, Whiteknights, United Kingdom; 5. European Synchrotron Radiation Facility, Grenoble, France; 6. AstraZeneca, Macclesfield, Cheshire, United Kingdom*

**11:12**

**GD-12. Electrodynamic Model for Low Loss Microwave Nanocomposite Magnets Using Autonomous Blocks with Floquet Channels.** *M. Pardavi-Horvath*[1], G.S. Makeeva[2] and O.A. Golovanov[2] *1. SEAS ECE, The George Washington University, Washington, DC; 2. Penza State University, Penza, Russian Federation*

**11:24**

**GD-13. Effect of Particle-Size on the Resistive Switching Behavior in Magnetite Nanoparticle Compacts.** *T. Kim*[1], E. Jang[1], J. Jang[2], N. Lee[1], J. Choi[2], K. Lee[3] and J. Cheon[2] *1. Departemnt of Physics, Ewha Womans University, Seoul, South Korea; 2. Departemnt of Chemistry, Yonsei University, Seoul, South Korea; 3. Departemnt of Materials Science and Engineering, Korea University, Seoul, South Korea*

**11:36**

**GD-14. Micromagnetic Modeling of the Magnetic and Magnetoresistive Response of Co/Cu Multilayered Nanowire Arrays.** *S. Hernandez*[1], L. Tan[2], B. Stadler[1] and R.H. Victora[1] *1. Electrical Engineering and Computer Science Department, University of Minnesota, Minneapolis, MN; 2. Chemical Engineering and Material Science Department, University of Minnesota, Minneapolis, MN*

**FRIDAY MORNING 9:00** **SALON D**

## Session GE
# MOLECULAR MAGNETS
Stephen Hill, Chair

**9:00**

**GE-01. The effective barrier to magnetization reversal in single-molecule magnets.** *S. Hill*[1,2], G. Redler[2], S. Datta[2], C. Lampropoulos[3] and G. Christou[3] *1. National High Magnetic Field Laboratory, Tallahassee, FL; 2. Physics, University of Florida, Gainesville, FL; 3. Chemistry, University of Florida, Gainesville, FL*

**9:12**

**GE-02. Spin filtering effect in a single-molecule magnet Mn12 bridged between metallic electrodes.** S. Barraza-Lopez[1], *K. Park*[1], V.M. Garcia-Suarez[2] and J. Ferrer[3] *1. Department of Physics, Virginia Tech, Blacksburg, VA; 2. Department of Physics, Lancaster University, Lancaster, United Kingdom; 3. Departamento de Fisica, Universidad de Oviedo, Oviedo, Spain*



**9:24**

**GE-03. Quantum Interference in the Longitudinal Oscillations of the Total Spin of a Dimeric Molecular Nanomagnet.** ***(Invited)*** *E. del Barco*[1], C.M. Ramsey[1], S. Hill[2], S.J. Shah[3], C.C. Beedle[3] and D.N. Hendrickson[3] *1. Physics, University of Central Florida, Orlando, FL; 2. Physics, University of Florida, Gainesville, FL; 3. Chemistry and Biochemistry, University of California at San Diego, La Jolla, CA*

**10:00**

**GE-04. Evidence of Glauber Dynamics in a Linear-Chain Metamagnet.** *A. Prosvirin*[1], H. Zhao[1] and K.R. Dunbar[1] *1. Chemistry Department, Texas A&M University, College Station, TX*

**10:12**

**GE-05. EPR Studies of Magnetically Dilute Ga-Doped Single Crystals of Fe18 Antiferromagnetic Molecular Wheels.** *J.J. Henderson*[1], E. del Barco[1], S. Datta[2], S. Hill[2], T. Stamatatos[3] and G. Christou[3] *1. Physics, University of Central Florida, Orlando, FL; 2. Physics, University of Florida, Gainesville, FL; 3. Chemistry, University of Florida, Gainesville, FL*

**10:24**

**GE-06. Rabi oscillations of a central spin in a dipolar-coupled spin bath.** *V. Dobrovitski*[1], A.E. Feiguin[2,3], R. Hanson[4] and D.D. Awschalom[5] *1. Ames Laboratory, Ames, IA; 2. Dept. of Physics, University of Maryland, College Park, MD; 3. Microsoft Station Q, University of California, Santa Barbara, CA; 4. Kavli Institute of Nanoscience, Delft University of Technology, Delft, Netherlands; 5. Center for Spintronics and Quantum Computation, University of California, Santa Barbara, CA*

**10:36**

**GE-07. Neutron scattering study of magnetic excitation and short-range magnetic order by inter-cluster interaction in the Mn6Sb2 molecular magnet.** *K. Iida*[1], Y. Qiu[2,3], H. Ishikawa[4], T. Yamase[4] and T.J. Sato[1] *1. Institute for Solid State Physics, University of Tokyo, Chiba, Japan; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 3. Department of Physics, University of Virginia, Charlottesville, VA; 4. Chemical Resources Laboratory, Tokyo Institute for Technology, Yokohama, Japan*

**10:48**

**GE-08. The Role of Fourth-Order Transverse Anisotropy in Thermally Assisted Tunneling in $Mn_{12}$-tBuAc.** *J.R. Friedman*[1], E.H. da Silva Neto[1], C. Lampropoulos[2], G. Christou[2], N. Avraham[3], Y. Myaesoedov[3], H. Shtrikman[3] and E. Zeldov[3] *1. Physics, Amherst College, Amherst, MA; 2. Department of Chemistry, University of Florida, Gainesville, FL; 3. Department of Condensed Matter Physics, Weizmann Institute of Science, Rehovot, Israel*

**11:00**

**GE-09. Magnetic properties of a molecular-based magnet $Afe^{II}Fe^{III}(C_2O_4)_3$ with biaxial crystal-field.** *W. Jiang*[1], F. Zhang[1], W. Wang[1] and W. Ren[2] *1. School of Science, Shenyang University of Technology, Shenyang, China; 2. Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*

**11:12**

**GE-10. Thermodynamic approach of the temperature and pressure hysteresis in spin-transition materials.** *R. Tanasa*[1] and A. Stancu[1] *1. Department of Physics & CARPATH, "Alexandru Ioan Cuza" University, Iasi, Romania*

**11:24**

**GE-11. Giant magneto-resistance in composites of organic polymers with manganese acetylacetonate and lanthanum-protactinium chlorides exhibiting ionic conductivity.** *R. Rakhimov*[1], V.G. Shevchenko[2], A.Y. Karmilov[2], I.A. Alexandrov[2] and A.I. Aleksandrov[2] *1. Center for Materials Research, Norfolk State University, Norfolk, VA; 2. Institute of Synthetic Polymer Materials, Moscow, Russian Federation*

FRIDAY MORNING 9:00 — SALON E

## Session GF
## DAMPING MECHANISMS AND MEASUREMENT
Mike Schneider, Chair

**9:00**

**GF-01. Simple Theory Of Gilbert Damping Based On Itinerant 3d Electrons Only.** *L. Berger*[1] *1. Physics Department, Carnegie Mellon University, Pittsburgh, PA*

**9:12**

**GF-02. Magnetization dynamics within magnetically non-uniform systems.** *K. Gilmore*[1,2], P.M. Haney[1], M.D. Stiles[1], I. Garate[3] and A.H. MacDonald[3] *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. Physics Department, University of Texas, Austin, TX*



**9:24**

**GF-03. Theory of Magnetization Damping in Conducting Ferromagnets.** *I. Garate*[1] and A. MacDonald[1] *1. Physics Department, University of Texas at Austin, Austin, TX*

**9:36**

**GF-04. Calculation of intrinsic damping in half metals.** C.K. Mewes[1], ***C. Liu***[1], M. Chshiev[1], T. Mewes[1] and W.H. Butler[1] *1. Center for Materials for Information Technology, Tuscaloosa, AL*

**9:48**

**GF-05. Laser-induced Magnetization Dynamics of Lanthanide-doped Permalloy Thin Films.** *C. Back*[1], I. Radu[1,2], M. Kiessling[1], A. Melnikov[3], U. Bovensiepen[3], G. Woltersdorf[1] and J. Thiele[4] *1. University Regensburg, Regensburg, Germany; 2. BESSY GmbH, Berlin, Germany; 3. Freie Universitaet Berlin, Berlin, Germany; 4. Hitachi Global Storage, San Jose, CA*

**10:00**

**GF-06. Ferromagnetic resonance characterization of rare-earth (Ho) doped soft magnetic films.** *N. Benatmane*[1,2] and T.W. Clinton[1] *1. Seagate Research, Seagate Technology, Pittsburgh, PA; 2. Physics Department, Georgetown University, Washington, DC*

**10:12**

**GF-07. Magnetic relaxation due to spin-pumping and rare earth impurities.** ***(Invited)*** *G. Woltersdorf*[1], O. Mosendz[2], B. Heinrich[2], C. Back[1], M. Kiessling[1] and J. Thiele[3] *1. Physics, University of Regensburg, Regensburg, Germany; 2. Physics, Simon Fraser University, Burnaby, BC, Canada; 3. Research Center, Hitachi Global Storage Technologies, San Jose, CA*

**10:48**

**GF-08. Damping origins for Co-Cr granular films.** *S.S. Kalarickal*[1], P. Krivosik[1,2], N. Mo[1], S. Wu[3] and C.E. Patton[1] *1. Department of Physics, Colorado State University, Fort Collins, CO, CO; 2. Slovak University of Technology, Bratislava, Slovakia; 3. SeagateTechnology, Fremont, CA*

**11:00**

**GF-09. Spin wave relaxation mapping in permalloy films – spin wave instability under oblique pumping.** *H.M. Olson*[1], P. Krivosik[2,3] and C.E. Patton[2] *1. Seagate Technology, Bloomington, MN; 2. Colorado State University, Fort Collins, CO; 3. Slovak University of Technology, Bratislava, Slovakia*

**11:12**

**GF-10. Magnetization damping in exchange bias systems.** H. Lee[1], M. Bradford[1], E. Edwards[1], Z. Tadisina[1], C.K. Mewes[1], S. Gupta[1] and *T. Mewes*[1] *1. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL*

**11:24**

**GF-11. Landau-Lifshitz or Gilbert Damping? That is the Question.** *W.M. Saslow*[1] *1. Physics, Texas A&M University, College Station, TX*

## FRIDAY MORNING 9:00 — 400/402

### Session GG
## GALFENOL MAGNETOSTRICTIVE ALLOYS
David Jiles, Chair

**9:00**

**GG-01. Soft and Hard Elastic Moduli of Galfenol Transduction Elements.** ***(Invited)*** M. Wun-Fogle[1], *J.B. Restorff*[1] and A.E. Clark[2] *1. Code 617, Naval Surface Warfare Center, Carderock Division, West Bethesda, MD; 2. Clark Associates, Adelphi, MD*

**9:36**

**GG-02. Magnetoelastic coupling in $Fe_{100-x}Ge_x$ single crystals, 5 < x < 18.** *G. Petculescu*[1], J.B. LeBlanc[1], M. Wun-Fogle[2], J.B. Restorff[2], T.A. Lograsso[3] and A.E. Clark[4] *1. Physics, University of Louisiana at Lafayette, Lafayette, LA; 2. Naval Surface Warfare Center, Carderock Division, West Bethesda, MD; 3. Ames Laboratory, Ames, IA; 4. Clark Associates, Adelphi, MD*

**9:48**

**GG-03. Magnetic and Structural properties of thin Fe-Ga films.** N.A. Morley[1], A. Javed[1] and *M.R. Gibbs*[1] *1. Engineering Materials, Sheffield University, Sheffield, United Kingdom*

