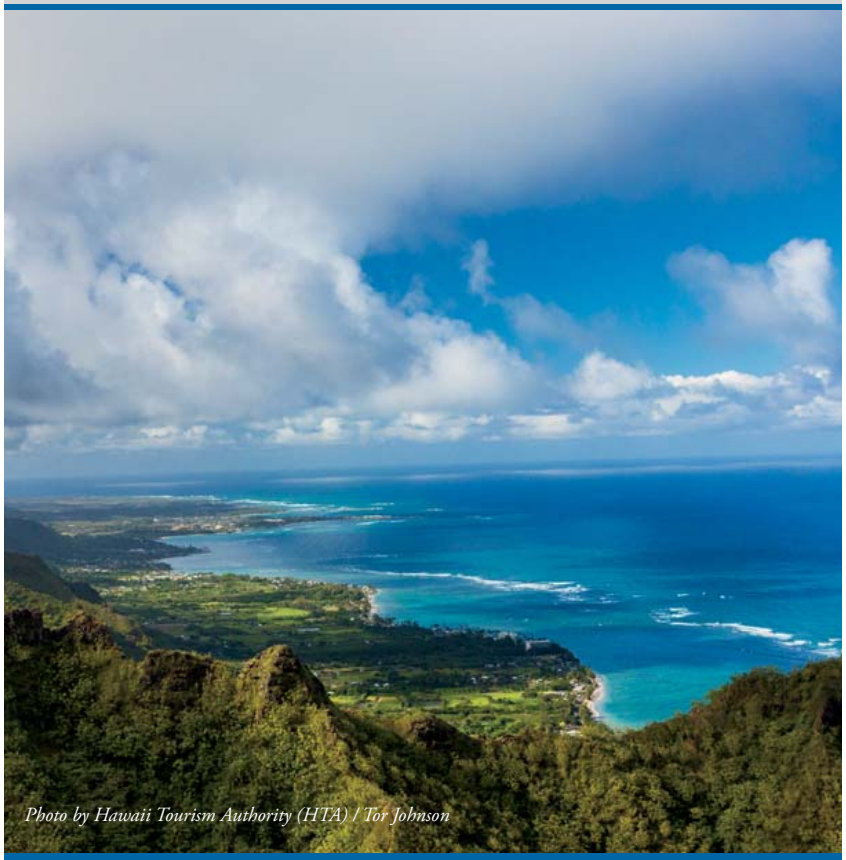
59TH ANNUAL CONFERENCE ON

MAGNETISM AND MAGNETIC MATERIALS

3-7 NOVEMBER 2014 • HONOLULU, HAWAII



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PROGRAM

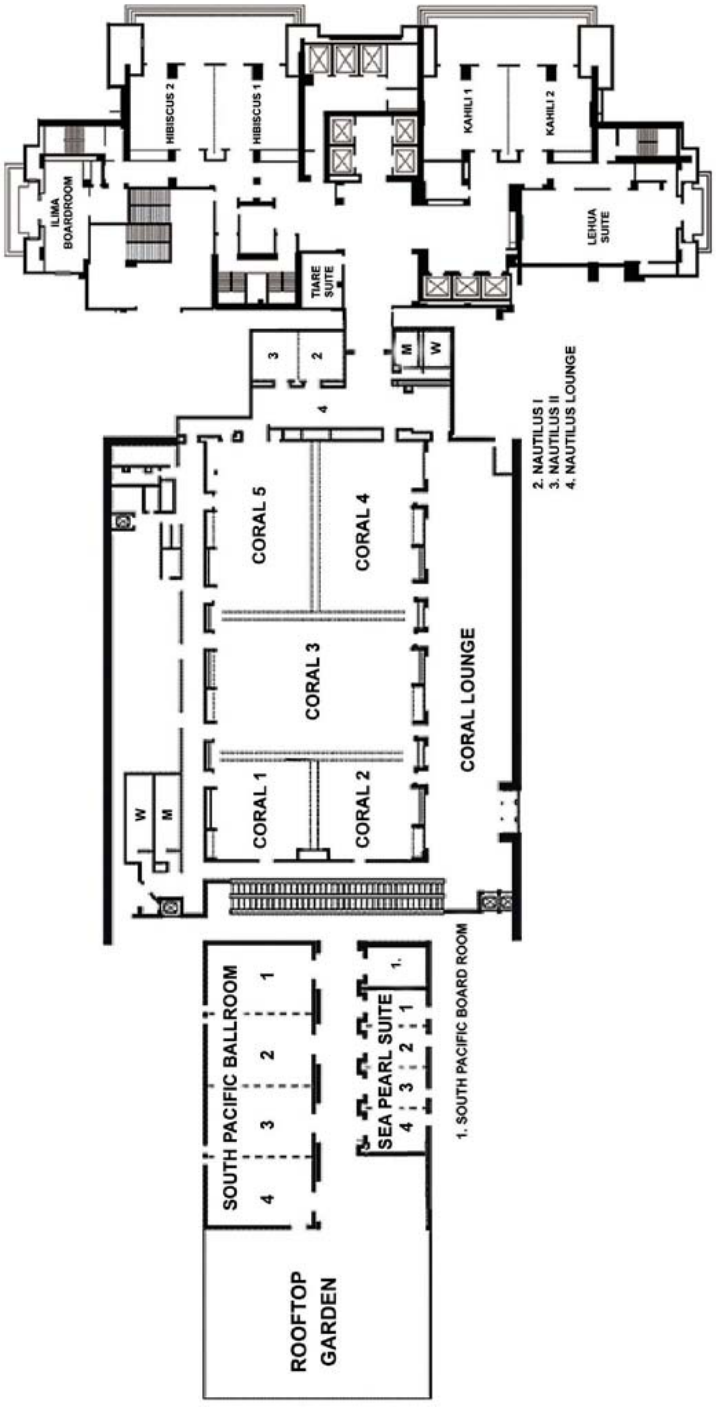
MMM 2014 Honolulu

AIP Publishing

IEEE MAGNETICS 50 YEARS 1964 2014

Jointly sponsored by AIP Publishing, LLC and the IEEE Magnetics Society

Hilton Hawaiian Village Conference Center



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General Conference Information

SCOPE OF THE CONFERENCE

The 59th Annual Conference on Magnetism and Magnetic Materials is sponsored jointly by AIP Publishing 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 world-wide participants to meet their colleagues and collaborators and discuss developments in all areas of magnetism research. In terms of the number of presentations, this will be one of the largest MMM Conferences in the history of the Conference, with over 1900 oral and poster presentations.

HONOLULU, HAWAII

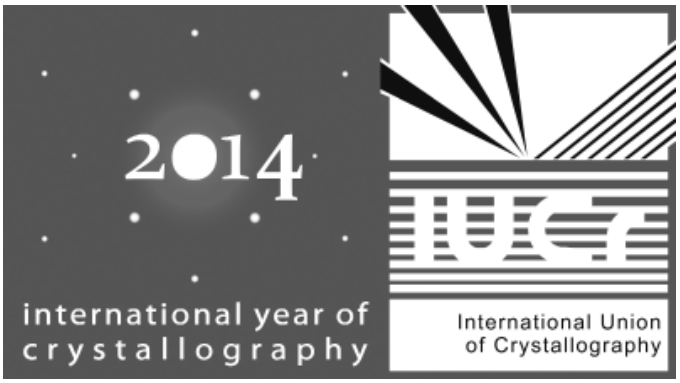
The city of Honolulu, which means "sheltered bay", is the capital of the state of Hawaii, located on the island of Oahu. The islands of Hawaii are a unique center of commerce where "East meets West", a multi-cultural Pacific population that is home to numerous military bases, cultural centers and museums, active volcanoes, beautiful beaches, and amazing restaurants. The average temperature in November is a high of 84°F, and a low of 70°F. For more information, visit www.gohawaii.com.

SPECIAL CONFERENCE EVENTS

Tutorial: Magnetism and X-rays (Session WA)

This Tutorial on Magnetism and X-rays will be held on Monday, November 3, from 2:00-5:15 pm in Coral Ballroom 3.

In 2014 the scientific world is celebrating the International Year of Crystallography to mark the centenary of the discovery of X-ray diffraction, a breakthrough which revolutionized the study of materials.



The use of X-rays to study magnetism and magnetic materials now extends well beyond the determination of atomic crystal structures, in particular since the advent of intense, tunable sources of radiation such as synchrotrons and free-electron lasers, which can be used to study the physical, electronic, and magnetic structure of materials. Three internationally renowned speakers from around the world will present tutorial talks giving an overview of the fundamentals of X-ray scattering, spectroscopy, and imaging methods, as well as explaining how these techniques are currently used in cutting edge magnetism research.

Speakers: Sunil Sinha, University of California San Diego – *"Magnetic X-ray Diffraction and Scattering as a Probe of Magnetic Structure and Nanomagnetism."*

Tetsuya Nakamura, Japan Synchrotron Radiation Research Institute (JASRI) – *"X-ray Magnetic Circular Dichroism and its Applications to Element Specific Characterization of Magnetic Materials."*

Laura Heyderman, Laboratory for Mesoscopic Systems, Department of Materials, ETH Zurich and Laboratory for Micro- and Nanotechnology, Paul Scherrer Institute – *"Exploring Artificial Ferroic Systems with Synchrotron X-rays."*

Special Evening Session: Status and Trends in Magnetic Recording (Session XA)

This Special Evening Session on Magnetic Recording will be held on Monday, November 3 from 6:00-7:30 pm in Coral Ballroom 3.

Speakers: Eric Fullerton, UC San Diego, Department of ECE, Department of Nanoengineering, and Center for Magnetic Recording Research – *"Magnetic Recording: 116 Years of Progress and the Challenges Ahead."*

Samuel Yuan, Western Digital – *"Advanced Recording Heads for HDD Storage Applications."*

Bruce Terris, HGST – *"Media Challenges for Beyond 1 Tb/in^2 Recording."*

Bierstubes

A toast to the following supporters who make the Bierstubes possible!

Monday, November 3 4:30-6:00 pm

AIP Publishing

Wednesday, November 5 4:30-6:00 pm

attocube
pioneers of precision

QuantumDesign

Thursday, November 6 4:30-6:00 pm

Note: Bierstubes will be held in the Coral Ballroom Lounge.

Coffee

Complimentary coffee service will be available Tuesday through Friday mornings from 9:00-10:30 am in the Coral Ballroom Lounge.

Reception

On Tuesday, November 4, from 6:00-8:00 pm, there will be a Reception on the Great Lawn at the Hilton Hawaiian Village, sponsored by the IEEE Magnetics Society. A full array of popular island fare, wine, and a sampling of local beers will be served, and a Hawaiian Trio will provide live musical entertainment. Tickets are required for all attendees and guests to attend the Reception. One complimentary reception ticket is included with each registration, and guest tickets may be purchased in advance or onsite at the cost of $100 per ticket. In the event of rain the Reception will be held in the Coral Ballroom.

Special Evening Talks

Wednesday, November 5 6:00-7:00 pm

Yoshinori Tokura of the RIKEN Center for Emergent Matter Science (CEMS) and the Department of Applied Physics at the University of Tokyo, will speak on "Topology and Magnetism" (YA). He will review nontrivial magnetism and electron dynamics, including colossal magnetoresistance, multiferroicity, skyrmions, and topological insulator/semimetal that are arising from topological spin textures both in real-space and momentum-space of solids.

Thursday, November 6 6:00-7:00 pm

Joshua Feinberg will make a presentation entitled "Whispers from the earth's core: how magnetic minerals in rocks record the history of the earth's magnetic field" (ZA). He will discuss, in particular, how the violent magmatic eruptions that gave rise to the Hawaiian Islands act as a quiet geologic archive of planetary magnetic field behavior for the past five million years.

Note: Special Evening talks will be held in Coral Ballroom 3.

Student Lunch with the Experts

Students who have been selected in advance of the Conference to attend this event will have a chance to "Meet with the Experts" from industry, universities and national laboratories over lunch (provided by the Conference) on Wednesday, November 5. **Registration for this event is now closed.**

Women in Magnetism Networking Event

The IEEE Magnetics Society is sponsoring a networking event for women in the magnetism community on Thursday, November 6, beginning at 5:00 pm by the Kalia Pool located on the fourth floor of the Kalia Tower at the Hilton Hawaiian Village. This is an opportunity to become acquainted with other women in the profession and to discuss a range of topics including leadership, work-life balance, and professional development. At the reception you will also have the opportunity to form small dinner groups in order to build new friendships and expand your professional network. All graduate students, researchers and retirees are encouraged to attend. This event is organized by Pallavi Dhagat. If you have questions, she can be reached at: dhagat@eecs.oregonstate.edu.

CAMERA, CELL PHONE AND VIDEO RECORDING POLICIES

Conference attendees are strictly prohibited from using cameras and all other recording devices in all oral and poster sessions, as well as the Exhibit Hall. Attendees are **not** permitted to take pictures of speaker slides or posters, or to make video recordings of presentations. Furthermore, as a courtesy to the speakers, attendees are asked to be respectful of their colleagues by turning off all cell phones before entering the session rooms.

REGISTRATION HOURS

The Conference Registration Desk, located in the Coral Ballroom Lounge, will be open during the following hours:

Monday, November 3	10:00 am – 7:00 pm
Tuesday, November 4	7:00 am – 4:30 pm
Wednesday, November 5	7:00 am – 2:30 pm
Thursday, November 6	7:00 am – 2:30 pm

Note: The Conference Registration Desk will not be open on Friday, November 7. If you need registration assistance on Friday please go to the Conference Office.

Onsite Registration Rates:

Full	$595 USD
Student	$300 USD
Unemployed Retiree	$300 USD

Badge Policy: All attendees are required to wear Conference name badges to enter the Technical Sessions, Exhibits, Posters, and Bierstubes. A name badge and a ticket will be required for the Reception.

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To access the wi-fi generously supported by Cryomech, search for and select the "Cryomech" network on your mobile device or computer under the available wireless networks. When prompted, enter the password "pulsetube".

PUBLICATIONS

Conference proceedings will be published in a special issue of *Journal of Applied Physics* scheduled to appear in print in May 2015. Included in the Full Registration fee is a DVD of the invited and contributed proceedings papers in *Journal of Applied Physics*. For those registering at the reduced rate (Students and Unemployed Retirees) a DVD copy of the Proceedings can be purchased for an additional $80. **Sales of DVD's will be available onsite only until Thursday, November 6**. All registrants will be able to access the Abstracts online.

To check the status of their papers, authors should refer to the PXP submission site at http://mmm.peerx-press.org. If you have any publications questions, visit Office 1 & 2 (located by the escalators across from Coral Ballroom 1 & 2) for assistance.

SPEAKER PRACTICE ROOM

Speakers may use Sea Pearl Suite 1 on the second floor of the Conference Center at the Hilton Hawaiian Village to practice their presentations with the provided audio-visual equipment (LCD projector and screen) prior to their sessions. This room will be available for speakers to use from Monday at 1:00 pm until Friday at 1:00 pm.

SESSION CHAIRS

Poster and Oral Session Chairs are expected to attend the Session Chair Breakfast at 7:15 am in the Lehua Suite on the morning of the session that they are chairing. If you are chairing an oral session, please bring your laptop computer to the session or arrange to borrow one during your session, as the Session Chair's laptop will be used for session timing.

ORAL SESSIONS

Oral sessions will be held Tuesday through Friday from 8:30–11:30 am and 1:30–4:30 pm. **Speakers must bring their presentation on their own laptop computer, have it powered on and ready to connect to the projector.** Only standard PC-style VGA connections to the LCD projector will be supplied, so you must supply any required adaptor for your computer. In particular, Mac OS users must make sure that they have the correct adaptor plug and that video "mirroring" is activated.

In each session room, there will be a multi-port switchbox so that speakers can connect their laptop during the question period of the previous speaker. **Each speaker will be responsible for promptly connecting to the projector and switching to the correct input port. The presentation timer will begin immediately after the introduction by the Session Chair, and there is no extra time allotted to troubleshoot connections or reboot.** Speakers are strongly encouraged to test their laptop connections and screen resolution settings in the Speaker Practice Room or in the session room prior to the start of the session.

There will be no technical support provided for speaker-supplied equipment. To protect against laptop failure, it is suggested that speakers also bring a copy of their presentation on a USB flash drive as a back-up. However, session timing must be maintained and no additional presentation time will be given in the event of technical difficulties.

BEST STUDENT PRESENTATION AWARD

This competition for the best student presentation is to encourage excellence in graduate studies in the field of magnetism. Conference attendees are encouraged to attend these talks, and support these young scientists. The finalists for this year are:

AH-06	"Zero-Moment Half-Metallic Ferrimagnetic Semiconductors", Michelle Jamar, Northeastern University
BG-06	"Spin-Orbit Torque Induced Magnetization Switching in Magnetically Doped Topological Insulators", Yabin Fan, UCLA
CC-02	"Crystal Orientation Dependence of Band Matching in CPP-GMR Pseudo Spin-Valves with Co2Fe(Ge0.5Ga0.5) Heusler Alloy and NiAl Spacer", Jiamin Chen, Tsukuba University
DH-01	"Emergent Degeneracy and Magnetic Charge Screening in Artificial Spin Ice", Ian Gilbert, University of Illinois at Urbana-Champaign
EE-03	"Electric-Field Manipulation of Magnetization Rotation and Tunneling Magnetoresistance of Magnetic Tunnel Junctions at Room Temperature", Aitian Chen, Tsinghua University
FD-05	"Laser Induced Spin Precession in Highly Anisotropic Granular L10 FePt", Jonas Becker, Radboud University Nijmegen

Congratulations to the Best Student Presentation Winner for MMM 2013

Yanan Geng, Rutgers University
"Direct Visualization of Magnetoelectric Domains in Hexagonal ErMnO3"

POSTER SESSIONS

Poster Sessions will be held Tuesday through Friday from 9:30 am–12:30 pm and 2:30 pm–5:30 pm. Poster presenters should set up their materials at least 30 minutes before session start times, and must be present at their poster at a minimum, for the first *and* last hours of each Poster Session. **Presenters must remove all of their materials promptly at the end of their session** (except the push-pins provided by the Conference). Any poster materials not removed will be discarded in order to prepare for the next session. Presenters who have had their poster printed in advance by ScholarOne may pick up their posters at Office 1 & 2 (located by the escalators across from Coral Ballroom 1 & 2) during the following times:

Monday, November 3	10:00 am–7:00 pm
Tuesday, November 4 to **Friday, November 7**	8:45–9:30 am and 2:00–2:30 pm

BEST POSTER PRESENTATION AWARD

Supported by

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All posters will be eligible for nomination for this award provided that they meet the requirements and guidelines as described on the Conference website. The presentations should consist of well-prepared visual materials, posted on a designated board. It is required that an author be registered for the conference and present at the first and last hours of the poster session to present details and answer questions. Nominations will be made by the Poster Session Chairs, and the Poster Award Committee will review all of the nominated posters at the beginning of each session. Selections will be based on the level of the research, quality of the poster, and clarity of the presentation. The award will be given during the last hour of the poster session, and winners will receive a $50 USD cash prize, thanks to the generous support of GMW Associates. A ribbon will also be attached to the winning posters, and they will be prominently displayed for the remainder of the conference.

A complete list of the Best Poster Award Winners from MMM 2013 is available on the Conference website at www.magnetism.org.

STUDENT TRAVEL SUPPORT

Travel grants are offered to a limited number of students who are presenting at the Conference. Students must apply online (with advisor's endorsement), and the grants are used to reimburse partial travel expenses (receipts required). **The program is for students who are presenting at the Conference and have not previously received a Conference or IEEE Magnetics Society travel grant. Only one application per research group is accepted.** Postdoctoral fellows and non-students are not eligible. If you are interested in applying for a travel grant to attend future MMM conferences, go to www.magnetism.org.

CHILD CARE SUPPORT

Child care grants are offered to a limited number of attendees who are bringing young children to the Conference or who incur extra expenses in leaving their children at home. The recipients of child care support have been informed about their selection and are required to submit receipts for their reimbursable expenses. If you are interested in applying for child care support at future MMM conferences, go to www.magnetism.org.

CONFERENCE ORGANIZATION

Steering Committee

Chairman	Chris Leighton
Chairman Elect	Bruce Gurney
Past Chairman	Axel Hoffmann
Treasurer	Maria Varela
Program Co-Chairs	Christopher Marrows, YoshiChika Otani, and Evgeny Tsymbal
Program Committee Members	Shireen Adenwalla, Del Atkinson, Katayun Barmak, Anjan Barman, Geoff Beach, Anne Bernand-Mantel, Ekkes Brück, Scott Crooker, Nora Dempsey, Pallavi Dhagat, Kathrin Dörr, Bernard Doudin, Hans Fangohr, Peter Fischer, Victorino Franco, Kaizhong Gao, Julie Grollier, Olle Heinonen, Olav Hellwig, Robert Hicken, Steven Hill, Kazuhiro Hono, Kazushi Ishiyama, Quan Jiang, Xiaofeng Jin, Olga Kazakova, Kathryn Krycka, Sean Langridge, June Lau, Kai Liu, Julia Lyubina, Aurelien Manchon, Steven May, Byoung-Chul Min, Chiharu Mitsumata, John Moreland, Ce-Wen Nan, Takayuki Nozaki, Christos Panagopoulos, Frédéric Petroff, Prem Piramanayagam, Stefania Pizzini, Mark Rzchowski, Karl Sandeman, Jeffrey Shield, Tom Silva, Hariharan Srikanth, Gopalan Srinivasan, Beth Stadler, Mark Stiles, Nian Sun, Kiyonori Suzuki, Yukiko Takahashi, Yayoi Takamura, Yoshihiko Togawa, Maxim Tsoi, Paolo Vavassori, Dan Wei, Matt Willard, John Xiao, Masahiro Yamaguchi, Igor Zutic
Publications Chairman	Cindi Dennis
Publications Editors	Victorino Franco Kazuhiro Hono Frédéric Petroff Kiyonori Suzuki Dan Wei Matt Willard
Exhibits Chairman	Tiffany Santos
Publicity	Brian Maranville

Student Awards and Travel	Barry Zink
Editor, *Journal of Applied Physics*	James Viccaro
Conference Managers	Diane Melton and Molly Bartkowski
Abstracts/Publications Manager	Regina Mohr
Exhibits Manager	Jennifer Fiske

Advisory Committee

Chairman	Axel Hoffmann
Chair-Elect	Chris Leighton
Executive Secretary/Treasurer	Maria Varela
Recording Secretaries	Diane Melton and Regina Mohr
Term Expires **December 2014**:	Franca Albertini, Dario Arena, Elke Arenholz, Ching-Ray Chang, Jeff Childress, Alina Deac, Yumi Ijiri, Grace Lin, Dan Reich, Matt Willard
Term Expires **February 2016**:	Cindi Dennis, Andrew Kent, Patrick LeClair, Kyung-Jin Lee, Laura Lewis, Alan MacDonald, Christopher Marrows, YoshiChika Otani, Amanda Petford-Long, Maria Varela
Term Expires **December 2016**:	Paul Crowell, Pallavi Dhagat, Kai Liu, Hariharan Shrikanth, Mark Stiles, Koki Takanashi, Bruce Terris, Suzanne te Velthuis, Manuel Vazquez, Shinji Yuasa

Sponsoring Society Representatives

AIP Publishing	Bill Burke
IEEE Magnetics Society	Massimo Pasquale

ADDITIONAL INFORMATION

To be placed on our mailing list, please visit the Conference website at www.magnetism.org. If you have questions about MMM, contact us at info@mmmconference.com.

FUTURE CONFERENCES

2015 Intermag Conference
May 11-15, 2015, Beijing, China

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

61st Magnetism and Magnetic Materials Conference (MMM)
October 31-November 4, 2016, New Orleans, Louisiana

2017 Intermag Conference
April 24-28, 2017, Dublin, Ireland

62nd Magnetism and Magnetic Materials Conference (MMM)
November 6-10, 2017, Pittsburgh, Pennsylvania

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

14th Joint MMM-Intermag Conference
January 14-18, 2019, Washington, DC

EXHIBITORS *(as of October 6, 2014)*

An exhibition of magnetism-related services, equipment, materials, and software will be held adjacent to the poster sessions in the Coral Ballroom Lounge and Coral Ballroom 4.

AJA INTERNATIONAL, Inc.

Booth #18

Sputtering, E-beam, Ion Milling, and Hybrid Deposition Systems for R&D and Pilot Production. Static and Rotating Magnetron Sputter Sources for HV and UHV, Substrate Holders with Rotation, RF Biasing, Heating, Cooling, and Tilting; Sputter Targets, Microwave, RF and DC Power Supplies, Microwave Components and Plasma Sources, RF Ion/Plasma Sources.

Contact: Stephanie Creech
Email: topgun@ajaint.com
Website: www.ajaint.com

Booth #9

Attocube offers a variety of easy-to-use scanning probe microscopes and nanopositioning stages for operation in a temperature range from 300K down to l0mK as well as in high magnetic fields. Most recent developments include a fully automated, low-vibration top-loading closed cycle cryostat which allows for highly sensitive SPM measurements in a cryogen-free environment within a temperature range from 300K to <2K. A unique piezo double rotator stage insert allows for electrical transport measurements with the sample exposed to the full magnetic field at any angle. A range of compact 1" scanning probe microscope inserts offer the possibility for highly sensitive SPM measurements inside the PPMS from Quantum Design.

Contact: Florian Ponnath
Email: info@attocube.com
Website: www.attocube.com

Booth #4

CAPRES A/S is a nano-technology based company. Our unique probe technology is designed for in-line production monitoring in the semiconductor industry where our fully automated tools for mass production are used at four of the leading computer chip companies. Our unique probe and tool technology is ideal for R&D as well as production monitoring because it allows direct measurements of Sheet Resistance, Hall Mobility, and Active Carrier Density on very thin conducting films down to a few nm directly on 300 mm product wafers or smaller samples without sample preparation. Our unique CIPTech® tool is the preferred method for characterizing magnetic films in the MRAM and Read Head industry.

Contact: Tom Karpowicz
Email: tjk@capres.com
Website: www.capres.com

Booth #10

Cryogenic Limited has supplied thousands of superconducting magnets to the scientific community over the past 20 years. Customers can completely eliminate the need for liquid helium in their laboratories with no concern for cost or availability. Cryogen-free magnet configurations include solenoids up to 20 Tesla, split pair, vector, UHV and beam-line magnets. The Cryogen Free Measurement System has an integrated variable temperature insert which operates to 1.6K to 1000K. Interchangeable measurement options: Vibrating Sample Magnetometer, AC Susceptibility, Specific Heat, Resistivity and Hall Effect probes with sample rotation. A 7 Tesla Cryogen Free SQUID magnetometry system available for magnetic property measurements.

Contact: Rick Hapanowicz
Email: sales@cryogenicusa.com
Website: www.CryogenicUSA.com

Booth #17

Cryomech, Inc. is a recognized leader in advanced cryocooler solutions for new and existing applications as requested by our unique and diverse customer base. Our vast product line includes the largest capacity GM cryocoolers on the market ranging from 100W @25K up to 600W @77K, Pulse Tube Cryocoolers from 0.5W - 1.5W at 4.2K, six different sizes of Liquid Nitrogen Plants, Liquid Helium Plants with liquefaction rates of 15, 22, 40 and 60 liters per day, Helium Reliquefiers and Helium Recovery Systems.

Email: cryosales@cryomech.com
Website: www.cryomech.com

GMW Associates

Booths #1 & #2

GMW will be showing: Metrolab Three-Component Magnetic Field Probes with USB Interface and LabView software. Full-scale ranges of +/-100uT (1G), +/-8mT 80G), +/-3T and +/-20T. Senis One-, Two- and Three-Component Hall Transducers with analog output, full-scale field ranges to +/-20T and frequency response from dc to 75kHz. The Senis Probes can be used stand-alone or in Senis Field Mappers or Zeiss CMM. GMW Electromagnets for magnetic material and thin film studies including the new, Model 5203 with vertical projected field. HTS-110 compact Electromagnets including Short Solenoids to +/-3T, Shielded Solenoids to +/-16T and Shielded Dipoles to +/-8T. +Matesy Magneto-Optic film systems for visualization of vertical dc and ac magnetic fields from a planar sample.

Contact: Ben Hartzell
Email: ben@gmw.com
Website: www.gmw.com

HINDS™ INSTRUMENTS

Booth #5

Hinds Instruments will display instrument options for Magneto-Optic Kerr Effect (MOKE) experiments. First, we offer the Exicor® Domain™ Hysteresis Looper, a turnkey system that allows the user to plot hysteresis loops and determine coercivity values within the magnetic field range of 0 to 2400 Gauss. In addition we offer MOKE kit options, including photo detectors, lock-in amplifiers, and photoelastic modulators (PEMS) that allow experimenters to build their own MOKE system. In both the Exicor Domain system and the MOKE kits the robustness and convenience of Hinds' PEM technology allows sensitive detection of magneto-optic signals produced by thin magnetic films

Contact: Connie Wimmer
Email: sales@hindsinstruments.com
Website: www.hindsinstruments.com

Intlvac THIN FILM

Booth #12

Intlvac Thin Film provides PVD (Physical Vapor Deposition) and IBE (Ion Beam Etch) systems for magnetic materials, metals and oxides. You can create and etch compounds that have never existed in nature with our Nanoquest Ion Beam Etch systems, and Nanochrome magnetron sputtering systems. Research and development plays a major role in our technology's superiority. Our in-house development lab designs, engineers and manufactures machinery and processes used for PVD and IBE. We specialize in engineering solutions for a variety of specific results and outcomes using our process lab. We provide our customers with machinery needed for creating ultra-thin coatings and etching solutions.

Contact: Dino Deligiannis
Email: dino@intlvac.com
Website: www.intlvac.com

Booth #15

Kaufman & Robinson: Manufacturing ion/plasma sources, electron neutralizers and automated power supplies to assist you with your depositions, etching, or material modifications. KRI's products include high current gridless sources, filamentless RFICP gridded sources, low energy electron sources and automated power supplies. We manufacture with the expertise of over 30 years experience.

Contact: Chris Griffith
Website: www.ionsources.com

Booth #6

Supporting advanced research since 1968, Lake Shore Cryotronics is a leading innovator in measurement and control solutions for characterizing materials under controlled magnetic field and temperature conditions. High-performance product solutions from Lake Shore include magnetic test and measurement instruments; high-sensitivity, electromagnet-based magnetometer (VSM/AGM) systems for characterizing magnetic properties of materials over a broad range of temperatures (4.2 K to 1273 K) and magnetic fields to 3.1 T; and cryogenic probe stations with integrated vertical and horizontal field magnets (to 2.5 T) for non-destructive characterization of electrical, magneto-transport, DC, RF, or microwave properties of materials. Lake Shore also offers a fully integrated terahertz (THz) materials characterization system for exploring the electronic and magnetic properties of next-generation materials at THz frequencies and as a function of temperature (4.2 K to 300 K) and magnetic field (9 T).

Contact: Andy Phillips
Email: Andy.Phillips@lakeshore.com
Website: www.lakeshore.com

Booth #11

Mantis Deposition is dedicated to the design and manufacture of high-quality deposition systems and components that offer exquisite control of film composition, thickness, and structure for magnetic thin films, multilayers, and nanoparticles. Our product offerings include PVD and MBE deposition systems including nanoparticle and sputter deposition sources. We also offer a range of RF atom and ion sources, e-beam evaporators, and thermal gas crackers as well as modular R&D deposition systems which can be customized for your application. Our highly skilled team of engineers and designers will be happy to work with you on your next deposition challenge.

Contact: Jessica Hilton
Email: Jessica.Hilton@mantisdeposition.com
Website: www.mantisdeposition.com

Booth #14

MicroSense is a leading manufacturer of magnetic measurement systems for research and production quality control. Our Vibrating Sample Magnetometer (VSM) systems are used for research at many prestigious academic and commercial magnetics laboratories worldwide. MicroSense VSMs have the lowest noise, highest signal-to-noise ratio and highest magnetic field in the smallest footprint of any horizontal field VSM. MicroSense also offers a range of non-contact, in-line (full wafer or disk) research and production magnetic metrology systems for in-plane and perpendicular MRAM, hard disk and recording head process control. MicroSense was the first to introduce a 300 mm ready non-contact magnetic property measurement tool for MRAM.

Contact: Erik Samwel
Email: esamwel@microsense.net
Website: www.microsense.net

Booth #3

NanoScan is a Swiss company that strives to achieve the best magnetic resolution in Scanning Probe Microscopy on the market. It features two versatile Atomic Force Microscopes (AFM) for high-resolution magnetic force mode, as well as for all traditional AFM modes of operation (contact, intermittent, non-contact, etc): (1) The latest version of the high-resolution Magnetic Force Microscope (**hr-MFM**) operates in high-vacuum and guarantees 10 nm magnetic resolution. It offers excellent positioning repeatability for samples up to 100 mm x 100 mm. (2) The **PPMS-AFM** can be operated at low temperatures (2-400 K) and high magnetic fields (0-16 T). It is designed to fit into 1-inch bore cryostat, but can also be operated at room temperature in high-vacuum. The PPMS-AFM guarantees a 15 nm magnetic resolution.

Contact: Dr. Raphaëlle Dianoux
Email: r.dianoux@nanoscan.ch
Website: www.nanoscan.ch

Booths #7 & #8

Quantum Design manufactures automated material characterization systems for the physics, chemistry, and material science research communities. These systems provide temperatures from 0.05 to 1000 K and magnetic fields up to 16 tesla. Instruments include the Physical Property Measurement System (PPMS®), SQUID-based Magnetic Property Measurement System (MPMS®3), VersaLab, and PPMS® DynaCool. Quantum Design also manufactures advanced helium liquefiers (ATL80, ATL160) along with helium recovery systems, an IR crystal furnace, and a cryogen-free, high-gradient magnetic separator.

Email: Info@qdusa.com
Website: www.qdusa.com

SINGULUS

Booth #19

SINGULUS TECHNOLOGIES has a high level of expertise in a combination of process and scientific know-how combined with smart solutions of equipment engineering for vacuum technology, thin-film deposition, thermal treatment as well as wet chemical processes. Our machines are employed by globally operating customers in Optical Disc, Solar and Semiconductor as well as new application areas. SINGULUS TECHNOLOGIES is a renowned manufacturer of advanced thin-film deposition equipment for magnetics, MRAM, thin-film head, and other semiconductor applications. The systems offer a reliable deposition of ultra-thin metallic and insulating films down to a thickness of one nanometer and below and stacks of such films with very precise material thickness and high uniformity specifications.

Contact: Bernhard Krause
Email: bernhard.krause@go-metacom.de
Website: www.singulus.com

SmartTip
Probe Solutions

Booth #20

SmartTip has extended its range of magnetic analysis tools with the SmartProber P1, a 300mm capable 6 kOe perpendicular field CIPT tool. Find out more about this and our other affordable CIPT analysis tools at our booth. As the world's only AFM probe provider specializing in MFM probes, we also continue to offer a range of MFM probe solutions fit to your specific application: hard magnetic media, soft magnetic structures, applied field measurements, etc. Our Smart Coating technology guarantees very high resolution and reproducible results.

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Website: www.smarttip:nl

Tohoku Steel Co., Ltd.
Sendai, Japan
Tohoku Instrumentation Technologies

Booth #16

Tohoku Steel has developed and commercialized numerous electromagnetic materials and technologies for over 70 years through close academic and cooperative partnership with Tohoku University. In this exhibit, you can obtain detailed information on Tohoku's unique line of magnetic measurement systems, which includes Hc meter and MR head / MRAM wafer probing systems. Tohoku's high-field MR-Probers, capable of applying over 15 kOe, will be a cutting edge tool for your most advanced research and production line inspection needs.

Contact: Kazuhiko Okita
Email: okita@tohokusteel.com
Website: www.tohokusteel.com

Ube Material Industries,Ltd.

Booth #13

We are going to exhibit our MgO sputtering target which is indispensable for spintronics applications. We can provide the world's largest class MgO sputtering target (18inch/460mm) which is high purity (the actual measurement value is 99.999%) and high density (the actual measurement value is 99.7%). And, our MgO sputtering target has high mechanical strength. It will reduce the risk of target cracking. Furthermore, we are manufacturing the raw material "high purity MgO powder" by ourselves. So, we will be able to provide you sufficient quantity of high quality MgO sputtering target.

Contact: Yoshihiro Nishimura
Email: yoshihiro.nishimura@ubematerials.co.jp
Website: www.ubematerial.com

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CONFERENCE PROGRAM-AT-A-GLANCE

MONDAY, NOVEMBER 3

2:00 pm - 5:15 pm

WA	Tutorial: Magnetism and X-rays	*Coral 3*

6:00 pm - 7:30 pm

XA	Evening Session: Status and Trends in Magnetic Recording	*Coral 3*

TUESDAY, NOVEMBER 4

8:30 am - 11:30 am

AA	Recent Progress in Current-Induced Torques	*Coral 3*
AB	Complex Oxide Thin Films and Heterostructures	*Coral 5*
AC	Energy-Assisted Recording I	*Coral 1*
AD	Ultrafast Spin Dynamics	*Coral 2*
AE	Multiferroics I	*South Pacific 1 & 2*
AF	Thin Films and Surface Effects I	*South Pacific 3 & 4*
AG	Magnetocaloric Materials I	*Hibiscus 1 & 2*
AH	Half-Metallic Materials I	*Kahili 1 & 2*
AI	Ferrites and Garnets I	*Sea Pearl 2-4*

9:30 am - 12:30 pm — Posters

AP	High Frequency and Microwave Devices I	*Coral 4*
AQ	Measurement Techniques and Bio/Chemical Magnetism	*Coral 4*
AR	Soft Magnetic Films, Microwires, and Alloys	*Coral 4*
AS	Special Materials and Skyrmions	*Coral 4*
AT	Crystalline Soft Magnets	*Coral Lounge*
AU	Interface-Governed Magnetic Nanoparticles	*Coral Lounge*
AV	Intermetallics and Other Hard Magnets	*Coral Lounge*
AW	Superconductivity and Heavy Fermions	*Coral Lounge*

1:30 pm - 4:30 pm

BA	Functional Complex Oxide Heterostructures	*Coral 3*
BB	Spin Hall Effect	*Coral 5*
BC	Spin Torque and Spin Torque Oscillators I	*Coral 1*
BD	Magnetization Dynamics I	*Coral 2*
BE	Tunnel Magnetoresistance and Spin Filtering	*South Pacific 1 & 2*
BF	Single Magnetic Nanoparticle Properties and Batch Processing	*South Pacific 3 & 4*
BG	Topological Insulators and Related Materials	*Hibiscus 1 & 2*
BH	Biomedical Applications	*Kahili 1 & 2*
BI	Instrumentation and Measurement Techniques	*Sea Pearl 2-4*

2:30 pm - 5:30 pm — Posters

BP	Energy-Assisted Recording II	*Coral 4*
BQ	Magnetic Microscopy I	*Coral 4*
BR	Magnetic Sensors Beyond Recording	*Coral 4*
BS	Multiferroics II	*Coral 4*

BT	Ferrites and Garnets II	*Coral Lounge*
BU	Hard Magnets: Materials and Processing I	*Coral Lounge*
BV	Magneto-Optic Materials and Sensors	*Coral Lounge*
BW	Multilayers and Thin Films I	*Coral Lounge*

WEDNESDAY, NOVEMBER 5

8:30 am - 11:30 am

CA	Electrical Detection of Spin-Pumping: Challenges and Recent Developments	*Coral 3*
CB	Domain Walls I	*Coral 5*
CC	Head/Media I	*Coral 1*
CD	Magnetization Dynamics and Ferromagnetic Resonance	*Coral 2*
CE	Voltage Control of Magnetic Anisotropy	*South Pacific 1 & 2*
CF	Exchange Bias I	*South Pacific 3 & 4*
CG	Magnetoresistance and Magnetoimpedance I	*Hibiscus 1 & 2*
CH	Micromagnetics I	*Kahili 1 & 2*
CI	Low-Dimensional & Molecular Magnetism I	*Sea Pearl 2-4*

9:30 am - 12:30 pm — Posters

CP	Core/Shell Magnetic Nanoparticles and Composites	*Coral 4*
CQ	Electronic Structure I	*Coral 4*
CR	Ferrites and Garnets III	*Coral 4*
CS	Magnetoelectrics I	*Coral 4*
CT	Complex Oxides I	*Coral Lounge*
CU	Magnetocaloric Materials II	*Coral Lounge*
CV	Nanowires and Assembled Nanoparticles I	*Coral Lounge*
CW	Skyrmions I	*Coral Lounge*

1:30 pm - 4:30 pm

DA	Frontiers of Magnetization Dynamics at the Nanoscale	*Coral 3*
DB	Spin Injection I	*Coral 5*
DC	Spin-Orbit Torques and the Spin Hall Effect	*Coral 1*
DD	Magnetic Vortices	*Coral 2*
DE	MRAM and Magnetic Tunnel Junctions	*South Pacific 1 & 2*
DF	Multilayers and Thin Films II	*South Pacific 3 & 4*
DG	Bioimaging and Hyperthermia	*Hibiscus 1 & 2*
DH	Spin Ices	*Kahili 1 & 2*
DI	Amorphous and Nanocrystalline Soft Magnets I	*Sea Pearl 2-4*

2:30 pm - 5:30 pm — Posters

DP	Complex Oxides II	*Coral 4*
DQ	Magnetoresistance and Magnetoimpedance II	*Coral 4*
DR	Spin Torque and Spin Torque Oscillators II	*Coral 4*
DS	Topological Insulators and Complex Magnetism	*Coral 4*
DT	Biomedical and New Applications	*Coral Lounge*
DU	Exchange Bias II	*Coral Lounge*
DV	Micromagnetics II	*Coral Lounge*
DW	Rare-Earth Transition Metal Borides I	*Coral Lounge*

6:00 pm - 7:00 pm

YA	Evening Session: Topology and Magnetism	*Coral 3*

THURSDAY, NOVEMBER 6

8:30 am - 11:30 am

EA	Spin Injection, Transport, and Detection in Novel 2D Materials	*Coral 3*
EB	Spin-Orbit Torques and the Dzyaloshinskii-Moriya Interaction	*Coral 5*
EC	Rare-Earth Free and L10 Hard Magnets I	*Coral 1*
ED	Magnetization Dynamics and Damping I	*Coral 2*
EE	Magnetoelectrics II	*South Pacific 1 & 2*
EF	Patterned Films	*South Pacific 3 & 4*
EG	Magnetoelastic Materials I	*Hibiscus 1 & 2*
EH	Fundamental Properties	*Kahili 1 & 2*
EI	Electronic Structure II	*Sea Pearl 2-4*

9:30 am - 12:30 pm — Posters

EP	Half-Metallic Materials II	*Coral 4*
EQ	Magnetoresistance, Tunnel Junctions, and Logic Devices	*Coral 4*
ER	Patterned Films and Nano-Assemblies	*Coral 4*
ES	Spin Currents, Spin Hall, and Related Effects	*Coral 4*
ET	Critical Phenomena	*Coral Lounge*
EU	Hyperthermia	*Coral Lounge*
EV	Magnetocaloric Materials III	*Coral Lounge*
EW	Power, Control Magnetics, Shielding, Levitation, and Propulsion	*Coral Lounge*

1:30 pm - 4:30 pm

FA	Topological Aspects in Correlated Spin Systems	*Coral 3*
FB	Spin Current and Spin Relaxation	*Coral 5*
FC	Magnetic Recording	*Coral 1*
FD	Magnetization Dynamics II	*Coral 2*
FE	MRAM	*South Pacific 1 & 2*
FF	Nanowires and Assembled Nanoparticles II	*South Pacific 3 & 4*
FG	High Frequency and Microwave Devices II	*Hibiscus 1 & 2*
FH	Rare-Earth Transition Metal Borides II	*Kahili 1 & 2*
FI	Superconductivity	*Sea Pearl 2-4*

2:30 pm - 5:30 pm — Posters

FP	Diluted Magnetic Semiconductors and Half-metallic Materials II	*Coral 4*
FQ	Head/Media II	*Coral 4*
FR	Nanostructured Permanent Magnets	*Coral 4*
FS	Voltage Control of Magnetic Anisotropy and Magnetic Tunnel Junctions	*Coral 4*
FT	Amorphous and Nanocrystalline Soft Magnets II	*Coral Lounge*
FU	Inductors and Transformers	*Coral Lounge*
FV	Magnetization Dynamics and Damping II	*Coral Lounge*
FW	Spin Injection II	*Coral Lounge*

6:00 pm - 7:00 pm

ZA	Evening Session: Geomagnetism	*Coral 3*

FRIDAY, NOVEMBER 7

8:30 am - 11:30 am

GA	Skyrmions and Chiral Spin Structures in Thin Films and Nanocrystals	*Coral 3*
GB	Domain Walls II	*Coral 5*
GC	Magnetic Microscopy II	*Coral 1*
GD	Spin Waves	*Coral 2*
GE	Magnetoelectrics III	*South Pacific 1 & 2*
GF	Hard Magnets: Materials and Processing II	*South Pacific 3 & 4*
GG	Special Materials	*Hibiscus 1 & 2*
GH	Magnetic Sensors	*Kahili 1 & 2*
GI	Inductors, Transformers, and Nanoparticles	*Sea Pearl 2-4*

9:30 am - 12:30 pm — Posters

GP	Magnetization Dynamics III	*Coral 4*
GQ	Magnetoelastic Materials II	*Coral 4*
GR	Rare-Earth Free and L10 Hard Magnets II	*Coral 4*
GS	Spin Transfer Torques and Related Effects	*Coral 4*
GT	Magnetic Fluids and Separations	*Coral Lounge*
GU	Multilayers and Thin Films III	*Coral Lounge*
GV	Power and Control Magnetics	*Coral Lounge*
GW	Spin Dynamics in Nanostructures	*Coral Lounge*

1:30 pm - 4:30 pm

HA	Magnetic Materials for Energy	*Coral 3*
HB	Spin Pumping and the Spin Seebeck Effect	*Coral 5*
HC	Skyrmions II	*Coral 1*
HD	Magnonics	*Coral 2*
HE	MRAM and Magnetic Logic Devices	*South Pacific 1 & 2*
HF	Thin Films and Surface Effects II	*South Pacific 3 & 4*
HG	Diluted Magnetic Semiconductors and Half-Metallic Materials I	*Hibiscus 1 & 2*
HH	Fluidic and Biochemical Applications of Nanoparticles	*Kahili 1 & 2*

2:30 pm - 5:30 pm — Posters

HP	Hysteresis Modeling and Magnetic Recording	*Coral 4*
HQ	Low-Dimensional & Molecular Magnetism II	*Coral 4*
HR	Multiferroics III	*Coral 4*
HS	Multilayers and Thin Films IV	*Coral 4*
HT	Domain Walls III	*Coral Lounge*
HU	Ferrites and Garnets IV	*Coral Lounge*
HV	Inductors and Transformers, and Nanoparticles	*Coral Lounge*
HW	Magnetic Stimulation and the Human Interface	*Coral Lounge*

MONDAY
AFTERNOON
2:00

CORAL 3

Session WA
TUTORIAL: MAGNETISM AND X-RAYS
Christopher H. Marrows, Chair

2:00

WA-01. Magnetic X-ray Diffraction and Scattering as a Probe of Magnetic Structure and Nanomagnetism. ***(Invited)*** *S. Sinha*[1]
1. University of California San Diego, La Jolla, CA

3:00

WA-02. X-ray magnetic circular dichroism and its applications to element specific characterization of magnetic materials. ***(Invited)*** *T. Nakamura*[1] *1. Japan Synchrotron Radiation Research Institute (JASRI), Hyogo, Japan*

4:15

WA-03. Exploring Artificial Ferroic Systems with Synchrotron X-rays. ***(Invited)*** *L. Heyderman*[1,2] *1. Laboratory for Mesoscopic Systems, Department of Materials, ETH Zurich, Zurich, Switzerland; 2. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institute, Villigen PSI, Switzerland*

MONDAY
EVENING
6:00

CORAL 3

Session XA
EVENING SESSION: STATUS AND TRENDS IN MAGNETIC RECORDING
Tiffany Santos, Chair

6:00

XA-01. Magnetic recording: 116 years of progress and the challenges ahead. ***(Invited)*** *E.E. Fullerton*[1] *1. Dept of ECE, Dept of Nanoengineering, and Center for Magnetic Recording Research, UC San Diego, San Diego, CA*

6:30

XA-02. Advanced recording heads for HDD storage applications. ***(Invited)*** *S. Yuan*[1] *1. Western Digital Corporation, Irvine, CA*

7:00

XA-03. Media Challenges for Beyond 1 Tb/in2 Recording. ***(Invited)*** *B. Terris*[1] *1. HGST, San Francisco, CA*

Session AA
RECENT PROGRESS IN CURRENT-INDUCED TORQUES
Aurelien Manchon, Chair

8:30

AA-01. Highly Efficient Exchange-Coupling Torque Driven Domain-Wall Velocities in Synthetic Antiferromagnet Racetracks *(Winner of the 2014 Millennium Technology Prize).* *(Invited)* *S.S. Parkin[1,2] 1. IBM Research - Almaden, San Jose, CA; 2. Max Planck Institute for Microstructure Physics, Halle (Saale), Germany*

9:06

AA-02. Spin Transfer Torques from the Spin Hall Effect and from Topological Insulators. *(Invited)* *D.C. Ralph[1] 1. Cornell University, Ithaca, NY*

9:42

AA-03. Spin orbit torques and chiral magnetism in ultrathin magnetic heterostructures. *(Invited)* *M. Hayashi[1] 1. National Insitute for Materials Science, Tsukuba, Japan*

10:18

AA-04. Intrinsic current-driven spin-orbit torques and Néel spin-orbit fields in ferromagnetic and antiferromagnetic systems. *(Invited)* *J. Sinova[2,1] 1. Institute of Physics of the Academy of Sciences of the Czech Republic, Praha, Czech Republic; 2. Institute of Physics, Johannes Gutenberg University Mainz, Mainz, Germany*

10:54

AA-05. Spin-orbit torque in crystalline magnets. *(Invited)* *A. Ferguson[1] 1. University of Cambridge, Cambridge, United Kingdom*

Session AB
COMPLEX OXIDE THIN FILMS AND HETEROSTRUCTURES
Ho Nyung Lee, Chair

8:30

AB-01. Oxygen vacancy order induced giant anisotropic magnetoresistance effect in $La_{0.5}Sr_{0.5}CoO_{3-\delta}$ thin films on $LaAlO_3$(001). *J. Walter*[1], J. Gazquez[2,3], M. Varela[3,4] and C. Leighton[1] *1. University of Minnesota, Minneapolis, MN; 2. Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, Bellaterra, Spain; 3. Oak Ridge National Laboratory, Oak Ridge, TN; 4. Universidad Complutense de Madrid, Madrid, Spain*

8:42

AB-02. Magnetic exchange in hole-doped ferromagnetic $La_{0.7}Sr_{0.3}CoO_3$. *D. Fuchs*[1], M. Merz[1], P. Nagel[1], R. Schneider[1], S. Schuppler[1] and H. von Löhneysen[1,2] *1. Institute for Solid State Physics, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany; 2. Physical Institute, Karlsruhe Institute of Technology, Karlsruhe, Germany*

8:54

AB-03. Unconventional Switching Behavior in $La_{0.7}Sr_{0.3}MnO_3$/ $La_{0.7}Sr_{0.3}CoO_3$ Exchange-Spring Bilayer. *B. Li*[1], R.V. Chopdekar[1], E. Arenholz[2], A. Mehta[3] and Y. Takamura[1] *1. Chemical Engineering and Materials Science, University of California Davis, Davis, CA; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Stanford Synchrotron Radiation Lightsource, Menlo Park, CA*

9:06

AB-04. Emergent Ferromagnetism in $LaNiO_3$/$CaMnO_3$ Superlattices. *C. Flint*[1,2], A. N'Diaye[3], P. Shafer[3], E. Arenholz[3], A. Grutter[4], B. Kirby[4], J. Borchers[4] and Y. Suzuki[2,5] *1. Materials Science and Engineering, Stanford University, Stanford, CA; 2. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 5. Applied Physics, Stanford University, Stanford, CA*

9:18

AB-05. Interfacial Magnetic Properties of $La_{0.7}Sr_{0.3}MnO_3/BaTiO_3$ Bilayers. *S.G. te Velthuis*[1], Y. Liu[1], C. Kinane[2], T. Charlton[2], J.W. Freeland[3], J. Tornos[4], C. Leon[4] and J. Santamaria[4] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. ISIS, STFC Rutherford Appleton Laboratory, Didcot, United Kingdom; 3. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 4. GFMC, Dpto. Fisica Aplicada III, Universidad de Complutense Madrid, Madrid, Spain*

9:30

AB-06. Manipulation of magnetic phase separation in manganites by strain engineering and electric field. *B. Cui*[1] and C. Song[1] *1. School of Material Science and Engineering, Tsinghua University, Beijing, China*

9:42

AB-07. Magnetically Doping the Quasi-Two-Dimensional Electron Gas in $SrTiO_3$ at the Interface between $SrTiO_3$ and $LaAlO_3$. *M.T. Gray*[1], T. Sanders[2], C. Jenkins[3], E. Arenholz[3] and Y. Suzuki[2] *1. Materials Science and Engineering, Stanford University, Stanford, CA; 2. Department of Applied Physics & Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

9:54

AB-08. Current-driven Rashba field in LAO/STO heterostructures. *K. Narayanapillai*[1], K. Gopinadhan[1], A. Annadi[1], T. Venkatesan[1,2] and H. Yang[1] *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Department of Physics, National University of Singapore, Singapore, Singapore*

10:06

AB-09. Spin-polarized two-dimensional electron gas at $GdTiO_3$/$SrTiO_3$ interfaces: Insight from first-principles calculations. J. Betancourt[1], T. Paudel[2], E.Y. Tsymbal[2] and *J. Velev*[1,2] *1. Department of Physics, University of Puerto Rico, San Juan, Puerto Rico; 2. Department of Physics, University of Nebraska, Lincoln, NE*

10:18

AB-10. Magnetism and electronic structure of (001) and (111) LaTiO3 bilayers sandwiched in LaScO3 barriers. *Y. Weng*[1] and S. Dong[1] *1. Physics, Southeast University, Nanjing, Jiangsu, China*

10:30

AB-11. Influence of local lattice distortion to transport across the ferromagnetic transition in $SrRuO_3$/Nb:$SrTiO_3$ devices. *S. Roy*[4], A. Solmaz[2], M. Huijben[2], G. Rijnders[2], B. Noheda[3], R. Egoavil[1], J. Verbeeck[1], J. Burton[5], E. Tsymbal[5] and T. Banerjee[4] *1. EMAT, University of Antwerp, Groenenborgerlaan 171, 2020, Antwerp, Groenenborgerlaan 171, 2020, Belgium; 2. MESA+ Institute for Nanotechnology, University of Twente, Enschede, Enschede, Netherlands; 3. SSME, Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands; 4. University of Groningen, Groningen, Netherlands; 5. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*

10:42

AB-12. Morin transition temperature in (0001) oriented Fe_2O_3 thin film : Effect of Ir doping. *N. Shimomura*[1], S. Pati[1], T. Nozaki[1], T. Shibata[2] and M. Sahashi[1] *1. Department of Electronic Engineering, Tohoku University, Aoba-Ku-Sendai, Miyagi, Japan; 2. Advanced Technology Development Center, TDK Corporation, Ichikawa, Japan*

10:54

AB-13. Magnetoelectronic properties of the high-T_c magnetic oxide $NiFe_2O_4$. *M. Müller*[2,1], M. Hoppe[2], S. Döring[2], M. Gorgoi[3] and C. Schneider[2,1] *1. Fakultät für Physik, Universität Duisburg-Essen, Duisburg, Germany; 2. Peter Grünberg Institut (PGI-6), Forschungszentrum Jülich, Jülich, Germany; 3. BESSY, Helmholtz Zentrum Berlin, Berlin, Germany*

11:06

AB-14. Novel Magnetic States Generated by Epitaxial Core-shell Metal Oxide Nanocrystals. *S. Chang*[1], C. Yang[1], Y. Chu[1] and Y. Tseng[1] *1. Materials Science & Engineering, National Chiao Tung University, Hsinchu, Taiwan*

11:18

AB-15. Templated Self-Assembly of $Co_xNi_{1-x}Fe_2O_4$/$BiFeO_3$ nanocomposite. *S. Ojha*[1], N. Aimon[1] and C.A. Ross[1] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

Session AC
ENERGY-ASSISTED RECORDING I
S. Piramanayagam, Chair

8:30

AC-01. Structural and magnetic properties of granular HAMR media based on ternary Fe(50-x)Cu(x)Pt(50) alloy. ***(Invited)***
O. Mosendz[1], S. Jain[1], D. Weller[1], V.V. Mehta[1], J. Reiner[1], O. Hellwig[1], H. Richter[1] and M. Salo[1] *1. HGST, a Western Digital Company, San Jose, CA*

9:06

AC-02. Measurement of Curie Temperature Distribution Relevant to Heat Assisted Magnetic Recording. *A. Chernyshov*[1], D. Treves[1,2], T. Le[1], C. Miller[1] and R. Acharya[1] *1. Western Digital, San Jose, CA; 2. Currently retired, Palo Alto, CA*

9:18

AC-03. Comparative Curie Temperature (Tc) measurements of heat assisted magnetic recording (HAMR) media. *Y. Chen*[1], H. Yang[1], S. Leong[1], K. Cher[1], J. Hu[1], P. Sethi[2] and W. Lew[2] *1. Data Storage Institute, A*STAR, Singapore, Singapore; 2. Nanyang Technological University, Singapore, Singapore*

9:30

AC-04. Temperature Distribution of Granular Media for HAMR. *S. Wang*[1] and R.H. Victora[1] *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

9:42

AC-05. The influence of MgO seed layer on the microstructure and magnetic properties of FePt-C HAMR media. *T. Shiroyama*[1], B. Varaprasad[1], Y. Takahashi[1] and K. Hono[1] *1. National Institute for Materials Science, Tsukuba, Japan*

9:54

AC-06. Prediction of high switching probability of high / low Tc materials using atomistic simulations. *D. Suess*[1], C. Vogler[1], C. Abert[1], F. Bruckner[1], R. Windl[1] and L. Breth[1] *1. Christian Doppler Laboratory for Advanced Magnetic Sensing and Materials, Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria*

10:06

AC-07. The Use of Metallic Adhesion Layers in Reducing HAMR NFT Interface Thermal Resistance. *H. Liang*[1], J.A. Bain[1] and J.A. Malen[2] *1. Electrical & Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Mechanical Engineering, Carnegie Mellon University, Pittsburgh, PA*

10:18

AC-08. Heat Assisted Magnetic Recording Optimization with Realistic Head Field. *H. Li*[1], B. Johnson[2], M. Morelli[2], M. Gibbons[2] and J. Zhu[1] *1. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. Western Digital Corporation, Fremont, CA*

10:30

AC-09. A novel method of stability study of transducer for heat-assisted magnetic recording. *Z. Cen*[1], B. Xu[1], R. Ji[1], Y. Toh[1] and Y. Yu[1] *1. Data storage institute, Singapore, Singapore*

10:42

AC-10. Transition curvature for heat assisted and conventional perpendicular magnetic recording. *K. Gao*[1], P. Lu[1], T. Rausch[1], X. Zheng[1], W. Zhu[1], G. Sandler[1], X. Han[1], P. Subedi[1], C. Rea[1] and E. Gage[1] *1. Seagate Technology LLC, Bloomington, MN*

10:54

AC-11. Crystalline ZrO_2 doping induced columnar structural FePt films with larger coercivity and high aspect ratio. *K. Dong*[1], H. Li[1], Y. Peng[2], G. Ju[2], G. Chow[1] and J. Chen[1] *1. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 2. Seagate Technology, Fremont, CA*

11:06

AC-12. Microwave-Assisted Switching of Perpendicular MTJ Nanodot - Correlation with Ferromagnetic Resonance. *H. Suto*[1], T. Nagasawa[1], K. Kudo[1], K. Mizushima[1] and R. Sato[1] *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

11:18

AC-13. A Novel Perpendicular Spin Torque Oscillator Design for High Data Rate Microwave Assisted Magnetic Recording. *J. Zhu*[1] *1. Data Storage Systems Center, Carnegie Mellon Univ, Pittsburgh, PA*

Session AD
ULTRAFAST SPIN DYNAMICS
Peter Fischer, Chair

8:30

AD-01. All-optical control of ferromagnetic thin films and nanostructures. ***(Invited)*** *S. Mangin*[1,2], C. Lambert[1,2], B. Varaprasad[3], M. Gottwald[2], Y. Takahashi[3], M. Hehn[1], M. Cinchetti[4], G. Malinowski[1], K. Hono[3], S. Fainman[5], M. Aeschlimann[4] and E.E. Fullerton[2] *1. Institut Jean Lamour, Universite de Lorraine, vamdoeuvre-les-Nancy, France; 2. Center for Magnetic Recording Research, University of California San Diego, San Diego, CA; 3. Magnetic Materials Unit, National Institute for Materials Science,, Tsukuba, Japan; 4. Department of Physics and Research Center OPTIMAS, University of Kaiserslautern, Kaiserslautern, France; 5. Department of Electrical and Computer Engineering, University of California San Diego, La Jolla, CA*

9:06

AD-02. Synthetic Ferrimagnets for use with All-Optical Magnetic Recording. *C.M. Forbes*[1], W. Hendren[1], I. Radu[2], R.F. Evans[3], T. Ostler[3], R. Chantrell[3] and R. Bowman[1] *1. Queen's University Belfast, Belfast, United Kingdom; 2. Helmholtz-Zentrum Berlin, Berlin, Berlin, Germany; 3. The University of York, York, United Kingdom*

9:18

AD-03. Sub-picosecond optical modification of exchange parameters in antiferromagnetic transition metal oxides. *R. Mikhaylovskiy*[1], T.J. Huisman[1], E. Hendry[2], R.V. Pisarev[3], V.V. Kruglyak[2], T. Rasing[1] and A.V. Kimel[1] *1. Spectroscopy of Solids and Interfaces, Radboud University Nijmegen, Nijmegen, Gelderland, Netherlands; 2. School of Physics, University of Exeter, Exeter, United Kingdom; 3. Ioffe Physical-Technical Institute, St. Petersburg, Russian Federation*

9:30

AD-04. Femtosecond magnetization dynamics and all-optical switching in metallic multilayers. *Y. Tsema*[1], M. Savoini[1], D. Afanasiev[1], A. Tsukamoto[2], A. Kirilyuk[1], A.V. Kimel[1] and T. Rasing[1] *1. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands; 2. College of Science and Technology, Nihon University, Chiba, Japan*

9:42

AD-05. All-Optical manipulation of sub-lattice magnetic system by femtosecond pulsed laser. *A. Tsukamoto*[2], H. Yoshikawa[1], T. Sato[1] and A. Itoh[2] *1. Electronic Engineering, Graduate School of Science and Technology, Nihon University, Funabashi, Chiba, Japan; 2. Electronic Engineering, College of Science and Technology Nihon University, Funabashi, Chiba, Japan*

9:54

AD-06. Plasmonic Nanoscale All-optial Switching in TbFeCo. *T. Liu*[1,2], T. Wang[1,3], A. Reid[1], M. Savoini[4], X. Wu[5], B. Koene[4], P. Granitzka[1], C.E. Graves[1,6], D. Higley[1,6], Z. Chen[1,2], A. Scherz[7], J. Stohr[1], A. Tsukamoto[8], B. Hecht[5], T. Rasing[4] and H. Durr[1] *1. SIMES, SLAC, Menlo Park, CA; 2. Physics, Stanford University, Stanford, CA; 3. Material Science, Stanford University, Stanford, CA; 4. Institute for Molecules and Materials, Radbound University Nijmegen, AJ Nijmegen, Netherlands; 5. Experimental Physics, Wurzburg University, Wurzburg, Germany; 6. Applied Physics, Stanford University, Stanford, CA; 7. Spectroscopy and Coherent Scattering, European XFEL, Hamburg, Germany; 8. Electronic Engineering, College of Science and Technology Nihon University, Chiba, Japan*

10:06

AD-07. Structual Dependent Efficiency Of All-Optical Magnetization Switching On Multi-Layered Films. *H. Yoshikawa*[1], T. Sato[1], A. Tsukamoto[2] and A. Itoh[2] *1. Graduate School of Science and Technology, Nihon University, Funabashi, Chiba, Japan; 2. Department of Electronic Engineering, Nihon University, 7-24-1 Narashino-dai Funabash, Chiba, Japan*

10:18

AD-08. Ultrafast Magnetization Dynamics: Different Mechanisms and Models. *K. Carva*[1], M. Battiato[2] and P.M. Oppeneer[3] *1. Dept. Condensed Matter Physics, Charles University, Prague, Czech Republic; 2. Technical University Vienna, Vienna, Austria; 3. Uppsala University, Uppsala, Sweden*

10:30

AD-09. Laser-induced ultrafast demagnetization time and spin moment in ferromagnets: First-principles calculation. *G. Zhang*[1], M. Si[2] and T.F. George[3] *1. Indiana State University, Terre Haute, IN; 2. LanZhou University, LanZhou, China; 3. University of Missouri-St. Louis, St. Louis, MO*

10:42

AD-10. Modeling of All Optical Switching by circular polarized laser pulses in granular FePt media. M. Menarini[1], V. Lomakin[1,3], E.E. Fullerton[3], P.J. Sham[4], P. Mangin[2], *S. Fu*[1] and D. Gabay[1] *1. Electrical and Computer Engineering, University of California San Diego, La Jolla, CA; 2. Physics, Lorraine Université -CNRS, Nancy, France; 3. Center for Magnetic Recording Research, University of California San Diego, San Diego, CA; 4. Physics, University of California San Diego, San Diego, CA*

10:54

AD-11. Microscopic electronic configuration after ultrafast magnetization dynamics. I.L. Locht[2], I. Di Marco[2], S. Garnerone[3], A. Delin[4] and *M. Battiato*[1,2] *1. Technical University Vienna, Vienna, Austria; 2. Uppsala University, Uppsala, Sweden; 3. University of Waterloo, Waterloo, ON, Canada; 4. Royal Institute of Technology (KTH), Stockholm, Sweden*

11:06

AD-12. Micromagnetic Study of Spin Transfer Induced Switching of an In-Plane Magnetized Layer with a Tilted Spin Polarization. *G.D. Chaves-O'Flynn*[1], G. Wolf[1] and A.D. Kent[1] *1. Department of Physics, New York University, New York, NY*

11:18

AD-13. Fast domain-wall creation with defined magnetic topology. F. Stein[1], L. Bocklage[2,3], K. Sentker[1], T. Matsuyama[1], M. Im[4,5], P. Fischer[4,6] and *G. Meier*[1,3] *1. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany; 2. Deutsches Elektronen-Synchrotron, Hamburg, Germany; 3. The Hamburg Centre for Ultrafast Imaging, Hamburg, Germany; 4. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA; 5. Daegu Gyeongbuk Institute of Science and Technology, Daegu, Republic of Korea; 6. Physics Department, University of California, Santa Cruz, CA*

TUESDAY MORNING 8:30

SOUTH PACIFIC 1 & 2

Session AE
MULTIFERROICS I
Margo Staruch, Chair

8:30

AE-01. Ferroelectric and magnetic properties of multiferroic $BiFeO_3$-$La_{0.7}Sr_{0.3}MnO_3$ heterostructures integrated with Si (100). *S. Singamaneni*[1,2], J. Prater[2,1], S. Nori[1], D. Kumar[3], B. Lee[4], V. Misra[4] and J. Narayan[1] *1. Materials Science and Engineering, North Carolina State University, Raleigh, NC; 2. Army research office, RTP, NC; 3. Center for Advanced Materials and Smart Structures, North Carolina A&T University, Greensboro, NC; 4. Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC*

8:42

AE-02. Studies of the relationship between magnetism and ferroelectricity in oxide multiferroic interfaces by aberration corrected scanning transmission microscopy. *G. Sanchez-Santolino*[1,2], J. Tornos[1], D. Hernandez[1], Z. Sefrioui[1], C. Leon[1], S.J. Pennycook[3], M. Varela[1,4] and J. Santamaria[1] *1. GFMC, Dept. de Fisica Aplicada III, Universidad Complutense de Madrid, Madrid, Spain; 2. Instituto Pluridisciplinar, Universidad Complutense de Madrid, Madrid, Spain; 3. Dept. of Materials Science and Engineering, University of Tennessee, Knoxville, TN; 4. Materials Science and Technology Div., Oak Ridge National Laboratory, Oak Ridge, TN*

8:54

AE-03. X-ray magnetic circular dichroism study of hexagonal $HoFeO_3$ thin film. *X. Wang*[1], Y. Liu[2], Z. Xiao[1], X. Xu[3], W. Wang[4], J. Shen[4], D.J. Keavney[5] and X. Cheng[1] *1. Department of Physics, Bryn Mawr College, Bryn Mawr, PA; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Department of Physics and Astronomy, University of Nebraska–Lincoln, Lincoln, NE; 4. Department of Physics, Fudan University, Shanghai, China; 5. Advanced Photon Source, Argonne National Laboratory, Argonne, IL*

9:06

AE-04. Magnetic coupling at the interface between a multiferroic and a soft ferromagnet by X-ray resonant magnetic scattering. M. Elzo[2], *N. Jaouen*[1], M. Viret[3], R. Belkhou[1], R. Moubah[3], S. Grenier[4] and S. Dhesi[5] *1. Experimental division, Synchrotron SOLEIL, Gif sur Yvette, France; 2. ESRF, Grenoble, France; 3. CEA, Saclay, France; 4. Institut Neel, Grenoble, France; 5. Diamond Light Source, Didcot, France*

9:18

AE-05. Disentangling magnetic order in orthorhombic multiferroics using resonant magnetic scattering. *J. Strempfer*[1], A. Skaugen[1], E. Schierle[2], G. van der Laan[3], D.K. Shukla[1,4], H.C. Walker[1,5] and E. Weschke[2] *1. Deutsches Elektronen-Synchrotron, Hamburg, Germany; 2. Helmholtz Zentrum Berlin, Berlin, Germany; 3. Diamond Light Source, Didcot, United Kingdom; 4. UGC DAE Consortium for Scientific Research, Indore, India; 5. ISIS, Rutherford Appleton Laboratory, Didcot, United Kingdom*

9:30

AE-06. A study of the spin reorientation with t-e orbital hybridization in $SmCrO_3$ chromites. *J. Zhang*[1] *1. Department of Physics, Shanghai University, Shanghai, China*

9:42

AE-07. First principles calculations on the effect of epitaxial strain under site disorder, cation and anion doping on the magnetic and optical properties of $GaFeO_3$. *J. Atanelov*[1], W. Mayr-Schmölzer[1] and P. Mohn[1] *1. Institute of Applied Physics - Center for Computational Materials Science, Technical University of Vienna, Vienna, Austria*

9:54

AE-08. Origins of the ferroelectricity in $BiFeO_3$. *C. Duan*[1] *1. East China Normal University, Shanghai, China*

10:06

AE-09. Magnetic Control of Ferroelectric Polarization in a Self-Formed Single Magnetoelectric Domain of Multiferroic $Ba_3NbFe_3Si_2O_{14}$. N. Lee[1], S. Cheong[2] and *Y. Choi*[1] *1. Physics, Yonsei University, Seoul, Seodaemun-gu, Republic of Korea; 2. Physics, Rutgers University, Piscataway, NJ*

10:18

AE-10. Displacive-type ferroelectricity from one dimensional spin-chain. T. Basu[1], V. Ravi Kishore[2], S. Gohil[1], K. Singh[1,3], N. Mohapatra[4], S. Bhattacharjee[1], B. Gonde[1], N. Lalla[3], P. Mahadevan[2], S. Ghosh[1] and *E.V. Sampathkumaran*[1] *1. Tata Institute of Fundamental Research, Mumbai, India; 2. S N Bose Narional Centre for Basic Sciences, Kolkata, West Bengal, India; 3. UGC-DAE Consortium for Scientific Research, India, Madhya Pradesh, India; 4. Indian Institute of Technology Bhubaneshwar, Bhubaneshwar, Orissa, India*

10:30

AE-11. Strong Ferroelectric-Dielectric Coupling in Multiferroic Lu_2CoMnO_6 single crystals. *N. Lee*[1], H. Choi[1], Y. Jo[2], M. Seo[3], S. Park[3] and Y. Choi[1] *1. Physics, Yonsei University, Seoul, Seodaemun-gu, Republic of Korea; 2. Physics, Kyungpook University, Daegu, Republic of Korea; 3. Division of Material Science, Korea Basic Science Institute, Daejeon, Republic of Korea*

10:42

AE-12. Exchange anisotropy associated with the glassy state in multiferroic $Bi_{10}Fe_6Ti_3O_{30}$ compound. *Y. Huang*[1], R. Peng[1] and Y. Lu[1] *1. University of Science and Technology of China, Hefei, Anhui, China*

10:54

AE-13. The multiferroic properties of (111) $BiFe_{0.5}Mn_{0.5}O_3$ and $BiFeO_3$/$BiMnO_3$ superlattice films. *Q. Xu*[1], Y. Sheng[1], M. He[2], X. Qiu[3] and J. Du[2] *1. Department of Physics, Southeast University, Nanjing, Jiangsu, China; 2. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 3. Department of Materials Science and Engineering, Nanjing University, Nanjing, Jiangsu, China*

11:06

AE-14. Second order phonon anomalies near the magnetic phase transitions in $BiFeO_3$ /$SrTiO_3$(111) thin films. *M.K. Singh*[1], G. Singh[1] and R.S. Katiyar[2] *1. Material Science, University of Allahabad, Allahabad, India; 2. Department of Physics, University of Puerto Rico, San Juan, Puerto Rico*

11:18

AE-15. Preparation and characterisation of multiferroic polycrystalline thin films by ion beam sputtering.
P. Couture[1,2], J. Kennedy[1,2], J. Leveneur[2] and G. Williams[2]
1. National Isotope Centre, GNS Science, 30 Gracefield Road, Lower Hutt, PO Box 31312, New Zealand; 2. The MacDiarmid Institute for Advanced Materials and Nanotechnology, SCPS, PO Box 600, Wellington, New Zealand

TUESDAY MORNING 8:30

SOUTH PACIFIC 3 & 4

Session AF
THIN FILMS AND SURFACE EFFECTS I
Dustin Gilbert, Chair

8:30

AF-01. Influence of Structural and Compositional Non-Uniformities on the Reversal Properties of Perpendicular Magnetic Films.
G.E. Rowlands[2], P.G. Gowtham[2], J.P. Park[2], D. Ralph[1,3] and R.A. Buhrman[2] *1. Physics, Cornell University, Ithaca, NY; 2. Applied and Engineering Physics, Cornell University, Ithaca, NY; 3. Kavli Institute at Cornell University, Ithaca, NY*

8:42

AF-02. Giant out-of-plane anisotropy in amorphous $Tb_{1-x}Co_x$ thin films grown by combinatorial sputtering.
A. Frisk[1], F. Magnus[1] and G. Andersson[1] *1. Physics and Astronomy, Uppsala University, Uppsala, Sweden*

8:54

AF-03. Field-dependent perpendicular magnetic anisotropy and interfacial metal-insulator transition in CoFeB/MgO systems.
I. Barsukov[1], Y. Fu[2,3], C. Safranski[1], Y. Chen[1], B. Youngblood[1], A.M. Gonçalves[4,1], L.C. Sampaio[4], M. Spasova[3], M. Farle[3] and I. Krivorotov[1] *1. University of California, Irvine, CA; 2. INAC/CEA, Grenoble, France; 3. CeNIDE, University Duisburg-Essen, Duibsurg, Germany; 4. CBPF, Rio de Janeiro, Brazil*

9:06

AF-04. The manipulation of magnetization damping in $FeNi_{1-x}Nd_x$/ Cu/$FeCo_{1-y}Gd_y$ sandwich structured multilayers.
D. Zhang[1,2], S. Jiang[1], C. Luo[1], Y. Wang[1], W. Zhang[1], H. Huang[4], *Y. Zhai*[1,3], J. Du[3] and H. Zhai[3] *1. Department of Physics, Southeast University, Nanjing, Jiangsu, China; 2. School of Physics Science and Information Engineering, Liaocheng University, Liaocheng, Shandong, China; 3. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, Jiangsu, China; 4. School of Materials Science and Engineering, Southeast University, Nanjing, Jiangsu, China*

9:18

AF-05. Helical magnetic structure in FeGe epilayers. *C.S. Spencer*[1], N.A. Porter[1], C.J. Kinane[2], T.R. Charlton[2], S. Langridge[2] and C.H. Marrows[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. STFC Rutherford Appleton Laboratory, ISIS, Didcot, Oxfordshire, United Kingdom*

9:30

AF-06. Moment Mapping of bcc $Fe_{1-x}Mn_x$ Alloy Films on MgO(001). *Y.U. Idzerda*[1], H. Bhatkar[1] and E. Arenholz[2] *1. Physics, Montana State University, Bozeman, MT; 2. Advanced Photon Source, Berkeley, CA*

9:42

AF-07. Crystalline structure and magnetic properties of α'- (Fe-M)-N (M = Cr, Mo or W) sputtered thin film. *T. Ogawa*[1] and K. Hayashi[1] *1. Department of Electronic Engineering, Tohoku University, Sendai, Japan*

9:54

AF-08. Remote plasma sputtered $L1_0$ ordered FePt thin films. *S. Zygridou*[1], P.W. Nutter[1] and T. Thomson[1] *1. University of Manchester, Manchester, United Kingdom*

10:06

AF-09. Proximity effects on dimensionality and magnetic ordering in Pd/Fe/Pd trilayers. *T.P. Hase*[1], M.S. Brewer[1], U.B. Arnalds[2], G. Andersson[2], M. Ahlberg[2], V. Kapaklis[2], M. Björck[2], C. Kinane[3], L. Bouchenoire[4,5], P. Thompson[4,5], D. Haskel[6], Y. Choi[6], J. Lang[6], C. Sánchez-Hanke[7] and B. Hjörvarsson[2] *1. Department of Physics, University of Warwick, Coventry, United Kingdom; 2. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 3. Rutherford Appleton Laboratory, ISIS, Didcot, United Kingdom; 4. Department of Physics, University of Liverpool, Liverpool, United Kingdom; 5. European Synchrotron Radiation Facility, XMaS Beamline, Grenoble, France; 6. Argonne National Laboratory, Advance Photon Source, Chicago, IL; 7. Brookhaven National Laboratory, National Synchrotron Light Source, Upton, NY*

10:18

AF-10. Interface driven magnetic interactions in nanostructured thin films of iron nanocrystallites embedded in a copper matrix. *R.D. Desautels*[1], C. Shueh[2], K. Lin[2] and J. van Lierop[1] *1. Physics and Astronomy, University of Manitoba, Winnpeg, MB, Canada; 2. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

10:30

AF-11. Proximity Effect in Cr-doped Bi_2Se_3/YIG Bilayer Structure. *W. Liu*[1,2], L. He[1,3], Y. Xu[1,2], K. Murata[3], M. Lang[3], M. Onbasli[4], N.J. Maltby[2], S. Li[2], X. Wang[1], K. Wang[3], C.A. Ross[4], P. Bencok[5], G. van der Laan[5] and R. Zhang[1] *1. York-Nanjing International Center for Spintronics (YNICS), School of Electronics Science and Engineering, Nanjing University, Nanjing, China; 2. Electronics Department, University of York, York, North Yorkshire, United Kingdom; 3. Department of Electrical Engineering, University of California, Los Angeles, CA; 4. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 5. Diamond Light Source, Didcot, United Kingdom*

10:42

AF-12. Interface effects of the magnetic properties in Nd/$Ni_{80}Fe_{20}$ bilayer films. C. Luo[1,2], S. Jiang[1], H. Huang[3], *Y. Zhai*[1], H. Zabel[2], J. Du[4], B. You[4] and H. Zhai[4] *1. Department of Physics, Southeast University, Nanjing, China; 2. Physics and Astronomy, Ruhr-University Bochum, Bochum, Germany; 3. College of Material Science and Engineering, Southeast University, Nanjing, China; 4. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China*

10:54

AF-13. Element Specific Magnetization Reversal Mechanisms in Amorphous SmCo/CoAlZr exchange spring magnets. *R.A. Hill*[1], F. Magnus[2], R. Moubah[2], U.B. Arnalds[2], V. Kapaklis[2], G. Andersson[2], B. Hjörvarsson[2] and T.P. Hase[1] *1. Physics, University of Warwick, Coventry, United Kingdom; 2. Physics and Astronomy, Uppsala University, Uppsala, Sweden*

11:06

AF-14. Direct determination of domain wall type by nano-scale stray field mapping in ultra-thin ferromagnets. *T. Hingant*[1], J. Tetienne[1], L.J. Martinez Rodriguez[1], S. Rohart[2], A. Thiaville[2], L. Herrera Diez[3], K. Garcia[3], J. Adam[3], J. Kim[3], J. Roch[1], I.M. Miron[4], G. Gaudin[4], L. Vila[5], B. Ocker[6], D. Ravelosona[3] and V. Jacques[1] *1. LAC, ENS Cachan & CNRS, Orsay, France; 2. LPS, Université Paris Sud & CNRS, Orsay, France; 3. IEF, Université Paris Sud & CNRS, Orsay, France; 4. INAC-SPINTEC, Université Grenoble Alpes, CNRS & CEA, Grenoble, France; 5. INAC, Université Grenoble Alpes & CEA, Grenoble, France; 6. Singulus Technology AG, Kahl am Main, Germany*

11:18

AF-15. The Magneto-Optical Studies in Magneto-Plasmonic Ferromagnetic Silmanal Thin Films. *K. Yang*[1] and R.A. Lukaszew[2] *1. Department of Applied Science, College of William and Mary, Williamsburg, VA; 2. Department of Physics, College of William and Mary, Williamsburg, VA*

Session AG
MAGNETOCALORIC MATERIALS I
Karl Sandeman, Chair

8:30

AG-01. Tayloring the magnetocaloric effect in Fe_2P based materials. *E. Brück*[1], F. Guillou[1], X. Yibole[1], L. Caron[1], X. Miao[1] and N. van Dijk[1] *1. Faculty of Science, Delft University of Technology, Delft, Netherlands*

8:42

AG-02. X-ray absorption spectroscopy and magnetic circular dichroism study on Mn-Fe-P-Si-B compounds. *X. Yibole*[2], F. Guillou[2], L. Caron[2], F. de Groot[4], P. Roy[3], E. Jimeneze[1], N. Van Dijk[2] and E. Brück[2] *1. European Synchrotron Radiation Facility, Grenoble, France; 2. Technology University of Delft, Delft, Netherlands; 3. Radboud University, Nijmengen, Netherlands; 4. University of Utrecht, Utrecht, Netherlands*

8:54

AG-03. Experimental and modelling studies of low cost, high performance Mn-Fe-P-Ge magnetocaloric materials. *X. Chen*[1] and R. Ramanujan[1] *1. School of Materials Science and Engineering, Nanyang Technological University, Singapore, Singapore*

9:06

AG-04. Electronic structure and metamagnetic transition of interstitially doped $LaSiFe_{12}$. *Z. Gercsi*[3,2], K.G. Sandeman[2,1] and A. Fujita[4] *1. Department of Physics, Brooklyn College, CUNY, Brooklyn, NY; 2. Department of Physics, Imperial College London, London, United Kingdom; 3. CRANN and School of Physics, Trinity College Dublin, Dublin, Ireland; 4. Green-Innovative Magnetic Material Research Center, National Institute of Advanced Industrial Science and Technology, Nagoya, Japan*

9:18

AG-05. Nucleation mechanism of $NaZn_{13}$-type and α-(Fe,Si) phases in La-Fe-Si alloys during rapid solidification . X. Hou[2], C. Liu[4,2], Y. Xue[4,2], H. Xu[4,2], M. Phan[1], N. Han[3] and *C. Ma*[3] *1. Department of Physics, Tampa, FL; 2. School of Materials Science and Engineering, Shanghai University, Shanghai, China; 3. Shanghai Universityof Engineering Science, Shanghai, China; 4. Laboratory for Microstructures of Shanghai University, Shanghai, China*

9:30

AG-06. Effect of Er on the structural and magnetic properties of $PrAl_2$ *A. Pathak*[1], K. Gschneidner, Jr.[1,2] and V. Pecharsky[1,2] *1. Ames Laboratory, USDOE, Ames, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames,, IA*

9:42

AG-07. Magnetic and magnetocaloric properties of Er-Co-Al thin films. *M. Kim*[1], J. Kim[3] and S. Lim[2] *1. Nano Semiconductor Engineering, Korea university, Seoul, Republic of Korea; 2. Materials Science and Engineering, Korea university, Seoul, Republic of Korea; 3. Functional Ceramics Group, Korea Institute of Materials Science (KIMS), Changwon, Republic of Korea*

9:54

AG-08. Large Magnetocaloric Effect Peaks of $Gd_{22}Ge_8Si_{34}Fe_{36}$ Alloy for Low Temperature Magnetic Refrigeration Applications. V. Provenzano[2,1], *E. Della Torre*[1], L.H. Bennett[1] and H. ElBidweihy[1] *1. Department of Electrical and Computer Engineering, The George Washington University, Washington, DC; 2. Materials Science and Engineering Division, NIST, Gaithersburg, MD*

10:06

AG-09. Magnetic entropy table-like shape in RNi_2 composites for cryogenic refrigeration. P.J. Ibarra-Gaytan[2], C.F. Sanchez-Valdes[2], J.L. Sanchez-Llamazares[2], P. Alvarez-Alonso[3], *P. Gorria*[1] and J.A. Blanco[1] *1. University of Oviedo, Oviedo, Asturias, Spain; 2. Division Materiales Avanzados, IPICyT, San Luis Potosí, Mexico; 3. Electricidad y Electronica, UPV/EHU, Bilbao, Spain*

10:18

AG-10. Anisotropic magnetocaloric effect in rare earth based compounds. *N.A. Oliveira*[1], P.J. von Ranke[1] and J.C. Patiño[1] *1. Instituto de Física, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil*

10:30

AG-11. On the determination of the magnetic entropy change in first-order magnetocaloric materials. *L. Caron*[1], Z. Ou[2], G. Porcari[1] and E. Brück[1] *1. Delft University of Technology, Delft, Netherlands; 2. Inner Mongolia Normal University, Hohhot, China*

10:42

AG-12. Characterization of the interphase interactions of multiphase magnetocaloric materials using FORC analysis. *V. Franco*[1,2], F. Béron[2], K.R. Pirota[2], M. Knobel[2] and M.A. Willard[3] *1. Department of Condensed Matter Physics, Sevilla University, Sevilla, Spain; 2. Instituto de Fisica Gleb Wataghin, Universidade Estadual de Campinas, Campinas, Brazil; 3. Department of Materials Science and Engineering, Case Western Reserve University, Cleveland, OH*

10:54

AG-13. Coexisting Normal and Inverse Magnetocaloric Effect in Co_3O_4 Nanoparticles. *A. Chaturvedi*[1], J. Duggan[2], C. Roberts[2] and T. Suzuki[1,3] *1. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL; 2. Department of Chemical Engineering, Auburn University, Auburn, AL; 3. Department of Electrical and Computer Engineering, and Metallurgical and Materials Engineering, The University of Alabama, Tuscaloosa, AL*

11:06

AG-14. The Influence of Spin Reorientations on the Magnetocaloric Effect in $Ho_{1-x}Gd_xAl_2$ compounds. *V. de Sousa*[1], L. Silva[2], A. Gomes[2] and P. von Ranke[1] *1. Instituto de Física Armando Dias Tavares, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil; 2. Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil*

11:18

AG-15. Tunable giant magnetocaloric effects in hexagonal phase-transition ferromagnets. *Z. Wei*[1], E. Liu[1], X. Xi[1], W. Wang[1] and G. Wu[1] *1. State Key Laboratory for Magnetism, Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

Session AH
HALF-METALLIC MATERIALS I
Oleg Mryasov, Chair

8:30

AH-01. High spin polarization and anomalous transport behavior in quaternary heusler alloys with 1:1:1:1 stoichiometery.
L. Pal[2,1], K.G. Suresh[2], B. Varaprasad[1], Y.K. Takahashi[1], K. Hono[1] and M. Raja[3] *1. Magnetic materials unit, National institute for materials science, Tsukuba, Ibaraki, Japan; 2. Department of physics, Indian Institute of Technology, Mumbai, Maharashtra, India; 3. Defence Metallurgical Research Laboratory, Hyderabad, India*

8:42

AH-02. Strain, composition and temperature dependence of the magnetic and transport properties of cubic zero-moment ferrimagnetic Mn_2Ru_xGa films.
Y. Lau[1], N. Thiyagarajah[1], K. Rode[1], M. Venkatesan[1], K. Borisov[1], D. Betto[1], H. Kurt[2], J. Coey[1] and P.S. Stamenov[1] *1. CRANN, AMBER, and School of Physics, Trinity College Dublin, Dublin, Ireland; 2. Department of Engineering Physics, Istanbul Medeniyet University, 34720 Istanbul, Turkey*

8:54

AH-03. Platinum thickness dependence of spin-orbit torques in Pt/$Co_2FeAl_{0.5}Si_{0.5}$/MgO.
L. Loong[1], P. Deorani[1], X. Qiu[1] and H. Yang[1] *1. National University of Singapore, Singapore, Singapore*

9:06

AH-04. The quest for and demonstration of direct experimental evidence for half metallicity in Heusler compounds. ***(Invited)***
M. Jourdan[1], J. Minar[2], J. Braun[2], A. Kronenberg[1], S. Chadov[3], B. Balke[4], A. Gloskovskii[5], M. Kolbe[1], H. Elmers[1], G. Schönhense[1], C. Felser[3] and M. Kläui[1] *1. Institute of Physics, Mainz University, Mainz, Germany; 2. Department of Chemistry, LMU München, München, Germany; 3. MPI-CPfS Dresden, Dresden, Germany; 4. Institute for Inorganic and Analytical Chemistry, Mainz University, Mainz, Germany; 5. DESY, Hamburg, Germany*

9:42

AH-05. Systematic Experimental and Theoretical Search for New Half-Metallic Heusler Alloys.
S. Keshavarz[1], N. Naghibolashrafi[1], J.C. Romero[1], K. Munira[1], D. Mazumdar[1], W. Butler[1], P. Leclair[1] and A. Gupta[1] *1. Physics and Astronomy, The University of Alabama, Tuscaloosa, AL*

9:54

AH-06. Zero-Moment Half-Metallic Ferrimagnetic Semiconductors. *M.E. Jamer**[1], G.E. Sterbinsky[3], D. Arena[3], L.H. Lewis[2] and D. Heiman[1] *1. Physics, Northeastern University, Boston, MA; 2. Chemical Engineering, Northeastern University, Boston, MA; 3. Photon Sciences Directorate, Brookhaven National Laboratory, Upton, NY*

10:06

AH-07. Magnetism of Hexagonal $Mn_{1.5}X_{0.5}Sn$ (X = Cr, Mn, Fe, Co) Nanomaterials. R. Fuglsby[1,2], *P.R. Kharel*[1,2], W. Zhang[2,3], S. Valloppilly[2], Y. Huh[1] and D.J. Sellmyer[2,3] *1. Physics, South Dakota State University, Brookings, SD; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 3. Physics and Astronomy, University of Nebraska, Lincoln, NE*

10:18

AH-08. Effect of nonstoichiometry on the half-metallicy of Co_2(Mn,Fe)Si thin films investigated through saturation magnetization. *K. Moges*[1], Y. Honda[1], T. Uemura[1] and M. Yamamoto[1] *1. Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Japan*

10:30

AH-09. Fabrication and characterization of a spin injector using a high-quality *B*2-ordered-$Co_2FeSi_{0.5}Al_{0.5}$/MgO /Si tunnel contact. *Y. Kawame*[1], T. Akushichi[1], Y. Takamura[2], Y. Shuto[1] and S. Sugahara[1] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan; 2. Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*

10:42

AH-10. Direct band-gap measurement on an epitaxial $Co_2FeAl_{0.5}Si_{0.5}$ Heusler-alloy film. T.F. Alhuwaymel[1,2], R. Abdullah[1], C. Yu[3], M. El-Gomati[1] and *A. Hirohata*[1,4] *1. Department of Electronics, University of York, York, United Kingdom; 2. National Nanotechnology Center, KACST, Riyadh, Saudi Arabia; 3. Department of Physics, University of York, York, United Kingdom; 4. PRESTO, Japan Science and Technology Agency, Kawaguchi 332-0012, Japan*

10:54

AH-11. Off-stoichiometric $Co_2Cr_{1-x}Fe_xAl$ Heusler compound: A new half-metallic ferromagnet. *A. Omar*[1], J. Trinckauf[1], M. Haft[1], F. Börrnert[1], J. Geck[1], F. Steckel[1], C.G. Blum[1], S. Hampel[1], C. Hess[1,3], W. Löser[1], S. Wurmehl[1,2] and B. Büchner[1,2] *1. Leibniz Institute for Solid State and Materials Research IFW, D-01171, Dresden, Germany; 2. Institut für Festkörperphysik, Technische Universität Dresden, D-01062, Dreden, Germany; 3. Center for Transport and Devices, Technische Universität Dresden, 01069, Dresden, Germany*

11:06

AH-12. Cation distribution, stability, and magnetism of thin magnetite films probed by means of x-ray magnetic circular dichroism (XMCD). *K. Kuepper*[2], T. Schemme[2], O. Schuckmann[2], N. Pathé[2], J. Wollschläger[2], J. Schmalhorst[1], G. Reiss[1] and E. Arenholz[3] *1. Ctr. Spinelect. Mat. & Devices, Dept. Phys., University of Bielefeld, Bielefeld, Germany; 2. School of Physics, Osnabrück University, Osnabrück, Germany; 3. LBNL, Berkeley, CA*

11:18

AH-13. Magnetic structure in epitaxially strained Sr_2CrReO_6 thin films by element-specific XAS and XMCD. *A. Hauser*[1], J.M. Lucy[2], M.W. Gaultois[1], M.R. Ball[2], J.R. Soliz[2], Y. Choi[3], O.D. Restrepo[2], W. Windl[2], J.W. Freeland[3], D. Haskel[3], P.M. Woodward[2] and F. Yang[2] *1. University of California, Santa Barbara, Santa Barbara, CA; 2. The Ohio State University, Columbus, OH; 3. Argonne National Laboratory, Argonne, IL*

TUESDAY MORNING 8:30

SEA PEARL 2-4

Session AI
FERRITES AND GARNETS I
Shiva Prasad, Chair

8:30

AI-01. Growth of high-quality nanometre thick yttrium iron garnet films by sputtering and their magnetic properties. *A. Mitra*[1], D. Cespedes[1], D. Ali[1] and B. Hickey[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

8:42

AI-02. Pulsed-laser deposited psuedomorphic yttrium iron garnet with highly anisotropic magnetic properties. *B. Howe*[1], H. Jeon[3], S. Emori[2], N.X. Sun[2] and G. Brown[1] *1. Air Force Research Lab, Wright-Patterson AFB, OH; 2. Electrical and Computer Engineering, Northeastern University, Boston, MA; 3. Electrical Engineering, Wright State Univerisity, Dayton, OH*

8:54

AI-03. Pulsed laser deposition of epitaxial Yttrium Iron Garnet films with low Gilbert damping and bulk-like magnetization. *M. Onbasli*[1], A. Kehlberger[2,3], D. Kim[1], M. Kläui[2], A. Chumak[4], B. Hillebrands[4] and C. Ross[1] *1. MIT, Cambridge, MA; 2. Institute of Physics, University of Mainz, Mainz, Germany; 3. Graduate School Materials Science in Mainz, Staudinger Weg 9, 55128, Germany, Mainz, Germany; 4. Fachbereich Physik and Landesforschungszentrum, OPTIMAS, Technische Universität Kaiserslautern, 67663, Kaiserslautern, Germany*

9:06

AI-04. Enhanced magnetooptic Kerr effect and magnetic damping in epitaxial Ce substituted Y3Fe5O12 thin films.
A. Kehlberger[1], M. Onbasli[2], G. Jakob[1], D. Kim[2], T. Goto[2], A.V. Chumak[3], B. Hillebrands[3], G. Götz[4], G. Reiss[4], T. Kuschel[4], C.A. Ross[2] and M. Klaeui[1] *1. Johannes Gutenberg Universität Mainz, Mainz, Germany; 2. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 3. Fachbereich Physik and Landesforschungszentrum, OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 4. Department of Physics, Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany*

9:18

AI-05. Effect of substrate temperature on dielectric, magnetic and magnetoresistance properties of $Ni_{0.65}Zn_{0.35}Fe_2O_4$ thin films.
D.K. Pradhan[1], P. Misra[1], V.S. Puli[2] and R.S. Katiyar[1] *1. Physics, University of Puerto Rico, San Juan, Puerto Rico; 2. Department of Physics and Engineering Physics, Tulane University, New Orleans, LA*

9:30

AI-06. Growth of high-quality barium hexagonal ferrite thin films on metals. *P. Li*[1], H. Chang[1], D. Ellsworth[1], P. Janantha[1], D. Richardson[1], W. Li[2], P. Phillips[1], T. Vijayasarathy[1], M. Marconi[2] and M. Wu[1] *1. Department of Physics, Colorado State Unviersity, Fort Collins, CO; 2. Department of Electrical and Computer Engineering, Colorado State Unviersity, Fort Collins, CO*

9:42

AI-07. Mössbauer spectroscopy study of Al distribution in $BaAl_xFe_{12-x}O_{19}$ thin films. *M. Przybylski*[1], J. Zukrowski[1], I. Harward[2] and Z. Celinski[2] *1. Faculty of Physics and Applied Computer Science, and Academic Centre for Materials and Nanotechnology, AGH University of Science and Technology, 30-059 Kraków, Poland; 2. Department of Physics, University of Colorado, Colorado Springs, CO 80918, CO*

9:54

AI-08. Synthesis of W-type ferrite derived from M-type and Spinel-type compounds with c-axis alignment. *S. Utsuno*[1] and Y. Kaneko[1] *1. Materials and Processing Dept.II, Toyota Central R&D Labs., Ins., Nagakute, Aichi, Japan*

10:06

AI-09. Low-fired M-type hexaferrites with high permeability for VHF applications. *Y. Bai*[1] *1. University of Science and Technology Beijing, Beijing, China*

10:18

AI-10. Synthesis of Sr-hexaferrites with improved magnetic properties for application in motors and generators.
F. Rhein[1,2], R. Karmazin[1], *M. Krispin*[1] and O. Gutfleisch[2]
1. Corporate Technology, Siemens AG, Munich, Germany; 2. Materialwissenschaft, Technische Universitaet Darmstadt, Darmstadt, Germany

10:30

AI-11. Thermal Effects on the Magnetic Properties of Titanium Modified Cobalt Ferrite. *C.I. Nlebedim*[2,1] and D.C. Jiles[2,1]
1. Ames Laboratory, US Department of Energy, Iowa State University, Ames, IA; 2. Electrical and Computer Engineering, Iowa State University, Ames, IA

10:42

AI-12. Complex Additive Systems for Mn-Zn Ferrites with low Power Loss. *J. Töpfer*[1] and A. Angermann[1] *1. Univ. Appl. Sciences Jena, Jena, Germany*

10:54

AI-13. Characterization of magnetic phase transitions in ferrite nanoparticles by electron spin resonance (ESR). *Y. Flores*[1,2], G. Vázquez[1], R. Ortega[1], U. Acevedo[1], S. Ammar[2] and R. Valenzuela[1] *1. Materiales Metálicos y Cerámicos, Instituto de Investigación en Materiales de la Universidad Nacional Autónoma de México, D.F, Mexico; 2. ITODYS, Université Paris 7 Diderot, Paris, France*

11:06

AI-14. Synthesis and electromagnetic properties of Ni_xCo_{100-x} nanoparticles/reduced graphene oxide hybrid composites. *J. Liu*[1], M. Zeng[1] and R. Yu[1] *1. School of Materials Science and Engineering, Beihang University, Beijing, China*

11:18

AI-15. $MgFe_2O_4/ZrO_2$ composite nanoparticles for hyperthermia applications. *A. Rashid*[1] and S. Manzoor[1] *1. Magnetism Laboratory, COMSATS Institute of Information Technology, Islamabad, Pakistan*

Session AP
HIGH FREQUENCY AND MICROWAVE DEVICES I (Poster Session)

Yasushi Endo, Co-Chair
Ranajit Sai, Co-Chair

AP-01. Propagation Properties of Forward-Volume Spin Waves in a YIG single Crystal with Roughened Surface for Logic Circuits. *J. Hoong*[1], T. Goto[1], N. Kanazawa[1], A. Buyandalai[1], S. Okajima[2], T. Hasegawa[2] and M. Inoue[1] *1. Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Toyohashi, Aichi, Japan; 2. Murata Manufacturing Co., LTD., Nosu, Aichi, Japan*

AP-02. Application of Nano-patterned Permalloy Thin Film in Tunable RF Inductors. *B. Rahman*[1], R. Divan[2], D. Rosennmann[2], T. Wang[1], Y. Peng[1] and G. Wang[1] *1. Electrical Engineering, University of South Carolina, Columbia, SC; 2. Center for Nano-scale Material, Argonne National Laboratory, Lemont, IL*

AP-03. High speed channel jitter reduction with magnetic films. *H. Zhang*[1] *1. Intel, DuPont, WA*

AP-04. Millimeter Wave CMOS On-chip Hexagonal Nano-Ferrite Circulator. *L. Chao*[1] and M. Afsar[1] *1. Tufts University, Medford, MA*

AP-05. Non-identical resonant coils for frequency splitting suppression in wireless power transfer. *F. Meng*[1], Y. Lv[1], J. Fu[1], G. Yang[1], Q. Wu[1] and K. Zhang[1] *1. Harbin Institute of Technology, Harbin, China*

AP-06. GHz electromagnetic power absorption of magnetic composite filled with Ni/FeCo hollow fibers and Fe/graphene oxides. *K. Kim*[1], B. Nam[1], J. Yi[2], S. Lee[2], S. Lee[2], J. Kim[1] and J. Lee[1] *1. Physics, Yeungnam University, Gyeongsan, Republic of Korea; 2. Composites Research Center, Korea Institute of Materials Science, Changwon, Republic of Korea*

AP-07. Strongly Coupled Magnetic Resonance for Omnidirectional Wireless Power Transmission. *C. Qiu*[1], K. Chau[1], C. Liu[1] and Z. Zhang[1] *1. The University of Hong Kong, Hong Kong, Hong Kong*

AP-08. Influence of Sleeve Material on Mechanical Stress of Permanent Magnet in High-speed Rotor. *J. Ahn*[2,1], K. Kim[1], H. Park[1], C. Park[2] and S. Jang[1] *1. Electrical Engineering, Chungnam National university, Daejun, Republic of Korea; 2. Advanced Manufacturing Systems Research Division, Korea Institute of Machinery and Materials, Daejeon, Republic of Korea*

AP-09. RF power absorption effects of FeCo hollow fibers composite and sendust flakes composite. *B. Nam*[1], J. Lee[1], J. Kim[1] and K. Kim[1] *1. Physics, Yeungnam University, Gyeongsan, Republic of Korea*

AP-10. Design of broadband circulator based on Gyromagnetic materials and substrate integrated waveguide. C. Huang[1,2] and *H. Lu*[1,2] *1. National Engineering Research Center of Electromagnetic Radiation Control,UESTC, Chengdu, Sichuan, China; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices,UESTC, Chengdu, Sichuan, China*

AP-11. Thermal conductivity prediction of magnetic composite sheet for near-field electromagnetic absorption. *J. Lee*[1], J. Kim[1], B. Nam[1] and K. Kim[1] *1. Physics, Yeungnam University, Gyeongsan, Republic of Korea*

AP-12. Electroacoustic Excitation and Detection of Magnetic Oscillations in ZnO-YIG-GGG Magnetoelectric Bulk Acoustic Wave Resonator. *N. Polzikova*[1], S. Alekseev[1,2], I. Kotelyanskii[1], V. Luzanov[1] and A. Raevskiy[1,2] *1. Kotel'nikov Institute of Radio-engineering and Electronics of RAS, Moscow, Russian Federation; 2. Moscow Institute of Physics and Technology, Dolgoprudny, Moscow reg., Russian Federation*

AP-13. Effect of Magnetization Pattern on Partial Demagnetization of Permanent Magnet Machine with Ferrite Magnet. *K. Kim*[1], J. Ahn[1], J. Choi[1] and S. Jang[1] *1. Chungnam National Univercity, Daejeon, Republic of Korea*

AP-14. Design and Characteristics Analysis of Linear Oscillatory Actuator Using Ferrite Permanent Magnet for Refrigerator Compressor. *K. Kim*[1], H. Park[1], J. Choi[1] and S. Jang[1] *1. Chungnam National University, Daejeon, Republic of Korea*

AP-15. Copper (Cu) Substituted NiZn Ferrite for 125 kHz Wireless Power Transfer (WPT) Application. *I. Baek*[1], N. Kim[1], N. Hur[1], W. Seong[1], W. Lee[2], Y. Hong[2], H. Kim[3] and J. Kim[3] *1. Research and Development Center, EMW Company, Seoul, Republic of Korea; 2. Department of Electrical and Computer Engineering and MINT Center, The University of Alabama, Tuscaloosa, AL; 3. Department of Electrical Engineering, Korea Advanced Institute of Technology, Daejeon, Republic of Korea*

AP-16. Experimental Characterization of Slinky Laminated Core and Iron Loss Analysis of Electrical Machine. *M. Lim*[1], S. Hwang[1], K. Jung[1], J. Kim[1] and J. Hong[1] *1. Automotive Engineering, Hanyang University, Seoul, Republic of Korea*

Session AQ
MEASUREMENT TECHNIQUES AND BIO/CHEMICAL MAGNETISM
(Poster Session)

Cajetan Nlebedim, Co-Chair
Albrecht Jander, Co-Chair

AQ-01. Detection of spin-resolved electronic structures from a buried ferromagnetic layer utilizing forward Mott scattering. *S. Ueda*[1], M. Mizuguchi[2], T. Kojima[2], S. Ishimaru[3], M. Tsujikawa[4,5], M. Shirai[4,5] and K. Takanashi[2] *1. National Institute for Materials Science, Hyogo, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan; 3. Spring-8 Service Co. Ltd., Tatsuno, Hyogo, Japan; 4. Center for spintronics Integrated Systems, Tohoku University, Sendai, Miyagi, Japan; 5. Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan*

AQ-02. Measurement of Magnetic Hyperfine Fields in Metallic Thin Wires under the Spin Hall Condition Using Synchrotron-Radiation Mössbauer Spectroscopy. *K. Mibu*[1], T. Mitsui[2], M. Tanaka[1], R. Masuda[3], S. Kitao[3], Y. Kobayashi[3], Y. Yoda[4] and M. Seto[3,2] *1. Graduate School of Engineering, Nagoya Institute of Technology, Nagoya, Aichi, Japan; 2. Japan Atomic Energy Agency, Sayo, Hyogo, Japan; 3. Research Reactor Institute, Kyoto University, Kumatori, Japan; 4. Japan Synchrotron Radiation Research Institute, Sayo, Hyogo, Japan*

AQ-03. Local magnetic structure determination using polarized neutron holography. *A. Szakál*[1], M. Marko[1] and L. Cser[1] *1. Neutron Spectroscopy, Wigner Research Centre for Physics, Budapest, Hungary*

AQ-04. Wide aperture vector magnet for neutron scattering experiments. *A.M. Bataille*[1], A. Daël[2], P. Lavie[1], P. Bredy[2], J. Rifflet[2], S. Klimko[1], T. Robillard[1], J. Meuriot[1] and G. Aubert[2] *1. IRAMIS/LLB, CEA, Gif sur Yvette, France; 2. IRFU/SACM, CEA, Gif sur Yvette, France*

AQ-05. A technique for error estimation of linewidth and damping parameters extracted from ferromagnetic resonance measurements. *B. Buford*[1], P. Dhagat[1] and A. Jander[1] *1. Oregon State University, Corvallis, OR*

AQ-06. Separation of linear and quadratic magneto-optical Kerr effects in ultra-thin Fe films using a rotating field method. *J. Liang*[1], J. Cao[1], J. Li[1] and Y. Wu[1] *1. Fudan University, Shanghai, Shanghai, China*

AQ-07. Pulsed Field Probe of Real Time Magnetization Dynamics in Magnetic Nanoparticle Systems. *M. Syed*[2] and T. Foulkes[1] *1. Electrical and Computer Engineering, Rose-Hulman Institute of Technology, Terre Haute, IN; 2. Physics & Optical Eng, Rose-Hulman Institute of Technology, Terre Haute, IN*

AQ-08. Measurement at microwave frequencies of the magnetic properties of small quantities of powder or diluted samples. J. Pura[1], J. Muñoz[1], *Ó. Alejos*[1], P. Hernández-Gómez[1] and C. Torres[1] *1. Electricidad y Electrónica, Universidad de Valladolid, Valladolid, Spain*

AQ-09. Transmission electron microscopy and ab initio calculations to relate interfacial intermixing and the magnetism of core/shell nanoparticles. C. Chi[1], E. Skoropata[2], J. van Lierop[2] and *H. Ouyang*[1] *1. National Tsing Hua University, HsinChu, Taiwan; 2. University of Manitoba, Winnipeg, MB, Canada*

AQ-10. Purity analysis of high-purity organic compounds with free radicals using Curie-Weiss law. *N. Matsumoto*[1] and T. Shimosaka[1] *1. National Metrology Institute of Japan (NMIJ), National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan*

AQ-11. Effects of intense magnetic fields on Brownian motions of diamagnetic microcrystals in aqueous solution. *M. Iwasaka*[1,2] and Y. Mizukawa[1] *1. Research Institute for Nanodevice and Bio Sytems, Hiroshima University, Higashi-Hiroshima, Japan; 2. JST PRESTO, Saitama, Japan*

AQ-12. Chlorophyll fluorescence control in microalgae by the magnetically rotative floating micromirrors. *Y. Miyashita*[2,3], M. Iwasaka[1,3] and H. Endo[1,4] *1. PRESTO, Japan Science and Thechnology Agency, Saitama, Japan; 2. Japan Society for the Promotion of Science, Tokyo, Japan; 3. Research Institute for Nanodevice and Bio-Systems, Hiroshima University, Higashi-Hiroshima, Japan; 4. Atmosphere and Ocean Research Institute, the University of Tokyo, Kashiwa, Japan*

AQ-13. Study on Neural Regeneration Effect of Rat by using Pulsed Functional Magnetic Stimulation. N. Zhang[1], *S. Wang*[1], X. Chen[1], Q. Shi[1], J. Li[1], J. Zhu[3], S. Wang[1], B. Yang[1], Y. Guo[2] and J. Zhu[2] *1. Xi'an Jiaotong University, Xi'an, China; 2. School of Electrical, Mechanical and Mechatronic Systems, University of Technology, Sydney, NSW, Australia; 3. XiJing Hospital, Department of Orthopedics, Xi'an Fourth Military Medical University, Xi'an, Shaanxi, China*

AQ-14. Specific relaxation properties of surperparamagnetic nanoparticles conjugate with polymer for T2-shortening MRI application. *M. Yang*[1,2], W. Hsieh[2], C. Lai[1] and M. Tung[2] *1. National Tsing Hua University, Hsinchu, Taiwan; 2. Industrial Technology Research Institute, Hsinchu, Taiwan*

AQ-15. Controlled motion and aggregation of magnetic particles using microelectromagnets assisted by an external uniform magnetic field. *X. Han*[1], Q. Cao[1] and L. Li[1] *1. Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology, Wuhan, China*

AQ-16. Biomolecular detection and capture in wave sheet ferromagnetic nanostructure. *H. Huang*[1] and Z. Wei[2] *1. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*

TUESDAY MORNING 9:30

CORAL 4 (POSTERS)

Session AR
SOFT MAGNETIC FILMS, MICROWIRES, AND ALLOYS
(Poster Session)

Fanny Béron, Chair

AR-01. Inter-grain exchange interaction in random magnetic anisotropy simulation of magnetic nanocrystals. S. Lee[1], N. Inami[2], H. Yanagihara[1], *E. Kita*[1], C. Mitsumata[3] and K. Ono[2] *1. University of Tsukuba, Tsukuba, Ibaraki, Japan; 2. KEK, Tsukuba, Japan; 3. NIMS, Tsukuba, Japan*

AR-02. Regulated magnetic domains and high frequency property in columnar structured magnetic materials. C. Zhou[1], W. Wei[1], C. Jiang[1] and *D. Xue*[1] *1. Lanzhou University, Lanzhou, China*

AR-03. Analysis and modeling of frequency-dependent losses in soft magnetic thin films for integrated power inductor applications. *H. Wu*[1], R. Davies[1] and N. Sturcken[1] *1. Ferric Semiconductor, Inc., New York, NY*

AR-04. Preparation and Magnetic Properties of Nano-Crystalline Fe, FeAl, and FeSi by Electrodeposition in an Ionic Liquid Electrodeposition. *B. Weidenfeller*[1] *1. Dept of Materials Sciences, Clausthal University of Technology, Clausthal-Zellerfeld, Germany*

AR-05. Improvement of thermal stability of amorphous CoFeSiB thin films. *M. Jimbo*[1], Y. Fujiwara[2] and T. Shimizu[1] *1. Daido University, Nagoya, Japan; 2. Mie University, Tu, Mie, Japan*

AR-06. Thickness-dependent magnetic and microwave properties of Hitperm thin films. M. Bi[1,2], *H. Lu*[1,2], X. Wang[1,2], L. Zhang[1,2], P. Zhou[1,2] and L. Deng[1,2] *1. National Engineering Research Center of Electromagnetic Radiation Control Materials (UESTC), Chengdu, Sichuan, China; 2. State Key Laboratory of Electronic Thin films and Integrated Devices (UESTC), Chengdu, Sichuan, China*

AR-07. Compositional dependence of magnetic and high frequency properties of nanogranular CoFe-Yttrium-doped films films. *G. Hao*[1] and H. Zhang[1] *1. University of Electronic Science and Technology, ChengDu, China*

AR-08. Tuning of the microwave magnetization dynamics in CoZr-based thin films by Nd doping. *F. Xu*[1], Y. Yin[1], X. Fei[1] and S. Li[1] *1. School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, Jiangsu, China*

AR-09. Analysis of IC chip-level Conductive and Inductive Noise Suppressor composed of Multilayered Co-Zr-Nb Film. *J. Ma*[1], Y. Shimada[1], S. Muroga[1], Y. Endo[1] and M. Yamaguchi[1] *1. Department of Electrical Engineering, Graduate School of Engineering, Tohoku University, Sendai-shi, Miyagi, Japan*

AR-10. Improvement in current efficiency of electroplated Fe-Ni films prepared in citric-acid-based baths. *Y. Watanabe*[1], T. Yanai[1], M. Otsubo[1], A. Takahashi[1], M. Nakano[1], K. Suzuki[2] and H. Fukunaga[1] *1. Nagasaki University, Nagasaki, Japan; 2. Monash University, Clayton, VIC, Australia*

AR-11. Uniaxial magnetic anisotropy in NiFe films with rippled surface morphology. *S. Ki*[1], J. Dho[1] and B. Kim[1] *1. Kyungpook national university, Daegu, Republic of Korea*

AR-12. Magneto-Strictive Behaviors of Fe-Si(001) Single-Crystal Films under Rotating Magnetic Fields. *T. Kawai*[1], T. Aida[1], M. Ohtake[1] and M. Futamoto[1] *1. Chuo University, Tokyo, Japan*

AR-13. Development of A New Grain Oriented Steel Sheet by Vector Magnetic Characteristic Controlling. *T. Kajiwara*[1] and M. Enokizono[1] *1. Oita University, Oita, Japan*

AR-14. Exponentially decaying magnetic coupling in DC magnetron sputtered thin film FeNi/Cu/FeCoV trilayers. *Y. Wei*[1], S. Akansel[1], I. Harward[4], S. Jana[2], R. Brucas[1], Y. Pogoryelov[2], M. Ranjbar[3], R.K. Dumas[3], J. Åkerman[3,5], O. Karis[2], Z. Celinski[4] and P. Svedlindh[1] *1. Engineering Sciences, Uppsala University, Uppsala, Sweden; 2. Physics and Astronomy, Uppsala University, Uppsala, Sweden; 3. Physics, Gothenburg University, Gothenburg, Sweden; 4. Physics, University of Colorado, Colorado Springs, CO; 5. Applied Physics and Microelectronics, KTH Royal Institute of Technology, Kista, Sweden*

AR-15. Effect of Periodic Metal Flakes on Magnetic Shielding of a Ferrite Plate. *H. Park*[1], J. Kwon[3], S. Kwak[3] and S. Ahn[2] *1. Department of Electronic Engineering, The University of Suwon, Hwaseong-si, Republic of Korea; 2. The Cho Chun Shik Graduate School For Green Transportation, KAIST, Daejeon, Republic of Korea; 3. Electronics and Telecommunications Research Institute (ETRI), Daejeon, Republic of Korea*

TUESDAY MORNING 9:30

CORAL 4 (POSTERS)

Session AS
SPECIAL MATERIALS AND SKYRMIONS (Poster Session)

Riccardo Tomasello, Chair

AS-01. Perpendicular magnetic anisotropic hexagonal $Co_{50}Pt_{50}$ thin films prepared at room temperature. *F. Yuan*[1], H.W. Chang[2] and H. Ouyang[3] *1. Advanced Sensor Labortory, iSentek Ltd., New Taipei City, Taiwan; 2. Physics, Tunghai University, Taichung, Taiwan; 3. National Tsing Hua University, Hsinchu, Taiwan*

AS-02. Current-induced forces in a skyrmion lattice. *J.C. Martinez*[1] *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

AS-03. Magnetic properties of Mn-Ge alloys with $D0_{22}$-type structure. *T. Sasaki*[1], H. Okada[1] and R.Y. Umetsu[2] *1. Tohoku-Gakuin University, Tagajo, Miyagi, Japan; 2. Tohoku University, Sendai, Japan*

AS-04. Tuning the Néel temperature of $Cu_{1+x}Mn_{1-x}As$ room-temperature antiferromagnet . *K. Uhlirova*[1], R. Tarasenko[1] and Z. Matej[1] *1. Department of Condensed Matter Physics, Charles University in Prague, Praha 2, Czech Republic*

AS-05. Magnetic anisotropy of distorted FeCo and FeCoC films on Rh seedlayer. *H. Oomiya*[1], S. Yoshida[1], B. Wang[1], S. Kanatani[1], K. Takahashi[1], A. Arakawa[1], T. Hasegawa[1], S. Saito[2] and S. Ishio[1] *1. Department of Materials Science and Engineering Akita University, Akita, Japan; 2. Department of Electronic Engineering Tohoku University, Sendai, Japan*

AS-06. Effect of external field on current-induced skyrmion dynamics in a nanowire. *S. Lee*[1], J. Moon[2] and K. Lee[1,2] *1. KU-KIST Graduate School, Korea University, Seoul, Republic of Korea; 2. Dept. of Mat. Sci. & Eng., Korea University, Seoul, Republic of Korea*

AS-07. Tailoring the Magnetic Properties of New Fe-Ni-Co-Al-(Ta,Nb)-B Superelastic Rapidly Quenched Microwires. *F. Borza*[1], N. Lupu[1] and H. Chiriac[1] *1. National Institute of R&D for Technical Physics, Iasi, Romania*

AS-08. Production of a magnetic material with the ability to change from very soft to semi-hard magnetic. *Y. Zhang*[1], P. Sharma[1], N. Yodoshi[1] and A. Makino[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

AS-09. Magnetic properties of few-layered graphene oxide sheets reduced in H_2 atmosphere. *T. Inamori*[1], Y. Fujiwara[1], T. Tanaka[1], Y. Aoki[1], M. Jimbo[2] and T. Kobayashi[1] *1. Mie University, Tsu, Japan; 2. Daido University, Nagoya, Japan*

AS-10. Thin-layered magnetic modification in deep part of FeRh by energetic ion beam irradiation. *T. Koide*[1], M. Sakamaki[3], K. Amemiya[3], H. Uno[4], H. Sakane[4], A. Iwase[1] and T. Matsui[2,1] *1. Osaka Prefecture University, Materials Science, Sakai, Japan; 2. Osaka Prefecture University, Reserch Organization for the 21st Century, Sakai, Japan; 3. High Energy Accelerator Research Organization, Tsukuba, Japan; 4. S. H. I. Examination & Inspection, Ltd, Saijo, Japan*

AS-11. Novel Magnetic and Optical Properties of $Sn_{1-x}Zn_xO_2$ Nanoparticles. *N.A. Franco*[1], M.R. Kongara[1], J. Eixenberger[1], D.A. Tenne[1], C.B. Hanna[1] and A. Punnoose[1] *1. Physics, Boise State University, Boise, ID*

AS-12. Optical, Magneto-optical and Structural Properties of Mn-Ni-Sn and Fe-Ni-Sn Heusler Compounds. M. Tomickova[2], L. Beran[1], P. Cejpek[1], J. Kopecek[3], O. Heczko[3], R. Varga[4], V. Holy[1], *M. Veis*[1] and J. Hamrle[2] *1. Charles University in Prague, Prague, Czech Republic; 2. VSB-Technical University of Ostrava, Ostrava, Czech Republic; 3. Institute of Physics, ASCR, Prague, Czech Republic; 4. Safarik University, Kosice, Slovakia*

AS-13. Polygon Trajectories of Skyrmion magnetic bubble gyration. *K. Moon*[1], B. Chun[1], W. Kim[1], Z. Qiu[2] and C. Hwang[1] *1. Center of Nano measurements, Korea Research Institute of Standards and Science, Daejeon, Republic of Korea; 2. Physics Department, University of California at Berkeley, Berkeley, CA*

AS-14. Influence of the curvature on the stability of vortices and skyrmions on a paraboloidal shell. *V.L. Carvalho Santos*[1,2], P.S. Vilas-Boas[3], J.M. Fonseca[4], R.G. Elias[2] and D. Altbir[2] *1. Campus Senhor do Bonfim, Instituto Federal de Educacão, Ciência e Tecnologia Baiano, Santiago, Santiago, Chile; 2. Departamento de Física, Universidad de Santiago de Chile and CEDENNA, Santiago, Chile; 3. Departamento de Educacão - Campus VII, Universidade do Estado da Bahia, Senhor do Bonfim, Bahia, Brazil; 4. Departamento de Física, Universidade Federal de Vicosa, Vicosa, Minas Gerais, Brazil*

AS-15. Towards Skyrmions: structural, magnetic and electronic properties of Mn_xRh_ySn Heusler compounds. *K. Rana*[1], B. Ernst[1], O. Meshcheriakova[1], A. Koehler[1], D. Ebke[1] and C. Felser[1] *1. Inorganic Chemistry, Max Planck Institut fur Chemical Physics of Solids, Dresden, Dresden, Saxony, Germany*

AS-16. Observation of skyrmion-like magnetic texture in large arrays of square nanomagnets. *I. Nekrashevich*[2], L. Chang[3,1], J. Rantschler[4], P. Ruchhoeft[3,1] and D. Litvinov[2,1] *1. University of Houston nanofabrication facility, University of Houston, Houston, TX; 2. Materials Engineering, University of Houston, Houston, TX; 3. Electrical and Computer Engineering, University of Houston, Houston, TX; 4. Department of Physics, Xavier University, New Orleans, LA*

TUESDAY MORNING 9:30

CORAL LOUNGE (POSTERS)

Session AT
CRYSTALLINE SOFT MAGNETS (Poster Session)

Ivan Skorvanek, Chair

AT-01. Magnetic Anisotropy in single crystal FeAl. *A. Lisfi*[1], S. Pokharel[1], J. Cullen[2] and M. Wuttig[2] *1. Physics, Morgan State University, Baltimore, MD; 2. Materials Science and Engineering, University of Maryland, College Park, MD*

AT-02. Low loss Sendust powder cores with sodium salt glass-coated grains. D. Wei[2], *X. Wang*[2], Y. Nie[2], Z. Feng[2], R. Gong[2], Y. Chen[1] and V.G. Harris[1] *1. Department of Electrical and Computer Engineering, Center for Microwave Magnetic Materials and Integrated Circuits, Boston, MA; 2. School of Optical and Electronic Information, Huazhong University of Science & Technology, Wuhan, Hubei, China*

AT-03. Effect of Annealing on the Structure and Magnetic Properties of Fe-Si-Al-Cr Flaky Particles . N. Zhang[2,1], *X. Wang*[2,1], H. Shi[2,1], J. Xie[2,1] and L. Deng[2,1] *1. State Key Laboratory of Electronic Thin Film and Integrated Devices(UESTC), chengdu, Sichuan province, China; 2. National Engineering Research Center of Electromagnetic Radiation Control Materials(UESTC), Chengdu, Sichuan Province, China*

AT-04. Internal stress distribution to generate closure domains in laser-irradiated Fe3%Si(110) steels. *K. Iwata*[1,2], M. Imafuku[3], T. Suzuki[1], T. Shobu[4], H. Orihara[3], Y. Sakai[3], K. Akita[5], S. Ohya[3] and K. Ishiyama[2] *1. Advanced Technology Research Laboratories, Nippon Stell & Sumitomo Metal, Futtsu, Chiba, Japan; 2. Research Institute of Electrical Communication, Tohoku University, Aoba Sendai, Japan; 3. Department of Mechanical Systems Engineering, Tokyo City University, Tokyo, Japan; 4. Japan Atomic Energy Agency, Quantum Beam Science Directorate, Sayo, Hyogo, Japan; 5. Japan Atomic Energy Agency, Quantum Beam Science Directorate, Naka, Ibaraki, Japan*

AT-05. Magnetic properties of polycrystalline iron nitride synthesized by high-pressure nitridizing treatment. *S. Tong*[1] and M. Tung[1] *1. Electromagnetic Material and Device Lab., Industrial Technology Research Laboratories, Hsinchu, Taiwan*

AT-06. Steinmetz law in AC magnetic fields for iron–phenolformaldehyde resin soft magnetic composites. V. Vojtek[2], P. Kollar[2], *D. Oleksakova*[1], J. Fuzer[2], R. Bures[3] and M. Faberova[3] *1. Department of Applied Mathematics and Informatics, Faculty of Mechanical Engineering, The Technical University of Košice, Kosice, Slovakia; 2. Institute of Physics, Faculty of Science, P.J. Šafárik University, Kosice, Slovakia; 3. Institute of Materials Research, Slovak Academy of Sciences, Kosice, Slovakia*

AT-07. Micromagnetic simulation of domain wall pinning in Fe-base soft magnets at grain boundary. *S. Irie*[1], K. Yamada[1] and Y. Nakatani[1] *1. Graduate School of Informatics and Engineering, University of Electro-Communications, Chofu, Tokyo, Japan*

AT-08. The irradiation effect of proton at various energies and fluences on Curie temperature of $Fe_{65}Ni_{35}$ Invar alloy. *M. Matsushita*[1], H. Wada[1] and Y. Matsushima[2] *1. Ehime UNiversity, Matsuyama, Ehime, Japan; 2. Okayama University, Okayama, Okayama, Japan*

AT-09. Stress effect on giant magnetoimpedance effect of electroplated FeNi/Ni/constantane composite wires. J. Dong[1], C. Zhao[1], X. Zhang[1], Q. Liu[1] and *J. Wang*[1] *1. Key Laboratory for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou, China*

AT-10. Metastable bcc phase formation in 3*d* ferromagnetic transition metal thin films sputter-deposited on GaAs(100) substrates. *S. Minakawa*[1], M. Ohtake[1], M. Futamoto[1], F. Kirino[2] and N. Inaba[3] *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo University of the Arts, Tokyo, Japan; 3. Faculty of Engineering, Yamagata University, Yonezawa, Japan*

AT-11. Surface morphology and composition of Fe-Co films prepared by different spot size of laser beam. M. Nakano[1], *A. Yamashita*[1], T. Yanai[1] and H. Fukunaga[1] *1. Nagasaki University, Nagasaki, Japan*

AT-12. Phase evolution and magnetic properties of FeCo films electrodeposited at different temperatures. Y. Song[1], X. Li[2], M. Lin[1], M. Jia[1] and *W. Lu*[1] *1. School of Materials Science and Engineering, Tongji University, Shanghai, China; 2. School of Materials Science and Engineering, University of Shanghai for Science and Technology, Shanghai, China*

AT-13. Annealing effects on the ferromagnetic resonance linewidths of sputter-deposited $Fe_{100-x}Co_x$(001) thin films ($x < 11$). A. Kusaoka[1], J. Kimura[1], Y. Takahashi[1], *N. Inaba*[1], F. Kirino[2], M. Ohtake[3] and M. Futamoto[3] *1. Graduate School of Science and Engineering, Yamagata University, Yonezawa,, Yamagata, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan; 3. Faculty of Science and Engineering, Chuo University, Tokyo, Japan*

AT-14. Magnetic Fe-Co alloy films electroplated in a Deep-Eutectic-Solvent-based plating bath. *K. Shiraishi*[1], T. Yanai[1], Y. Watanabe[1], M. Nakano[1] and H. Fukunaga[1] *1. Nagasaki University, Nagasaki, Japan*

AT-15. Two-dimensional Magnetostriction under Vector Magnetic Characteristic. *D. Wakabayashi*[1] and M. Enokizono[1,2] *1. Oita University, Oita, Japan; 2. Vector Magnetic Characteristic Technical Loboratory, Usa, Japan*

AT-16. Characterizing the Effects of Tensile Stress on the Anisotropy of Coercive Force in Electrical Steels with the Moving Magnet Hysteresis Comparator. *I.J. Garshelis*[1] and G. Crevecoeur[2] *1. Magnova, Inc., Pittsfield, MA; 2. Electrical Energy, Systems and Automation, Ghent University, Ghent, Belgium*

TUESDAY MORNING 9:30

CORAL LOUNGE (POSTERS)

Session AU
INTERFACE-GOVERNED MAGNETIC NANOPARTICLES (Poster Session)

Alex Punnoose, Chair

AU-01. Fabrication of Fe Nanowires on Oxide substrates by Thermal CVD Method. *A. Kawahito*[1], T. Yanase[2], T. Nagahama[3], T. Shimada[3], T. Endo[3], J. Ishioka[3], T. Shibayama[3] and S. Watanabe[3] *1. Graduate School of Chemical Science and Engineering, Hokkaido University, Sapporo, Hokkaido, Japan; 2. Frontier Chemistry Center, Hokkaido University, Sapporo, Hokkaido, Japan; 3. Graduate School of Engineering, Hokkaido University, Sapporo, Hokkaido, Japan*

AU-02. Fabrication and characterization of nanoparticles of Gd_5Si_4. *R.L. Hadimani*[1,2], S. Gupta[2], V.K. Pecharsky[2,3] and D.C. Jiles[1,2] *1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Division of Materials Science & Engineering, Ames Laboratory, Ames, IA; 3. Division of Materials Science & Engineering, Iowa State University, Ames, IA*

AU-03. Grain size effect on magnetic and dielectric properties of hexagonal $YbMnO_3$ nanoparticles. *T. Han*[1], H. Hsu[1] and Y. Hu[1] *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

AU-04. The Magnetic Transition in ε-Fe_2O_3 Nanoparticles: Magnetic Properties and Hyperfine Interactions from Mössbauer Spectroscopy. *J. Kohout*[1], P. Brázda[2], T. Kmječ[1], K. Závěta[1], D. Kubániová[1], A. Lančok[3], E. Šantavá[2] and M. Klementová[2] *1. Charles University in Prague, Faculty of Mathematics and Physics, Prague, Czech Republic; 2. Institute of Physics ASCR, v.v.i., Prague, Czech Republic; 3. Institute of Inorganic Chemistry of the ASCR, v.v.i., Husinec-ež, Czech Republic*

AU-05. Magnetization and Electron Magnetic Resonance Studies on Nanoparticles and Nanowires of $Pr_{0.57}Ca_{0.41}Ba_{0.02}MnO_3$ Manganite. *A.K. Narasimhaiah*[2] and S.V. Bhat[1] *1. Physics, Indian Institute of Science, Bangalore, Karnataka, India; 2. Physics, Dr. Ambedkar Institute of Technology, Bangalore, Karnataka, India*

AU-06. Direct Observation of Magnetic Domain Motion in Nano-structure using Wide-field Kerr Microscopy. *X. Lu*[2], J. Sizeland[2], Z.H. Hujan[2], J. Jasiunaite[2], J. Wu[2], X. Hu[1] and Y. Xu[1] *1. Department of Electronics, University of York, York, North Yorkshire, United Kingdom; 2. Department of Physics, University of York, York, North Yorkshire, United Kingdom*

AU-07. Disappearance of Charge Order and Emergence of Ferromagnetism in Nanoparticles of $Nd_{1-x}Ca_xMnO_3$: Magnetization Studies. *K. Bhagyashree*[1] and S. Bhat[1] *1. Physics, Indian Institute of Science, Bangalore, Karnataka, India*

AU-08. Origin of magnetic bistability in rapidly solidified $(Co_{0.94}Fe_{0.06})_{72.5}Si_{12.5}B_{15}$ nearly zero magnetostrictive amorphous nanowires. *T.A. Ovari*[1] and H. Chiriac[1] *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

AU-09. Ferromagnetic resonance and magnetic properties of $Mn_XZn_{1-x}Fe_2O_4$ (X= 0.00, 0.35, 0.50, 0.65) nanoparticles prepared by citrate method. S. Thota[1], *S.C. Kashyap*[1] and H.C. Gupta[1] *1. Department of Physics, Indian Institute of Technology Delhi, New Delhi, Delhi, India*

AU-10. CO_2 Laser Vaporization Prepared Fe_xO_y Nanoparticles – Control of Crystal Phase Composition. *S. Dutz*[1], C. Stötzel[2], H. Kurland[2], J. Grabow[2], E. Müller[3], M. Sierka[2] and F.A. Müller[2] *1. Technische Universität Ilmenau, Ilmenau, Germany; 2. Friedrich-Schiller-University Jena, Jena, Germany; 3. TU Bergakademie Freiberg, Freiberg, Germany*

AU-11. High Magnetostrictive Single Crystal Nanowires for Sensing Applications. *M. Alnassar*[1], Y. Ivanov[1] and J. Kosel[1]
1. Electrical Engineering, King Abdullah University of Science and Technology, Thuwal - Jeddah, Western, Saudi Arabia

AU-12. Effect of boron adding on the magnetic properties and structure of CoPt nanoparticles. *S. Pinitsoontorn*[1,2], Y. Khemjeen[3] and A. Chompoosor[1,2] *1. Physics, Khon Kaen University, Khon Kaen, Thailand; 2. Nanotec-KKU Center of Excellence on Advanced Nanomaterials for Energy Production and Storage, Khon Kaen University, Khon Kaen, Thailand; 3. Materials Science and Nanotechnology Program, Faculty of Science, Khon Kaen University, Khon Kaen, Thailand*

AU-13. Probing the Magnetic Behavior of Single Nanodots. *A. Neumann*[1], D. Altwein[1], C. Thönnissen[1], A. Frauen[1], R. Wieser[1], A. Berger[2], A. Meyer[3], E. Vedmedenko[1] and H.P. Oepen[1] *1. Institut of Applied Physics, University of Hamburg, Hamburg, Germany; 2. CIC nanoGUNE, San Sebastian, Spain; 3. Institut of Physical Chemistry, University of Hamburg, Hamburg, Germany*

AU-14. Structure and composition of iron nanoparticles synthesized using a novel anionic-element complex. *E. Skoropata*[1], R.D. Desautels[1], M.P. Rowe[2] and J. van Lierop[1] *1. Physics & Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. Toyota Research Institute North America, Ann Arbor, MI*

AU-15. Investigation on transformation of Spindle-like Fe_3O_4 Nanoparticles from self-assembling α-Fe_2O_3 *Z. Huang*[1,2], H. Meng[1], S. Yuan[1], W. Zhang[1], E. Liu[1], D. Zhang[1,4], Z. Kou[1], Y. Zhai[1,3] and H. Zhai[3] *1. Department of Physics, Southeast University, Nanjing, China; 2. School of Electronic Science and Engineering, Southeast University, Nanjing, China; 3. National Laboratory of Solid Microstructures, Nanjing UniVersity, Nanjing, China; 4. School of Physics Science and Information Engineering, Liaocheng University, Liaocheng, China*

AU-16. Magnetic behavior of La-doped Fe_3O_4 studied by Perturbed Angular Correlation spectroscopy with ^{111}Cd and ^{140}Ce. *I.T. Matos*[1], B. Bosch-Santos[1], G.A. Cabrera-Pasca[1], A.W. Carbonari[1], T.M. Freire[2] and P.B. Fechine[2] *1. CRPq, Instituto de Pesquisas Energéticas e Nucleares/USP, Sao Paulo, Sao Paulo, Brazil; 2. GQMAT, Universidade Federeal do Ceará, Fortaleza, CE, Brazil*

Session AV
INTERMETALLICS AND OTHER HARD MAGNETS (Poster Session)

David Parker, Co-Chair
Aru Yan, Co-Chair

AV-01. Nitrogenation effect of Sm_2Fe_{17} alloys prepared by strip casting technique. M. Xing[1], Y. zhang[1], *J. Han*[1], S. Liu[1], C. Wang[1], H. Du[1], J. Yang[1] and Y. Yang[1] *1. School of Physics, Peking University, Beijing, China*

AV-02. Magnetic properties of Sm-Fe-N prepared by surfactant-assisted ball milling and nitriding under high gas pressure of nitrogen. X. Xiao[1], P. Si[1], *N. Sun*[2], X. Wang[1], J. Liu[3], S. Yu[1] and H. Ge[1] *1. China Jiliang University, Hangzhou, China; 2. Shenyang Ligong University, Shenyang, China; 3. Ningbo University, Ningbo, China*

AV-03. Magnetic properties of $Sm_5(Fe_{1-x}Co_x)_{17}$ (x=0-1) magnets. *S. Saito*[1] and T. Saito[1] *1. Mechanical Science and Engineering, Chiba Institute of Technology, Narashino, Japan*

AV-04. Anomalous magnetization in $Sm(Ni_{0.5}Fe_{0.4}Cu_{0.1})_7$ alloy bulks. W. Yang[1], Q. Du[1], G. Chen[1], Y. Xia[1], Y. Yang[1], H. Du[1], C. Wang[1], J. Han[1], Y. Yang[1] and *J. Yang*[1] *1. School of Physics, Peking University, Beijing, China*

AV-05. Magnetic Hardening of $CeFe_{11-x}Co_xTi$ with $ThMn_{12}$ Structure by Melt Spinning. *C. Zhou*[1], F.E. Pinkerton[3], K. Sun[2] and M.J. Kramer[2] *1. MEDA Engineering and Technical Services LLC, Southfield, MI; 2. Ames Laboratory, Ames, IA; 3. Chemical and Materials Systems Lab, General Motors R&D, Warren, MI*

AV-06. Optimization of permanent magnetic property in melt spun $Co_{82-x}Hf_{12+x}B_6$ (x=0-4) nanocomposites. H. Chang[2], M. Liao[1], *C. Shih*[1], W. Chang[1], C. Shaw[3] and Y. Lee[1] *1. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. Department of Applied Physics, Tunghai University, Taichung, Taiwan; 3. Superrite Electronics Co. Ltd., Taipei, Taiwan*

AV-07. Consolidation and Phase Decomposition of Metastable Co_3C Material. *Z. Turgut*[1,2], M. Lucas[1,3], Y. Shen[1,4], J.C. Horwath[1] and S.L. Semiatin[1] *1. AFRL, Wright-Patterson AFB, OH; 2. UES Inc., Dayton, OH; 3. UTC, Dayton, OH; 4. UDRI, Dayton, OH*

AV-08. Preparation of α"-$Fe_{16}N_2$ isolated nanoparticles using hydroxyapatite coating. *D. Nagai*[1], Y. Kinemuchi[1], K. Suzuki[1], A. Towata[1] and M. Yasuoka[1] *1. Green-Innovative Magnetic Material Research Center, Advanced Industrial Science and Technology, Nagoya, Aichi, Japan*

AV-09. DFT Calculation and Experimental Investigation of Mn Doping Effects in $Fe_{16}N_2$ *Y. Jiang*[3], B. Himmetoglu[2], M. Cococcioni[2] and J. Wang[1] *1. MINT center, Minneapolis, MN; 2. Department of Chemical Engineering and Materials Science, Minneapolis, MN; 3. Department of Electrical and Computer Engineering, Minneapolis, MN*

AV-10. Computer simulation of improvement in coercivity due to refinement of microstructures. *R. Hori*[1], H. Fukunaga[1], M. Nakano[1], T. Yanai[1], R. Kato[2] and Y. Nakazawa[2] *1. Nagasaki University, Nagasaki, Japan; 2. Honda R&D Co., Ltd., Tochigi, Japan*

AV-11. Study of post annealing conditions for having high coercivity of electroplated FePt thin film on Molybdenum underlayer. *Y. Hayashi*[1], S. Hashi[1], T. Yanai[2], K. Ishiyama[1], M. Nakano[2] and H. Fukunaga[2] *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Electrical and Electronic Engineering, Nagasaki University, Nagasaki, Japan*

AV-12. Fe-Pt thick-film magnets prepared by electroplating method. K. Furutani[1], *T. Yanai*[1], M. Nakano[1] and H. Fukunaga[1] *1. Nagasaki University, Nagasaki, Nagasaki, Japan*

AV-13. Magnetic properties and microstructure of anisotropic FeCo-based thin films. *M. Matsuura*[1], N. Tezuka[1] and S. Sugimoto[1] *1. Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

AV-14. Effects of substitution of transition metal T on the formation and magnetism of the fibrous $R_{11}T_4In_9$ intermetallics. *A. Provino*[1,2], K.A. Gschneidner Jr[1,3], P. Manfrinetti[4,1], D. Paudyal[1], S.K. Dhar[5], C. Ferdeghini[2] and V.K. Pecharsky[1,3] *1. Ames Laboratory, Ames, IA; 2. Institute SPIN-CNR, Genova, Italy; 3. Department of Materials Science and Engineering, Iowa State University, Ames, IA; 4. Department of Chemistry, University of Genova, Genova, Italy; 5. Condensed Matter Physics & Material Science, Tata Institute of Fundamental Research, Mumbai, India*

AV-15. Crystal field Hamiltonian in $Nd_2Fe_{14}B$ based on Wannier functions. *T. Yoshioka*[1], H. Tsuchiura[1] and P. Novak[2] *1. Department of Applied Physics, Tohoku University, Sendai, Miyagi, Japan; 2. institute of physics, ASCR, Prague, Czech Republic*

AV-16. Temperature Dependence of Magnetic Anisotropy in τ-MnAl Thin Films. *S. Zhao*[1,2], T. Hozumi[1,3] and T. Suzuki[1,2] *1. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL; 2. Departments of Electrical and Computer Engineering, and Metallurgical and Materials Engineering, The University of Alabama, Tuscaloosa, AL; 3. Advanced Technology Development Center, TDK Corporation, Narita, Japan*

Session AW
SUPERCONDUCTIVITY AND HEAVY FERMIONS (Poster Session)

Joshaniel Cooper, Chair

AW-01. Phase transitions in classical biquadratic Heisenberg model for strained iron pnictides. W. Li[2], J. Feng[2], M. Qin[2], Y. Xie[1], Z. Yan[1], X. Jia[3] and *J. Liu*[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 2. Institute for Advanced Materials, South China Normal University, Guangzhou, China; 3. School of Physics and Chemistry, Henan Polytechnic University, Jiaozuo, China*

AW-02. Fabrication and Characterization of Superconducting $FeSe_{0.5}Te_{0.5}$ thin films. *Z. Xing*[1] and T. Wang[2] *1. Department of Materials Science and Engineering, Nanjing University, Nanjing, Jiangsu, China; 2. Department of Mathmetics, Nanjing University of Aeronautics and Astronautics, Nanjing, Jiangsu, China*

AW-03. Simulation of Microscopic Magnetic Flux Behavior Inside of High-temperature Superconductor. *S. Noguchi*[1] and S. Kim[2] *1. Hokkaido University, Sapporo, Japan; 2. Okayama University, Okayama, Japan*

AW-04. Probing odd frequency superconductivity at superconductor / ferromagnet interfaces by low-energy muon spectroscopy. *A. Di Bernardo*[4], D. Salman[1], D. Suter[1], D. Wang[3], D. Egilmez[5], D. Banerjee[4], D. Flokstra[2], P. Zhao[3], P. Lee[2], P. Blamire[4] and D. Robinson[4] *1. Laboratory for Muon Spin Spectroscopy, Paul Scherrer Institut, Villigen, Switzerland; 2. School of Physics and Astronomy, University of St Andrews, St Andrews, United Kingdom; 3. State Key Laboratory of Superlattices and Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China; 4. Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 5. American University of Sharjah, Dubai, United Arab Emirates*

AW-05. Electronic properties in the $PdTi_2$ superconductor under high pressure. *E.L. Martínez-Piñeiro*[1], C. Reyes-Damián[1] and R. Escudero[1] *1. IIM, UNAM, Mexico city, Mexico*

AW-06. Spin injection induced phase transition in $YBa_2Cu_3O_{7-d}$/ $Nd_{0.35}Sr_{0.65}MnO_3$ bilayer. *S. Cheng*[1,2], J.G. Lin[1] and T. Chuang[2] *1. Center for condensed matter sciences, National Taiwan University, Taipei, Taiwan; 2. Department of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan*

AW-07. Size effect of strong-coupled superconducting In_2Bi nanoparticles: An investigation of short-range electron phonon coupling. *P. Lin*[1], A. Gandhi[1] and S. Wu[1] *1. Department of Physics, National Dong Hwa Univeristy, Hualien, Taiwan*

AW-08. Magnetic proximity effect in Fe/V ferromagnet/ superconductor bilayer investigated by polarized neutron refletometry. *B. Nagy*[1], Y.N. Khaydukov[2] and L. Bottyán[1] *1. Wigner Research Centre for Physics, Budapest, Hungary; 2. Max Planck Institute for Solid State Research, Stuttgart, Germany*

AW-09. Special Vortex Pinning Phenomena in arrays of defects with gradient spatial distributions on niobium film. *T. Wu*[1], L. Horng[2] and J. Wu[2] *1. Department of Electronic Engineering, National Formosa University, Yunlin, Taiwan; 2. Department of Physics, National Changhua University of Education, Changhua, Taiwan*

AW-10. Vortex-Antivortex coexistence in Nb based Superconductor/ Ferromagnet heterostructures. *C. Di Giorgio*[1], F. Bobba[1], A. Scarfato[1,2], M. Longobardi[2], M. Iavarone[3], S.A. Moore[3], G. Karapetrov[4], V. Novosad[5], V. Yefremenko[5] and A.M. Cucolo[1] *1. Department of Physics "E.R. Caianiello", University of Salerno, Salerno, Italy; 2. Department of Condensed Matter Physics, University of Geneva, Geneva, Switzerland; 3. Physics Department, Temple University, Philadelphia, PA; 4. Physics Department, Drexel University, Philadelphia, PA; 5. Material Science Division, Argonne National Laboratory, Argonne, IL*

AW-11. Electronic properties in a single crystal of $FeSe_{0.5}Te_{0.5}$ under high pressure. *E.L. Martínez-Piñeiro*[1], R. López-Romero[1] and R. Escudero[1] *1. IIM, UNAM, Mexico City, Mexico*

AW-12. Visualization of Ce atoms and site dependent in-gap residual density of state in $CeCoIn_5$. *Y. Yoshida*[1], H. Kim[1], Y. Haga[2], N. Tateiwa[2], M. Suzuki[4], Z. Fisk[3,2] and Y. Hasegawa[1] *1. Institute for solid state physics, University of Tokyo, Kashiwa, Japan; 2. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Japan; 3. Department of Physics and Astronomy, University of California, Irvine, Irvine, CA; 4. Center for Emergent Matter Science, RIKEN, Wako, Japan*

AW-13. Magnetic, electrical and thermodynamic properties of heavy fermion NpIr. *H.C. Walker*[1], K.A. McEwen[2], J. Griveau[3], R. Eloirdi[3], D. Bouëxière[3] and E. Colineau[3] *1. ISIS Neutron and Muon Source, STFC, Didcot, Oxfordshire, United Kingdom; 2. Department of Physics and Astronomy, University College London, London, United Kingdom; 3. Institute for Transuranium Elements, European Commission, Karlsruhe, Germany*

AW-14. Effects of Nd substitution on the antiferromagnetic state of $CeRhIn_5$. *P.F. Rosa*[2,1], A. Oostra[2] and Z. Fisk[2] *1. University of Campinas, Campinas, Brazil; 2. Physics, University of California at Irvine, Irvine, CA*

AW-15. Heavy fermion $Ce_3Co_4Sn_{13}$ compound under pressure. J.R. Collave[1], H.A. Borges[1], S.M. Ramos[2,3], E.N. Hering[2,3], M.B. Fontes[2], E. Baggio-Saitovitch[2], L. Mendonça-Ferreira[4], *E.M. Bittar*[2] and P.G. Pagliuso[5] *1. Departamento de Física, Pontifícia Universidade Católica do Rio de Janeiro (PUC-Rio), Rio de Janeiro, RJ, Brazil; 2. Centro Brasileiro de Pesquisas Físicas (CBPF), Rio de Janeiro, RJ, Brazil; 3. Institut Nanosciences et Cryogénie (INAC), Grenoble, France; 4. Centro de Ciências Naturais e Humanas, Universidade Federal do ABC (UFABC), Santo André, SP, Brazil; 5. Instituto de Física "Gleb Wataghin", Universidade Estadual de Campinas (UNICAMP), Campinas, SP, Brazil*

AW-16. Pauli-type paramagnetism for the cage-like intermetallic compound of $Yb_3Co_4Sn_{13}$ evidenced by NMR. *C. Lue*[1] and Y. Kuo[2] *1. Physics, National Cheng Kung University, Tainan, Taiwan; 2. Physics, National Dong Hwa University, Hualien, Taiwan*

TUESDAY AFTERNOON 1:30

CORAL 3

Session BA
FUNCTIONAL COMPLEX OXIDE HETEROSTRUCTURES

Sean Langridge, Chair

1:30

BA-01. Engineering the electronic and orbital properties of the rare-earth nickelates. ***(Invited)*** *C. Ahn*[1] *1. Yale University, New Haven, CT*

2:06

BA-02. Non-collinear magnetic structure in $La_{2/3}Sr_{1/3}MnO_3/LaNiO_3$ superlattices. ***(Invited)*** *A. Bhattacharya*[1] *1. Materials Science Division, and Nanoscience and Technology Division, Argonne National Laboratory, Lemont, IL*

2:42

BA-03. Correlated oxide interfaces: What is hidden in plain view? ***(Invited)*** *J. Chakhalian*[1] *1. Physics Department, University of Arkansas, Fayetteville, AR*

3:18

BA-04. Enhancing Electroresistance and Electric Control of Magnetic States in Multiferroic Tunnel Junctions using Bilyer Barriers with Ferroelectric Induced Interface Phase Transition. ***(Invited)*** *Q. Li*[1] *1. Department of Physics, Pennsylvania State University, University Park, PA*

3:54

BA-05. Control of valence states and ionic conduction in $SrCoO_x$ oxygen sponges by epitaxial strain. ***(Invited)*** J. Petrie[1], T. Meyer[1], C. Mitra[1], F.A. Reboredo[1], J.W. Freeland[2] and *H. Lee*[1] *1. Oak Ridge National Laboratory, Oak Ridge, TN; 2. Argonne National Laboratory, Argonne, IL*