**10:00**

**GG-04. Structural evolution of magnetostrictive Fe-Ga alloy ribbons.** *X. Zhao*[1], N.J. Mellors[1], N. Lupu[2] and H. Chiriac[2] *1. University of Salford, Salford, United Kingdom; 2. National Institute of Research and Development for Technical Physics, Iasi, Romania*



**10:12**

**GG-05. Structure, magnetostriction and magnetoelastic coupling coefficient of thick Fe-Ga melt-spun ribbons.** *N. Lupu*[1], H. Chiriac[1], M. Tibu[1], M. Lostun[1] and G. Ababei[1] *1. Magnetic Materials and Devices, National Institute of Research and Development for Technical Physics, Iasi, Romania*

**10:24**

**GG-06. Nano-Textured Fe85Ga15 alloys: Fabrication and Properties.** *K. Martirosyan*[1,4], E. Galstyan[2,4], H. Ye[3,4] and D. Litvinov[3,4] *1. Chemical and Biomolecular Engineering, University of Houston, Houston, TX; 2. Texas Center for Superconductivity, University of Houston, Houston, TX; 3. Electrical and Computer Engineering, University of Houston, Houston, TX; 4. Center for Nanomagnetic Systems, University of Houston, Houston, TX*

**10:36**

**GG-07. Magnetostriction and Texture Relationships in Annealed Galfenol Alloys.** *E.M. Summers*[1], R. Meloy[1] and S. Na[2] *1. ETREMA Products, Inc., Ames, IA; 2. Aerospace Engineering, U. of Maryland, College Park, MD*

**10:48**

**GG-08. Synthesis and characterization of Fe-Ga/Fe-Ni nanowires and their magnetic properties.** *J. Battogtokh*[1,2], S. Kang[1,2], I. Pegg[1,2] and J. Philip[1,2] *1. Physics, The Catholic University of America, Washington, DC; 2. Vitreous State Laboratory, The Catholic University of America, Washington, DC*

**11:00**

**GG-09. Galfenol Thin Films Deposited by MBE.** *A. McClure*[1], S. Albert[2,1], T. Jaeger[2,1], C. Wolfe[1], H. Li[1], C. Key[1], R.J. Smith[1], J.A. Schaefer[2], E. Arenholz[3] and Y.U. Idzerda[1] *1. Physics, Montana State University, Bozeman, MT; 2. Institut fur Physik and Institut fur Mikro- und Nanotechnologien, Technische Universitat Ilmenau, Ilmenau, Germany; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

**11:12**

**GG-10. Magnetostriction in Fe-Co Binary Probed Using the Thin Film Composition Spread Technique.** *D.D. Hunter*[1], R. Takahashi[1], R. Suchoski[1], J. Hattrick-Simpers[1], S.E. Lofland[2], M. Wuttig[1] and I. Takeuchi[1] *1. Department of Materials Science & Engineering, University of Maryland, College Park, MD; 2. 2Department of Physics and Astronomy, Rowan University, Glassboro, NJ*

**11:24**

**GG-11. Magnetostriction in Fe-Ga alloys: invaluable insights from small angle neutron scattering studies.** *M. Laver*[1], M. Wuttig[2] and J. Cullen[2] *1. NIST Center for Neutron Research, Gaithersburg, MD; 2. Materials and Nuclear Engineering, University of Maryland, College Park, MD*

**11:36**

**GG-12. NbC Containing Magnetostrictive Fe-Ga Alloy Sheet for Lamination Actuator.** *S. Na*[1], A. Passell[1], P. Downey[1] and A.B. Flatau[1] *1. Aerospace Engineering, University of Maryland, College Park, MD*

**11:48**

**GG-13. Stress Dependent Magnetostriction in Highly Magnetostrictive $Fe_{100-x}Ga_x$, 20 < x < 30.** *A.E. Clark*[1], J. Yoo[2], J. Cullen[2], G. Petculescu[3], M. Wun-Fogle[4] and A. Flatau[2] *1. Clark Associates, Adelphi, MD; 2. Dept. of Aerospace Engineering, University of Maryland, College Park, MD; 3. University of Louisiana, Lafayette, LA; 4. Code 617, Naval Surface Warfare Center, Carderock Division, West Bethesda, MD*

FRIDAY MORNING 9:00 410

## Session GH
# SPIN GLASSES AND SPIN DYNAMICS IN CORRELATED SYSTEMS

Wouter Montfrooij, Chair

**9:00**

**GH-01. The search for quantum critical scaling in a classical system.** J. Lamsal[1], J. Gaddy[1], M. Petrovic[1], *W. Montfrooij*[1] and T. Vojta[2] *1. Physics & Astronomy, University of Missouri, Columbia, MO; 2. Physics, Missouri University of Science and Technology, Rolla, MO*

**9:12**

**GH-02. Theory of magnetism with temporal disorder applied to magnetically doped ZnO.** *G.A. Gehring*[1], M.R. Ahmed[1] and A.J. Crombie[1] *1. Physics and Astronomy, The University of Sheffield, Sheffield, United Kingdom*

**9:24**

**GH-03. Soft mode dynamics of magnetic trilayered nanodisks in the vortex state.** F. Montoncello[1], L. Giovannini[1] and *F. Nizzoli*[1] *1. Department of Physics and CNISM, University of Ferrara, Ferrara, Italy*



**9:36**

**GH-04. AC demagnetization of interacting nanomagnet arrays*.** ***(Invited)*** *X. Ke*[1] *1. Physics Department, Pennsylvania State University, University Park, PA*

**10:12**

**GH-05. Magnetic configurations in artificial kagome ice structures.** *L.J. Heyderman*[1], E. Mengotti[1], A. Fraile Rodríguez[1], A. Bisig[1], F. Nolting[1] and H. Braun[2] *1. Paul Scherrer Institut, Villigen-PSI, Switzerland; 2. School of Physics, University College Dublin, Dublin, Ireland*

**10:24**

**GH-06. Magnetism and cluster glass dynamics in geometrically frustrated $LuFe_2O_4$** *H. Srikanth*[1], M. Phan[1], N.A. Frey[1], M. Angst[2], B.C. Sales[2] and D.G. Mandrus[2] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Materials Science & Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN*

**10:36**

**GH-07. Correlated Superspin Dynamics in Ising- and Heisenberg-like Superspin glasses from Field Effect Experiments.** *S. Nakamae*[1], Y. Tahri[1], C. Thibierge[1], D. L'Hôte[1], E. Vincent[1], E. Wandersman[2], V. Dupuis[2], E. Dubois[2] and R. Perzynski[2] *1. Service de Physique de l'Etat Condensé, SPEC/IRAMIS/DSM/CEA-Saclay, Gif-sur-Yvette, France; 2. Laboratoire des Liquides Ioniques et Interfaces Chargées, Université de Pierre et Marie Curie, Paris, France*

**10:48**

**GH-08. Withdrawn**

**11:00**

**GH-09. Phase separation versus spin glass behavior in La0.85Sr0.15CoO3.** D. Samal[1], C. Shivakumara[2] and *A.P. Kumar*[1] *1. Department of Physics, Indian Institute of Science, Bangalore, India; 2. Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore, India*

**11:12**

**GH-10. Correlation-induced spin-charge coupling in an itinerant ferromagnet: magnon damping and anomalous softening.** *S. Pandey*[1] and A. Singh[1] *1. Physics, Indian Institute of Technology, Kanpur, India*

**11:24**

**GH-11. Competition or co-operation? Charge ordered insulating and ferromagnetic metallic phases in $Ni^{2+}$ and $Cr^{3+}$ doped $Nd_{0.5}Ca_{0.5}MnO_3$** A. Sharma[1] and *S.V. Bhat*[1] *1. Physics, Indian Institute of Science, Bangalore, Karnataka, India*

FRIDAY MORNING 8:00 AUSTIN BALLROOM

## Session GP
## HEAD-MEDIA INTERFACE & TRIBOLOGY (POSTER SESSION)
Yiao-tee Hsia, Chair

**GP-01. Humidity effects on lubricant transfer in head-disk-interface.** *S. Kim*[1], Q. Dai[1], B. Marchon[1] and K. Flechsig[1] *1. Hitachi Global Storage Technologies, San Jose, CA*

**GP-02. Spinning Effects on the Spreading of PFPE Films over Carbon-Overcoated Disks.** H. Chen[2], *D. Kim*[1], P. Chung[1] and M.S. Jhon[1] *1. Depart of Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. Hewlett-Packard Company, San Diego, CA*

**GP-03. Buff/Wipe Effects on the Ultra-Thin Perfluoropolyether Films.** H. Chen[2], *P. Chung*[1], Y. Hsia[3] and M.S. Jhon[1] *1. Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. Hewlett Packard Company, San Diego, CA; 3. Electro-Mechanical Systems Integration, Seagate Technology, Pittsburgh, PA*

**GP-04. A Novel Simulation of Air/Liquid Bearing based on Lattice Boltzmann Method.** *D. Kim*[1], W. Kim[2], H. Kim[3], H. Chen[4], P. Jain[1] and M.S. Jhon[1] *1. Depart of Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. Samsung Corning Precision Glass Co., Cheonan, South Korea; 3. Division of Mechanical System Design Engineering, Kyonggi University, Suwon, South Korea; 4. Hewlett-Packard, San Diego, CA*

**GP-05. Thermal Stability of Lubricant film on Hard Disk under a High Temperature Flash Heating.** *J. Zhang*[1], H. Xie[1], Q. Zhang[1], R. Ji[1], J. Xu[2], B. Xu[1], H. Yuan[1], N. Liu[1], G. He[1,3], R. Dharmawan[1,4] and Y. Liew[1,3] *1. Data Storage Institute, Singapore, Singapore; 2. Institute of Materials Research & Engineering, Singapore, Singapore; 3. National University of Singapore, Singapore, Singapore; 4. Nayang Technological University, Singapore, Singapore*

**GP-06. Nano-Rheology of Thin Lubricant Films.** Q. Guo[2], *P. Chung*[1], H. Choi[3] and M.S. Jhon[1] *1. Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. Seagate Technology, Fremont, CA; 3. Polymer Science and Engineering, Inha University, Incheon, South Korea*



**GP-07. Withdrawn**

**GP-08. Study of Ultra-low Fly Height Glide Testing by Dynamic Fly Height Control.** *H. Tani*[1], M. Kanda[2], M. Kubota[2] and N. Tagawa[1] *1. Dept. of Mechanical Engineering, Kansai University, Suita-shi, Osaka-fu, Japan; 2. Kubota Comps, Amagasaki-shi, Hyougo-ken, Japan*

FRIDAY MORNING 8:00 AUSTIN BALLROOM

## Session GQ
## HIGH ANISOTROPY PERPENDICULAR RECORDING MEDIA II (POSTER SESSION)
Yingguo Peng, Chair

**GQ-01. Tuning microstructure and magnetism in FePt-$SiO_2$ granular films by ion-beam bombardment.** *K. Lin*[1], Y. Chiu[1], A. Sun[2,3], J. Hsu[2,3], J. van Lierop[4] and S. Takao[5] *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 2. Center for Nanostorage Research, National Taiwan University, Taipei, Taiwan; 3. Department of Physics, National Taiwan University, Taipei, Taiwan; 4. Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 5. Information Storage Materials Laboratory, Toyota Technological Institute, Nagoya, Japan*

**GQ-02. Effect of Cu doping on Magnetic and Microstructural Properties of FePtZr/MgO Nano Composite Films.** *D. Park*[1], S. Lee[1] and J. Won Young[2] *1. Materials Science and Engineering, Korea University, Seoul, South Korea; 2. Materials Science and Engineering, Korea Institute of Science and Technology, Seoul, South Korea*

**GQ-03. Effect of Sn on the microstructure and magnetic properties of FePt thin-film.** *D. Chun*[1], G. Kim[1] and W. Jeung[1] *1. Division of Materials Research, Korea Institute of Science and Technology, Seoul, South Korea*

**GQ-04. $L1_0$ Ordering of FePt Thin Films using Millisecond Laser Pulses.** *Y. Inaba*[1], K. Shishou[1], G.B. Thompson[1,2], J.R. Izatt[3], I. Zana[1], J.W. Harrell[1,3], Y. Kubota[4] and T.J. Klemmer[4] *1. Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL; 2. Dept. of Metallurgical and Materials Engineering, University of Alabama, Tuscaloosa, AL; 3. Dept. of Physics and Astronomy, University of Alabama, Tuscaloosa, AL; 4. Seagate Research, Pittsburgh, PA*

**GQ-05. Perpendicular Magnetization and Coercivity Reduction in Exchange-Coupled NiFe/FePt Bilayers.** *N. Lee*[1], J. Ahn[1], S. Kim[1], T. Kim[1], J. Kim[2], H. Kim[2] and G. Schemerber[3] *1. Department of Physics, Ewha Womans University, Seoul, South Korea; 2. Department of Physics, Sogang University, Seoul, South Korea; 3. Institut de Physique et Chimie des Matériaux de Strasbourg, UMR 7504 CNRS-ULP, Strasbourg, France*

**GQ-06. Magnetic Properties and Microstructures of Particulate (FePt/Ag)n Film with Perpendicular Magnetic Anisotropy.** C. Ou[1], *J. Tsai*[1], G. Lin[1] and M. Chen[1] *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

**GQ-07. Effect of bombardment with different types of ions on ordering transformation of Fe/Pt multilayer films.** A. Sun[1], F. Yuan[2], *J. Hsu*[1] and P. Kuo[3] *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Institute of Physics+, Academia Sinica, Taipei, Taiwan; 3. Material Science & Engineering, Academia Sinica, Taipei, Taiwan*

**GQ-08. The influence of Ag doping on the CoPt thin films properties.** *Y.O. Se*[1,2], A.J. Shapiro[2], J. Hattrick-Simpers[2] and C. Lee[1] *1. Materials, Changwon National University, Changwon, South Korea; 2. National Institute of Standard and Technology, Gaithersburg, MD*

**GQ-09. Magnetic Properties and The Cluster Nature of Multilayer Thin Films of $(CoPt/Ag/C)_6$ After Annealing.** *Y. Lee*[1], G. Hung[1], R. Li[1], J. Min[1] and T. Wu[2] *1. Physics department, National Cheng Kung University, Tainan, Taiwan; 2. Department of Humanities and Sciences, National Yunlin University of Science and Technology, Touliu, Taiwan*

FRIDAY MORNING 8:00 — AUSTIN BALLROOM

## Session GR
## MOTORS AND ACTUATORS I (POSTER SESSION)
Alexander Parkhomovsky, Chair

**GR-01. A new stator-flux orientation strategy for flux-switching permanent magnet motor based on current-hysteresis control.** *H. Wei*[1] and M. Cheng[1] *1. School of Electrical Engineering, Southeast University, Nanjing, 210096, China*

**GR-02. Analytical approach and verification of operational power and eddy current losses for applying coreless double-sided PM synchronous motor/generator to high-power FESS.** *D. You*[1], S. Jang[1], J. Park[1], S. Choi[2] and J. Lee[3] *1. Chungnam National Univ., Daejeon, South Korea; 2. Korea Institute of Machinery and Materials, Dae-jeon, South Korea; 3. Korea Electric Power Research Institute, Dae-jeon, South Korea*

**GR-03. Torque Ripple Minimization of Flux-Controllable Stator-Permanent-Magnet Brushless Motors Using Harmonic Current Injection.** X. Zhu[1,2], *M. Cheng*[2] and K. Chau[2,3] *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China; 2. Engineering Research Center for Motion Control of MOE, School of Electrical Engineering, Southeast University, Nanjing, China; 3. Department of Electrical and Electronic Engineering, the University of Hong Kong, Hong Kong, China*



**GR-04. Optimal Rotor Design for Reducing the Partial Demagnetization Effect and Cogging Torque in Spoke type PM Motor.** *K. Hwang*[1], B. Yang[1], B. Kim[3], S. Rhyu[2] and B. Kwon[1] *1. Department of Electronics, Electrical, Control & Instrumentation Engineering, Hanyang Univ., Ansan, South Korea; 2. Korea Electronics Technology Institute, Buchon, South Korea; 3. Department of Electric Electrical Engineering, Kunsan National Univ., Jeonbuk, South Korea*

**GR-05. Fuzzy Actuation Strategy and Implementation of a Magnetically-Actuated Optical Image Stabilizer with Hysteresis Compensation.** *T. Tu*[1], C. Chiu[1], P. Chao[1] and J. Huang[2] *1. Dept. of Electrical and Control Engineering, National Chiao Tung University, Hsinchu, Taiwan; 2. Department of Mechanical Engineering, Chung Yuan Christian University, Chung-Li, Taiwan*

**GR-06. Analysis and Comparison for Rotor Eddy Current Losses of Permanent Magnet Synchronous Generator according to DC and AC Load Conditions.** S. Jang[1], *H. Kim*[1], J. Choi[1] and I. Kim[2] *1. Chungnam National University, Daejeon, South Korea; 2. Hoseo, Asan, South Korea*

**GR-07. Quantitative comparison of double-stator and traditional permanent magnet brushless machines.** *S. Niu*[1] and K. Chau[1] *1. Depart. of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China*

**GR-08. Design and analysis of interior-magnet outer-rotor concentric magnetic gears.** *X. Liu*[1,2], K. Chau[1] and J. Jiang[1,2] *1. Department of Electrical & Electronic Engineering, The University of Hong Kong, Hong Kong, China; 2. Automation Department, Shanghai University, Shanghai, China*

**GR-09. Effect of rotor eccentricity in a PM brushless motor with common and uncommon neutral point in parallel winding connections.** *H. Chen*[1] and M. Tsai[1] *1. Department of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan*

**GR-10. Experimental Works and Performance Analysis of Surface-Mounted Permanent Magnet Generator using Equivalent Circuit considering Power Losses.** S. Jang[1], *J. Choi*[1], K. Ko[1] and S. Lee[2] *1. Chungnam National University, Dae-jeon, South Korea; 2. KITECH, Gwangju, South Korea*

**GR-11. A Flux-Mnemonic Permanent Magnet Brushless Machine for Wind Power Generation.** *C. Yu*[1], K.T. Chau[1] and J.Z. Jiang[2] *1. Department of Electrical & Electronic Engineering, University of Hong Kong, Hong Kong, Hong Kong, China; 2. School of Automation, Shanghai University, Shanghai, Shanghai, China*

**GR-12. A study on the irreversible magnet demagnetization in single-phase line-start permanent magnet motor.** *T. Kim*[1], H. Nam[2] and J. Hong[3] *1. Electrical Engineering, Gyeongsang National University, Jinju, South Korea; 2. LG Electronics Inc., Changwon, South Korea; 3. Automotive Engineering, Hanyang University, Seoul, South Korea*

**GR-13. Optimal design of stator interior permanent magnet machine based on FE analysis.** *Z. Jianzhong*[1], M. Cheng[1] and W. Hua[1] *1. School of Electrical Engineering, Southeast University, Nanjing, China*

**GR-14. The rewritable effects of bonded magnet for large starting torque and high efficiency in the Small Power Single-Phase Written Pole Motor.** *J. Choi*[1] and S. Lee[2] *1. Electric Motor Research Group, Korea Electrotechnology Research Institute, Changwon Si, Gyeongsangnam-Do, South Korea; 2. Materials & Component Team, Korea Institute of Industrial Technology, Gwangju, South Korea*

**GR-15. Magnetization Distribution in Transition Zones of Magnet Poles and Its Influence on Spindle Motor Performances.** *J. Li*[1] and Z. Liu[2] *1. School of Electrical Engineering,Xi'an Jiaotong University, P.R. China, China; 2. Data Storage Insititute, Singapore, Singapore*

**GR-16. Analysis of armature reaction field and saturation effect in permanent magnet motors with concentrated windings.** J. Li[2] and *Z. Liu*[1] *1. School of Electrical Engineering,Xi'an Jiaotong University, P.R. China, China; 2. Data Storage Institute, Singapore, Singapore*

**GR-17. Optimal Design of Flux Barrier for Reducing of Cogging Torque and Torque Ripple, and Increasing Efficiency in Spoke type BLDC Motor by using Modified Taguchi Method.** *B. Yang*[1], K. Hwang[1] and B. Kwon[1] *1. Hanyang Unv., Ansan, South Korea*

FRIDAY MORNING 8:00 — AUSTIN BALLROOM

## Session GS
# MICROMAGNETIC SIMULATIONS AND METHODS (POSTER SESSION)

Donald Porter, Chair

**GS-01. Hybrid Finite-Element / Boundary Element Method for Oersted field calculation in spin-torque driven magnetization dynamics.** *R. Hertel*[1] *1. Institute of Solid State Research, Julich Research Center, Julich, Germany*

**GS-02. Exploiting Effective Field Time Derivative Information to Improve Accuracy of a Norm-preserving Landau-Lifshitz Solver.** D.G. Porter[1] and *M.J. Donahue*[1] *1. NIST, Gaithersburg, MD*

**GS-03. Micromagnetic Simulation by Using Fast Multipole Method Specialized for Uniform Brick Elements.** *Y. Takahashi*[1], S. Wakao[2], T. Iwashita[3] and M. Kanazawa[3] *1. Graduate School of Informatics, Kyoto University, Kyoto, Japan; 2. Department of Electrical Engineering and Bioscience, Waseda University, Tokyo, Japan; 3. Academic Center for Computing and Media Studies, Kyoto University, Kyoto, Japan*



**GS-04. High resolution large-scale micromagnetic simulations with hierarchical matrices.** *A. Kakay*[1], R. Hertel[1] and C. Schneider[1] *1. IFF-IEE, Forschungszentrum Juelich, Juelich, Germany*

**GS-05. Finite Element Method Based on a Minimization Theorem to Obtain Unique Magnetization Distribution.** *A. Vashghani Farahani*[1] and J. Lavers[1] *1. University of Toronto, Toronto, ON, Canada*

**GS-06. Non-uniform Grid algorithm for fast magnetostatic interactions calculation in micromagnetics.** *B. Livshitz*[1,2], A. Boag[3], H.N. Bertram[2,4] and V. Lomakin[1,2] *1. ECE, UCSD, San Diego, CA; 2. CMRR, UCSD, San Diego, CA; 3. Physical Electronics, Tel Aviv University, Tel Aviv, Israel; 4. Hitachi San Jose Reseach Center, Hitachi GST, San Jose, CA*

**GS-07. A New Approach in Finite Element Analysis of Eddy Currents with Flux Skin Effect.** *J. Merrikhi*[1] *1. Islamic Azad University, Firozkoh, Iran*

**GS-08. Micromagnetic study of the above-threshold generation regime in a spin-torque oscillator based on a magnetic nano-contact magnetized at an arbitrary angle.** *G. Consolo*[1], B. Azzerboni[1], L. Lopez-Diaz[2], V. Tiberkevich[3] and A.N. Slavin[3] *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Italy, Messina, Italy; 2. Fisica Aplicada, University of Salamanca, Salamanca, Spain; 3. Physics, Oakland University, Rochester, MI*