TUESDAY AFTERNOON 1:30

CORAL 5

Session BB
SPIN HALL EFFECT
Laura Thevenard, Chair

1:30

BB-01. Sign change of the spin Hall effect due to electron correlation in nonmagnetic CuIr alloys. *Z. Xu*[1], B. Gu[1], M. Mori[1], T. Ziman[2] and S. Maekawa[1] *1. ASRC, JAEA, Tokai, Ibaraki, Japan; 2. Institut Laue Langevin, Grenoble, France*

1:42

BB-02. First observation of quasiparticles-mediated spin Hall effect in superconducting niobium nitride. *T. Wakamura*[1], H. Akaike[2], Y. Omori[1], Y. Niimi[1], S. Takahashi[3], A. Fujimaki[2], S. Maekawa[4,5] and Y. Otani[1,6] *1. Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan; 2. Department of Quantum Engineering, Nagoya University, Nagoya, Japan; 3. Institute for Materials Research, Tohoku University, Sendai, Japan; 4. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Japan; 5. CREST, Japan Science and Technology, Tokyo, Japan; 6. RIKEN-CEMS, Wako, Japan*

1:54

BB-03. Spin Hall voltages from a.c. and d.c. spin currents. *D. Wei*[1], M. Obstbaum[1], M. Ribow[1,2], C.H. Back[1] and G. Woltersdorf[1,2] *1. Institut für Experimentelle und Angewandte Physik, Universität Regensburg, Regensburg, Germany; 2. Institut für Physik, Martin-Luther-Universität Halle, Halle, Germany*

2:06

BB-04. Spin Hall effects in ferromagnetic metals measured with lateral structures. *Y. Niimi*[1], Y. Omori[1], D. Wei[1] and Y. Otani[1,2] *1. ISSP, University of Tokyo, Chiba, Japan; 2. RIKEN-CEMS, Wako, Japan*

2:18

BB-05. Large Extrinsic Spin Hall Effect in AuW alloy.
P. Laczkowski[1,2], J. Rojas-Sánchez[1,2], W. Savero-Torres[2], N. Reyren[1], H. Jaffrès[1], C. Deranlot[1], J. George[1], L. Notin[2], C. Beigné[2], A. Marty[2], J. Attané[2], L. Vila[2] and A. Fert[1] *1. UMR CNRS/Thales and Université Paris-Sud, Palaiseau, France; 2. INAC/SP2M, CEA-Université Joseph Fourier, Grenoble, France*

2:30

BB-06. Spin Hall Effect in Antiferromagnetic $IrMn_3$ Probed by Tunneling Spectroscopy and Magnetic Switching. *C. Chen*[1] and L. Liu[1] *1. IBM Thomas J Watson Research Center, Yorktown Heights, NY*

2:42

BB-07. Anti-damping spin-Hall torque in FeGaB/Ta bilayers.
S. Emori[2], T. Nan[2], T.M. Oxholm[2], B. Howe[1], J.G. Jones[1], G.J. Brown[1], D.E. Budil[3] and N.X. Sun[2] *1. Materials and Manufacturing Directorate, Air Force Research Laboratory, Wright-Patterson AFB, OH; 2. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA; 3. Department of Chemistry, Northeastern University, Boston, MA*

2:54

BB-08. Sign and Magnitude of Spin Hall Effect in CuBi Alloys.
B. Gu[1], Z. Xu[1], M. Mori[1], T. Ziman[2] and S. Maekawa[1] *1. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibaraki, Japan; 2. Institut Laue Langevin, Grenoble, France*

3:06

BB-09. Spin Hall effect by surface roughness. L. Zhou[1], V.L. Grigoryan[1], S. Maekawa[2], X. Wang[3] and *J. Xiao*[1] *1. Physics Department, Fudan University, Shanghai, China; 2. JAEA, Tokai, Japan; 3. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

3:18

BB-10. Micro-focused Brillouin light scattering study of the magnetic eigenmodes excited by Spin Hall effect in a transversely magnetized rectangular NiFe dot. *M. Madami*[3], G. Gubbiotti[1], T. Moriyama[2], K. Tanaka[2], G. Siracusano[5], M. Carpentieri[4], G. Finocchio[5], T. Ono[2], S. Tacchi[1] and G. Carlotti[3] *1. Istituto Officina dei Materiali del CNR (CNR-IOM), Unità di Perugia, Perugia, Italy; 2. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 3. Department of Physics and Geology, University of Perugia, Perugia, Italy; 4. Department of Electrical and Information Engineering, Politecnico of Bari, Bari, Italy; 5. Department of Electronic Engineering, Industrial Chemistry and Engineering, University of Messina, Messina, Italy*

3:30

BB-11. Spin Hall Effect Tunneling Spectroscopy. *L. Liu*[1], C. Chen[1] and J. Sun[1] *1. IBM TJ Watson Research Center, Yorktown Heights, NY*

3:42

BB-12. Comparative studies of the spin Hall angle in heavy metals using DC Hall, FMR and spin pumping inverse spin Hall technique. *Y. Lau*[1], D. Betto[1], K. Rode[1], N. Thiyagarajah[1], J. Coey[1] and P.S. Stamenov[1] *1. CRANN, AMBER and School of Physics, Trinity College Dublin, Dublin, Ireland*

3:54

BB-13. Optical detection of spin Hall effect in metals. *O. van 't Erve*[1], A.T. Hanbicki[1], K. McCreary[1], C.H. Li[1] and B.T. Jonker[1] *1. Naval Research Laboratory, Washington, DC*

4:06

BB-14. Efficient room temperature spin-Hall injection across an oxide barrier. *S. Chen*[1], C. Qin[1] and Y. Ji[1] *1. Dept. of Physics, University of Delaware, Newark, DE*

4:18

BB-15. Spin Hall Switching in the Ta/TbFeCo Structure with Bulk Perpendicular Anisotropy. *Z. Zhao*[1], M. Jamali[1], A. Klemm[1] and J. Wang[1] *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

TUESDAY AFTERNOON 1:30

CORAL 1

Session BC
SPIN TORQUE AND SPIN TORQUE OSCILLATORS I
Andrew Kent, Chair

1:30

BC-01. Noise-enhanced synchronization of stochastic magnetic oscillators. *A. Mizrahi*[2,3], N. Locatelli[3,2], A. Accioly[1,3], R. Matsumoto[4], A. Fukushima[4], H. Kubota[4], S. Yuasa[4], V. Cros[2], L. Pereira[1], D. Querlioz[3], J. Kim[3] and J. Grollier[2] *1. Instituto de Fisica, Univ. Federal do Rio Grande do Sul, Porto Alegre, Brazil; 2. CNRS/Thales, Palaiseau, France; 3. Institut d'Electronique Fondamentale, Orsay, France; 4. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

1:42

BC-02. Phase noise analysis of a noisy spin torque oscillator synchronized to an external signal. *M. Tortarolo*[1,2], C. Dieudonné[2,3], M. Quinsat[2,3], L. Buda-Prejbeanu[1,2], M. Cyrille[1,3] and U. Ebels[1,2] *1. Univ. Grenoble Alpes, Grenoble, France; 2. CEA, INAC-SPINTEC/CNRS, SPINTEC, Grenoble, France; 3. CEA, LETI, Minatec Campus, Grenoble, France*

1:54

BC-03. Spin wave beam mediated mutual synchronization of nanocontact spin torque oscillators. *A. Houshang*[1,2], E. Iacocca[1,2], P. Dürrenfeld[1], S. Radjai Sani[2,3], J. Åkerman[1,3] and R.K. Dumas[1,2] *1. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 2. Nanosc AB, Stockholm, Sweden; 3. Materials Physics, Royal Institute of Technology (KTH), Stockholm, Sweden*

2:06

BC-04. Synchronized oscillation with narrow spectral linewidth in a dual free-layer Heusler-alloy-based spin-torque oscillator. *T. Nagasawa*[1], K. Kudo[1], H. Suto[1], M. Yamagishi[1], K. Mizushima[1] and R. Sato[1] *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

2:18

BC-05. Spin transfer torque in spin filter tunnel junctions. *C. Ortiz Pauyac*[1], A. Manchon[1], M. Chshiev[2] and A. Kalitsov[2] *1. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 2. SPINTEC, UMR CEA/CNRS/UJF, Grenoble, France*

2:30

BC-06. Magnetic Droplet Solitons in Orthogonal-Spin Valve Nanowire. P. Dürrenfeld[1], *M. Ranjbar*[1], E. Iacocca[1], S. Chung[2], S. Mohseni[2], R.K. Dumas[1] and J. Åkerman[1,2] *1. Physics Department, University of Gothenburg, Gothenburg, Sweden; 2. KTH Royal Institute of Technology, Materials Physics, School of ICT, Stockholm, Sweden*

2:42

BC-07. Study of Magnetic Droplet Solitons in Spin Transfer Nanocontacts with Perpendicular Magnetic Anisotropy. *S. Lendinez*[1], D. Backes[2], A.D. Kent[2] and F. Macia[1] *1. Fundamental Physics, Universitat de Barcelona, Barcelona, Spain; 2. Department of Physics, New York University, New York, NY*

2:54

BC-08. Switching field distributions with spin transfer torques in perpendicularly magnetized spin-valve nanopillars. *D.B. Gopman*[2,1], D. Bedau[3], S. Mangin[4], J.A. Katine[3] and A.D. Kent[1] *1. Dept. of Physics, New York University, New York, NY; 2. Materials Science & Engineering Division, National Institute of Standards and Technology, Gaithersburg, MD; 3. HGST, San Jose, CA; 4. Universite de Lorraine, Nancy, France*

3:06

BC-09. Magnetization reversal dynamics of orthogonal spin transfer devices. *G. Wolf*[1], G. Chaves-O'Flynn[1], A.D. Kent[1], S. Watts[2], B. Kardasz[2] and M. Pinarbasi[2] *1. Physics, New York University, New York, NY; 2. Spin Transfer Technologies, Fremont, CA*

3:18

BC-10. Large amplitude oscillation of magnetization in spin-torque oscillator stabilized by field-like torque. *T. Taniguchi*[1], S. Tsunegi[2], H. Kubota[1] and H. Imamura[1] *1. Spintronics Research Center, AIST, Tsukuba, Ibaraki, Japan; 2. CNRS, Paris, France*

3:30

BC-11. Element- and site-resolved magnetization dynamics in a YIG/Cu/Co trilayer measured by x-ray detected ferromagnetic resonance. *L. Shelford*[2], A. Figueroa[1], R. Valkass[2], H. Mohamad[2], P.S. Keatley[2], S. Cavill[3], S. Marmion[4], J. Batley[4], G. van der Laan[1], B.J. Hickey[4] and R.J. Hicken[2] *1. Magnetic Spectroscopy Group, Diamond Light Source, Didcot, Oxfordshire, United Kingdom; 2. School of Physics, University of Exeter, Exeter, Devon, United Kingdom; 3. Department of Physics, University of York, York, United Kingdom; 4. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

3:42

BC-12. A magneto-optical spatial light modulator with magnetic tunnel junctions driven by an integrated transistor backplane. *K. Aoshima*[1], H. Kinjo[1], K. Machida[1], D. Kato[1], K. Kuga[1], H. Kikuchi[1] and N. Shimidzu[1] *1. Science and Technology Research Laboratories, NHK, Japan Broadcasting Corp., Tokyo, Japan*

3:54

BC-13. Spin torque ferromagnetic resonance measurements on FeCoB/IrMn/Pt multilayers. *T. Moriyama*[1], M. Nagata[1], K. Tanaka[1], K. Kim[1], H. Almasi[2], W. Wang[2] and T. Ono[1] *1. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 2. Department of Physics, The University of Arizona, Tucson, AZ*

4:06

BC-14. The manipulation of the spin-axis in antiferromagnets by the electrical current. *J. Zelezny*[1,3], H. Gao[4], K. Výborný[1], J. Zemen[5], J. Mašek[1], A. Manchon[8], J. Wunderlich[1,6], J. Sinova[2,1] and T. Jungwirth[1,7] *1. Institute of Physics ASCR v.v.i., Prague, Czech Republic; 2. Institut für Physik, Johannes Gutenberg Universität Mainz, Mainz, Germany; 3. Faculty of Mathematics and Physics, Charles University in Prague, Prague, Czech Republic; 4. Department of Physics, Texas A&M University, College Station, TX; 5. Department of Physics, Blackett Laboratory, Imperial College London, London, United Kingdom; 6. Hitachi Cambridge Laboratory, Cambridge, United Kingdom; 7. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; 8. Physical Science and Engineering Division, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia*

4:18

BC-15. Current-driven non-linear magnetodynamics in exchange-biased spin valves. H. Seinige[1], C. Wang[1] and *M. Tsoi*[1]
1. Physics, University of Texas at Austin, Austin, TX

TUESDAY
AFTERNOON
1:30

CORAL 2

Session BD
MAGNETIZATION DYNAMICS I
Christian Binek, Chair

1:30

BD-01. Spin wave theory of magnetization dynamics induced by spin-transfer torque. ***(Invited)*** *A. Slavin*[1], V. Tyberkevych[1], D. Slobodianiuk[2] and G. Melkov[2] *1. Physics, Oakland University, Rochester, MI; 2. Radiophysics, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*

2:06

BD-02. Interplay between conservative and dissipative coupling for spin torque driven dynamics of a coupled two layer structure. *M. Romera*[1], B. Lacoste[1], U. Ebels[1] and L.D. Buda-Prejbeanu[1] *1. Univ. Grenoble Alpes, CNRS, CEA, INAC-SPINTEC, Grenoble, France*

2:18

BD-03. Nonlinear damping effects in spin torque dynamics of magnetic tunnel junctions. *Y. Chen*[1], I. Barsukov[1], H. Lee[1], A.M. Gonçalves[1,2], J.A. Katine[3], R.E. Arias[4], B.A. Ivanov[5] and I. Krivorotov[1] *1. University of California, Irvine, CA; 2. CBPF, Rio de Janeiro, Brazil; 3. HGST, San Jose, CA; 4. Universidad de Chile, Santiago, Chile; 5. Academy of Sciences, Kiev, Ukraine*

2:30

BD-04. Negative spin motive force induced in magnetite thin films. *M. Nagata*[1], T. Moriyama[1], K. Tanabe[2], D. Chiba[3], J. Ohe[4], Y. Hisamatsu[5], T. Niizeki[5], H. Yanagihara[5], E. Kita[5] and T. Ono[1] *1. Institute for Chemical Research, Kyoto University, Uji-shi, Japan; 2. Department of Physics, Osaka University, Osaka, 560-0043, Japan; 3. Department of Applied Physics, The University of Tokyo, Meguro, 113-8656, Japan; 4. Department of Physics, Toho University, Chiba, 113-8656, Japan; 5. Institute of Applied Physics, University of Tsukuba, Ibaraki, 305-8573, Japan*

2:42

BD-05. XMCD Imaging of Large Angle Spin-Excitations in Spin Transfer Nanocontacts with Perpendicular Anisotropy. *F. Macia*[4,1], D. Backes[4], A.D. Kent[4], S. Bonetti[2,3], R. Kukreja[2,3] and H. Ohldag[3] *1. Fundamental Physics, Universitat de Barcelona, Barcelona, Spain; 2. Stanford University, Stanford, CA; 3. SLAC National Accelerator Laboratory, Menlo Park, CA; 4. Physics, New York University, New York, NY*

2:54

BD-06. Time domain mapping of large amplitude magnetization dynamics of spin torque oscillators. *J. Zhang*[1], P.M. Braganca[2], I. Krivorotov[1] and B. Gurney[2] *1. Physics Department, UC Irvine, Irvine, CA; 2. HGST, a Western Digital company, San Jose, CA*

3:06

BD-07. Spin-Torque Oscillators: Energy Space Dynamics. *D. Pinna*[1], D.L. Stein[1,2] and A.D. Kent[1] *1. Physics, New York University, New York, NY; 2. Courant Institute of Mathematical Sciences, New York University, New York, NY*

3:18

BD-08. Perfect parametric synchronization at multiple frequencies for spin-transfer vortex oscillators in hybrid magnetic tunnel junctions. *R. Lebrun*[1], P. Bortolotti[1], C. Serpico[2], A. Jenkins[1], E. Grimaldi[1], J. Grollier[1], H. Kubota[3], K. Yakushiji[3], A. Fukushima[3], S. Yuasa[3] and V. Cros[1] *1. UMR CNRS/THALES, Palaiseau, France; 2. Dipartimento di Ingegneria Elettrica, Università di Napoli 'Federico II', Naples, Italy; 3. AIST, Tsukuba, Japan*

3:30

BD-09. Ultrahigh sensitivity spin-torque diode in the absence of external magnetic fields. *Z. Zeng*[1], G. Finocchio[2], H. Jiang[3], J. Langer[4], J. Katine[5], P. Khalili Amiri[6] and K. Wang[6] *1. Suzhou Institute of Nano-tech and Nano-bionics, CAS, Suzhou, China; 2. Department of Matter Physics and Electronic Engineering, University of Messina, Messina, Italy; 3. Department of Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA; 4. Singulus Technologies AG, Kahl am Main, Germany; 5. HGST Inc., San Jose, CA; 6. Department of Electrical Engineering, University of California, Los Angeles, Los Angeles, CA*

3:42

BD-10. Inverse spin Hall effect induced by surface spin waves in YIG/Pt bilayers. *M. Balinskiy*[1], M. Ranjbar[1], S. Khartsev[2], M. Haidar[1], P. Dürrenfeld[1], R.K. Dumas[1], A. Slavin[3] and J. Åkerman[1] *1. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 2. Department of Integrated Devices and Circuits, School of ICT, Royal Institute of Technology (KTH), Sweden, Stockholm, Sweden; 3. Department of Physics, Oakland University, Rochester, MI*

3:54

BD-11. Atomistic calculations of the spin wave spectrum of YIG.
J. Barker[1] and G.E. Bauer[1,2] *1. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

4:06

BD-12. Electronic control of the spin-wave damping in a magnetic insulator. A. Hamadeh[5], O. d'Allivy Kelly[3], C. Hahn[1], A. Molpeceres[3], V. Naletov[4,3], M. Munoz[5], J. Prieto[6], R. Bernard[3], A. Anane[1], V. Cros[3], G. de Loubens[1] and *O. Klein*[1,2] *1. Service de Physique de l'État Condensé, Gif-Sur-Yvette, France; 2. SPINTEC CEA-Grenoble, Grenoble, France; 3. UMP CNRS/Thales, Palaiseau, France; 4. Federal University of Kazan, Kazan, Russian Federation; 5. Instituto de Microelectrónica de Madrid (CNM, CSIC), Madrid, Spain; 6. Instituto de Sistemas Optoelectrónicos y Microtecnología (UPM), Madrid, Spain*

4:18

BD-13. PLD growth of nanometer-thick YIG films for damping compensation. O. d'Allivy Kelly[1], C. Hahn[3], V. Cros[1], R. Bernard[1], A. Molpeceres[1], P. Bortolotti[1], G. de Loubens[3], V. Naletov[3], O. Klein[3], N. Beaulieu[2], J. Ben Youssef[2], J.L. Prieto[4], M. Munoz[5] and *A. Anane*[1] *1. Unité Mixte de Physique CNRS/Thales and Universite Paris Sud, Plaiseau, France; 2. Université de Bretagne Occidentale, LMB-CNRS, Brest, France; 3. Service de Physique de l'Etat Condensé (CNRS URA 2464), CEA Saclay, Gif-sur-Yvette, France; 4. Instituto de Sistemas Optoelectrónicos y Microtecnología (UPM), Madrid, Spain; 5. Instituto de Microelectrónica de Madrid (CNM, CSIC), Madrid, Spain*

TUESDAY
AFTERNOON
1:30

SOUTH PACIFIC 1 & 2

Session BE
TUNNEL MAGNETORESISTANCE AND SPIN FILTERING

Richard Mattana, Chair

1:30

BE-01. Origin of Hanle-like Signals in 3-terminal Devices. ***(Invited)***
O. Txoperena[2], Y. Song[1], L. Qing[4], M. Gobbi[5], L.E. Hueso[2,3], H. Dery[1,4] and *F. Casanova*[2,3] *1. Department of Electrical and Computer Engineering, University of Rochester, Rochester, NY; 2. CIC nanoGUNE, Donostia-San Sebastian, Basque Country, Spain; 3. IKERBASQUE, Bilbao, Basque Country, Spain; 4. Department of Physics and Astronomy, University of Rochester, Rochester, NY; 5. Institut de Science et d'Ingénierie Supramoléculaires, Université de Strasbourg, Strasbourg, France*

2:06

BE-02. Bias-enhanced tunnel magneto-Seebeck effect. *A. Boehnke*[5], M. Minikel[3], M. Walter[4,3], V. Zbarsky[4,3], C. Franz[6], M. Czerner[6], K. Rott[5], A. Thomas[2,1], C. Heiliger[6], M. Münzenberg[4,3] and G. Reiss[5] *1. Physikalisches Institut, Johannes Gutenberg-Universität, Mainz, Germany; 2. Bielefeld University, Bielefeld, Germany; 3. I. Physikalisches Institut, Georg-August-Universität-Göttingen, Göttingen, Germany; 4. Institut für Physik, Ernst-Moritz-Arndt Universität, Greifswald, Germany; 5. Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany; 6. I. Physikalisches Institut, Justus-Liebig-Universität, Gießen, Germany*

2:18

BE-03. Spin-filtering by vacuum. *M. Eltschka*[1], B. Jäck[1], M. Assig[1], M. Etzkorn[1], C.R. Ast[1] and K. Kern[1,2] *1. Max Planck Institute for Solid State Research, Stuttgart, Germany; 2. Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland*

2:30

BE-04. Graphene Spin-Filtering Membranes for Magnetic Tunnel Junctions. *M. Martin*[1], B. Dlubak[1], R.S. Weatherup[2], H. Yang[1,3], C. Deranlot[1], K. Bouzehouane[1], F. Petroff[1], M. Anane[1], S. Hofmann[2], J. Robertson[2], A. Fert[1] and P. Seneor[1] *1. UMPhy CNRS/Thales & University Paris-Sud, Palaiseau, France; 2. Engineering Dept, University of Cambridge, Cambridge, United Kingdom; 3. Institute for Basic Sciences, SKKU University, Suwon, Republic of Korea*

2:42

BE-05. Spin Filtering in Ferromagnet / Multi-Layer Graphene Tunnel Junctions. *E. Cobas*[1], A.L. Friedman[1], O.M. van 't Erve[1], J.T. Robinson[1] and B.T. Jonker[1] *1. U.S. Naval Research Laboratory, Washington, DC*

2:54

BE-06. Spin Transfer Interfaces between Ferromagnetic Metal and Cu-phthalocyanine Molecular Films. *Y. Bae*[1], N. Lee[1], T. Kim[1], J. Wade[2], J. Kim[2] and E. Ito[3] *1. Department of Physics, Ewha Womans University, Seoul, Republic of Korea; 2. Department of Physics, Imperial College London, London, United Kingdom; 3. Flucto-Order Functions Research Team, RIKEN Advanced Science Institute, Wako, Japan*

3:06

BE-07. Tunneling anisotropic magnetoresistance in organic spin valves induced by spin dependent hybridization. S. Delprat[1], M. Galbiati[1], C. Barraud[1], S. Tatay[1], K. Bouzehouane[1], C. Deranlot[1], S. Boukari[2], M. Bowen[2], E. Beaurepaire[2], P. Seneor[1], *R. Mattana*[1] and F. Petroff[1] *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. IPCMS, Strasbourg, France*

3:18

BE-08. Tunneling (anisotropic) magnetoresistance controlled by antiferromagnet. *Y. Wang*[1], C. Song[1] and F. Pan[1] *1. Tsinghua University, Beijing, China*

3:30

BE-09. Tunneling Anisotropic Magnetoresistance with Half-Metallic Electrodes. *J.D. Burton*[1] and E.Y. Tsymbal[1] *1. Physics and Astronomy, University of Nebraska Lincoln, Lincoln, NE*

3:42

BE-10. Spin accumulation and detection in an isolated CoFe nanoparticle. *R.C. Temple*[1], B.J. Hickey[1] and C.H. Marrows[1] *1. University of Leeds, Leeds, United Kingdom*

3:54

BE-11. Spin-dependent transport properties of double quantum dots strongly coupled to ferromagnetic leads. *I. Weymann*[1] *1. Faculty of Physics, Adam Mickiewicz University, Poznan, Poland*

4:06

BE-12. A Comprehensive Modeling of GMI effect in Magnetic Thin Film Alloys by Employing Conventional Landau Lifshitz Gilbert Equation of Motion. *U. Kilic*[1,2] and C.G. Garcia[2,3] *1. Electrical Engineering Department, University of Nebraska-Lincoln, Lincoln, NE; 2. Department of Physics, Bogazici University, Istanbul, Turkey; 3. Departemanto De Fisica, Instituto Potosino de Investigación Científica y Tecnológica, Valparaíso, Chile*

4:18

BE-13. High Temperature Giant MagnetoImpedance in Co-based Nanocomposites. *M. Kurniawan*[1], P. Ohodnicki[1], D. Greve[2] and M.E. McHenry[1] *1. Materials Science Engineering, Carnegie Mellon, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon, Pittsburgh, PA*

Session BF
SINGLE MAGNETIC NANOPARTICLE PROPERTIES AND BATCH PROCESSING

Nicoleta Lupu, Chair

1:30

BF-01. Magnetoresistance and Switching of Single Nanoparticles and Nanopillars. ***(Invited)*** *S. Majetich*[1] *1. Carnegie Mellon University, Pittsburgh, PA*

2:06

BF-02. Magnetic properties of single sub 30 nm Pt/Co/Pt nanodots. *A. Neumann*[1], C. Thönnissen[1], A. Meyer[2] and H.P. Oepen[1] *1. Institut of Applied Physics, Universtiy of Hamburg, Hamburg, Germany; 2. Institut of Physical Chemistry, University of Hamburg, Hamburg, Germany*

2:18

BF-03. Dynamics of helical domain wall in cylindrical nanowires. *D. Wong*[1], M. Chandra Sekhar[1], W. Gan[1], I. Purnama[1], C. Guite[1] and W. Lew[1] *1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*

2:30

BF-04. Examination of the magnetism dynamics from intermixing effects in γ-Fe_2O_3/MnO core-shell nanoparticles. *E. Skoropata*[1], T. Su[2], H. Ouyang[2], J.W. Freeland[3] and J. van Lierop[1] *1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 3. Argonne National Laboratory, Argonne, IL*

2:42

BF-05. Thermally Activated Switching at Magnetic Nanocontacts. *Y. Xu*[1,2], S. Lepadatu[2], J. Wu[2,1] and D. Niu[1,2] *1. Nanjing University, Nanjing, Jiangsu, China; 2. York University, York, United Kingdom*

2:54

BF-06. Quantifying Thermal Fluctuations in Superparamagnetic Nanoparticles. S. Majetich[1], O. Hovorka[2] and *M. Matty*[1] *1. Carnegie Mellon University, Pittsburgh, PA; 2. Southampton University, Southampton, United Kingdom*

3:06

BF-07. Magnetic nanoparticles with triple-vortex state. *W. Gan*[1], D. Wong[1], Y. Yang[2], C. Murapaka[1], I. Purnama[1], J. Ding[2] and W. Lew[1] *1. Nanyang Technological University, Singapore, Singapore; 2. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

3:18

BF-08. Withdrawn

3:30

BF-09. Direct Chemical Synthesis of $L1_0$-FePtAu Nanoparticles with High Coercivity. *Y. Yu*[1,2], P. Mukherje[2], X. Li[2] and D. Sellmyer[2] *1. School of Materials Science and Engineering, Jilin University, Changchun, Jilin, China; 2. Nebraska Center for Materials and Nanoscience & Department of Physics and Astronomy, University of Nebraska Lincoln, Lincoln, NE*

3:42

BF-10. From core-shell to hollow Fe/γ-Fe_2O_3 nanoparticles: evolution of the magnetic behavior. Z. Nemati[1], H. Khurshid[1], J. Alonso Masa[1,2], M. Phan[1] and *H. Srikanth*[1] *1. Physics, University of South Florida, Tampa, FL; 2. BCMaterials, Derio, Vizcaya, Spain*

3:54

BF-11. Fabrication and magnetic anisotropy manipulation in FeN_4 nanoflakes. *Q. Wu*[1], Y. Li[1], Z. Qu[1], J. Chen[1], M. Xu[1] and M. Yue[1] *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*

4:06

BF-12. Effect of Hard Shell Coating of Silica and Gold on Iron Oxide Nanoparticles. L.E. Woodard[2], J. Borchers[1], *C. Dennis*[1], P. Searson[2], M. Pomper[2] and R. Ivkov[2] *1. NIST, Gaithersburg, MD; 2. Johns Hopkins University, Baltimore, MD*

4:18

BF-13. Size dependent magnetic coercivity behaviors of magnetic Fe_3O_4 nanoclusters. J. Lee[2], J. Cha[1], H. Yoon[2], J. Lee[1] and *Y. Kim**[2] *1. Department of Chemistry, Seoul National University, Seoul, Republic of Korea; 2. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea*

Session BG
TOPOLOGICAL INSULATORS AND RELATED MATERIALS

Tamalika Banerjee, Chair

1:30

BG-01. Tuning Dirac States in Topological Insulator Thin Films. ***(Invited)*** *V. Lazarov*[2], Y. Liu[1], D. Gilks[2], L. Lari[2], A. Ghasemi[2], D. Kepaptsoglou[3], Q. Ramasse[3], M. Guerrero-Lebrero[4], P. Galindo[4], M. Weinert[1] and L. Li[1] *1. Physics, University of Wisconsin-Milwaukee, Milwaukee, WI; 2. Physics, University of York, Heslington, United Kingdom; 3. SuperSTEM, Daresbury, United Kingdom; 4. Computer Science, University of Cadiz, Cadiz, Spain*

2:06

BG-02. Electrical detection of the spin polarized current due to spin-momentum locking in the surface state of the topological insulator $Bi_{1.5}Sb_{0.5}Te_{1.7}Se_{1.3}$. *Y. Ando*[1,2], T. Hamasaki[2], T. Kurokawa[2], F. Yang[3], M. Novak[3], S. Sasaki[3], K. Segawa[3], Y. Ando[3] and M. Shiraishi[1] *1. Kyoto University, Kyoto, Japan; 2. Osaka University, Toyonaka, Japan; 3. Osaka University, Suita, Japan*

2:18

BG-03. Carrier-independent ferromagnetism and giant anomalous Hall effect in vanadium doped topological insulator. *C. Chang*[1], W. Zhao[2], M. Chan[2] and J. Moodera[1,3] *1. Francis Bitter Magnetic Lab, MIT, Cambridge, MA; 2. The Center for Nanoscale Science and Department of Physics, Penn State University, University Park, PA; 3. Department of Physics, MIT, Cambridge, MA*

2:30

BG-04. Electrical Detection of Spin Polarized Currents in Topological Insulators at Room Temperature. *A. Dankert*[1], J.M. Geurs[1], V. Mutta[1] and S.P. Dash[1] *1. MC2, QDP, Chalmers University of Technology, Göteborg, Sweden*

2:42

BG-05. Electrical detection of spin-momentum locking in the topological insulator Bi_2Se_3. *E. de Vries*[1], A. Kamerbeek[1], N. Koirala[2], M. Brahlek[2], M. Salehi[2], S. Oh[2], B. van Wees[1] and T. Banerjee[1] *1. University of Groningen, Groningen, Netherlands; 2. Rutgers, State University of New Jersey, Piscataway, NJ*

2:54

BG-06. Spin-orbit torque induced magnetization switching in magnetically doped topological insulators. *Y. Fan**[1], P. Upadhyaya[1], X. Kou[1] and K. Wang[1] *1. Electrical Engineering, UCLA, Los Angeles, CA*

3:06

BG-07. Chern Half Metal: A New Class of Topological Materials to Realize the Quantum Anomalous Hall Effect. *J. Hu*[1] and R. Wu[1] *1. Physics and Astronomy, University of California, Irvine, Irvine, CA*

3:18

BG-08. Room Temperature Large Spin Hall Angle Characterized in Bi_2Se_3 Topological Insulator by Spin Pumping. *M. Jamali*[1], J.S. Lee[2], Y. Lv[1], Z. Zhao[1], N. Samarth[2] and J. Wang[1] *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Physics, The Pennsylvania State University, University Park, PA*

3:30

BG-09. Exchange coupling in Heterostructures of a Topological Insulator and a Ferromagnetic Insulator bi-layer revealed by Polarized Neutron Scattering. *V. Lauter*[1], F. Katmis[2], B.A. Assaf[3], D. Heiman[3], P. Jarillo-Herrero[2] and J.S. Moodera[2] *1. QCMD, Oak Ridge National Laboratory, Oak Ridge, TN; 2. Massachusetts Institute of Technology, Francis Bitter Magnet Lab, Cambridge, MA; 3. Northeastern University, Department of Physics, Boston, MA*

3:42

BG-10. Strongly enhanced spin current in topological insulator/ ferromagnetic metal heterostructures by spin pumping. *C. Wu*[1], Y. Lin[2], Y. Fanchiang[2], H. Hung[1], H. Lin[1], P. Lin[1], J.G. Lin[3], S. Lee[4], M. Hong[2] and J.R. Kwo[1] *1. Department of Physics, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Physics, National Taiwan University, Taipei, Taiwan; 3. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 4. Institute of Physics, Academia Sinica, Taipei, Taiwan*

3:54

BG-11. Magnetic Properties and Exchange Interactions in Rare-Earth Substituted $DyCrO_3$. *A. McDannald*[1] and M. Jain[2,3] *1. Material Science and Engineering, University of Connecticut, Norwich, CT; 2. Department of Physics, University of Connecticut, Storrs, CT; 3. Institute of Material Science, University of Connecticut, Storrs, CT*

4:06

BG-12. First-principles study of the magnetic properties of Fe_2TeO_6 towards increasing its Néel temperature. *S. Mu*[1] and K. Belashchenko[1] *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*

4:18

BG-13. $(Ba,Sr)Fe_{12}O_{19}$ hexaferrites: a new family of magnetic quantum paraelectrics. *Y. Sun*[1], S. Shen[1], Y. Chai[1], J. Cong[1], P. Sun[1], J. Lu[1], L. Yan[1] and S. Wang[1] *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

TUESDAY AFTERNOON 1:30

KAHILI 1 & 2

Session BH
BIOMEDICAL APPLICATIONS
Olga Kazakova, Chair

1:30

BH-01. Functionalized Magnetic Nanoparticles for Label-free Immunoassay. *C. Bala*[1], L. Zamfir[2] and N. Jaffrezic-Renault[3] *1. Department of Analytical Chemistry, University of Bucharest, Bucharest, Romania; 2. LaborQ, University of Bucharest, Bucharest, Romania; 3. Institute of Analytical Sciences, UMR CNRS 5280, University of Lyon, Lyon, France*

1:42

BH-02. Monodisperse Magnetofluorescent Nanoplatforms for Radio-Frequency-Heating and Local Temperature Sensing. H. Zhang[1], H. Huang[1], H. Xing[1], S. He[2], A. Pralle[1] and *H. Zeng*[1] *1. Department of Physics, University at Buffalo, SUNY, Buffalo, NY; 2. Physics, Capital Normal University, Beijing, China*

1:54

BH-03. $Ni_{80}Fe_{20}$ nanodisks by nanosphere lithography for biomedical applications. *P. Tiberto*[1], F. Celegato[1], G. Barrera[1], G. Conta[1], M. Coisson[1] and F. Vinai[1] *1. INRIM, Torino, Italy*

2:06

BH-04. Killing Cancer Cells by Nanomagnets. ***(Invited)*** *R. Cowburn*[1] *1. Department of Physics, University of Cambridge, Cambridge, United Kingdom*

2:42

BH-05. Cardiac immunoassay based on LaSrMnO nanoparticles. Y. Kim[1], *W. Ham*[1], M. Kim[3], J. Gim[1], J. Lee[1], J. Wu[2] and K. Lee[3] *1. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Republic of Korea; 3. Department of Biomedical Engineering, Korea University, Seoul, Republic of Korea*

2:54

BH-06. Controlled Formation of a Biocompatible Protein Corona on Magnetic Nanoparticles. *S. Dutz*[1], A. Weidner[1], F. von Eggeling[2], F.H. Schacher[2] and J.H. Clement[3] *1. Technische Universität Ilmenau, Ilmenau, Germany; 2. Friedrich Schiller Universität Jena, Jena, Germany; 3. Universitätsklinikum Jena, Jena, Germany*

3:06

BH-07. Characterization of magnetic moment distribution in low-concentrated solutions of iron oxide nanoparticles by high-T_c SQUID magnetometer. *M. Saari*[1], K. Sakai[1], T. Kiwa[1], T. Sasayama[2], T. Yoshida[2] and K. Tsukada[1] *1. Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan; 2. Department of Electrical and Electronic Engineering, Kyushu University, Fukuoka, Japan*

3:18

BH-08. Characterization of fluids via measurement of the rotational dynamics of suspended magnetic microdisc. *N. Garraud*[1] and D.P. Arnold[1] *1. Electrical and Computer Engineering, University of Florida, Gainesville, FL*

3:30

BH-09. Selective Navigating and Unclogging Motions of an Intravascular Helical Magnetic Microrobot Actuated by Hybrid External Rotating Magnetic Fields. *S. Jeon*[1], G. Jang[1], J. Nam[1] and S. Kim[1] *1. Dept of Mechanical Convergence Engineering, Hanyang University, Seoul, Republic of Korea*

3:42

BH-10. An Electromagnetic Guidance System of Magnetic Nanoparticles for Targeted Drug Delivery. J. Yoon[1], *Y. No*[1], M. Tehrani[2], T.D. Do[2] and M. Kim[3] *1. School of Mechanical and Aerospace Engineering, Gyeongsang National University, Jinju, GyeongNam, Republic of Korea; 2. Pioneer Research Center for Controlling Dementia by Converging Technology, Gyeongsang National University, Jinju, Republic of Korea; 3. Department of Biology and Applied of Life Science, Gyeongsang National University, Jinju, Republic of Korea*

3:54

BH-11. On-chip magnetic device for single particle manipulation and particle transit monitoring. *M. Monticelli*[1], D. Petti[1], E. Albisetti[1], A. Torti[1], M. Carminati[2], M. Sampietro[2] and R. Bertacco[1] *1. Physics, Politecnico di Milano, Como, Como (CO), Italy; 2. DEI, Politecnico di Milano, Milan, Italy*

4:06

BH-12. On-chip manipulation of magnetic nanoparticles for cellular mechanobiology. *E. Albisetti*[1], M. Monticelli[1], D. Petti[1], A. Torti[1], D. Parazzoli[2], M. Lupi[3] and R. Bertacco[1] *1. Physics, Politecnico di Milano, Como, Italy; 2. IFOM, Milan, Italy; 3. Istituto Mario Negri, Milano, Italy*

4:18

BH-13. MTJ-based platform for the detection of DNA pathogens in agrifood industries. *D. Petti*[1], E. Albisetti[1], P. Sharma[1], F. Damin[2], M. Cretich[2], M. Chiari[2] and R. Bertacco[1] *1. Physics, Politecnico di Milano, Como, Italy; 2. CNR- ICRM, Milano, Italy*

TUESDAY AFTERNOON 1:30

SEA PEARL 2-4

Session BI
INSTRUMENTATION AND MEASUREMENT TECHNIQUES

Josh Feinberg, Chair

1:30

BI-01. Conductive atomic force microscopy measurements of switching in sub-100 nm perpendicular magnetic tunnel junctions. *S.K. Piotrowski*[1], S. Oberdick[1], M. Li[2], C. Chien[2] and S. Majetich[1] *1. Carnegie Mellon University, Pittsburgh, PA; 2. Physics and Astronomy, Johns Hopkins University, Baltimore, MD*

1:42

BI-02. Spatially resolved evolution of magnetic order in a Fe film with periodically varying thickness. D.J. Erb[1], *K. Schlage*[1], L. Bocklage[1,3], R. Rüffer[2], H. Wille[1] and R. Röhlsberger[1,3] *1. Photon Science, Deutsches Elektronen-Synchrotron, Hamburg, Germany; 2. European Synchrotron Radiation Facility, Grenoble, France; 3. The Hamburg Centre for Ultrafast Imaging, Hamburg, Germany*

1:54

BI-03. Measuring the saturation magnetization of ultrathin films with sub-micron resolution using stray field mapping. *T. Hingant*[1], J. Tetienne[1], L.J. Martinez Rodriguez[1], J. Roch[1], K. Garcia[3], D. Ravelosona[3], G. Gaudin[2] and V. Jacques[1] *1. LAC, CNRS, ENS Cachan, Orsay, France; 2. INAC-SPINTEC, Université Grenoble Alpes, CNRS & CEA, Grenoble, France; 3. IEF, Université Paris Sud & CNRS, Orsay, France*

2:06

BI-04. The Frequency Domain FMR Linewidth Measurement by a TE_{10} Rectangular Transmission Cavity Perturbation Technique. *A.S. Sokolov*[1], Y. Chen[1] and V.G. Harris[1] *1. CM3IC, Northeastern University, Boston, MA*

2:18

BI-05. Comparing conventional and transport FORC: a $L1_0$ FeCuPt case study. *J.W. Lau*[1], D.A. Gilbert[2], V. Provenzano[1], K.B. Stritch[1], J. Liao[3], C. Lai[3] and K. Liu[2] *1. National Institute of Standards and Technology, Gaithersburg, MD; 2. Physics Department, University of California, Davis, CA; 3. Dept. of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

2:30

BI-06. Magnetic nanoparticle detection using domain wall-based nanosensor. *H. Corte-León*[1,2], P. Krzysteczko[3], H.W. Schumacher[3], A. Manzin[4], V. Antonov[2] and O. Kazakova[1] *1. TQEM, National Physical Laboratory, Teddington, United Kingdom; 2. Physics Department, Royal Holloway University of London, Egham, United Kingdom; 3. Nanomagnetism, PTB, Braunschweig, Germany; 4. Istituto Nazionale di Recerca Metrologica, Torino, Italy*

2:42

BI-07. Magnetization dynamics and topological crystal vortices in anti spin ice geometries nanopatterned on nickel thin film. *J.F. Felix*[1], I. Ribeiro[1], S. Ferreira[1], W. Moura-Melo[1], A. Pereira[1], L. Figueiredo[2], P.C. de Morais[2] and C. de Araujo[1] *1. Departamento de Física, Universidade Federal de Viçosa, Viçosa, Minas Gerais, Brazil; 2. Instituto de Física, Universidade de Brasília, Brasília, Distrito Federal, Brazil*

2:54

BI-08. Domain wall measurements with radially polarized light. *R. Dost*[1], D. Allwood[1] and I.G. Hughes[2] *1. Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 2. Department of Physics, Durham University, Durham, United Kingdom*

3:06

BI-09. An Instrument for X-ray Absorption Spectroscopy with In-situ Electrical Control Characterizations. *Y. Tseng*[1], S. Chang[1] and C. Huang[1] *1. Materials Science & Engineering, National Chiao Tung University, Hsinchu, Taiwan*

3:18

BI-10. Interface spin polarization in magnetic metal/Pt bilayers investigated by XRMR: Variation of photon energies and magnetic profile models. *C. Klewe*[1], T. Kuschel[1], J.M. Schmalhorst[1], M. Meinert[1], F. Bertram[2], E. Lundgren[2], O. Schuckmann[3], J. Wollschläger[3], J. Strempfer[4] and G. Reiss[1] *1. Department of Physics, Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany; 2. Division of Synchrotron Radiation Research, Lund University, Lund, Sweden; 3. Fachbereich Physik, Osnabrück University, Osnabrück, Germany; 4. Beamline P09, PETRA III, Deutsches Elektronen Synchrotron (DESY), Hamburg, Germany*

3:30

BI-11. High Pressure Studies on Magnetic Materials - Highlights from the SNAP Instrument at the SNS. *A.M. dos Santos*[1], C. Tulk[1] and J. Molaison[1] *1. Oak Ridge National Laboratory, Oak Ridge, TN*

3:42

BI-12. Nuclear Resonant Scattering at the Dynamics Beamline P01 at PETRA III - Brilliant opportunities to study magnetism in nano structures and materials under extreme conditions. *H. Wille*[1], K. Schlage[1], H. Yavas[1], D.J. Erb[1], T. Guryeva[1], L. Bocklage[1], I. Sergueev[1] and R. Röhlsberger[1] *1. FS-PE, Deutsches Elektronen-Synchrotron, Hamburg, Germany*

3:54

BI-13. Pushing the Limits of Ferromagnetic Resonance: Detection of Single sub-100-nm Nanodots. *K. Lenz*[1], A. Banholzer[1], R. Narkowicz[2], J. Grebing[1], S. Stienen[1], J. Lindner[1] and J. Fassbender[1] *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Department of Physics, Technische Universität Dortmund, Dortmund, Germany*

4:06

BI-14. Study of the magnetic behavior of the intermetallic compound $NdMn_2Ge_2$ by magnetic hyperfine field measurements. *B. Bosch-Santos*[1], A.W. Carbonari[1], G.A. Cabrera-Pasca[1], R.S. Freitas[2] and R.N. Saxena[1] *1. CRPq, IPEN/USP, Sao Paulo, Sao Paulo, Brazil; 2. Instituto de Física, Universidade de São Paulo, Sao Paulo, Sao Paulo, Brazil*

4:18

BI-15. Ferromagnetic resonance line width in magnetic films as a function of temperature. *K.M. Lebecki*[1] *1. Nanotechnology Centre, VSB-TU Ostrava, Ostrava-Poruba, Czech Republic*

Session BP
ENERGY-ASSISTED RECORDING II (Poster Session)

Kaizhong Gao, Chair

BP-01. Effect of MgO underlayer misorientation on the texture and magnetic property of FePt-C granular film. *J. Wang*[1], S. Hata[2], Y. Takahashi[1], H. Sepehri-Amin[1], B. Varaprasad[1], T. Shiroyama[1] and K. Hono[1] *1. National Institute for Materials Science (NIMS), Sengen 1-2-1, Tsukuba, Ibaraki 305-0047, Japan; 2. Department of Electrical and Material Science, Kyushu University, Kasuga, Fukuoka 816-8580, Japan*

BP-02. Molecular Dynamics Simulation of Thermal Transport Between FePt Grains in Heat Assisted Magnetic Recording. *R. Smith*[1], Q. Dai[1] and B. Marchon[1] *1. San Jose Research Center, HGST, a Western Digital Company, San Jose, CA*

BP-03. FePtC magnetic recording media with (200) textured MoC intermediate layer. *J. Tsai*[1], Y. Tseng[1], C. Li[1] and S. Fu[1] *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

BP-04. The Temperature and Electromagnetic Field Distributions of Heat-Assisted Magnetic Recording for Bit-Patterned Media at Ultrahigh Areal Density. K. Pituso[1], *A. Kaewrawang*[1], P. Buatong[1], A. Siritaratiwat[1] and A. Kruesubthaworn[2] *1. Electrical Engineering, Khon Kaen University, Khon Kaen, Thailand; 2. Faculty of Applied Science and Engineering, Khon Kaen University, Nong Khai, Thailand*

BP-05. Modelling of thermally assisted magnetic recording with the LLB equation and Brillouin functions. *S. Greaves*[1], Y. Kanai[2] and H. Muraoka[1] *1. RIEC, Tohoku University, Sendai, Japan; 2. Niigata Institute of Technology, Kashiwazaki, Japan*

BP-06. Characterization of Tc and σTc in FePt HAMR Media Using AC Magneto-Optical Kerr Effect. *O. Krupin*[1], A. Chernyshov[1], B. Livshitz[2], T. Le[1], K. Eason[2], A. Ajan[1] and R. Acharya[1] *1. Media Organization, Western Digital Corporation, San Jose, CA; 2. Advanced Technology Organization, Western Digital Corporation, San Jose, CA*

BP-07. Temperature-dependent domain-wall assisted reversal in $L1_0$ FePt based exchange spring magnets with soft magnetic layers of varied Curie temperature. J. Liao[1], U. Atxitia[2,3], D.A. Gilbert[4], B.J. Kirby[5], R.F. Evans[2], S. Liao[1], K. Liu[4], R.W. Chantrell[2] and *C. Lai*[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu city, Taiwan; 2. Department of Physics, The University of York, York, United Kingdom; 3. Departamento de Fisica de Materiales, Universidad del Pais Vasco, UPV/EHU, San Sebastian, Spain; 4. Physics Department, University of California, Davis, CA; 5. NIST center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD*

BP-08. A Hybrid Model for Media Layer Thermal Management in Heat Assisted Magnetic Recording. *S. Vemuri*[1], H. Kim[2,1], Y. Liu[1], P. Chung[1] and M.S. Jhon[1] *1. Chemical Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Mechanical System Engineering, Kyonggi University, Suwon, Suwon, Republic of Korea*

BP-09. Micromagnetic model analysis of integrated SPT head with tilted STO for high-frequency microwave-assisted magnetic recording. *T. Katayama*[1], Y. Kanai[1], K. Yoshida[2], S. Greaves[3] and H. Muraoka[3] *1. IEE, Niigata Institute of Technology, Kashiwazaki, Japan; 2. ICE, Kogakuin Univ., Tokyo, Japan; 3. RIEC, Tohoku Univ., Sendai, Japan*

BP-10. High track density recording of shingled magnetic recording combined with microwave-assisted magnetization reversal. *T. Tanaka*[2], S. Kashiwagi[2], Y. Kanai[1] and K. Matsuyama[2] *1. Niigata Institute of Thechnology, Kashiwazaki, Japan; 2. Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Fukuoka, Japan*

BP-11. Effect of capping layer on effective damping factor for CoPtCr-SiO_2 media with exchange coupled up- and downwardly magnetized domains. *S. Hinata*[1,2], S. Saito[1], M. Takahashi[1] and M. Sahashi[1] *1. Department of Electronic Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Japan Society for the Promotion of Science (PD), Chiyoda-ku, Tokyo, Japan*

BP-12. Micromagnetic model analysis of high-frequency thermally-assisted magnetic recording. *Y. Kanai*[1], S. Greaves[2], K. Yoshida[3] and H. Muraoka[2] *1. IEE, Niigata Institute of Technology, Kashiwazaki, Niigata-ken, Japan; 2. RIEC, Tohoku Univ., Sendai, Japan; 3. ICE, Kogakuin Univ., Tokyo, Japan*

BP-13. Experimental study on switching time of microwave-assisted magnetization reversal in 2 μm wide NiFe wires. *G. Okano*[1] and Y. Nozaki[1,2] *1. Department of Physics, Keio University, Yokohama, Kanagawa, Japan; 2. CREST-JST, Tokyo, Japan*

BP-14. Microwave assisted magnetization switching based on non-uniform precession mode in layered nanodot. *M. Furuta*[1], S. Okamoto[1], N. Kikuchi[1], O. Kitakami[1] and T. Shimatsu[2,3] *1. IMRAM, Tohoku University, Sendai, Japan; 2. FRIS, Tohoku University, Sendai, Japan; 3. RIEC, Tohoku University, Sendai, Japan*

TUESDAY AFTERNOON 2:30

CORAL 4 (POSTERS)

Session BQ
MAGNETIC MICROSCOPY I (Poster Session)

Peter Fischer, Co-Chair
Oleksandr Mosendz, Co-Chair

BQ-01. Spatial Resolution for Magnetic Domain Scope Method using Contact-scanning of TMR Sensor by Evaluating Magnetic Flux Distribution from Small Magnetic Domains in [Co/Pd] Nanowires. *Y. Miyamoto*[1,2], M. Okuda[1], E. Miyashita[1], N. Saito[1] and N. Hayashi[1] *1. Science & Technology Research Labs., NHK (Japan Broadcasting Corporation), Tokyo, Japan; 2. Advanced R&D Dept., NHK Engineering System, Inc., Tokyo, Japan*

BQ-02. Nitrogen Vacancy scanning magnetometry. *T. Hingant*[1], J. Tetienne[1], L.J. Martinez Rodriguez[1], J. Roch[1] and V. Jacques[1] *1. Laboratoire Aimé Cotton, CNRS, ENS Cachan, Orsay, France*

BQ-03. Pulse field applied magnetic force microscopes and evaluation of tip magnetic properties. *Y. Zheng*[1], S. Yoshimura[1], G. Egawa[1], F. Zheng[2], Y. Kinoshita[2] and H. Saito[1] *1. Research Center for Engineering Science, Graduate School of Engineering and Resource Science, Akita University, Akita 010-8502, Japan; 2. Venture Business Laboratory, Akita University, Akita 010-8502, Japan*

BQ-04. Direct identification of individual magnetic nanoparticles by frequency-modulated magnetic force microscopy. *X. Li*[1,2], W. Lu[4], Z. Li[3], D. Pan[1], S. Yoshimura[2] and H. Saito[2] *1. School of Materials Science and Engineering, University of Shanghai for Science and Technology, Shanghai, China; 2. Research Center for Engineering Science, Graduate School of Engineering & Resource Science, Akita University, Akita, Japan; 3. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, China; 4. School of Materials Science and Engineering, Tongji University, Shanghai, China*

BQ-05. Near-contact magnetic field imaging of hard magnetic FePt films by alternating magnetic force microscopy with high-susceptibility superparamagnetic Ag-Co tip. S. Nakayama[1], G. Egawa[1], Y. Kinoshita[2], S. Yoshimura[1] and *H. Saito*[1]
1. Graduate School of Engineering and Resource Science, Akita University, Akita, Japan; 2. Venture Business Laboratory, Akita University, Akita, Japan

BQ-06. Magnetic domain quantification in $La_{0.7}Sr_{0.3}MnO_3$ poly-crystalline films using magnetic force microscopy (MFM). *Z. Li*[1], X. Li[2], W. Lu[3], D. Liu[1] and H. Saito[4] *1. Dalian Nationalities University, Liaoning Key Lab of Optoelectronic Films & Materials, School of Physics and Materials Engineering, Dalian, Liaoning, China; 2. School of Materials Science and Engineering, University of Shanghai for Science and Technology, Shanghai, China; 3. School of Materials Science and Engineering, Shanghai Key Laboratory of D&A for Metal-Functional Materials, Tongii University, Shanghai, China; 4. Research Center for Engineering Science, Graduate School of Engineering & Resource Science, Akita University, Akita, Japan*

BQ-07. Quantitative and parallel magnetometry of multiple individual nanoparticles with ultrathin Co/Pt magneto-optical indicator films. *A.L. Balk*[1,2], C. Hangarter[3], S.M. Stavis[1] and J. Unguris[1] *1. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 2. Maryland Nanocenter, University of Maryland, College Park, MD; 3. Materials Science and Engineering Division, Material Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD*

BQ-08. Imaging of magnetic nanoparticles using multiple Electron Paramagnetic Resonance activation sequences. *A. Coene*[1], G. Crevecoeur[1] and L. Dupré[1] *1. Department of Electrical Energy, Systems and Automation, Ghent University, Ghent, Belgium*

BQ-09. Reconstruction of Magnetic Domain Structure Using the Reverse Monte Carlo Method with an Extended Fourier Image. *M. Tokii*[1], E. Kita[1], C. Mitsumata[2], K. Ono[3], H. Yanagihara[1] and M. Matsumoto[1] *1. Univ. of Tsukuba, Tsukuba, Japan; 2. National Institute for Materials Science, Tsukuba, Japan; 3. High Energy Accelerator Research Organaization, Tsukuba, Japan*

BQ-10. Employing Hermite Gaussian beams to probe magnetic materials at atomic resolution. *J.J. Chess*[1], T.R. Harvey[1], J. Pierce[1] and B.J. McMorran[1] *1. Physics, University of Oregon, Eugene, OR*

BQ-11. X-ray Imaging of Supercurrents in YBCO. *C. Stahl*[1], S. Ruoss[1], M. Weigand[1], P. Audehm[1], J. Gräfe[1], E.J. Goering[1], J. Albrecht[2] and G. Schütz[1] *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany, Stuttgart, Germany; 2. Institute for Innovative Surfaces, Aalen University, 73430 Aalen, Germany*

BQ-12. Shadow XMCD-PEEM: high-resolution experiments of 3D domain walls and development of a simulation tool.
S. Jamet[1,2], S. Da Col[1,2], N. Rougemaille[1,2], A. Locatelli[3], T. Mentes[3], B. Santos Burgos[3], R. Afid[1,2], L. Cagnon[1,2], J. Toussaint[1,2] and O. Fruchart[1,2] *1. Institut Neel, CNRS, Grenoble, France; 2. Universite Joseph Fourier, CNRS, Grenoble, France; 3. Elletra- Sincrotrone Trieste, Trieste, Italy*

BQ-13. Quantitative XMCD mapping with high spatial resolution full-field magnetic transmission soft x-ray spectro-microscopy.
M.J. Robertson[2,4], A.T. N'Diaye[1], G. Chen[6], M. Im[2,5] and P. Fischer[2,3] *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Physics Department, University of California, Santa Cruz, CA; 4. Physics Department, University of California, Berkeley, CA; 5. Daegu Gyeongbuk Institute of Science and Technology, Daegu, Republic of Korea; 6. National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, Berkeley, CA*

BQ-14. Microscopic origin of asymmetric magnetization reversal of Co/Pt multilayers with perpendicular magnetic anisotropy.
D. Quach[1], D. Handoko[1], S. Lee[1] and D. Kim[1] *1. Department of Physics, Chungbuk National University, Cheongju, Chungbuk, Republic of Korea*

BQ-15. The construction of a super-resolution magneto-optical Kerr microscope working at extreme conditions.
W. Guan[1], A. Huxley[1] and J. Cole[1] *1. School of Physics and Astronomy, University of Edinburgh, Edinburgh, United Kingdom*

BQ-16. Development of *in-situ* optical observation devices utilizable under high magnetic fields.
N. Hirota[1], H. Okada[1], T. Ode[2], A. Nakamura[3], J. Ohtsuka[3], M. Kiyohara[2], M. Tanokura[3] and H. Wada[1,3] *1. National Institute for Materials Science, Tsukuba, Japan; 2. Kiyohara Optics, Tokyo, Japan; 3. Univ. of Tokyo, Tokyo, Japan*

TUESDAY AFTERNOON 2:30

CORAL 4 (POSTERS)

Session BR
MAGNETIC SENSORS BEYOND RECORDING (Poster Session)

Joseph Davies, Chair

BR-01. Great Enhancement of Energy Harvesting Properties of Piezoelectric/magnet Composites by the Employment of Magnetic Concentrator.
J. Han[1], J. Hu[1], S. Wang[1,2] and J. He[1] *1. Dept. of Electrical Engineering, Tsinghua University, Beijing, Beijing, China; 2. Center for Magnetic Nanotechnology, Stanford University, Palo Alto, CA*

BR-02. Extremely sensitive magnetic field sensor based on the ferromagnetic resonance of magnetic crystals. *H. Piao*[1,2], J. Shim[2], L. Pan[1] and D. Kim[2] *1. School of Science, China Three Gorges University, Yichang, Hubei, China; 2. Physics, Chungbuk National University, Cheongju, Chungbuk, Republic of Korea*

BR-03. Enhancement of impedance change at low frequencies in a thin-film magnetoimpedance element. *S. Kamata*[1], H. Kikuchi[1], T. Nakai[2], S. Hashi[3] and K. Ishiyama[3] *1. Faculty of Engineering, Iwate University, Morioka, Iwate, Japan; 2. Industrial Technology Institute, Miyagi Prefectural Government, Sendai, Miyagi, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan*

BR-04. Magnetoelectric and electromagnetic composite vibration energy harvester for wireless sensor networks. *J. Qiu*[1], H. Chen[1], Y. Wen[1], P. Li[1] and J. Yang[2,1] *1. College of Optoelectronic Engineering, Chongqing University, Chongqing, Chongqing, China; 2. Material Science Engineering, Georgia Institute of Technology, Atlanta, GA*

BR-05. High Sensitivity Magnetic Tunnel Junction Sensors with Double Pinned Synthetic Antiferro-coupled Layers. Z. Yuan[1], L. Huang[1], J. Feng[1], *X. Han*[1], T. Nakano[2], T. Yu[2] and H. Naganuma[2] *1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, Beijing, China; 2. Department of Applied Physics, Tohoku University, Sendai, Japan*

BR-06. Effect of MgO thickness and bias voltage polarity on frequency response of tunneling magnetoresistance sensors with perpendicular anisotropy. *M. Dabek*[1], P. Wisniowski[1], T. Stobiecki[1], S. Cardoso[2] and P. Freitas[2] *1. Electronics, AGH University of Science and Technology, Krakow, Poland; 2. Institute of Nanoscience and Nanotechnology, Lisbon, Portugal*

BR-07. A refractometric sensor based on magneto-optical Goos-Hänchen effect. T. Tang[1,2], J. Qin[1], *X. Wang*[1], J. Xie[1], L. Deng[1] and L. Bi[1] *1. National Engineering Research Center of Electromagnetic Radiation Control Materials, University of Electronic Science and Technology of China, Chengdu, Sichuan, China; 2. College of Optoelectronic Technology, Chengdu University of Information Technology, Chengdu, Sichuan, China*

BR-08. PicoTesla Magnetic field sensing based on low noise magentic tunnel junction sensor. *X. Yin*[1] and S. Liou[1] *1. Physics, University of Nebraska-Lincoln, Lincoln, NE*

BR-09. Measurement Method for Internal Defects in Aluminum Using a Nano-granular In-gap Magnetic Sensor. *T. Ozawa*[1], S. Yabukami[1], J. Totsuka[2], S. Koyama[2], J. Hayasaka[3], N. Wako[3] and K. Arai[3] *1. Department of Engineering, Tohoku Gakuin University, Tagajo-city, Miyagi-Pref., Japan; 2. Research & Development Center, Daido Steel Co., Ltd., Nagoya-city, Japan; 3. Research Institute for Electromagnetic Materials, Sendai-city, Japan*

BR-10. Temperature dependence of magnetoresistance in magnetic tunnel junction with CoFeB sensing layer capped with MgO film for sensor applications. *Y. Tsuzaki*[1], T. Takenaga[1], C. Yoshida[1], Y. Yamazaki[1], A. Hatada[1], M. Nakabayashi[1], Y. Iba[1], A. Takahashi[1], H. Noshiro[1], K. Tsunoda[1], M. Aoki[1], T. Furukawa[1], Y. Yoshida[1], T. Satake[1] and T. Sugii[1] *1. Low-power Electronics Association & Project, Tsukuba, Ibaraki, Japan*

BR-11. Magnetic tunnel junction based out-of-plane field sensor with perpendicular magnetic anisotropy in reference layer. C. Chao[1], Y. Lee[1], L. Horng[1], T. Wu[2], C. Chang[3] and *J. Wu*[1] *1. Physics, National Changhua University of Education, Changhua, Taiwan; 2. Taiwan SPIN Research Center, National Yunlin University of Science and Technology, Yunlin, Taiwan; 3. Physics, National Taiwan University, Taipei, Taiwan*

BR-12. The Influence of High External Electric Field on GMR Current Sensors. *G. Zhao*[1], J. Hu[1], Y. Ouyang[1], S. Wang[2] and J. He[1] *1. Dept. of Electrical Engineering, Tsinghua University, Beijing, Beijing, China; 2. Center for Magnetic Nanotechnology, Stanford University, Palo Alto, CA*

BR-13. Interaction between HFC-type thin film magnetic sensor and small particle with subjecting to strong normal field. *T. Nakai*[1], Y. Miura[2] and K. Ishiyama[3] *1. Industrial Technology Institute, Miyagi Prefectural Government, Sendai, Miyagi, Japan; 2. JNS. Co., Ltd., Natori, Miyagi, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan*

BR-14. Tri-axis magnetometer with in-plane GMR sensors for compass application. *C. Chiang*[1], J. Jeng[1] and C. Lu[2] *1. Department of Mechanical Engineering, National Kaohsiung University of Applied Sciences, Kaohsiung, Taiwan; 2. Institute of Mechatronics Engineering, National Taipei University of Technology, Taipei, Taiwan*

BR-15. High sensitivity zero-bias multi-phase magnetoelectric sensor based on nanocrystalline soft magnetic alloy. H. Chen[1], *J. Qiu*[1], Y. Wen[1] and P. Li[1] *1. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*

Session BS
MULTIFERROICS II
(Poster Session)

John Burton, Chair

BS-01. Novel magnetic and ferroelectric orders in $Gd_{1/2}Na_{1/2}TiO_3$ under lattice strain: First-principles calculations. P. Zhou[1], S. Dong[2], *Y. Xie*[1], Z. Yan[1], X. Zhou[1] and J. Liu[1] *1. Laboratory of Solid State Microstructures, Nanjing University, Nanjing, Jiangsu Province, China; 2. Department of Physics, Southeast University, Nanjing, Jiangsu Province, China*

BS-02. Room-temperature ferromagnetism in Fe-doped wide band gap ferroelectric $Bi_{0.5}K_{0.5}TiO_3$ nanocrystals. D. Dung[1], D. Thiet[1], D. Cuong[2], O. Dorj[1] and *S. Cho*[1] *1. Department of Physics, University of Ulsan, Ulsan, Republic of Korea; 2. University of Engineering and Technology, Laboratory for Micro-Nano Technology, Ha Noi, Vietnam*

BS-03. Study on electric structure and magnetic properties of $BiFeO_3/CoFe_2O_4$ thin film. J. Chen[1], W. Jiang[1] and *W. Wang*[1] *1. Shenyang University of Technology, Shenyang, China*

BS-04. Control of charge transport and magnetic interactions of epitaxial gallium ferrite thin films by doping additional cobalt ions. *S. Oh*[1], R. Shin[1], C. Lefevre[2,3], F. Roulland[3], A. Thomasson[3], C. Meny[3], D. Kim[4], J. Kim[4,5], W. Jo[1] and N. Viart[3] *1. Department of Physics, Ewha Womans University, Seoul, Republic of Korea; 2. CNRS-EWHA International Research Center, Ewha Womans University, Seoul, Republic of Korea; 3. Institute of Physics and Chemistry of Materials of Strasbourg, UMR 7504 University of Strasbourg-CNRS, Strasbourg, France; 4. Department of Physics, Pohang University of Science and Technology, Pohang, Republic of Korea; 5. Pohang Accelerator Laboratory, Pohang University of Science and Technology, Pohang, Republic of Korea*

BS-05. Multiferroic properties of stretchable $BiFeO_3$ nanocomposite film. *J. Hwang*[1], J. Cho[2], Y. Yoo[1], S. Park[2] and Y. Lee[1] *1. Physics, Hanyang University, Seoul, Republic of Korea; 2. Nano-Bio Convergence Research Center, Advanced Institutes of Convergence Technology, Seoul National University, Suwon, Republic of Korea*

BS-06. Multiferroicity in epitaxial orthorhombic $HoMnO_3$ thin films. *T. Han*[1], Y. Liu[1] and J.G. Lin[2] *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan*

BS-07. Effect of Ba substitution on the multiferroic properties of $BiFeO_3$ films on glass substrates. *H.W. Chang*[1], K. Tu[1], S. Tu[1], C. Wang[1], C. Tu[2] and S. Jen[3] *1. Department of Applied Physics, Tunghai University, Taichung, Taiwan; 2. Department of Physics, Fu Jen Catholic University, Taipei, Taiwan; 3. Institute of Physics, Academia Sinica, Taipei, Taiwan*

BS-08. Magnetic anisotropy induced by structural texture in $BiFeO_3$ PLD thin films deposited over Si substrates. *G. Gomez-Iniarte*[4], D. Moreira de Souza[4], L.S. de Oliveira[3], A. Mello[4], L. Steren[1], S. Carreira[1], A. Penton-Madrigal[2] and J. Sinnecker[4] *1. Centro Atómico Constituyentes, Comisión Nacional de Energía Atómica, Buenos Aires, Buenos Aires, Argentina; 2. Facultad de Física, Universidad de la Havana, La Habana, La Habana, Cuba; 3. Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 4. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, RJ, Brazil*

BS-09. Exchange coupling in multiferroic Fe_2O_3 - $BaTiO_3$ composites. *Y. Chen*[1] and J.G. Lin[1] *1. Center for Condensed Matter Sciences, National Taiwain University, Taipei, Taiwan*

BS-10. Temperature dependent exchange bias training effect in single-crystalline $BiFeO_3$/Co bilayer. M. He[1], H. Tu[1], B. You[1], Y. Sheng[2], W. Rui[1], Y. Gao[1], Y. Zhang[1], Q. Xu[2] and *J. Du*[1] *1. Department of Physics, Nanjing University, Nanjing, China; 2. Department of Physics, Southeast University, Nanjing, China*

BS-11. Texture control of multiferroic $BiFeO_3$ polycrystalline films on glass substrates with various metal electrode underlayers. *H.W. Chang*[1], P. Chen[1], Y. Yu[1], P. Lin[1], C. Wang[1] and S. Jen[2] *1. Department of Applied Physics, Tunghai University, Taichung, Taiwan; 2. Institute of Physics, Academia Sinica, Taipei, Taiwan*

BS-12. Effect of strain on voltage-controlled magnetism in BiFeO3-based heterostructures. *J. Wang*[1], J. Hu[1,2], T. Yang[2], M. Feng[1], J. Zhang[3], L. Chen[2,1] and C. Nan[1] *1. Material Science, Tsinghua University, Beijing, China; 2. Material Science and Engineering, The Pennsylvania State University, State College, PA; 3. Physics, Beijing Normal University, Beijing, China*

BS-13. Magnetoelectric Coupling in FeGaB/PIN-PMN-PT Multiferroic Heterostructures for High-Power and High-Temperature Applications. *Z. Hu*[1], X. Wang[1], T. Nan[1], Y. Gao[1], M. Staruch[2], P. Finkel[2] and N.X. Sun[1] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. U.S. Naval Research Laboratory, Washington, DC*

BS-14. Exchange bias in polycrystalline multiferroic heterostructures. *S. Wu*[1], S. Yin[1], Y. Wu[1], X. Xu[1] and Y. Jiang[1] *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China*

BS-15. Magnetic, dielectric and magnetoelectric properties in $Sr_2CoGe_2O_7$. Y.Q. Song[1], W. Zhou[1], Y. Fang[1], L. Wang[1], *D. Wang*[1] and Y. Du[1] *1. Physics, Nanjing University, Nanjing, China*

BS-16. Tunable ferromagnetic, ferroelectric and magnetodielectric coupling in epitaxial Bi_2NiMnO_6 double perovskite thin films. *G.A. Basheed*[1], A. Anshul[1], A. Gupta[1], R. Pant[1] and R. Kotnala[1] *1. Physics, CSIR-National Physical Laboratory, New Delhi, India*

TUESDAY AFTERNOON 2:30

CORAL LOUNGE (POSTERS)

Session BT
FERRITES AND GARNETS II
(Poster Session)

Yaije Chen, Co-Chair
Xiaoming Kou, Co-Chair

BT-01. Hybrid Absorbers Composed of Fe_3O_4 Thin Film and Magnetic Composite Sheet and Enhancement of Conduction Noise Absorption on a Microstrip Line. *S. Kim*[1] *1. Department of Advanced Materials Engineering, Chungbuk National University, Cheongju, Republic of Korea*

BT-02. Nanocrystalline zinc ferrite films studied by magneto-optical spectroscopy. *E.L. Jakubisova*[1], S. Visnovsky[1], P. Siroky[2], D. Hrabovsky[2], J. Pistora[2], S.C. Sahoo[3], S. Prasad[4], M. Bohra[6], N. Venkataramani[5] and R. Krishnan[7] *1. Faculty of Mathematics and Physics, Charles University in Prague, Prague, Czech Republic; 2. Nanotechnology Center, Technical University of Ostrava, Ostrava - Poruba, Czech Republic; 3. Department of Physics, Central University of Kerala, Kerala, India; 4. Department of Physics, Indian Institute of Technology Bombay, Mumbai, India; 5. Department of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, Mumbai, India; 6. Okinawa Institute of Science and Technology, Graduate University (OIST), Okinawa, Japan; 7. Groupe d'Etude de la Matière Condensée (GEMaC), CNRS-UVSQ, Versailles, France*

BT-03. High-frequency properties of oriented hcp-$Co_{1-x}Ir_x$ ($0.06 \le x \le 0.24$) soft magnetic films. *F. Xu*[1], S. Zhang[1], D. Yang[1], T. Wang[1] and F. Li[1] *1. Key Laboratory of Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, Lanzhou, China*

BT-04. Optical spectroscopy of sputtered yttrium iron garnet nanometer films. *E.L. Jakubisova*[1], S. Visnovsky[1], H. Chang[2] and M. Wu[2] *1. Faculty of Mathematics and Physics, Charles University in Prague, Prague, Czech Republic; 2. Department of Physics, Colorado State University, Fort Collins, CO*

BT-05. Chemical epitaxial growth and ferromagnetic properties of nm-thick single crystal yttrium iron garnet films. *L. Jin*[1,2], D. Zhang[3], H. Zhang[1], X. Tang[1], Z. Zhong[1], X. Fan[2] and J. Xiao[2] *1. Microelectronics and Solid-State Electronics, University of Electronic Science and Technology of China, Chengdu, China; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE; 3. Department of Electrical and Computer Engineering, University of Delaware, Newark, DE*

BT-06. Magneto-optical properties of nano-crystalline cubic and tetragonal copper ferrite thin films. *M. Kucera*[1], P. Brom[1], S. Visnovsky[1], P.D. Kulkarni[2], S. Prasad[2] and N. Venkataramani[2] *1. Charles University, Prague, Czech Republic; 2. Indian Institute of Technology, Bombay, India*

BT-07. Magnetization Reversal in Epitaxial Highly Anisotropic $CoFe_2O_4$ Hetero-structures. *A. Lisfi*[1], S. Pokharel[1], L. Salamanca-Riba[2] and M. Wuttig[2] *1. Physics, Morgan State University, Baltimore, MD; 2. Materials Science and Engineering, University of Maryland, College Park, MD*

BT-08. Thickness Dependence of Unipolar Resistive Switching in Spin-coated Cobalt Ferrite Thin Films. *C. Liu*[1], M. Mustaqima[1], M. Lee[1], B. Lee[1] and D. Kim[1] *1. Physics, Hankuk Univ of Foreign Studies, Yongin, Republic of Korea*

BT-09. Electrical control of two types of resistive switching effect in NiZn ferrite film. C. Dong[1], C. Jiang[1] and *D. Xue*[1] *1. Key Laboratory for Magnetism and Magnetic Materials of MOE, Lanzhou, China*

BT-10. Morphology and Magnetic Properties of Magnetite Nanodot Arrays using Template-Assisted Epitaxial Growth. X. Guan[1], D. Chen[1], Z. Quan[1], F. Jiang[1], Y. Qi[1], X. Qin[1], G. Gehring[2] and *X. Xu*[1] *1. Shanxi Normal University, Linfen, Shanxi, China; 2. University of Sheffield, Sheffield, United Kingdom*

BT-11. Magnetic and microwave properties of c-axis oriented M type barium ferrite thin films by Sol-gel method. Y. Liu[1], D. Chen[1], Y. Wang[1], K. Yang[1], Y. Wang[1] and *H. Zhang*[1] *1. School of Microelectronics and Solid-State Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

BT-12. Unexpected strain and rotated magnetic anisotropy in ultrathin epitaxial magnetite films grown on strontium titanate. *O. Schuckmann*[3], T. Schemme[3], N. Pathe[3], F. Bertram[1], T. Kuschel[2], K. Kuepper[3] and J. Wollschläger[3] *1. Division of Synchrotron Radiation Research, Lund University, Lund, Sweden; 2. Department of Physics, Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany; 3. Physics Department, Osnabrück University, Osnabrück, Germany*

BT-13. Ferromagnetic Resonance Study of Si/NiO/NiFe Films with Different Orientations of NiO Bufferlayers. K. Sun[1], *Y. Yang*[2], Z. Yu[1], Y. Zeng[1], X. Jiang[1], Z. Lan[1], R. Guo[1] and C. Wu[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 2. Department of Communication Engineering, Chengdu Technological University, Chengdu, China*