**GS-09. Thermal effects in the magnetization dynamics of nanoscale spin-valves.** *L. Torres*[2], G. Finocchio[1], G. Consolo[1] and B. Azzerboni[1] *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain*

**GS-10. Low field and controlled domain wall structure during injection into nanostripes.** *A. Kunz*[1], A.J. Smith[1] and E.C. Breitbach[1] *1. Physics, Marquette University, Milwaukee, WI*

**GS-11. Effect of Elliptical Magnetic Impurity on Stripe Domain in Iron-Garnet Magnetic Films.** *Y. Fedyunin*[1], M.L. Akimov[2], A.O. Menshenina[2], P.A. Polyakov[2] and N.N. Usmanov[2] *1. Math and Science, Merchant Marine Academy, Kings Point, NY; 2. Lomonosov Moscow State University, Moscow, Russian Federation*

**GS-12. Micromagnetic numerical analysis of magnetization processes in patterned ferromagnetic films.** *A. Manzin*[1], O. Bottauscio[1] and M. Chiampi[2] *1. Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 2. Dipartimento di Ingegneria Elettrica, Politecnico di Torino, Torino, Italy*

**GS-13. Analysis of Magnetic Field for AC Singular Line Currents by Coupling of Analytical Solution and Finite Element Method.** *Y. Kim*[1], D. Kim[2], I. Park[1] and K. Lee[2] *1. School of Information and Communication Engineering Sungkyunkwan University, Suwon, Kyeonggi-do, South Korea; 2. Department of Electrical Engineering Dankook University, Yongin, Kyeonggi-do, South Korea*

**GS-14. Modeling and calculation of magnetic fields in magnetic circuits: problems with the standard Ampere's Law model equation.** *A.E. Umenei*[1], Y. Melikhov[1], S. Zurek[1] and D.C. Jiles[1] *1. Electrical Engineering, Wolfson Centre for Magnetics, Cardiff, Wales, United Kingdom*

**GS-15. Numerical study of effective permeability of soft-magnetic composites with conductive inclusions.** *B. Drnovšek*[1], V.B. Bregar[1] and M. Pavlin[2] *1. Nanotesla Institute, Ljubljana, Slovenia; 2. Faculty of Electrical Engineering, University of Ljubljana, Ljubljana, Slovenia*

**GS-16. Numerical study of Magneto-Convection in a square enclosure.** *M. Ghassemi*[1,3], M. Pirmohammadi[1] and G. Sheikhzadeh[2] *1. Kntoosi University of Technology, Tehran, Iran; 2. University of Kashan, Kashan, Iran; 3. New Mexico Tech, New Mexico, NM*

**GS-17. Withdrawn**

FRIDAY MORNING 8:00 — AUSTIN BALLROOM

## Session GT
# MAGNETORESISTANCE, MAGNETOIMPEDANCE, HALL EFFECT AND HALF METALS (POSTER SESSION)

Claudia Felser, Co-Chair
William Butler, Co-Chair

**GT-01. Magnetic Properties of Bulk and Thin Film $Co_2MnSb_xSn_{1-x}$** *M.R. Paudel*[1], C. Wolfe[1], H. Anthony[1], I. Dubenko[1], N. Ali[1], Y. Li[6], D.L. Ederer[2,6], T.A. Callcott[5], J.W. Freeland[3] and S. Stadler[4,1] *1. Physics, Southern Illinois University, Carbondale, IL; 2. Center for Advanced Microstructures and Devices, Louisiana State University, Baton Rouge, LA; 3. Advanced Photon Source, Argonne National Lab, Argonne, IL; 4. Physics and Astronomy, Louisiana State University, Baton Rouge, LA; 5. Physics and Astronomy, University of Tennessee, Knoxville, TN; 6. Physics, Tulane University, New Orleans, LA*

**GT-02. New quarternary half metallic material CoFeMnSi.** *X. Dai*[1,2], G. Liu[1], G.H. Fecher[1], C. Felser[1], Y. Li[2] and H. Liu[2] *1. Institute of Inorganic and Analytical Chemistry, Johannes Gutenberg - University, Mainz, Germany; 2. School of Material Sciences and Engineering, Hebei University of Technology, Tianjin, China*

**GT-03. Spin-dependent electronic structures of $Co_2Cr_{0.6}Fe_{0.4}Al$ electrodes investigated through tunneling spectroscopy.** *N. Itabashi*[1], T. Ishikawa[1], K. Yonemura[1], K. Matsuda[1], T. Uemura[1] and M. Yamamoto[1] *1. Division of Electronics for Informatics, Hokkaido University, Sapporo, Japan*



**GT-04. Tailoring of structural and magnetic properties of $Co_2MnSi$ Heusler compound by $He^+$ ion irradiation.** *O. Gaier*[1], J. Hamrle[1], B. Hillebrands[1], H. Schneider[2], M. Kallmayer[2], P. Pörsch[2], H.J. Elmers[2], J. Fassbender[3], Y. Sakuraba[4], S. Tsunegi[5], M. Oogane[5] and Y. Ando[5] *1. Fachbereich Physik and Forschungszentrum OPTIMAS, TU Kaiserslautern, Erwin-Schrödinger-Str. 56, D-67663 Kaiserslautern, Germany; 2. Institut für Physik, Johannes-Gutenberg-Universität, Staudingerweg 7, D-55128 Mainz, Germany; 3. Forschungszentrum Dresden-Rossendorf, Institut für Ionenstrahlphysik und Materialforschung, Bautzner Landstrasse 128, D-01328 Dresden, Germany; 4. Magnetic Materials Laboratory, Institute for Materials Research (IMR), Tohoku University, Katahira 2-1-1, Aoba-ku, Sendai 980-8577, Japan; 5. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Aoba-yama 6-6-05, Aoba-ku, Sendai 980-8579, Japan*

**GT-05. High-Quality Full-Heusler $Fe_2MnSi$/Ge Heterostructures Grown by Molecular Beam Epitaxy.** *K. Hamaya*[1], K. Yamamoto[1], K. Ueda[1], Y. Ando[1], H. Itoh[2], Y. Maeda[3] and M. Miyao[1] *1. Department of Electronics, Kyushu University, Fukuoka, Japan; 2. Department of Pure and Applied Physics, Kansai University, Suita, Japan; 3. Department of Energy Science and Technology, Kyoto University, Kyoto, Japan*

**GT-06. Withdrawn**

**GT-07. Magnetic properties and magnetoresistance effect of spinels $Cd_{1-x}Cu_xCr_2S_4$ (x=0, 0.01, 0.04, 0.1, 0.2).** L. Yan[1], J. Shen[1], *W. Ren*[2], Z. Sun[1] and F. Wang[1] *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Physics, Hong Kong University of Science and Technology, Hong Kong, China*

**GT-08. Extraordinary Hall effect of $SrRuO_3$ in the ultrathin limit.** *M. Schultz*[1], J.W. Reiner[2] and L. Klein[1] *1. Physics, Bar Ilan University, Ramat-Gan, Israel; 2. Applied Phisics, Yale University, New Haven, CT*

**GT-09. Universal scaling relation between Hall and longitudinal conductivity in Zn-substituted magnetite.** D. Venkateshvaran[1,2], A. Boger[1], M. Althammer[1], M. Rao[2,3], S.B. Goennenwein[1], *M. Opel*[1] and R. Gross[1,4] *1. Walther-Meissner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 2. Materials Science Research Centre, Indian Institute of Technology Madras, Chennai, India; 3. Department of Physics, Indian Institute of Technology Madras, Chennai, India; 4. Physik-Department, Technische Universität München, Garching, Germany*

**GT-10. Growth and magnetic properties of half-metallic Fe3O4 epitaxial Films on wide bandgap semiconductor GaN(0001).** J. Wong[1], W. Zhang[1], *Y. Xu*[1], X. Cui[2], Z. Tao[2], X. Li[2], Z. Xie[2] and R. Zhang[2] *1. Spintronics and Nanodevice Laboratory, Department of Electronics, University of York, York, United Kingdom; 2. Key Laboratory of Advanced Photonic and Electronic Materials, Department of Physics, Nanjing University, Nanjing, China*

**GT-11. Spin-Hall accumulation in a square 2DEG sample with a central defect.** I. Klik[1], S. Chen[1] and *C. Chang*[1] *1. Physics, National Taiwan University, Taipei, Taiwan*

**GT-12. Electronic structure of Fe and Cr interlayers.** *K.N. Shrivastava*[1], N.A. Zabidi[1] and H.A. Kassim[1] *1. Department of Physics, University of Malaya, Kuala Lumpur, Selangor, Malaysia*

**GT-13. Magnetoresistance behavior of Elliptical Ring Nanomagnets in Close Proximity with Magnetic Elements.** *S. Jain*[1] and A.O. Adeyeye[1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

**GT-14. The influence of the anisotropic effect on the spin Hall effect studied using the effective mean-free-path model.** *S. Chen*[1] and C. Chang[2] *1. Applied Physics, National Chia Yi University, Chiayi, Taiwan; 2. Physics, National Taiwan University, Taipei, Taiwan*

**GT-15. Magnetoresistance in a Fe/$Fe_3O_4$ nanowire array.** *F. Cuccureddu*[1], H. Wu[1], R. Ramos[1] and I.V. Shvets[1] *1. School of Physics, Trinity College Dublin, Dublin, Ireland*

**GT-16. Anisotropy Magnetoresistance(AMR) Effect of Macroscopic ferrimagnet Co-TbN.** *H. Lee*[1], Y. Cho[1], M. Park[1], J. Cho[2], Y. Kim[2] and T. Kim[1] *1. Sejong University, Seoul, South Korea; 2. Korea University, Seoul, South Korea*

**GT-17. Enhancement of Tunneling Magnetoresistance by Spin-flip Effects in a Double Magnetic Tunnel Junction System.** *M. Ma*[1], M. Bin Adul Jalil[1] and S. Tan[2] *1. Department of Electrical and Computer Engineering, Information Storage Materials Laboratory, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore*

**GT-18. Planar Hall effect of Permalloy films on Si(111), Si(100), and glass substrates.** *S. Jen*[1,2], P. Wang[2], Y. Tseng[2] and H. Chuang[2] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Institute of Optoelectronic Sciences, Nation Taiwan Ocean University, Keelung, Taiwan*

**GT-19. Current-perpendicular-to-plane giant magnetoresistance of multilayered films using $Co_2MnSi$ Heusler alloys.** K. Kodama[1], *T. Furubayashi*[2], T. Nakatani[1], H. Sukegawa[2], K. Inomata[2] and K. Hono[2,1] *1. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; 2. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Japan*

**FRIDAY MORNING 8:00** — **AUSTIN BALLROOM**

## Session GU
## MAGNETO-ELASTIC MATERIALS (POSTER SESSION)
Alex Punnoose, Chair

**GU-01. Resonance properties and anisotropy of Ni-Mn-Ga thin films of different thickness deposited on Si substrate.** *V. Golub*[1], K.M. Reddy[2], V. Chernenko[1], P. Müllner[3], A. Punnoose[2] and M. Ohtsuka[4] *1. Institute of Magnetism NASU and MESU, Kiev, Ukraine; 2. Department of Physics, Boise State University, Boise, ID; 3. Department of Materials Science and Engineering, Boise State University, Boise, ID; 4. IMRAM, Tohoku University, Sendai, Japan*



**GU-02. Magnetic shape memory effect in free-standing cantilevers of Ni2MnGa and Mn2NiGa thin films.** *C. Jenkins*[1,2], R. Ramesh[1], T. Eichhorn[2], G. Jakob[2] and C. Felser[2] *1. University of California, Berkeley, Berkeley, CA; 2. Johannes Gutenberg University Mainz, Mainz, RLP, Germany*

**GU-03. Magnetic field influence on the structural transformation in ferromagnetic shape memory alloy Mn50Ni40In10 melt spun ribbons.** *C. Garcia*[1,2], J. Gonzalez[2], J.L. Sanchez Llamazares[3], B. Hernando[3], V.M. Prida[3] and R. Varga[4] *1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. Dpto. de Fisica de Materiales, Fac. Quimicas, UPV/EHU, San Sebastian, Guipuzcoa, Spain; 3. Dpto. Fisica. Facultad de Ciencias, Universidad de Oviedo, Oviedo, Asturias, Spain; 4. Fac Sci, Inst Phys, UPJS, Kosice, Slovakia*

**GU-04. Metastability and the Magnetostructural Transitions in $Ni_{50}Mn_{39}Sn_{11}$** *W.M. Yuhasz*[1], D.L. Schlagel[1], Q. Xing[1], K.W. Dennis[1], R.W. McCallum[1] and T.A. Lograsso[1] *1. Materials and Engineering Physics Program, Ames Laboratory, Ames, IA*

**GU-05. Structural & Magnetic Properties of NiMnSn Ferromagnetic Shape Memory Alloy Thin Films.** *D. Kaur*[1], R. Vishnoi[1], A. Kumar[1] and N. Chaudhary[1] *1. Department of Physics & Centre of Nanotechnology, Indian Institute of Technology, Roorkee, Roorkee, India*

**GU-06. Microstructures and Magnetic Properties of Rapidly Solidified Iron-based Ni-Fe-Ga Ferromagnetic Shape Memory Alloys.** S. Aich[1], S. Das[1], *I.A. Al-Omari*[2,4], P. Alagarsamy[3], S. Ghosh Chowdhury[5] and M. Chakraborti[1] *1. Metallurgical & Materials Engineering, Indian Institute of Technology (IIT), Kharagpur, West Bengal, India; 2. Physics, Sultan Qaboos University, Muscat, Oman; 3. Physics, Indian Institute of Technology (IIT), Guwahati, Assam, India; 4. Physics, University of Nebraska-Lincoln, Lincoln, NE; 5. MST Division, National Metallurgical Laboratory, Jamshedpur, Bihar, India*

**GU-07. Phase formation and magnetic properties of rapidly quenched Ni-Fe-Ga Heusler alloy.** *N.V. Rama Rao*[1,2], R. Gopalan[1], V. Chandrasekaran[1] and K.G. Suresh[2] *1. AMG, DMRL, Hyderabad, Andhra Pradesh, India; 2. Physics, IIT Bombay, Mumbai, Maharashtra, India*

**GU-08. Magnetic and thermal properties of single crystal Ni-Fe-Ga Heusler alloys.** *V. Basso*[1], D. Balma[1], M. Kuepferling[1], C.P. Sasso[1] and A. Vasiliev[2] *1. Electromagnetics, Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 2. Moscow State University, Moscow, Russian Federation*

**GU-09. 1600 ppm Unloaded Magnetostriction in Epoxy-Bonded Terfenol-D Continuous-Fiber Composites with [112] Crystallographic Orientation.** *C. Lo*[1], C. Leung[1], S. Or[1] and H. Chan[2] *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China; 2. Department of Appled Physics, The Hong Kong Polytechnic University, Hong Kong, China*

**GU-10. Synthesis and Magnetostriction of TbxPr1-x(Fe0.8Co0.2)1.9 Cubic Laves Alloys.** Y. Shi[1], *S. Tang*[1], J. Yu[1], L. Zhai[1], X. Zhang[1] and Y. Du[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China*

**GU-11. Young's moduli and damping capacity of magnetically annealed Tb0.36Dy0.64(Fe0.85Co0.15)2 polycrystals.** T. Ma[1], *M. Yan*[1], X. Chen[1] and Y. Pei[2] *1. Department of Materials Science and Engineering,, Zhejiang University, Hangzhou, China; 2. School of Science, Beijing Institute of Technology, Beijing, China*

**GU-12. Interplay between lattice clamping and helical magnetic ordering in (110) Eu epitaxial films.** *K. Dumesnil*[1], A. Bataille[2], C. Dufour[1], P. Mangin[1,2] and A. Gukasov[2] *1. LPM, Vandoeuvre les Nancy, France; 2. Laboratoire Leon Brillouin, Gif sur Yvette, France*

**GU-13. Plastic deformation of thin ferromagnetic films on nitinol sheet metal.** *A. Bandyopadhyay*[1], W.J. Geerts[1], A. Gregory[1], K. Smith[1], C. Moore[1], J.S. Tate[2] and M.J. Sablik[3] *1. Physics, Texas State University, San Marcos, TX; 2. Ingram School of Engineering, Texas State University, San Marcos, TX; 3. Applied Physics Division, Southwest Research Institute, San Antonio, TX*

**GU-14. Magnetic and magnetostrictive properties of Laves compounds $Sm_{1-x}Ce_xFe_2$ ($0 \le x \le 1$).** *W.J. Ren*[1], J.L. Yang[1], B. Li[1], D. Li[1], X.G. Zhao[1] and Z.D. Zhang[1] *1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*

**GU-15. Comparison of Alternative Techniques for Characterization of Magnetostriction and Inverse Magnetostriction in Magnetic Thin Films.** *A. Raghunathan*[1], D.C. Jiles[1] and J.E. Snyder[1] *1. Wolfson Centre for Magnetics, Cardiff School of Engineering, Cardiff University, Cardiff, United Kingdom*

**GU-16. Analysis of a power harvesting device with hysteretic magnetostrictive characteristics.** D. Davino[1], A. Giustiniani[2] and *C. Visone*[1] *1. Engineering Department, University of Sannio, Benevento, Italy; 2. DIIIE, University of Salerno, Salerno, Italy*

FRIDAY MORNING 8:00 — AUSTIN BALLROOM

## Session GV
## POWER, SHIELDING, AND LEVITATION (POSTER SESSION)
Chan Ham, Chair

**GV-01. Design and Analysis of a Hybrid Magnet Array for a Maglev System.** *C.H. Ham*[1] *1. Florida Space Institute, University of Central Florida, Kennedy Space Center, FL*



**GV-02. Characteristic Analysis of Electrodynamic Suspension Device with Permanent Magnet Halbach Array.** *H. Cho*[1], S. Moon[1], H. Sung[1], H. Han[1], J. Bang[1], K. Ko[2] and S. Jang[2] *1. System Engineering Research Division, Korea Institute of Machinery and Materials, Daejeon, South Korea; 2. Electrical Engineering, Chungnam National Universitiy, Daejeon, South Korea*

**GV-03. Magnetic Design and Dynamic Analysis of Rectangular-Surface Electromagnets for Levitation Application System.** S. Jang[1], *J. Choi*[1], J. Park[1], S. Sung[1] and H. Sung[2] *1. Chungnam National University, Dae-jeon, South Korea; 2. KIMM, Daejeon, South Korea*

**GV-04. Performance Prediction of a Small-sized Herringbone-grooved Bearing with Non-Newtonian Ferro-fluid Lubrication Considering Cavitation.** *Y. Kao*[1], P. Chao[1], C. Chang[2] and J. Huang[2] *1. Electrical and Control Engineering, National Chiao Tung University, Hsinchu, Taiwan; 2. Mechanical Engineering, Chung Yuan Christian University, Chungli, Taiwan*

**GV-05. Withdrawn**

**GV-06. Study of electromagnetic absorption on Zn1-xCoxO film prepared by hybrid magnetic co-sputtering method.** *S. Tong*[1] and M. Tung[1] *1. Industrial Technology Research Laboratories, Hsinchu, Taiwan*

**GV-07. Coil geometry for efficient active compensation with separated magnetic shields.** *Y. Nakashima*[1,2] and I. Sasada[1] *1. Department of Applied Science for Electronics and Materials, Kyushu University, Fukuoka, Japan; 2. Research Fellow of the Japan Society for the Promotion of Science, Tokyo, Japan*

**GV-08. Shielding Performance of Open-Type Magnetic Shielding Box Structure.** *T. Saito*[1] *1. Kajima Corporation, Tokyo, Japan*

**GV-09. Microstructural Characterization of Ferritic 12Cr Steel by Reversible Magnetic Permeability.** *C. Kim*[1], I. Park[2] and K. Ryu[3] *1. Engineering Science and Mechanics, Pennsylvania State University, State College, PA; 2. Seoul National University of Technology, Seoul, South Korea; 3. Korea Research Institute of Standard and Science, Daejeon, South Korea*

**GV-10. Experimental Verification and Analytical Approach to Influence Stator Skew on Electromagnetic Performance of Permanent Magnet Generators with Multi-pole Rotor.** *J. Choi*[1], S. Jang[1], K. Ko[1] and J. Park[1] *1. Chungnam National University, Dae-jeon, South Korea*

**GV-11. Rotating Flux and Rotational Loss within Lamination at T-joint of a 3-phase 3-limb Transformer Core under PWM Voltage Excitation.** *X. Yao*[1], A. Moses[1], S. Somkun[1] and F. Anayi[1] *1. School of Engineering, Cardiff University, Wolfson Centre for Magnetics, Cardiff, Wales, United Kingdom*

**GV-12. Micro-scaled on chip high Q toroidal inductors above 20GHz.** S. Chen[1], J. Ou[2] and *J. Wu*[3] *1. The Graduate Institute of Photonics, National Changhua Univ. of Education, Changhua, Taiwan; 2. Taiwan SPIN research center, National Changhua Univ. of Education, Changhua, Taiwan; 3. Department of Physics, National Changhua Univ. of Education, Changhua, Taiwan*

**GV-13. An analytical estimation of dependence of copper loss in high frequency transformers on winding cross section.** *K.V. Namjoshi*[1], A. Sadeghian[2] and J. Lavers[1] *1. Electrical and Computer Engineering, University of Toronto, Toronto, ON, Canada; 2. Computer Science, Ryerson, Toronto, ON, Canada*

**GV-14. Incorporating Core Hysteresis Properties In 3-D Computations Of Transformer Inrush Current Forces.** *A.A. Adly*[1] and H.H. Hassan[1] *1. Elect. Power & Machines, Cairo University, Giza, Egypt*

**GV-15. MEMs Design of Air Core Ethernet Transformers.** *D. Bowen*[1,2], I.D. Mayergoyz[1,2] and M. Beyaz[1] *1. ECE, University of Maryland, College Park, MD; 2. UMIACS, University of Maryland, College Park, MD*

## FRIDAY AFTERNOON 2:00 SALON A

### Session HA
## INTERMETALLIC AND OTHER HARD MAGNETIC MATERIALS III
Jan-Ulrich Thiele, Chair

**2:00**

**HA-01. Grain isolated $L1_0$ FePt-$Ta_2O_5$ nanocomposite media with large coercivity for perpendicular recording applications.** *B. Lim*[1], J. Chen[2], J. Hu[1], W. Phyoe[1], Y. Ding[1] and B. Liu[1] *1. Spintronics, Media and Interface (SMI) Division, Data Storage Institute, A*STAR (Agency for Science, Technology and Research), Singapore, Singapore; 2. Dept of Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

**2:12**

**HA-02. $L1_0$ Alloys for Heat Assisted Magnetic Recording (HAMR) Media: On the Nucleation of the $L1_0$ Phase in FePt and FeCuPt Alloy Films.** *K. Barmak*[1,2], D.C. Berry[1,2] and J.M. Rickman[3] *1. Department of Materials Science and Engineering, Carnegie Mellon Univeristy, Pittsburgh, PA; 2. Data Storage Systems Center, Carnegie Mellon Univeristy, Pittsburgh, PA; 3. Department of Materials Science and Engineering, Lehigh University, Bethlehem, PA*