BT-14. Electric field tunability of microwave soft magnetic properties of Co_2FeAl Heusler alloy film. *S. Li*[1], J. Xu[1], Q. Xue[1], H. Du[1], C. Chen[1], R. Yang[1], S. Xie[1], M. Liu[2], T. Nan[3], N.X. Sun[3] and J. Duh[4] *1. College of Physics Science, Qingdao University, Qingdao, Shandong, China; 2. Electronic Materials Research Laboratory, Xi'an Jiaotong University, Xi'an, Shanxi, China; 3. Electrical and Computer Engineering Department, Northeastern University, Boston, MA; 4. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

BT-15. Microwave and magnetic properties of Al-doped M-type barium ferrite thick films by tape casting. D. Chen[1,2], Y. Liu[3], Y. Li[3], Y. Wang[3], J. Li[3] and *H. Zhang*[3] *1. Institute of Electronic and Information Engineering in Dongguan, University of Electronic Science and Technology of China, Dongguan, Guangdong, China; 2. Center for Magnetism and Magnetic Nanostructures, University of Colorado at Colorado Springs, Colorado Springs, CO; 3. State Key Laboratory of Electronic Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

BT-16. Frequency dependent FMR studies of epitaxial YIG thin films grown by RF magnetron sputtering. *B. Bhoi*[1], T. Garg[2], N. Venkataramani[2], S. Prasad[3], R. Aiyar[1] and M. Kostylev[4] *1. Center for Research in Nanotechnology and Science, Indian Institute of Technology Bombay, Mumbai, Maharastra, India; 2. Department of Metallurgical Engineering & Materials Science, IIT Bombay, Mumbai, Maharashtra, India; 3. Department of Physics, IIT Bombay, Mumbai, Maharashtra, India; 4. School of Physics, The University of Western Australia, Perth, WA, Australia*

Session BU
HARD MAGNETS: MATERIALS AND PROCESSING I (Poster Session)

June Cui, Co-Chair
Chiharu Mitsumata, Co-Chair

BU-01. $PrCo_5$ Nanoflakes Prepared by Surfactant-Assisted Ball Milling at Low Temperatures. *F. Wang*[1,2], L. Liu[1,2], J. Zhang[1,2], J. Du[1,2], W. Xia[1,2], A. Yan[1,2] and J. Liu[3] *1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 3. Department of Physics, University of Texas at Arlington, Arlington, TX*

BU-02. Improving magnetization of high coercivity $SrFe_{10}Al_2O_{19}$ ferrite via surfactant - assisted synthesis. *D. Neupane*[1], L. Wang[1], S. Mishra[1], N. Paudyal[2] and P. Liu[2] *1. Physics, University of Memphis, Memphis, TN; 2. Physics, University of Texas at Arlinton, Arlington, TX*

BU-03. Microstructure and thermal stability of bulk nanocrystalline $Pr_2(Fe,Co)_{14}B/PrCo_5$ composite magnet prepared by SPS. *C. Wang*[1], D. Zhang[1], M. Yue[1], W. Liu[1] and J. Zhang[1] *1. Materials Science and Engineering, Beijing University of Technology, Beijing, China*

BU-04. Effects of La substitution on the microstructures and intrinsic magnetic properties of Nd-Fe-B alloy. *Z. Li*[1], W. Liu[1], S. Zha[1], Y. Li[1], Y. Wang[1], D. Zhang[1] and M. Yue[1] *1. Beijing University of Technology, Beijing, China*

BU-05. Novel particle-coating techniques to reduce oxidation in jet-milled Nd-Fe-B powder. *B. Podmiljsak*[1], P.J. McGuiness[1] and S. Kobe[1] *1. Jozef Stefan Institute, Ljubljana, Slovenia*

BU-06. Reuse treatment of waste Nd-Fe-B sintered magnets by grain boundary diffusion with DyH_3 nano-particles. *W. Ji*[1], W. Liu[1], M. Yue[1] and D. Zhang[1] *1. Material Science and Technology, Beijing University of Technology, Beijing, China*

BU-07. Structure and magnetic properties of anisotropic nanocrystalline $PrCo_5$ magnet prepared by hot deformation method. *D. Zhang*[1], C. Wang[1], M. Yue[1], W. Liu[1], J. Zhang[1], J. Sundararajan[2] and Y. Qiang[2] *1. College of Science and Engineering, Beijing University of Technology, Beijing, China; 2. Department of Physics, University of Idaho, Moscow, ID*

BU-08. The morphology and magnetic properties of barium ferrites prepared via sol-gel process. *K. Liu*[1], J. Du[1], J. Zhang[1], W. Xia[1], A. Yan[1] and J. Liu[2] *1. Ningbo Institute of Materials Technology and Engineering, CAS, Ningbo, China; 2. University of Texas at Arlington, Arlington, TX*

BU-09. The phase and microstructure analysis of AlNiCo magnets with high coercivity. *J. Zhao*[1] *1. Magnetic Department, Ningbo Institute of Material Technology and Engineering, Ningbo, Zhejiang, China*

BU-10. Structural and magnetic properties of M-Ti (M=Zn^{2+} or Ni^{2+}) co-substituted M-type barium ferrite by a novel sintering process. *J. Li*[1,2] and H. Zhang[1] *1. University of Electronic Science and Technology of China, Cheng Du, Sichuan Province, China; 2. School of Mechanical and Chemical Engineering, University of Western Australia, Perth, WA, Australia*

BU-11. Fabrication of High-Quality $Nd_2Fe_{14}B$ Thin Films by Using UHV Multi-Cathode Sputtering System. *D. Ogawa*[1], K. Koike[1], Y. Mizuno[1], T. Miyazaki[2], Y. Ando[2] and H. Kato[1] *1. Graduate School of Science and Engineering, Yamagata University, Yonezawa, Yamagata, Japan; 2. Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

BU-12. Magnetic properties of Ta/NdFeB core-shell microwires. *P. Szary*[2], I. Luciu[1], D. Duday[1], E.A. Perigo[2], T. Wirtz[1] and A. Michels[2] *1. Science and Analysis of Materials (SAM), Centre de Recherche Public – Gabriel Lippmann, Belvaux, Luxembourg; 2. Physics and Materials Science Research Unit, University of Luxembourg, Luxembourg, Luxembourg*

BU-13. Analysis of Local Magnetocrystalline Anisotropy of Hard Magnetic Materials. *D. Hirai*[1], S. Tsuneyuki[1,2] and Y. Gohda[1,3] *1. The University of Tokyo, Tokyo, Japan; 2. ISSP, The University of Tokyo, Tokyo, Japan; 3. Tokyo Institute of Technology, Kanagawa, Japan*

BU-14. Enhanced temperature stability of coercivity in sintered permanent magnet by substitution of Ce for didymium. *C. Yan*[1], L. Cai[1], S. Guo[1], G. Ding[1], R. Chen[1], J. Liu[1], D. Lee[1] and A. Yan[1] *1. Ningbo Insitute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

BU-15. Novel Pre-Alloyed Powder Processing and Alloy Modification of Alnico 8: Correlation of Microstructure and Magnetic Properties . *I.E. Anderson*[1,2], A. Palasyuk[1], A. Kassen[2], E. White[1], L. Zhou[1], W. Tang[1], K. Dennis[1], R. McCallum[1,2] and M. Kramer[1,2] *1. Division of Materials Sciences and Engineering, Ames Lab (USDOE), Ames, IA; 2. Materials Science and Engineering, Iowa State University, Ames, IA*

BU-16. Magnetic properties of Sm-Fe-N bulk magnets prepared from the $Sm_2Fe_{17}N_3$ melt-spun ribbons. *T. Saito*[1] *1. Mechanical Science and Engineering, Chiba Institute of Technology, Narashino, Japan*

Session BV
MAGNETO-OPTIC MATERIALS AND SENSORS (Poster Session)

Takao Suzuki, Chair

BV-01. Quadratic magneto-optic spectroscopy of bcc Fe and Co_2MnSi. *R. Silber*[1], J. Hamrle[1], J. Pištora[1], M. Veis[5], L. Beran[5], T. Kuschel[2], G. Reiss[2], T. Kubota[3] and Y. Ando[4]
1. Nanotechnology Centre, VSB-Technical University of Ostrava, Ostrava, Czech Republic; 2. Department of Physics, Bielefeld University, Bielefeld, Germany; 3. IMR, Tohoku University, Sendai, Japan; 4. Graduate School of Engineering, Tohoku University, Sendai, Japan; 5. Institute of Physics of Charles University, Charles University in Prague, Prague, Czech Republic

BV-02. Optical and Magneto-optical Studies of $SrGa_{0.7}Co_{0.3}O_3$ Perovskite Thin Films with Embedded Cobalt Nanoparticles. *M. Veis*[1], M. Zahradnik[1], E. Jesenska[1], L. Ohnoutek[1], L. Beran[1], M. Kucera[1], X.Y. Sun[2,3], C. Zhang[2,4], N. Aimon[2], T. Goto[2], M. Onbasli[2], D.H. Kim[2], H.K. Choi[2] and C.A. Ross[2] *1. Charles University in Prague, Prague, Czech Republic; 2. Massachusetts Institute of Technology, Cambridge, MA; 3. Harbin Institute of Technology, Harbin, China; 4. National University of Singapore, Singapore, Singapore*

BV-03. Band Gap Engineering by Exchange Coupling in Mn Doped CdSe Quantum Dots for Improved Solar Cell Performance. *Q. Dai*[1], E. Sabio[2], W. Wang[1] and J. Tang[1] *1. Department of Physics & Astronomy, University of Wyoming, Laramie, WY; 2. Department of Chemistry, University of Wyoming, Laramie, WY*

BV-04. Interface-Mediated Enhancement of Magnetic Field Effect in Organic Light-Emitting Devices: Analytical Study of Carrier Motion Across Interfaces. *T. Kim*[2], N. Lee[2], Y. Bae[2], H. Jung[1] and C. Lee[1] *1. School of Electrical Engineering and Computer Science, Seoul National University, Seoul, Republic of Korea; 2. Department of Physics, Ewha Womans University, Seoul, Republic of Korea*

BV-05. Enhanced Diffraction Efficiency of Magnetic Holograms in Magnetophotonic Microcavity Structures with Iron-garnet/alumina Multilayer Film as Defect. *R. Isogai*[1], K. Kobayashi[1], T. Goto[1], H. Takagi[1], Y. Nakamura[1], P. Lim[1] and M. Inoue[1]
1. Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Toyohashi, Aichi, Japan

BV-06. Modulation of Faraday rotation angle for gray-level MO-3DD. *K. Nakamura*[1], H. Takagi[1], T. Goto[1], P. Lim[1] and M. Inoue[1] *1. Toyohashi University of Technology, Toyohashi, Aichi, Japan*

BV-07. Magneto-Optical Properties of $Nd_{0.5}Bi_{2.5}Fe_4GaO_{12}$ Thin Films on Glass Substrates with Various Thicknesses Prepared by Metal Organic Decomposition Method. *G. Lou*[1], T. Yoshida[1] and T. Ishibashi[1] *1. Department of Materials Science and Technology, Nagaoka Unifersity of Technology, Nagaoka, Niigata, Japan*

BV-08. Nonreciprocal Goos-Hanchen Effect Induced by an External Magnetic Field. R. Macedo[1], *R. Stamps*[1] and T. Dumelow[2] *1. University of Glasgow, Glasgow, United Kingdom; 2. Departamento de Fisica, Universidade do Estado do Rio Grande do Norte, Mossoro, Brazil*

BV-09. $Nd_{0.5}Bi_{2.5}Fe_{5-y}Ga_yO_{12}$ (y=0, 0.5, 1) films on GGG (111) substrates by MOD method. *M. Sasaki*[1], T. Hashinaka[1], A. Meguro[1], M. Ninomiya[1], G. Lou[1] and T. Ishibashi[1] *1. Material Science and Technology, Nagaoka University of Technology, Nagaoka, Niigata, Japan*

BV-10. Optimization of Magneto-optical Effect of GMR Devices for Spin SLM. *T. Ishibashi*[2], S. Goto[2], E. Jesenská[1], M. Veis[1], K. Kuga[3], K. Aoshima[3], K. Machida[3], H. Kikuchi[3] and N. Shimidzu[3] *1. Charles University in Prague, Prague, Czech Republic; 2. Nagaoka University of Technology, Niigata, Japan; 3. NHK Japan Broadcasting Corp., Tokyo, Japan*

BV-11. Optical and Magneto-optical Properties of Bi Substituted Yttrium Iron Garnets Prepared by Metal Organic Decomposition. *E. Jesenska*[1,2], L. Beran[1], R. Antos[1], T. Yoshida[2], T. Ishibashi[2] and M. Veis[1] *1. Charles University in Prague, Prague, Czech Republic; 2. Nagaoka University of Technology, Niigata, Japan*

BV-12. Electroplated FeNi ring cores for fluxgate with field induced radial anisotropy. *M. Butta*[1], P. Ripka[1] and M. Janosek[1] *1. Faculty of Electrical Engineering, Czech Technical University in Prague, Praha, Czech Republic*

BV-13. Thermal stability, magnetic properties and GMI effect of Cr-doping amorphous CoFeSiB ribbons. Y. Song[1], X. Li[2], M. Jia[1], M. Lin[1] and *W. Lu*[1] *1. School of Materials Science and Engineering, Tongji University, Shanghai, China; 2. School of Materials Science and Engineering, University of Shanghai for Science and Technology, Shanghai, China*

BV-14. FPGA Based Highly Sensitive Magneto-Impedance Sensor Circuit for ASIC. *P. Wu*[1], Y. Okuda[1], S. Tajima[1] and T. Uchiyama[1] *1. Nagoya University, Nagoya, Japan*

BV-15. Voltage-mode dc magnetic field sensor based on piezoelectric–magnetostrictive heterostructure. C. Leung[1], L. Zhang[1] and *S. Or*[1] *1. The Hong Kong Polytechnic University, Kowloon, Hong Kong*

BV-16. Enhancement of magnetoelectric anisotropy through differential laminate sensor. *J. Ouyang*[1], X. Yang[1], S. Chen[1], B. Zhu[1], Y. Zhang[1] and B. Tong[1] *1. Huazhong University of Science and Technology, Wuhan, China*

TUESDAY AFTERNOON 2:30

CORAL LOUNGE (POSTERS)

Session BW
MULTILAYERS AND THIN FILMS I (Poster Session)

Alexandre Bataille, Chair

BW-01. Effects of the top Pt layer thickness on the magnetic dead layer in [Pt/Co/Pt] trilayers. *Y. Won*[1], S. Lim[1,2] and S. Lee[2] *1. Nano Semiconductor Engineering, Korea University, Seoul, Republic of Korea; 2. Materials Science and Engineering, Korea University, Seoul, Republic of Korea*

BW-02. Magnetic Field Dependence of Spin-wave Dynamics in $[Co/Pd]_8$ Antidot Lattices with Perpendicular Magnetic Anisotropy. *S. Pal*[3], P. Gruszecki[2], J.W. Klos[2], K. Das[3], O. Hellwig[1], M. Krawczyk[2] and A. Barman[3] *1. San Jose Research Center, HGST, a Western Digital Company, San Jose, CA; 2. Faculty of Physics, Adam Mickiewicz Univeristy in Poznan, Poznan, Poland; 3. Thematic Unit of Excellence on Nanodevice Technology and Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Centre for Basic Sciences, Kolkata, India*

BW-03. Magnetic property variation in $[Co/Pt]_3$ multilayer as a function of Co thickness and annealing temperature. *S. Yoon*[1] and B. Cho[1] *1. School of Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju, Republic of Korea*

BW-04. High Annealing Stability in Perpendicular MTJ Pinned Layer utilizing a Composite Spacer. *D. Kim*[1], K. Lee[2], J. Kan[2] and E.E. Fullerton[1] *1. Center for Magnetic Recording Research, University of California San Diego, La Jolla, CA; 2. Corporate R&D, Qualcomm Inc., San Diego, CA*

BW-05. Effect of interlayer interaction on domain structure of CoPt stacked films with perpendicular anisotropy. *H. Kawamura*[1], K. Hayakawa[1] and R. Sugita[1] *1. Media and Telecommunications Engineering, Ibaraki University, Hitachi, Ibaraki, Japan*

BW-06. Perpendicular magnetic anisotropy of amorphous [CoSiB/Pt]$_N$ thin films. *T. Kim*[1], Y. Choi[2], K. Lee[2], J. Yoon[3], J. Cho[3], C. You[3] and M. Jung[2] *1. Department of Advanced Materials Engineering, Sejong University, Seoul, Republic of Korea; 2. Department of Physics, Sogang University, Seoul, Republic of Korea; 3. Department of Physics, Inha University, Incheon, Republic of Korea*

BW-07. Vertical Magnetic Anisotropy in Annealed CoO/Pd Multilayer Nanostructures. *W. Qiu*[1], L. Chang[2,3] and D. Litvinov[1,2] *1. Materials Engineering, University of Houston, Houston, TX; 2. Electrical Engineering, University of Houston, Houston, TX; 3. Nano Fabrication Facility, University of Houston, Houston, TX*

BW-08. Magnetic anisotropy of tetragonal FeCo films by using Fe/Co and FeCo/Pt superlattices. *K. Shintaku*[1], S. Fujishima[2] and S. Ishio[2] *1. Akita Industrial Technology Center, Akita, Japan; 2. Akita University, Akita, Japan*

BW-09. Influence of Uniaxial Anisotropy of Rare-Earth Metals on PMA of Tb/Fe and Gd/Fe Multilayers. *A. Chowdhury*[1] *1. Physics, University of Alaska Fairbanks, Fairbanks, AK*

BW-10. The exchange coupling and Fabry-Perot wavelength in perpendicular synthetic antiferromagnetic structures. K. Wang[1], C. Tsai[2], D. Lee[3], *C. Cheng*[1] and G. Chern[1] *1. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. Department of Engineering and Management of Advanced Technology, Chang Jung Christian University, Tainan, Taiwan; 3. Electrical Engineering Department, Da-Yeh University, Chunghua, Taiwan*

BW-11. Perpendicular magnetic anisotropy induced by spin direction of antiferromagnet layers in a ferromagnetic-antiferromagnetic bi-layer system. *W. Kim*[1], G. Yang[1], K. Moon[1], B. Chun[1], C. Hwang[1], H. Lee[2] and J. Kim[2] *1. Korea Research Institute of Standards and Science, Daejeon, Republic of Korea; 2. Pohang Accelerator Laboratory, Pohang, Republic of Korea*

BW-12. Exchange Coupling in Hybrid Anisotropy Magnetic Multilayers Quantified by Vector Magnetometry. C. Morrison[1], J.J. Miles[1], T. Nguyen[2,3], Y. Fang[4], *R.K. Dumas*[4], J. Åkerman[2,4] and T. Thomson[1] *1. School of Computer Science, University of Manchester, Manchester, United Kingdom; 2. Materials Physics, School of ICT, KTH Royal Institute of Technology, Kista, Sweden; 3. Laboratory for Nanotechnology, Vietnam National University, Ho Chi Min City, Vietnam; 4. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

BW-13. The Magneto-Structural Phase Transition in FeRhPd Thin Films Probed by Polarized Neutron Reflectometry.
S. Bennett[1], H. Ambaye[2], H. Lee[3], P. LeClair[3], G. Mankey[3] and V. Lauter[1] *1. Quantum Condensed Matter Division, Oak Ridge National Laboratory, Knoxville, TN; 2. Research Accelerator Division, Oak Ridge National Laboratory, Oak Ridge, TN; 3. Department of Physics and Astronomy, University of Alabama, Tuscaloosa, AL*

BW-14. The magnetization process in Spinel ferrite/Cr/Fe systems.
T. Kawai[1], N. Takahashi[1], T. Yanase[2], T. Nagahama[2] and T. Shimada[2] *1. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Sapporo, Hokkaido, Japan; 2. Graduate School of Engineering, Hokkaido University, Sapporo, Hokkaido, Japan*

BW-15. Effect of Disorder on Magnetism at the Interface Between Cu and MgO. *L.K. Sposato*[1], C. Bordel[1], M. Kang[1], J. Kortright[2] and F. Hellman[1] *1. Physics, University of California, Berkeley, Berkeley, CA; 2. Lawrence Berkeley National Laboratory, Berkeley, CA*

BW-16. Temperature dependent Hall and resistivity measurements of Co/Tb Multilayers. *C.J. Thompson*[1], S.K. Patel[1], C.L. Melamed[1], P.D. Sparks[1], J.C. Eckert[1], M. Gottwald[2], R.D. Tolley[3,2], S. Mangin[3] and E.E. Fullerton[2] *1. Physics, Harvey Mudd College, Claremont, CA; 2. Center of Magnetic Recording Research, 2.University of California, La Jolla, CA; 3. Institut Jean Lamour – UMR CNRS 7198, Université de Lorraine, Vandoeuvre, France*

WEDNESDAY MORNING 8:30 CORAL 3

Session CA
ELECTRICAL DETECTION OF SPIN-PUMPING: CHALLENGES AND RECENT DEVELOPMENTS
Hans Nembach, Chair

8:30

CA-01. Various spin-current exchange phenomena at metal/insulator junctions. ***(Invited)*** *E. Saitoh*[1,2] *1. WPI-AIMR, Tohoku University, Sendai, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

9:06

CA-02. Insights about spin Hall effects from spin pumping. *(Invited)*
A. Hoffmann[1], W. Zhang[1], V. Vlaminck[1,2], M. Jungfleisch[1], W. Jiang[1], J. Pearson[1], S. Bader[1], R. Divan[3], L. Bai[4], P. Hyde[4], Y. Gui[4], C. Hu[4], F. Freimuth[5] and Y. Mokrousov[5] *1. Materials Science Department, Argonne National Laboratory, Argonne, IL; 2. Colegio de Ciencias e Ingenería, Universidad San Francisco de Quito, Quito, Ecuador; 3. Center for Nanosacle Materials, Argonne National Laboratory, Argonne, IL; 4. Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 5. Peter Grünberg Institut and Institute for Advanced Simulation, Forschungszentrum Jülich and JARA, Jülich, Germany*

9:42

CA-03. Phase-Sensitive Detection Of Spin Pumping Via The AC Inverse Spin Hall Effect. *(Invited)* *M. Weiler*[1]
1. Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO

10:18

CA-04. Pure spin current in nonmagnetic, ferromagnetic and antiferromagnetic metals and/or insulators using YIG-based heterostructures. *(Invited)* *F. Yang*[1], H. Wang[1], C. Du[1] and P. Hammel[1] *1. Physics, The Ohio State University, Columbus, OH*

10:54

CA-05. Determination of spin Hall angle and spin diffusion length by thermal spin injection. *(Invited)* *D. Qu*[1], S. Huang[1,2], B. Miao[1,3], S. Huang[1] and C. Chien[1] *1. Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 2. Department of Physics, National Taiwan University, Taipei, Taiwan; 3. Department of Physics, Nanjing University, Nanjing, Jiangsu, China*

WEDNESDAY
MORNING
8:30

CORAL 5

Session CB
DOMAIN WALLS I
Stefania Pizzini, Chair

8:30

CB-01. Domain-wall depinning governed by the spin Hall effect and Dzyaloshinskii-Moriya interaction. *(Invited)* *R. Lavrijsen*[1], J.H. Franken[1], D. Hartmann[2], R. Duine[2], H. Swagten[1] and B. Koopmans[1] *1. Applied Physics / Physics of Nanostructures, Eindhoven University of Technology, Eindhoven, Netherlands; 2. Institute for Theoretical Physics, Utrecht University, Utrecht, Netherlands*

9:06

CB-02. Tailoring the Dzyaloshinskii-Moryia interaction in films with out-of-plane anisotropy. *A. Hrabec*[1], N.A. Porter[1], A. Wells[1], M. Benitez[2], D. McGrouther[2], G. Burnell[1], S. McVitie[2], T.A. Moore[1] and C.H. Marrows[1] *1. University of Leeds, Leeds, United Kingdom; 2. University of Glasgow, Glasgow, United Kingdom*

9:18

CB-03. Spin-orbit torques and Dzyaloshinskii-Moriya interaction in Ta/CoFeB/MgO. *R. Lo Conte*[1,4], G.V. Karnad[1], E. Martinez[2], A. Hrabec[3], A.P. Mihai[3], T. Schulz[1], C.H. Marrows[3], T.A. Moore[3] and M. Klaeui[1,4] *1. Institut für Physik, Johannes Gutenberg-Universität Mainz, Mainz, Germany; 2. Dpto. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain; 3. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 4. Graduate School of Excellence Materials Science in Mainz (MAINZ), Mainz, Germany*

9:30

CB-04. Domain wall creep in Ta/CoFeB/MgO wire induced by current or field. *S. DuttaGupta*[1], S. Fukami[2,3], M. Yamanouchi[1,2], C. Zhang[1], H. Sato[2,3], F. Matsukura[1,4] and H. Ohno[1,2] *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan; 2. CSIS, Tohoku University, Sendai, Miyagi, Japan; 3. CIES, Tohoku University, Sendai, Miyagi, Japan; 4. WPI-AIMR, Tohoku University, Sendai, Miyagi, Japan*

9:42

CB-05. Rashba-effect induced chiral magnetic domain-wall resistance. *Y. Yin*[1], J. Kim[1], K. Lee[2], K. Kim[3], H. Lee[3], B. Koopmans[1] and H. Swagten[1] *1. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands; 2. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 3. Department of Physics, Pohang University of Science and Technology, Gyoungbuk, Republic of Korea*

9:54

CB-06. Chiral damping of field driven magnetic domain walls. *S. Chenattukuzhiyil*[1,2], E. Jué[1,2], M. Drouard[1,2], A. Lopez[1,2], P. Balint[1,2], L. Prejbeanu[1,2], O. Boulle[1,2], S. Auffret[1,2], S. Alain[3,2], I. Miron[1,2] and G. Gaudin[1,2] *1. SPINTEC/CEA/CNRS-Grenoble, Grenoble, Rhone Alpes, France; 2. University Grenoble Alpes, Grenoble, France; 3. CNRS-Institute NEEL, Grenoble, France*

10:06

CB-07. 2D control of field-driven magnetic bubble movement using Dzyaloshinskii-Moriya interactions. D.C. Petit[1], P.R. Seem[2], R. Mansell[1] and *R.P. Cowburn*[1] *1. Physics Department, University of Cambridge, Cambridge, United Kingdom; 2. Durham Magneto Optics Ltd, Cambridge, United Kingdom*

10:18

CB-08. Spontaneous domain nucleation under in-plane fields in ultrathin films with Dzyaloshinskii-Moriya Interaction.
P. Agrawal[1], U. Bauer[1] and G. Beach[1] *1. MIT, Cambridge, MA*

10:30

CB-09. Domain walls in the helimagnet Ba2CuGe2O7. *J. Chovan*[1], M. Marder[3] and N. Papanicolaou[2] *1. Department of Physics, Matej Bel University, Banska Bystrica, Slovakia; 2. Department of Physics and Institute of Plasma Physics, University of Crete, Heraklion, Greece; 3. Center for Nonlinear Dynamics and Department of Physics, The University of Texas at Austin, Austin, TX*

10:42

CB-10. Field-driven domain-wall dynamics in the presence of Dzyaloshinskii-Moriya interaction: velocity enhancement by the spin wave emission. *Y. Yoshimura*[1], K. Kim[1], T. Taniguchi[1], K. Ueda[1], R. Hiramatsu[1], T. Moriyama[1], H. Tanigawa[2], E. Kariyada[2], Y. Nakatani[3] and T. Ono[1] *1. ICR, Kyoto University, Uji, Kyoto, Japan; 2. RENESAS, Sagamihara, Kanagawa, Japan; 3. Univ. of Electro-communications, Chofu, Tokyo, Japan*

10:54

CB-11. Current-driven domain wall in cylindrical nano-wires: a mobile spin-wave source. *M. Yan*[1] *1. Physics, Shanghai University, Shanghai, China*

11:06

CB-12. Determination of the interfacial Dzyaloshinskii-Moriya interaction energy density by Brillouin light scattering.
J. Cho[1], J. Kim[2], N. Kim[1], S. Lee[1], A. Solignac[2], Y. Yin[2], H. Swagten[2], B. Koopmans[2] and C. You[1] *1. Department of Physics, Inha University, Incheon, Republic of Korea; 2. Department of Applied Physics, Center for Nano Materials, Eindhoven University of Technology, Eindhoven, Netherlands*

11:18

CB-13. First observation of self-focussing soliton originating from a Damon-Eschbach spinwave in a confined geometry.
M. Helsen[1], A. Gangwar[2] and B. Van Waeyenberge[1] *1. Solid State Sciences, Ghent University, Ghent, Belgium; 2. Physics, Regensburg University, Regensburg, Germany*

Session CC
HEAD/MEDIA I
Kumar Srinivasan, Chair

8:30

CC-01. Non-local spin-valves using Heusler alloy with over 10mV output for HDD reader. *S. Shirotori*[1], H. Iwasaki[1], S. Hashimoto[1], M. Takagishi[1], Y. Kamiguchi[1], I. Ikhtiar[2], S. Kasai[2], Y. Takahashi[2], S. Mitani[2] and K. Hono[2] *1. Toshiba Corp., Kawasaki, Kanagawa, Japan; 2. National Institute for Materials Science (NIMS), Tsukuba, Japan*

8:42

CC-02. Crystal orientation dependence of band matching in CPP-GMR pseudo spin-valves with $Co_2Fe(Ge_{0.5}Ga_{0.5})$ Heusler alloy and NiAl spacer. *J. Chen**[2,1], T. Furubayashi[1], Y. Takahashi[1] and K. Hono[1,2] *1. Magnetic Materials Unit, National Institute for Material Science, Tsukuba-City, Japan; 2. Pure and Applied Sciences, Tsukuba University, Tsukuba, Ibaraki, Japan*

8:54

CC-03. Improving signal to noise ratio of CPP-GMR read head sensors with simple pinned reference layer. *G. Mihajlovic*[1], N. Smith[1], J. Read[1], J.R. Childress[1], C. Tsang[1] and P. van der Heijden[1] *1. HGST, a Western Digital Company, San Jose, CA*

9:06

CC-04. Effects of lamination on damping of FeCo thin films. *D. Ellsworth*[2], L. Lu[1], B. Johnson[2], V. Inturi[1], H. Yin[1] and M. Wu[2] *1. Recording Head Operations, Seagate Technology, Bloomington, MN; 2. Physics, Colorado State Univsersity, Fort Collins, CO*

9:18

CC-05. Enhancement of CPP-GMR magnetoresistance by insertion of Amorphous Ferromagnetic Underlayer in Heusler alloy spin-valve structures. *Y. Choi*[1], M. Carey[1], T. Nakatani[1], E. Brinkman[1], B. York[1] and J. Childress[1] *1. HGST, a Western Digital Company, San Jose, CA*

9:30

CC-06. Imaging the equilibrium state and magnetization dynamics of partially-built hard disk drive write heads. *R. Valkass*[1], W. Yu[1], L. Shelford[1], P.S. Keatley[1], T. Loughran[1], R. Hicken[1], S. Cavill[2,3], G. van der Laan[2], S. Dhesi[2], M. Gubbins[4], P. Czoschke[5] and R. Lopusnik[5] *1. School of Physics, University of Exeter, Exeter, Devon, United Kingdom; 2. Diamond Light Source, Didcot, Oxfordshire, United Kingdom; 3. Department of Physics, University of York, York, United Kingdom; 4. Research & Development, Seagate Technology, Derry, United Kingdom; 5. Recording Heads Operation, Seagate Technology, Bloomington, MN*

9:42

CC-07. Withdrawn

9:54

CC-08. Fabrication of GaAs/AlGaAs Quantum Dot Ridge Ring and Bar Lasers for Coupling to HAMR NFT. *H. Liang*[1], L. Chomas[1], T. Schlesinger[1], K. Kuriyama[2] and J.A. Bain[1] *1. Electrical & Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Pioneer Corporation, Kawasaki, Kanagawa, Japan*

10:06

CC-09. Structure for Near Field Excitation of Au NFT Structures Using InAs Quantum Dot Emission. *C. Chow*[1], K. Kuriyama[2], T.E. Schlesinger[3] and J.A. Bain[1] *1. Electrical and Computer Engineering, Carnegie Mellon University, Gaithersburg, MD; 2. Pioneer Corporation, Kanagawa 212-0031, Japan; 3. Whiting School of Engineering, Johns Hopkins University, Baltimore, MD*

10:18

CC-10. Alternative material study for HAMR transducer application. *B. Xu*[1] and Z. Cen[1] *1. Data Storage Institute, Singapore, Singapore*

10:30

CC-11. The recording of bottom hard magnetic recording layer (RL) by heat assist in dual recording layer perpendicular magnetic recording (PMR) media for two and half dimensional (2.5D) magnetic data storage. *Y. Chen*[1], H. Yang[1], S. Leong[1], B. Santoso[1], J. Shi[1], B. Xu[1] and J. Tsai[1] *1. Data Storage Institute, A*STAR, Singapore, Singapore*

10:42

CC-12. HCP $Co_{60-70}Pt_{40-30}$ media with small grain size and high K_u for PMR extension and MAMR . *K. Cher*[1], T. Zhou[1], Y. Yang[1], J. Tan[2], M. Low[1] and H. Gong[2] *1. Data Storage Institute, Singapore, Singapore; 2. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

10:54

CC-13. Well-isolated FePt grains on TiN underlayers for heat-assisted magnetic recording media. *T. Santos*[1], S. Jain[1], Q. Dai[1] and O. Hellwig[1] *1. San Jose Research Center, HGST, a Western Digital Company, San Jose, CA*

11:06

CC-14. Templated growth of nano structured magnetic patterns on templates with topographic features. *E. Yang*[1], Z. Liu[1], H. Arora[1], F.Q. Zhu[1] and B. Gurney[1] *1. HGST, a Western Digital Company, San Jose Research Center, San Jose, CA*

11:18

CC-15. Feasibility of Bit Patterned Media for HAMR at 5Tb/in^2. *S. Wang*[1], A. Ghoreyshi[1] and R.H. Victora[1] *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

WEDNESDAY MORNING 8:30

CORAL 2

Session CD
MAGNETIZATION DYNAMICS AND FERROMAGNETIC RESONANCE

Hua Chen, Chair

8:30

CD-01. Manipulation of diamond spins via ferromagnetic resonance: consequences for angular momentum transfer and imaging ferromagnetic phenomena. *V.P. Bhallamudi*[1], C.S. Wolfe[1], H. Wang[1], C. Du[1], S.A. Manuilov[1], R.M. Teeling[1], A.J. Berger[1], R. Adur[1], F. Yang[1] and P. Hammel[1] *1. Department of Physics, The Ohio State University, Columbus, OH*

8:42

CD-02. Broadband Ferromagnetic Resonance Study of Tunable Magnonic Spectra in $Ni_{80}Fe_{20}$ Antidot Lattices by Varying Lattice Symmetry. *A. Barman*[1], R. Mandal[1], S. Barman[1], O. Rousseau[3] and Y. Otani[2,3] *1. Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Centre For Basic Sciences, Kolkata, West Bengal, India; 2. Institute for Solid State Physics, University of Tokyo, Kashiwa, Chiba, Japan; 3. CEMS-RIKEN, Hirosawa, Wako, Saitama, Japan*

8:54

CD-03. Configurational Anisostropy in Two-Dimensional Ferromagnetic Nanodot Lattices with Varying Dot Shape. *B.K. Mahato*[1], S. Choudhury[1], S. Barman[1], R. Mandal[1], O. Rousseau[2], Y. Otani[2,3] and A. Barman[1] *1. Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Centre For Basic Sciences, Kolkata, West Bengal, India; 2. CEMS-RIKEN, Hirosawa, Wako, Saitama, Japan; 3. Institute for Solid State Physics, University of Tokyo, Kashiwa, Chiba, Japan*

9:06

CD-04. Temperature-dependent shift of the ferromagnetic cut-off frequency in Fe-Co-Hf-N/Ti-N multilayer films. *K. Krueger*[1], K. Seemann[1], H. Leiste[1], M. Stueber[1] and S. Ulrich[1] *1. Institute for Applied Materials (IAM-AWP), Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen, Germany*

9:18

CD-05. Tunable permalloy based films for nano-contact spin torque devices. *Y. Yin*[1,2], M. Ranjbar[3], M. Haidar[3], F. Pan[2], A. Delin[2], L. Bergqvist[2], R.K. Dumas[3], Y. Zhai[1] and J. Åkerman[2,3] *1. Department of Physics, Southeast University, Nanjing, China; 2. Department of Material and Nano Physics, School of ICT, KTH Royal Institute of Technology, Kista, Sweden; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

9:30

CD-06. In-plane magnetic field angle dependence of ferromagnetic resonance frequency in a nanoscale CoFeB-MgO magnetic tunnel junction. *E. Hirayama*[1], S. Kanai[1], H. Sato[2,3], F. Matsukura[2,4] and H. Ohno[1,2] *1. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan; 3. Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan; 4. WPI-Advanced Institute for Materials Research, Tohoku University, Sendai, Japan*

9:42

CD-07. Layer-resolved FMR in asymmetric exchange coupled trilayers. *D. Arena*[2], Y. Pogoryelov[3], S. Jana[3], S. Akansel[4], Y. Wei[4], M. Ranjbar[1], J. Åkerman[1], P. Svedlindh[4] and O. Karis[3] *1. Dept. of Physics, University of Gothenburg, Gothenburg, Sweden; 2. Photon Sciences Directorate, Brookhaven National Lab, Upton, NY; 3. Dept. of Physics & Astronomy, Uppsala University, Uppsala, Sweden; 4. Dept. of Engineering Sciences, Uppsala University, Uppsala, Sweden*

9:54

CD-08. Magnetic Response of Aperiodic Wire Networks Based on Fibonacci Distortions of Square Antidot Lattices. V. Bhat[2], B.W. Farmer[2], J. Sklenar[1], E. Teipel[2], J.S. Woods[2], J.B. Ketterson[1], J.T. Hastings[3] and *L.E. De Long*[2] *1. Physics and Astronomy, Northwestern University, Evanston, IL; 2. Physics and Astronomy, University of Kentucky, Lexington, KY; 3. Electrical and Computer Engineering, University of Kentucky, Lexington, KY*

10:06

CD-09. Damage-Free Deposition of NiFe Films on Graphene by Oblique Angle Sputtering. *W. Gannett*[1], M.W. Keller[1], T. Silva[1], H. Nembach[1] and B. Derby[1] *1. National Institute of Standards & Technology, Boulder, CO*

10:18

CD-10. Mechanisms of nonlinear frequency shifts in the dynamics of a macrospin. *R.D. McMichael*[1] and F. Guo[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*

10:30

CD-11. Controlling ferromagnetic resonance using three dimensional exchange biased antidot lattice stacks. *F.J. Goncalves*[2], G. Paterson[2], S. O'Reilly[3], T. Drysdale[4], D. Schmool[1], R. Bowman[3] and R. Stamps[2] *1. Lab. PROMES CNRS UPR8521, Universitie de Perpignam Via Domitia, Perpignam, France; 2. School of Physics and Astronomy, University of Glasgow, UK, Glasgow, United Kingdom; 3. ANSIN, Queen's University Belfast, Belfast, BT7 1NN, UK, United Kingdom; 4. School of Engineering, University of Glasgow, G12 8QQ Glasgow, United Kingdom*

10:42

CD-12. Ferromagnetic resonance of patterned CrO_2 thin films fabricated by selective area chemical vapour deposition. *C. Durrant*[1], M. Jokubaitis[2], W. Yu[1], H. Mohamad[1], L. Shelford[1], P.S. Keatley[1], R. Hicken[1] and G. Xiao[2] *1. Physics and Astronomy, University of Exeter, Exeter, Devon, United Kingdom; 2. Department of Physics, Brown University, Providence, RI*

10:54

CD-13. Ultra-narrow ferromagnetic resonance in encapsulated $V[TCNE]_{x\sim2}$ air-stable thin films. *H. Yu*[1], M. Harberts[1], R. Adur[1], Y. Lu[2], I. Froning[1], P. Hammel[1], A. Epstein[1,2] and E. Johnston-Halperin[1] *1. Physics, Ohio State University, Columbus, OH; 2. Chemistry, Ohio State University, Columbus, OH*

11:06

CD-14. X-ray Ferromagnetic Resonance on the Nanoscale. C. Schoeppner[2], *H. Ohldag*[1], R. Meckenstock[2], A. Ney[3], D. Spoddig[4], K. Ollefs[5], S. Bonetti[6] and M. Farle[2] *1. SLAC National Accelerator Laboratory, Menlo Park, CA; 2. Experimental Physics, University Duisburg, Duisburg, Germany; 3. Semiconductor and Solid State Physics, Johannes Kepler University, Linz, Austria; 4. Hitachi Global Storage Technologies, San Jose, CA; 5. European Synchrotron Radiation Facility, Grenoble, France; 6. Stanford University, Stanford, CA*

11:18

CD-15. Size-specific resonant excitation of soft magnetic nanospheres of three dimensional magnetic vortex. M. Yoo[1], J. Lee[1], D. Han[1] and *S. Kim*[1] *1. Department of Materials Science and Engineering, Seoul National University, Seoul, Republic of Korea*

WEDNESDAY MORNING 8:30

SOUTH PACIFIC 1 & 2

Session CE
VOLTAGE CONTROL OF MAGNETIC ANISOTROPY
Satoru Emori, Chair

8:30

CE-01. Withdrawn

8:30

CE-02. Magneto-Ionic Control of Magnetic Anisotorpy. *U. Bauer*[1], S. Emori[1] and G. Beach[1] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

8:42

CE-03. Enhanced control of coercivity by sustained electric field in a Pt/Co/AlOx/Pt junction. *A. van den Brink*[1], M. van der Heijden[1], H. Swagten[1] and B. Koopmans[1] *1. Physics, Eindhoven University of Technology, Eindhoven, Noord-Brabant, Netherlands*

8:54

CE-04. Electric field induced deformation of magnetic domain structure. *H. Kakizakai*[1], K. Yamada[1], M. Kawaguchi[1], T. Koyama[2], D. Chiba[2] and T. Ono[1] *1. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 2. The University of Tokyo, Bunkyo-ku, Tokyo, Japan*

9:06

CE-05. Resonant and nonresonant transmission of spin waves through a barrier induced by voltage-controlled magnetic anisotropy. *R. Verba*[1], V. Tiberkevich[2], O. Gorobets[3,1] and A. Slavin[2] *1. Institute of Magnetism, Kyiv, Ukraine; 2. Oakland University, Rochester, MI; 3. National Technical University of Ukraine "KPI", Kyiv, Ukraine*

9:18

CE-06. Magnetization switching assisted by high-frequency-voltage-induced ferromagnetic resonance. *T. Nozaki*[1,2], H. Arai[1], K. Yakushiji[1,2], S. Tamaru[1], H. Kubota[1,2], H. Imamura[1], A. Fukushima[1,2] and S. Yuasa[1,2] *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan; 2. JST-CREST, Kawaguchi, Saitama, Japan*

9:30

CE-07. Voltage controlled magnetocrystalline anisotropy at the Fe/MgO (001) interface. *P. Lukashev*[1,2] and E.Y. Tsymbal[1] *1. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE; 2. Physics, University of Northern Iowa, Cedar Falls, IA*

9:42

CE-08. Electric field modulation of magnetization in MgO/Co/Pt system. *K. Yamada*[1], H. Kakizakai[1], T. Koyama[2], M. Kawaguchi[1], T. Moriyama[1], D. Chiba[2] and T. Ono[1] *1. Institute for Chemical Research, Kyoto University, Uji, Japan; 2. Department of Applied Physics, The University of Tokyo, Tokyo, Japan*

9:54

CE-09. Voltage-controlled magnetic anisotropy in a perpendicularly magnetized Pd/Co/Pt system. *Y. Hibino*[1], A. Obinata[1], T. Koyama[1], K. Miwa[2], S. Ono[2] and D. Chiba[1] *1. Department of Applied Physics, The University of Tokyo, Faculty of Engineering, Tokyo, Japan; 2. Central Research Institute of Electric Power Industry, Tokyo, Japan*

10:06

CE-10. Electric field control of magnetism in Pd/Co/Pt multilayer. *A. Obinata*[1], D. Hayakawa[1], Y. Hibino[1], T. Koyama[1], K. Miwa[2], S. Ono[2] and D. Chiba[1] *1. The University of Tokyo, Tokyo, Japan; 2. Central Research Institute of Electric Power Industry, Komae, Japan*

10:18

CE-11. Electric field effect on magnetic anisotropy in Fe-monolayer on $SrTiO_3$ and MgO insulating layer: A first-principles study. *Y. Kota*[1] and H. Imamura[1] *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan*

10:30

CE-12. Large voltage induced magnetic anisotropy change in FeGd. *K. Tanaka*[2,1], S. Miwa[2,1], Y. Shiota[2,1], E. Tamura[2], N. Mizuochi[2], T. Shinjo[2] and Y. Suzuki[2,1] *1. CREST, Tokyo, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan*

10:42

CE-13. Magneto-optical Study of Interfacial Effects Responsible for Voltage-controlled Anisotropy Switching in Ferromagnetic Nanostructures. *M. Veis*[1], L. Beran[1], D. Kral[1], R. Antos[1], U. Bauer[2] and G. Beach[2] *1. Charles University in Prague, Prague, Czech Republic; 2. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

WEDNESDAY MORNING 8:30

SOUTH PACIFIC 3 & 4

Session CF
EXCHANGE BIAS I
Randy Dumas, Chair

8:30

CF-01. Exchange Bias Mediated by Interfacial Nanoparticles. ***(Invited)*** *A. Berkowitz*[1] *1. Physics and CMRR, University of California, San Diego, La Jolla, CA*

9:06

CF-02. Mesoscopic Modelling of the Exchange Bias behaviour of bi-magnetic nanoparticle assemblies. *K.N. Trohidou*[1], G. Margaris[1], M. Vasilakaki[1], J. Nogués[2], D. Fiorani[3], D. Peddis[3] and C. Binns[4] *1. Institute of Nanoscience and Nanotechnology, NCSR Demokritos, Aghia Paraskevi, Attiki, Greece; 2. ICREA and Institut Catala de Nanociencia i Nanotecnologia, Barcelona, Spain; 3. Instituto di Struttura della Materia-CNR, Monterotondo Scalo (RM), Italy; 4. Department of Physics and Astronomy, University of Leicester, Leicester, United Kingdom*

9:18

CF-03. Bidirectional rotatable anisotropy as dynamical exchange bias in core-shell ferrite nanoparticles. *F. Gomes da Silva*[1,3], R. Aquino[1,3], G. Ballon[4], F. Tourinho[1], E. Dubois[2], V. Stepanov[5], Y. Raikher[5], R. Perzynski[2] and J. Depeyrot[1] *1. Laboratório 3 Nano, Instituto de Física, Universidade de Brasilia, Brasília, Brazil; 2. Laboratoire PHENIX, Université Pierre et Marie Curie, Paris, France; 3. Laboratório de Nanociência Ambiental e Aplicada-LNAA, Faculdade UnB Planaltina, Universidade de Brasília, Brasília, DF, Brazil; 4. LNCMI-T, UPR 3228, CNRS-UJF-UPS-INSA, Toulouse, France; 5. Complex Fluid Group, Institute of Continuous Media Mechanics, Perm, Russian Federation*

9:30

CF-04. Pinned Fe orbital moments as a strong source for the magnetic anisotropy energy. *P. Audehm*[1], M. Schmidt[1], G. Schütz[1] and E.J. Goering[1] *1. Schütz, Max-Planck-Institut für Intelligente Systeme, Stuttgart, Germany*

9:42

CF-05. Exchange bias and emergent spin phenomena in magnetic heterostructures. ***(Invited)*** *C. Song*[1], Y. Wang[1], B. Cui[1] and F. Pan[1] *1. Tsinghua University, Beijing, China*

10:18

CF-06. Perpendicular magnetic anisotropy *via* interface exchange coupling. P. Kuswik[2,3], P.L. Gastelois[2,5], H.C. Tolentino[4], M.M. Soares[6], M. De Santis[4], A.D. Lamirand[4], W.A. Macedo[5], *M. Przybylski*[1,2] and J. Kirschner[2] *1. Faculty of Physics and Applied Computer Science, and Academic Centre for Materials and Nanotechnology, AGH University of Science and Technology, Poland, 30-059 Kraków, Poland; 2. Max-Planck-Institut für Mikrostrukturphysik, 06120 Halle, Germany; 3. Institute of Molecular Physics, Polish Academy of Sciences, Poznan, Poland; 4. Institut Neel, CNRS and Universite Joseph Fourier, 38042 Grenoble, France; 5. Servico de Nanotecnologia, Centro de Desenvolvimento da Tecnologia Nuclear, 31270-901 Belo Horizonte, Brazil; 6. European Synchrotron Radiation Facility, 38042 Grenoble, France*

10:30

CF-07. Magnetization Reversal in Exchange Biased Cross Junctions Revealed by Magnetoresistance and Planar Hall Effect. *A.C. Basaran*[1,2], R. Morales[3,4], S. Guenon[1,5] and I.K. Schuller[1,2] *1. Department of Physics and Center for Advanced Nanoscience, University of California San Diego, San Diego, CA; 2. Materials Science and Engineering, University of California San Diego, San Diego, CA; 3. Department of Chemical Physics & BC Materials, University of the Basque Country UPV/EHU, Leioa, Spain; 4. IKERBASQUE, Basque Foundation for Science, Bilbao, Spain; 5. CQ Center for Collective Quantum Phenomena and their Applications in LISA+, Physikalisches Institut, Eberhard-Karls-Universität Tübingen, Tübingen, Germany*

10:42

CF-08. Observation of exchange bias of the interface spin system in Fe/MgO(001). *B.T. Jonker*[1], Y. Fan[2], K. Smith[2], G. Luepke[2], A. Hanbicki[1], R. Goswami[1], C. Li[1] and H. Zhao[3]
1. Magnetoelectronic Materials & Devices, Naval Research Laboratory, Washington, DC; 2. Applied Science, College of William & Mary, Williamsburg, VA; 3. Optical Science & Engineering, Fudan University, Shanghai, China

10:54

CF-09. Switching Behavior in Continuous NiFe Films Patterned with IrMn Stripe Arrays. *F. Liu*[1] and C.A. Ross[1] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

11:06

CF-10. Isotope-enriched tracer layers prove intrinsic diffusion on IrMn top-pinned exchanged biased systems.
L.E. Fernandez-Outon[1,2], M.S. Araujo Filho[1], F.H. Aragón[1], I. Gonzalez[1], J.D. Ardisson[1] and *W.A. Macedo*[1] *1. Laboratório de Física Aplicada, Centro de Desenvolvimento da Tecnologia Nuclear, Belo Horizonte, Minas Gerais, Brazil;*
2. Departamento de Fisica, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

11:18

CF-11. Room temperature instability of exchange anisotropy in FeMn/FeCo system. *E. Jimenez*[4], N. Mikuszeit[1], D.R. Cavicchia[2], F. D'Orazio[3] and L. Rossi[3] *1. CEA (INAC/SP2M/NM), Grenoble, France; 2. Institue of Applied Physics, University of Hamburg, Hamburg, Germany; 3. Dipartimento di Scienze Fisiche e Chimiche, Universita di L'Aquila, L'Aquila, Italy; 4. European Synchrotron Radiation Facility (ESRF), Grenoble, France*

WEDNESDAY MORNING 8:30 — HIBISCUS 1 & 2

Session CG
MAGNETORESISTANCE AND MAGNETOIMPEDANCE I
Madhusudan Kongara, Chair

8:30

CG-01. Magnetoresistance in Semiconductors. *X. Zhang*[1] and Z. Luo[1] *1. School of Materials Science and Engineering, Tsinghua University, Beijing, China*

8:42

CG-02. Withdrawn

8:54

CG-03. Anisotropic magnetoresistance in antiferromagnetic Sr_2IrO_4. C. Wang[1,2], H. Seinige[1,2], G. Cao[3], J. Zhou[2], J. Goodenough[2] and *M. Tsoi*[1,2] *1. Physics, University of Texas at Austin, Austin, TX; 2. Texas Materials Institute, University of Texas at Austin, Austin, TX; 3. Center for Advanced Materials, University of Kentucky, Lexington, KY*

9:06

CG-04. Magnetotransport study of graphene-cobalt junctions in vertical spin-valve geometry. *S. Entani*[1], H. Naramoto[1] and S. Sakai[1] *1. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibaraki, Japan*

9:18

CG-05. CPP-GMR with In-Zn-O conductive oxide spacer layers. *T. Nakatani*[1] and J.R. Childress[1] *1. San Jose Research Center, HGST, San Jose, CA*

9:30

CG-06. Anisotropic Interface Magnetoresistance (AIMR) of all-metallic layered structures. *A. Kobs*[1], A. Frauen[1], G. Winkler[1], A. Farhadi[1], S. Hesse[1] and H. Oepen[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany*

9:42

CG-07. Scattering mechanisms in FeGe thin films. N.A. Porter[1], J. Carter Gartside[1,2] and *C.H. Marrows*[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Department of Physics, Imperial College, London, United Kingdom*

9:54

CG-08. Interfacial Rashba induced intrinsic magnetoresistance. *V.L. Grigoryan*[1], W. Guo[1], G.E. Bauer[2,3] and J. Xiao[1] *1. Department of Physics and State Key Laboratory of Surface Physics, Fudan University, Shanghai, Shanghai, China; 2. Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands; 3. Institute for Materials Research and WPI-AIMR, Tohoku University, Sendai, Japan*

10:06

CG-09. Magnon contribution to the resistivity as a mean to detect of domain wall position and magnetization reversal in nanostructures. *V. Nguyen*[1], P. Laczkowski[1], W. Savero Torres[1], L. Vila[1], C. Beigné[1], L. Notin[1], M. Jamet[1], A. Marty[1] and J. Attané[1] *1. Institut Nanosciences et Cryogenie, CEA Grenoble and Université Grenoble Alpes, Grenoble, France*

10:18

CG-10. Spin dependent transport in spin valves with CoFeGe.
S. Roy[1], E. Mallon[1], J.C. Read[2], J. Childress[2] and *T. Banerjee*[1]
1. Physics of Nanodevices Group, University of Groningen, Groningen, Netherlands; 2. San Jose Research Center, HGST, San Jose, CA

10:30

CG-11. Novel approach to investigate spin-polarization in half-metallic Heusler compounds via anisotropic magnetoresistance effect. ***(Invited)*** *Y. Sakuraba*[1], S. Kokado[2], Y. Hirayama[1], T. Furubayashi[1], H. Sukegawa[1], S. Li[1], Y. Takahashi[1] and K. Hono[1] *1. National Institute for Materials Science, Tsukuba, Ibaraki, Japan; 2. Shizuoka University, Hamamatsu, Shizuoka, Japan*

11:06

CG-12. Anisotropic interface contributions to the magnetothermoelectric power (MTEP) in Co/Pt layered structures. *A. Frauen*[1], A. Kobs[1], T. Böhnert[1], A. Michel[1], G. Winkler[1], K. Nielsch[1] and H. Oepen[1] *1. Institut für Angewandte Physik, Universität Hamburg, Hamburg, Germany*

11:18

CG-13. Investigation of interface spin asymmetry and interfacial resistance in Fe_xCo_{100-x}/Ag interface. *J. Jung*[1], Z. Jin[1], Y. Shiokawa[1] and M. Sahashi[1] *1. Electronic Engineering, Tohoku University, Sendai, Japan*

WEDNESDAY
MORNING
8:30

KAHILI 1 & 2

Session CH
MICROMAGNETICS I

Thomas Schrefl, Co-Chair
Jing Shi, Co-Chair

8:30

CH-01. Micromagnetics on High-performance Workstation and Mobile Computational Platforms. *S. Fu*[1,2], R. Chang[1,2], S. Couture[1,2], M. Kuteifan[1,2], M. Menarini[1,2], M. Escobar[1,2], M. Lubarda[3], D. Gabay[1,2] and V. Lomakin[1,2] *1. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 2. Department of Electrical and Computer Engineering, UC San Diego, La Jolla, CA; 3. University of Donja Gorica, Donja Gorica, Montenegro*

8:42

CH-02. An Efficient Wavelet Transform based Algorithm for Fast Computation of the 3D Demagnetizing Field in Micromagnetic Simulations. *A.S. Kazmi*[1] *1. NU-CES, Lahore, Pakistan*

8:54

CH-03. Finite-Element Simulation of Magnetic Microstructures Including Spin-Diffusion Effects. *C. Abert*[1], M. Ruggeri[2], C. Vogler[3], F. Bruckner[1], G. Hrkac[4], M. Page[2], D. Praetorius[2] and D. Suess[1] *1. Institute of Solid State Physics, Christian Doppler Laboratory for Advanced Magnetic Sensing and Materials, Vienna University of Technology, Vienna, Austria; 2. Institute for Analysis and Scientific Computing, Vienna University of Technology, Vienna, Austria; 3. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 4. Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom*

9:06

CH-04. Implementation of a localized fourth order demagnetization tensor. *M.J. Donahue*[1] *1. Applied and Computational Mathematics Division, National Institute of Standards and Technology, Gaithersburg, MD*

9:18

CH-05. Effective computation of the demagnetizing tensor in finite difference simulations. *D. Chernyshenko*[1] and H. Fangohr[1] *1. Engineering and the Environment, University of Southampton, Southampton, United Kingdom*

9:30

CH-06. Representation of magnetization process based on bifurcation property of domain structure. *T. Nakamura*[1], S. Ito[1], T. Mifune[1], T. Matsuo[1] and C. Kaido[2] *1. Department of Electrical Engineering, Graduate School of Engineering, Kyoto University, Kyoto, Japan; 2. Department of Electrical & Electronic Engineering, Kitakyushu National College of Technology, Kitakyushu, Japan*

9:42

CH-07. Landau-Lifhsitz-Bloch equation for exchange coupled grains. *C. Vogler*[1], C. Abert[2], F. Bruckner[2], R. Windl[2] and D. Suess[2] *1. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 2. Christoph Doppler Laboratory for Advanced Magnetic Sensing and Materials, Institute of Solid State Physics, Vienna University of Technology, Vienna, Vienna, Austria*

9:54

CH-08. Computational approaches for understanding the role of grain boundary phase on magnetic property of NdFeB hard magnet. *T. Koyama*[2], T. Abe[3], Y. Tsukada[2] and Y. Kobayashi[1] *1. Metallurgy and Ceramics Science, Tokyo Institute of Technology, Tokyo, Japan; 2. Materials Science and Engineering, Nagoya Institute of Technology, Nagoya, Japan; 3. Environment and Energy Materials Division, National Institute for Materials Science, Tsukuba, Japan*

10:06

CH-09. Micromagnetic Simulations of Soft Nano-Granular Magnetic Films. *S. Couture*[1], S. Fu[1], E.E. Fullerton[1] and V. Lomakin[1] *1. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA*

10:18

CH-10. Micromagnetic simulation of exchange coupled ferri-/ ferromagnetic composite in bit patterned media. *H. Özelt*[1], A. Kovacs[1], P. Wohlhüter[2], E. Kirk[2], D. Nissen[3,4], P. Matthes[3], L.J. Heydeman[2], M. Albrecht[3,4] and T. Schrefl[1] *1. St.Poelten University of Apllied Sciences, Vienna, Austria; 2. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institut, Villigen, Switzerland; 3. Institute of Physics, Chemnitz University of Technology, Chemnitz, Germany; 4. Institute of Physics, Augsburg University, Augsburg, Germany*

10:30

CH-11. Intrinsic synchronization of an array of spin-torque oscillators driven by the Spin Hall Effect. *G. Siracusano*[2], R. Tomasello[1], A. Giordano[2], V. Puliafito[2], B. Azzerboni[2], M. Carpentieri[3], A. La Corte[4] and G. Finocchio[2] *1. Department of Computer Science, Modelling, Electronics and System Science, University of Calabria, Rende, Italy; 2. Department of Electronic Engineering, Industrial Chemistry and Engineering, University of Messina, Messina, Italy; 3. Department of Electrical and Information Engineering, Politecnico of Bari, Bari, Italy; 4. Department of Electrical, Electronic and Informatic Engineering, University of Catania, Catania, Italy*

10:42

CH-12. Vortex Core Motion driven by Thermal Spin Transfer Torque. *M. Vogel*[1], J. Chauleau[1,2], C. Mewes[3], C.H. Back[1] and T. Mewes[3] *1. Institut für Experimentelle und Angewandte Physik, Universität Regensburg, Regensburg, Germany; 2. Service de Physique de l'Etat Condensé, CEA Saclay, Gif-sur-Yvette Cedex, France; 3. MINT Center / Depeartment of Physics and Astronomy, University of Alabama, Tuscaloosa, AL*

10:54

CH-13. Spin-transfer dynamics in magnetic tunnel junctions with an out-of-plane magnetized free layer and in-plane polarizer. *E. Kowalska*[1,2], V. Sluka[1], C. Fowley[1], Y. Aleksandrov[1,2], J. Lindner[1], J. Fassbender[1,2] and A.M. Deac[1] *1. Institute for Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Institute for Solid State Physics, Technische Universität Dresden, Dresden, Germany*

11:06

CH-14. Influence of lattice disorder on magnonic spectra of permalloy antidot arrays. *A. Manzin*[1] and W. Wang[1] *1. Istituto Nazionale di Ricerca Metrologica (INRIM), Torino, Italy*

11:18

CH-15. Broadly Tunable Approach to Localizing Ferromagnetic Resonance Modes Controlled by Field Orientation. *C. Du*[1], R. Adur[1], H. Wang[1], S.A. Manuilov[1], F. Yang[1], D.V. Pelekhov[1] and P. Hammel[1] *1. Department of Physics, The Ohio State University, Columbus, OH*

WEDNESDAY MORNING 8:30

SEA PEARL 2-4

Session CI
LOW-DIMENSIONAL & MOLECULAR MAGNETISM I
Alexandru Stancu, Chair

8:30

CI-01. How ligands and adlayers can be used to tailor the magnetic properties of paramagnetic molecules on metallic surfaces. *H.C. Herper*[1], S. Bhandary[1], D. Klar[2], M. Bernien[3], W. Kuch[3], B. Sanyal[1], O. Eriksson[1] and H. Wende[2] *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Faculty of Physics and CeNIDE, University of Duisburg-Essen, Duisburg, Germany; 3. Institute of Experimental Physics, FU Berlin, Berlin, Germany*

8:42

CI-02. Magnetic anisotropy and hysteresis in endohedral single-molecule magnets: From bulk to sub-monolayers. *R. Westerström*[1,2], A. Uldry[2], R. Stania[1,2], J. Dreiser[2,3], C. Piamonteze[2], M. Muntwiler[2], F. Matsui[1,4], S. Rusponi[3], H. Brune[3], S. Yang[5], A. Popov[6], B. Büchner[6], B. Delley[2] and T. Greber[1] *1. University of Zurich, Zurich, Switzerland; 2. Paul Scherrer Institute, Villigen, Switzerland; 3. Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland; 4. Nara Institute of Science and Technology, Ikoma, Japan; 5. University of Science and Technology of China, Hefei, China; 6. Leibniz Institute of Solid State and Materials Research, Dresden, Germany*

8:54

CI-03. Appearance of Magnetic Ordering in Diamagnetic and Paramagnetic Films with Molecular Interfaces. *O. Cespedes*[2], F. Al Ma'Mari[2], T. Moorsom[2], G. Teobaldi[3], D. Arena[1], G.E. Sterbinsky[1], S. Lee[4], M. Geert[4], G. Burnell[2], M.C. Wheeler[2] and B.J. Hickey[2] *1. Photon Sciences Directorate, Brookhaven National Lab, Upton, NY; 2. School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom; 3. Department of Chemistry, University of Liverpool, Liverpool, United Kingdom; 4. School of Physics & Astronomy, University of St. Andrews, St. Andrews, United Kingdom*

9:06

CI-04. Magnetic exchange and anisotropy in actinide-based single-molecule magnets. *N. Magnani*[1] *1. Institute for Transuranium Elements (ITU), European Commission, Joint Research Centre (JRC), Karlsruhe, Germany*

9:18

CI-05. Theoretical design of molecular nanomagnets for magnetic refrigeration. *E. Garlatti*[1], S. Carretta[1], J. Schnack[2], G. Amoretti[1] and P. Santini[1] *1. Dipartimento di Fisica e Scienze della Terra, Università di Parma, Parma, Italy; 2. Fakultät für Physik, Universität Bielefeld, Bielefeld, Germany*

9:30

CI-06. Magnetic Hardening and Softening Induced by Nonmagnetic π-Conjugated Organic Materials. *N. Atodiresei*[1], V. Caciuc[1] and S. Blügel[1] *1. Peter Grünberg Institut and Institute for Advanced Simulation, Forschungszentrum Jülich, Jülich, NRW, Germany*

9:42

CI-07. Single spin and charge manipulation of NV center in diamond. *(Invited)* *N. Mizuochi*[2,1] *1. CREST, JST, Kawaguchi, Saitama, Japan; 2. Engineering Science, Osaka University, Toyonaka, Osaka, Japan*

10:18

CI-08. Electron correlation and spin-crossover properties of organometallics: insights from ab initio theory. S. Bhandary[1], T. Wehling[2,3], O. Eriksson[1] and *B. Sanyal*[1] *1. Department of Physics & Astronomy, Uppsala University, Uppsala, Sweden; 2. Institute for Theoretical Physics, University of Bremen, Bremen, Germany; 3. Bremen Center for Computational Materials Science, University of Bremen, Bremen, Germany*

10:30

CI-09. Defects and Supercooling without Superheating in a Spin-Crossover Fe(II) based Polymer. L. Bovo[1], I. Bräunlich[2], W. Caseri[2] and *Y. Soh*[1] *1. University College London, London, United Kingdom; 2. ETH, Zurich, Switzerland*

10:42

CI-10. Low-temperature heat transport and magnetic phase transitions of low-dimensional quantum magnets. *X. Sun*[1], F. Zhang[1], Z. Zhao[1], J. Shi[2] and X. Zhao[3] *1. Hefei National Laboratory for Physical Sciences at Microscale, University of Science and Technology of China, Hefei, Anhui, China; 2. Department of Physics, University of Science and Technology of China, Hefei, Anhui, China; 3. School of Physical Sciences, University of Science and Technology of China, Hefei, Anhui, China*

10:54

CI-11. Temperature Dependence of the Magnon Lineshape in the 3D Dimerized System $Sr_3Cr_2O_8$. *D.L. Quintero-Castro*[1], J. Jensen[2] and B. Lake[3] *1. Department Methods for Characterization of Transport Phenomena in Energy Materials, Helmholtz Zentrum Berlin, Berlin, Germany; 2. Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark; 3. Department Quantum Phenomena in Novel Materials, Helmholtz Zentrum Berlin, Berlin, Germany*

11:06

CI-12. A new magnetic phase diagram for the quasi-one-dimensional (1D) spin chain compound $Ca_3Co_2O_6$. *P. Lampen*[1], N.S. Bingham[1,2], M.H. Phan[1], H. Srikanth[1], H.T. Yi[3], S.W. Cheong[3], J. Kovac[4] and I. Skorvanek[4] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Paul Scherrer Institut, Villigen, Switzerland; 3. Rutgers Center for Emergent Materials and Department of Physics and Astronomy, Rutgers University, Piscataway, NJ; 4. Institute of Experimental Physics, Slovak Academy of Sciences, Kosice, Slovakia*

11:18

CI-13. Designed magnetic systems based on the 2D-XY ferromagnet. S. Horry[1], M. Tokac[1], C. Kinane[3], R.M. Rowan-Robinson[1], F. Maccherozzi[2], D. Atkinson[1] and *A. Hindmarch*[1] *1. Centre for Materials Physics, Durham University, Durham, United Kingdom; 2. Diamond Light Source, Harwell Science Campus, United Kingdom; 3. ISIS Neutron Facility, Harwell Science Campus, United Kingdom*

WEDNESDAY MORNING 9:30

CORAL 4 (POSTERS)

Session CP
CORE/SHELL MAGNETIC NANOPARTICLES AND COMPOSITES
(Poster Session)

Ravi Hadimani, Chair

CP-01. Magnetic and optical properties of $ZnFe_2O_4$/ZnS core-shell nanocomposites. *P. Yoo*[1], D. Kim[1], B. Lee[1] and C. Liu[1] *1. Physics, Hankuk Univ of Foreign Studies, Yongin, Republic of Korea*

CP-02. Glasses Containing Magnetic Nanoparticles. W.R. Vialli[2], A. Tercjak[3], J. Gutierrez[3], M. Jafelicci[1], R.F. Marques[1], S.J. Ribeiro[1] and *M. Nalin*[1,2] *1. Inorganic and General Chemistry, Institute of Chemistry - UNESP, Araraquara, São Paulo, Brazil; 2. Chemistry Department, Federal University of São Carlos, São Carlos, São Paulo, Brazil; 3. Department of Chemistry & Environmental Chemistry, University of the Basque Country, San Sebastian, Spain*

CP-03. Magnetism of (Fe,Co)Si and FeGe Nanocluster Films.
B. Balasubramanian[1], P. Manchanda[1], P. Mukherjee[1], B. Das[1], 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

CP-04. Room Temperature Ferromagnetic $(Fe_{1-x}Co_x)_3BO_5$ Nanorods.
S. He[4,3], H. Zhang[3], H. Xing[3], K. Li[2], H. Cui[4], C. Yang[4], S. Sun[1] and *H. Zeng*[3] *1. Department of Chemistry, Brown University, Providence, RI; 2. Department of Chemistry, Capital Normal University, Beijing, China; 3. Department of Physics, University at Buffalo, SUNY, Buffalo, NY; 4. Department of Physics, Capital Normal University, Beijing, Beijing, China*

CP-05. Low temperature magnetic behavior of $CoFe_2O_4$ nanofibers obtained by electrospinning.
D.M. Carrillo Flores[3], J.T. Elizalde Galindo[3], V. Corral Flores[4], J.R. Farias Mancilla[3], C. Ornelas Gutiérrez[2] and F. Espinosa Magaña[1] *1. Centro de Investigación en Materiales Avanzados, Chihuahua, Chihuahua, Mexico; 2. Centro de Investigación en Materiales Avanzados, Chihuahua, Chihuahua, Mexico; 3. Physics and Matemathics, Universidad Autonoma de Ciudad Juarez, Ciudad Juarez, Chihuahua, Mexico; 4. Materiales Avanzados, Centro de Investigación en Química Aplicada, Saltillo, Coahuila, Mexico*

CP-06. Unconventional Size Dependence of the Magnetic properties of Antiferromagnetic-core/Ferrimagnetic-shell Nanoparticles.
M. Vasilakaki[1], K.N. Trohidou[1] and J. Nogués[2] *1. Institute of Nanoscience and Nanotechnology, NCSR Demokritos, Aghia Paraskevi, Attiki, Greece; 2. ICREA and Institut Catala de Nanociencia i Nanotecnologia, Barcelona, Spain*

CP-07. Effects of NiO decoration on the magnetism of γ-Fe_2O_3 nanoparticles.
E. Skoropata[1], T. Su[2], H. Ouyang[2], J.W. Freeland[3] and J. van Lierop[1] *1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 3. Argonne National Laboratory, Argonne, IL*

CP-08. Investigating nanoparticle interactions from interparticle-to-nanocomposite.
R.D. Desautels[1], E. Skoropata[1], M.P. Rowe[2] and J. van Lierop[1] *1. Physics & Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. Toyota Research Institute North America, Ann Arbor, MI*

CP-09. Unusual ferromagnetism due to internal and interfacial defects in CoSi nanowires.
T. Liu[1], C. Lee[1], S. Chiou[2], Y. Hsu[1], J. van Lierop[3] and *H. Ouyang*[1] *1. National Tsing Hua University, Hsinchu, Taiwan; 2. Industrial Technology Research Institute, Hsinchu, Taiwan; 3. University of Manitoba, Winnipeg, MB, Canada*

CP-10. Superparamagnetic properties of carbon nanotubes filled with $NiFe_2O_4$ nanoparticles. *K. Stojak Repa*[1], D. Israel[1], M. Phan[1], H. Srikanth[1], E. Palmero[2] and M. Vázquez[2] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain*

CP-11. Perpendicular magnetic anisotropy and complex magnetotransport behavior of cobalt nanoparticles in silver matrix. D. Kumar[1], *S. Chaudhary*[1] and D. Pandya[1] *1. Physics Department, Indian Institute of Technology Delhi, New Delhi, India*

CP-12. The role of interfacial metal silicates on the elemental magnetism in FeCo/SiO_2 and $Fe_{49}Co_{49}V_2$/SiO_2 core/shell nanoparticles. *R.D. Desautels*[1], M.P. Rowe[2] and J. van Lierop[1] *1. Physics and Astronomy, University of Manitoba, Winnpeg, MB, Canada; 2. Toyota Research Institute of North America, Ann Arbor, MI*

CP-13. Magnetotransport in Fe_3O_4-Ag composite nanoparticles. C. Jiang[1], C. Leung[2], L. Li[1], *T. Zeng*[1] and P. Pong[1] *1. Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong; 2. Department of Applied Physics, Hong Kong Polytechnic University, Hong Kong, Hong Kong*

CP-14. Facile synthesis of superparamagnetic $Fe_{25}Pd_{75}$ alloy nanoparticles via a novel sol-gel process. L. Xu[1,2], H. Huang[1], X. Zhang[3], Z. Tang[1], L. Lv[1], *S. Tang*[1] and Y. Du[1] *1. Institute of Materials Engineering, Nanjing National Laboratory of Microstructures, Jiangsu Provincial Laboratory for Nanotechnology and School of Physics, Nanjing University, Nanjing, Jiangsu Province, China; 2. School of Physics and Information Technology, Ningxia Normal University, Guyuan, Ningxia, China; 3. School of Physics and Electronics and Institute of Optoelectronic Materials and Technology, Gannan Normal University, Ganzhou, Jiangxi Province, China*

CP-15. Magnetic Properties of $CuFe_{1-x}Cr_xO_2$ nanoparticles surrounded by amorphous SiO_2 K. Mori[1], M. Hachisu[1], T. Yamazaki[1], K. Hyodo[1], S. Morimoto[1] and *Y. Ichiyanagi*[1] *1. Department of Physics, Yokohama National University, Yokohama, Japan*

CP-16. Withdrawn

CP-17. Direct observation of rotatable uncompensated spins in the exchange bias system Co/CoO–MgO. *E. Pellegrin*[1], C. Ge[2], X. Wan[2], Z. Hu[3], S. Valvidares[1], A. Barla[4], W. Liang[5], Y. Chu[5], W. Zou[2] and Y. Du[2] *1. Experiments Division, CELLS-ALBA, Cerdanyola, Barcelona, Spain; 2. Department of Physics, Nanjing University, Nanjing, China; 3. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 4. ISM CNR, Istituto di Struttura della Materia, Trieste, Italy; 5. Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan*

Session CQ
ELECTRONIC STRUCTURE I
(Poster Session)

Vladimir Antropov, Co-Chair
Arti Kashyap, Co-Chair

CQ-01. Spin-orbit-coupled insulating states in perovskite iridates studied by bulk-sensitive photoemission spectroscopy. *A. Yamasaki*[1], S. Tachibana[2], A. Higashiya[3,4], A. Irizawa[5], O. Kirilmaz[6], M. Sing[6], T. Muro[7], M. Yabashi[4], K. Tamasaku[4], H. Namatame[8], M. Taniguchi[8], A. Hloskovskyy[9], H. Yoshida[10], H. Okabe[10], M. Isobe[10], J. Akimitsu[11], W. Drube[9], R. Claessen[6], T. Ishikawa[4], S. Suga[5,4], S. Imada[12] and A. Sekiyama[2] *1. Physics, Konan University, Kobe, Hyogo, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 3. Faculty of Science and Engineering, Setsunan University, Neyagawa, Osaka, Japan; 4. RIKEN SPring-8 Center, Sayo, Hyogo, Japan; 5. Institute of Scientific and Industrial Research, Osaka University, Ibaraki, Osaka, Japan; 6. Physikalisches Institut, Universitaet Würzburg, Würzburg, Germany; 7. Japan Synchrotron Research Institute, Sayo, Hyogo, Japan; 8. Hiroshima Synchrotron Radiation Center, Hiroshima University, Higashi-Hiroshima, Japan; 9. DESY Photon Science, Deutsches Elektronen-Synchrotron, Hamburg, Germany; 10. National Institute for Materials Science, Tsukuba, Japan; 11. College of Science and Engineering, Aoyama Gakuin University, Sagamihara, Japan; 12. College of Science and Engineering, Ritsumeikan University, Kusatsu, Japan*

CQ-02. First principle study of magnetocrystalline anisotropy in hcp Co with stacking faults. *T. Komine*[1] and S. Saito[2] *1. Faculty of Engineering, Ibaraki University, Ibaraki, Japan; 2. Tohoku University, Sendai, Miyagi, Japan*

CQ-03. Evidence of the side jump mechanism in the anomalous Hall effect in paramagnets. Y. Li[1], G. Su[1], D. Hou[1], L. Ye[1], Y. Tian[1], J. Xu[1] and *X. Jin*[1] *1. Fudan University, Shanghai, China*

CQ-04. Comparative Study of Magnetic Ordering in Bulk and Nanoparticles of $Sm_{0.65}Ca_{0.35}MnO_3$: Magnetization and EMR measurements. *L.R. Goveas*[1,2], K. Anuradha[1], K. Bhagyashree[3] and S. Bhat[3] *1. Physics, Dr. Ambedkar Institute of Technology, Bangalore, Karnataka, India; 2. Physics, St. Joseph's College of Arts and Science, Bangalore, Karnataka, India; 3. Physics, Indian Institute of Science, Bangalore, Karnataka, India*

CQ-05. The 3d Electronic Structure of Manganese Phthalocyanine. *I.E. Brumboiu*[1], R. Totani[3], M. de Simone[4], M. Coreno[2], C. Grazioli[4,5], L. Lozzi[3], H.C. Herper[1], B. Sanyal[1], O. Eriksson[1], C. Puglia[1] and B. Brena[1] *1. Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. CNR-IMIP Montelibretti, c/o Sincrotrone Trieste, Basovizza, Italy; 3. Physical and Chemical Sciences, University of L'Aquila, L'Aquila, Italy; 4. CNR-IOM, Laboratorio TASC, Sincotrone Trieste, Basovizza, Italy; 5. Chemical and Pharmaceutical Sciences, University of Trieste, Trieste, Italy*

CQ-06. The magnetic origin of multiferroic Y_2CoMnO_6. T. Jia[1], *Z. Zeng*[1,2], X. Li[3] and H. Lin[4] *1. Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, China; 2. University of Science and Technology of China, Hefei, China; 3. Hefei National Laboratory for Physical Sciences at Microscale, Department of Physics, University of Science and Technology of China, Hefei, China; 4. Beijing Computational Science Research Center, Beijing, China*

CQ-07. Optimization of spin- and angle-resolved photoemission spectroscopy using parallel spin detection. *E. Schaefer*[1,2], D. Kutnyakhov[1], K. Medjanik[1], G. Schönhense[1,2] and H. Elmers[1,2] *1. Institut für Physik, Johannes Gutenberg-Universität, Mainz, Germany; 2. Graduate School Materials Science in Mainz, Mainz, Germany*

CQ-08. Thickness-dependent charge-order state in $Bi_{0.4}Sr_{0.28}Ca_{0.32}MnO_3$ thin films under anisotropic strain. Y. Li[1], B. Shen[1], F. Hu[1], J. Wang[1], *J. Lu*[1] and J. Sun[1] *1. State Key Laboratory of Magnetism, Institute of Physics, Beijing, China*

CQ-09. Electronic Configurations and Magnetic Anisotropy in Organometallic Metallocenes. *K. Nawa*[1], Y. Kitaoka[1], K. Nakamura[1], T. Akiyama[1] and T. Ito[1] *1. Physics Engineering, Mie University, Tsu, Mie, Japan*

CQ-10. Spin-polarized Electron Energy Loss Spectroscopy of Fe layer on W(110) at various kinematics. *J. Williams*[1], O. Artamonov[2] and S. Samarin[1] *1. Physics, University of Western Australia, Perth, WA, Australia; 2. Physics, St. Petersburg State University, St. Petersburg, Russian Federation*

CQ-11. Surface-induced magnetocrystalline anisotropy of antiferromagnetic Cr_2O_3(0001) films. *M. Ikuta*[1], K. Nakamura[1], T. Akiyama[1] and T. Ito[1] *1. Physics Engneering, Mie University, Tsu, Mie, Japan*

CQ-12. Magnetic anisotropy in single Fe-phthalocyanine molecule on MgO(001) substrate. *Y. Kitaoka*[1], K. Nakamura[1], T. Akiyama[1] and T. Ito[1] *1. Mie University, Tsu, Japan*

CQ-13. Effect of substrate and orientation on charge order behaviors in epitaxial $Pr_{0.5}Ca_{0.35}Sr_{0.15}MnO_3$ films. *H. Yang*[1], C. Wang[2], R. Cai[2], Y. Wang[2] and J. Sun[1] *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Qingdao University, Qingdao, China*

CQ-14. XMCD Study of Epitaxial Magnetite Thin Films . *W. Liu*[1,2], M. Song[3], N.J. Maltby[2], S. Li[2], J. Lin[3], S.S. Parkin[4], P. Bencok[5], Y. Xu[1,2] and R. Zhang[1] *1. York-Nanjing International Center for Spintronics (YNICS), School of Electronics Science and Engineering, Nanjing University, Nanjing, China; 2. Electronics Department, University of York, York, North Yorkshire, United Kingdom; 3. National Taiwan University, Taibei, Taiwan; 4. IBM Research Division, Almaden Research Center, San Jose, CA; 5. Diamond Light Source, Didcot, United Kingdom*

CQ-15. The screening effect of magnetic exchange in the U- and Gd-based intermetallic compounds. *V. Krylov*[1], V. Sechovský[2] and A. Andreev[3] *1. Institute of Nuclear Physics, Moscow State University, Moscow, Russian Federation; 2. DSMP, Charles University in Prague, Prague, Ke Karlovu 5, 12116 Prague 2, Czech Republic; 3. Instititute of Physics ASCR, Prague, Na Slovance 2, 18221Prague 8, Czech Republic*

CQ-16. Correlation between Charge Transfer and Exchange Coupling in Carbon-based Magnetic Materials. *N.A. Tuan*[1,2], N. Van Thanh[1], P. Thi Tuan Anh[1] and D. Viet Thang[1] *1. Faculty of Physics, Hanoi University of Science, Vietnam National University, Hanoi, Hanoi, Vietnam; 2. Japan Advanced Institute of Science and Technology, Nomi, Ishikawa, Japan*

WEDNESDAY MORNING 9:30 — CORAL 4 (POSTERS)

Session CR
FERRITES AND GARNETS III
(Poster Session)
Vasyl Tyberkevych, Chair

CR-01. Magnetization dynamics in cobalt ferrite cubic nanoparticles. M. Vomir[1], R. Turnbull[2], P. André[2] and *J. Bigot*[1] *1. CNRS, Université de Strasbourg, IPCMS UMR 7504, 67034 Strasbourg, France; 2. University of St. Andrews, School of Physics & Astronomy North Haugh, KY16 9SS, St. Andrews, United Kingdom*

CR-02. Vector analysis of an alternating magnetic field from individual magnetic nanoparticles by frequency-modulated magnetic force microscopy. *X. Li*[1,2], Z. Li[3], W. Lu[4], D. Pan[1], S. Yoshimura[2] and H. Saito[2] *1. School of Materials Science and Engineering, University of Shanghai for Science and Technology, Shanghai, China; 2. Research Center for Engineering Science, Graduate School of Engineering & Resource Science, AkitaUniversity, Akita, Japan; 3. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, China; 4. School of Materials Science and Engineering, Tongji University, Shanghai, China*

CR-03. Millimeter wave absorption of indium-substituted epsilon iron oxide spherical nanoparticles. *M. Yoshikiyo*[1], A. Namai[1], M. Nakajima[2], K. Yamaguchi[2], T. Suemoto[2] and S. Ohkoshi[1,3] *1. The University of Tokyo, Tokyo, Japan; 2. Institute for Solid State Physics, The University of Tokyo, Tokyo, Japan; 3. CREST, JST, Tokyo, Japan*

CR-04. Magnetic response in the vicinity of the compensation point in Ni–Fe–Cr ferrite nanoparticles. *C. Lin*[1], M. Chen[2], I. Lyubutin[3], Y. Lin[4], C. Yang[4], C. Wu[4], T. Hsu[1] and H. Hsu[1] *1. Department of Applied Physics, National Pingtung University, Pingtung, Taiwan; 2. Department of Electro-optical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan; 3. Shubnikov Institute of Crystallography, Russian Academy of Sciences, Moscow, Russian Federation; 4. Department of Mechanical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan*

CR-05. Design of Grid-type Microwave Absorbers with High-permittivity Composites of Ag-coated Ni-Zn Ferrite Particles. H. Cho[1] and *S. Kim*[1] *1. Department of Advanced Materials Engineering, Chungbuk National University, Cheongju, Republic of Korea*

CR-06. Microstructure and magnetic properties of MFe_2O_4 (M=Co, Ni, Mn) ferrite nanocrystals synthesized by an improved hydrothermal method. W. Wang[1], Z. Ding[1], X. Qi[1], F. Li[1] and *J. Liu*[2] *1. Beijing University of Chemical Technology, Beijing, China; 2. University of Texas at Arlington, Arlington, TX*

CR-07. Spin Orientation, Structure, Morphology and Magnetic Properties of Hematite Nanoparticles. A.H. Habib[2], *S. Xu*[1], S. Gee[4], Y. Hong[5] and M.E. McHenry[3] *1. Western Digital Corporation, San Jose, CA; 2. Intel Corporation, Chandler, AZ; 3. Carnegie Mellon University, Pittsburgh, PA; 4. Seagate Technology, Bloomington, MN; 5. University of Alabama, Tuscaloosa, AL*

CR-08. Effects of Co doping on site-disorder and magnetic properties of magnetoelectric $GaFeO_3$ nanoparticles. *T. Han*[1], Y. Lee[1], T. Chen[1], J. Chen[1] and Y. Hu[1] *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

CR-09. An improved magnetic softness for NiMgCuZn ferrite by two-step sintering method. K. Ma[1], *Z. Wang*[1] and H. Zhang[1] *1. Department of Applied Physics, Tianjin University, Tianjin, Tianjin, China*

CR-10. Influence of rare-earth on structural, magnetic and electrical properties of aluminum doped Strontium Ferrite. *D. Kunwar*[1], L. Wang[1], S. Mishra[1], N. Poudyal[2] and P. Liu[2] *1. Physics, University of Memphis, Memphis, TN; 2. Physics, University of Texas at Arlington, Arlington, TX*

CR-11. Influence of crystalline defects on the magnetic properties of Zinc Ferrite. *K. Lopez Maldonado*[1], P. de la Presa[2,3], J. Alonso[2,3], A. Hernando[2,3] and J. Elizalde Galindo[1] *1. Dpto. de Física y Matemáticas, Instituto de Ingeniería y Tecnología, Universidad Autónoma de Ciudad Juárez, Juárez, Chihuahua, Mexico; 2. Instituto de Magnetismo Aplicado (UCM-ADIF-CSIC), Las Rozas, Madrid, Spain; 3. Dpto. de Fisica de Materiales, Universidad Complutense de Madrid, Madrid, Madrid, Spain*

CR-12. $BiFeO_3$ phase controlled m'=e' low magnetic loss M-type hexaferrites for very high frequency applications. *Y. Peng*[1], Z. Feng[1] and Y. Chen[2] *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, China, WuHan, Hubei, China; 2. Department of Electrical and Computer Engineering, Center for Microwave Magnetic Materials and Integrated Circuits, and Department of Electrical and Computer Engineering, Northeastern University, Boston, MA*

CR-13. Influence of manganese substitution on the magnetoelastic properties and AC impedance of cobalt ferrites. C. Tsay[1], *Y. Lin*[1] and S. Jen[2] *1. Department of Materials Science and Engineering, Feng Chia University, Taichung, Taiwan; 2. Institute of Physics, Academia Sinica, Taipei, Taiwan*

CR-14. Nanofabrication and Characterization of Mg doped Cd Ferrites ($CdFe_{2-x}Mg_{1.5x}O_4$). *M. Gupta*[2,1] and B. Randhawa[1] *1. Department of Chemistry, Guru Nanak Dev University, Amritsar, Punjab, India; 2. Department of Chemistry, DAV College, Amritsar, Punjab, India*

CR-15. Investigation of the magnetic properties of individual superparamagnetic nanoparticles by frequency-modulated magnetic force microscopy imaging. *X. Li*[1,2], W. Lu[3], Z. Li[4], D. Pan[1], S. Yoshimura[2] and H. Saito[2] *1. School of Materials Science and Engineering, University of Shanghai for Science and Technology, Shanghai, China; 2. Research Center for Engineering Science, Graduate School of Engineering & Resource Science, Akita University, Akita, Japan; 3. School of Materials Science and Engineering, Tongji University, Shanghai, China; 4. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, China*

CR-16. Millimeter-wave Magneto-Dielectric Effects in Self-assembled Ferrite-Ferroelectric Core-Shell Nanoparticles. *G. Srinivasan*[1], M. Popov[1,2], G. Sreenivasulu[1], V. Petrov[3] and F. Chavez[4] *1. Physics, Oakland University, Rochester, MI; 2. Radiophysics Department, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 3. Institute of Electronic and Information Systems, Novgorod State University, Veliky Novgorod, Russian Federation; 4. Chemistry, Oakland University, Rochester, MI*

Session CS
MAGNETOELECTRICS I
(Poster Session)
Pavel Lukashev, Chair

CS-01. Electric field control of the magnetization in $Pr_{0.7}Sr_{0.3}MnO_3$/$Pb(Mg_{1/3}Nb_{2/3})_{0.7}Ti_{0.3}O_3$ heterostructures. Y. Zhao[1], J. Wang[1], F. Hu[1], *J. Lu*[1], J. Sun[1] and B. Shen[1] *1. Beijing National Laboratory for Condensed Matter Physics and State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

CS-02. Large E-field tunability of magnetic anisotropy and ferromagnetic resonance frequency of co-sputtered $Fe_{50}Co_{50}$-B film. *S. Li*[1], Q. Xue[1], H. Du[1], J. Xu[1], W. Shao[1], Z. Shi[1], X. Gao[1], M. Liu[2], T. Nan[3], N.X. Sun[3] and J. Duh[4] *1. College of Physics Science, Qingdao University, Qingdao, Shandong, China; 2. Electronic Materials Research Laboratory, Xi'an Jiaotong University, Xi'an, Shanxi, China; 3. Electrical and Computer Engineering Department, Northeastern University, Boston, MA; 4. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

CS-03. Compressive stress induced ferromagnetism and magneto-electric effect in magneto-electric Cr_2O_3 epitaxial films. *T. Yokota*[1], I. Tsuboi[1] and M. Gomi[1] *1. Environmental and Materials Engineering, Nagoya Institute of Technology, Nagoya, Aichi, Japan*

CS-04. Effect of Cobalt substitution on the magnetoelectric coupling of M-type hexaferrites. *H. Izadkhah*[1], S. Zare[1], S. Somu[1] and C. Vittoria[1] *1. Electrical and Computer Engineering, Northeastern Univeristy, Boston, MA*

CS-05. Electric field control of exchange spring behavior. *Y. Zhang*[1], Q. Zhou[1], B. Zhu[1], J. Ou-Yang[1], X. Yang[1] and S. Chen[1] *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China*

CS-06. Positive electroresistance in patterned $La_{0.8}Ca_{0.2}MnO_3$ micro-bridge on ferroelectric substrates. *Z. Wu*[1], J. Gao[2] and W. Tang[1] *1. Physics, Beijing University of Posts and Telecommunications, Beijing, China; 2. The University of Hong Kong, Hong Kong, Hong Kong*

CS-07. Low magnetic basing and large magnetoelectric effects in heterostructure of piezoelectric tube embedded with magnetostrictive fibers. *C. Leung*[1] and S. Or[1] *1. The Hong Kong Polytechnic University, Kowloon, Hong Kong*

CS-08. Irreversible electrical manipulation of magnetization based on $BiFeO_3$. *Q. Xu*[1], Z. Xu[1], M. He[2], Y. Cao[3] and J. Du[2]
1. Department of Physics, Southeast University, Nanjing, China; 2. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 3. Department of Materials Science and Engineering, Nanjing University, Nanjing, Jiangsu, China

CS-09. Voltage-controlled ferromagetism in pure ZnO thin films. Y.M. Hu[1] and *S.S. Li*[2] *1. Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Institute of Electro-Optical Science and Engineering, National Cheng Kung University, Tainan, Taiwan*

CS-10. Investigation of the effect of strain relaxation in $Pr_{0.67}Sr_{0.33}MnO_3$ films using polarization dependent XANES. *B. Zhang*[2,1], C. Sun[1], T. Venkatesan[3], S.M. Heald[1], J. Chen[2] and G. Chow[2] *1. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 2. Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 3. NUSNNI-Nanocore, National University of Singapore, Singapore, Singapore*

CS-11. The giant magnetoelectric effect in $Fe_{73.5}Cu_1Nb_3Si_{13.5}B_9$/PZT thick film composites. *J. Qiu*[1], Y. Wen[1], P. Li[1] and J. Yang[2,1] *1. College of Optoelectronic Engineering, Chongqing University, Chongqing, China; 2. Material Science Engineering, Georgia Institute of Technology, Atlanta, GA*

CS-12. Quantification of strain and charge co-mediated magnetoelectric coupling on ultra-thin Permalloy/PMN-PT interface. *T. Nan*[1], Z. Zhou[1], M. Liu[2], Y. Gao[1] and N.X. Sun[1] *1. ECE, Northeastern University, Boston, MA; 2. Xi'an Jiaotong University, Xi'An, China*

CS-13. Non-volatile magnetization switching in PMN-PT/Ru/FeCo heterostructures by electric field pulse. X. Han[1], *L. Xi*[1], Y. Li[1], X. Guo[1], D. Li[1], Z. Wang[1], Y. Zuo[1] and D. Xue[1] *1. Key Laboratory for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, Lanzhou, Gansu, China*

CS-14. Magnetic phase transitions and magnetoelelctric coupling of Al-doped Co_2Z hexaferrite. *X. Wang*[1,2], Z. Su[1], A. Sokolov[1], B. Hu[1], P. Andalib[1], Y. Chen[1] and V.G. Harris[1] *1. Department of Electrical and Computer Engineering, Center for Microwave Magnetic Materials and Integrated Circuits, Northeastern University, Boston, MA; 2. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, Hubei, China*

CS-15. Magnetoelectric Polymer Nanocomposite for Flexible Electronics. *M. Alnassar*[1], A. Alfadhel[1], Y. Ivanov[1] and J. Kosel[1] *1. Electrical Engineering, King Abdullah University of Science and Technology, Thuwal-Jeddah, Saudi Arabia*

CS-16. Abnormal Bistable Magnetoelectric Effect in Multiferroic Heterostructure. *J. Zhao*[1], W. Hubbard[2], M. Lewis[1], E. White[2], B. Regan[2] and K. Wang[1] *1. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA*

WEDNESDAY MORNING 9:30

CORAL LOUNGE (POSTERS)

Session CT
COMPLEX OXIDES I (Poster Session)
Stephen Wu, Chair

CT-01. Effect of Cu substitution on the magnetic and dielectric properties of La_2NiMnO_6. *A.K. Biswal*[2], J. Ray[2], P. Babu[1], V. Siruguri[1] and P. Vishwakarma[2] *1. UGC-DAE Consortium for Scientific Research, Mumbai, Maharashtra, India; 2. Physics, National Institute of Technology, Rourkela, Rourkela, Odisha, India*

CT-02. Physical proprieties of the novel $La_{2-x}Ca_xCoIrO_6$ double perovskite series. L. Tolentino[1], D.C. Freitas[2], M.B. Fontes[2], E. Baggio-Saitovitch[2], *E.M. Bittar*[2], E. Granado[3], P.G. Pagliuso[3] and L. Bufaiçal[1] *1. Instituto de Física, Universidade Federal de Goiás (UFG), Goiânia, GO, Brazil; 2. Centro Brasileiro de Pesquisas Físicas (CBPF), Rio de Janeiro, RJ, Brazil; 3. Instituto de Física "Gleb Wataghin", Universidade Estadual de Campinas (UNICAMP), Campinas, SP, Brazil*

CT-03. Magnetic-field-induced dielectric anomaly and electric polarization in ceramic $Mn_4Nb_2O_9$. *Y. Fang*[1,2], R. Bai[2], Z. Qian[2], Q. Cao[1], D. Wang[1] and Y. Du[1] *1. National Laboratory of Solid State Microstructures and Key Laboratory of Nanomaterials for Jiang Su Province, Nanjing, Jiangsu, China; 2. Center for Integrated Spintronic Devices (CISD), Hangzhou Dianzi University, Hangzhou, Zhejiang, China*

CT-04. Evaluation of magnetic field induced glassy behavior and oscillating magnetocalaroic effect in $Zn_{0.05}Ni_{0.95}Cr_2O_4$ spinel oxide. *K. Devi Chandrasekhar*[1], J. Krishna Murthy[2], A. Venimadhav[2] and H. Yang[1] *1. Physics, National Sun Yan Set University, Kaohsiung, Kaohsiung, Taiwan; 2. Cryogenic Engineering Centre, Indian Institute of Technology, Kharagpur, India*

CT-05. Hyperfine structure and magnetdic properties of Zn doped Co_2Z hexaferrite based on high-field Mössbauer spectroscopy. *J. Lim*[1], E. Hahn[2] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Republic of Korea; 2. Department of Physics, University of Suwon, Suwon, Republic of Korea*

CT-06. Magnetotransport and Magneto-Seebeck effect in $Nd_{0.7}Sr_{0.3}MO_3$ (M = Co, Mn). *R. Mahendiran*[1] and P. Kumar[1] *1. Physics Dept., National University of Singapore, Singapore, Singapore*

CT-07. Magnetic properties and exchange bias in $CaMn_{1-x}W_xO_3$ system. *V. Markovich*[1], I. Fita[2,3], A. Wisniewski[2], R. Puzniak[2], D. Mogilyansky[4], S. Naumov[5], E. Mostovshchikova[5], G. Gorodetsky[1] and G. Jung[1] *1. Physics, Ben-Gurion University of the Negev, Beer-Sheva, Israel; 2. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland; 3. Donetsk Institute for Physics and Technology, Donetsk, Ukraine; 4. The Ilse Katz Institute for Nanoscale Science and Technology, Ben-Gurion University of the Negev, Beer-Sheva, Israel; 5. Institute of Metal Physics, Ural Branch of RAS, Ekaterinburg, Russian Federation*

CT-08. Room temperature magnetodielectric properties of cobalt doped $CaCu_3Ti_4O_{12}$ ceramics. *C. Mu*[1] *1. University of Electronic Science and Technology of China, Chengdu, China*

CT-09. Spin reorientation in multiferroic spinel $Co_{0.5}Fe_{0.5}Cr_2O_4$ with Mössbauer spectroscopy. *B. Myoung*[1] and C. Kim[1] *1. Physics, Kookmin University, Seoul, Republic of Korea*

CT-10. Spin Reorientation effect on Phonon Raman Scattering in $NdFeO_3$ Single Crystal. *M.K. Singh*[2], G. Singh[2] and R.S. Katiyar[1] *1. Depaartment of Physics, University of Puerto Rico, San Juan, Puerto Rico; 2. Centre of Material Sciences, University of Allahabad, Allahabad, India*

CT-11. Nanostructured magnetic oxides for infrared applications. *A. Telegin*[1], E.V. Mostovshchikova[1], B.A. Gizhevskii[1] and L.V. Nomerovannaya[1] *1. Institute of Metal Physics UB of RAS, Yekaterinburg, Russian Federation*

CT-12. Enhancement magnetic properties and X-ray photoemission of $NaCo_{2-x}Ca_xO_4$ (x = 0.0, 0.1 and 0.2). D. Nanto[1,2], E. Ermawan[3], S. Poetardji[3] and *S. Yu*[1] *1. Physics, Chungbuk National University, Cheongju Chungbuk, Republic of Korea; 2. Physics Education, Syarif Hidayatullah State Islamic University, Jakarta, Indonesia; 3. Physics, University of Indonesia, Depok, Indonesia*

CT-13. Composition and temperature induced magnetic compensation and reversal in Mn Doped Co_2CrO_4 system. *H. Zhang*[2,1], Z. Wang[1], E. Liu[2], W. Wang[2], M. Yue[1] and G. Wu[2] *1. Beijing University of Technology, Beijing, China; 2. State Key Laboratory of Magnetism, Institute of Physics and Beijing National Laboratory for Condensed Mater Physics, Beijing, China*

CT-14. Magnetic properties and spin polarization of double perovskite $SrLaVRuO_6$ thin films. *K. Itou*[1], K. Ueda[1], T. Shinno[1] and H. Asano[1] *1. Nagoya University, Nagoya, Japan*

CT-15. The magneto-optical Kerr effect (MOKE) study of Sr_2CrReO_6 thin films. *J. So*[1], K. Ueda[1] and H. Asano[1] *1. Graduate School of Engineering, Nagoya University, Nagoya, Aichi, Japan*

CT-16. Magnetism and transport properties of layered rare-earth cobaltates $Ln_{0.30}CoO_2$. *K. Knizek*[1], P. Novak[1], Z. Jirak[1], J. Hejtmanek[1], M. Marysko[1] and J. Bursik[2] *1. Institute of Physics ASCR, Prague 6, Czech Republic; 2. Institute of Inorganic Chemistry ASCR, Rez near Prague, Czech Republic*

WEDNESDAY MORNING 9:30

CORAL LOUNGE (POSTERS)

Session CU
MAGNETOCALORIC MATERIALS II (Poster Session)

Robert de Groot, Co-Chair
Zsolt Gercsi, Co-Chair

CU-01. Optimization of magnetic refrigerators by tuning the heat transfer medium and operating conditions. M. Ghahremani[1], A. Aslani[1], M. Ovichi[1], A. Siddique[1], L.H. Bennett[1] and *E. Della Torre*[1] *1. Electrical and Computer Engneering, The George Washington University, Washington, DC*

CU-02. Anisotropic magnetocaloric effect in $DyAl_2$ measured by heat flux technique in a PPMS. *J.C. Monteiro*[1], R.D. dos Reis[1], A.N. Medina[2] and F.C. Gandra[1] *1. Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas, Campinas, São Paulo, Brazil; 2. Departamento de Física, Universidade Estadual de Maringá, Maringá, Paraná, Brazil*

CU-03. Critical behavior and magnetocaloric effect of $Pr_{1-x}Ca_xMnO_3$. *T. Ho*[1], T.D. Thanh[1,2], T.O. Ho[3], P.D. Thanh[4], T.L. Phan[1] and S.C. Yu[1] *1. Physics, Chungbuk National University, Seoul, Republic of Korea; 2. Institute of Materials Science, Vietnam Academy of Science and Technology, Hanoi, Vietnam; 3. Institute of Chemistry, Vietnam Academy of Science and Technology, Hanoi, Vietnam; 4. Faculty of Engineering Physics and Nanotechnology, University of Engineering and Technology, Vietnam National University, Hanoi, Vietnam*

CU-04. Magnetocaloric effect and magnetostructural coupling in $Mn_{0.92}Fe_{0.08}CoGe$ compounds. *J. Wang*[1], P. Shamba[1], W. Hutchison[2], M.F. Md Din[1], Z. Cheng[1], S. Kennedy[3], S. Campbell[2] and S. Dou[1] *1. Institute for Superconducting & Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. UNSW Canberra at the Australian Defence Force Academy, School of Physical, Environmental & Mathematical Sciences (PEMS), Canberra, ACT, Australia; 3. The Bragg Institute, ANSTO, Sydney, NSW, Australia*

CU-05. Magnetic ordering in the giant magnetocaloric compound Eu_4PdMg. *D. Ryan*[1], A. Legros[1], O. Niehaus[2], R. Pöttgen[2], J. Cadogan[3] and R. Flacau[4] *1. McGill University, Montreal, QC, Canada; 2. Institut für Anorganische und Analytische Chemie, University of Muenster, Muenster, Germany; 3. School of Physical, Environmental and Mathematical Sciences, UNSW Canberra at the Australian Defence Force Academy, Canberra, ACT, Australia; 4. Canadian Neutron Beam Centre, Chalk River, ON, Canada*

CU-06. Sample dependence of giant magnetocaloric effect in a cluster-glass system Ho_5Pd_2. *S. Toyoizumi*[1], H. Kitazawa[2], Y. Kawamura[2,3], H. Mamiya[2], N. Terada[2], R. Tamura[2], A. Dönni[2], K. Morita[1] and A. Tamaki[1] *1. Tokyo Denki University, Adachi, Tokyo, Japan; 2. National Institute for Materials Science, Tsukuba, Ibaraki, Japan; 3. Research Center for Neutron Science and Technology, Comprehensive Research Organization for Science and Society, Tokai-mura, Naka-gun, Ibaraki, Japan*

CU-07. Magnetocaloric effect across the magnetostructural transition in $Mn_{1-x}Cr_xCoGe$ melt-spun ribbons (x = 0.04, 0.11). *G. Daniel-Pérez*[1], J.L. Sanchez Llamazares[3], P. Alvaréz-Alonso[2], D. Ríos-Jara[3], R. Varga[4] and V. Chernenko[5] *1. Instituto Tecnológico Superior de Irapuato (ITESI), Irapuato, Guanajuato, Mexico; 2. Departamento de Electricidad y Electrónica, UPV/EHU, Bilbao, Spain; 3. Instituto Potosino de Investigación Científica y Tecnológica A.C., San Luis Potosi, Mexico; 4. Institute of Physics,University Pavol Jozef Safárik, Kosice, Slovakia; 5. BC Materials and University of Basque Country, UPV/EHU, Bilbao, Spain*

CU-08. Tricritical behavior of Gallium doped of $La_{0.7}Ca_{0.3}MnO_3$. D. Nanto[1,3], B. Soegijono[2], J. Hwang[1] and *S. Yu*[1] *1. Physics, Chungbuk National University, Cheongju, Republic of Korea; 2. Physics, University of Indonesia, Depok, Indonesia; 3. Physics Education, Syarif Hidayatullah State Islamic University, Jakarta, Indonesia*

CU-09. Second order phase transition temperature of single crystal samples of $Gd_5(Si_xGe_{1-x})_4$ in the mixed phase region of $0.3 \leq x \leq 0.41$. *R.L. Hadimani*[1,2], Y. Melikhov[3,4], D.L. Schlagel[2], T.A. Lograsso[2,5], K.W. Dennis[2], R.W. McCallum[2,5] and D.C. Jiles[1,2] *1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Division of Materials Science & Engineering, Ames Laboratory, Ames, IA; 3. Wolfson Center for Magnetics, Cardiff University, Cardiff, United Kingdom; 4. Institute of Physics, Polish Academy of Science, Warsaw, Poland; 5. Dept. of Materials Science & Engineering, Iowa State University, Ames, IA*

CU-10. Magnetocaloric effect in NiMnInSi Heusler alloys. *M. Ovichi*[1], M. Ghahremani[1], E. Della Torre[1], L. H. Bennett[1], H. ElBidweihy[1], F. Johnson[2] and M. Zou[2] *1. George Washington University, Arlington, VA; 2. GE Global Research, Niskayuna, NY*

CU-11. Enhancement of the magnetic entropy change on substitution of Ge in $ErSn_{1.1}Ge_{0.9}$. *S. Gupta*[1], L. Bainsla[1] and K. Suresh[1] *1. Physics, Indian Institute of Technology Bombay, Mumbai India, Mumbai, Maharashtra, India*

CU-12. Tuning Magnetostructural transformation temperature in Antiperovskite Compounds. E.T. Dias[2], K.R. Priolkar[2] and *A.K. Nigam*[1] *1. Department of Condensed Matter Physics and Materials Science, Tata Institute of Fundamental Research, Mumbai, Maharashtra, India; 2. Department of Physics, Goa University, Taleigao, Goa, India*

CU-13. Influence of microstructural changes on magnetic refrigeration performance for $La(Fe_{0.94}Co_{0.06})_{11.8}Si_{1.2}$ alloys during magnetic field cycling. Z. Yuan[1], *J. He*[1], L. Yang[1], Z. Xia[1] and D. Zhao[1] *1. Division of Functional Materials, Central Iron and Steel Research Institute, Beijing, China, Beijing, China*

CU-14. Phase transition and magnetocaloric properties of $Ni_{50}Mn_{35-x}In_{15}Cu_x$ alloys and ribbons. *F. Xu*[1], X. Fei[1], J. Liu[1], W. Tan[1] and S. Li[2] *1. School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, Jiangsu, China; 2. College of Physical Science, Qingdao University, Qingdao, China*

CU-15. Magnetocaloric Effect of Prospective Materials at Adiabatic and Quasi-Isothermal Conditions in High Magnetic Fields. *A.P. Kamantsev*[1,2], V.V. Koledov[1,2], A.V. Mashirov[1,2], E.T. Dilmieva[1], V.G. Shavrov[1], J. Cwik[2], I.S. Tereshina[3,2] and V.V. Khovaylo[4] *1. Kotelnikov IRE RAS, Moscow, Russian Federation; 2. International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw, Poland; 3. Baikov Institute of Metallurgy and Material Science of RAS, Moscow, Russian Federation; 4. National University of Science and Technology "MISiS", Moscow, Russian Federation*

CU-16. Comparison of the order of magnetic phase transitions in several magnetocaloric materials using the rescaled universal curve, Banerjee and mean field theory criteria. *L.A. Burrola Gándara*[1], C.R. Santillán Rodríguez[1], F.J. Rivera Gómez[1], R.J. Saénz Hernández[1], M.E. Botello Zubiate[1] and J.A. Matutes Aquino[1] *1. CIMAV, Chihuahua, Mexico*

Session CV
NANOWIRES AND ASSEMBLED NANOPARTICLES I (Poster Session)

Aidan Hindmarch, Co-Chair
Subhankar Bedanta, Co-Chair

CV-01. Improvement of saturation magnetization of Fe nanoparticles by post-annealing in a hydrogen gas atmosphere. *M. Kin*[1], H. Kura[2], M. Tanaka[1], Y. Hayashi[1], J. Hasegawa[1] and T. Ogawa[2] *1. Research Laboratories, Denso Corporation, Nisshin, Aichi, Japan; 2. Department of Electronic Engineering, Tohoku University, Sendai, Japan*

CV-02. The Effect of the Concentration of Mn^{2+} Ions on the Magnetic Properties of $Zn_{1-x}Mn_xTe$ Nanocrystals Grown in Glasses. A.S. Silva[1], *A. Franco Jr.*[2], F. Pelegrini[2] and N.O. Dantas[1] *1. Instituto de Física, Universidade Federal de Uberlândia (UFU), Uberlândia, Minas Gerais, Brazil; 2. Instituto de Física, Universidade Federal de Goiás (UFG), Goiânia, Goiás, Brazil*

CV-03. Magnetic properties of Ni nanowires with modulated diameter: a bottle-neck pinning. L.C. Arzuza[1], R.L. Ruiz[1], F. Béron[1] and *K.R. Pirota*[1] *1. Universidade Estadual de Campinas, Campinas, São Paulo, Brazil*

CV-04. Suppression of the spiral ordering and magnetic anisotropy studies in single-cristalline array of $BiFeO_3$ nanotubes. *L.S. de Oliveira*[2,1] and K.R. Pirota[1] *1. Universidade Estadual de Campinas, Campinas, Sao Paulo, Brazil; 2. Universidade Federal do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil*

CV-05. Magnetization reversal of Fe_3Se_4 nanowire arrays. *D. Li*[1], S. Li[1], Y. Zhou[1], Y. Zhu[1], W. Ren[1] and Z. Zhang[1] *1. Institute of Metal Research, Shenyang, China*

CV-06. All Optical Excitation and Detection of Spin-waves in Ferromagnetic Nanowires with High Aspect Ratio. *S. Pal*[1], S. Saha[1], M.V. Kamalakar[2] and A. Barman[1] *1. Thematic Unit of Excellence on Nanodevice Technology and Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Centre for Basic Sciences, Kolkata, West Bengal, India; 2. Department of Microtechnology and Nanoscience, Chalmers University of Technology, Göteborg, Sweden*

CV-07. Positive magnetoresistance and photovoltaic effects of Co-doped amorphous carbon/silicon heterostructures. Y. Jiang[1], L. Wang[2], *W. Huang*[1] and J. Gao[1] *1. Physics, Hong Kong University, Hong Kong, China; 2. Shanghai University, Shanghai, China*

CV-08. The magnetic properties of well-aligned nickel nanochains synthesized by magnetic field-induced assembly approach. *Z. Kou*[1], D. Zhang[1], J. Yue[1], Y. Wang[1], Z. Huang[1,3], Y. Cao[1], Y. Zhai[1,2], J. Du[2] and H. Zhai[2] *1. Southeast University, Nanjing, China; 2. Laboratory of Solid Microstructures, Nanjing University, Nanjing, China; 3. School of Electronic Science and Engineering, Southeast University, Nanjing, China*

CV-09. Relaxation and Interaction Effects in Magnetic Nanowire Arrays. *L. Spinu*[1], S. Khanal[1], J. Jagnyaseni Tripathy[2] and J. Wiley[2] *1. AMRI/Physics, University of New Orleans, New Orleans, LA; 2. AMRI/Chemistry, University of New Orleans, New Orleans, LA*

CV-10. Probing Domain Structure in High-Density Segmented Nanowire Arrays Through Polarization Analyzed SANS. *A. Grutter*[1], K.L. Krycka[1], D. Borchers[1], D. Tartakivska[1], B.J. Kirby[1], E.C. Estrine[3], D. Reddy[3], D. Park[2], P. Flatau[2] and B. Stadler[3] *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. University of Maryland, College Park, MD; 3. University of Minnesota, Minneapolis, MN*

CV-11. Magnetic order and dynamics of magnetic fluctuations in Fe_3O_4 nanoparticles assemblies. *K. Chesnel*[1], Y. Cai[1], R. Harrison[2], A. Reid[3] and A. Scherz[3] *1. Physics, BYU, Provo, UT; 2. Chemistry, BYU, Provo, UT; 3. SIMES, SLAC, Palo Alto, CA*

CV-12. Electrodeposited $Co_{93.2}P_{6.8}$ nanowire arrays with core-shell microstructure and perpendicular magnetic anisotropy. *A.S. Samardak*[1], F. Nasirpouri[2], M. Peighambari[2], A. Ognev[1], E. Sukovatitsina[1], L. Chebotkevich[1], S. Bending[4] and S.V. Komogortsev[3] *1. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation; 2. Faculty of Materials Engineering, Sahand University of Technology, Tabriz, Islamic Republic of Iran; 3. Institute of Physics, SB Russian Academy of Sciences, Krasnoyarsk, Islamic Republic of Iran; 4. Department of Physics, University of Bath, Bath, United Kingdom*

CV-13. Hierarchical Self-Assembly of Magnetic Colloidal Nanoparticle on Patterned Surface. *T. Wen*[1], H. Zhang[1], Q. Li[1], Q. Wen[1], Q. Yang[1], Z. Zhong[1], F. Bai[1] and Y. Liao[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

CV-14. Structuring induced spin reorientation in magnetic nanostructures. *A. Neumann*[1], A. Frauen[1], J. Vollmers[1], A. Meyer[2] and H.P. Oepen[1] *1. Institut of Applied Physics, University of Hamburg, Hamburg, Germany; 2. Institut of Physical Chemistry, University of Hamburg, Hamburg, Germany*

CV-15. Systematic variation of the composition in multisegmented CoNi nanowires. *A. Pereira*[1], J.L. Palma[1], M. Vázquez[2], J.C. Denardin[1] and J. Escrig[1] *1. Física, Universidad de Santiago de Chile, Santiago, Santiago, Chile; 2. Campus Universitario, Instituto de Ciencias de Materiales de Madrid, CSIC, Madrid, Madrid, Spain*

CV-16. Magnetic blocking properties and interparticle interactions in assemblies of $CoFe_2O_4$@γ-Fe_2O_3 core-shell nanoparticles. *C.A. Vieira*[1], R.C. Gomes[1], F.A. Tourinho[2], R.A. de Souza[3] and J. Depeyrot[1] *1. Instituto de Física, Universidade de Brasília, Brasília, DF, DF, Brazil; 2. Instituto de Química, Universidade de Brasília, Brasília, Distrito Federal, Brazil; 3. Faculdade UnB Planaltina, Universidade de Brasília, Brasília, Distrito Federal, Brazil*

WEDNESDAY MORNING 9:30 — CORAL LOUNGE (POSTERS)

Session CW
SKYRMIONS I
(Poster Session)
Mario Carpentieri, Chair

CW-01. Synthesis and Magnetism of $Mn_{3+x}Sn$ (x = 0, 0.5) films. *Y. Huh*[1], A. Nelson[1], J. Guenther[1], M. Dubey[2], Q. Fan[2], S. Valloppilly[3], W. Zhang[3,4], D. Sellmyer[3,4] and P. Kharel[1,3] *1. Physics, South Dakota State University, Brookings, SD; 2. Electrical Engineering and Computer Science, South Dakota State University, Brookings, SD; 3. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 4. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE*

CW-02. Magnetic phase induced by diluted doping of Co into $PrIn_3$. *Q. He*[1] and Y. Guo[1] *1. School of Energy Power and Mechanical Engineering, North China Electric Power University, Beijing, China*

CW-03. Ferromagnetism in $R_5Co_3Ni_2$ compounds (R = Gd, Tb, Dy, Ho, Er). *A. Provino*[1,2], S.K. Dhar[3], V. Smetana[4], K.A. Gschneidner Jr[4,5], M.U. Khan[6], P. Manfrinetti[1,4] and C. Ferdeghini[2] *1. Department of Chemistry, University of Genova, Genova, Genova, Italy; 2. Institute SPIN-CNR, Genova, Genova, Italy; 3. Condensed Matter Physics & Material Science, Tata Institute of Fundamental Research, Mumbai, India; 4. Ames Laboratory, Ames, IA; 5. Department of Materials Science and Engineering, Iowa State University, Ames, IA; 6. Department of Physics, Miami University, Oxford, OH*

CW-04. Influence of Cr on the nanoclusters formation and superferromagnetic behavior of Fe-Cr-Nb-B glassy alloys. H. Chiriac[1], L. Whitmore[1], G. Ababei[1], M. Grigoras[1] and *N. Lupu*[1] *1. Magnetic Materials and Devices, National Institute of R&D for Technical Physics, Iasi, Romania*

CW-05. Topological skyrmion mode driven by spin transfer-torque. *M. Carpentieri*[1], R. Tomasello[4], R. Zivieri[3] and G. Finocchio[2] *1. Department of Ingegneria Elettrica e dell'Informazione, Politecnico of Bari, Bari, Italy; 2. Department of Electronic Engineering, Industrial Chemistry and Engineering, University of Messina, Messina, Italy; 3. Department of Physics and Earth Sciences and CNISM Unit of Ferrara, University of Ferrara, Ferrara, Italy; 4. Department of Computer Science, Modelling, Electronics and System Science, University of Calabria, Rende, Italy*

CW-06. Bubbles and skyrmions in Pt|Co|Pt and Pt|Co|Ir multilayers observed by STXM. *C. Moreau-Luchaire*[1], C. Moutafis[2], N. Reyren[1], J. Sampaio[1], N. Van Horne[1], C. Vaz[2], P. Warnicke[2], K. Garcia[1], M. Weigand[3], K. Bouzehouane[1], C. Deranlot[1], J. George[1], J. Raabe[2], V. Cros[1] and A. Fert[1] *1. Unité Mixte CNRS/Thales, Palaiseau, France; 2. Paul Scherrer Institute, Villigen, Switzerland; 3. Max Planck Institute for Intelligent Systems, Stuttgart, Germany*

CW-07. Magnetic vortex and skyrmions in heterogeneous hard/soft systems with perpendicular crystalline anisotropy. *G. Zhao*[1] *1. College of Physics and Electronic Engineering, Sichuan Normal University, Chengdu, Sichuan, China*

CW-08. Use of skyrmions in the design of multi-level STT-MRAMs. *R. Tomasello*[1], M. Lanuzza[1], A. Giordano[2], M. Carpentieri[3] and G. Finocchio[2] *1. Department of Computer Science, Modeling, Electronics and System Science, University of Calabria, Arcavacata di Rende, Cosenza, Italy; 2. Department of Electronic Engineering, Industrial Chemistry and Engineering, University of Messina, Messina, Italy; 3. Department of Electrical and Information Engineering, Politecnico of Bari, Bari, Italy*

CW-09. Current-driven Skyrmion dynamics in a memory device. *I. Purnama*[1], W. Gan[1], M.B. Jalil[2] and W. Lew[1] *1. Nanyang Technological University, Singapore, Singapore; 2. National University of Singapore, Singapore, Singapore*

CW-10. Physical conditions for stability of skyrmions in a nanowire. C. Chui[1] and *Y. Zhou*[1] *1. Physics, The University of Hong Kong, Hong Kong Island, Hong Kong*

CW-11. Stabilization of skyrmion state in a bilayer nanodisk with perpendicular magnetic anisotropy. *M.E. Stebliy*[1], A.G. Kolesnikov[1], A. Ognev[1], A.S. Samardak[1], A.V. Davidenko[1] and L.A. Chebotkevich[1] *1. Thin film Technology, FEFU, Vladivostok, Russian Federation*

CW-12. Spin motive force driven by the resonant motion of the Skyrmion lattice. *J. Ohe*[1] *1. Toho University, Chiba, Japan*

CW-13. Reversal mechanism of skyrmionic textures in nanostructures via Bloch point occurence and propagation. *M. Beg*[1], W. Wang[1], M. Albert[1], M. Bisotti[1], D. Chernyshenko[1], R.L. Stamps[2] and H. Fangohr[1] *1. Faculty of Engineering and the Environment, University of Southampton, Southampton, Hampshire, United Kingdom; 2. SUPA School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

CW-14. Topological charge as a diagnostic of magnetic skyrmion configurations. *M.B. Jalil*[1], S. Tan[2], Z. Siu[3], W. Gan[4], I. Purnawan[4] and W. Lew[4] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Agency for Science, Technology and Research (A*STAR), Singapore, Singapore; 3. NUS Graduate School for Integrative Sciences and, National University of Singapore, Singapore, Singapore; 4. Nanyang Technological University, School of Physical and Mathematical Sciences, Singapore, Singapore*

CW-15. Micromagnetic simulation of skyrmions in confined geometries without Dzyaloshinskii-Moriya interaction. *J. Sinnecker*[1], F. Garcia[1], É.R. Novais[1] and A.P. Guimarães[1] *1. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, RJ, Brazil*

CW-16. Voltage guiding of magnetic skyrmions. *P. Upadhyaya*[1], P.K. Amiri[1] and K. Wang[1] *1. Electrical Engineering, UCLA, Los Angeles, CA*

WEDNESDAY AFTERNOON 1:30

CORAL 3

Session DA
FRONTIERS OF MAGNETIZATION DYNAMICS AT THE NANOSCALE

Justin Shaw, Chair

1:30

DA-01. Time-resolved scanning Kerr microscopy of magnetization dynamics at the nanoscale. *(Invited)* *P.S. Keatley*[1], P. Gangmei[1,2], M. Dvornik[1,3], R.J. Hicken[1], J. Grollier[4] and C. Ulysse[5] *1. School of Physics and Astronomy, University of Exeter, Exeter, United Kingdom; 2. Seagate Technology, Springtown, Derry, United Kingdom; 3. Department of Solid State Sciences, Ghent University, Ghent, Belgium; 4. Unité Mixte de Physique CNRS/Thales and Université Paris Sud 11, Palaiseau, France; 5. CNRS PHYNANO team, Laboratoire de Photonique et de Nanostructures (LPN), Marcoussis, France*

2:06

DA-02. Time-resolved x-ray imaging of spin wave dynamics at the nanoscale. ***(Invited)*** *S. Bonetti*[1,2], R. Kukreja[1,2], H. Ohldag[2], Z. Chen[1,2], S. Urazhdin[3], J. Frisch[2], F. Macià[8], D. Backes[8], A. Eklund[5], G. Malm[5], F. Mancoff[6], J. Katine[4], V. Tyberkevich[7], A. Slavin[7], A.D. Kent[8], J. Stöhr[2] and H. Dürr[2] *1. Stanford University, Stanford, CA; 2. SLAC National Accelerator Laboratory, Menlo Park, CA; 3. Emory University, Atlanta, GA; 4. HGST, San Jose, CA; 5. KTH - Royal Institute of Technology, Stockholm, Sweden; 6. Everspin Technologies, Chandler, AZ; 7. Oakland University, Rochester, MI; 8. New York University, New York, NY*

2:42

DA-03. Nanowire spin torque oscillator driven by spin orbit torques. ***(Invited)*** *I. Krivorotov*[1], Z. Duan[1], A. Smith[1], L. Yang[1], B. Youngblood[1], J. Lindner[2], V. Demidov[3] and S. Demokritov[3] *1. Physics and Astronomy, University of California, Irvine, Irvine, CA; 2. Helmholtz Zentrum Dresden Rossendorf, Dresden, Germany; 3. University of Muenster, Muenster, Germany*

3:18

DA-04. Generation of bright Circular Polarized High Harmonics for Ultrafast Magneto-Optical Investigations. ***(Invited)*** *P. Grychtol*[1], O. Kfir[2], R. Knut[1,3], E. Turgut[1], D. Zusin[1], D. Popmintchev[1], T. Popmintchev[1], H. Nembach[3], J. Shaw[3], A. Fleischer[2], H. Kapteyn[1], M. Murnane[1] and O. Cohen[2] *1. JILA, University of Colorado, Boulder, CO; 2. Solid State Institute and Physics Department, Technion, Haifa, Israel; 3. Electromagnetics Division, NIST, Boulder, CO*

3:54

DA-05. Spin currents in ultrafast magnetization dynamics - A combined theoretical and experimental approach. ***(Invited)*** *A.J. Schellekens*[1], K. Kuiper[1], W. Verhoeven[1], T. Vader[1], R. de Wit[1], N. de Vries[1], J. Lucassen[1] and B. Koopmans[1] *1. Applied Physics, TU/e, Eindhoven, Noord-Brabant, Netherlands*

Session DB
SPIN INJECTION I
Felix Casanova, Chair

1:30

DB-01. Graphene spintronics: Spin Injection and Proximity Effects from First Principles. *I. Zutic*[1], P. Lazic[2], G. Sipahi[3] and R. Kawakami[4] *1. University at Buffalo, Buffalo, NY; 2. Rudjer Boskovic Institute, Zagreb, Croatia; 3. Instituto de Fisica de Sao Carlos, Universidade de Sao Paulo, Sao Paulo, Brazil; 4. Ohio State University, Columbus, OH*

1:42

DB-02. Characterization of intrinsic spin relaxation time in Hanle effect of graphene with various junction. H. Idzuchi[1], A. Fert[2] and *Y. Otani*[1,3] *1. CEMS, RIKEN, Wako, Japan; 2. CNRS/Thales, Universite Paris-Sud, Orsay, France; 3. Univ. of Tokyo, Kashiwa, Chiba, Japan*

1:54

DB-03. Homoepitaxial Graphene Tunnel Barriers for Spin Transport. *A.L. Friedman*[1], O.M. van 't Erve[1], C.H. Li[1], J.T. Robinson[2] and B.T. Jonker[1] *1. Mater. Sci. and Tech., Naval Research Laboratory, Washington, DC; 2. Elec. Sci. and Tech., Naval Research Laboratory, Washington, DC*

2:06

DB-04. Long Distance Spin Communication in CVD Graphene. V. Mutta[1], C. Groenveld[1], A. Dankert[1] and *S.P. Dash*[1] *1. Chalmers University of Technology, Gothenburg, Sweden*

2:18

DB-05. Demonstration of long-range spin transport in n-type Si at room temperature. *M. Kameno*[1,2], Y. Ando[2], T. Shinjo[2], M. Shiraishi[2], H. Koike[3], T. Sasaki[3], T. Oikawa[3] and T. Suzuki[4] *1. Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 2. Department of Electronic Science and Engineering, Kyoto University, Kyoto, Kyoto, Japan; 3. TDK corporation, Ichikawa, Chiba, Japan; 4. AIT, Akita, Akita, Japan*

2:30

DB-06. Interdiffusion-controlled Kondo suppression of spin injection efficiency in metallic non-local spin valve. *L. O'Brien*[1,2], D. Spivak[3], M. Erickson[3], H. Ambaye[4], R.J. Goyette[4], V. Lauter[4], P.A. Crowell[3] and C. Leighton[1] *1. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 2. Department of Physics, University of Cambridge, Cambridge, United Kingdom; 3. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN; 4. Oak Ridge National Laboratory, Oak Ridge, TN*

2:42

DB-07. g-factor anisotropy driven spin relaxation in germanium. ***(Invited)*** *P. Li*[1] and I. Appelbaum[1] *1. University of Maryland, College Park, MD*

3:18

DB-08. Electric Field Effects on Spin Accumulation in Nb-doped $SrTiO_3$ Using Three Terminal Hanle Geometry at Room Temperature. *A.M. Kamerbeek*[1], E. de Vries[1], A. Dankert[2], S.P. Dash[2], B.J. van Wees[1] and T. Banerjee[1] *1. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Groningen, Netherlands; 2. Microtechnology and Nanoscience, Chalmers University of Technology, Gothenburg, Sweden*

3:30

DB-09. Electrical spin injection and detection in a Schottky diode with non-linear transport characteristics. *A.M. Spiesser*[1], R. Jansen[1], H. Saito[1] and S. Yuasa[1] *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology AIST, Tsukuba, Ibaraki, Japan*

3:42

DB-10. X-ray imaging of spin injection into copper. *R. Kukreja*[1,2], S. Bonetti[2], H. Ohldag[2], Z. Chen[2], D. Backes[3], F. Macia[3], J. Katine[4], A. Kent[3], H. Durr[2] and J. Stohr[2] *1. Material Science and Engineering, Stanford University, Stanford, CA; 2. SLAC National Accelerator Laboratory, Menlo Park, CA; 3. Physics, New York University, NYU, NY; 4. HGST a Western Digital company, San Jose, CA*

3:54

DB-11. Sensing spin and spinning memory. A chiral-based spin sensors and magnetic memory devices without a permanent magnet. *Y. Paltiel*[1] *1. Applied Physics, The Hebrew University, Jerusalem, Israel*

4:06

DB-12. Electric control of spin injection into a ferroelectric semiconductor. *X. Liu*[1], J.D. Burton[1] and E.Y. Tsymbal[1] *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*

4:18

DB-13. Withdrawn

Session DC
SPIN-ORBIT TORQUES AND THE SPIN HALL EFFECT
Olaf van't Erve, Chair

1:30

DC-01. Spin-orbit torque engineering in magnetic heterostructures. ***(Invited)*** X. Qiu[1], K. Narayanapillai[1], P. Deorani[1], M. Jamali[1], Y. Wu[1], L. Loong[1], K. Lee[2], H. Lee[3], A. Manchon[4] and *H. Yang*[1] *1. National University of Singapore, Singapore, Singapore; 2. Korea University, Seoul, Republic of Korea; 3. Pohang University of Science and Technology, Pohang, Republic of Korea; 4. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

2:06

DC-02. Effects of interfacial spin orbit scattering on spin and charge transport in ferromagnetic metals. *S. Zhang*[1] and S. Zhang[1] *1. Department of Physics, University of Arizona, Tucson, AZ*

2:18

DC-03. Characterization of Spin-Orbit Torques in Pt/Co/Ta structures. *S. Woo*[1], M. Mann[1], L. Caretta[1] and G. Beach[1] *1. Materials Sci. & Eng., MIT, Cambridge, MA*

2:30

DC-04. Direct and inverse spin-orbit torques from first principles. *F. Freimuth*[1] *1. IAS-1, Forschungszentrum Julich, Julich, Germany*

2:42

DC-05. Time domain measurements of a spin torque oscillator driven by spin orbit torques. *A. Smith*[1], L. Yang[1], B. Youngblood[1], Z. Duan[1] and I. Krivorotov[1] *1. Physics, UC Irvine, Irvine, CA*

2:54

DC-06. Self-consistent determination of the key spin transfer torque parameters from spin wave Doppler experiments. *H.S. Körner*[1], J. Chauleau[1], H.G. Bauer[1], J. Stigloher[1], M. Härtinger[1], G. Woltersdorf[1] and C.H. Back[1] *1. Department of Physics, University of Regensburg, Regensburg, Germany*

3:06

DC-07. Electric loop current induced by inverse spin Hall effect. *Y. Omori*[2], F. Auvray[2], T. Wakamura[2], Y. Niimi[2], A. Fert[3] and Y. Otani[2,1] *1. CEMS, RIKEN, Wako, Saitama, Japan; 2. ISSP, University of Tolyo, Kashiwa, Chiba, Japan; 3. CNRS/Thales, University Paris-Sud, Palaiseau, France*

3:18

DC-08. Inverse Spin Hall Effect in NiFe/Normal Metal Bilayers. *M. Obstbaum*[1], M. Härtinger[1], H.G. Bauer[1], T. Meier[1], F. Swientek[1], C.H. Back[1] and G. Woltersdorf[2] *1. Department of Physics, University of Regensburg, Regensburg, Germany; 2. Department of Physics, Martin Luther University Halle, Halle, Germany*

3:30

DC-09. Investigation of spin to charge current conversion using Spin Hall Effect. *J. George*[1], J. Rojas-Sanchez[1], P. Laczkowski[1], N. Reyren[1], C. Deranlot[1], H. Jaffres[1], S. Oyarzun[2], L. Vila[2] and M. Jamet[2] *1. Unité Mixte de Physique CNRS Thales, CNRS, Palaiseau, France; 2. INAC-SP2M, CEA, Grenoble, France*

3:42

DC-10. Surprisingly Large Inverse Spin Hall Effect in 3*d* Transition Metals: The Dominant Role of *d*-Orbitals in Spin-Orbit Coupling. *H. Wang*[1], C. Du[1], F. Yang[1] and P. Hammel[1] *1. Physics, The Ohio State University, Columbus, OH*

3:54

DC-11. Observation of inverse spin Hall effect in bismuth selenide. *P. Deorani*[1], J. Son[1], K. Banerjee[1], N. Koirala[2], M. Brahlek[2], S. Oh[2] and H. Yang[1] *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Department of Physics & Astronomy, The State University of New Jersey, Newark, NJ*

4:06

DC-12. Detecting Spin Swapping in Normal Metals. *H.B. Saidaoui*[1], C. Ortiz Pauyac[1] and A. Manchon[1] *1. Physical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal, Makkah, Jeddah, Saudi Arabia*

4:18

DC-13. Spin Hall effect in Mn-based metallic antiferromagnets. *W. Zhang*[1], M.B. Jungfleisch[1], W. Jiang[1], J. Pearson[1] and A. Hoffmann[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL*

Session DD
MAGNETIC VORTICES
Guido Meier, Chair

1:30

DD-01. Electrical determination of vortex state in sub-micron magnetic elements. *A. Gangwar*[1,2], H.G. Bauer[1], J.Y. Chauleau[1], M. Noske[2], M. Weigand[2], H. Stoll[2], G. Schütz[2] and C.H. Back[1] *1. Department of Physics, University of Regensburg, Regensburg, Germany; 2. Max Planck Institute for Intelligent Systems, Stuttgart, Germany*

1:42

DD-02. Vortex-related AMR effect in sub-micron nickel disks. T. Wren[1,2], O. Kazakova[1] and *P. Petrashov*[2] *1. Quantum Detection, National Physical Laboratory, Egham, United Kingdom; 2. Physics, Royal Holloway University, Egham, Surrey, United Kingdom*

1:54

DD-03. Coupled vortex dynamics in vortex and vortex-antivortex lattices. D. Han[1], A. Vogel[2], H. Jung[1], K. Lee[1], M. Weigand[3], H. Stoll[3], G. Schutz[3], P. Fischer[4], G. Meier[2] and *S. Kim*[1] *1. Department of Materials Science and Engineering, Seoul National University, Seoul, Republic of Korea; 2. Institut fur Angewandte Physik und Zentrum fur Mikrostrukturforschung, Universitat Hamburg, Hamburg, Germany; 3. Max Planck Institut fur Intelligente Systeme, Stuttgart, Germany; 4. Center for X-ray Optics, Lawrence Berkeley National Lab, Berkeley, CA*

2:06

DD-04. Mode coupling and synchronization of spin transfer nano-oscillators based on coupled vortices. *R. Lebrun*[1], N. Locatelli[1,2], F. Abreu Araujo[3], H. Kubota[4], S. Tsunegi[4,1], K. Yakushiji[4], A. Fukushima[4], J. Grollier[1], S. Yuasa[4] and V. Cros[1] *1. UMR CNRS/THALES, Palaiseau, France; 2. Institut d'Electronique Fondamentale, Orsay, France; 3. ICMN, Louvain La Neuve, Belgium; 4. AIST, Tsukuba, Japan*

2:18

DD-05. Observation of large rectification voltage associated with gyrotropic vortex dynamics. *A. Jenkins*[1], P. Bortolotti[1], E. Grimaldi[1], R. Lebrun[1], J. Kermorvant[1], H. Kubota[2], K. Yakushiji[2], A. Fukushima[2], O. Klein[3], S. Yuasa[2] and V. Cros[1] *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 3. Service de Physique de l'État Condensé, Saclay, France*

2:30

DD-06. Gyration amplification in dynamics of magnetic vortex pair. *N. Hasegawa*[1,2], S. Sugimoto[1], D. Kumar[3], S. Barman[3], A. Barman[3] and Y. Otani[1,2] *1. ISSP, University of Tokyo, Kashiwa, Japan; 2. RIKEN-CEMS, Wako, Japan; 3. Department of Condensed Matter Physics and Material Sciences, S.N. Bose National Centre for Basic Sciences, Kolkata, India*

2:42

DD-07. Withdrawn

2:54

DD-08. The third dimension: Hybridisation of 'flexure gyromodes' with spin waves in magnetic vortex structures. *M. Noske*[1], M. Weigand[1], G. Dieterle[1], M. Fähnle[1], H. Stoll[1], A. Gangwar[1,2], G. Woltersdorf[3], A. Slavin[4], C.H. Back[2] and G. Schütz[1] *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Department of Physics, University of Regensburg, Regensburg, Germany; 3. Department of Physics, Martin Luther University Halle, Halle, Germany; 4. Department of Physics, Oakland University, Rochester, MI*

3:06

DD-09. Intensity inversion of vortex gyrotropic modes in thick ferromagnetic nanodots. J. Ding[1], *G.N. Kakazei*[1,2], X. Liu[1], K. Guslienko[3,4] and A. Adeyeye[1] *1. Department of Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore; 2. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal; 3. Dpto. Física de Materiales, Universidad del País Vasco, UPV/EHU, San Sebastian, Spain; 4. IKERBASQUE, The Basque Foundation for Science, Bilbao, Spain*

3:18

DD-10. Vortex Dynamics in Co-Fe-B Magnetic Tunnel Junctions in Presence of Defects. *M. Kuepferling*[1], S. Zullino[1], A. Sola[1], G. Durin[1], M. Pasquale[1], G. Bertotti[1], B. Van de Wiele[2], K. Rott[3] and G. Reiss[3] *1. INRIM, Torino, Italy; 2. Department of Electrical Energy, Systems and Automation, Ghent University, Ghent, Belgium; 3. Physics Department, Bielefeld University, Bielefeld, Germany*

3:30

DD-11. Vortex core reversal in patterned magnetic hybrid systems. *P. Wohlhüter*[1,2], M.T. Bryan[3,4], P. Warnicke[2], S. Gliga[1,2], S.E. Stevenson[2], G. Heldt[5], L. Saharan[4], A.K. Suszka[1,2], C. Moutafis[2], R.V. Chopdekar[2], J. Raabe[2], T. Thomson[5], G. Hrkac[4] and L. Heyderman[1,2] *1. Department of Materials, ETH Zurich, Zurich, Switzerland; 2. Paul Scherrer Institute, Villigen PSI, Switzerland; 3. Department of Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 4. College of Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom; 5. School of Computer Science, University of Manchester, Manchester, United Kingdom*

3:42

DD-12. Time-resolved X-ray microscopy of domain pattern destruction and recovery via non-equilibrium uniform magnetization states in permalloy vortex elements at the P04 beamline of PETRA III. *P. Wessels*[2,3], J. Ewald[4], M. Wieland[1,2], T. Nisius[4], A. Vogel[5], G. Abbati[4], S. Baumbach[4], J. Overbuschmann[4], J. Viefhaus[6], G. Meier[2,5], T. Wilhein[4] and M. Drescher[2,1] *1. Institute of Experimental Physics, University of Hamburg, Hamburg, Germany; 2. The Hamburg Centre for Ultrafast Imaging, University of Hamburg, Hamburg, Germany; 3. Institute of Laser-Physics, University of Hamburg, Hamburg, Germany; 4. Institute for X-Optics, Hochschule Koblenz, Remagen, Rheinland-Pfalz, Germany; 5. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 6. Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany*

3:54

DD-13. Controlling the switching of out-of-plane magnetized nanowires by in-plane shape. *R. Mansell*[1], A. Beguivin[1], D.C. Petit[1], A. Fernandez-Pacheco[1], J. Lee[1] and R. Cowburn[1] *1. University of Cambridge, Cambridge, United Kingdom*

4:06

DD-14. Magnetization reversal at 10nm scales in exchange coupled media for weak or strong coupling. *S. Romer*[1], M.A. Marioni[1], S. Oezer[4], N.R. Joshi[3] and H.J. Hug[1,2] *1. Nanoscale Materials Science, Empa, Swiss Federal Laboratories for Materials Science and Technology, Duebendorf, Switzerland; 2. Department of Physics, University of Basel, Basel, Switzerland; 3. Nano Science and Technology Centre (NSTC), Mangalore Institute of Technology & Engineering, Mangalore, India; 4. Bogaziçi University, Department of Electrical and Electronics Engineering, Bebek/Istanbul, Turkey*

4:18

DD-15. Perpendicularly magnetized spintronic memristor. *S. Lequeux*[2], J. Sampaio[2], R. Matsumoto[1], A. Fukushima[1], K. Yakushiji[1], H. Kubota[1], S. Yuasa[1], V. Cros[2] and J. Grollier[2] *1. AIST, Tsukuba, Japan; 2. Unité Mixte de Physique CNRS/ Thales, Palaiseau, France*

Session DE
MRAM AND MAGNETIC TUNNEL JUNCTIONS
Alexey Khvalkovskiy, Chair

1:30

DE-01. Spin dice: physical random number generator using spin torque switching in perpendicularly magnetized MTJs. *A. Fukushima*[1], T. Seki[1], K. Yakushiji[1], H. Kubota[1], H. Imamura[1], S. Yuasa[1] and K. Ando[1] *1. AIST, Tsukuba, Japan*

1:42

DE-02. Ultra-low resistance area in MgO-based MTJs (>100% at 0.3 Ωμm²) study for 2Tbit/inch² read head application. *T. Kitada*[1], K. Nakamura[1], Y. Tanaka[1], S. Furukawa[1] and T. Hatano[1] *1. Process Development Group, Tokyo Electron Yamanashi Limited, Nirasaki, Yamanashi, Japan*

1:54

DE-03. Control of offset field and pinning stability in perpendicular magnetic tunnelling junctions with synthetic antiferromagnetic coupling multilayer. *G. Han*[1], M. Tran[1], J. Wang[1], K. Eason[1], S. Lim[1], C. Sim[1] and A. Huang[1] *1. Data Storage Institute, Singapore, Singapore*

2:06

DE-04. Perpendicular magnetic tunnel junction with ultra-thin reference layer. *H. Gan*[1], R. Malmhall[1], Z. Wang[1], X. Wang[1], Y. Zhou[1], J. Zhang[1], B.K. Yen[1], X. Hao[1], D. Jung[1], K. Satoh[1] and Y. Hui[1] *1. Avalanche Technology, Fremont, CA*

2:18

DE-05. Al-Doping Effect on Annealing Stability in MgO-Based Magnetic Tunnel Junctions for Magnetic Sensor with Perpendicularly Magnetized CoFeB Sensing Layer. *T. Nakano*[1], M. Oogane[1], H. Naganuma[1], T. Yano[2], K. Ao[2] and Y. Ando[1] *1. Department of Applied Physics, Tohoku University, Sendai, Miyagi, Japan; 2. DENSO Corp., Kariya, Japan*

2:30

DE-06. Tailoring MnGa/FeCo interfacial coupling and their effect on spin dependent tunneling in perpendicular magnetic tunnel junctions. *Q. Ma*[1], S. Mizukami[1], X. Zhang[1] and T. Miyazaki[1] *1. WPI AIMR, Tohoku University, Sendai, Japan*

2:42

DE-07. Low damping insertion elements for the exchange coupled hard/soft composite structure. *A. Singh*[2], A. Natarajarathinam[3], M. Carton[1], S. Schwarm[1], S. Gupta[1] and O.N. Mryasov[2] *1. Department of Metallurgical and Materials Engineering, University of Alabama, Tuscaloosa, AL; 2. Physics, University of Alabama, Tuscaloosa, AL; 3. Seagate, Minneapolis, MN*

2:54

DE-08. Interlayer exchange coupling between [Pt/Co] multilayers and CoFeB/MgO through a Ru/Ta composite spacer. *S. Yun*[1], S. Lim[1] and S. Lee[1] *1. Materials Science and Engineering, Korea University, Seoul, Republic of Korea*

3:06

DE-09. Modified current-in-plane tunneling method for double-barrier magnetic tunnel junctions. *S. Lee*[1], T. Bae[1] and J. Hong[1] *1. Materials Science & Engineering, Yonsei University, Seoul, Republic of Korea*

3:18

DE-10. Low temperature scaling of CoFeB/MgO interface magnetic anisotropy. *A. Singh*[1], J. Barker[1,2], L. Spinu[3], E. Girt[4], S. Gupta[5] and O.N. Mryasov[1] *1. Physics, University of Alabama, Tuscaloosa, AL; 2. Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai, Japan; 3. Physics, AMRI, University of New Orleans, New Orleans, LA; 4. Physics, Simon Fraser University, Vancouver, BC, Canada; 5. Metallurgical and Materials Engineering, University of Alabama, Tuscaloosa, AL*

3:30

DE-11. Magnetic properties of ultra-thin $D0_{22}$-Mn_3Ge perpendicular-magnetized films. *A. Sugihara*[1], K.Z. Suzuki[1], S. Mizukami[1] and T. Miyazaki[1] *1. Tohoku University, Sendai, Japan*

3:42

DE-12. Perpendicular magnetic anisotropy of Mn_4N films fabricated by reactive sputtering method. *K. Kabara*[1] and M. Tsunoda[1] *1. Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan*

3:54

DE-13. Uniaxial anisotropy in layered full Heusler alloys. *K. Munira*[1] and W.H. Butler[1] *1. University of Alabama, Tuscaloosa, AL*

4:06

DE-14. Electric field control of magnetism in multiferroic heterostructures. *Y. Zhao*[1], S. Zhang[1], P. Li[1], A. Chen[1], L. Yang[1], S. Rizwan[2], J. Zhang[3], J. Seidel[3], T. Qu[1], Z. Luo[4], Q. He[3], T. Zou[2], Y. Sun[2], Y. Wu[5], X. Jin[5], C. Gao[4], X. Han[2] and R. Ramesh[3] *1. Physics, Tsinghua University, Beijing, China; 2. Beijing National Laboratory for Condensed Matter Physics, Beijing, China; 3. University of California, Berkeley, CA; 4. University of Science and Technology of China, Hefei, China; 5. Fudan University, Shanghai, China*

4:18

DE-15. Development of Magnetic-Insulator Multilayer Films for FITT Device. *J. Chudow*[1], C. Chen[1], A. Richardella[2], N. Samarth[2] and D. Worledge[1] *1. Physical Sciences Department, IBM T.J. Watson Research Center, Yorktown Heights, NY; 2. Center for Nanoscale Science and Department of Physics, Pennsylvania State University, University Park, PA*

WEDNESDAY AFTERNOON 1:30

SOUTH PACIFIC 3 & 4

Session DF
MULTILAYERS AND THIN FILMS II
Abdelmadjid Anane, Chair

1:30

DF-01. Magnetic Yoking and Enhanced Interactions in Perpendicular $L1_0$-FePt Based Hard/Soft Bilayers. *D.A. Gilbert*[1], J. Liao[2], M. Winklhofer[3], C. Lai[2] and K. Liu[1] *1. Physics, University of California, Davis, Davis, CA; 2. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 3. Department of Earth & Environmental Sciences, Ludwig-Maximilians-Universität München, München, Germany*

1:42

DF-02. Enhanced (001) preferred orientation and perpendicular magnetic anisotropy of $L1_0$-CoPt/TiN multilayer films on glass substrates. *H. An*[1], Q. Xie[2], J. Wang[3], T. Sannomiya[1], S. Muraishi[1], Z. Zhang[2], Y. Nakamura[1] and J. Shi[1] *1. Tokyo Institute of Technology, Tokyo, Japan; 2. Tsinghua University, Beijing, China; 3. National Institute for Materials Science, Tsukuba, Japan*

1:54

DF-03. Enhancement of perpendicular magnetic anisotropy of $L1_0$ ordered FePd by inserting ultra-thin Co_2MnSi Heusler alloy. *T. Bae*[1], J. Ko[1], S. Lee[1] and J. Hong[1] *1. Materials Science and Engineering, Yonsei, Seoul, Republic of Korea*

2:06

DF-04. Dependence of Curie temperature on Pt underlayer thickness in Co/Pt system. *T. Koyama*[1], A. Obinata[1], Y. Hibino[1] and D. Chiba[1] *1. The University of Tokyo, Tokyo, Japan*

2:18

DF-05. Effect of different seed layers with varying Co and Pt thicknesses on the magnetic properties of Co/Pt multilayers. *S. Lim*[1], M. Tran[1], C. Wang[1] and J. Ying[2] *1. Non-Volatile Memory, Data Storage Institute (A*STAR), Singapore, Singapore; 2. Materials Science Lab, Data Storage Institute (A*STAR), Singapore, Singapore*

2:30

DF-06. Initial growth process of a Co layer on a Pd surface. *N. Nishizawa*[1], J.G. Porquez[1], Y. Kitamoto[2] and H. Munekata[1] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan; 2. Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan*

2:42

DF-07. Evolution of the perpendicular magnetic anisotropy in CoFeB/MgO based multilayers as a function of annealing temperature. *Y. Aleksandrov*[3,2], C. Fowley[3], E. Kowalska[3,2], V. Sluka[3], J. Lindner[3], M. Farle[1], B. Ocker[4], J. Fassbender[3,2] and A.M. Deac[3] *1. Fakultät für Physik, Universität Duisburg-Essen, Duisburg, Germany; 2. Institut für Festkörperphysik, Technische Universität Dresden, Dresen, Germany; 3. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 4. Singulus Technologies AG, Kahl am Main, Germany*

2:54

DF-08. Modifying exchange-spring behavior of CoPt/NiFe bilayer by inserting a Pt or Ru spacer. *J. Hsu*[1], C. Tsai[1], C. Lee[2] and P. Saravanan[1,3] *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Graduate School of Materials Science, National Yunlin University of Science and Technology, Douliou, Taiwan; 3. Defence Metallurgical Research Laboratory, Hyderabad, India*

3:06

DF-09. Vertical Shift Register Using Dipolar Interaction in Magnetic Multilayers. *S. Chin*[1], A. Fernández-Pacheco[1], D.C. Petit[1] and R. Cowburn[1] *1. Physics, University of Cambridge, Cambridge, United Kingdom*

3:18

DF-10. Novel Magnetic Multilayer Systems with Adjustable Spin Profiles and Tunable Hysteretic Properties. *K. Schlage*[1], D.J. Erb[1], H. Wille[1], L. Bocklage[1,2] and R. Roehlsberger[1,2] *1. DESY, Hamburg, Germany; 2. The Hamburg Centre for Ultrafast Imaging, Hamburg, Germany*