**2:24**

**HA-03. L10 ordered FePtB thin films with small distribution of perpendicular magnetic anisotropy.** *E. Kitagawa*[1], M. Yoshikawa[1], T. Nagase[1], T. Daibou[1], K. Nishiyama[1], M. Nagamine[1], T. Kishi[1] and H. Yoda[1] *1. Toshiba Corporation, Kawasaki, Japan*

**2:36**

**HA-04. Tailoring the FePt orientation on amorphous substrates by magnetron sputtering, structural and magnetic investigations.** *V. Cantelli*[1], J. Grenzer[1], J. von Borany[1] and J. Fassbender[1] *1. Institute of Ion Beam Physics and Materials Research, Forschungszentrum Dresden-Rossendorf, Dresden, Germany*

**2:48**

**HA-05. Thickness dependence of structure and magnetic properties of annealed $[Fe/Pt]_n$ multilayer films.** *B. Yao*[1] and K.R. Coffey[1] *1. Advanced Materials Processing and Analysis Center, Department of Mechanical, Materials and Aerospace Engineering, University of Central Florida, Orlando, FL*

**3:00**

**HA-06. *In situ* formation of $L1_0$ FePt nanoclusters via plasma ion heating during inert gas condensation.** *M. Patterson*[4,1], X. Rui[2,1], T.A. Zimmerman[6,1], X. Li[1,3], M. Kramer[5], S. Dave[3,1] and J. Shield[2,1] *1. Nebraska Center for Materials and Nanoscience, University of Nebraska - Lincoln, Lincoln, NE; 2. Mechanical Engineering, University of Nebraska - Lincoln, Lincoln, NE; 3. Physics, University of Nebraska - Lincoln, Lincoln, NE; 4. Physics, University of Wisconsin - Stout, Menomonie, WI; 5. Materials Science and Engineering, Iowa State University, Ames, IA; 6. Physics, Gustavus Adolphus, St Peter, MN*

**3:12**

**HA-07. Morphology and Crystalline Structure of Large Directly-Ordered $L1_0$ FePt Nanoparticles.** *X. Liu*[1] and J. Wang[1] *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

**3:24**

**HA-08. Ultra-high-density (001)-oriented FePt nanoparticles by atomic-scale-multilayer deposition.** *L. Wang*[1], Y. Wu[1] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

**3:36**

**HA-09. Shape Control of FePt Nanocrystals.** *N. Poudyal*[1], G.S. Chaubey[1], C. Rong[1] and J. Liu[1] *1. Physics, University of Texas at Arlington, Arlington, TX*

**3:48**

**HA-10. Observation of L10-like chemical ordered decahedral FePt nanoparticles by Cs-corrected HRTEM.** X. Hu[1,2], L. Xie[1,2], P.J. Liu[4] and *J. Yuan*[3] *1. Laboratory of Advanced Materials, Department of Materials Science and Engineering, Tsinghua University, Beijing, China; 2. Beijing Electron Microscopy Centre, Tsinghua University, Beijing, China; 3. Department of Physics, University of York, York, United Kingdom; 4. Department of Physics, University of Texas at Arlington, Arlington, TX*

**4:00**

**HA-11. Phenomenological analysis of magnetization reversal process for $L1_0$-FePt (001) particulate films.** D. Wang[1], T. Seki[1], *K. Takanashi*[1] and T. Shima[2] *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Faculty of Engineering, Tohoku-Gakuin University, Tagajo, Japan*

**4:12**

**HA-12. Magnetic properties of L1o FexPtyAu100-x-y nanoparticles.** *V. Nandwana*[1], G.S. Chaubey[1], Y. Zhang[1] and J. Liu[1] *1. Physics, University of Texas at Arlington, Arlington, TX*

**4:24**

**HA-13. Phase transformations and magnetic structure of Fe-Pd and Co-Pt alloys studied by in-situ neutron powder diffraction.** *J. Lyubina*[1], O. Isnard[2] and O. Gutfleisch[1] *1. Leibniz-Institute of Solid State and Materials Research, IFW Dresden, P.O. Box 270016, D-01171, Dresden, Germany; 2. Institut Néel, CNRS / University J. Fourier, Avenue des Martyrs 38042 Grenoble cedex 9 and Institut Laue-Langevin, Rue J. Horowitz, 38042, Grenoble cedex 9, France*

**4:36**

**HA-14. Effects of substrate bias on magnetocrystalline anisotropy Ku of CoPt thin films with increasing Pt content.** *H. Yuan*[1,2], Y. Peng[3] and D.E. Laughlin[1,2] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 3. Seagate Technology, Pittsburgh, PA*



**4:48**

**HA-15. Competing magnetic interactions in the intermetallic compound $Ho_2Mn_3Si_5$** *R. Nirmala*[1], A.V. Morozkin[2], J. Lamsal[3], Z. Chu[4], V. Sankaranarayanan[1], K. Sethupathi[1], Y. Yamamoto[5], H. Hori[5], W.B. Yelon[6] and S.K. Malik[7] *1. Physics, Indian Institute of Technology Madras, Chennai, India; 2. Department of Chemistry, Moscow Lomonosov State University, Moscow, Russian Federation; 3. Department of Physics and Astronomy, University of Missouri-Columbia, Columbia, MO; 4. Department of Physics, University of Missouri-Columbia, Columbia, MO; 5. School of Materials Science, Japan Advanced Institute of Science and Technology, Ishikawa, Japan; 6. Materials Research Center and Department of Chemistry, Missouri University of Science and Technology, Rolla, MO; 7. International Center for Condensed Matter Physics (ICCMP), University of Brasilia, Brasilia, Brazil*

**FRIDAY AFTERNOON 2:00** **SALON B**

## Session HB
## AMORPHOUS AND NANOCRYSTALLINE MATERIALS

Leszek Malkinski, Chair

**2:00**

**HB-01. Soft magnetic nanocomposites generated by energetic iron/iron oxide core-shell nanocluster impact.** *Y. Qiang*[1], D. Meyer[1], Y. Tian[1], R. Souza[1] and G. Donohoe[2] *1. Physics, University of Idaho, Moscow, ID; 2. Electrical and Computer Engineering, University of Idaho, Moscow, ID*

**2:12**

**HB-02. Potential application of iron isotope fractionation in the mechanistic study of magnetite formation.** *P. Roonasi*[1] *1. Luleå Universiry of Technology, Luleå, Sweden*

**2:24**

**HB-03. Characterization of Anomalous Magnetic Behavior of Iron Nanoparticles.** *T.C. Monson*[1], D.L. Huber[1], J.M. Lavin[1], V. Petkov[2] and Y. Ren[3] *1. Sandia National Labs, Albuquerque, NM; 2. Department of Physics, Central Michigan University, Mt. Pleasant, MI; 3. Advanced Photon Source, Argonne National Lab, Argonne, IL*

**2:36**

**HB-04. Synthesis of Monodisperse FeCo Nanoparticles by Reductive Salt-matrix Annealing.** *N. Poudyal*[1], G.S. Chaubey[1], C. Rong[1] and J. Liu[1] *1. Physics, University of Texas at Arlington, Arlington, TX*

**2:48**

**HB-05. Magnetic Nanocrystalline Iron-Nickel alloy prepared by electrodeposition.** *A. Sanaty Zadeh*[1], A. Saidi[1] and K. Raeissi[1] *1. Materials Engineerig, Isfahan University of Technology, Isfahan, Isfahan, Iran*

**3:00**

**HB-06. Fabrication and magnetic properties of Ni nanodots using nanoporous polysulphone membrane.** *S. Ramaswamy*[1], G. Chandrashekaran[1], A. Littleflower[1] and S.N. Kumar[1] *1. Nanotechnology Research Center, SRM University, Chennai, Tamil Nadu, India*

**3:12**

**HB-07. Formation of non-interacting Ni nanostructures in α-Al2O3 by negative ion implantation.** *S.K. Sharma*[1], P. Thakur[2], R. Kumar[3], S. Kumar[4], C.G. Lee[4] and M. Knobel[1] *1. Physics, University of Campinas, Campinas, Sao Paulo, Brazil; 2. Thin Film Materials Research Center, KIST, Cheongrang, Seoul 130-650, South Korea; 3. Inter University Accelerator Centre (IUAC), New Delhi, India; 4. School of Nano & Advanced Materials Engineering, Changwon National University, # 9 Sarim dong, Chan, South Korea*

**3:24**

**HB-08. Effect of boron on the field-induced magnetic anisotropy in Fe-based soft magnetic nanostructures.** N. Ito[1], *K. Suzuki*[1], J.S. Garitaonandia[2] and J.D. Cashion[3] *1. Department of Materials Engineering, Monash University, Clayton, VIC, Australia; 2. Departamento de Física Aplicada II, UPV/EHU, Bilbao, Spain; 3. School of Physics, Monash University, Clayton, VIC, Australia*

**3:36**

**HB-09. Process control of magnetic and structural properties of $Fe_3Si$ films on Si substrates.** *S. Liew*[1], H.D. Seng[1] and D. Chi[1] *1. IMRE, Singapore, Singapore*

**3:48**

**HB-10. New Fe-Metalloids based nanocrystalline alloys with high Bs of 1.9T and excellent magnetic softness.** *A. Makino*[1], H. Men[1], K. Yubuta[1] and A. Inoue[1] *1. IMR, Tohoku Univ., Sendai, Japan*

**4:00**

**HB-11. Magnetic Behavior of SiCN/MWCNT Nano-composites.** *A.A. Francis*[1,2], E. Ionescu[2] and R. Riedel[2] *1. Advanced Materials, Central Metallurgical Research and Development Institute, Helwan, Egypt; 2. Materialwissenschaft, Technische Universität Darmstadt, Darmstadt, Germany*



**4:12**

**HB-12. FeTaC soft underlayer for double-layered perpendicular recording media.** *P. Alagarsamy*[1], T. Yukiko K[1] and K. Hono[1] *1. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Ibaraki, Japan*

**FRIDAY AFTERNOON 2:00** **SALON D**

## Session HC
# MAGNETO-CALORIC MATERIALS II
Robert Shull, Chair

**2:00**

**HC-01. The Structure and Magnetocaloric Properties of Cu-doped $Ni_2GaMn$ alloys.** *V. Provenzano*[1], T.B. Zhang[1,2], A. Shapiro[1] and R.D. Shull[1] *1. NIST, Gaithersburg, MD; 2. School of Materials Science and Engineering, Sichuan University, Chengdu, China*

**2:12**

**HC-02. The effect of thermal/magnetic non-equilibrium in estimating the magnetocaloric effect from magnetization measurements.** *J.S. Amaral*[1] and V.S. Amaral[1] *1. Departamento de Física and CICECO, Universidade de Aveiro, Aveiro, Portugal*

**2:24**

**HC-03. Influence of the demagnetizing field on the determination of the magnetocaloric effect from magnetization curves.** R. Caballero[1], *V. Franco*[1], A. Conde[1] and L.F. Kiss[2] *1. Department of Condensed Matter Physics, Sevilla University, Sevilla, Spain; 2. Research Institute for Solid State Physics and Optics, Hungarian Academy of Sciences, Budapest, Hungary*