3:30

DF-11. Coercivity Enhancement in V_2O_3/Ni Bilayers Driven by Nanoscale Phase Coexistence. *J. de la Venta*[2], S. Wang[1,3], T. Saerbeck[1], J. Ramirez[1], I. Valmianski[1] and I.K. Schuller[1] *1. Department of Physics and Center for Advanced Nanoscience, University of California San Diego, La Jolla, CA; 2. Department of Physics, Colorado State University, Fort Collins, CO; 3. Materials Science and Engineering Program, University of California San Diego, La Jolla, CA*

3:42

DF-12. Ferromagnetic Phase Front in Vertically Graded Ni_xCu_{1-x} Alloy Films. *B.J. Kirby*[1], A. Berger[3], H. Belliveau[2], D. Belyea[2] and C. Miller[2] *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Physics, University of South Florida, Tampa, FL; 3. CIC nanoGUNE, San Sebastian, Spain*

3:54

DF-13. Tunnel-mediated coupling between antiferromagnetic thin films. M. Leroy[1,2], *A.M. Bataille*[1], B. Dkhil[3], F. Porcher[1], A. Barbier[4], Y. Lu[2], C. Bellouard[2], T. Hauet[2], J. Herrero-Martin[5], C. Gatel[7], K. Bouzehouane[6], A. Gukasov[1], S. Andrieu[2] and C.V. Tiusan[2] *1. IRAMIS/LLB, CEA, Gif sur Yvette, France; 2. Institut Jean Lamour, Vandoeuvre-les-Nancy, France; 3. Laboratoire SPMS, Chatenay-Malabry, France; 4. IRAMIS/SPEC, CEA Saclay, Gif sur Yvette, France; 5. ESRF, Grenoble, France; 6. UMR CNRS/Thales, Palaiseau, France; 7. CEMES, Toulouse, France*

4:06

DF-14. The Magnetic and Electronic Structure of Fe/Graphene Interface. *W. Liu*[1,2], W. Wang[3], J. Wang[3], F. Jin[4], A. Zhang[4], F. Wang[1], C. Lu[2], N.J. Maltby[2], S. Li[2], Q. Li[3], Q. Zhang[4], P. Bencok[5], Y. Xu[1,2] and R. Zhang[1] *1. York-Nanjing International Center for Spintronics (YNICS), School of Electronics Science and Engineering, Nanjing University, Nanjing, China; 2. Electronics Department, University of York, York, North Yorkshire, United Kingdom; 3. Department of Chemical Physics, University of Science and Technology of China, Hefei, China; 4. Department of Physics, Renmin University of China, Beijing, China; 5. Diamond Light Source, Didcot, United Kingdom*

4:18

DF-15. Molecular orientation and stacking on FePc thin film: an STM and hard x-ray spectroscopy study. *F. Bartolome*[1,2], J. Bartolome[1,2], C.R. Natoli[3], O. Bunau[1,2], M. Piantek[4,2], I.K. Schuller[6], T. Gredig[7], F. Wilhelm[5] and A. Rogalev[5] *1. ICMA, CSIC, Zaragoza, Zaragoza, Spain; 2. Departamento de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain; 3. Laboratorio Nazionale de Frascati, INFI, Frascati, Italy; 4. Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza, Spain; 5. ESRF, Grenoble, France; 6. UCSD, La Jolla, CA; 7. Dept. of Physics and Astronomy, California State University Long Beach, Long Beach, CA*

Session DG
BIOIMAGING AND HYPERTHERMIA
Shoogo Ueno, Chair

1:30

DG-01. NanoIron Phantom for Quantitative MRI. ***(Invited)***
S.E. Russek[1], K.E. Keenan[1] and R.J. Usselman[1] *1. Natl Inst of Standards & Tech, Boulder, CO*

2:06

DG-02. Feasibility of detecting neuronal magnetic fields in the rat brain using MRI. *M. Sekino*[1,2], Y. Chin[1], D. Kim[1,2] and T. Someya[1,2] *1. Graduate School of Engineering, The University of Tokyo, Tokyo, Japan; 2. JST ERATO, Tokyo, Japan*

2:18

DG-03. Design of RF pulse waveforms for mitigating signal inhomogeneity in MRI due to metallic implants. *T. Woo*[1], D. Kim[1,2], T. Someya[1,2] and M. Sekino[1,2] *1. Department of Electrical Engineering and Information Systems, The University of Tokyo, Tokyo, Japan; 2. Exploratory Research for Advanced Technology, Japan Science and Technology Agency, Tokyo, Japan*

2:30

DG-04. Drive field amplitude & frequency dependence of the tracer response for magnetic particles imaging (MPI). *S.A. Shah*[2], R.M. Ferguson[1] and K.M. Krishnan[2] *1. LodeSpin Labs, PO Box 95632, Seattle, WA; 2. Materials Science & Engineering, University of Washington, Seattle, WA*

2:42

DG-05. Efficient magnetic particle imaging (MPI) tracers optimized by tuning their size-dependent crystalline structure.
H. Arami[1], H. Bradshaw[2], R.D. Hufschmid[1], A. Tomitaka[1], S.A. Shah[1] and *K. Krishnan*[1] *1. Materials Science and Engineering, University of Washington, Seattle, WA; 2. Department of Chemistry, University of Washington, Seattle, WA*

2:54

DG-06. Characteristics of bowl-shaped coils for transcranial magnetic stimulation. *M. Sekino*[1,2], K. Yamamoto[1], M. Suyama[1] and Y. Saitoh[2] *1. Graduate School of Engineering, The University of Tokyo, Tokyo, Japan; 2. Graduate School of Medicine, Osaka University, Osaka, Japan*

3:06

DG-07. Magnetic Nanotherapy for Cancer Treatment. *T. Mitrelias*[2,3], M. Tselepi[2,3], C. Barnes[2], V. Orel[1], I. Schepotin[1], A. Shevchenko[4], A. Romanov[1], A. Burlaka[5] and S. Lukin[5] *1. National Cancer Institute of Ministry of Health of Ukraine, Kiev, Ukraine; 2. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 3. Cavendish NanoTherapeutics Ltd, Cambridge, United Kingdom; 4. G.V. Kurdyumov Institute for Metal Physics of the National Academy of Sciences of Ukraine, Kiev, Ukraine; 5. R.E. Kavetsky Institute of Experimental Pathology, Oncology and Radiobiology of the National Academy of Sciences of Ukraine, Kiev, Ukraine*

3:18

DG-08. Improvement of Heat Shock Proteins 72 Induction using Nanofluid Hyperthermia for Ocular Neuroprotection in Glaucoma. *M. Jeun*[1,2] and K. Lee[1,2] *1. Biomedical Research Institute, Korea Institute of Science and Technology (KIST), Seoul 136-791, Republic of Korea; 2. Department of Biomedical Engineering, Korea University of Science and Technology (UST), Seoul 136-791, Republic of Korea*

3:30

DG-09. Withdrawn

3:30

DG-10. Dynamic magnetic hysteresis response of Fe oxide nanoparticle suspensions for magnetic hyperthermia. *E. Kita*[1], A. Seki[1], K. Ota[1], A. Horiuchi[1], H. Latiff[1], M. Kishimoto[1], H. Yanagihara[1], H. Mamiya[2], T. Oda[3] and N. Ohkohchi[3] *1. Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan; 2. National Institute for Materials Science, Tsukuba, Ibaraki, Japan; 3. Department of Surgery, University of Tsukuba, Tsukuba, Ibaraki, Japan*

3:42

DG-11. Magnetization reversal and specific loss power of intracellular magnetic nanoparticles evaluated by ac hysteresis measurement. S. Ota[1], T. Yamada[1] and *Y. Takemura*[1] *1. Electrical and Computer Engineering, Yokohama National University, Yokohama, Japan*

3:54

DG-12. Manipulating specific absorption rate of iron oxide nanoparticles by modifying shape anisotropy. *J. Alonso Masa*[1,2], H. Khurshid[1], Z. Nemati[1], M. Phan[1], P. Mukherjee[1], M. Fdez-Gubieda[3,2], J. Barandiarán[2,3] and H. Srikanth[1] *1. Physics, University of South Florida, Tampa, FL; 2. BCMaterials, Derio, Vizcaya, Spain; 3. Electricidad y Electrónica, Universidad del País Vasco, Leioa, Vizcaya, Spain*

4:06

DG-13. Magnetic nanoparticles and transferrin: an effective targeting by the iron acquisition pathway? *M. Hemadi*[1], H. Piraux[1], J. Hai[1], S. Ammar[1], F. Gazeau[1], P. Verbeke[1], N. Serradji[1], T. Ha-Duong[1] and J. El Hage Chahine[1] *1. Université Paris Diderot, Paris, France*

4:18

DG-14. Monte Carlo Study on the Relaxational Losses of Core/Shell Nanoparticles for Hyperthermia Applications. *M. Vasilakaki*[1], A. Morphis[1], C. Binns[2] and K.N. Trohidou[1] *1. Institute of Nanoscience and Nanotechnology, NCSR Demokritos, Aghia Paraskevi Attiki, Greece; 2. Department of Physics and Astronomy, University of Leicester, Leicester, United Kingdom*

WEDNESDAY AFTERNOON 1:30

KAHILI 1 & 2

Session DH
SPIN ICES
Christian Kinane, Chair

1:30

DH-01. Emergent Degeneracy and Magnetic Charge Screening in Artificial Spin Ice. *I. Gilbert**[1], G. Chern[2], S. Zhang[3], L. O'Brien[4,5], B. Fore[1], C. Nisoli[2] and P. Schiffer[1] *1. Department of Physics and Frederick Seitz Materials Research Laboratory, University of Illinois at Urbana-Champaign, Urbana, IL; 2. Theoretical Division and Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM; 3. Department of Physics and Materials Research Institute, Pennsylvania State University, University Park, PA; 4. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 5. Thin Film Magnetism Group, Department of Physics, Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom*

1:42

DH-02. Exploring thermally-induced states in square Artificial Spin-Ice arrays. *J. Porro*[1,2], A. Bedoya-Pinto[2], A. Berger[2] and P. Vavassori[2,3] *1. ISIS, Rutherford Appleton Laboratory, Didcot, Oxfordshire, United Kingdom; 2. CIC nanoGUNE, San Sebastian, Spain; 3. IKERBASQUE, Basque Science Foundation, Bilbao, Spain*

1:54

DH-03. Thermally activated dynamics in artificial spin ice. *S.A. Morley*[1], D. Alba Venero[2], A. Stein[3], M. Rosamond[4], S.T. Riley[4], S. Langridge[2] and C.H. Marrows[1] *1. School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom; 2. ISIS, STFC Rutherford-Appleton Laboratory, Didcot, United Kingdom; 3. Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY; 4. School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom*

2:06

DH-04. Avalanches and disorder-induced criticality in artificial spin ices. *(Invited)* *C. Reichhardt*[1], G. Chern[1], A. Libal[2] and C. Reichhardt[1] *1. Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM; 2. Faculty of Mathematics and Computer Science, Babes-Bolyai University, Los Alamos, NM*

2:42

DH-05. Kerr Imaging of Frustration in Perpendicular Anisotropy Artificial Spin Ice Geometries. *R.D. Fraleigh*[1], I. Gilbert[2], S. Kempinger[1], V.H. Crespi[1], P. Lammert[1], P. Schiffer[2] and N. Samarth[1] *1. Department of Physics, The Pennsylvania State University, University Park, PA; 2. Department of Physics and the Frederick Seitz Materials Research Laboratory, University of Illinois at Urbana Champaign, Urbana, IL*

2:54

DH-06. Thermal behaviour study of an artificial magnetic quasi-crystal. *D. Shi*[1], A. Stein[2], G. Burnell[1] and C.H. Marrows[1] *1. School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom; 2. Brookhaven National Laboratory, Upton, NY*

3:06

DH-07. Magnetotransport and Mobile Monopole Defects in Connected Kagome Artificial Spin Ice. *B.L. Le*[1], D.W. Rench[2], P.E. Lammert[2], V.H. Crespi[2], N. Samarth[2] and P. Schiffer[1] *1. Physics, University of Illinois at Urbana-Champaign, Urbana, IL; 2. Physics, Pennsylvania State University, State College, PA*

3:18

DH-08. Mescoscopic Cross Tie Textures in Artificial Spin Ice Patterns. F. Nascimento[1], A. Pereira[1] and *R. Stamps*[2] *1. Departamento de F'sica, Universidade Federal de Vicosa, Vicosa, Brazil; 2. University of Glasgow, Glasgow, United Kingdom*

3:30

DH-09. Tunable ground state symmetry breaking in artificial square spin ice. *S. Gliga*[1,2], K. Attila[3], R. Hertel[4] and O. Heinonen[5,6] *1. Laboratory for Mesoscopic Systems, Department of Materials, ETH Zurich, Zurich, Switzerland; 2. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institute, Villigen, Switzerland; 3. Peter Grünberg Institut (PGI-6), Forschungszentrum Jülich GmbH, Jülich, Germany; 4. Institut de Physique et Chimie des Matériaux de Strasbourg, Université de Strasbourg, Strasbourg, France; 5. Materials Science Division, Argonne National Laboratory, Lemont, IL; 6. Department of Physics and Astronomy, Northwestern University, Evanston, IL*

3:42

DH-10. Magnetisation reversal processes at artificial spin ice vertices. *D.M. Burn*[1], M. Chadha[1], L.F. Cohen[1] and W.R. Branford[1] *1. Physics, Imperial College London, London, United Kingdom*

3:54

DH-11. Er Mössbauer spectroscopy study of magnetic ordering in a spinel-based potential spin-ice system: $CdEr_2S_4$. A. Legros[1], *D. Ryan*[1] and P. Dalmas de Reotier[2] *1. McGill University, Montreal, QC, Canada; 2. INAC/SPSMS, CEA Grenoble, Grenoble, France*

4:06

DH-12. Realization of magnetic monopoles current in an artificial spin ice device: A step towards magnetronics. *C. Levartoski de Araujo*[1], R. Loreto[1], W. Mello[1] and A. Pereira[1] *1. Universidade Federal de Viçosa, Viçosa, Brazil*

4:18

DH-13. Defects and Magnetization Reversal Process in Geometrical Frustrated Artificial Spin Ice Lattice. *S. Krishnia*[1], P. Sethi[1], C. Murapaka[1], I. Purnama[1] and W. Lew[1] *1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*

Session DI
AMORPHOUS AND NANOCRYSTALLINE SOFT MAGNETS I
Michael McHenry, Chair

1:30

DI-01. Field-induced magnetic anisotropy in Si-free nanocrystalline soft magnetic materials: A transmission x-ray diffraction study. *R.R. Parsons*[1], T. Yanai[2], H. Kishimoto[3], A. Kato[3], M. Ohnuma[4] and K. Suzuki[1] *1. Department of Materials Engineering, Monash University, Clayton, VIC, Australia; 2. Graduate School of Engineering, Nagasaki University, Nagasaki, 852-8521, Japan; 3. Toyota Motor Corporation, Mishuku, Shizuoka, 410-1193, Japan; 4. Faculty and Graduate School of Engineering, Hokkaido University, Sapporo, 060-8628, Japan*

1:42

DI-02. Influence of wet milling conditions on the evolution of microstructure and magnetic stability of FINEMET powders. L. Budeanu[1,2], G. Ababei[1], H. Chiriac[1], M. Neagu[2] and *N. Lupu*[1] *1. Magnetic Materials and Devices Department, National Institute of R&D for Technical Physics, Iasi, Romania; 2. Department of Physics, Alexandru Ioan Cuza University, Iasi, Romania*

1:54

DI-03. Three- dimensional atom probe analysis and magnetic properties of $Fe_{84.3-85}Si_{2-4}B_8P_{3-4}Cu_{0.7-1}$ melt spun ribbons. *S. Jafari Chamkavi*[2,1], A. Beitollahi[1], T. Ohkubo[2], M. Marsilius[3], V. Budinsky[3], G. Herzer[3] and K. Hono[2] *1. Department of Metallurgy and Materials Engineering, Iran University of Science and Technology, Tehran, Islamic Republic of Iran; 2. Magnetic Materials Unit, Natinal Institue for Material Science, Tsukuba, Ibaraki, Japan; 3. Vacuumschmelze GmbH & Co. KG, D-63450 Hanau, Germany, Hanau, Germany*

2:06

DI-04. Evolution of fcc Cu-clusters and their structure transition in the soft magnetic $Fe_{85.2}Si_1B_9P_4Cu_{0.8}$ (NANOMET) alloy and FINEMET observed by XAFS. *M. Matsuura*[1], M. Nishijima[1], K. Takenaka[1], A. Takeuchi[1] and A. Makino[1] *1. Research and Development Center for Ultra High Efficiency Nano-crystalline Soft Magnetic Material, Institute for Materials Research, Tohoku University, Sendai, Japan*

2:18

DI-05. Influence of microstructure on the enhancement of soft magnetic character and the induced anisotropy of field annealed HITPERM-type alloys. J.S. Blázquez[1], J. Marcin[2], M. Varga[2], *V. Franco*[1], A. Conde[1] and I. Skorvanek[2]
1. Condensed Matter Physics, Sevilla University, Sevilla, Spain; 2. Laboratory of Nanomaterials and Applied Magnetism, Institute of Experimental Physics Slov. Acad. Sci., Kosice, Slovakia

2:30

DI-06. Large induced anisotropy in field-annealed nanocrystalline/ amorphous soft magnetic FeCoNbB/CoSiB bilayer ribbons. *I. Skorvanek*[1], J. Marcin[1], M. Capik[1], I. Matko[2] and P. Svec[2]
1. Institute of Experimental Physics, Slovak Academy of Sciences, Kosice, Slovakia; 2. Institute of Physics, Slovak Academy of Sciences, Braislava, Slovakia

2:42

DI-07. Effect of Zr and Nb addtitions on high frequency magnetic properties of $Co_{85-(x+y)}Zr_{3+x}Nb_{12+y}$ films. *Y. Endo*[1], T. Ito[1], Y. Shimada[1] and M. Yamaguchi[1] *1. Department of Electrical Engineering, Tohoku University, Sendai, Japan*

2:54

DI-08. Time Temperature Transformation (TTT) diagram for secondary crystal products of Co-based Co-Fe-B-Si-Nb-Mn soft magnetic nanocomposite. *V.G. DeGeorge*[1], V. Keylin[1], A. Leary[1] and M.E. McHenry[1] *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

3:06

DI-09. Induced Anisotropy in CoFeMn Soft Magnetic Nanocomposites. *A. Leary*[1], V. Keylin[1], P. Ohodnicki[2] and M.E. McHenry[1] *1. Carnegie Mellon University, Pittsburgh, PA; 2. Chemistry and Surface Science Division, National Energy Technology Laboratory, Pittsburgh, PA*

3:18

DI-10. Origin of In-plane and Out-of-plane magnetic anisotropy in as deposited and annealed CoFeB ferromagnetic thin films. *G.A. Basheed*[1], G. Swamy[1], R. Pant[1] and R. Rakshit[2] *1. Physics, CSIR-National Physical Laboratory, New Delhi, India; 2. Physics, CSIR-National Physical Laboratory, New Delhi, India*

3:30

DI-11. The influence of Nd dopants on spin and orbital moments in Nd-doped permalloy thin films. C. Luo[1], W. Zhang[1], P. Wong[2], *Y. Zhai*[1], B. You[3], J. Du[3] and H. Zhai[3] *1. Department of Physics, Southeast University, Nanjing, China; 2. NanoElectronics Group, MESA+ Institute of Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, Netherlands; 3. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China*

3:42

DI-12. Magnetic properties of iron nitride films prepared by oblique sputtering under different nitrogen gas flow ratios. X. Li[1], X. Sun[1], J. Du[1], J. Wang[1] and *Q. Liu[1] 1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou, China*

3:54

DI-13. Metacomposites containing hybrid Co- and Fe- based ferromagnetic microwires. *Y. Luo*[2], H. Peng[2], F. Qin[3], M. Ipatov[1], V. Zhukova[1], A. Zhukov[1] and J. Gonzales[1] *1. Dpto. de Fisica de Materiales, Universidad del Pais Vasco, San Sebastian, Spain; 2. Advanced Composites Centre for Innovation and Science, Department of Aerospace Engineering, University of Bristol, Bristol, United Kingdom; 3. 1D Nanomaterials Group, National Institute for Material Science, Tsukuba, Japan*

4:06

DI-14. Influence of cold drawing on the magnetic properties and GMI response of FINEMET nanocrystalline wires. *H. Chiriac*[1], S. Corodeanu[1], A. Donac[1,2], V. Dobrea[1], T.A. Ovari[1] and N. Lupu[1] *1. Magnetic Materials and Devices Department, National Institute of R&D for Technical Physics, Iasi, Romania; 2. Physics Department, Alexandru Ioan Cuza University, Iasi, Romania*

4:18

DI-15. Understanding of double-curvature shaped magnetoimpedance profiles in Joule-annealed and tensioned microwires at 8-12 GHz. V. Popov[2], V. Berzhansky[2], H. Gomonay[3] and *F. Qin[1] 1. National Institute for Materials Science, Tsukuba, Japan; 2. Taurida National University, Simferopol, Ukraine; 3. National Technical University of Ukraine 'KPI', Kyiv, Ukraine*

WEDNESDAY AFTERNOON 2:30

CORAL 4 (POSTERS)

Session DP
COMPLEX OXIDES II (Poster Session)
Anand Bhattacharya, Chair

DP-01. Self-assembled magnetodielectric $Pb(ZrTi)O_3$-$(MnZn)Fe_2O_4$ nanocomposite films with high dielectric tunability. X. Hui[1], H. Zhang[1] and *F. Bai[1] 1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

DP-02. Formation of $BiFeO_3$(110) films on ferromagnetic CoPt(111) electrode layer on glass substrates at reduced temperatures. *H.W. Chang*[1], Y. Yu[1], S. Tu[1], P. Lin[1], C. Wang[1], C. Tu[2] and S. Jen[3] *1. Department of Applied Physics, Tunghai University, Taichung, Taiwan; 2. Department of Physics, Fu Jen Catholic University, Taipei, Taiwan; 3. Institute of Physics, Academia Sinica, Taipei, Taiwan*

DP-03. Orientation-dependent magnetism and orbital structure of strained $YTiO_3$ films on $LaAlO_3$ substrates. X. Huang[1], Q. Xu[1] and *S. Dong*[1] *1. Physics, Southeast University, Nanjing, Jiangsu, China*

DP-04. Modulation of the magnetic/conductive dead layer at the manganites-$SrTiO_3$ interface. W. Gao[1], *F. Hu*[1], B. Shen[1] and J. Sun[1] *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Science, Beijing, Beijing, China*

DP-05. Magnetic anisotropy and anisotropic damping in LSMO/STO thin films. *H. Lee*[1], I. Barsukov[1], L. Yang[1], A.G. Swartz[2], B. Kim[2], H.Y. Hwang[2] and I.N. Krivorotov[1] *1. University of California, Irvine, CA; 2. Stanford University, Stanford, CA*

DP-06. Competition between magnetic anisotropies in $La_{2/3}Sr_{1/3}MnO_3$ thin film grown on the patterned $SrTiO_3$ substrate. *V.K. Malik*[2,1], R.V. Chopdekar[3], I. Marozau[1], A. Kleibert[3] and C. Bernhard[1] *1. Department of Physics, University of Fribourg, Fribourg, Switzerland; 2. Department of Physics, Indian Institute of Technology Roorkee, Roorkee, India; 3. Paul Scherrer Institute, Villigen, Switzerland*

DP-07. A First-Principles Prediction on The Electronic Structure and Magnetism of Fe_4N/Oxides (MgO, $BaTiO_3$, $BiFeO_3$) Interfaces. N. Feng[1], *W. Mi*[1], X. Wang[2] and H. Bai[1] *1. Department of Applied Physics, Tianjin University, Tianjin, China; 2. School of Electronics Information Engineering, Tianjin University of Technology, Tianjin, China*

DP-08. Strain induced spin phonon coupling and magnetoelectric properties in $BiFeO_3$/ $CoFe_2O_4$ thin film heterostructures. *M.K. Singh*[1], G. Singh[1] and R.S. Katiyar[2] *1. Centre of Material Sciences, University of Allahabad, Allahabad, Allahabad, India; 2. Department of Physics, University of Puerto Rico, San Juan, Puerto Rico*

DP-09. Interlayer-induced asymmetrical stress and its effect on magnetotransport properties of epitaxial $[Pr_{0.7}Sr_{0.3}MnO_3/La_{0.5}Ca_{0.5}MnO_3]_{20}$ superlattice. H. Wang[1,2], H. Liu[1], M. Cao[1], *W. Tan*[1], L. Li[2], D. Huo[2], F. Xu[3], Q. Jia[4] and J. Gao[5] *1. Department of Applied Physics, Nanjing University of Science and Technology, Nanjing, Jiangsu, China; 2. Institute of Materials Physics, Hangzhou Dianzi University, Hangzhou, Zhejiang, China; 3. School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, Jiangsu, China; 4. Institute of High Energy Physics, The Chinese Academy of Sciences, Beijing, China; 5. Department of Physics, The University of Hong Kong, Hong Kong, Hong Kong, China*

DP-10. Magnetoresistive behavior of $SrTiO_{3-\delta}$ films grown by Molecular Beam Epitaxy. *N. Theodoropoulou*[1], R.J. Cottier[1] and D.A. Currie[1] *1. Physics, Texas State University, San Marcos, TX*

DP-11. Influence of epitaxial strain on small-polaron hopping conduction in $Pr_{0.7}(Ca_{0.6}Sr_{0.4})_{0.3}MnO_3$ thin films. *J. Wang*[1], Y. Zhao[1], Y. Liu[1], J. Lu[1], F. Hu[1], J. Sun[1] and B. Shen[1] *1. Institute of Physics,CAS, Beijing, China*

DP-12. Dependence of properties of $Pr_{0.67}Sr_{0.33}MnO_3$ thin film on substrate orientation. *B. Zhang*[1,2], C. Sun[2], T. Venkatesan[3], S.M. Heald[2], J. Chen[1] and G. Chow[1] *1. Materials Science & Engineering, National University of Singapore, Singapore, Singapore; 2. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 3. NUSNNI-Nanocore, National University of Singapore, Singapore, Singapore*

DP-13. Sythesis of large area transition metal dichalcogenides for spintronics. *K.M. McCreary*[1] and B. Jonker[1] *1. Naval Research Laboratory, Washington, DC*

DP-14. Abnormal colossal electroresistance effect in Ru-doped $La_{0.225}Pr_{0.4}Ca_{0.375}MnO_3$. *Z. Yan*[1], M. Liu[1], Y. Wang[1], P. Che[1], X. Zhou[1] and J. Liu[1] *1. Physics, Laboratory of Solid State Microstructures, Nanjing University, Nanjing, Jiangsu, China*

DP-15. X-ray absorption magnetic circular dichroism study on ferromagnetic $SrRuO_3$. S. Agrestini[2], *E. Pellegrin*[1], Z. Hu[2], N. Hollmann[2], C. Kuo[2], Q. Liu[2], P. Gargiani[1], M. Valvidares[1], P. Gegenwart[3], M. Schneider[3], S. Esser[3], A. Komarek[2] and L. Tjeng[2] *1. Experiments Division, CELLS-ALBA, Cerdanyola, Barcelona, Spain; 2. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 3. Department of Physics, University of Augsburg, Augsburg, Germany*

DP-16. Crossover from AT- to GT-type critical lines on H-T plane in layered cobaltite $Sr_{1.5}La_{0.5}CoO_4$ thin film. *P.K. Pandey*[1], R.J. Choudhary[1] and D.M. Phase[1] *1. UGC DAE Consortium for Scientific Research, Indore, M.P., India*

Session DQ
MAGNETORESISTANCE AND MAGNETOIMPEDANCE II (Poster Session)

Tamalika Banerjee, Chair

DQ-01. Nonvolatile anisotropic electric transport behaviors manipulated by electric field in Co/PMN-PT heterostructure. *S. Yang*[1], T. Jiang[1], Y. Liu[1], L. Feng[1], H. Du[2] and X. Li[1] *1. Hefei National Laboratory for Physical Sciences at Microscale, Department of Physics, University of Science and Technology of China, Hefei, Anhui, China; 2. High Magnetic Field Laboratory, Chinese Academy of Sciences and University of Science and Technology of China, Hefei, Anhui, China*

DQ-02. Interfacial Origin of Thickness Dependent In-Plane Anisotropic Magnetoresistance. S. Jaiswal[1], M. Wang[2], *M. Tokac*[1], A. Rushforth[2], B. Gallagher[2], D. Atkinson[1] and A. Hindmarch[1] *1. Physics, Durham University, Durham, Durham, United Kingdom; 2. Physics, University of Nottingham, Nottingham, Nottingham, United Kingdom*

DQ-03. Understanding the thickness dependence of anisotropic magnetoresistance through the contribution of electron-magnon scattering in ferromagnetic thin films. *R.M. Rowan-Robinson*[1], A. Hindmarch[1] and D. Atkinson[1] *1. Physics, Durham University, Durham, County Durham, United Kingdom*

DQ-04. Current-perpedicular-to-plane giant magnetoresistance using a Heusler alloy for ferromagnetic layers and B2-ordered CuZn for a spacer layer. *T. Furubayashi*[1], Y. Takahashi[1] and K. Hono[1] *1. National Institute for Materials Science, Tsukuba, Japan*

DQ-05. Investigation of uniaxial anisotropy along the [100] direction in GaMnAs films. *S. Bac*[1], S. Choi[1], S. Lee[1], H. Lee[1], S. Lee[1], X. Liu[2] and J. Furdyna[2] *1. Physics, Korea University, Seoul, Republic of Korea; 2. Physics, University of Notre Dame, Notre Dame, IN*

DQ-06. Magnetotransport and Seebeck coefficient of epitaxial FeGe film grown on GaAs(100). *A. Duong*[1], Y. Shin[1], V. Nguyen[1] and S. Cho[1] *1. Physics, University of Ulsan, Ulsan, Republic of Korea*

DQ-07. Enhanced electro-magnetoresistance of GMR wire/ferroelectric heterostructures on contrasting ferroelectric domains. *S. Pillai*[1], M. Tokunaga[1], H. Kojima[1], M. Itoh[1] and T. Taniyama[1] *1. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

DQ-08. Magnetoresistance in individual Fe_3O_4 single crystal nanowire. *K. Reddy*[1] and A. Punnoose[1] *1. Physics, Boise State University, Boise, ID*

DQ-09. Magnetic and magnetoimpedance studies on $(Fe_{70}Co_{30})_{80}B_{20-x}Si_x$ amorphous ribbons. *S.K. Manna*[1] and V. Srinivas[1] *1. Department of Physics, Indian Institute of Technology Madras, Chennai, Tamilnadu, India*

DQ-10. Temperature dependence of magnon contribution to resistivity in permalloy thin films. *V.M. Parakkat*[1], A. Roy[1] and P. Kumar[1] *1. Physics, Indian Institute of Science, Bangalore, Karnataka, India*

DQ-11. Structural, Magnetic and Dielectric Properties of Graphene Oxide/$Zn_xFe_{1-x}Fe_2O_4$ Composites. *G. Khurana*[1], N. Kumar[1], K. Sudheendran[1] and R. Katiyar[1] *1. Physics, University of Puerto Rico, USA, San Juan, Puerto Rico*

DQ-12. Unusual current-direction dependence of the transport properties in single crystalline face-centered-cubic Cobalt films. *X. Xiao*[1], B. Chen[1], Z. Ding[1], J. Li[1], D. Ma[2] and Y. Wu[1] *1. Department of Physics, Fudan University, Shanghai, China; 2. Department of Physics, Pennsylvania State University, University Park, PA*

DQ-13. Magnetoresistance of parallel spin-valve nanopillars fabricated by hole-colloidal lithography. X. Li[1], C. Zheng[1], C. Leung[2], *L. Li*[1] and P. Pong[1] *1. Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong; 2. Department of Applied Physics, Hong Kong Polytechnic University, Hong Kong, Hong Kong*

DQ-14. Effects of repetitive bending on the magnetoresistance of a flexible spin-valve. *J. Kwon*[1], W. Kwak[1] and B. Cho[1] *1. School of Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju, Republic of Korea*

DQ-15. Voltage polarity manipulation of the magnetoresistance sign in organic spin valve devices. S. Jiang[1], B. Chen[1], P. Wang[1], Y. Zhou[1], Y. Shi[1], F. Yue[1], H. Ding[1] and *D. Wu*[1] *1. Nanjing University, Nanjing, China*

DQ-16. Andreev Reflection Studies at Interfaces with High-resistivity Ferromagnetic Materials. *K. Eid*[1] *1. Physics, Miami University, Oxford, OH*

Session DR
SPIN TORQUE AND SPIN TORQUE OSCILLATORS II (Poster Session)

Igor Barsukov, Chair

DR-01. Enhancement of spin-torque diode sensitivity at high-frequency by utilizing anti-phase dynamic coupling of free and reference layers. *R. Matsumoto*[1], H. Kubota[1], T. Yamaji[1], H. Arai[1], H. Imamura[1], K. Yakushiji[1], A. Fukushima[1] and S. Yuasa[1] *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan*

DR-02. Extrinsic and intrinsic spin-orbit torques in non-centrosymmetric ferromagnets. *H. Li*[1], L.P. Zarbo[3], H. Gao[2], K. Vyborny[3], X. Wang[1], I. Garate[6], F. Dogan[1], A. Cejchan[3], J. Sinova[2,4], T. Jungwirth[3,5] and A. Manchon[1] *1. KAUST, Jeddah, Saudi Arabia; 2. Department of Physics, Texas A&M University, College Station, TX; 3. Institute of Physics ASCR, Praha, Czech Republic; 4. Institute of Physics, Johannes Gutenberg Universitat, Mainz, Germany; 5. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; 6. Department of Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada*

DR-03. Highly sensitive magnetic field sensor using spin-torque oscillators. *H. Tomita*[1,2], H. Kubota[1], S. Miwa[2], A. Fukushima[1], S. Yuasa[1] and Y. Suzuki[2] *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan; 2. Engineering Science, Osaka University, Toyonaka, Osaka, Japan*

DR-04. Spin Wave Coupling of Multiple Independently Controllable Nanocontact Spin-Torque Oscillators. *M. Pufall*[1], E.R. Evarts[1] and W.H. Rippard[1] *1. National Institute of Standards and Technology, Boulder, CO*

DR-05. Current-Induced Switching and Properties of Ta/CoFeB/MgO with Perpendicular Magnetic Anisotropy. *Y. Hung*[1], L. Rehm[1], G. Wolf[1] and A.D. Kent[1] *1. Department of Physics, New York University, New York, NY*

DR-06. Investigation of Spin-orbit Effect in Pt/NiFe/Ta, Pt/NiFe/Pt and Ta/NiFe/Ta Trilayers. *Y. Yang*[1,2], X. Zhang[1], Y. Wang[1], K. Yao[2] and Y. Wu[1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore, Singapore*

DR-07. Noise spectroscopy of CoFeB/MgO/CoFeB magnetic tunnel junctions in the presence of thermal gradients. *N. Liebing*[1], S. Serrano-Guisan[2], K. Rott[3], G. Reiss[3], J. Langer[4], B. Ocker[4] and H. Schumacher[1] *1. Physikalisch-Technische Bundesanstalt, Braunschweig, Germany; 2. International Iberian Nanotechnology Laboratory, Braga, Portugal; 3. Department of Physics, University of Bielefeld, Bielefeld, Germany; 4. Singulus AG, Kahl am Main, Germany*

DR-08. Spin-Orbit Torques and Spin Hall Magnetoresistance in W/CoFeB/MgO. *S. Cho*[1] and B. Park[1] *1. Material Science and Engineering, KAIST, Daejeon, Republic of Korea*

DR-09. Spin-torque induced stochastic resonance in CoFeB/MgO/CoFeSiB magnetic tunnel junction. H. Tomita[1,2], *S. Miwa*[1,2], M. Umeyama[1], H. Kubota[2], R. Matsumoto[2], K. Yakushiji[2], A. Fukushima[2], S. Yuasa[2], N. Mizuochi[1], T. Shinjo[1] and Y. Suzuki[1,2] *1. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 2. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan*

DR-10. Tapered nanowire spin torque oscillators driven by spin orbit torques. *L. Yang*[1], A. Smith[1], B. Youngblood[1], Z. Duan[1] and I. Krivorotov[1] *1. UC Irvine, Irvine, CA*

DR-11. High frequency microwave oscillation of scissors-type mode with NCMR trilayer device under low applied magnetic field. *Y. Toda*[1], Y. Shiokawa[1], M. Al-Mahdawi[1], K. Sakamoto[1] and M. Sahashi[1] *1. Department of Electronic Engineering, Tohoku University, Sendai 980-8579, Japan*

DR-12. Coupling sensitivity of injection-locked spin torque oscillators at simple and double driving frequencies. *C. Dieudonné*[1,2], L. Buda-Prejbeanu[1], M. Zarudniev[2], M. Tortarolo[1], O. Klein[1], M. Cyrille[2] and U. Ebels[1] *1. SPINTEC, Univ. Grenoble Alpes, CNRS, CEA-INAC, Grenoble, France; 2. LETI, Univ. Grenoble Alpes, CEA, Grenoble, France*

DR-13. Current Bias Dependence of Nonlinearity and Spectral Linewidths in Large Precession Angle Spin Torque Oscillators. *P.M. Braganca*[1], B.A. Gurney[1], A.F. Garcia[1], J.A. Katine[1] and J.R. Childress[1] *1. HGST, a Western Digital Company, San Jose, CA*

DR-14. Frequency control of spin torque oscillator using magnetostrictive anisotropy. *M.A. Park*[1], S.C. Baek[1], B. Park[2] and S. Lee[1] *1. Electrical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Republic of Korea; 2. Material Science and Engineering, Korea Advanced Institute Science and Technology, Daejeon, Republic of Korea*

DR-15. Modulation of a parametrically phase-locked spin torque oscillator. *P. Dürrenfeld*[1], E. Iacocca[1], J. Åkerman[1,2] and P.K. Muduli[1,3] *1. Department of Physics, University of Gothenburg, Göteborg, Sweden; 2. Materials Physics, School of ICT, KTH-Royal Institute of Technology, Kista, Sweden; 3. Department of Physics, Indian Institute of Technology, Delhi, New Delhi, India*

DR-16. Injection locking of the vortex spin-torque oscillator to a noisy source. *Y. Pogoryelov*[2,1], M. Ranjbar[1], S. Sani[3], M. Mohseni[3] and J. Åkerman[1,3] *1. Physics Department, University of Gothenburg, Gothenburg, Sweden; 2. Dept. of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 3. Material Physics, Royal Institute of Technology (KTH), Kista, Stockholm, Sweden*

WEDNESDAY AFTERNOON 2:30

CORAL 4 (POSTERS)

Session DS
TOPOLOGICAL INSULATORS AND COMPLEX MAGNETISM (Poster Session)

Kirill Belashchenko, Chair

DS-01. Inverse Spin Hall Effect in Topological Insulator Thin Film at Room Temperature. *T.Z. Chiang*[1] *1. Department of Physics, National Cheng Kung University, Tainan 70101, Taiwan, Tainan City, Taiwan*

DS-02. Comparison of the spin injection/extraction efficiencies between bulk-insulating and -metallic topological insulators. *T. Hamasaki*[1], Y. Ando[2], T. Kurokawa[1], F. Yang[3], M. Novak[3], S. Sasaki[3], K. Segawa[3], Y. Ando[3] and M. Shiraishi[2] *1. Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 2. Department of Electronic Science and Engineering, Kyoto University, Kyoto, Kyoto, Japan; 3. Institute of Scientific and Industrial Research, Osaka University, Suita, Osaka, Japan*

DS-03. Robust ferromagnetic memory read-out based on the quantum anomalous Hall effect in topological surface states. *M.B. Jalil*[1], S. Tan[2] and Z. Siu[3] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Agency for Science, Technology and Research (A*STAR), Singapore, Singapore; 3. NUS Graduate School for Integrative Sciences and Engineering, National University of Singapore, Singapore, Singapore*

DS-04. Anomalous magnetoresistance in topological insulator nanowires. *Z. Siu*[1,2] and M.B. Jalil[1] *1. NUS Graduate School for Integrative Sciences and Engineering, National University of Singapore, Singapore, Singapore; 2. Advanced Concepts and Nanotechnology, Data Storage Institute, Singapore, Singapore*

DS-05. Magnetoresistance and nonlinear hall effect in quaternary topological insulator $Bi_{1.5}Sb_{0.5}Te_{1.8}Se_{1.2}$. *W. Wang*[1,2], X. Gu[1,2], W. Zou[1,2], F. Zhang[1,2] and X. Wu[1,2] *1. Physics, Nanjing University, Nanjing, Jiangsu, China; 2. National Laboratory of Solid State Microstructures, Nanjing, Jiangsu, China*

DS-06. Understanding the role of crystalline-structure and covalent-hybridization in electronic band structure of topological insulators from first principles. *X. Zhang*[1], G. Xu[1], E. Liu[1], Z. Liu[2], W. Wang[1] and G. Wu[1] *1. Chinese Academy of Sciences, Institute of Physics, Beijing, China; 2. State Key Laboratory of Metastable Material Sciences and Technology, Yanshan University, Qinhuangdao, Hebei, China*

DS-07. Enhanced Surface State of Topological Insulators by Optimal Magnetic Doping. *Z. Zhang*[1], Y. Ni[1], C.I. Nlebedim[1,2], R.L. Hadimani[1], G. Tuttle[1] and D.C. Jiles[1] *1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Ames Laboratory, Ames, IA*

DS-08. Quantum anomalous Hall effect and a nontrivial spin-texture in ultra-thin films of magnetic topological insulators. *H. Lin*[1], L. Duong[1], T. Das[1] and Y. Feng[1] *1. Physics, National University of Singapore, Singapore, Singapore*

DS-09. The ionic configuration of Ruthenium in the $Eu_2Ru_2O_7$ pyrochlore. *S. Muñoz Pérez*[1], R. Cobas[1], J. Cadogan[1], J. Albino Aguiar[2] and X. Obradors[3] *1. School of Physical, Environmental and Mathematical Sciences, UNSW Australia, Canberra, ACT, Australia; 2. Departmento de Física, Universidade Federal de Pernambuco, Recife, Pernambuco, Brazil; 3. Institut de Ciencia dels Materials de Barcelona, CSIC, Barcelona, Spain*

DS-10. Magnetization Properties Study in nanoparticles of $Cu_{1-x}Ni_xCr_2O_4$ normal spinel. *T.T. Gurgel*[1], N.O. Moreno[1] and J.M. Soares[2] *1. Departamento de Física, Universidade Federal de Sergipe, São Cristovão, SE, Brazil; 2. Departamento de Física, Universidade Estadual do Rio Grande do Norte, Mossoró, RN, Brazil*

DS-11. Magnetic properties of the spin-orbit-coupled frustrated spinel $Ge(Co_{1-x}Mg_x)_2O_4$. *T. Ishikawa*[1], S. Takita[1], R. Agata[1] and T. Watanabe[1] *1. Department of Physics, Nihon University, Chiyoda-ku, Tokyo, Japan*

DS-12. Tunable magnetic helicity in $Mn_{1-x}Fe_xGe$: a Monte Carlo simulation. J. Chen[1], *Y. Xie*[1], Z. Yan[1], X. Zhou[1] and J. Liu[1] *1. Laboratory of Solid State Microstructures, Nanjing University, Nanjing, Jiangsu Province, China*

DS-13. Elastic Anomalies in the Geometrically-Frustrated Spinel $ZnFe_2O_4$. *S. Takita*[1], H. Suzuki[1], T. Watanabe[1], K. Tomiyasu[2] and K. Kamazawa[3] *1. Department of Physics, Nihon University, Chiyoda-ku, Tokyo, Japan; 2. Department of Physics, Tohoku University, Sendai, Japan; 3. Comprehensive Research Organization for Science and Society, Tokai, Japan*

DS-14. Nanocluster Building Blocks of Artificial Square Spin Ice: Stray-Field Studies of Thermal Dynamics. *M. Pohlit*[1], E. Begun[1], F. Porrati[1], M. Huth[1] and J. Mueller[1] *1. Institute of Physics, Goethe-University Frankfurt am Main, Frankfurt am Main, Hessen, Germany*

DS-15. Magnetic phase transitions and spin orders in dipolar spin ice under uniaxial pressure: a Monte Carlo simulation. *Y. Xie*[1], Z. Yan[1], X. Zhou[1] and J. Liu[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu Province, China*

DS-16. Structural, magnetic and dielectric properties of $R_xSr_{2-x}TiMnO_6$ (R = La, Dy; x = 0, 0.5) oxides. R. Mondal[1], T. Ghosh[1], R. Nirmala[1], A.V. Morozkin[2], *A.K. Nigam*[4] and S.K. Malik[3] *1. Physics, IIT MADRAS, Chennai, India; 2. Chemistry, Moscow Lomonosov State University, Moscow, Russian Federation; 3. Departamento de Física Teórica e Experimental, UFRN, Natal-RN, Brazil; 4. TIFR, Mumbai, India*

WEDNESDAY AFTERNOON 2:30 — CORAL LOUNGE (POSTERS)

Session DT
BIOMEDICAL AND NEW APPLICATIONS (Poster Session)
Pavel Kabos, Chair

DT-01. Magneto-photonic properties of hexagonal BN micro crystals. *M. Iwasaka*[1], Y. Mizukawa[1] and Y. Miyashita[1] *1. Research Institute for Nanodevice and Bio Sytems, Hiroshima University, Higashi-Hiroshima, Japan*

DT-02. Enhanced the resolution of surface plasmon polaritons for biosensor. *H. Huang*[1] and Z. Wei[2] *1. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*

DT-03. Modeling of graphene Hall effect sensors for microbead detection. *A. Manzin*[1], E. Simonetto[1,2] and G. Amato[1] *1. Istituto Nazionale di Ricerca Metrologica (INRIM), Torino, Italy; 2. Politecnico di Torino, Torino, Italy*

DT-04. An Effective Gain Enhancement Approach for THz Planar Antenna by Metamaterial Structure for Biomedical Applications. *Y. Wu*[4], W. Li[3,2], M. Wang[3,1], X. Lv[4] and Q. Wu[3,2] *1. The Fourth Affiliated Hospital of Harbin Medical University, Harbin, China; 2. State Key Laboratory of Millimeter Wave, Nanjing, China; 3. School of Electronics and Information Engineering, Harbin Institute of Technology, Harbin, China; 4. Beijing Key Laboratory of Millimeter Wave and Terahertz Technology, School of Information and Electronics, Beijing Institute of Technology, Beijing, China*

DT-05. Porous Iron Oxide/Tin Oxide Quantum Dots (QDs) Composites as Potential Probe for Bio-imaging. *D. Dutta*[1], L. Pradhan[1] and D. Bahadur[1] *1. Metallurgical Engineering & Materials Science, Indian Institute of Technology Bombay, Mumbai, India*

DT-06. Study of micro-containers and microfluidic channels fabricated by three-dimensional printing technology and functionalization with ferromagnetic nanomaterials for medical applications. *D.S. Choi*[1], W. Gill[1], D. Ali[2], J. Park[3] and Y.K. Kim[4] *1. Mechanical and Materials Engineering, Masdar Institute of Science and Technology, Masdar, Abu Dhabi, United Arab Emirates; 2. Mechanical Engineering, Abu Dhabi University, Abu Dhabi, Abu Dhabi, United Arab Emirates; 3. Minotech Inc, Boston, MA; 4. Materials Science and Engineering, Korea University, Seoul, Republic of Korea*

DT-07. Magnetic-Based Biomolecule Detection using GMR Sensors. *G. Kokkinis*[1], M. Jamalieh[1], F. Cardoso[2], S. Cardoso[2], F. Keplinger[1] and I. Giouroudi[1] *1. Institute of Sensor and Actuator Systems, Vienna University of Technology, Vienna, Austria; 2. INESC Microsystems and Nanotechnologies, Lisbon, Portugal*

DT-08. Multiplexed transmission of polarization modulation signal in magneto-optical hybrid fiber. *K. Nishibayashi*[1], H. Yoneda[2], K. Kuga[3], T. Matsuda[1] and H. Munekata[1] *1. Tokyo Institute of Technology, Yokohama, Japan; 2. University of Electro-Communications, Chofu-shi, Japan; 3. Science and Technology Research Laboratories, Japan Broadcasting Corporation, Setagaya-ku, Japan*

DT-09. New designs of non-reciprocal optical devices utilizing surface plasmons. *V. Zayets*[1], H. Saito[1], K. Ando[1] and S. Yuasa[1] *1. Spintronics Research Center, AIST, Tsukuba, Ibaraki, Japan*

DT-10. Engineered Smart Substrate Embedded with Pattered Permalloy for RF Applications. *Y. Peng*[1], B. Rahman[1], T. Wang[1] and G. Wang[1] *1. Electrical Engineering, University of South Carolina, Columbia, SC*

DT-11. Quasi-Uniform Magnetic Field Generated by Multiple Transmitters of Magnetically-Coupled Resonant Wireless Power Transfer. *Y. Zhang*[1], T. Lu[1] and Z. Zhao[1] *1. Department of Electrical Engineering, Tsinghua University, Beijing, China*

DT-12. Magnetic cantilever actuator with magnetic thin films structures. *C. Huang*[2], T. Ger[1], H. Huang[2] and Z. Wei[2] *1. National Tsing Hua University, Institute of NanoEngineering and MicroSystems, Hsinchu, Taiwan; 2. National Tsing Hua University, Department of Power Mechanical Engineering, Hsinchu, Taiwan*

DT-13. Biocellulose-based Flexible Magnetic Paper. M.S. Salgado[3], H.S. Barud[3], A. Tercjak[1], J. Gutierrez[1], W.R. Viali[3], E.S. Nunes[2], S.J. Ribeiro[3], M. Jafellici Jr.[2], M. Nalin[3] and *R.F. Marques*[2]
1. University of the Basque Country, San Sebastian, Basque, Spain; 2. Physical-Chemistry, UNESP - Institute of Chemistry, Araraquara, São Paulo, Brazil; 3. Inorganic, UNESP - Institute of Chemistry, Araraquara, São Paulo, Brazil

DT-14. The MgB_2 bulk superconducting magnetic lens for focusing the ion beam. J. Hong[1], *J. Park*[1], S. Kim[1], J. Bahng[1], M. Won[1], B. Lee[1], J. Ok[1], C. Shin[1], J. Kim[2] and S. Choi[1] *1. Busan Center, Korea Basic Science Institute, Busan, Republic of Korea; 2. ISEM, University of Wollongong, Wollongong, NSW, Australia*

DT-15. Magnetic control of the inclination of Venetian-blind micro-mirror with DNA joints. *Y. Mizukawa*[1,2] and M. Iwasaka[3]
1. Department of Semiconductor Electronics & Integration Science, Hiroshima University, Higasihiroshima, Hiroshima, Japan; 2. Japan Society for the Promotion of Science, Chiyoda-ku, Tokyo, Japan; 3. Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashi-Hiroshima, Japan

WEDNESDAY AFTERNOON 2:30 — CORAL LOUNGE (POSTERS)

Session DU
EXCHANGE BIAS II (Poster Session)
Jose de la Venta, Chair

DU-01. Neel Temperature of Cr_2O_3 in Cr_2O_3/Co exchange coupled system: Effect of buffer layer. *S. Pati*[1], N. Shimomura[1], T. Nozaki[1], T. Shibata[2] and M. Sahashi[1] *1. Department of Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Advanced Technology Development Center, TDK Corporation, Ichikawa, Japan*

DU-02. Strain Induced Exchange Bias Studies of (100) and (111) Oriented Fe_3O_4 Films. S.G. Bhat[1], *A. Roy*[1] and A.P. Kumar[1]
1. Department of Physics, Indian Institute of Science, Bangalore, Karnataka, India

DU-03. The effects of the post magnetic field annealing on the magnetic anisotropy of NiO/$Co_{90}Fe_{10}$ bilayers. *F. Goncalves*[1], S. Su[3], R. Stamps[1], T. Wu[4], J. van Lierop[2] and K. Lin[3]
1. Department of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 2. Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 3. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 4. Taiwan Spin Research Center, National Yunlin University of Science and Technology, Douliu, Taiwan

DU-04. Exchange bias effect in martensitic Ni-Mn-Sn thin films applied to pin CoFeB/MgO/CoFeB magnetic tunnel junctions. *N. Teichert*[2], A. Boehnke[2], A. Behler[3,1], A. Waske[3] and A. Hütten[2] *1. Department of Physics, Institute for Solid State Physics, Dresden University of Technology, Dresden, Germany; 2. Department of Physics, Thin Films and Physics of Nanostructures, Bielefeld University, Bielefeld, Germany; 3. Institute for Complex Materials, IFW Dresden, Dresden, Germany*

DU-05. Anisotropic behavior of exchange bias effects in tensile-deformed Pt_3Fe single crystal. *S. Kobayashi*[1] and R. Morita[1] *1. Iwate University, Morioka, Japan*

DU-06. Exchange bias induced at a $Co_2FeAl_{0.5}Si_{0.5}$/Cr interface. N. Yu[1], A.J. Vick[1,2] and *A. Hirohata*[2] *1. Physics, University of York, York, United Kingdom; 2. Electronics, University of York, York, United Kingdom*

DU-07. Withdrawn

DU-08. A unified model to describe different types of exchange bias training effect. W. Rui[1], B. You[1], Z. Shi[2], S. Zhou[2], Q. Xu[3] and *J. Du*[1] *1. Department of Physics, Nanjing University, Nanjing, China; 2. Department of Physics, Tongji University, Shanghai, China; 3. Department of Physics, Southeast University, Nanjing, China*

DU-09. Crucial influence of the capping layer nature and thickness on typical magnetic thin films thermal stability. *K. Akmaldinov*[2,1], F. Letellier[3], S. Auffret[2], L. Lechevallier[3,4], R. Lardé[3], J. Le Breton[3], B. Dieny[2] and V. Baltz[2] *1. CROCUS, Grenoble, France; 2. SPINTEC, Grenoble, France; 3. GPM, Rouen, France; 4. Université de Cergy-Pontoise, Cergy-Pontoise, France*

DU-10. Comparative Studies of Perpendicular Exchange Bias Behavior between CoPt/IrMn and CoPt/FeMn bilayers. *C. Tsai*[1], J. Hsu[2] and K. Lin[1] *1. Graduate Institute of Materials Science & Engineering, National Tawian University, Taipei, Taiwan; 2. Physics, National Taiwan University, Taipei, Taiwan*

DU-11. Effect of $L1_2$ ordering in antiferromagnetic Ir-Mn layer on exchange bias of FePd epitaxial films. Y. Chang[3], *S. Hsiao*[1,2], S. Liu[2], W. Hsieh[2], J. Dhu[3], Y. Lin[1] and H. Lin[2] *1. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 2. Materials Science and Engineering, Feng Chia University, Taichung, Taiwan; 3. Materials Science and Engineering, National Hsing Hwa University, Hsinchu, Taiwan*

DU-12. Role of the antiferromagnetic pinning layer on spin-wave properties in IrMn/NiFe based spin-valves. G. Gubbiotti[1], *S. Tacchi*[1], E. Bonfiglioli[2], L. Giovannini[2], M. Tamisari[2], F. Spizzo[2], R. Zivieri[2] and L. Del Bianco[3] *1. IOM-CNR, Perugia, Italy; 2. Dipartimento di Fisica e Scienze Geologiche, Università di Ferrara, Ferrra, Italy; 3. Dipartimento di Fisica e Astronomia, Università di Bologna, Bologna, Italy*

DU-13. Unconventional exchange bias in basically antiferromagnetic $Sm_{0.1}Ca_{0.6}Sr_{0.3}MnO_3$ *V. Markovich*[1], I. Fita[2,3], A. Wisniewski[2], R. Puzniak[2], C. Martin[4], G. Gorodetsky[1] and G. Jung[1]
1. Department of Physics, Ben-Gurion University of the Negev, Beer-Sheva, Israel; 2. Institute of Physics, Polish Academy of Sciences, PL-02-668 Warsaw, Poland, Warsaw, Poland; 3. Donetsk Institute for Physics and Technology, National Academy of Sciences, Donetsk, Ukraine; 4. Laboratoire CRISMAT, UMR 6508, ISMRA, Caen, France

DU-14. Influence of the seed layer on the exchange spring coupling of the NiFe/IrMn/Co trilayer. *I.L. Castro Merino*[2], V. Pedruzzi Nascimento[1], E. Passamani Caetano[1] and E. Baggio Saitovitch[2]
1. Universidade Federal do Espírito Santo, Vitória, Espírito Santo, Brazil; 2. Exp, Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Rio de Janeiro, Brazil

DU-15. Antiferromagnetic Spin Structure in Ordered and Disordered Fe/IrMn. *R. Fan*[1], R. Ward[2] and P. Steadman[1]
1. Science Department, Diamond Light Source, Didcot, United Kingdom; 2. The Clarendon Laborator, University of Oxford, Oxford, United Kingdom

DU-16. Controlled synthesis, microstructure and magnetic properties of γ-Fe_2O_3/NiO core/shell nanostructures. *Z. Li*[1], X. He[1], W. Qiao[1], X. Song[1], X. Zhang[1], S. Yan[1], W. Zhong[1] and Y. Dou[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China*

WEDNESDAY AFTERNOON 2:30

CORAL LOUNGE (POSTERS)

Session DV
MICROMAGNETICS II (Poster Session)

Michael Donahue, Co-Chair
Dan Wei, Co-Chair

DV-01. An extented phase diagram of domain walls with a geometry from flat nanostrips to compact nanowires. *S. Jamet*[2,1], N. Rougemaille[2,1], J. Toussaint[2,1] and O. Fruchart[2,1] *1. Universite Joseph Fourier, CNRS, Grenoble, France; 2. Institut Neel, CNRS, Grenoble, France*

DV-02. A Monte Carlo Study of the Memory Effects in Assemblies of Magnetic Core/Shell Nanoparticles. M. Vasilakaki[1], D. Peddis[2], C. Binns[3], D. Fiorani[2] and *K.N. Trohidou*[1] *1. Institute of Nanoscience and Nanotechnology, NCSR Demokritos, Aghia Paraskevi, Attiki, Greece; 2. Instituto di Struttura della Materia-CNR, Monterotondo Scalo (RM), Italy; 3. Department of Physics and Astronomy, University of Leicester, Leicester, United Kingdom*

DV-03. Simulation Studies and Analysis of Magnetic Properties of Fe-Si Based Powder Magnetic Cores. *M. Suzuki*[1], Y. Iwazaki[1], K. Kawano[1], A. Furuya[2] and Y. Uehara[2] *1. Material R&D Department 3, Taiyo Yuden Co., Ltd., Takasaki, Gunma Prefecture, Japan; 2. Fujitsuu Limited, Kawasaki, Kanagawa, Japan*

DV-04. Investigation on magnetic properties of parallel and perpendicular oriented $Nd_2Fe_{14}B/Fe_{65}Co_{35}/Nd_2Fe_{14}B$ films by micro-magnetism finite element method. Y. Li[1], *M. Yue*[1], Q. Wu[1], T. Wang[1], C. Cheng[1] and H. Chen[1] *1. Beijing University of Technology, Beijing, China*

DV-05. Thermal relaxation in magnetic multi-layer materials with mixed hysteretic behavior. M. Dimian[2], *P. Andrei*[1] and V. Bevara[1] *1. Florida State University, Tallahassee, FL; 2. Department of Computers, Electronics and Automatics, Stefan cel Mare University, Suceava, Romania*

DV-06. Current-driven 2π-vortex precession in nona-disk with Dzyaloshinskii-Moriya interaction. X. Liu[1], Q. Zhu[1], S. Zhang[1], Q. Liu[1] and *J. Wang*[1] *1. Key Laboratory for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou, China*

DV-07. Parallelizing micromagnetic solver for large-scale micromagnetic simulations. *S. Lee*[1], C. You[3] and S. Shin[2] *1. Physics, Korea Advanced Institute of Science and Technology, Daejeon, Yuseong-Gu, Republic of Korea; 2. Department of Emerging Materials Science, DGIST, Daegu, Republic of Korea; 3. Department of Physics, Inha University, Incheon, Republic of Korea*

DV-08. Modeling the stress dependent hysteretic dynamics of Magnetostrictive Transducers. *X. Du*[2], L. Wang[2] and Z. Tang[1] *1. College of Biomedical Engineering, Institute of Advanced Digital Technologies and Instrumentation, Hangzhou, Zhejiang, China; 2. Department of Mechanical Engineering, Institute of Mechanical Design, Hangzhou, Zhejiang, China*

DV-09. Persisting structures in almost saturated magnetic states and their manifestation in grain systems revealed by a large-scale two-dimensional Ginzburg-Landau type simulation. *K. Iwano*[1], C. Mitsumata[2] and K. Ono[1] *1. IMSS, KEK, Tsukuba, Ibaraki, Japan; 2. NIMS, Tsukuba, Japan*

DV-10. Efficient Energyminimization in Finite-Difference Micromagnetics: Speeding up Hysteresis Computations. *C. Abert*[1], G. Wautischer[1], F. Bruckner[1], A. Satz[2] and D. Suess[1] *1. Institute of Solid State Physics, Christian Doppler Laboratory for Advanced Magnetic Sensing and Materials, Vienna University of Technology, Vienna, Austria; 2. Infineon Technologies Austria AG, Villach, Austria*

DV-11. Performance Analysis of the Parametric Magneto-Dynamic Model of Soft Magnetic Steel Sheets. *M. Petrun*[1], S. Steentjes[2], K. Hameyer[2] and D. Dolinar[1] *1. FERI, University of Maribor, Maribor, Slovenia; 2. IEM, RWTH Aachen, Aachen, Germany*

DV-12. Tracking interaction field intensity with FORC diagrams in longitudinal 1D, 2D arrays of magnetic wires and in frustrated systems. M. Nica[1] and *A. Stancu*[1] *1. Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*

DV-13. A New Preisach Type Hysteresis Model of High Temperature Superconductors. N. Duan[1,2], W. Xu[1,2], *S. Wang*[1], J. Zhu[2] and Y. Guo[2] *1. Xi'an Jiaotong University, Xi'an, China; 2. University of Technology, Sydney, Sydney, NSW, Australia*

DV-14. Dynamic hysteresis model and experiments of strain and magnetic field for Galfenol rod. *L. Weng*[1], Y. Sun[1], L. Wang[1], W. Huang[1], B. Wang[1] and B. Cui[2] *1. Hebei University of Technology, Tianjin, China; 2. Electron Energy Corporation, Landisville, PA*

DV-15. Modeling the Influence of Varying Magnetic Properties in Soft Magnetic Materials on the Hysteresis Shape Using the Flux Tube Approach. *M. Petrun*[1], S. Steentjes[2], K. Hameyer[2] and D. Dolinar[1] *1. FERI, University of Maribor, Maribor, Slovenia; 2. IEM, RWTH Aachen, Aachen, Germany*

WEDNESDAY AFTERNOON 2:30

CORAL LOUNGE (POSTERS)

Session DW
RARE-EARTH TRANSITION METAL BORIDES I (Poster Session)

Gino Hrkac, Co-Chair
Masashi Matsuura, Co-Chair

DW-01. Energy barrier analyses on highly oriented Nd-Fe-B thin films with and without Nd overlayer. *R. Goto*[1], S. Okamoto[1], N. Kikuchi[1] and O. Kitakami[1] *1. IMRAM, Tohoku Univ., Sendai, Japan*

DW-02. Interface modification and magnetic properties of $Nd_2Fe_{14}B/M$ (M = Nd, Mo)/Fe thin films. *K. Koike*[1], Y. Ohira[1], D. Ogawa[1], Y. Mizuno[1], T. Miyazaki[2], Y. Ando[2] and H. Kato[1] *1. Applied Mathematics and Physics, Yamagata University, Yonezawa, Yamagata, Japan; 2. Tohoku University, Sendai, Japan*

DW-03. Magnetic domain analysis of (Nd,Dy)-Fe-B sintered magnet based on topological defect theory. *K. Ono*[1], C. Mitsumata[2], K. Iwano[1], H. Tsukahara[1], M. Yano[3], T. Shoji[3], A. Manabe[3] and A. Kato[3] *1. KEK, Tsukuba, Japan; 2. NIMS, Tsukuba, Japan; 3. Toyota Motor Corporation, AIchi, Japan*

DW-04. Magnetic domain evolution in sintered NdFeB magnet during magnetization process. Q. Ma[1,3], *X. Zhang*[1,2], M. Yue[3], F. Liu[2], Y. Liu[2], M. Shi[1], Y. Li[2], L. Xu[2] and J. Zhang[3] *1. Key Laboratory of Integrated Exploitation of Bayan Obo Multi-Metal Resources, Inner Mongolia University of Science and Technology, Baotou, Inner Mongolia, China; 2. School of Mathematics, Physics and Biological Engineering, Inner Mongolia University of Science and Technology, Baotou, Inner Mongolia, China; 3. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*

DW-05. Relationship between microstructure and magnetic domain structure of anisotropic melt-spun Nd–Fe–B ribbons. *M. Takezawa*[1], H. Taneda[1] and Y. Morimoto[1] *1. Kyusyu Institute of Technology, Kyusyu Institute of Technology, Japan*

DW-06. Controlled usage of Dy in grain boundary diffusion treated NdFeB magnets by sputtered Dy, DyCu and Dy/Cu overlayers. *C. Shih*[1], C. Huang[1], Y. Yu[1], C. Chiu[2], H. Chang[3] and W. Chang[1] *1. Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. New Materials Research & Development Dept., China Steel Corp., Kaohsiung, Taiwan; 3. Department of Applied Physics, Tunghai University, Taichung, Taiwan*

DW-07. Decomposition of DyF_3 and its effect on magnetic performance of DyF_3-doped Nd-Fe-B-type hot-deformed magnet. *H. Kwon*[1], J. Kim[1], J. Lee[2] and J. Yu[2] *1. Materials Science and Engineering, Pukyong National Univ, Busan, Republic of Korea; 2. Korea Institute of Materials Science, Changwon, Republic of Korea*

DW-08. Tb diffusion behavior of sintered Nd-Fe-B magnets with TbHx surface coating. *S. Guo*[1], G. Ding[1], C. Yan[1], L. Chen[1], J. Liu[1], R. Chen[1], D. Lee[1] and A. Yan[1] *1. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology; Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

DW-09. Effect of Cu content and process conditions on the magnetic and structural properties of Nd-Fe-B sintered magnet. *T. Kim*[1], S. Lee[1], H. Kim[2], M. Lee[3] and T. Jang[3] *1. Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. R&D Center, Jahwa Electronics Co. Ltd., Cheongwon, Republic of Korea; 3. Hybrid Engineering, Sunmoon University, Asan, Republic of Korea*

DW-10. Sintered Nd-Fe-B magnets made from highly anisotropic HDDR powders. Y. Zhang[1], *J. Han*[1], T. Liu[2], X. Zhang[1], L. Zhou[2], S. Liu[1], J. Yang[1] and Y. Yang[1] *1. School of Physics, Peking University, Beijing, China; 2. Advanced Technology & Materials Co., Ltd. Inc, Beijing, 100081, China*

DW-11. Regeneration of waste sintered Nd-Fe-B magnets to fabricate anisotropic bonded magnets. X. Li[1], *M. Yue*[1], Y. Liu[1], W. Liu[1], D. Zhang[1] and T. Zuo[1] *1. Materials Science and Engineering, Beijing University of Technology, Beijing, China*

DW-12. Grain refinement in HREE-free sintered Nd-Fe-B magnets by small amount addition of molybdenum. J. Kim[1], W. Lee[1], J. Byun[1], S. Kim[2] and *Y. Kim*[1] *1. Department of Materials Science and Engineering, Hanyang University, Seoul, Republic of Korea; 2. Korea Automotive Technology Institute (KATECH), Cheonan-si, Republic of Korea*

DW-13. On the grain size effect for magnetic performance of low rare earth Nd-Fe-B sintered magnets. *X. Liu*[1], T. Ma[1] and M. Yan[1] *1. Department of Materials Science and Engineering, Zhejiang Unviersity, Hangzhou, China*

DW-14. Effect of High-Pressure Treatment on Phase Stability and Magnetic Properties of $Nd_2Fe_{14}B$ compound. *A. Kamegawa*[1,2], T. Sasaki[1], I. Matsushita[1] and H. Takamura[1] *1. Department of Materials Science, Tohoku University, Sendai, Japan; 2. PREST, The Japan Science and Technology Agency, Tokyo, Japan*

DW-15. Temperature coefficient of coercivity in $Nd_2Fe_{14}B$ films improved by covering metal layer. *T. Sato*[1] and Y. Kaneko[1] *1. Toyota Central R&D Labs., inc., Nagakute, Aichi, Japan*

DW-16. Thermal stability and magnetic properties of NdFeB/MnBi hybrid bonded magnets. *P. Wang*[1], D. Zhang[1], M. Yue[1], W. Geng[1], W. Liu[1], J. Zhang[1], Y. Qiang[2] and J. Sundararajan[2] *1. Materials Science and Engineering, Beijing University of Technology, Beijing, China; 2. Department of Physics, University of Idaho, Moscow, ID*

WEDNESDAY EVENING 6:00 — CORAL 3

Session YA
EVENING SESSION: TOPOLOGY AND MAGNETISM
YoshiChika Otani, Chair

6:00

YA-01. Topology and Magnetism. ***(Invited)*** *Y. Tokura*[2,1] *1. Department of Applied Physics, University of Tokyo, Tokyo, Japan; 2. RIKEN Center for Emergent Matter Science (CEMS), Saitama, Japan*

Session EA
SPIN INJECTION, TRANSPORT, AND DETECTION IN NOVEL 2D MATERIALS

Scott Crooker, Chair

8:30

EA-01. Defect-Mediated Spin Relaxation and Dephasing in Graphene. ***(Invited)*** *J. Folk*[1], M. Lundeberg[1,2], S.L. Avila[3] and S. Lüscher[1] *1. Physics and Astronomy, University of British Columbia, Vancouver, BC, Canada; 2. ICFO, Barcelona, Spain; 3. Chalmers University of Technology, Goteborg, Sweden*

9:06

EA-02. Spin-Layer Locking Effects in Optical Orientation of Exciton Spin in Bilayer WSe_2 ***(Invited)*** *A.M. Jones*[1] and X. Xu[1,2] *1. Physics, University of Washington, Seattle, WA; 2. Materials Science and Engineering, University of Washington, Seattle, WA*

9:42

EA-03. Generation and Electric Control of Spin-Coupled Valley Current in WSe_2. ***(Invited)*** *H. Yuan*[2,1], H. Hwang[2,1] and Y. Cui[2,1] *1. Stanford Institute for Materials and Energy Sciences, SLAC National Accelerator Laboratory, Menlo Park, CA; 2. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA*

10:18

EA-04. Direct electrical detection of spin-momentum locking in the topological insulator Bi_2Se_3. ***(Invited)*** *C.H. Li*[1] *1. Naval Research Lab, Washington, DC*

10:54

EA-05. Spin-electricity conversion effect induced by spin pumping in ferromagnet|topological-insulator devices. ***(Invited)*** *Y. Shiomi*[1], K. Nomura[1], Y. Kajiwara[1], K. Eto[2], M. Novak[2], K. Segawa[2], Y. Ando[2] and E. Saitoh[1] *1. Tohoku University, Sendai, Japan; 2. Osaka University, Osaka, Japan*

Session EB
SPIN-ORBIT TORQUES AND THE DZYALOSHINSKII-MORIYA INTERACTION
Aubrey Hanbicki, Chair

8:30

EB-01. Quantitative measurement of interfacial Dzyaloshinskii-Moriya interaction by nonreciprocal spin-wave propagation. *J. Lee*[1], C. Jang[1], B. Min[1] and J. Chang[1] *1. Spin Convergence Research Center, Korea Institute of Science and Technology, Seoul, Republic of Korea*

8:42

EB-02. Direct spectroscopic determination of the Dzyaloshinskii-Moriya interaction for $Ni_{80}Fe_{20}$/Pt. *H. Nembach*[1,2], J.M. Shaw[1], M. Weiler[1], E. Jue[1] and T. Silva[1] *1. NIST, Boulder, CO; 2. JILA, University of Colorado, Boulder, CO*

8:54

EB-03. Observation of spin to charge conversion by Ag/Bi_2O_3 interface. *S. Karube*[1,2], K. Kondou[2], H. Idzuchi[2], Y. Fukuma[2,3], Y. Niimi[1] and Y. Otani[1,2] *1. Institute for Solid State Physics, University of Tokyo, Kashiwa, Chiba, Japan; 2. Center of Emergent Matter Science, RIKEN, Wako, Saitama, Japan; 3. Kyushu Institute of Technology, Iizuka, Fukuoka, Japan*

9:06

EB-04. Spin To Charge Current Conversion using Spin Hall and Rashba effects. ***(Invited)*** J. Rojas Sanchez[1,3], *L. Vila*[1], S. Oyarzun[1], W. Savero Torres[1], P. Laczkowski[3], Y. Fu[1], A. Marty[1], C. Vergnaud[1], M. Jamet[1], S. Gambarelli[1], S. Desfonds[1], N. Reyren[3], C. Deranlot[3], J. George[3], H. Jaffrès[3], J. Attané[1], J. De Teresa[2] and A. Fert[3] *1. Institut Nanosciences et Cryogénie, CEA, and Université Grenoble Alpes, Grenoble, France; 2. Instituto de Ciencia de Materiales de Aragón (ICMA), Univ. de Zaragoza-CSIC, Zaragoza, Spain; 3. Unité Mixte de Physique CNRS/Thales and Université Paris-Sud 11, Palaiseau, France*

9:42

EB-05. Spin-orbit torque-driven perpendicular magnetization switching in systems with structural asymmetry. *G. Yu*[1], M. Akyol[1], P. Upadhyaya[1], X. Li[1], C. He[1], Y. Fan[1], J.G. Alzate[1], M. Lang[1], K.L. Wong[1], Y. Tserkovnyak[2], P.K. Amiri[1] and K.L. Wang[1] *1. Electrical engineering, UCLA, Los Angeles, CA; 2. Department of Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA*

9:54

EB-06. Thickness dependence of spin-orbit torques in Pd/Co/Pt wires. *S. Yun*[1], J. Moon[1], H. Whang[1] and S. Choe[1] *1. Department of Physics, Seoul National University, Seoul, Republic of Korea*

10:06

EB-07. Layer thickness dependence of current induced effective fields in ferromagnetic multilayers. *M. Kawaguchi*[1], T. Moriyama[1], D. Chiba[2] and T. Ono[1] *1. Institute for Chemical Research, Kyoto University, Uji city, Kyoto prefecture, Japan; 2. Department of Applied Physics, The University of Tokyo, Tokyo, Japan*

10:18

EB-08. Current-induced Spin Torque Resonance for Magnetic Insulators. *T. Chiba*[1], G.E. Bauer[1,2] and S. Takahashi[1] *1. Institute for Materials Research (IMR), Tohoku University, Sendai, Japan; 2. Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands*

10:30

EB-09. Structural Engineering of Spin Orbit Torques in Perpendicular Co/Ni Multilayers. *J. Yu*[1], X. Qiu[1], Y. Wu[1], J. Yoon[1], P. Deorani[1], A. Manchon[2] and H. Yang[1] *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Division of Physical Science and EngineeringKAUST, Thuwal, Saudi Arabia*

10:42

EB-10. Device size dependence of magnetization reversal by spin-orbit torque in Ta/CoFeB/MgO structure down to sub 100 nm. *C. Zhang*[1], S. Fukami[2,3], H. Sato[2,3], M. Yamanouchi[1,2], F. Matsukura[1,4] and H. Ohno[1,2] *1. RIEC, Tohoku Univ., Sendai, Japan; 2. CSIS, Tohoku Univ., Sendai, Japan; 3. CIES, Tohoku Univ., Sendai, Japan; 4. WPI-AIMR, Tohoku Univ., Sendai, Japan*

10:54

EB-11. Effective field due to the spin orbit torque in the $L1_0$ bulk perpendicular magnetic anisotropy Pd/FePd/MgO system. K. Lee[1], H. Lee[2], J. Cho[2], Y. Choi[1], F. Bonell[3,4], Y. Shiota[3,4], S. Miwa[3,4], Y. Suzuki[3,4], *C. You*[2] and M. Jung[1] *1. Department of Physics, Sogang University, Seoul, Republic of Korea; 2. Department of Physics, Inha university, Inha, Republic of Korea; 3. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 4. CREST, Japan Science Technology Agency, Saitama, Japan*

11:06

EB-12. Deterministic control of a longitudinal ferromagnetic domain wall by spin orbit torque. *D. Bhowmik*[1], M. Nowakowski[1], L. You[1], O. Lee[1], D. Keating[1], M. Wong[1], J. Bokor[1] and P. Salahuddin[1] *1. University of California Berkeley, Berkeley, CA*

11:18

EB-13. Spin Pumping in the presence of Interface Spin-orbit Coupling. *K. Chen*[1] and S. Zhang[1] *1. University of Arizona, Tucson, AZ*

THURSDAY MORNING 8:30

CORAL 1

Session EC
RARE-EARTH FREE AND L10 HARD MAGNETS I

Junichiro Inoue, Co-Chair
Frederick Pinkerton, Co-Chair

8:30

EC-01. Correlations in Rare-Earth Transition-Metal Permanent Magnets. *R. Skomski*[1], P. Manchanda[1] and A. Kashyap[2] *1. Physics and Astronomy, Univ Nebraska, Lincoln, NE; 2. School of Basic Science, IIT Mandi, Mandi, Himachal Pradesh, India*

8:42

EC-02. Effect of Adatoms on Exchange Coupling and Magnetic Anisotropy Energy of (0001) $SmCo_5$ Surface Slabs Using First Principles Approach. *S. Chandrasekaran*[2], P. Murugan[2], P. Saravanan[1] and S.V. Kamatl[1] *1. Advanced Magnetic Groups, Defence Metallurgical Research Laboratory, Hyderabad, India; 2. Functional Materials Division, CSIR-Central Electrochemical Research Institute, Karaikkudi, Tamil Nadu, India*

8:54

EC-03. Influence of intermediate-heat treatment on the structure and magnetic properties of iron-rich $Sm(CoFeCuZr)_z$ sintered magnet. *Y. Horiuchi*[1], M. Hagiwara[1], M. Endo[1], N. Sanada[1] and S. Sakurada[1] *1. Toshiba Corp., Kawasaki, Kanagawa, Japan*

9:06

EC-04. Structural and Magnetic Properties of Iron-Rich $Sm(CoFeCuZr)_z$ Sintered Magnets Prepared from Jet-Milled Powder. *M. Hagiwara*[1], Y. Horiuchi[1], T. Kobayashi[1], T. Kobayashi[1] and S. Sakurada[1] *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Kanagawa, Japan*

9:18

EC-05. Characterization of Ta/$SmCo_5$/Ta multilayers formed by facing targets sputtering system. *H. Sakai*[1], M. Kondo[1], Y. Takamura[1] and S. Nakagawa[1] *1. Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*

9:30

EC-06. Increased magnetocrystalline anisotropy in spontaneously strained epitaxial Fe-Co-X films. *L. Reichel*[1,2], S. Kauffmann-Weiss[1,2], G. Giannopoulos[3], M. Hoffmann[4], S. Oswald[4], E.K. Delczeg-Czirjak[5], A. Edström[5], J. Rusz[5], D. Niarchos[3], L. Schultz[1,2] and S. Fähler[1] *1. Institute of Metallic Materials, IFW Dresden, Dresden, Germany; 2. Institute of Materials Science, TU Dresden, Dresden, Germany; 3. Demokritos National Center of Scientific Research, Athens, Greece; 4. Institute of Complex Materials, IFW Dresden, Dresden, Germany; 5. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden*

9:42

EC-07. Structural and magnetic properties of epitaxial $NdFe_{12}$ and $NdFe_{12}N_x$ thin film. *Y. Hirayama*[1], Y.K. Takahashi[1] and K. Hono[1] *1. National Institute for Materials Science, Tsukuba, Japan*

9:54

EC-08. Quantitative understanding of thermal stability of α"-$Fe_{16}N_2$. *S. Yamamoto*[1], R. Gallage[1,3], Y. Ogata[2], N. Kobayashi[3], T. Ogawa[5], M. Takahashi[2] and M. Takano[4] *1. Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, Kyoto, Japan; 2. New Industry Creation Hatchery Center (NICHe), Tohoku University, Sendai, Japan; 3. T&T Innovations Inc, Hiroshima, Japan; 4. Okayama Univerity, Okayama, Japan; 5. Tohoku Univerity, Sendai, Japan*

10:06

EC-09. Ferromagnetic properties of the Fe_2W Laves phase. M. Koten[1], B. Balamurugan[2], R. Skomski[2], D.J. Sellmyer[3,2] and *J. Shield*[1,2] *1. Mechanical & Materials Engineering, Univ Nebraska-Lincoln, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 3. Physics and Astronomy, University of Nebraska, Lincoln, NE*

10:18

EC-10. Origin of the unusual magnetic anisotropy in MnBi. *K. Shanavas*[1], D. Parker[1] and D.J. Singh[1] *1. Materials Science & Technology, Oak Ridge National Laboratory, Oak Ridge, TN*

10:30

EC-11. Magnetic Anisotropy Mechanism of LTP MnBi Thin Film. *T. Hozumi*[1,2], T. Suzuki[1], J. Barker[1] and O.N. Mryasov[1] *1. MINT Center, University of Alabama, Tuscaloosa, AL; 2. Advanced Technology Development Center, TDK Corporation, Narita, Chiba, Japan*

10:42

EC-12. Atomic Structure and Magnetism of Fe-*T*-Pt Alloys.
R. Choudhary[2,3], P. Kumar[2], T.H. Rana[1,3], P. Manchanda[3], A. Kashyap[2], Y. Liu[3], D.J. Sellmyer[3] and R. Skomski[3]
1. Department of Physics, LNM Institute of Information Technology, Jaipur, Jaipur, Rajasthan, India; 2. School of Basic Sciences (Physics), Indian Institute of Technology, Mandi, Himachal Pradesh, India; 3. Department of Physics and Astronomy, NCMN.University of Nebraska, Lincoln, NE

10:54

EC-13. Real space representation of magnetic anisotropy of metallic ferromagnets with non-periodic lattice structure. *J. Inoue*[2,1]
1. Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; 2. Department of Applied Physics, Tohoku University, Sendai, Japan

11:06

EC-14. First-principles calculations of magnetic anisotropy due to itinerant electrons. *Y. Gohda*[1,2], Z. Torbatian[2], T. Ozaki[3] and S. Tsuneyuki[2,3] *1. Dept. Mater. Sci. Eng., Tokyo Tech, Yokohama, Japan; 2. Dept. Phys., Univ. Tokyo, Tokyo, Japan; 3. ISSP, Univ. Tokyo, Kashiwa, Japan*

11:18

EC-15. Magnetic properties of electroplated $L1_0$ CoPt thick films at elevated temperatures. *A. Garraud*[1], O.D. Oniku[1] and D.P. Arnold[1] *1. Electrical and Computer Engineering Dept, University of Florida, Gainesville, FL*

THURSDAY MORNING 8:30 — CORAL 2

Session ED
MAGNETIZATION DYNAMICS AND DAMPING I
Maxim Tsoi, Chair

8:30

ED-01. Gilbert damping of ferromagnetic metals in inhomogeneous spin dynamics. *N. Umetsu*[1], D. Miura[1] and A. Sakuma[1]
1. Tohoku University, Sendai, Japan

8:42

ED-02. Effect of Substitutional Defects on Kambersky Damping in $L1_0$ Magnetic Materials. *T. Qu*[2] and R.H. Victora[1]
1. Department of Electrical Engineering, University of Minnesota - Twin Cities, Minneapolis, MN; 2. School of Physics & Astronomy, University of Minnesota-Twin Cities, Minneapolis, MN

8:54

ED-03. Local Control of Damping in Ferromagnetic/Non-magnetic Bilayers by Interfacial Intermixing Induced by Focused Ion-Beam Irradiation. J. King[3], A. Ganguly[1], D.M. Burn[3], S. Pal[1], E. Sallabank[3], T. Hase[2], A. Hindmarch[3], A. Barman[1] and *D. Atkinson[3] 1. Department of Condensed Matter Physics, SN Bose National Centre for Basic Sciences, Kolkata, India; 2. Department of Physics, University of Warwick, Coventry, United Kingdom; 3. Department of Physics, Durham University, Durham, United Kingdom*

9:06

ED-04. Thickness and Capping Layer Dependence of Magnetic Damping. *M. Tokaç*[2], S.A. Bunyaev[1], G.N. Kakazei[1], D.S. Schmool[3], D. Atkinson[2] and A. Hindmarch[2] *1. Departmento de Fisica e Astronomia, Institute of Nanoscience and Nanotechnology, Universidade do Porto, Porto, Portugal; 2. Physics Department, Durham University, Durham, United Kingdom; 3. Laboratorie PROMES CNRS UPR 8521, Univ. de Perpignan Via Domitia, Perpignan, France*

9:18

ED-05. Comparison of micromagnetic parameters of ferromagnetic semiconductors (Ga,Mn)(As,P) and (Ga,Mn)As. *P. Nemec*[1], N. Tesarova[1], D. Butkovicova[1], R. Campion[2], A. Rushforth[2], K.W. Edmonds[2], P. Wadley[2], B. Gallagher[2], E. Schmoranzerova[1], F. Trojanek[1], P. Maly[1], V. Novak[3] and T. Jungwirth[3,2] *1. Charles University, Prague, Czech Republic; 2. University of Nottingham, Nottingham, United Kingdom; 3. Institute of Physics ASCR, Prague, Czech Republic*

9:30

ED-06. Temperature dependent ferromagnetic relaxation and gyromagnetic ratio in $Ni_{80}Fe_{20}$/Gd thin films. *B. Khodadadi*[1,2], J. Beik Mohammadi[1,2], C. Mewes[1,2], T. Mewes[1,2], T. Eggers[3] and C. Miller[3] *1. Physics, University of Alabama, Tuscaloosa, AL; 2. MINT Center, University of Alabama, Tuscaloosa, AL; 3. Physics, University of South Florida, Tampa, FL*

9:42

ED-07. Linewidth broadening of the optical precession mode in a synthetic antiferromagnet due to mutual spin pumping effect. *K. Tanaka*[1], T. Moriyama[1], M. Nagata[1], T. Seki[2], K. Takanashi[2], S. Takahashi[2] and T. Ono[1] *1. Institute for Chemical Research, Kyoto University, Gokasho,Uji, Kyoto, Japan; 2. Institute for Materials Research, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai, Japan*

9:54

ED-08. Spin Hall Effect-controlled magnetization dynamics in NiMnSb. *P. Dürrenfeld*[1], F. Gerhard[2], M. Ranjbar[1], C. Gould[2], L.W. Molenkamp[2] and J. Åkerman[1,3] *1. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 2. Physikalisches Institut (EP3), Universität Würzburg, Würzburg, Germany; 3. Materials Physics, School of ICT, KTH Royal Institute of Technology, Kista, Sweden*

10:06

ED-09. Size-dependent damping and linewidth broadening of confined spin wave modes in an insulating ferromagnetic film. *R. Adur*[1], C. Du[1], H. Wang[1], S.A. Manuilov[1], V.P. Bhallamudi[1], C. Zhang[1], D.V. Pelekhov[1], F. Yang[1] and P. Hammel[1] *1. Department of Physics, The Ohio State University, Columbus, OH*

10:18

ED-10. Spin Wave-Assisted Switching in Perpendicularly Magnetized Bilayers. W. Zhou[1], *T. Seki*[1], H. Arai[2], H. Imamura[2] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan*

10:30

ED-11. Nanometer-Thick Yttrium Iron Garnet Films with Extremely Low Damping. *H. Chang*[1], P. Li[1], W. Zhang[2], T. Liu[1,3], A. Hoffmann[2], L. Deng[3] and M. Wu[1] *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

10:42

ED-12. Yttrium Iron Garnet grown by room temperature pulsed laser deposition and subsequent annealing. T. Richter[1], N. Homonnay[1], C. Hauser[1], B. Fuhrmann[2] and *G. Schmidt*[1,2] *1. Institut für Physik, Universität Halle, Halle, Germany; 2. Interdisziplinäres Zentrum für Materialwissenschaften, Universität Halle, Halle, Germany*

10:54

ED-13. High power spinwave instabilities in ultra-thin YIG film measured using inverse spin Hall effect. *S.A. Manuilov*[1], C. Du[1], R. Adur[1], H. Wang[1], F. Yang[1] and P. Hammel[1] *1. Department of Physics, The Ohio State University, Columbus, OH*

11:06

ED-14. Experimental demonstration of electric-field coupling to spin waves in a centrosymmetric ferrite. *X. Zhang*[1], T. Liu[2], M.E. Flatte[2] and H. Tang[1] *1. Electrical Engineering, Yale University, New Haven, CT; 2. Optical Science and Technology Center and Department of Physics and Astronomy, University of Iowa, Iowa City, IA*

11:18

ED-15. Hybrid YIG-ferromagnet structures for spin-wave devices. *G. Csaba*[1], A. Papp[1] and W. Porod[1] *1. University of Notre Dame, Notre Dame, IN*

Session EE
MAGNETOELECTRICS II
Ramanathan Mahendiran, Chair

8:30

EE-01. Non-volatile switching of magnetism in multiferroic heterostructures. *M. Liu*[1] *1. School of Electrical and Information Engineering, Xi'an Jiaotong University, Xi'an, Shannxi, China*

8:42

EE-02. Studies of the Magnetic, Dielectric and Electrical Properties of PZTFT for Multiferroic Tunnel Junction Applications. *D.G. Barrionuevo Diestra*[1,2], N. Ortega[1,2], D. Sanchez[1,2] and R. Katiyar[1,2] *1. Physics, University of Puerto Rico Rio Piedras, San Juan, Puerto Rico; 2. Physics, Institute of Functional Nanomaterials, San Juan, Puerto Rico*

8:54

EE-03. Electric-field manipulation of magnetization rotation and tunneling magnetoresistance of magnetic tunnel junctions at room temperature. *A. Chen**[1], P. Li[1], D. Li[2], Y. Zhao[1], S. Zhang[1,3], L. Yang[1], Y. Liu[1], M. Zhu[1], H. Zhang[1] and X. Han[2] *1. Department of Physics and State Key Laboratory of Low-Dimensional Quantum Physics, Tsinghua University, Beijing, China; 2. Beijing National Laboratory for Condensed Matter Physics, Chinese Academy of Sciences, Beijing, China; 3. College of Science, National University of Defense Technology, Changsha, China*

9:06

EE-04. Voltage-controlled Exchange Bias: Advances towards Magnetoelectric Device Applications. ***(Invited)*** *C. Binek*[1], W. Echtenkamp[1], M. Street[1] and J. Wang[1] *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*

9:42

EE-05. Reversible electric-field driven magnetic and resistive changes in manganite/titanate heterostructures. *R.V. Chopdekar*[1], M. Buzzi[2], E. Arenholz[3], F. Nolting[2] and Y. Takamura[1] *1. Department of Chemical Engineering and Materials Science, University of California, Davis, Davis, CA; 2. Swiss Light Source, Paul Scherrer Institute, Villigen, Aargau, Switzerland; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

9:54

EE-06. Imaging electrically-induced interconversion between antiferromagnetism and ferromagnetism just above room temperature. *L.C. Phillips*[1], V. Ivanovskaya[1], R.O. Cherifi[1], A. Zobelli[2], I.C. Infante[3], E. Lesne[1], E. Jacquet[1], V. Garcia[1], S. Fusil[1,4], P.R. Briddon[5], N. Guiblin[3], A. Mougin[2], A. Ünal[6], F. Kronast[6], S. Valencia[6], B. Dkhil[3], A. Barthélémy[1] and M. Bibes[1] *1. Unité Mixte CNRS/Thales, Palaiseau, France; 2. Laboratoire de Physique des Solides, Université Paris Sud, Orsay, France; 3. Laboratoire SPMS, Ecole Centrale Paris, Châtenay-Malabry, France; 4. Université d'Evry-Val d'Essonne, Evry, France; 5. School of Electrical Engineering, University of Newcastle, Newcastle-upon-Tyne, United Kingdom; 6. Helholtz-Zentrum Berlin, Berlin, Germany*

10:06

EE-07. Composition and temperature dependences of electric-field control of nonvolatile magnetization in $Co_{40}Fe_{40}B_{20}$/(1-x) $Pb(Mg_{1/3}Nb_{2/3})O_3$-x$PbTiO_3$ multiferroic heterostructures. *Y. Liu*[1], Y. Zhao[1], P. Li[1], S. Zhang[3], D. Li[2], H. Wu[2] and X. Han[2] *1. Department of Physics and State Key Laboratory of Low-Dimensional Quantum Physics, Tsinghua University, Beijing, China; 2. Beijing National Laboratory for Condensed Matter Physics, Chinese Academy of Sciences, Beijing, China; 3. College of Science, National University of Defense Technology, Changsha, Hunan Province, China*

10:18

EE-08. Enhanced strain-induced magnetoelectricity at the Fe/$SrTiO_3$ interface. *D. Odkhuu*[1], T. Tsevelmaa[1], P. Ong[1] and N. Kioussis[1] *1. Department of Physics and Astronomy, California State University Northridge, Northridge, CA*

10:30

EE-09. Giant magnetoelectric effect in Metglas/PIN-PMN-PT multiferroic heterostructure. *M. Staruch*[1] and P. Finkel[1] *1. Naval Research Laboratory, Washington, DC*

10:42

EE-10. Exchange biased magnetoelectric composites for magnetic field sensor application by frequency conversion. V. Röbisch[1], E. Lage[1,3], E. Yarar[1], N.O. Urs[1], I. Teliban[2], R. Knöchel[2], J. McCord[1], E. Quandt[1] and *D. Meyners*[1] *1. Institute for Materials Science, Christian-Albrechts-Universität zu Kiel, Kiel, Germany; 2. Institute of Electrical and Information Engineering, Christian-Albrechts-Universität zu Kiel, Kiel, Germany; 3. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

10:54

EE-11. Giant self-biased magnetoelectric effect in laminated heterostructures of $Fe_{83}Ga_{17}Tb_{0.2}$ alloys and $Pb(Zr,Ti)O_3$ D. Wang[1], *P. Li*[1], Y. Wen[1], C. Yang[1], A. Yang[1], C. Lu[1], F. Zhang[1] and J. Qiu[1] *1. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*

11:06

EE-12. Electric field modulated exchange bias and magnetization switching in novel room temperature Cr/Ni-Mn-In/PZT thin film multiferroic heterostructure. K. Singh[1,2], S.K. Singh[3] and *D. Kaur[1,2] 1. Physics Department, IIT Roorkee, Roorkee, India; 2. Indian Institute of Technology, Roorkee, India; 3. Solid State Physics Lab, New Delhi, India*

11:18

EE-13. Strain-induced Giant Magnetoelectric Effect in Heavy Metal/Magnet/Insulator Junctions. *P. Ong*[1], N. Kioussis[1], D. Odkhuu[1], P. Khalili Amiri[2], K.L. Wang[2] and G.P. Carman[3] *1. Department of Physics and Astronomy, California State University Northridge, Northridge, CA; 2. Department of Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 3. Department of Mechanical and Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA*

THURSDAY MORNING 8:30

SOUTH PACIFIC 3 & 4

Session EF
PATTERNED FILMS
Masamitsu Hayashi, Chair

8:30

EF-01. Controlling Topological Charges by Imprinting Non-Collinear Spin Textures. *(Invited)* *R. Streubel[1] 1. Institute for Integrative Nanosciences, IFW Dresden, Dresden, Saxony, Germany*

9:06

EF-02. Imprinting topological domain structure in epitaxial Ni/Fe/Co/Cu(001). *A. Tan*[1], J. Li[1] and Z. Qiu[1] *1. Physics, University Of California Berkeley, Berkeley, CA*

9:18

EF-03. Nano-Stencil Lithographic Approach for Fabricating Large Area Magnetic Nanostructures. *X. Liu*[1], P. Lupo[1], Z. Ding[2], N. Singh[2] and A.O. Adeyeye[1] *1. Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Institute of Microeletronics, A*STAR (Agency for Science, Technology and Research), Singapore, Singapore*

9:30

EF-04. Tailoring the magnetic properties of cobalt antidot arrays by varying the pore size and degree of disorder. S. Michea[2], *J.L. Palma*[1], R. Lavín[3], J. Briones[1,4], J. Escrig[1,4], J.C. Denardin[1,4] and R. Rodriguez[2] *1. Física, Universidad de Santiago de Chile, Santiago, Chile; 2. Física, Universidad Católica de Chile, Santiago, Metropolitana, Chile; 3. Ingeniería, Universidad Diego Portales, Santiago, Metropolitana, Chile; 4. Center for the Development of Nanotechnology and Nanoscience CEDENNA, Santiago, Metropolitana, Chile*

9:42

EF-05. Control and Generation of Domain Walls Near Magnetic Compensation in Ferrimagnetic CoTb *via* Applied Thermal Gradient. *R.D. Tolley*[1,2], T. Liu[2], S. Le Gall[2], Y. Xu[2], M. Gottwald[2], T. Hauet[1], M. Hehn[2], F. Montaigne[2], E.E. Fullerton[1] and S. Mangin[2] *1. Center for Magnetic Recording Research, University of California San Diego, La Jola, CA; 2. Institut Jean Lamour UNR CNRS Universite de Lorraine, Vandoeuvre- Les-Nancy, France*

9:54

EF-06. Vortex nucleation and quasistatic motion in coupled discs with exchange bias. *S. Zhang*[1], A.K. Petford-Long[1], O. Heinonen[1] and C. Phatak[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL*

10:06

EF-07. Direct observation of ordering in a one dimensional Ising like macro-spin chain. *E. Östman*[2], U.B. Arnalds[3], H. Stopfel[2], V. Kapaklis[2], A. Farhan[1], R.V. Chopdekar[1], A. Balan[1], L. Heyderman[1], A. Scholl[4] and B. Hjörvarsson[2] *1. Paul Scherrer Institute, Villigen, Switzerland; 2. Physics and Astronomy, Uppsala University, Uppsala, Sweden; 3. Engineering and Natural Sciences, University of Iceland, Reykjavik, Iceland; 4. Lawrence Berkeley National Laboratory (LBNL), Berkeley, CA*

10:18

EF-08. Perpendicular Magnetization from In-Plane Fields in Antidot Lattices. *J. Gräfe*[1], F. Haering[2], T. Tietze[1], U. Wiedwald[3], P. Ziemann[2], U. Nowak[4], G. Schütz[1] and E.J. Goering[1] *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Institute of Solid State Physics, Ulm University, Ulm, Germany; 3. Faculty of Physics, University of Duisburg-Essen, Duisburg, Germany; 4. Department of Physics, Universität Konstanz, Konstanz, Germany*

10:30

EF-09. Collective Behavior of the Metamagnetic Phase Transition in FeRh Nanostripes. *V. Uhlir*[1], J.A. Arregi[2] and E.E. Fullerton[1] *1. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 2. CIC nanoGUNE Consolider, Donostia - San Sebastian, Spain*

10:42

EF-10. Writing Magnetic Patterns Using Chemical Disorder Induced Ferromagnetism. R. Bali[1,2], S. Wintz[1,3], F. Meutzner[1,3], R. Hübner[1], R. Boucher[3], A.A. Ünal[4], S. Valencia[4], A. Neudert[1], K. Potzger[1], J. Bauch[3], F. Kronast[4], S. Facsko[1], J. Lindner[1] and *J. Fassbender[1,3] 1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. University of Western Australia, Crawley, Perth, WA, Australia; 3. TU Dresden, Dresden, Germany; 4. Helmholtz-Zentrum Berlin, Berlin, Germany*

10:54

EF-11. Orientation-dependent domain states in epitaxial perovskite oxide thin film micromagnets. E. Folven[1], R.V. Chopdekar[2], S. Slöetjes[1], B. Li[2], Y. Jia[2], I.G. Hallsteinsen[1], A.T. Young[3], A. Scholl[3], S.T. Retterer[4], T. Tybell[1], Y. Takamura[2] and *J.K. Grepstad[1] 1. Department of Electronics and Telecommunications, Norwegian University of Science and Technology, Trondheim, Norway; 2. Department of Chemical Engineering and Materials Science, University of California Davis, Davis, CA; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Center for Nanophase Materials Sciences and Biosciences Divisions, Oak Ridge National Laboratory, Oak Ridge, TN*

11:06

EF-12. Error Analysis for Ultra Dense Nanomagnet Logic Circuits. *F.A. Shah*[1], G. Csaba[1], M.T. Niemier[2], X.S. Hu[2], W. Porod[1] and G.H. Bernstein[1] *1. Electrical Engineering, University of Notre Dame, Notre Dame, IN; 2. Computer Science and Engineering, University of Notre Dame, Notre Dame, IN*

11:18

EF-13. Magnetic switching and dynamics of NiFe nanorings on carbon mesas. *S. Yoon*[1,2], S. Lee[1], B. Cho[1] and R. McMichael[2] *1. School of Materials Science and Engineering, Gwangju Institute of Science and Technology, Gwangju, Republic of Korea; 2. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD*

Session EG
MAGNETOELASTIC MATERIALS I
Ekkes Brück, Chair

8:30

EG-01. Magnetic shape memory nano-disks: effects of size reduction on magnetism, structure and micorstructure. ***(Invited)***
F. Albertini[1], P. Ranzieri[1], M. Campanini[1], V. Chiesi[1], S. Fabbrici[2,1], F. Casoli[1], L. Nasi[1], L. Righi[3,1], V. Grillo[4,1], F. Celegato[5], P. Tiberto[5,1] and G. Barrera[5] *1. IMEM-CNR, Parma, Italy; 2. Mist E-R Lab., Bologna, Italy; 3. Chemistry Department, Parma University, Parma, Italy; 4. NANO-CNR, Modena, Italy; 5. INRIM, Torino, Italy*

9:06

EG-02. Effect of Enhanced Magnetic Hysteresis on Magnetic Shape Memory Effect in Ni-Mn-Ga. *O. Heczko*[2], V. Kopecky[2], A. Sozinov[3] and L. Straka[1] *1. Laboratory of Engineering Materials, Aalto University, School of Engineering, FIN-00076 Aalto, Finland; 2. Department of Functional Materials, Institute of Physics ASCR, Prague, Prague, Czech Republic; 3. AdaptaMat Ltd., Helsinki, Finland*

9:18

EG-03. Pulsed high magnetic field experiments: New insights into the magnetocaloric effect in Ni-Mn-In Heusler alloys.
C. Salazar[1], M. Ghorbani[2,3], A.K. Nayak[1], Y. Skourski[2], J. Wosnitza[2,3], C. Felser[1] and M. Nicklas[1] *1. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 2. Dresden High Magnetic Field Laboratory (HLD), HelmholtzZentrum DresdenRossendorf, Dresden, Germany; 3. Institut für Festkörperphysik, TU Dresden, Dresden, Germany*

9:30

EG-04. Phase Transformations and Magnetic Ordering in Ni-Mn-X Heusler Alloys. *A.S. Madiligama Ralalage*[2], P. Ari-Gur[2], Y. Ren[4], D. Brown[5], S. Calder[3], V. Garlea[3], V. Shavrov[1], A.V. Mashirov[1], A.P. Kamantsev[1], E.T. Dilmieva[1] and V. Koledov[1] *1. Kotelnikov Institute of Radio-engineering and Electronics of RAS, Moscow, Russian Federation; 2. Western Michigan University, Kalamazoo, MI; 3. Quantum Condensed Matter Division, Oak Ridge National Laboratory, Oak Ridge, TN; 4. X-ray Science Division, Argonne National Laboratory, Argonne, IL; 5. Neutron Science Center, Los Alamos National Laboratory, Los Alamos, NM*

9:42

EG-05. Ab initio study of piezomagnetic effect in Mn-antiperovskites. *J. Zemen*[1], Z. Gercsi[1,3] and K.G. Sandeman[2,1] *1. Department of Physics, Imperial College London, London, United Kingdom; 2. Department of Physics, Brooklyn College, New York, NY; 3. CRANN and School of Physics, Trinity College Dublin, Dublin, Ireland*

9:54

EG-06. Understanding strong magnetostriction in $Fe_{100-x}Ga_x$ alloys. *R. Wu*[1] and H. Wang[2] *1. Physics and Astronomy, University of California, Irvine, Irvine, CA; 2. Department of Physics, Fudan University, Shanghai, China*

10:06

EG-07. Enhanced magnetostrictive properties of $Fe_{81}Ga_{19}$ alloys prepared by mechanical alloying. P. Taheri[1,2], *Y. Chen*[1], M. Zamanpour[1,2] and V.G. Harris[1,2] *1. Electrical and Computer Engineering, Center for Microwave Magnetic Materials and Integrated Circuits, Northeastern University, Boston, MA; 2. : Department of Chemical Engineering, Northeastern University, Boston, MA*

10:18

EG-08. Effects of Zn Additions to highly Magnetoelastic FeGa Alloys. *T.A. Lograsso*[2,6], N. Jones[3], D. Schlagel[2], G. Petculescu[1], M. Wun-Fogle[3], J.B. Restorff[3], A.E. Clark[4] and K. Hathaway[5] *1. University of Louisana at Lafayette, Lafayette, LA; 2. Materials Science and Engineering, Ames Laboratory, Ames, IA; 3. Naval Surface Warfare Center, Carderock, MD; 4. Clark Associates, Adelphi, MD; 5. Spectrum Technology Group, Inc., Gaithersburg, MD; 6. Dept of Materials Science and Engineering, Iowa State University, Ames, IA*

10:30

EG-09. Influence of small B addition on the induced crystallographic texture and magnetostriction of Fe-Ga wires. *N. Lupu*[1], E. Summers[2], M. Lostun[1], M. Grigoras[1], S. Corodeanu[1] and H. Chiriac[1] *1. Magnetic Materials and Devices, National Institute of R&D for Technical Physics, Iasi, Romania; 2. ETREMA Products, Inc., Ames, IA*

10:42

EG-10. Study of magnetic domain evolution in an auxetic plane of Galfenol using Kerr microscopy. *G. Raghunath*[1] and A.B. Flatau[1] *1. Department of Aerospace Engineering, University of Maryland, College Park, MD*

10:54

EG-11. NiCoMnIn films with magneto-structural transformation at room temperature. *G. Crouïgneau*[1,2], D. Bourgault[1,2], L. Porcar[1,2], P. Schuster[3], P. Courtois[4], B. Mestrallet[4], E. Mossang[1,2], S. Pairis[1,2], O. Fruchart[1,2], S. Le Denmat[1,2] and E. Eyraud[1,2] *1. Université Grenoble Alpes, Grenoble, France; 2. Institut Néel/CRETA, CNRS, Grenoble, France; 3. Schneider Electric Industrie, Eybens, France; 4. Institut Laue Langevin, Grenoble, France*

11:06

EG-12. Detailed structural analysis of ferromagnetic Ni-Mn-Sn thin film alloy fabricated by co-sputter deposition. *S. Guvenc*[1,2], M. Yumak[1], A. Quintana-Nedelcos[3], J.L. Sánchez-Llamazares[3] and C.G. Garcia[4] *1. Department of Physics, Bogazici University, Istanbul, Turkey; 2. Department of Physics, Dogus University, Istanbul, Turkey; 3. Instituto Potosino de Investigación Científica y Tecnológica, San Luis Potosí, Mexico; 4. Departemanto De Fisica, Universidad Tecnica Federico Santa Maria, Valparaíso, Chile*

11:18

EG-13. Approach to evaluate the magnetocaloric effect on field-induced transition in metamagnetic shape memory alloys. *B. Gao*[1], S. Yang[1], X. Song[1], F. Hu[2], J. Sun[2] and B. Shen[2] *1. MOE Key Laboratory for Nonequilibrium Synthesis and Modulation of Condensed Matter, School of Science, Xi'an Jiaotong University, Xi'an, Shannxi, China; 2. State Key Laboratory of Magnetism, Institute of Physics, CAS, Beijing, China*

THURSDAY MORNING 8:30

KAHILI 1 & 2

Session EH
FUNDAMENTAL PROPERTIES
Dragana Popović, Chair

8:30

EH-01. Imaging first order spin-reorientation transition in Fe_3Sn_2 using magnetic force microscopy. K. Heritage[2], B. Bryant[1], D. Boldrin[1], L. Fenner[1], A. Wills[1], G. Aeppli[1] and *Y. Soh*[1] *1. University College London, London, United Kingdom; 2. Imperial College, London, United Kingdom*

8:42

EH-02. Disorder induced critical phase transition in NiFe magnetization reversal. *A. Roy*[1] and P. Kumar[1] *1. Department of Physics, Indian Institute of Science, Bangalore, Karnataka, India*

8:54

EH-03. Metal-Insulator transition induced by Al doping in $LaCoO_3$. A. Vishnu Radhan[1] and *A. Dogra*[1] *1. CSIR-National Physical Laboratory, New Delhi, Delhi, India*

9:06

EH-04. On the dynamics of the reentrant spin-glass state of the $Fe_{100-x}Zr_x$ (x = 9,10) amorphous alloys. P. Ribeiro[1], *F. Machado*[1] and E. Dahlberg[2] *1. Departamento de Física, Universidade Federal de Pernambuco, Recife, Pernambuco, Brazil; 2. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN*

9:18

EH-05. Low field relaxation in an ideal superspin glass. *M.S. Andersson*[2], J.A. De Toro[1], S.S. Lee[3], R. Mathieu[2] and P. Nordblad[2] *1. Instituto Regional de Investigación Científica Aplicada (IRICA) and Departamento de Física Aplicada, Universidad de Castilla-La Mancha, Ciudad Real, Spain; 2. Engineering Sciences, Uppsala University, Uppsala, Sweden; 3. Institute of Bioengineering and Nanotechnology, Singapore, Singapore*

9:30

EH-06. Thermal and transport studies of 3D harmonic honeycomb Li_2IrO_3. *A. Ruiz*[1,2] and J. Analytis[1,2] *1. Physics, UC Berkeley, Berkeley, CA; 2. Lawrence Berkeley National Laboratory, Berkeley, CA*

9:42

EH-07. The superspin glass transition in zinc ferrite nanoparticles. *O. Kaman*[1,2], T. Korinkova[1,2], Z. Jirak[1], M. Marysko[1], M. Veverka[1] and E. Santava[1] *1. Institute of Physics, ASCR, Prague, Czech Republic; 2. Faculty of Science, Charles University in Prague, Prague, Czech Republic*

9:54

EH-08. Neutron diffraction studies of magnetic ordering in Ni-doped $LaCoO_3$. *N. Rajeevan*[1], V. Kumar[2], R. Kumar[2], R. Kumar[2,3] and S. Kaushik[4] *1. Physics, Zamorin's Guruvayurappan College, Calicut, Kerala, India; 2. Physics, National Institute of Technology, Hamirpur, H.P, India; 3. Beant College of Engineering & Technology, Gurudaspur, Punjab, India; 4. UGC-DAE CSR Mumbai Centre, Mumbai, Maharashtra, India*

10:06

EH-09. A Possible Ferromagnetic Quantum Critical Point in Heavy-Fermion Iron Oxypnictide $CeFe_{1-x}Cr_xPO$. *T. Okano*[1], S. Kitao[2], M. Seto[2], T. Atou[3], M. Itoh[3], M. Matoba[1] and Y. Kamihara[1] *1. Department of Applied Physics and Physico-Informatics, Keio University, Yokohama, Japan; 2. Research Reactor Institute, Kyoto University, Kyoto, Japan; 3. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

10:18

EH-10. Probing Magnetic Coupling at the $CaRuO_3/CaMnO_3$ Interface. *A. Grutter*[1], D. Vailionis[2], D. He[3], D. Borchers[1], B.J. Kirby[1], C. Flint[2], W.D. Ratcliff[1] and Y. Suzuki[2] *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Stanford University, Stanford, CA; 3. UC Berkeley, Berkeley, CA*

10:30

EH-11. Highly orientated growth and characterization of $La_{0.7}Sr_{0.3}MnO_3$ thin films with different orientations on STO substrates by chemical solution deposition method. W. Yin[1], *Y. Zhang*[1], D. Cao[1], J. Yang[1], W. Bai[1], Y. Chen[2], G. Wang[2], X. Dong[2], C. Duan[1] and X. Tang[1] *1. Key Laboratory of Polar Materials and Devices, Ministry of Education, Department of Electronic Engineering, East China Normal University, Shanghai, China; 2. Key Laboratory of Inorganic Function Materials and Devices, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China*

10:42

EH-12. Magnetic properties of superlattices driven by their architecture. *A.V. Pan*[1], S.A. Fedoseev[1] and S. Rubanov[2] *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. Electron Microscope Unit, Bio21 Institute, University of Melbourne, Melbourne, VIC, Australia*

10:54

EH-13. Spin-Orbit Interaction Renormalized Kondo Scattering in Delta-Doped $LaTiO_3/SrTiO_3$ Interfaces. *S. Das*[1], A. Rastogi[1], L. Wu[2], J. Zheng[3], Z. Hossain[1], Y. Zhu[2] and R.C. Budhani[1,4] *1. Physics, Indian Institute of Technology, Kanpur, Kanpur, Uttar Pradesh, India; 2. Condensed Matter Physics and Material Science Department, Brookhaven National Laboratory, Upton, NY; 3. Department of Physics and Fujian Provincial Key Laboratory of Theoretical and Computational Chemistry, Xiamen University, Xiamen, China; 4. National Physical Laboratory, New Delhi, New Delhi, India*

11:06

EH-14. Pressure induced ferromagnetism in charge ordered manganite: $Pr_{0.75}Na_{0.25}MnO_3$. *S. Dash*[2,1], K. Kumar[1] and A. Banerjee[1] *1. UGC-DAE CSR, Indore, India; 2. Dept. of Physics and Astronomy, NIT Rourkela, Rourkela, India*

11:18

EH-15. Determination of Spin Polarization Using Fe-Superconductor $SmO_{0.82}F_{0.18}FeAs$. *J.A. Gifford*[1], B.B. Chen[2], J. Zhang[1], C.N. Snider[1], D. Wu[2] and T.Y. Chen[1] *1. Arizona State University, Tempe, AZ; 2. National Laboratory of Solid State Microstructures, Nanjing, China*

Session EI
ELECTRONIC STRUCTURE II
Randy Victora, Chair

8:30

EI-01. Electronic structure and magnetic properties of $L1_0$ binary alloys. *A. Edström*[1], J. Chico[1], A. Jakobsson[1], A. Bergman[1] and J. Rusz[1] *1. Physics and Astronomy, Uppsala University, Uppsala, Sweden*

8:42

EI-02. Finite temperature magnetism and electronic structure of SrRuO3 using LDA+DMFT calculations in combination with Atomistic Spin Dynamics. *O. Granas*[2,1], Y.O. Kvashnin[1], I. di Marco[1], O. Eriksson[1], L. Nordstrom[1] and C. Etz[1] *1. Dept. of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. SEAS, Harvard University, Cambridge, MA*

8:54

EI-03. Enhanced magnetization in ultrathin $SrRuO_3$ film – the role of the nonmagnetic element Sr. *W. Lu*[2], C. Sun[1], G. Chow[2] and J. Chen[2] *1. Advanced Photon Source, Argonne National Laboratory, Chicago, IL; 2. Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

9:06

EI-04. Antiferromagnetic coupling in EuO_{1-x} and a magnetic polaron model for the enhanced Curie temperature. P. Liu[1] and *J. Tang*[1] *1. Physics & Astronomy, University of Wyoming, Laramie, WY*

9:18

EI-05. Electronic structures and a search for high magnetic anisotropy systems. *L. Ke*[1] and V. Antropov[1] *1. Ames Laboratory, Ames, IA*

9:30

EI-06. Temperature dependence of magnetic anisotropy and coercivity in magnets. *V. Antropov*[1], L. Ke[1], A. Wysocki[1], K. Belashchenko[2] and V. Antonov[1] *1. Ames Laboratory, Ames, IA; 2. Physics dept, University of Nebraska, Lincoln, NE*

9:42

EI-07. Electronic properties and structure determination of thin $Co_{50}Fe_{50}$ films. *A. Gloskovskii*[1], W. Drube[1], J. Hamrle[2], H. Elmers[3], Y. Sakuraba[4] and K. Takanashi[4] *1. Photon Science/ DESY, Hamburg, Germany; 2. VSB–Technical University, Ostrava, Czech Republic; 3. Uni-Mainz, Mainz, Germany; 4. Institute for Materials Research, Sendai, Japan*

9:54

EI-08. Anomalous magnetoresistance of itinerant ferromagnet $Fe_{1-x}Co_xSi$. *T. Ou Yang*[1] and F. Chou[1] *1. CCMS, NTU, Taipei, Taiwan*

10:06

EI-09. First-principles study of magnetocrystalline anisotropy in $(Fe_{1-x}Co_x)_2B$ alloys. *K. Belashchenko*[1], L. Ke[2], M. Daene[3], L. Benedict[3] and V. Antropov[2] *1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. Ames Laboratory, Ames, IA; 3. Lawrence Livermore National Laboratory, Livermore, CA*

10:18

EI-10. A Search for Fundamental Magnetism Effects in EuSe under Pressure using μSR Measurements. N. Bykovetz[1], S. Giblin[2], J. Klein[3], C. Lin[1], *T. Liu*[4], I. Terry[6], P. Adams[4], Z. Guguchia[5] and R. Khasanov[5] *1. Department of Physics, Temple University, Philadelphia, PA; 2. School of Physics and Astronomy, Cardiff University, Cardiff, CF24 3AA, United Kingdom; 3. Department of Physics and Astronomy, University of Pennsylvania, Philadelphia, PA; 4. Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA; 5. Laboratory for Muon-Spin Spectroscopy, Paul Scherrer Institute, Villigen-PSI, CH-5232, Switzerland; 6. Department of Physics, University of Durham, Durham, DH1 3LE, United Kingdom*

10:30

EI-11. Magnetism and Electronic Structures of novel layered Ironpnictides $CaFeAs_2$ and $Ca_{0.75}(Pr/La)_{0.25}FeAs_2$. *Y. Huang*[1,2], X. Yu[1], D. Liu[1] and L. Zou[1,2] *1. Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, Anhui, China; 2. Department of Physics, University of Science and Technology of China, Hefei, Anhui, China*

10:42

EI-12. Thickness effect on magnetocrystalline anisotropy of a Co/Pd(111) superlattice: A density functional study. S. Jekal[1], *O. Kwon*[1] and S. Hong[1] *1. Department of Physics and EHSRC, University of Ulsan, Ulsan, Republic of Korea*

10:54

EI-13. Electronic Structure Study on the Co doped ZnO by Optical MCD. *H. Chou*[1], J. Wang[1], Y. Tsao[1], S. Sun[2] and H. Hsu[3] *1. Physics, Natl Sun Yat-Sen University, Kaohsiung, Taiwan; 2. Applied Physics, National Kaohsiung University, Kaohsiung City, Taiwan; 3. Applied Physics, National Pintung University of Education, Pintung, Taiwan*

11:06

EI-14. Ab initio and cluster expansion studies of magnetism in face-centered cubic Fe-Ni and Fe-Cr-Ni systems. *M. Lavrentiev*[1], J. Wróbel[1], D. Nguyen-Manh[1] and S. Dudarev[1] *1. Culham Centre for Fusion Energy, Abingdon, United Kingdom*

EI-15. **d-band quantum well states and oscillatory magnetic anisotropy.** *M. Przybylski*[1,2], M. Dabrowski[2], M. Cinal[3], T.R. Peixoto[2], M. Pazgan[2], A. Winkelmann[2], T. Nakagawa[4], Y. Takagi[4], T. Yokoyama[4], F. Bisio[5], U. Bauer[2], F. Yildiz[2] and J. Kirschner[2] *1. Faculty of Physics and Applied Computer Science, and Academic Centre for Materials and Nanotechnology, AGH University of Science and Technology, Poland, 30-059 Kraków, Poland; 2. Max-Planck-Institut für Mikrostrukturphysik, 06120 Halle, Germany; 3. Institute of Physical Chemistry, Polish Academy of Sciences, 01-224 Warszawa, Poland; 4. Institute of Molecular Science, Okazaki, Aichi 444-8585, Japan; 5. CNR-SPIN, 16152 Genova, Italy*

THURSDAY MORNING 9:30

CORAL 4 (POSTERS)

Session EP
HALF-METALLIC MATERIALS II (Poster Session)

Yuya Sakuraba, Chair

EP-01. **High tunnel magneto-Seebeck effect by exploiting the half-metallicity of Co_2FeSi Heusler compound.** *A. Boehnke*[4,5], M. Walter[2,6], C. Sterwerf[4], C. Franz[7], M. Meinert[4], M. Czerner[7], K. Rott[4], A. Thomas[3,1], C. Heiliger[7], M. Münzenberg[2,6] and G. Reiss[4] *1. Institut für Physik, Johannes Gutenberg-Universität, Mainz, Germany; 2. Institut für Physik, Ernst-Moritz-Arndt Universität, Greifswald, Germany; 3. Bielefeld University, Bielefeld, Germany; 4. Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany; 5. CRANN, Trinity College Dublin, Dublin, Ireland; 6. I. Physikalisches Institut, Georg-August-Universität, Göttingen, Germany; 7. I. Physikalisches Institut, Justus-Liebig-Universität, Giessen, Germany*

EP-02. **Size dependence of Peltier Cooling Effect in Heusler Compound Co_2MnSi / NM (NM = Au, Cu, Cr) Current Perpendicular to Plane Nano Pillar Junctions.** *S. Bosu*[1], Y. Sakuraba[1], T. Kubota[1] and K. Takanashi[1] *1. Institute for Materials Research, Sendai, Japan*

EP-03. **Epitaxial ferromagnetic MnSb on GaAs, InGaAs and Ge substrates: polymorphism and unconventional early stage growth.** *C. Burrows*[1], T. Hase[1], J. Aldous[1], S. Hatfield[1], S. Glover[1], M. Ashwin[2] and G. Bell[1] *1. Physics, University of Warwick, Coventry, West Midlands, United Kingdom; 2. Chemistry, University of Warwick, Coventry, West Midlands, United Kingdom*

EP-04. Magnetic anisotropy modulation of epitaxial Fe_3O_4 film on MgO substrates. O. Chichvarina[1], T. Herng[1], W. Xiao[1], *X. Hong*[1] and J. Ding[1] *1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

EP-05. Effect of GeTe Doping on the Magnetic Properties of Co_2FeAl Heusler Alloys. *T. Huang*[1,2], X. Cheng[1,2], X. Guan[1,2] and X. Miao[1,2] *1. School of Optical and Electronic Information, Huazhong University of Science & Technology, Wuhan, Hubei, China; 2. Wuhan National Laboratory for Optoelectronics, Wuhan, Hubei, China*

EP-06. Epitaxially grown Mn_2CoAl Heusler alloy thin films: Structural, magnetic and electrical transport properties. *T. Kubota*[1], T. Sugiyama[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

EP-07. Magnetic instability, antisite effect on electronic and magnetism of CoMnGa half-Heusler alloy: Experiments and first-principles calculations. L. Wang[1], X. Dai[1], X. Wang[1], H. Jia[1], P. Li[1], Q. Xia[1], Y. Zhang[1], Y. Cui[2] and *G. Liu*[1,2] *1. Hebei University of Technology, School of Materials Science and Engineering, Tianjin, Tianjin, China; 2. School of Physics and Electronic Engineering, Chongqing Normal University, Chongqing, Chongqing, China*

EP-08. Low temperature growth of Co_2MnSi films on diamond semiconductor by ion beam assisted sputtering . *M. Nishiwaki*[1], K. Ueda[1], S. Aichi[1] and H. Asano[1] *1. Graduate School of Engineering, Nagoya university, Nagoya, Aichi, Japan*

EP-09. Large anisotropic Fe orbital moments in perpendicularly magnetized Co_2FeAl Heusler alloy thin films revealed by XMCD. *J. Okabayashi*[1], H. Sukegawa[2], Z. Wen[2], K. Inomata[2] and S. Mitani[2] *1. The University of Tokyo, Tokyo, Japan; 2. NIMS, Tsukuba, Japan*

EP-10. Epitaxial growth and properties of antiperovskite nitride Mn_3GaN/Co_3FeN bilayers. *H. Sakakibara*[1], H. Ando[1], Y. Kuroki[1], S. Kawai[1], K. Ueda[1] and H. Asano[1] *1. Department of Crystalline Materials Science, Nagoya University, Nagoya, Aichi, Japan*

EP-11. Atomic and Electronic Structures of Interfaces for $Co_2FeAl_{0.5}Si_{0.5}$/n-GaAs Junctions. *N. Tezuka*[1], T. Saito[1], M. Matsuura[1] and S. Sugimoto[1] *1. Tohoku Univ, Sendai, Japan*

EP-12. Half-metallic antiferromagnetism in double-perovskite $BiPbCrCuO_6$. *K. Weng*[1] and Y. Wang[1,2] *1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Center for General Education and Department of Physics, National Taiwan Normal University, Taipei, Taiwan*

EP-13. Investigation of the exchange stiffness at Co_2MnSi/Ag and Co_2FeSi/Ag interfaces using the depth-resolved x-ray magnetic circular dichroism. *H. Yako*[1], Y. Sakuraba[2], K. Amemiya[3], M. Sakamaki[3], T. Kubota[1], T. Sasaki[2], Y. Miura[4], K. Hono[2] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. National Institute for Materials Science, Tsukuba, Japan; 3. Photon Factory and CMRC, IMSS, High Energy Accelerator Research Organization, Tsukuba, Japan; 4. Kyoto Institute of Technology, Kyoto, Japan*

EP-14. Deposition and damping constant measurement of Fe_4N (001) thin film on Ag underlayer. *X. Li*[1], H. Li[2], M. Jamali[1] and J. Wang[1] *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Chemical Engineering and Materials Science, University of Minnesota, MInneapolis, MN*

EP-15. Magnetic phase coexistence and metastability caused by the first-order magnetic phase transition in the Heusler compounds Mn_2PtGa. *A.K. Nayak*[1], M. Nicklas[1] and C. Felser[1] *1. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

EP-16. Verwey transition and magnetic anisotropy in hetero-epitaxial (110) Fe_3O_4 films. *J. Dho*[1], S. Ki[1] and B. Kim[1] *1. Physics, Kyungpook National University, Daegu, Republic of Korea*

THURSDAY
MORNING
9:30

CORAL 4 (POSTERS)

Session EQ
MAGNETORESISTANCE, TUNNEL JUNCTIONS, AND LOGIC DEVICES
(Poster Session)

Rie Matsumoto, Chair

EQ-01. Relationship of Blanket-Film Properties to High-Speed Switching Behavior in MTJ Devices Optimized for STT-MRAM. *M.L. Schneider*[1], H. Chia[1], R. Whig[1], D. Houssameddine[1], F.B. Mancoff[1], N.D. Rizzo[1], S. Aggarwal[1], S. Deshpande[1], K. Nagel[1] and J.M. Slaughter[1] *1. Everspin, Chandler, AZ*

EQ-02. Improving Dynamic Range and Precision for Current In-Plane Tunneling Measurements. *D. Kjaer*[2,1], F.W. Østerberg[1], O. Hansen[1,3], P.F. Nielsen[2] and D.H. Petersen[1] *1. DTU Nanotech, Technical University of Denmark, Kgs. Lyngby, Denmark; 2. Capres A/S, Kgs. Lyngby, Denmark; 3. Technical University of Denmark, CINF, Center for Individual Nanoparticle Functionality, Kgs. Lyngby, Denmark*

EQ-03. Bipolar Switching and Intermediate Resistance States in an Orthogonal Spin-Transfer Spin-Valve Device. *L. Ye*[1], G. Wolf[1], D. Pinna[1], G.D. Chaves-O'Flynn[1] and A.D. Kent[1] *1. Department of Physics, New York University, New York, NY*

EQ-04. Modulation of magnetoresistance in magnetic tunneling junction by microwave. *T. Yu*[1], H. Naganuma[1], M. Oogane[1] and Y. Ando[1] *1. Department of Applied Physics, Tohoku University, Sendai, Japan*

EQ-05. Fabrication of spinel barrier by rf-sputtering and tunnel magnetoresistance through it with Fe or Fe_4N electrode. *M. Tsunoda*[1] and R. Chiba[1] *1. Department of Electronic Engineering, Tohoku University, Sendai, Japan*

EQ-06. Double Perovskite Sr_2FeMoO_6 Based Heterostructures for Room Temperature Magnetoresistive Applications. *N. Kumar*[1], G. Khurana[1], P. Misra[1] and R. Katiyar[1] *1. Physics, University of Puerto Rico, USA, San Juan, Puerto Rico*

EQ-07. Neural coding using telegraphic switching of magnetic tunnel junction. *D. Suh*[1], J. Lee[1] and W. Park[1] *1. Hanyang University, Seoul, Republic of Korea*

EQ-08. The MTJ/CMOS Hybrid Logic Gate Representing 16 Binary Boolean Logic Functions. *J. Lee*[1], D. Suh[1] and W. Park[1] *1. Electronics Engineering, Hanyang University, Seoul, Republic of Korea*

EQ-09. Withdrawn

EQ-10. Theoretical study of magnetic vortex oscillation in a magnetic nanopillar with high magnetoresistance ratio having an in-plane spin polarizer. *H. Tsukahara*[1], H. Arai[2] and H. Imamura[2] *1. High Energy Accelerator Research Organization, Tsukuba, Japan; 2. AIST, Tsukuba, Japan*

EQ-11. Effect of angular dependence of spin-orbit spin transfer torque on threshold current for switching of perpendicular magnetic layer. K. Lee[1] and *S. Lee*[1] *1. Dept. of Mater. Sci. & Eng., Korea University, Seoul, Republic of Korea*

EQ-12. Three dimensional magnetic abacus memory. *S. Zhang*[1], J. Zhang[2], A. Baker[1], S. Wang[3], G. Yu[2] and T. Hesjedal[1] *1. Condensed Matter Physics, University of Oxford, Oxford, United Kingdom; 2. Department of Materials Physics and Chemistry, University of Science and Technology Beijing, Beijing, China; 3. State Key Laboratory of Magnetism, Institute of Physics, Beijing, China*

EQ-13. Numerical analysis on thermally assisted spin transfer torque magnetization reversal in synthetic ferrimagnetic free layers. *J. Shen*[1], M. Shi[1], T. Tanaka[1] and K. Matsuyama[1] *1. Kyushu University, Fukuoka, Fukuoka, Japan*

EQ-14. Giant ferromagnetic cobalt nanoparticles. *R.O. Fuller*[1], B. Goh[1], M.J. Loedolff[1], G.A. Koutsantonis[1], M. Saunders[1] and R.C. Woodward[1] *1. University of Western Australia, Perth, WA, Australia*

EQ-15. Heterojunction metal-oxide-metal Au-Fe_3O_4-Au single nanowire device for spintronics. *K. Reddy*[1] and A. Punnoose[1] *1. Physics, Boise State University, Boise, ID*

EQ-16. Magnetoresistance in Facing-Target Sputtered $Fe_4N/Alq_3/Co$ Organic Spin Valves. Z. Li[1], *W. Mi*[1], X. Wang[2], H. Dai[1] and H. Bai[1] *1. Department of Applied Physics, Tianjin University, Tianjin, China; 2. School of Electronics Information Engineering, Tianjin University of Technology, Tianjin, China*

THURSDAY MORNING 9:30

CORAL 4 (POSTERS)

Session ER
PATTERNED FILMS AND NANO-ASSEMBLIES (Poster Session)

Takeshi Seki, Chair

ER-01. Spin wave eigenmodes in single and coupled sub-150 nm elongated permalloy dots. *G. Carlotti*[2], S. Tacchi[1], G. Gubbiotti[1], M. Madami[2], G. Csaba[3], H. Dey[3] and W. Porod[3] *1. Istituto Officina dei Materiali (IOM-CNR), CNR, Perugia, Italy; 2. Dipartimento di Fisica, University of Perugia, Perugia, Italy; 3. Dept. of Electrical Engineering, University of Notre Dame, Notre Dame, IN*

ER-02. Exchange bias study of CoFeB/IrMn nanodots and nanoholes defined by hole-colloidal lithography. X. Li[1], C. Zheng[1], K. Lin[2], *L. Li*[1] and P. Pong[1] *1. Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong; 2. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

ER-03. Ferromagnetic resonance and Lorentz microscopy studies of NiFe and NiO/NiFe antidot lattices. *F.J. Goncalves*[2], R. Desautels[1], S. Su[3], J. van Lierop[1], K. Lin[3] and R. Stamps[2] *1. Department of Physics and Astronomy, University of Manitoba, Manitoba, MB, Canada; 2. School of Physics and Astronomy, University of Glasgow, UK, Glasgow, United Kingdom; 3. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

ER-04. New Sacrificial Layers for the Growth of Magnetic Micro-Origami Structures. *L.M. Malkinski*[1], R. Eskandari[1] and M.M. McGehee[1] *1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA*

ER-05. A Comprehensive Study of Patterning Permalloy thin Film for RF Applications. *B. Rahman*[1], R. Divan[2], D. Rosennmann[2], T. Wang[1], Y. Peng[1] and G. Wang[1] *1. Electrical Engineering, University of South Carolina, Columbia, SC; 2. Center for Nano-scale Material, Argonne National Laboratory, Lemont, IL*

ER-06. Magnetic Weak Stripe Domains in Patterned NiFe Films. *C. Mathieu*[1] and V. Inturi[1] *1. Seagate, Bloomington, MN*

ER-07. Aspect ratio dependence of ferromagnetic resonance in thin film ellipse arrays. *H. Huang*[1], K. Liao[2] and Z. Wei[2] *1. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*

ER-08. Tunable Magnetic Anisotropy in Magnetic Thin Films Grown on Holographic Relief Gratings. A. García[1], J.M. Teixeira[1], J. Berendt[1], M. Raposo[2], P.A. Ferreira[2], J. Dubowik[3], J.P. Araújo[1], J. Ventura[1], *G.N. Kakazei*[1] and D.S. Schmool[1,4] *1. IFIMUP and IN-Institute of Nanoscience and Nanotechnology, and Departamento de Fisica e Astronomia, Faculdade de Ciencias, Universidade do Porto, Rua do Campo Alegre 687, 4169-007, Porto, Portugal; 2. CEFITEC, Faculdade de Ciencias e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, Lisbon, Portugal; 3. Institute of Molecular Physics, Polish Academy of Sciences, PL-60-179, Poznan, Poland; 4. Laboratoire PROMES CNRS (UPR 8521); Université de Perpignan Via Domitia, Perpignan, France*

ER-09. Anisotropic properties on exchange coupled composite array. *H. Huang*[1], K. Liao[2] and Z. Wei[2] *1. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*

ER-10. Misalignment-free logic operation in a 3-input MQCA full adder using 45°-clocking mechanism. *Z. Li*[1] and K. Krishnan[1] *1. Materials Science and Engineering Department, University of Washington, Seattle, WA*

ER-11. Reversal modes in small rings: Signature on the susceptibility. *S. Castillo*[1], N. Vargas[1], R.A. Escobar[1], S. Baltazar[1], S. Allende[1] and D. Altbir[1] *1. Departamento de Física, Universidad de Santiago de Chile, Santiago, Santiago, Chile*

ER-12. Characterization of Dual Synthesized Cobalt Ferrite-Gold Core-Shell Nanoparticles for Biosensing Applications. *C. Snow-Davis*[1], C. Carvajal[1], S.L. Fletcher[1], G. Rutherford[1], L. Manandhar[1], J.R. Skuza[1] and A.K. Pradhan[1] *1. Center for Materials Research, Norfolk State University, Norfolk, VA*

ER-13. Transport properties of magnetite nanocluster arrays. J. Lee[1], *L. Park*[1], Y. Choi[1] and Y. Kim[1] *1. Materials Science and Engineering, Korea University, Seoul, Republic of Korea*

ER-14. Enhanced perpendicular magnetic anisotropy of *m-D*0_{19} structure Co_3Pt film on glass substrate. *Y. Chen*[1], T. Yang[1], C. Huang[1] and A. Sun[1] *1. Chemical Engineering and Materials Science, Yuan-Ze University, Taoyuan, Taiwan*

ER-15. A first-principles study of magnetocrystalline anisotropy of 4*d*/5*d* Transition Metal Monolayers on a Co(0001) Surface. P. Taivansaikhan[1], D. Odkhuu[1], O. Kwon[1] and *S. Hong*[1] *1. Physics, University Of Ulsan, Ulsan, Republic of Korea*

ER-16. Vortex manipulation and chirality control in asymmetric bilayer nanomagnets. *A. Ognev*[1], M.E. Stebliy[1], A. Kolesnikov[1] and A.S. Samardak[1] *1. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation*

THURSDAY MORNING 9:30

CORAL 4 (POSTERS)

Session ES
SPIN CURRENTS, SPIN HALL, AND RELATED EFFECTS
(Poster Session)

Yizheng Wu, Chair

ES-01. Theory of the unidirectional spin heat conveyer. *H. Adachi*[1] and S. Maekawa[1] *1. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibaraki, Japan*

ES-02. Asymmetric edge modes in silicene: spin-mover splitter. S. Chen[1], S. Sun[3], *Y. Su*[2] and C. Chang[2] *1. Department of Applied Physics and Chemistry, University of Taipei, Taipei, Taiwan; 2. Department of Physics, National Taiwan University, Taipei, Taiwan; 3. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

ES-03. Optimisation of geometrical ratchets for spin-current amplification. R.M. Abdullah[1], A.J. Vick[1,3], B.A. Murphy[3] and *A. Hirohata*[1,2] *1. Department of Electronics, University of York, York, United Kingdom; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan; 3. Department of Physics, University of York, York, United Kingdom*

ES-04. Engineering of the spin-polarized current by disorder. *S. Chadov*[1] *1. Inorganic Chemistry, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

ES-05. Correlation between amplitude of spin accumulation signals investigated by Hanle effect measurement and effective junction barrier height in CoFe/MgO/n^+-Si junctions.
Y. Saito[1], M. Ishikawa[1], T. Inokuchi[1], D. Sugiyama[1], D. Tanamoto[1], P. Hamaya[2] and N. Tezuka[3] *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Kanagawa, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 3. Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

ES-06. Switching of slightly tilted perpendicularly polarized nanomagnets with spin orbit torque without external magnetic fields.
L. You[1], O. Lee[1], D. Bhowmik[1], D. Labanowski[1] and S. Salahuddin[1] *1. EECS, UC Berkeley, Berkeley, CA*

ES-07. Magnetothermoelectric Effect on Magnetoresistance of CoFeB/Pt Heterostructures.
K. Lee[1], D. Kim[1], B. Park[1], J. Jeong[2], K. Lee[3], H. Song[4], J. Sohn[1] and S. Shin[4] *1. KAIST, Daejeon, Republic of Korea; 2. Chungnam National University, Daejeon, Republic of Korea; 3. UNIST, Ulsan, Republic of Korea; 4. DGIST, Daegu, Republic of Korea*

ES-08. Spin Seebeck Devices for Thermoelectric Power Generation.
G. Siegel[1,2], M. Prestgard[1,2] and *A. Tiwari*[1,2] *1. Materials Research Science and Engineering Center, University of Utah, Salt Lake City, UT; 2. Materials Science & Engineering, University of Utah, Sandy, UT*

ES-09. Thermal gradients, Nerst effects, and new limits on spin-current generation in metallic ferromagnets using suspended thermal platforms.
D. Wesenberg[1], A. Hojem[1] and B. Zink[1] *1. University of Denver, Denver, CO*

ES-10. Longitudinal spin Seebeck effect in $Nd_2BiFe_{4-x}Ga_xO_{12}$ prepared by MOD method.
H. Asada[1], A. Kuwahara[1], N. Sakata[1], T. Ishibashi[2], A. Meguro[2], T. Hashinaka[2], K. Kishimoto[1] and T. Koyanagi[1] *1. Yamaguchi University, Ube, Japan; 2. Nagaoka University of Technology, Nagaoka, Japan*

ES-11. Static magnetic proximity effects in $NiFe_2O_4$/Pt and Fe/Pt bilayers investigated by x-ray resonant magnetic reflectivity.
T. Kuschel[3], C. Klewe[3], J. Schmalhorst[3], F. Bertram[2], E. Lundgren[2], O. Schuckmann[4], J. Wollschläger[4], T. Schemme[4], S. Francoual[5], J. Strempfer[5], A. Gupta[1], M. Meinert[3], G. Götz[3], D. Meier[3] and G. Reiss[3] *1. Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL; 2. Division of Synchrotron Radiation Research, Lund University, Lund, Germany; 3. Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany; 4. Department of Physics, Osnabrueck University, Osnabrück, Germany; 5. Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany*

ES-12. Interfacial Engineering: Understanding the role of proximity magnetization in Co/Pt using Au insertion layers. *R.M. Rowan-Robinson*[1], T.P. Hase[2], A. Hindmarch[1] and D. Atkinson[1] *1. Physics, Durham University, Durham, County Durham, United Kingdom; 2. Physics, University of Warwick, Warwick, United Kingdom*

ES-13. A dynamic measurement: Proving the existence of Magnetic Proximity Effect in Pt/YIG. H. Zhou[1], *X. Fan*[1], J. Rao[1], X. Zhao[1], D. Xue[1] and L. Ma[2] *1. The Key Lab for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, LanZhou, China; 2. Tongji University, Shanghai, China*

ES-14. Orbital control of Rashba spin-orbit coupling in metal surface through surface decoration. *S. Gong*[1], W. Tong[1], J. Cai[1] and C. Duan[1] *1. Electronic Engineering, East China Normal University, Shang Hai, China*

ES-15. Spin to charge conversion in NiFe/Ag/Bi and NiFe/Ag/Sb –A comparative study. *W. Zhang*[1], M. Jungfleisch[1], W. Jiang[1], J. Pearson[1] and A. Hoffmann[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL*

ES-16. Anomalous Hall effect induced by spatially-varying Rashba interaction. *A. Takeuchi*[1] *1. Department of Physics and Mathematics, Aoyama Gakuin University, Sagamihara, Kanagawa, Japan*

THURSDAY MORNING 9:30

CORAL LOUNGE (POSTERS)

Session ET
CRITICAL PHENOMENA
(Poster Session)

Robert Stamps, Chair

ET-01. Fermi surface distortion induced by interaction between Rashba and Zeeman effects. W. Choi[1,2], H. Kim[1], J. Chang[1], *H. Koo*[1,2] and K. Lee[2,3] *1. Spin Convergence Research Center, Korea Institute of Science and Technology, Seoul, Republic of Korea; 2. KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, Republic of Korea; 3. Department of Materials Science and Engineering, Korea University, Seoul, Republic of Korea*

ET-02. Dynamics of the spin nematic phases of the S = 1 bilinear-biquadratic model on the triangular lattice. *A.S. Pires*[1] *1. Physics, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil*

ET-03. Two order parameters theory for metal — insulator phase transition. *L. Dubovskii*[1,2] *1. RC "Kurchatov institute", Moscow, Russian Federation; 2. MFTI, Dolgoprudnyi, 141700 Moscow Region, Russian Federation*

ET-04. In-plane magnetization in the Shastry-Sutherland system TbB_4: Monte Carlo Simulation. J. Feng[2], W. Li[2], M. Qin[2], Y. Xie[1], Z. Yan[1], X. Jia[3] and *J. Liu*[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 2. Institute for Advanced Materials, South China Normal University, Guangzhou, China; 3. School of Physics and Chemistry, Henan Polytechnic University, Jiaozuo, China*

ET-05. Hole doping effect on the spin gap formation in the heavy fermion compound $CeRu_2Al_{10}$: Inelastic neutron scattering study. *A. Bhattacharyya*[1,2], D. Adroja[1,2], A. Strydom[2], D. Khalyavin[1], A. Hillier[1], J. Taylor[1], P. Manuel[1] and T. Takabatake[3] *1. ISIS Facility, Rutherford Appleton Laboratory, OX11 0QX, Didcot Oxon, United Kingdom; 2. Physics Department, University of Johannesburg, PO Box 524, Auckland Park 2006, Johannesburg, South Africa; 3. Inst. for Advanced Materials Research, Hiroshima University, Hiroshima, Japan*

ET-06. Metal-insulator transition in $Nd_{1-x}Eu_xNiO_3$: entropy change and electronic delocalization. *R.F. Jardim*[1], S. de Andrade[1], V. Bernal Barbeta[2], M.T. Escote[3], F. Cordero[4] and M.S. Torikachvili[5] *1. Instituto de Física, Universidade de São Paulo, São Paulo, São Paulo, Brazil; 2. Departamento de Física, Centro Universitário FEI, São Bernardo do Campo, São Paulo, Brazil; 3. Centro de Engenharia, Modelagem e Ciências Sociais Aplicadas, Universidade Federal do ABC, Santo André, São Paulo, Brazil; 4. Istituto dei Sistemi Complessi, CNR-ISC, Rome, Italy; 5. Department of Physics, San Diego State Uniersity, San Diego, CA*

ET-07. Coexistence short- and long-range ferromagnetic order and universal behavior for magnetocaloric effect in $La_{0.7}Sr_{0.3}Mn_{1-x}Co_xO_3$. T. Thanh[1,2], C. Dinh[2], V. Tien[1], T. Ho[1], T. Phan[1] and *S. Yu*[1] *1. Department of Physics, Chungbuk National University, Cheongju, Republic of Korea; 2. Institute of Materials Science, Vietnam Academy of Science and Technology, HaNoi, Vietnam*

ET-08. Anomalies in magnetoelastic properties of $DyFe_{11.2}Nb_{0.8}$ compound. *J. Wang*[1,2], M. Md Din[1], S. Kennedy[2], Z. Cheng[1], S. Campbell[3] and S. Dou[1] *1. Institute for Superconducting & Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. Bragg Institute, ANSTO, Sydney, NSW, Australia; 3. School of Physical, Environmental and Mathematical Sciences, The University of New South Wales at Canberra, Canberra, ACT, Australia*

ET-09. Magnetic-field driven Pr-valence change at simultaneous metal-insulator and spin-state transition in $(Pr_{1-y}RE_y)_{1-x}Ca_xCoO_3$ (RE=rare earth elements). *T. Naito*[1], D. Takeda[1], T. Watanabe[1], H. Fujishiro[1], N. Kawamura[2], M. Mizumaki[2], T. Nishizaki[3], J. Hejtmánek[4], K. Knizek[4] and Z. Jirak[4] *1. Iwate University, Morioka, Japan; 2. Japan Synchrotron Radiation Research Institute, Sayo, Japan; 3. Kyushu Sangyo University, Fukuoka, Japan; 4. ASCR, Prague, Czech Republic*

ET-10. Collective properties of frustrated nano-disk arrays. *M. Chadha*[1], S.K. Walton[1], K. Zeissler[1], D.M. Burn[1], L.F. Cohen[1] and W.R. Branford[1] *1. Physics, Imperial College London, London, United Kingdom*

ET-11. Critical phenomena and finite–size scaling in $Cr_{70}Fe_{30}$ thin films. *R. Bandapelli*[1] and S. Kaul[1] *1. School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

ET-12. Magnetic Ordering of $Ho_2Fe_2Si_2C$. *R.A. Susilo*[1], S. Cadogan[1], R. Cobas[1], W. Hutchison[1], M. Avdeev[2] and S. Campbell[1] *1. School of Physical, Environmental and Mathematical Sciences, UNSW Canberra at the Australian Defence Force Academy, Canberra, ACT, Australia; 2. Bragg Institute, ANSTO, Menai, NSW, Australia*

ET-13. Field-induced spin-helix chirality in nanocrystalline Ho. *P. Szary*[1], J. Bick[1], A. Malyeyev[1], C. Dewhurst[2] and A. Michels[1] *1. Physics and Materials Science Research Unit, University of Luxembourg, Luxembourg, Luxembourg; 2. Institut Laue-Langevin, Grenoble, France*

ET-14. Probing the magnetic order in $(Cr_{84}Re_{16})_{100-y}V_y$ alloys using neutron diffraction. *B.S. Jacobs*[1], A.R. Prinsloo[1], C.J. Sheppard[1], A. Venter[2] and H.E. Maynard-Casely[3] *1. Physics, University of Johannesburg, Johannesburg, Gauteng, South Africa; 2. Research and Development, Nuclear Energy Corporation of South Africa, Pretoria, Gauteng, South Africa; 3. Australian Nuclear Science and Technology Organisation, Kirrawee, NSW, Australia*

ET-15. Ferromagnetic B-doped $LnCr_2Si_2C$ (*Ln* = La, Sm). *K. Takeuchi*[1], T. Yuki[1], K. Nagamine[1], M. Matoba[1], N. Takeshita[2] and Y. Kamihara[1] *1. Applied Physics and Physico-Informatics, Keio University, Yokohama, Japan; 2. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

ET-16. Magnetic properties of nearly stoichiometric $CeAuBi_2$ heavy fermion compound. *C. Adriano*[1], C. Jesus[1], P.F. Rosa[1,2], M.M. Piva[1], T. Grant[2], Z. Fisk[2], D.J. Garcia[3] and P. Pagliuso[1] *1. Physics, University of Campinas, Campinas, SP, Brazil; 2. Physics, University of California, Irvine, CA; 3. Instituto Balseiro, Centro Atomico Bariloche, Bariloche, Rio Negro, Argentina*

Session EU
HYPERTHERMIA
(Poster Session)
Dhirendra Bahadur, Chair

EU-01. FeCo nanowires for enhanced magnetic hyperthermia. H. Khurshid[1], *J. Alonso Masa*[1,2], Z. Nemati[1], M. Phan[1], P. Mukherjee[1], E. Garaio[3], J. García[3] and H. Srikanth[1] *1. Physics, University of South Florida, Tampa, FL; 2. BCMaterials, Derio, Vizcaya, Spain; 3. Física Aplicada II, Universidad del País Vasco, Leioa, Vizcaya, Spain*

EU-02. Magneto-impedance based detection of MnO nanoparticle-embedded LLC cells. *J. Devkota*[1], M. Howell[2], S. Mohapatra[2], P. Mukherjee[1], H. Srikanth[1] and M. Phan[1] *1. Department of Physics, University of South Florida, Tampa, FL; 2. Department of Molecular Medicine, University of South Florida, Tampa, FL*

EU-03. Two-Dimensional Magnetic Nanohybrids for Efficient Thermo-Chemo Therapy of Cervical Cancer. *E.P. Komarala*[1], S. Nigam[3], A. Mohammad[2] and D. Bahadur[1] *1. Metallurgical Engineering & Materials Science, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India; 2. Department of Physics, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India; 3. Metallurgical Engineering & Materials Science, IITB-Monash Research Academy, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India*

EU-04. Magnetic-field-induced synthesis of magnetite nanocube by direct thermo-decomposition and its hyperthermia property. W. Xiao[1], X. Liu[1], *X. Hong*[1], Y. Yang[1], Y. Lv[1] and J. Ding[1] *1. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore*

EU-05. Numerical study of dosimetry in magnetic hyperthermia with low Curie temperature particles. I. Astefanoaei[1], I. Dumitru[1], H. Chiriac[2] and *A. Stancu*[1] *1. Alexandru Ioan Cuza University, Faculty of Physics, Iasi, Romania; 2. Institute of Research & Development for Technical Physics, Iasi, Romania*

EU-06. Comparison of Volume Distribution of Magnetic Nanoparticles Obtained from M-H Curve with a Mixture of Log-normal Distributions. *T. Sasayama*[1], T. Yoshida[1], M. Saari[2] and K. Enpuku[1] *1. Department of Electrical and Electronic Engineering, Kyushu University, Fukuoka, Japan; 2. Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan*