**2:36**

**HC-04. High cooling power of Co-doped PrNi5 compounds exploiting its spin reorientation and magnetic transition over a wide temperature zone.** *S. Das*[1], D. Rocco[1], J. Amaral[1], J. Leitão[1], V. Amaral[1], M. Reis[1], R. Fernandes[2], J. Araújo[3], A. Pereira[3], P. Tavares[4], N. Martins[4] and A. Coelho[5] *1. Departamento de Física and CICECO, University of Aveiro, Aveiro, Portugal; 2. Institut für Keramische Hochleistungswerkstoffe, DenickestraBe, Technische Universität Hamburg-Harburg, Hamburg, Germany; 3. IFIMUP, Departamento de Física, Univsersidade do Porto, Porto, Portugal; 4. Departamento de Química and CQ-VR, Universidade de Trás-os-Montes e Alto Douro, Vila Real, Portugal; 5. Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas - UNICAMP, Campinas, S. Paulo, Brazil*

**2:48**

**HC-05. Pressure Effect on Phase Transitions and Magnetocaloric Effect in $Gd_5Ge_4$** *Z. Arnold*[1], Y. Skorokhod[1], J. Kamarad[1], C. Magen[2] and P.A. Algarabel[2] *1. Magnetics and Superconductors, Institute of Physics AS CR, v.v.i., Prague 8, Czech Republic; 2. Departamento de Fisica de la Materia Condensada and Instituto de Ciencia de Materiales de Aragon, Universidad de Zaragoza and Consejo Superior de Investigaciones Cientificas, 50009 Zaragoza, Spain*

**3:00**

**HC-06. Field induced structural phase transition at higher temperatures in $Gd_5(Si_xGe_{1-x})_4$** *R.L. Hadimani*[1], Y. Melikhov[1], J.E. Snyder[1] and D.C. Jiles[1] *1. Wolfson Centre for Magnetics, Cardiff University, Cardiff, Wales, United Kingdom*

**3:12**

**HC-07. A nano-resolution analytical electron microscopy study of Fe-substituted Gd-Ge-Si magnetocaloric alloys.** *P. McGuiness*[1], B. Podmiljsak[1], I. Skulj[3], B. Markoli[2] and S. Kobe[1] *1. Department for Nanostructured Materials, IJS, Ljubljana, Slovenia; 2. Department for Materials and Metallurgy, University of Ljubljana, Ljubljana, Slovenia; 3. Magneti Ljubljana d.d., Ljubljana, Slovenia*

**3:24**

**HC-08. Pressure-induced enhancement of suppressed ferromagnetism in Ge-rich, Gd5(Si0.025Ge0.975)4 magnetocaloric compound.** *Y. Tseng*[1,2], D. Haskel[2], N.M. Souza-Neto[2], Y. Mudryk[3], V.K. Pecharsky[3] and K.A. Gschneidner, Jr[3] *1. Materials Science & Engineering, Northwestern University, Evanston, IL; 2. Magnetic Materials Group, Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 3. Materials and Engineering Physics Program, Ames Laboratory, Ames, IA*

**3:36**

**HC-09. Magnetic and magnetocaloric properties of the R6Co2Si3 compounds with R = Pr, Nd, Gd and Tb.** *J. Shen*[1,2], B. Shen[1], F. Hu[1], J. Sun[1] and Y. Li[2] *1. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China; 2. School of Material Science and Engineering, Hebei University of Technology, Tianjin 300130, China*



**3:48**

**HC-10. Magnetocaloric Effects in Spherical $La(Fe_xSi_{1-x})_{13}$ and Their Hydrides for AMR-type Refrigerator.** *A. Fujita*[1], S. Koiwai[2], S. Fujieda[1], K. Fukamichi[3], T. Kobayashi[4], H. Tsuji[4], S. Kaji[4] and A. Saito-Takahashi[4] *1. Department of Materials Science, Graduate School of Engineering, Tohoku University, Sendai 980-8579, Japan; 2. JST Plaza Miyagi, Sendai 989-3204, Japan; 3. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai 980-8577, Japan; 4. Corporate Research & Development Center, Toshiba Corporation, Kawasaki 212-8582, Japan*

**4:00**

**HC-11. Cooling power enhancement triggered by multiple metamagnetic transitions in $La(Fe,Si)_{13}$-based compounds.** *J. Lyubina*[1] and O. Gutfleisch[1] *1. Leibniz-Institute of Solid State and Materials Research, IFW Dresden, P.O. Box 270016, D-01171, Dresden, Germany*

**4:12**

**HC-12. Copper Induced Electronic Structure Changes in Giant Magnetocaloric Compound $Ni_2Mn_{0.75}Cu_{0.25}Ga$.** *S. Roy*[1], E. Blackburn[2], S.M. Valvidares[3], M.R. Fitzsimmons[4], S.C. Vogel[4], J.B. Kortright[3], S.K. Sinha[2], M. Khan[5], I. Dubenko[5] and N. Ali[5] *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Department of Physics, University of California, San Diego, CA; 3. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Manuel Lujan Neutron Scattering Center, Los Alamos National Laboratory, Los Alamos, NM; 5. Department of Physics, Southern Illinois University, Carbondale, IL*

**4:24**

**HC-13. Magnetocaloric Effect in MnP Nanorods: magnetic isotherms and direct thermal measurements.** *R.A. Booth*[1], J. Moran[1] and S.A. Majetich[1] *1. Physics, Carnegie Mellon University, Pittsburgh, PA*

**4:36**

**HC-14. Irreversible magnetocaloric response in Ni-Mn-Sn.** *C.P. Sasso*[1], L. Giudici[1,2], M. Pasquale[1], M. Kuepferling[1], V. Basso[1], T. Lograsso[3] and D. Schlagel[3] *1. Electromagnetics Division, INRIM, Torino, Italy; 2. Physics, Politecnico di Torino, Turin, Italy; 3. Materials and Engineering Physics, Ames Laboratory, Ames, IA*

**4:48**

**HC-15. Mössbauer spectroscopy study on the magnetic transition in $Mn_{1.1}Fe_{0.9}P_{0.8}Ge_{0.2}$** *X. Liu*[1], Z. Altounian[1], D.H. Ryan[1], M. Yue[2], Z. Li[2], D. Liu[2] and J. Zhang[2] *1. physics department, McGill University, Montreal, QC, Canada; 2. College of Mater. Sci. & Eng., Beijing University of Technology, Beijing, China*

FRIDAY AFTERNOON 2:00 SALON E

## Session HD
## 4f-, 5f- AND STRONGLY CORRELATED SYSTEMS III
Joseph Ross, Chair

**2:00**

**HD-01. Contribution of 4*f* states to the magnetic anisotropy of EuO.** *E. Arenholz*[1], G. van der Laan[2], A. Schmehl[3] and D.G. Schlom[4] *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Diamond Light Source, Didcot, Oxfordshire, United Kingdom; 3. Institut für Physik, Universität Augsburg, Augsburg, Germany; 4. Department of Materials Science & Engineering, Penn State University, University Park, PA*

**2:12**

**HD-02. Electronic structure of ferromagnetic semiconductors EuX (X=O, S, Se, Te) probed by x-ray magnetic circular dichroism under high pressure.** *N.M. Souza-Neto*[1], D. Haskel[1], Y. Tseng[2,1] and G. Lapertot[3] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Department of Materials Science and Engineering, Northwestern University, Evanston, IL; 3. Département de Recherche Fondamentale sur la Matière Condensée, CEA, Grenoble, France*

**2:24**

**HD-03. $^{33}S$ NMR Measurements in the Heisenberg Ferromagnet EuS.** *N. Bykovetz*[1] and c. Lin[2] *1. Department of the Army, CECOM LCMC, AMSEL-SF-R, Fort Monmouth, NJ; 2. Physics, Temple University, Philadelphia, PA*

**2:36**

**HD-04. Infrared study of $SmMnO_3$ crystal field excitations.** *V. Nekvasil*[1], S. Jandl[2], A.A. Mukhin[3], V.Y. Ivanov[3] and A.M. Balbashov[4] *1. Institute of Physics CAS, Prague, Czech Republic; 2. Université de Sherbrooke, Sherbrooke, QC, Canada; 3. General Physics Institute RAS, Moscow, Russian Federation; 4. Moscow Power Ingineering Institute, Moscow, Russian Federation*



**2:48**

**HD-05. Pressure and magnetic field effects in heavy-fermion $UCu_{3.5}Al_{1.5}$** F. Nasreen[1], A.M. Alsmadi[2], V. Zapf[3], F. Fabris[3], T.D. Dial[3], A. Lacerda[3], J. Kamarad[4], K. Kothapalli[1] and *H. Nakotte*[1] *1. Physics Department, New Mexico State University, Las Cruces, NM; 2. Physics Department, The Hashemite University, Zarqa, Jordan; 3. Pulse Field Facilty, NHMFL, Los Alamos National Laboratory, Los Alamos, NM; 4. Laboratory of High Pressure, Institute of Physics, ASCR, Praha, Czech Republic*

**3:00**

**HD-06. Electronic Structure, Magnetic, and Transport Characterization of Eu-Mn Intermetallic Alloys.** *K.A. Balin*[1,2], J. Szade[2], A. Hutchison[1] and Z. Celinski[1] *1. Center for Magnetism and Magnetic Nanostructures, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Division of Solid State Physics, Institute of Physics, Silesian University, Katowice, Poland*

**3:12**

**HD-07. Moment variation in $Er(Co_{1-x}Fe_x)_2$ Laves phase: magnetic measurements and Mössbauer spectroscopy study.** *X. Liu*[1], Z. Altounian[1] and D.H. Ryan[1] *1. Physics Department, McGill University, Montreal, QC, Canada*

**3:24**

**HD-08. Magnetic Properties of Thulium Layered Compounds; $AlB_2$-type Analogues.** *T. Mori*[1,2] and K. Siemensmeyer[3] *1. National Institute for Materials Science, Tsukuba, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Hahn Meitner Institute, Berlin, Germany*

**3:36**

**HD-09. Magnetic phase transitions in $R_5NiPb_3$, $R$ = Ce, Nd and Gd.** *V. Goruganti*[1], K.D. Rathnayaka[1] and J.H. Ross[1] *1. Department of Physics, Texas A&M University, College Station, TX*

**3:48**

**HD-10. Coexistence of magnetism and superconductivity in CeRhIn5.** *T. Park*[1,2], J.L. Sarrao[2] and J.D. Thompson[2] *1. Physics, Sungkyunkwan University, Suwon, South Korea; 2. Condensed Matter and Thermal Physics, Los Alamos National Laboratory, Los Alamos, NM*

**4:00**

**HD-11. Magnetic properties of plutonium and Pu compounds.** *L. Havela*[1], A.B. Shick[2] and T. Gouder[3] *1. Department of Condensed Matter Physics, Charles University, Prague 2, Czech Republic; 2. Insititute of Physics, Academy of Sciences of the Czech Republic, Prague 8, Czech Republic; 3. European Commission, Joint Research Centre, Institute for Transuranium Elements, Karlsruhe, Germany*

**4:12**

**HD-12. Ferromagnetism in UCoGe stabilized by transition metal doping.** *J. Pospisil*[1], J. Poltierova Vejpravova[1], M. Divis[1] and V. Sechovsky[1] *1. Department of Condensed Matter Physics, Charles University in Prague, Praha 2, Czech Republic*

**4:24**

**HD-13. Magnetic disorder in Ti doped ErCo2: High magnetic field study.** *Y. Öner*[1] and M. Guillot[2] *1. Department of Physics, Istanbul Technical University, Istanbul, Turkey; 2. Grenoble High Magnet Field Laboratory, CNRS, Grenoble, France*

**4:36**

**HD-14. Nanocrystals formation in amorphous $Y_xCe_{50-x}Cu_{42}Al_8$ (x=0, 25) heavy-fermion system.** *B. Idzikowski*[1], Z. Sniadecki[1] and B. Mielniczuk[1] *1. Institute of Molecular Physics, Polish Academy of Sciences, Poznan, Poland*

**4:48**

**HD-15. Quadrupolar pair interactions in f-electron materials.** *N.G. Fazleev*[1,2] *1. Physics, University of Texas at Arlington, Arlington, TX; 2. Physics, Kazan State University, Kazan, Russian Federation*

FRIDAY AFTERNOON 2:00 — 400/402

## Session HE
# FERRITES, GARNETS AND MICROWAVE MATERIALS

Rajasakeran Swaminathan, Chair

**2:00**

**HE-01. Structural and Size dependent Magnetic Properties of Gadolinium- Iron- Garnet (GdIG) Nanoparticles under High Magnetic Field of 32 Tesla.** C.N. Chinnasamy[1], V.G. Harris[1], J.M. Greneche[2], T. Sakai[1], B. Latha[1], C. Vittoria[1] and *M. Guillot*[3] *1. Center for Microwave and Magnetic Materials, Dept. of Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Laboratoire de Physique de L'Etat Condensé, UMR CNRS 6087, Institut de Recherche en Ingénierie Moléculaire et Matériaux Fonctionnels IRIM2F, FR CNRS 2575, Université du Maine, 72085 Le Mans Cedex 9, France; 3. Grenoble High Magnetic Field Laboratory, CNRS, Grenoble, BP 166, F-38042, France*



**2:12**

**HE-02. Magnetism and magnetocaloric effect in bulk and nanostructured $Gd_3Fe_5O_{12}$ garnets.** *M.H. Phan*[1], M.B. Morales[1], H. Srikanth[1], C.N. Chinnasamy[2] and V.G. Harris[2] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA*

**2:24**

**HE-03. Imaging Capabilities of Etched (100) and (210) Garnet Films.** *S. Tkachuk*[1], D. Bowen[1], C. Krafft[2] and I.D. Mayergoyz[1,3] *1. Electrical and Computer Engineering, University of Maryland, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD; 3. UMIACS, University of Maryland, College Park, MD*

**2:36**

**HE-04. Monochromatic microwave radiation from the system of strongly excited magnons.** *O. Dzyapko*[1], V.E. Demidov[1], S.O. Demokritov[1], G.A. Melkov[2] and V.L. Safonov[3] *1. University of Muenster, Muenster, Germany; 2. National Taras Schevchenko University of Kiev, Kiev, Ukraine; 3. Mag & Bio Dynamics, Inc., Escondido, CA*

**2:48**

**HE-05. Magnetic Exchange Enhancement of Electron Spin Resonance.** *G.F. Dionne*[1] *1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

**3:00**

**HE-06. In-plane c-axis oriented barium ferrite films with self bias low microwave loss.** *Y. Song*[1], J. Das[1], Z. Wang[1], W. Tong[1] and C.E. Patton[1] *1. Department of Physics, Colorado State University, Fort Collins, CO*

**3:12**

**HE-07. Synthesis, structural and magnetic properties of magnesium ferrite epitaxial thin films by molecular beam epitaxy.** *J. Cheng*[1], V.K. Lazarov[2], G.E. Sterbinsky[1] and B.W. Wessels[1] *1. Department of Materials Science and Engineering, Northwestern Univ., Evanston, IL; 2. Department of Materials, University of Oxford, Oxford, United Kingdom*

**3:24**

**HE-08. Sharp Ferromagnetic Resonance in Polycrystalline Zn-ferrite Thin Films.** *M. Bohra*[1,2], S. Prasad[2], N. Venketaramani[3], S.C. Sahoo[2] and R. Krishnan[4] *1. LSG2M, GT4, Ecole des mines, Nancy Cedex, France; 2. physics, IIT-Bombay, Mumbai, India; 3. Metallurgical Engineering and Material Science, IIT-BOMBAY, Mumbai, India; 4. Laboratoire de Magnetisme et d'Optique de l'Universite de Versailles, CNRS, 45 Avenue des Etats Unis, 78035 Versailles Cedex, France*

**3:36**

**HE-09. Temperature dependence of magnetic anisotropy of germanium/cobalt co-substituted cobalt ferrite.** *N. Ranvah*[1], I.C. Nlebedim[1], Y. Melikhov[1], J.E. Snyder[1], A.J. Moses[1], P.I. Williams[1], F. Anayi[1] and D.C. Jiles[1,2] *1. Wolfson Centre for Magnetics, Cardiff University, Cardiff, Wales, United Kingdom; 2. Materials Science and Engineering Department, Iowa State University, Ames, IA*

**3:48**

**HE-10. Permeability and losses in ferrites from DC to the microwave regime.** *M. Pasquale*[1], F. Fiorillo[1], M. Coïsson[1] and C. Beatrice[1] *1. Divisione Elettromagnetismo, INRIM, Torino, Italy*

**4:00**

**HE-11. An efficient model for the GHz permeability of sprayed ferrite films.** *O. Acher*[1], M. Ledieu[1], M. Abe[2], M. Tada[2] and T. Nakagawa[2] *1. Departement Matériaux, CEA Le Ripault, F-37260 Monts, France; 2. Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*

**4:12**

**HE-12. Low-loss magnetodielectric spinel-ferrite based ceramic with constant permeability and permittivity in the UHF range.** T. Atul[1], C. Alexis[1], *M. Jean-Luc*[1] and Q. Patrick[1] *1. Lab-STICC, Brest Cedex 3, France*

**4:24**

**HE-13. Ferromagnetic resonance and dielectric and magnetic properties of pure and diluted ferrites in millimeter waves.** *M.N. Afsar*[1], S. Chen[1] and K.A. Korolev[1,2] *1. EECS, Tufts University, Medford, MA; 2. Extremely High Frequency Medical and Technical Association, Moscow, Russian Federation*



**4:36**

**HE-14. Room Temperature Photo-induced Magnetization of Spinel $(Mn,Zn,Fe)_3O_4$ Thin Films.** ***J.S. Bettinger***[1], R.V. Chopdekar[2,1], E. Arenholz[3] and Y. Suzuki[1] *1. Materials Science and Engineering, UC Berkeley, Berkeley, CA; 2. Applied Physics, Cornell University, Ithaca, NY; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

**4:48**

**HE-15. Novel magnetic behaviors of CoFe2O4 nanoparticles prepared at low temperatures.** *J. Tang*[1], W. Wang[1], Q. Gao[2], G. Hong[2] and J. Ni[2] *1. Physics & Astronomy, University of Wyoming, Laramie, WY; 2. Key Laboratory of Rare Earth Chemistry and Physics, Changchun Institute of Applied Chemistry, Changchun, Jilin, China*

## FRIDAY AFTERNOON 2:00 410

### Session HF
## MOTORS AND ACTUATORS II
Helm Jansen, Chair

**2:00**

**HF-01. Methods of Torque Ripple Reduction for Flux Reversal Motor.** G. Vakil[2], *N.K. Sheth*[1] and D. Miller[1] *1. R&D, Magnequench Neo Powders Pte. Ltd., Singapore, Singapore; 2. Electrical Engineering Department, Nirma University of Science and Technology, Ahmedabad, India*

**2:12**

**HF-02. Analysis and Design of a Slotless Tubular PM Actuator for High Acceleration Applications.** K.J. Meessen[1], *J.J. Paulides*[1], B.L. Gysen[1] and E.A. Lomonova[1] *1. Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

**2:24**

**HF-03. Evaluation of an Electro-magnetic Micro Actuator Using Scanning Hall Probe Microscopy Measurements.** *D. Dinulovic*[1], H. Saalfeld[1], Z. Celinski[2], S.B. Field[3] and H.H. Gatzen[1] *1. Institute for Microtechnology, Leibniz Universität Hannover, Garbsen, Germany; 2. Center for Magnetism and Magnetic Nanostructures, University of Colorado, Colorado Springs, CO; 3. Department of Physics, Colorado State University, Fort Collins, CO*

**2:36**

**HF-04. Multilayered TbFe/Ni/TbFe Thin Film Multi Body Actuator for Micromachined Magnetostrictive Transducer.** *H. Lee*[1], C. Cho[1], C. You[2], H. Choi[2] and J. Yoon[2] *1. Mechanical Engineering, Inha University, Incheon, South Korea; 2. Physics, Inha University, Incheon, South Korea*

**2:48**

**HF-05. ANN based Torque Calculation of SR Motor without Locking the Rotor.** *F. Kucuk*[1], . Goto[1], H.J. Guo[2] and O. Ichinokura[1] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Graduate School of Engineering, Tohoku Gakuin University, Tagajo, Japan*

**3:00**

**HF-06. Performance Analysis of Surface Mounted Permanent Magnet Brushless DC Motor using various Finite Element Packages.** *P.R. Upadhyay*[1], A.J. Sutaria[2] and T.N. Patel[2] *1. Electrical and Computer Engineering Department, Institute of Technology, University of Minnesota, Minneapolis, MN, MN; 2. Department of Electrical Engineering, Institute of Technology, Nirma University, Ahmedabad, Gujarat, India*

**3:12**

**HF-07. Eddy currents due to vacuum chamber wall in the airgap of linear PM actuators.** *J.W. Jansen*[1] and E.A. Lomonova[1] *1. Department of Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands*

**3:24**

**HF-08. The influence of the stochastic features of the energy source on the design of an electromagnetic generator.** *M. Trapanese*[1] *1. Dipartimento di Ingegneria Elettrica, Elettronica e delle Telecomunicazioni, Università di Palermo, Palermo, Italy*

**3:36**

**HF-09. Sensorless Optimal Sinusoidal BLDC for Hard Disk Drives.** *C. Soh*[1,2] and C. Bi[1,2] *1. Data Storage Institute, Singapore, Singapore; 2. National University of Singapore, Singapore, Singapore*

**3:48**

**HF-10. Comparative Study on Stator Structures in High-Speed Sensorless Brushless DC Motors.** *K. Wang*[1], M. Jin[1], J. Shen[1] and R. Qiu[2] *1. College of Electrical Engineering, Zhejiang University, Hangzhou, China; 2. Astronaut Center of China, Beijing, China*



**4:00**

**HF-11. An Outer-Rotor Permanent Magnet Flux-Switching Machine for Traction Application.** *Y. Wang*[1], W. Fei[2,1], J. Shen[1] and Z. Fang[1] *1. Zhejiang University, Hangzhou, China; 2. Cranfield University, Swindon, United Kingdom*

**4:12**

**HF-12. A Study on the Integration of Contactless Energy Transfer in the End Teeth of a PM Synchronous Linear Motor.** *D. Krop*[1] and E. Lomonova[1] *1. Electrical Engineering, University of Technology Eindhoven, Eindhoven, Netherlands*

**4:24**

**HF-13. The use of Lie's Symmetries on the modeling of permanent magnet motors.** L.T. Loureiro[1], *.F. Flores Filho*[1], J.R. Zabadal[2] and R.P. Homrich[1] *1. Electrical Engineering Department, Federal University of Rio Grande do Sul, Porto Alegre, RS, Brazil; 2. Nuclear Engineering Department, Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*

**4:36**

**HF-14. Noninvasive Detection of Unevenly Magnetized Permanent Magnet of a Brushless DC Motor by Characterizing Back Electro Motive Force.** *C. Lee*[1] and G. Jang[1] *1. Dept. of Mechanical Engineering, PREM Lab., Hanyang University, Seoul, South Korea*

**4:48**

**HF-15. Design and Construction of a Novel Rotary Magnetostrictive Motor.** *N. Zhou*[2] *1. Hangzhou Dianzi University, Hangzhou, zj, China; 2. Pittsburg State University, Pittsburg, KS*

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*Indicates student finalist