EU-07. The Fabrication and Characterization of Stable Core-Shell Superparamagnetic Nanocomposites for Potential Application in Drug Delivery. M. Eizadi-Sharifabad[1], *T. Mercer*[2,1] and T. Sen[1,3] *1. Centre for Materials Science, University of Central Lancashire, Preston, United Kingdom; 2. Jeremiah Horrocks Institute for Mathematics, Physics & Astrophysics, University of Central Lancashire, Preston, United Kingdom; 3. Institute of Nanotechnology and Bio-engineering, University of Central Lancashire, Preston, United Kingdom*

EU-08. Disaggregation of Stacked Red Blood Cells under Strong Pulse Magnetic Field. *D. Hwang*[1], H. Park[1], J. Lee[1] and H. Lee[1] *1. Department of Oriental Biomedical Engineering, Sangji University, Wonju, Gangwon-Do, Republic of Korea*

EU-09. Impact of Surface Coated Magnetite Used in Magnetic Drug Delivery System on Immune Response. *Y. Oaku*[1], J. Tamada[1], F. Mishima[1], Y. Akiyama[1], M.K. Osako[2], H. Koriyama[1], H. Nakagami[1] and S. Nishijima[1] *1. Osaka University, Suita-shi, Osaka-hu, Japan; 2. Sao Paulo University, Sao Paulo, Brazil*

EU-10. Gold coated FePt nanoparticles by chemical synthesis for magnetic fluid hyperthermia. *D. Wei*[1,2], P. Chi[1,2], Y. Yao[1], Y. Yu[1] and Y. Chen[1] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Institute of Manufacturing Technology/ Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan*

EU-11. AC Magnetic Susceptibility and Heat Dissipation by $Mn_{1-x}Zn_xFe_2O_4$ Nanoparticles for Hyperthermia Treatment . *Y. Ichiyanagi*[3], T. Kondo[3], K. Mori[3], M. Hachisu[3], D. Okamaoto[2], M. Watanabe[2], K. Gonda[4,1], H. Tada[4], Y. Hamada[1], M. Takano[1] and N. Ohuchi[4,1] *1. Department of Nano-Medical Science, Tohoku University, Sendai, Japan; 2. Department of Biology, Yokohama National University, Yokohama, Japan; 3. Department of Physics, Yokohama National University, Yokohama, Japan; 4. Department of Surgical Oncology, Tohoku University, Sendai, Japan*

EU-12. Design of High Frequency Magnetic Field Generator with Ferrite Core for Inductive Hyperthermia. *T. Takura*[1], F. Sato[2] and H. Matsuki[2] *1. Tohoku Institute of Technology, Sendai, Japan; 2. Tohoku University, Sendai, Japan*

EU-13. Study of magnetically controlled drug release from hydrogel micro particles. *M.N. Kavaldzhiev*[1], J. Kosel[1], O. Yassine[1], A. Alfadhel[1], A. Zaher[1], Q. Li[1] and S. Thoroddsen[1] *1. Electrical Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

EU-14. Effects of magnetic fields on dissolution of arthritis causing crystals. *Y. Takeuchi*[1] and M. Iwasaka[2,3] *1. Graduate School of Advanced Sciences of Matter, Hiroshima University, Higashihiroshima-shi, Japan; 2. Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashihiroshima-shi, Japan; 3. JST PRESTO, Kawaguchi, Japan*

EU-15. The evaluation of liver iron concentration using magnetic susceptometry method. *H. Kaabi Hamidi*[1] *1. Physics, K.N. Toosi University of Technology, Tehran, Islamic Republic of Iran*

THURSDAY MORNING 9:30

CORAL LOUNGE (POSTERS)

Session EV
MAGNETOCALORIC MATERIALS III (Poster Session)

Luana Caron, Co-Chair
Dominic Ryan, Co-Chair

EV-01. Magnetocaloric Effect and Critical Behavior in Ni_2In-type Compound $FeMn_{1-x}Ni_xGe$. *F. Wang*[1], J. Zhang[2,3], J. Wang[1], T. Feng[1], R. Sun[1] and S. Yu[1] *1. NingBo University of Technology, NingBo, Zhe Jiang, China; 2. Zhe Jiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, NingBo, ZheJiang, China; 3. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, NingBo, ZheJiang, China*

EV-02. Improvement temperature span in magnetocaloric effect of single crystalline $Nd_{0.7}Sr_{0.3}MnO_3$. D. Nanto[1,4], *B. Soegijono*[2], N. Chebotaev[3], A. Telegin[3] and S. Yu[1] *1. Physics, Chungbuk National University, Cheongju, Republic of Korea; 2. Physics, University of Indonesia, Depok, Indonesia; 3. Institute of Metal Physics, UB of RAS, Yekaterinburg, Russian Federation; 4. Physics Education, Syarif Hidayatullah State Islamic University, Jakarta, Indonesia*

EV-03. Magnetic Properties and Magnetocaloric Effect in Fe-doped $La_{0.6}Ca_{0.4}MnO_3$ with Short-range Ferromagnetic Order. *T.A. Ho*[1], T. Thanh[1], T. Ho[2], P. Thang[3], T. Phan[1] and S. Yu[1] *1. Physics, Chungbuk National University, Seoul, Republic of Korea; 2. Institute of Chemistry, Vietnam Academy of Science and Technology, Hanoi, Vietnam; 3. Faculty of Engineering Physics and Nanotechnology, University of Engineering and Technology, Vietnam National University, Hanoi, Vietnam*

EV-04. Direct measurument of the magnetocaloric effect in heusler alloys by field sweep. J.C. Monteiro[1], G.A. Lombardi[1] and *F.C. Gandra*[1] *1. Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas, Campinas, São Paulo, Brazil*

EV-05. High-magnetic field characterization of magnetocaloric effect in FeZrB(Cu) amorphous ribbons. *P. Alvarez-Alonso*[1], J.L. Sanchez Llamazares[2], C. Sánchez-Valdés[2], M. Fdez-Gubieda[1,3], P. Gorria[4,5] and J. Blanco[5] *1. Electricidad y Electrónica, Universidad del País Vasco, Lejona, Vizcaya, Spain; 2. División de Materiales Avanzados, Instituto Potosino de Investigación Científica y Tecnológica A.C., San Luis Potosí, San Luis Potosí, Mexico; 3. BCMaterials, Derio, Vizcaya, Spain; 4. Departamento de Física & IUTA, Universidad de Oviedo, Gijón, Asturias, Spain; 5. Departamento de Física, Universidad de Oviedo, Oviedo, Asturias, Spain*

EV-06. Control of martensitic transformations in thin film NiMnIn magnetic shape memory alloy by substrate engineering. *A. Sokolov*[5], S. Granovsky[1,2], I. Gaidukova[1], V. Snegirev[1], A. Devishvili[3], E. Kirianov[6], P. Ninh[5], N. Al-Aqtash[4] and R. Sabirianov[4] *1. Faculty of Physics, M.V.Lomonosov Moscow State University, Moscow, Russian Federation; 2. Institut für Festkörperphysik, TU Dresden, Dresden, Germany; 3. Institut Laue-Langevin, Grenoble, France; 4. University of Nebraska-Omaha, Omaha, NE; 5. Physics & Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 6. Lincoln South-West High School, Lincoln, NE*

EV-07. Influence of Copper on the Magnetic and Magnetocaloric Properties of $Ni_{50}Mn_{34}In_{14}B$ Alloys. *A. Quetz*[1], S. Pandey[1], A. Aryal[1], I. Dubenko[1], T. Samanta[2], S. Stadler[2] and N. Ali[1] *1. Physics, Southern Illinois University Carbondale, Murphysboro, IL; 2. Physics and Astronomy, Louisiana State University, Baton Rouge, LA*

EV-08. Stress modulated magnetocaloric effect in $MnCoGe_{0.99}In_{0.01}$ compounds. Y. Liu[1], F. Shen[1], L. Bao[1], R. Wu[1], F. Hu[1], J. Wang[1], *J. Lu*[1], J. Sun[1] and B. Shen[1] *1. Beijing National Laboratory for Condensed Matter Physics and State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

EV-09. Mechanical properties and magnetocaloric effects in bonded $La(Fe, Si)_{13}$ hydrides with different epoxy resins. *H. Zhang*[1], Y. Sun[1], Y. Wu[1], Y. Long[1], J. Shen[2], F. Hu[3], J. Sun[3] and B. Shen[3] *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China; 2. Key laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China; 3. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

EV-10. Effect of Germanium content on the structural and magnetic properties of MnFePGe magneto-caloric materials. *M. Yue*[1], M. Xu[1], H. Zhang[1], D. Liu[1] and J. Zhang[1] *1. Beijing University of Technology, Beijing, China*

EV-11. Coexistence of conventional and inverse magnetocaloric effects, and influence of magnetic-phase transformation on these effects in $Ni_{43}Mn_{46}Sn_8In_3$ alloy. T. Thanh[1], W. Nam[1], B. Jeon[2], T. You[2], T. Ho[1], T. Phan[1] and *S. Yu*[1] *1. Department of Physics, Chungbuk National University, Cheongju, Republic of Korea; 2. Department of Chemistry, Chungbuk National University, Cheongju, Republic of Korea*

EV-12. Synthesis and magnetic properties of $AlFe_2B_2$ and $CeMn_2Si_2$ via melt spinning of stoichiometric compositions. Q. Du[1], G. Chen[1], W. Yang[1], Z. Song[1], M. Hua[1], H. Du[1], C. Wang[1], S. Liu[1], J. Han[1], Y. Zhang[1] and *J. Yang*[1] *1. School of Physics, Peking University, Beijing, China*

EV-13. Magnetocaloric properties of rapidly solidified Dy_3Co alloy ribbons. *J.L. Sanchez Llamazares*[1], H. Flores-Zúñiga[1], P. Alvarez-Alonso[2], C.F. Sánchez-Valdés[1], G.A. Lara-Rodríguez[3] and M.L. Fdez-Gubieda[2,4] *1. División de Materiales Avanzados, Instituto Potosino de Investigación Científica y Tecnológica A.C., San Luis Potosi, San Luis Potosi, Mexico; 2. Departamento de Electricidad y Electrónica, UPV/EHU, Bilbao, Leioa, Spain; 3. Instituto de Investigación en Materiales, UNAM, Mexico D.F., Mexico; 4. BC Materials, Bilbao, Derio, Spain*

EV-14. Phase Diagram and Magnetocaloric Effects in $Ni_{1-x}Cr_xMnGe_{1.05}$ system. *A. Aryal*[1], A. Quetz[1], M. Eubank[1], S. Pandey[1], I. Dubenko[1], T. Samanta[2], S. Stadler[2] and N. Ali[1] *1. Physics, Southern Illinois University Carbondale, USA, Carbondale, IL; 2. Physics and Astronomy, Louisiana State University, Baton Rouge, LA*

EV-15. Withdrawn

EV-16. Tunable magnetocaloric effect of $Fe_{90-x}Sn_xZr_{10}$ alloy ribbons exhibiting short-range ferromagnetic order. *T. Phan*[1], N. Dan[2], T. Thanh[2], M. Phan[3] and S. Yu[1] *1. Chungbuk National University, Cheongju, Republic of Korea; 2. Vietnam Academy of Science and Technology, Hanoi, Viet Nam; 3. University of South Florida, Tampa, FL*

THURSDAY MORNING 9:30 — CORAL LOUNGE (POSTERS)

Session EW
POWER, CONTROL MAGNETICS, SHIELDING, LEVITATION, AND PROPULSION (Poster Session)

Ming Liu, Chair

EW-01. Magnetic Levitation Gravity Compensator. *H. Zhang*[1], B. Kou[1], Y. Jin[1] and H. Zhang[1] *1. Harbin Institute of Technology, Harbin, Heilongjiang, China*

EW-02. High-frequency electromagnetic properties of the manganese ferrite ($MnFe_2O_4$) nanoparticles. M. Zeng[1], *J. Liu*[1], R. Yu[1], H. Yang[1] and X. Liu[1] *1. School of Materials Science and Engineering, Beihang University, Beijing, China*

EW-03. Power Density Improvement of Double-Stator Tubular Permanent-Magnet Motor With Series Magnetic Circuit. J. Ji[1], *W. Zhao*[1] and G. Liu[1] *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*

EW-04. Optimized wall tiling of RF shielded rooms for ultra-low field MRI. *Y. Nakashima*[1,2] and J. Moreland[1] *1. NIST, Boulder, CO; 2. Kyushu University, Fukuoka, Japan*

EW-05. A Novel Five-Phase Fault-Tolerant Modular In-wheel Permanent-Magnet Synchronous Machine for Electric Vehicles. *P. Zheng*[1], Y. Sui[1], F. Wu[1], P. Wang[1] and L. Cheng[1] *1. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, Heilongjiang, China*

EW-06. A Positioning-Tolerant Wireless Charging System for Roadway-Powered Electric Vehicles. Z. Zhang[1], K. Chau[1], C. Liu[1] and *C. Qiu*[1] *1. Dept. of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong*

EW-07. Development of A Low Cost Double Rotor Axial Flux Motor with Soft Magnetic Composite Core and Ferrite Permanent Magnet Material. *C. Liu*[1], J. Zhu[2], Y. Wang[1], G. Lei[2], Y. Guo[2] and X. Liu[1] *1. Province-Ministry Joint Key Laboratory of EFEAR, Hebei University of Technology, Tianjin, China; 2. School of Electrical, Mechanical and Mechatronic system, University of Technology, Sydney, Sydney, NSW, Australia*

EW-08. A Magnetically Levitated Synchronous Permanent Magnet Planar Motor with Concentric Structure Winding used for Lithography Machine. *L. Zhang*[1], B. Kou[1], F. Xing[1] and H. Zhang[1] *1. Harbin Institute of Technology, Harbin, Heilongjiang, China*

EW-09. Improvement of Force Factor of Magnetostrictive Vibration Energy Harvester for High Power Output. *S. Kita*[1], T. Ueno[1] and S. Yamada[1] *1. Kanazawa University, Kanazawa-shi, Ishikawa, Japan*

EW-10. Efficiency Analysis of Wireless Power Transfer with Three Dimensional Transmitters. J. Zhao[1], *X. Huang*[1] and W. Wang[1] *1. Southeast University, Nanjing, China*

EW-11. A Novel Double-sided Flux-switching Permanent Magnet Linear motor. F. Xiao[1], X. Liu[1], Y. Du[1], *X. Zhu*[1] and W. Zhao[1] *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*

EW-12. Investigation of a Tubular Dual-Stator Flux-Switching PM Linear Generator for Free-Piston Stirling Engine. Y. Sui[1], *P. Zheng*[1], C. Tong[1], B. Yu[1] and S. Zhu[1] *1. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, Heilongjiang, China*

EW-13. Current Distribution among Relay Resonators in Magnetically-Coupled Resonant Wireless Power Transfer. *Y. Zhang*[1], T. Lu[1] and Z. Zhao[1] *1. Department of Electrical Engineering, Tsinghua University, Beijing, China*

EW-14. A resonant electromagnetic vibration energy harvester for intelligent wireless sensor systems. *J. Qiu*[1], X. Liu[1], H. Chen[1], Y. Wen[1], P. Li[1] and J. Yang[2,1] *1. College of Optoelectronic Engineering, Chongqing University, Chongqing, China; 2. Materials Science Engineering, Georgia Institute of Technology, Atlanta, GA*

EW-15. Multi-Rate Optimal Controller Design for EMS Systems. C. Kim[1], *I. Kim*[1] and J. Lee[1] *1. Hanyang University, Seoul, Republic of Korea; 2. KETEP, Seoul, Democratic People's Republic of Korea*

EW-16. Modular Inductive Power Transmission System for High Misalignment Electric Vehicle Application. *C. Qiu*[1], K. Chau[1], C. Liu[1] and Z. Zhang[1] *1. The University of Hong Kong, Hong Kong, Hong Kong*

THURSDAY AFTERNOON 1:30 — CORAL 3

Session FA
TOPOLOGICAL ASPECTS IN CORRELATED SPIN SYSTEMS

Satoru Nakatsuji, Chair

1:30

FA-01. Topological phases and responses of correlated spin systems. ***(Invited)*** *L. Balents*[1] *1. Kavli Institute of Theoretical Physics, University of California, Santa Barbara, Santa Barbara, CA*

2:06

FA-02. Observation of a quadratic Fermi node in the pyrochlore iridate by Angle-Resolved Photoemission Spectroscopy. ***(Invited)*** *T. Kondo*[1], M. Nakayama[1], R. Chen[2], J. Ishikawa[1], E. Moon[2], H. Kanai[1], Y. Nakashima[1], T. Yamamoto[1], Y. Ota[1], W. Malaeb[1], Y. Ishida[1], R. Yoshida[1], H. Yamamoto[1], M. Matsunami[3], S. Kimura[4], S. Nakatsuji[1], L. Balents[5], S. Shin[1], H. Kumigashira[6] and K. Ono[6] *1. ISSP, University of Tokyo, Kashiwa, Chiba, Japan; 2. University of California, Santa Barbara, CA; 3. UVSOR Facility, Institute for Molecular Science, Okazaki, Aich, Japan; 4. Graduate School of Frontier Biosciences, Osaka University, Suita, Osaka, Japan; 5. Kavli Institute for Theoretical Physics, Santa Barbara, CA; 6. KEK, Photon Factory, Tsukuba, Ibaraki, Japan*

2:42

FA-03. Kondo Insulators: Magnetism meets topology. ***(Invited)*** *P. Coleman*[1], V. Alexandrov[1] and O. Erten[1] *1. Physics and Astronomy, Rutgers University, Piscataway, NJ*

3:18

FA-04. Topological Kondo Insulator state in SmB_6 - Experimental Evidence. ***(Invited)*** *J. Paglione*[1] *1. Physics, University of Maryland, College Park, MD*

3:54

FA-05. Electronic structure and topological phases in transition metal oxide heterostructures. ***(Invited)*** *G. Fiete*[1] and X. Hu[1] *1. University of Texas at Austin, Austin, TX*

THURSDAY
AFTERNOON
1:30

CORAL 5

Session FB
SPIN CURRENT AND SPIN RELAXATION
Jiang Xiao, Chair

1:30

FB-01. Spin Transport Mechanism in Highly Doped Polymer Film. *M. Kimata*[1], D. Nozaki[1], Y. Niimi[1], H. Tajima[2] and Y. Otani[1] *1. Institute for Solid State Physics, University of Tokyo, Kashiwa, Chiba, Japan; 2. Graduate School of Material Science, University of Hyogo, Ako-gun, Hyogo, Japan*

1:42

FB-02. Pure spin current transport in Alq_3 by spin pumping. *S. Jiang*[1], P. Wang[1], Z. Luan[1], X. Tao[1], H. Ding[1] and D. Wu[1] *1. Physics Department, Nanjing University, Nanjing, Jiangsu, China*

1:54

FB-03. Spin-charge conversion system in CVD-grown single-layer graphene at room temperature. *R. Ohshima*[1], A. Sakai[1], Y. Ando[1,2], T. Shinjo[1,2], K. Hamaya[1], K. Kawahara[3], H. Ago[3] and M. Shiraishi[1,2] *1. Graduate School of Engineering Science, Osaka Univ., Toyonaka, Osaka, Japan; 2. Department of Electronic Science and Engineering, Kyoto Univ., Kyoto, Kyoto, Japan; 3. Institute for Materials Chemistry and Engineering, Kyushu Univ., Kasuga, Fukuoka, Japan*

2:06

FB-04. Spin Currents in Graphene as a Probe for Localized Spin States. *J.J. van den Berg*[1], W. Strupinsky[2] and B.J. van Wees[1] *1. University of Groningen, Groningen, Netherlands; 2. Institute of Electronic Materials Technology, Warsaw, Poland*

2:18

FB-05. Demonstration of spin transport in n-type Germanium epilayers at room temperature. *S. Dushenko*[1], M. Koike[1], Y. Ando[1,2], M. Myronov[3] and M. Shiraishi[1,2] *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 2. Department of Electronic Science and Engineering, Kyoto University, Kyoto, Kyoto, Japan; 3. Department of Physics, The University of Warwick, Coventry, United Kingdom*

2:30

FB-06. Correlation between anomalous Nernst and Hall effects in Co-doped Mn_3Ga thin films with varied magnetic anisotropy. *M. Mizuguchi*[1], M. Inoue[1], T. Sugiyama[1], T. Kubota[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

2:42

FB-07. The Role of Interfaces in Dynamic Spin Transport. ***(Invited)*** R. Adur[1], J. Cardellino[1], N. Scozzaro[1], C. Du[1], H. Wang[1], M. Herman[2], D. Pelekhov[1], F. Yang[1] and *P. Hammel*[1] *1. Physics, Ohio State University, Columbus, OH; 2. Applied Physics Laboratory, Johns Hopkins University, Laurel, MD*

3:18

FB-08. Spin current transmission through Pt, Pd and Ru spin sinks. *Y. Li*[1], A. Ghosh[2], S. Auffret[2], U. Ebels[2] and W.E. Bailey[1] *1. Applied Physics and Applied Mathematics, Columbia University, New York, NY; 2. SPINTEC, Grenoble, France*

3:30

FB-09. Generation of Spin Current *via* Mechanical Rotation. *B.A. Murphy*[1], R. Arakawa[2], A.J. Vick[1], T. Nakayama[2], K. O'Grady[1] and A. Hirohata[1,3] *1. Physics, The University of York, York, Yorkshire, United Kingdom; 2. EEIE, Nagaoka University of Technology, Nagaoka, Japan; 3. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan*

3:42

FB-10. DC voltage generation in a pure permalloy layer under ferromagnetic resonance. *M. Jungfleisch*[1], W. Zhang[1], W. Jiang[1], F.Y. Fradin[1], J.E. Pearson[1] and A. Hoffmann[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL*

3:54

FB-11. On Optical Controllability of Spin-Orbit Interaction. *I. Mayergoyz*[2] and C. Krafft[1] *1. Laboratory for Physical Sciences, College Park, MD; 2. Electrical Engineering, University of Maryland, College Park, MD*

4:06

FB-12. Influence of interface roughness in CoFe/MgO/n^+-Si junctions on spin accumulation and spin transport signals. *M. Ishikawa*[1], H. Sugiyama[1], T. Inokuchi[1], T. Tanamoto[1], K. Hamaya[2], N. Tezuka[3] and Y. Saito[1] *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 3. Materials Science, Graduate School of Engineering, Tohoku University, Sendai, Japan*

4:18

FB-13. Stationary spin superfluidity states in easy plane ferromagnetic insulators. *H. Chen*[1], I. Sodemann[1] and A.H. MacDonald[1] *1. Department of Physics, University of Texas at Austin, Austin, TX*

THURSDAY AFTERNOON 1:30

CORAL 1

Session FC
MAGNETIC RECORDING
Simon Greaves, Chair

1:30

FC-01. Spinstand Demonstration of Areal Density Enhancement Using Two-Dimensional Magnetic Recording (TDMR). ***(Invited)*** *T. Lippman*[1], R. Brockie[1], J. Coker[2], J. Contreras[1], R. Galbraith[2], S. Garzon[1], W. Hanson[2], T. Leong[1], A. Marley[1], R. Wood[1], R. Zakai[1], H. Zolla[1], P. Duquette[3] and J. Petrizzi[3] *1. HGST, a Western Digital Company, San Jose, CA; 2. HGST, a Western Digital Company, Rochester, MN; 3. Avago Technologies, San Jose, CA*

2:06

FC-02. Volumetric density (TB/in^3) trends for storage components: TAPE, HDD, NAND, blu-ray. *R. Fontana*[1], G. Decad[1] and S. Hetzler[2] *1. Systems and Technology Group, IBM, San Jose, CA; 2. Research Divison, IBM, San Jose, CA*

2:18

FC-03. Effect of Media Properties Variations on Shingled Magnetic Recording Channel Performance on SNR and bER. *M. Lin*[1], K. Teo[1] and K. Chan[1] *1. Data Storage Institute (DSI), Agency for Science Technology and Research (A*STAR), Singapore, Singapore*

2:30

FC-04. Renormalized Anisotropic Exchange for Magnetic Recording Media. *Y. Jiao*[1], P. Huang[1] and R. Victora[1] *1. Department of Electrical Engineering, University of Minnesota - Twin Cities, Minneapolis, MN*

2:42

FC-05. Performance of Perpendicular Magnetic Recording with Track Squeeze using Bidirectional Pattern-Dependent Noise Prediction Detector. *Y. Ng*[1], S. Zhang[1], K. Cai[1], Z. Qin[1], C. Ong[1], S. Ang[1] and Z. Yuan[1] *1. Data Storage Institute, Singapore, Singapore*

2:54

FC-06. Using Magnetic Permeability Bits to Store Information. *A. Edelstein*[1], J. Petrie[2], K. Wieland[3], S. Urazhdin[4] and G. Newburgh[1] *1. US Army Research Laboratory, Adelphi, MD; 2. Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN; 3. Corning Incorporated, Painted Post, NY; 4. Department of Physics, Emory University, Atlanta, GA*

3:06

FC-07. Measuring grain size-level inhomogeneity in the magnetization reversal of exchange-coupled ferro/ ferrimagnet media for heat assisted magnetic recording. *M.A. Marioni*[1], X. Zhao[1], J. Schwenk[1], S. Romer[1], N.R. Joshi[3], S. Oezer[4] and H.J. Hug[1,2] *1. Nanoscale Materials Science, Empa, Swiss Federal Laboratories for Materials Science and Technology, Duebendorf, Switzerland; 2. Department of Physics, University of Basel, Basel, Switzerland; 3. Nano Science and Technology Centre (NSTC), Mangalore Institute of Technology & Engineering, Mangalore, India; 4. Department of Electrical and Electronics Engineering, Bogaziçi University, Bebek/Istanbul, Turkey*

3:18

FC-08. Switching window analysis of a magnetic media grain in microwave assisted magnetic recording. *M. Zhang*[1], T. Zhou[1] and Z. Yuan[1] *1. Data Storage Institute, Singapore, Singapore*

3:30

FC-09. Long-Term Stability of Magnetic Tape for Data Storage in Office Environment. *K. Katayama*[1], Y. Chinda[1], O. Shimizu[1], Y. Goto[1], M. Suzuki[1] and H. Noguchi[1] *1. Fujifilm Corporation, Odawara, Kanagawa, Japan*

3:42

FC-10. Lubricant Reflow after Laser Heating in Heat Assisted Magnetic Recording (HAMR). *H. Wu*[1], A. Rodriguez Mendez[1], S. Xiong[1] and D.B. Bogy[1] *1. UC Berkeley, Berkeley, CA*

3:54

FC-11. Withdrawn

4:06

FC-12. Superior bit error rate due to an exchange spring effect in bit patterned media. *D. Suess*[1], M. Fuger[2], M. Schabes[2] and J. Fidler[1] *1. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 2. HGST, a Western Digital Company, Shenzhen, China*

4:18

FC-13. Damping constant estimation in magnetoresistive readers. *A. Stankiewicz*[1] and S. Hernandez[1] *1. Seagate Technology, Bloomington, MN*

THURSDAY
AFTERNOON
1:30

CORAL 2

Session FD
MAGNETIZATION DYNAMICS II
Leigh Shelford, Chair

1:30

FD-01. Ultrafast Magneto-Acoustics in Magnetic Metals. ***(Invited)*** *J. Bigot*[1], J. Kim[1], M. Vomir[1] and O. Kovalenko[1] *1. IPCMS UMR 7504, CNRS, Université de Strasbourg, Strasbourg, France*

2:06

FD-02. Sub-nanosecond signal propagation in anisotropy engineered nanomagnetic logic chains. *M.E. Nowakowski*[1], Z. Gu[1], D.B. Carlton[2], R. Storz[3], M. Im[4,6], J. Hong[1], W. Chao[4], B. Lambson[5], P. Bennett[1], M.T. Alam[7], M.A. Marcus[8], A. Doran[8], A.T. Young[8], A. Scholl[8], P. Fischer[4,9] and J. Bokor[1] *1. Department of Electrical Engineering and Computer Science, University of California, Berkeley, CA; 2. Intel Corporation, Santa Clara, CA; 3. Thor Labs, Newton, NJ; 4. CXRO, Lawrence Berkeley National Lab, Berkeley, CA; 5. iRunway, Santa Clara, CA; 6. Daegu Gyeongbuk Institute of Science and Technology, Daegu, Republic of Korea; 7. Intel Corporation, Hillsboro, OR; 8. ALS, Lawrence Berkeley National Lab, Berkeley, CA; 9. Department of Physics, University of California, Santa Cruz, Santa Cruz, CA*

2:18

FD-03. Photoinduced magnetization precession in a Co_2FeAl/GaMnAs bilayer with low-energy-density ultrafast laser pulse. H. Yuan[1], S. Nie[2], T. Ma[3], Z. Chen[3], Y. Wu[3], J. Zhao[2], *H. Zhao*[1] and L. Chen[1] *1. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 2. State Key Laboratory of Superlattices and Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China; 3. Department of Physics, Fudan University, Shanghai, China*

2:30

FD-04. Spin dynamics on binary alloys with large perpendicular magnetic anisotropy. *M. Wikberg*[1], I. Razdolski[2], J. Chico[1], A. Edström[1], S. Akansel[4], J. Sadowski[3], D. Primetzhofer[1], R. Brucas[4], A. Kirilyuk[2], T. Rasing[2], P. Svedlindh[4] and O. Karis[1] *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands; 3. MAX-lab, Lund University, Lund, Sweden; 4. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden*

2:42

FD-05. Laser Induced Spin Precession in Highly Anisotropic Granular $L1_0$ FePt. *J.J. Becker**[1,2], O. Mosendz[3], D. Weller[3], A. Kirilyuk[1], J. Maan[2], P.C. Christianen[2], T. Rasing[1] and A. Kimel[1] *1. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Gelderland, Netherlands; 2. High Field Magnet Laboratory, Radboud University Nijmegen, Nijmegen, Gelderland, Netherlands; 3. HGST, a Western Digital Company, San Jose, CA*

2:54

FD-06. Magnetization Damping and Dynamics in a Microscopic Toy Model. *S. Vollmar*[1,2], A. Baral[1] and H. Schneider[1] *1. Physics Department, University of Kaiserslautern and State Research Center OPTIMAS, Kaiserslautern, Germany; 2. Graduate School of Excellence Materials Science in Mainz, Kaiserslautern, Germany*

3:06

FD-07. Terahertz Radiation Driven Dynamics of Magnetic Domain Structures Probed by Coherent Free-Electron Laser Light. *L. Müller*[1], S. Schleitzer[1], M.A. Schroer[1], I. Steinke[1], F. Lehmkühler[1], A. Ricci[2], A. Al-Shemmary[3], N. Stojanovic[3], T. Golz[3], J. Bach[4], B. Beyersdorff[4], G. Winkler[4], R. Frömter[4], H. Oepen[4], B. Fischer[4], M. Gensch[5], C. Gutt[6] and G. Grübel[1] *1. FS-CXS, DESY, Hamburg, Germany; 2. FS-PE, DESY, Hamburg, Germany; 3. FS-FL, DESY, Hamburg, Germany; 4. Universität Hamburg, Hamburg, Germany; 5. HZDR, Dresden, Germany; 6. Universität Siegen, Siegen, Germany*

3:18

FD-08. THz spin precession in Mn-based tetragonal Heusler and related alloy films. *S. Mizukami*[1], S. Iihama[2], A. Sugihara[1], K.Z. Suzuki[1] and T. Miyazaki[1] *1. WPI-AIMR, Tohoku University, Sendai, Japan; 2. Dept. Appl. Phys., Tohoku University, Sendai, Japan*

3:30

FD-09. Towards attomagnetism: exploring the dephasing dynamics of magnetic states with a few optical cycles. *M. Sanches Piaia*[1], M. Barthelemy[1], B. Barbara[2], P. Molho[2] and J. Bigot[1] *1. CNRS, Université de Strasbourg, IPCMS, UMR7504, Strasbourg, France; 2. CNRS, Université Joseph Fourrier, ILN, UPR2940, Grenoble, France*

3:42

FD-10. Time Resolved Anomalous Nernst Effect Imaging of In-Plane Magnetization. *D.H. Ngai*[2], J. Bartell[1] and G.D. Fuchs[1] *1. Applied & Engineering Physics, Cornell University, Ithaca, NY; 2. Physics, Cornell University, Ithaca, NY*

3:54

FD-11. Enhanced free layer relaxation in a microscale magnetic tunnel valve. *P.S. Keatley*[1], V.V. Kruglyak[1], A. Neudert[1,2], R. Hicken[1], J.R. Childress[3] and J.A. Katine[3] *1. School of Physics and Astronomy, University of Exeter, Exeter, United Kingdom; 2. Fraunhofer Institute for Photonic Microsystems, Dresden, Germany; 3. San Jose Research Center, HGST, San Jose, CA*

4:06

FD-12. Time-resolved imaging of internal vortex domain-wall dynamics. *F. Stein*[1], L. Bocklage[2,3], M. Weigand[4] and G. Meier[1,3] *1. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany; 2. Deutsches Elektronen-Synchrotron, Hamburg, Germany; 3. The Hamburg Centre for Ultrafast Imaging, Hamburg, Germany; 4. Max-Planck-Institut für Intelligente Systeme, Stuttgard, Germany*

4:18

FD-13. Characterization of Mode Structure and Interactions in Magnetic Nanodot Arrays using Scanning Microwave Microscopy. *K.F. Stupic*[1], S.E. Russek[1], P. Kabos[1], T.M. Wallis[1], S. Berweger[1], J. Weber[1], A. Imtiaz[1] and H.T. Nembach[1] *1. Natl Inst of Standards & Tech, Boulder, CO*

THURSDAY
AFTERNOON
1:30

SOUTH PACIFIC 1 & 2

Session FE
MRAM
Takahiro Moriyama, Chair

1:30

FE-01. Ultra-fast spin orbit torque (SOT) based memory for processor cache memory replacement. *G. Di Pendina*[2], K. Jabeur[2], R. Bishnoi[1], F. Oboril[1], M. Ebrahimi[1], G. Prenat[2] and M. Tahoori[1] *1. Karlsruhe Institute of Technology, Karlsruhe, Germany; 2. Univ. Grenoble Alpes, INAC, CNRS, CEA, SPINTEC, Grenoble, France*

1:42

FE-02. Laser Powered Magnetic-Random Access Memory. Y. Xu[1], W. Lin[1], S. Petit-Watelot[1], M. Hehn[1], H. Rinnert[1], Y. Lu[1], F. Montaigne[1], D. Lacour[1], S. Andrieu[1] and *S. Mangin*[1] *1. Institut Jean Lamour, Nancy, France*

1:54

FE-03. STT-MRAM Cell Design with Dual MgO Tunnel Barriers and Perpendicular Magnetic Anisotrop. *Z. Duan*[1], S. Schafer[1], A.V. Khvalkovskiy[1], V. Voznyuk[1], X. Tang[1], J. Lee[1], D. Lee[1], D. Erickson[1], D. Apalkov[1], R. Beach[1] and V. Nikitin[1] *1. New Memory Technology Lab, Semiconductor R&D Center, Samsung Electronics, Milpitas, CA*

2:06

FE-04. Retention Error Rate Calculation and Mitigation for Embedded MRAM/Spin-Logic Applications. *S. Manipatruni*[1], D.E. Nikonov[1] and I.A. Young[1] *1. Components Research, Intel Corporation, Portland, OR*

2:18

FE-05. Novel Read Method for Multi-Level-Cell STT-MRAM. *Y. Zhou*[1], Y. Huai[1], E. Abedifard[1], P. Keshtbod[1], M. Mozaffari[1], K. Satoh[1] and B.K. Yen[1] *1. Avalanche Technology, Fremont, CA*

2:30

FE-06. Performance of a 64Mb STT-MRAM Device with Optimized In-Plane Magnetic Tunnel Junctions. *D. Houssameddine*[1], J. Janesky[1], R. Whig[1], N.D. Rizzo[1], M.L. Schneider[1], F.B. Mancoff[1], H. Chia[1], M. DeHerrera[1], M. Lin[1], C. Mudivarthi[1], J. Sun[1], K. Nagel[1], S. Deshpande[1], S. Aggarwal[1] and J.M. Slaughter[1] *1. Everspin Technologies, Chandler, AZ*

2:42

FE-07. Back-Hopping in Perpendicular STT-MRAM Cell with SAF-Coupled Reference Layer. *A.V. Khvalkovskiy*[1], V. Voznyuk[1], S. Schafer[1], D. Apalkov[1], R.S. Beach[1] and V. Nikitin[1] *1. Semiconductor R&D Center, New Memory Technology Lab, Samsung Electronics, Milpitas, CA*

2:54

FE-08. Materials investigation for thermally-assisted MRAM robust against 400C temperatures. *A.J. Annunziata*[1], P. Trouilloud[1], S. Bandiera[2], S. Brown[1], E. Gapihan[1], E. O'Sullivan[1] and D. Worledge[1] *1. IBM-Crocus Joint Development Alliance, IBM TJ Watson Research Center, Yorktown Heights, NY; 2. IBM-Crocus Joint Development Alliance, Crocus Technology, Grenoble, France*

3:06

FE-09. Heavy-Ion SEU and SEE Performance Analysis of a 1 Mbit Magneto-Resistive Random Access Memory (MRAM). *R.R. Katti*[1], M.A. Smith[1], D.K. Nelson[1], D. Erstad[1], K. Golke[1], A. Marques[2], D. Martin[3] and M. Kay[3] *1. 12001 State Highway 55, Honeywell Aerospace, Plymouth, MN; 2. 555 Technology Square, Charles Stark Draper Laboratory, Cambridge, MA; 3. 300 Highway 361, Naval Surface Warfare Center, Crane, IN*

3:18

FE-10. The dynamic interaction effect due to oscillatory stray field from programing cell in 10nm design p-MTJ array. *S. Ohuchida*[1,3], K. Ito[2], M. Muraguchi[1,3] and T. Endoh[2,3] *1. Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Center for Innovative Integrated Electronics Systems, Tohoku University, Sendai, Miyagi, Japan; 3. JST-ACCEL, Sendai, Miyagi, Japan*

3:30

FE-11. Effect of the stray field profile on the switching characteristics of the free layer in a perpendicular magnetic tunnel junction. *J. Huang*[1], C. Sim[1], V.B. Naik[1], M. Tran[1], S. Lim[1] and G. Han[1] *1. Data Storage Institute, Agency for Science Technology and Research (A*STAR), Singapore, Singapore*

3:42

FE-12. Finite-Amplitude Normal Modes for STT-MRAM Switching. *K. Munira*[1] and P.B. Visscher[1] *1. Physics and MINT Center, University of Alabama, Tuscaloosa, AL*

3:54

FE-13. Intrinsic critical current and thermal stability factor of MgO/CoFeB/Ta/CoFeB/MgO recording structure scaling down to 11 nm. *H. Sato*[1,2], E.I. Enobio[1,3], M. Yamanouchi[1,3], S. Ikeda[1,2], S. Fukami[1,2], S. Kanai[3], F. Matsukura[4,1] and H. Ohno[1,3] *1. Center for Spintronics Integrated Systems, Sendai, Miyagi, Japan; 2. Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Miyagi, Japan; 3. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan; 4. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

4:06

FE-14. Perpendicular STT-MRAM Thermal Stability Scaling and Robust Retention Design. *X. Wang*[1], Z. Wang[1], H. Gan[1], B.K. Yen[1] and Y. Hui[1] *1. Avalanche Technology, Fremont, CA*

4:18

FE-15. Tunable Interfacial PMA for Compensation of the Demagnetization Field in STT-MRAM Free Layers . *R. Whig*[1], H. Chia[1], M. Schneider[1], D. Houssameddine[1], F. Mancoff[1], J. Sun[1] and J. Slaughter[1] *1. Everspin Technologies, Chandler, AZ*

THURSDAY AFTERNOON 1:30

SOUTH PACIFIC 3 & 4

Session FF
NANOWIRES AND ASSEMBLED NANOPARTICLES II
Eric Evarts, Chair

1:30

FF-01. DMI induced chiral nucleation in Pt/CoAlOx microstructures. ***(Invited)*** *S. Pizzini*[1], J. Vogel[1], S. Rohart[2], L. Buda-Prejbeanu[3], M. Miron[3], G. Gaudin[3], O. Boulle[3], E. Jue[3] and A. Thiaville[2] *1. Institut Néel, CNRS, Grenoble, France; 2. Laboratoire de Physique des Solides, CNRS, Université Paris Sud, Orsay, France; 3. SPINTEC, CEA/CNRS/UJF/Grenoble-INP, Grenoble, France*

2:06

FF-02. Controlled Synthesis of Cobalt-Substituted Magnetite Nanocubes and Their Assembly into Ferrimagnetic Nanocube Arrays. *W. Yang*[1] and Y. Yu[2,3] *1. School of Chemical Engineering and Technology, Harbin Institute of Technology, Harbin, Heilongjiang, China; 2. School of Materials Science and Engineering, Jilin University, Changchun, Jilin, China; 3. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE*

2:18

FF-03. Reversal mechanism in Co/Pt patterned media with dipolar frustrations. T. Hauet[3], L. Piraux[1], S. Srivastava[1,4], V. Antohe[1], D. Lacour[3], M. Hehn[3], F. Montaigne[3], J. Schwenk[2], *M.A. Marioni*[2], H.J. Hug[2,5], O. Hovorka[6], A. Berger[7], S. Mangin[3] and F. Abreu Araujo[1] *1. Institute of Condensed Matter and Nanosciences, Université Catholique de Louvain, Louvain-la-Neuve, Belgium; 2. Empa, Swiss Federal Laboratories for Materials Science and Technology, Duebendorf, Switzerland; 3. Institut Jean Lamour, Université de Lorraine - CNRS, Vandoeuvre Les Nancy, France; 4. Amity Institute of Nanotechnology, Amity University, Noida, India; 5. Institute of Physics, Universität Basel, Basel, Switzerland; 6. Faculty of Engineering and the Environment, University of Southampton, Southampton, United Kingdom; 7. CIC nanoGUNE Consolider, Donostia-San Sebastián, Spain*

2:30

FF-04. Magnetization process of arrays of CoFe-based nanowire modulated in diameter. C. Bran[1], O. Iglesias-Freire[1], E. Palmero[1], E. Berganza[1], C. Magen[2], A. Asenjo[1] and *M. Vázquez*[1] *1. Instituto de Ciencia de Materiales de Madrid (CSIC), Madrid, Spain; 2. Instituto de Nanociencia de Aragon-ARAID, Universidad de Zaragoza, Zaragoza, Spain*

2:42

FF-05. Field-Induced Magnetic Shell Formation in Ferrite Nanoparticles. S. Majetich[1], *S.D. Oberdick*[1], Y. Ijiri[2], K.L. Krycka[3], J.A. Borchers[3], K. Hasz[2] and R.A. Booth[1] *1. Carnegie Mellon University, Pittsburgh, PA; 2. Physics and Astronomy, Oberlin College, Oberlin, OH; 3. NCNR, NIST, Gaithersburg, MD*

2:54

FF-06. Magnetic properties of iron oxide nanotubes: influence of the outer diameter. C. Silva Cea[1], A. Pereira[1], J. Palma[1], R. Zierold[2], J.C. Denardin[1], M. Vázquez[3], K. Nielsch[2] and *J. Escrig*[1] *1. Departamento de Física, Universidad de Santiago Chile, Santiago, Chile; 2. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 3. Institute of Materials Science of Madrid, Madrid, Spain*

3:06

FF-07. Crystal structures and magnetic properties of iron oxide supraparticles. *X. Song*[1], S. Yan[1], X. He[1], Q. Ding[1], X. Yao[1], W. Zhong[1] and Y. Du[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China*

3:18

FF-08. Microscopic Reversal Processes of Antidot Lattices, Revealed by High Resolution FORC and Soft X-Ray Microscopy. J. Gräfe[2], M. Schmidt[2], F. Haering[1], U. Wiedwald[3], P. Ziemann[1], M. Skripnik[4], U. Nowak[4], G. Schuetz[2] and *E.J. Goering*[2] *1. Institute of Solid State Physics, Ulm University, Ulm, BW, Germany; 2. Schuetz, Max-Planck-Institute for Intelligent Systems, Stuttgart, Germany; 3. Faculty of Physics, University of Duisburg-Essen, Duisburg, Germany; 4. Department of Physics, University of Konstanz, Konstanz, Germany*

3:30

FF-09. Resonant spin-wave modes in trilayered magnetic nanowires studied in the parallel and antiparallel ground state. G. Gubbiotti[1], H. Nguyen[2], R. Hiramatsu[3], S. Tacchi[1], M. Madami[4], *M. Cottam*[2], T. Ono[3] and G. Carlotti[4] *1. Istituto Officina dei Materiali (CNR-IOM), Perugia, Italy; 2. Department of Physics and Astronomy, University of Western Ontario, London, ON, Canada; 3. Laboratory of Nano Spintronics, Division of Materials Chemistry, Institute for Chemical Research, Kyoto, Japan; 4. Dipartimento di Fisica e Geologia, Università di Perugia, Perugia, Italy*

3:42

FF-10. Withdrawn

3:54

FF-11. Modified Snoek's limit for columnar structure of Fe nanoparticle assembly. *T. Ogawa*[1], R. Tate[1], H. Kura[1], T. Oikawa[2] and K. Hata[2] *1. Department of Electronic Engineering, Tohoku University, Sendai, Japan; 2. Samsung R&D Institute Japan Co. Ltd., Yokohama, Japan*

4:06

FF-12. Towards Nanowire Shift Registers Using a Perfectly Ordered In-Plane Nanochannel Array with Rectangular Cross Section. *P. Sergelius*[1], J.M. Montero Moreno[1], W. Rahimi[1], M. Waleczek[1], R. Zierold[1], D. Görlitz[1] and K. Nielsch[1] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Hamburg, Germany*

4:18

FF-13. Self-assembled magnetic nanodot arrays growing on diblock copolymer templates: an in-situ study combining GISAXS and NRS. D.J. Erb[1], *K. Schlage*[1], H. Wille[1] and R. Röhlsberger[1,2] *1. Deutsches Elektronen-Synchrotron, Hamburg, Germany; 2. The Hamburg Centre for Ultrafast Imaging, Hamburg, Germany*

Session FG
HIGH FREQUENCY AND MICROWAVE DEVICES II
Guoan Wang, Chair

1:30

FG-01. Integrated Tunable Band Pass Filter with Spin Spray NiZn Ferrite. H. Lin[1], *J. Wu*[2], X. Yang[3], T. Nan[1], Z. Hu[1], Y. Gao[1], J. Jones[4], G. Brown[4] and N.X. Sun[1] *1. ECE, Northeastern University, Boston, MA; 2. R&D, Boston Scientific, Pasadena, MA; 3. UCLA, LA, MA; 4. Air Force Research Laboratory, AFB, OH*

1:42

FG-02. Exploiting Lamination and Shape for Increasing Ferromagnetic Resonance Frequency in Gigahertz Magnetic Devices. *A. El-Ghazaly*[1] and S. Wang[1,2] *1. Electrical Engineering, Stanford University, Stanford, CA; 2. Materials Science and Engineering, Stanford University, Stanford, CA*

1:54

FG-03. The synthesis of rhodium substituted ε-iron oxide exhibiting super high frequency natural resonance. *A. Namai*[1], M. Yoshikiyo[1], S. Umeda[1], T. Yoshida[2], T. Miyazaki[2], M. Nakajima[3], K. Yamaguchi[3], T. Suemoto[3] and S. Ohkoshi[1,4] *1. The University of Tokyo, Tokyo, Tokyo, Japan; 2. DOWA Electronics Materials Co., Ltd., Okayama, Japan; 3. Institute of Institute for Solid State Physics, The Univ. of Tokyo, Kashiwa, Japan; 4. CREST, JST, Tokyo, Japan*

2:06

FG-04. Arbitrary Frequency Tunable RF Bandpass Filter Based on Nano-Patterned Permalloy Coplanar Waveguide. ***(Invited)*** *T. Wang*[1], B. Rahman[1], Y. Peng[1] and G. Wang[1] *1. Department of Electrical Engineering, University of South Carolina, Columbia, SC*

2:42

FG-05. High Noise Suppression Effects of Magnetically Isotropic (CoFe-AlN)/(AlN) Multilayer Films. *H. Kijima*[1,2], Y. Shimada[2], H. Masumoto[1], S. Ohnuma[1,3], Y. Endo[2] and M. Yamaguchi[2] *1. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Sendai, Japan; 2. Department of Electrical Engineering, Graduate School of Engineering, Tohoku University, Sendai, Japan; 3. Research Institute for Electromagnetic Materials, Sendai, Japan*

2:54

FG-06. Broadband unidirectional waveguide by magnetic photonic crystal. *R. Wu*[1], Z. Li[1], Q. Li[1] and Y. Poo[1] *1. Nanjing University, Nanjing, China*

3:06

FG-07. Low Phase Noise of an Auto-Oscillator Based on a Magneto-Acoustic Resonator. *R. Khymyn*[1], V. Tiberkevich[1] and A. Slavin[1] *1. Oakland University, Rochester Hills, MI*

3:18

FG-08. Microwave properties of quasi-periodic-structured patterned ferromagnetic nanowire arrays in Fibonacci sequence. *Y. Lei*[1], Z. Chen[1] and L. Li[1] *1. Tsinghua University, Beijing, China*

3:30

FG-09. Metal thickness dependence on spin wave propagation in magnonic crystal using yttrium iron garnet. *T. Goto*[1], N. Kanazawa[1], J. Hoong[1], A. Buyandalai[1], T. Hiroyuki[1] and M. Inoue[1] *1. Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Toyohashi, Aichi, Japan*

3:42

FG-10. Signal analysis and control of ringing in pulsed NMR circuits. *N. Prabhu Gaunkar*[1], N.Y. Bouda[1], I.C. Nlebedim[1], R.L. Hadimani[1], K. Ganesan[2], I. Bulu[2], Y. Song[2], R. Weber[1], M. Mina[1] and D.C. Jiles[1] *1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Schlumberger-Doll Research, Cambridge, MA*

3:54

FG-11. Low loss Z-type ferrite composites with matching permeability and permittivity for microwave antenna applications. Z. Su[1], H. Chang[1], *Y. Chen*[1] and V. Harris[1] *1. Electrical and Computer Engineering, Northeastern University, Boston, MA*

4:06

FG-12. Oriented nanometric aggregates of partially inverted zinc ferrite: one-step processing and tunable high-frequency magnetic properties. *R. Sai*[2,1], Y. Shimada[2], Y. Endo[2], M. Yamaguchi[2] and S.A. Shivashankar[1] *1. Centre for Nano Science and Engineering, Indian Institute of Science, Bangalore, Karnataka, India; 2. Department of Electrical Engineering, Tohoku University, Sendai, Miyagi, Japan*

4:18

FG-13. Microwave Properties of Electrospun NiZn Spinel ferrite Nanofiber. *P. Chen*[1,2] and R. Wu[1] *1. School of Electronic Science and Engineering, Nanjing University, Nanjing, Jiangsu, China; 2. High-tech Institute (Suzhou) of Nanjing University, Suzhou, Jiangsu, China*

Session FH
RARE-EARTH TRANSITION METAL BORIDES II

Ming Yue, Co-Chair
Ralph Skomski, Co-Chair

1:30

FH-01. Modelling of anisotropy and coercivity in $RE_2Fe_{14}B$ (RE=Pr,Dy) magnets by electronic structure and numerical micromagnetic calculations. *J. Fidler*[1], A. Asali[1], P. Toson[1] and D. Suess[1] *1. Inst. Solid State Physics, Vienna University of Technology, Vienna, Austria*

1:42

FH-02. Stable tetragonal distortion and significantly increased magnetocrystalline anisotropy in FeCo alloys with C or B impurities. *A. Edström*[1], E. Delczeg-Czirjak[1], M. Werwinski[1], J. Rusz[1] and O. Eriksson[1] *1. Physics and Astronomy, Uppsala University, Uppsala, Sweden*

1:54

FH-03. Dy-free, High Performance Nd-Fe-B Based Permanent Magnets. *A. Pathak*[1], M. Khan[1], K. Gschneidner, Jr.[1,2], R. McCallum[1] and V. Pecharsky[1,2] *1. Ames Laboratory, USDOE, Ames, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames, IA*

2:06

FH-04. Development of dy-free sintered Nd-Fe-B magnet with nano-size crystal grain. ***(Invited)*** *Y. Une*[1], H. Kubo[1], T. Mizoguchi[1], T. Iriyama[1], M. Sagawa[1], M. Nakamura[2], M. Matsuura[2] and S. Sugimoto[2] *1. Intermetallics Co., Ltd., Nagoya, Japan; 2. Department of Materials Science, Graduate School of Engineering, Tohoku University, Sendai, Japan*

2:42

FH-05. Enhanced Electric Resistivity in Nd-Fe-B magnets by NdF_3 diffusion. *Z. Wang*[1], R. Chen[1], W. Yin[1], C. Yan[1], X. Tang[1], S. Guo[1], C. Jin[1], D. Lee[2] and A. Yan[1] *1. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. University of Dayton, Dayton, OH*

2:54

FH-06. Temperature dependence of post-sintered annealing on magnetic properties of intergranular phase in Nd-Fe-B permanent magnet. *A. Yasui*[1], T. Nakamura[1], Y. Kotani[1], T. Fukagawa[2], T. Nishiuchi[2] and S. Hirosawa[3] *1. JASRI/ SPring-8, Sayo, Hyogo, Japan; 2. Hitachi Metals, Ltd., Shimamoto, Osaka, Japan; 3. NIMS, Tsukuba, Ibaraki, Japan*

3:06

FH-07. Effect of Pr-Cu infiltration on coercivity enhancement in Nd-Fe-B nanocrystalline magnets investigated by small-angle neutron scattering. *T. Ueno*[1], K. Saito[2], M. Yano[3], M. Harada[4], T. Shoji[3], N. Sakuma[3], A. Manabe[3], A. Kato[3], U. Keiderling[5] and K. Ono[2] *1. Elements Strategy Initiative Center for Magnetic Materials, National Institute for Materials Science, Tsukuba, Japan; 2. Institute of Materials Structure Science, High Energy Accelerator Research Organization, Tsukuba, Japan; 3. Advanced Materials Engineering Division, Toyota Motor Corporation, Susono, Japan; 4. Toyota Central R&D Labs., Inc., Nagakute, Japan; 5. Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany*

3:18

FH-08. Impact of Cu inclusions at Nd-rich to NdFeB grain boundaries - a temperature study . *G. Hrkac*[1], K.T. Butler[2], L. Saharan[1] and T. Schrefl[3] *1. Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, Devon, United Kingdom; 2. Centre for Sustainable Chemical Technologies, University of Bath, Bath, United Kingdom; 3. University of Applied Sciences, St Poelten, Austria*

3:30

FH-09. Magnetic and microstructural properties of Al/Cu or Mn/Cu co-doped Nd-Fe-B sintered magnet. *T. Kim*[1], S. Lee[1], H. Kim[2], M. Lee[3] and T. Jang[3] *1. Materials Science and Engineering, Korea University, Seoul, Republic of Korea; 2. R&D Center, Jahwa Electronics Co. Ltd., Cheongwon, Republic of Korea; 3. Hybrid Engineering, Sunmoon University, Asan, Republic of Korea*

3:42

FH-10. Quantitative Explanation of Coercivity Change in Rare-Earth Added Nd-Fe-B Magnets. *H. Kato*[1] and M. Sagawa[2] *1. Graduate School of Science and Engineering, Yamagata University, Yonezawa, Japan; 2. Intermetallics Co. Ltd, Kyoto, Japan*

3:54

FH-11. Dipolar energy in Nd-Fe-B nanocrystalline magnets with and without RE-Cu infiltration. *K. Ono*[1], H. Ohtori[1], K. Iwano[1], H. Tsukahara[1], C. Mitsumata[2], M. Yano[3], T. Shoji[3], A. Manabe[3] and A. Kato[3] *1. KEK, Tsukuba, Japan; 2. NIMS, Tsukuba, Japan; 3. TOYOTA Motor Corporation, Aichi, Japan*

4:06

FH-12. Magnetic Fluctuation on Magnetization Reversal Process of Nd-Fe-B Nanocrystalline Magnet Observed with Small Angle Neutron Scattering. *K. Saito*[1], T. Ueno[2], M. Yano[3], M. Harada[4], T. Shoji[3], N. Sakuma[3], A. Manabe[3], A. Kato[3], U. Keiderling[5] and K. Ono[1] *1. Institute of Materials Structure Science, High Energy Accelerator Research Organization, Tsukuba, Ibaraki, Japan; 2. Elements Strategy Initiative Center for Magnetic Materials, National Institute for Materials Science, Tsukuba, Japan; 3. Advanced Material Engineering Division, Toyota Motor Corporation, Susono, Japan; 4. Toyota Central R&D Labs., Inc., Nagakute, Japan; 5. Helmholtz-Zentrum Berlin, Berlin, Germany*

4:18

FH-13. X-ray magnetic circular dichroism study of rare-earth $M_{4,5}$ and transition metal $L_{2,3}$ absorption edges in $Nd_2Fe_{15}B$ permanent magnets. *S. Tripathi*[1], E.J. Goering[1], Y. Chen[1], T. Tietze[1], S. Schuppler[2], P. Nagel[2] and G. Schütz[1] *1. Modern magnetic systems, Max Planck Institute for Intelligent Systems, Stuttgart, Baden-Württemberg, Germany; 2. Institute for Solid -State Physics, Karlsruhe Institute of technology,,Hermann-von-Helmholtz-platz 1,76344 Eggenstein- Leopldshafen, Karlsruhe, Baden-Württemberg, Germany*

THURSDAY
AFTERNOON
1:30

SEA PEARL 2-4

Session FI
SUPERCONDUCTIVITY
Gavin Burnell, Chair

1:30

FI-01. Superconducting spintronics: spin-polarized cooper pairs and spin-selectivity in superconducting spin-valves. ***(Invited)*** *J. Robinson*[1] and M.G. Blamire[1] *1. Department of Materials Science and Metallurgy, 27 Charles Babbage Road, University of Cambridge, Cambridge, United Kingdom*

2:06

FI-02. Signature of odd frequency triplet superconductivity in superconducting spin-filter tunnel junctions. *A. Pal*[1] and M.G. Blamire[1] *1. Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom*

2:18

FI-03. Superconducting spintronics - The anomalous Nernst effect in the superconductor Sr2RuO4. *M. Gradhand*[1], K.I. Wysokinski[2] and J.F. Annett[1] *1. University of Bristol, Bristol, United Kingdom; 2. Institute of Physics, M. Curie-Skłodowska University, Lublin, Poland*

2:30

FI-04. The observation of artificial spin triplet superconductivity in a controllable superconductor/ferromagnet heterostructure. *J.F. Cooper*[1], N.G. Pugach[5,7], C.J. Kinane[1], N. Satchell[2], J. Kim[2], J.D. Witt[2,3], G. Burnell[2], P.J. Curran[4], S.J. Bending[4], A. Isidori[5], M. Eschrig[5], M.G. Flokstra[6], S. Lee[6] and S. Langridge[1] *1. Large Scale Structures, ISIS Neutron Source, Didcot, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, West Yorkshire, United Kingdom; 3. Paul Scherrer Institute, Villigen PSI, Switzerland; 4. Department of Physics, University of Bath, Bath, United Kingdom; 5. Department of Physics, Royal Holloway University of London, London, United Kingdom; 6. School of Physics and Astronomy, University of St Andrews, St Andrews, United Kingdom; 7. Skobeltsyn Institute of Nuclear Physics (SYNP), Lomonosov Moscow State University, Moscow, Russian Federation*

2:42

FI-05. Quantum critical behavior in the magnetic-field-tuned superconductor-insulator transition in underdoped $La_{2-x}Sr_xCuO_4$ ***(Invited)*** *D. Popović*[1] *1. National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL*

3:18

FI-06. Effect of injected spins with different polarized orientations on the vortex phase transition in $La_{0.7}Sr_{0.3}MnO_3$/ $La_{1.85}Sr_{0.15}CuO_4$ heterostructure. *M. Zhang*[1], M. Teng[1], F. Hao[1], Y. Yin[1] and X. Li[1] *1. Hefei National Laboratory for Physical Sciences at Microscale, Department of Physics, University of Science and Technology of China, Hefei, Anhui, China*

3:30

FI-07. Superconductor/Skyrmion Proximity in $Fe_{0.7}Co_{0.3}Si$/Nb Bilayers. *N. Satchell*[1], N.A. Porter[1], P. Sinha[1], P.J. Curran[3], S.J. Bending[3], C.H. Marrows[1], S. Langridge[2] and G. Burnell[1] *1. Physics and Astronomy, University of Leeds, Leeds, West Yorkshire, United Kingdom; 2. ISIS Neutron and Muon Source, Rutherford Appleton Laboratory, Harwell, Oxfordshire, United Kingdom; 3. Department of Physics, University of Bath, Bath, United Kingdom*

3:42

FI-08. Long ranged superconductivity in half-metallic ferromagnetic $La_{0.7}Ca_{0.3}MnO_3$ *M. Egilmez*[1], J. Robinson[2] and M.G. Blamire[2] *1. Physics, American University of Sharjah, Sharjah, United Arab Emirates; 2. Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom*

3:54

FI-09. Superconducting in magnetic Sm-doped $LaCo_2B_2$ Y. Wang[1], *W.J. Ren*[1], T. Duan[1], D. Li[1], J. Li[1] and Z. Zhang[1] *1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*

4:06

FI-10. Fluctuation-induced resistance upturn below onset of superconducting transition in mesoscopic NiFe/Nb ferromagnet/superconductor heterostructure. L. Lin[1,2], J. Huang[2], J. Liang[3] and *S. Lee*[1] *1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Department of Materials Science and Engineering, National Tsing Hua University, HsinChu, Taiwan; 3. Department of Physics, Fu Jen Catholic University, Taipei, Taiwan*

4:18

FI-11. Effect of Eu substitution on superconductivity of $Ba_{8-x}Eu_xAl_6Si_{40}$ clathrate. *L. Liu*[1], S. Bi[1], B. Peng[1] and Y. Li[2] *1. Department of Physics, University of Science and Technology Beijing, Beijing, China; 2. Department of Engineering Science and Materials, University of Puerto Rico at Mayaguez, Puerto Rico, Puerto Rico*

THURSDAY AFTERNOON 2:30

CORAL 4 (POSTERS)

Session FP
DILUTED MAGNETIC SEMICONDUCTORS AND HALF-METALLIC MATERIALS II (Poster Session)

Antonio Ruotolo, Chair

FP-01. Inhomogeneous distribution of manganese atoms in ferromagnetic $ZnSnAs_2$:Mn thin films on InP revealed by three dimensional atom probe investigations. *N. Uchitomi*[1], H. Inoue[1], T. Kato[1], H. Toyota[1] and H. Uchida[2] *1. Nagaoka University of Technology, Nagaoka, Japan; 2. Toshiba Nanoanalysis Corporation, Yokohama, Japan*

FP-02. Observation of spin gapless semiconductor behavior in CoFeCrGa quaternary Heusler alloy. *L. Pal*[1], K.G. Suresh[1], A. Nigam[2], A. Coelho[3] and M.M. Raja[4] *1. Physics, Indian Institute of Technology Bombay, Mumbai, India; 2. CMPD, Tata Institute of Fundamental Research, Mumbai, Maharashtra, India; 3. Instituto de Física "Gleb Wataghin", Universidade Estadual de Campinas—UNICAMP, 13083-859 Campinas, SP, Brazil; 4. Defence Metallurgical Research Laboratory, Hyderabad, India*

FP-03. Magneto-transport anisotropy in epitaxially grown hybrid MnAs/GaAs superlattices. *J. Song*[2,1], Y. Cui[2], J. Lee[2] and J.B. Ketterson[2] *1. Physics, Chungnam National University, Daejeon, Republic of Korea; 2. Physics and Astronomy, Northwestern University, Evanston, IL*

FP-04. Investigation of possible ferromagnetic semiconductor material on double perovskites La_2FeCoO_6 using first principles calculation. *H. Fuh*[1,2], K. Weng[1], Y. Liu[3] and Y. Wang[1,4] *1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Graduate Institute of Applied Physics, National Taiwan University, Taipei, Taiwan; 3. Department of Physics, National Taiwan Normal University, Taipei, Taiwan; 4. Center for General Education and Department of Physics, National Taiwan Normal University, Taipei, Taiwan*

FP-05. Optical spectroscopic study on the electronic structures of transition metal-doped Ge epitaxial films. M. Noh[1], *Y. Lee*[1] and S. Cho[2] *1. Physics, Soongsil University, Seoul, Republic of Korea; 2. Physics, Ulsan University, Ulsan, Republic of Korea*

FP-06. Ferromagnetism in Ti-doped ZnO Thin Films. *Q. Shao*[1], P. Ku[1], C. Leung[2] and A. Ruotolo[1] *1. The Department of Physics and Materials Science, City University of Hong Kong, Hong Kong, Hong Kong; 2. Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong, Hong Kong*

FP-07. Structural Characterization and Magnetic Properties at Room Temperature of Co-doped ZnO Nanoparticles. T.J. Castro[1], S.W. da Silva[1], P.A. Rodrigues[1], F. Nakagomi[1], P.C. Morais[1], *A. Franco Júnior*[2] and H.V. Pessoni[2] *1. Instituto de Física, Universidade de Brasília, Brasília, DF, Brazil; 2. Instituto de Física, Universidade Federal de Goiás, Goiânia, GO, Brazil*

FP-08. Withdrawn

FP-09. Ion-beam modification of magnetic properties of thin GaMnAs films. *S. Mello*[1,2], M.M. Sant'Anna[2], C. Codeço[2], S. Dong[1], T. Yoo[1], X. Liu[1] and J. Furdyna[1] *1. Department of Physics, University of Notre Dame, South Bend, IN; 2. Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil*

FP-10. Local structure analysis of magnetic transparent conducting films by x-ray spectroscopy. *T. Nakamura*[1] *1. Department of Engineering Science, Osaka Electro-Communication University, Neyagawa, Osaka, Japan*

FP-11. Observation of room temperature ferromagnetism in g-C_3N_4 Q. Xu[1], *D. Gao*[1] and D. Xue[1] *1. Key Laboratory for Magnetism and Magnetic Materials of MOE, Lanzhou University, Lanzhou, Gansu, China*

FP-12. Ferromagnetic and paramagnetic magnetization of implanted GaN: Ho,Tb,Sm,Tm films. *M. Marysko*[1], Z. Sofer[2], D. Sedmidubsky[2], J. Hejtmanek[1], P. Simek[2], M. Vesely[2], M. Mikulics[3], C. Buchal[3] and A. Mackova[4] *1. Institute of Physics ASCR, Praha 6, Czech Republic; 2. Dept. of Inorganic Chemistry, Institute of Chemical Technology, Prague, Czech Republic; 3. Forschung Centrum, PGI-9, Peter Grunberg Institut, Julich, Germany; 4. Rez, Nuclear Physics Institute Of the ASCR, Prague, Czech Republic*

FP-13. The Electronic Structure and Magnetic Ordering of Rare-Earth Metals Doped ZnO: A First-Principles Study. X. Zhang[1], *W. Mi*[1], X. Wang[2] and H. Bai[1] *1. Department of Applied Physics, Tianjin University, Tianjin, China; 2. School of Electronics Information Engineering, Tianjin University of Technology, Tianjin, China*

FP-14. Localized/Itinerant Ferromagnetism of ZnO Mediated by Structural Imperfections. C. Yang[1], *S. Chang*[1], Y. Hsu[1] and Y. Tseng[2] *1. Materials Science & Engineering, National Chiao Tung University, Hsinchu, Taiwan; 2. Materials Science & Engineering, National Chiao Tung University, Hsinchu, Taiwan*

FP-15. Oxygen vacancy tuning of room temperature ferromagnetism in variable band gap ZnMgO films. Y. Qi[1], *Z. Quan*[1] and X. Xu[1] *1. Shanxi Normal University, Linfen, China*

FP-16. Post-annealing effect on the room-temperature ferromagnetism in Cu-doped ZnO thin films. *Y.M. Hu*[1] and S.S. Li[2] *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Institute of Electro-Optical Science and Engineering, National Cheng Kung University, Tainan, Taiwan*

THURSDAY AFTERNOON 2:30

CORAL 4 (POSTERS)

Session FQ
HEAD/MEDIA II (Poster Session)
Tiffany Santos, Chair

FQ-01. Stripe height effect on the critical current density of spin-torque noise in a tunneling magnetoresistive read head with a low resistance area product below 1.0 Ω.μm² *Y. Endo*[1], P. Fan[1] and M. Yamaguchi[1] *1. Department of Electrical Engineering, Tohoku University, Sendai, Japan*

FQ-02. A Novel Technique to Detect Effects of Electromagnetic Interference by Remote ESD to Test Parameters of Tunneling Magnetoresistive Read Head. A. Kruesubthaworn[1], *P. Khunkitti*[2], A. Siritaratiwat[2], T. Mewes[3] and C. Mewes[3] *1. Khon Kaen University, Faculty of Applied Science and Engineering, Meung, Nong Khai, Thailand; 2. Khon Kaen University, Department of Electrical Engineering, Muang Khon Kaen, Khon Kaen, Thailand; 3. University of Alabama, Department of Physics & Astronomy, Tuscaloosa, AL*

FQ-03. Analysis of magnetic noises in TDMR readers. *Z. Liu*[1], Z. Yuan[1], C. Ong[1], G. Han[1] and S. Ang[1] *1. Data Storage Institute, Singapore, Singapore*

FQ-04. Bit Error Rate Performance for Head Skew Angle in Shingled Magnetic Recording using Dual Reader Heads. *Y. Nakamura*[1], H. Osawa[1], Y. Okamoto[1], Y. Kanai[2] and H. Muraoka[3] *1. Department of Electrical and Electronic Engineering and Computer Science, Ehime University, Matsuyama, Ehime, Japan; 2. Department of Information and Electronics Engineering, Niigata Institute of Technology, Kashiwazaki, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

FQ-05. Thermal Effects on Transducer Material for Heat Assisted Magnetic Recording Application. *R. Ji*[1], B. Xu[1], Z. Cen[1], J. Ying[1] and Y. Toh[1] *1. Data Storage Institute, Singapore, Singapore*

FQ-06. Demagnetization assisted reversal in composite perpendicular recording media achieved by interfacial modification. *K. Srinivasan*[1], C. Papusoi[1] and M. Desai[1] *1. Western Digital, San Jose, CA*

FQ-07. Write synchronization for grain position controlled granular media. *A. Hara*[1] and H. Muraoka[1] *1. RIEC, Tohoku University, Sendai, Miyagi, Japan*

FQ-08. Metal-oxide buffer layer for maintaining topological bumpy surface underlayer of columnar CoPt-SiO_2 granular media deposited at high substrate temperature. *K. Tham*[1], S. Hinata[2,3], S. Saito[2] and M. Takahashi[4] *1. Tanaka Kikinzoku Kogyo K. K., Chiyoda-ku, Tokyo, Japan; 2. Electronic Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 3. Japan Society for the Promotion of Science Research Fellow, Chiyoda-ku, Tokyo, Japan; 4. New Industry Creation Hatchery Center, Tohoku University, Sendai, Miyagi, Japan*

FQ-09. Fabrication of $L1_0$-MnGa nanoparticles for perpendicular magnetic recording. *J. Lu*[1], J. Xiao[1] and J. Zhao[1] *1. Institute of Semiconductor, Beijing, China*

FQ-10. Magnetic characteristics and grain structures of FePt-(B, C)/FePt-C stacked granular films. *A. Furuta*[1,2], H. Kikuchi[1,2], H. Kataoka[1,2], T. Ono[1,2], N. Kikuchi[3], S. Okamoto[3], O. Kitakami[3] and T. Shimatsu[2,4] *1. Fuji Electric Co. Ltd., Sendai, Japan; 2. FRIS, Tohoku University, Sendai, Japan; 3. IMRAM, Tohoku University, Sendai, Japan; 4. RIEC, Tohoku University, Sendai, Japan*

FQ-11. Comparative studies between three methods to realize perpendicular graded anisotropic $L1_0$-FePt Films. Y. Lin[2], *J. Hsu*[1] and P. Kuo[2] *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Graduate Institute of Material Science and Engineering, National Taiwan University, Taipei, Taiwan*

FQ-12. A Two-Dimensional Coding Design for Staggered Islands Bit-Patterned Media Recording. D. Arrayangkool[1] and *C. Warisarn*[1] *1. College of Data Storage Innovation, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand*

FQ-13. Effects of oxygen post-annealing on the FePt:B films. *S. Huang*[1], W. Wen[1], K. Chang[2] and C. Lai[1] *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, 30013, Taiwan, Hsinchu, Taiwan; 2. Seagate Technology, Fremont, CA*

FQ-14. Dependence of domain structure on applied field direction in staked media. *N. Tomiyama*[1], K. Ebata[1] and R. Sugita[1] *1. Media and Telecommunications Engineering, Ibaraki University, Hitachi, Ibaraki, Japan*

FQ-15. Influence of layer thickness ratio on the leakage field from recorded magnetization of stacked media with high coercivity. *N. Nomiya*[1] and R. Sugita[1] *1. Media and Telecommunications, Ibaraki University, Hitachi, Ibaraki, Japan*

FQ-16. Large grain bcc CrMn seed layer deposited on CrTi amorphous layer for highly oriented FePt-C granular media. *S. Jeon*[1], S. Hinata[1], S. Saito[1] and M. Takahashi[2] *1. Electronic Department, Tohoku University, Sendai, Miyagi, Japan; 2. New Industry Creation Hatchery Center, Sendai, Japan*

THURSDAY
AFTERNOON
2:30

CORAL 4 (POSTERS)

Session FR
NANOSTRUCTURED PERMANENT MAGNETS (Poster Session)

Ping Liu, Chair

FR-01. Micromagnetic simulation of magnetic small angle neutron scattering of Nd-Fe-B nanocrystalline magnet. *H. Tsukahara*[1], K. Iwano[1], N. Inami[1], C. Mitsumata[3], M. Yano[2], T. Ueno[1], K. Saito[1], T. Syoh-ji[2], A. Manabe[2], A. Kato[2] and K. Ono[1] *1. High Energy Accelertaor Research Organization, Tsukuba, Japan; 2. Toyota Motor Corporation, Toyota, Japan; 3. NIMS, Tsukuba, Japan*

FR-02. Investigation of magnetic properties of MnBi/Co and MnBi+$Fe_{65}Co_{35}$ nanocomposite permanent magnets by micro-magnetic simulation. *Y. Li*[1], M. Yue[1], T. Wang[1] and D. Zhang[1] *1. Beijing University of Technology, Beijing, China*

FR-03. MnBi/FeCo Hard/Soft Composite Magnet. *X. Xu*[2], J. Park[1], Y. Hong[3] and A. Lane[4] *1. Department of Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, AL; 2. Department of Chemical and Biological Engineering, The University of Alabama, Tuscaloosa, AL; 3. Department of Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, AL; 4. Department of Chemical and Biological Engineering, The University of Alabama, Tuscaloosa, AL*

FR-04. Anisotropic $CeCo_5$ based permanent magnetic nanoflakes with high coercivity. R. Liu[1,2], M. Zhang[1], J. Lu[1], C. Liu[2], *B. Shen*[1], F. Hu[1] and J. Sun[1] *1. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, Beijing, China; 2. Technology Center, Chinese National Engineering Technology Center for Magmatic Materials, Beijing, Beijing, China*

FR-05. Shape Effects on the Order-Disorder Phase-Transition Temperature and Magnetic properties of FePt Nanocrystals. B. Bian[1], W. Xia[1], J. Zhang[1], J. Liu[2] and *J. Du*[1] *1. Division of Magnetic Materials and Devices, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Department of Physics, University of Texas at Arlington, Arlington, TX*

FR-06. Energy product of exchange coupled $L1_0$ FePt/FeCo nanodot patterns. B. Wang[1], H. Omiya[1], S. Yoshida[1], A. Arakawa[1], T. Hasegawa[1], H. Sasaki[1], M. Suzuki[2], N. Kawamura[2], M. Mizumaki[2], Y. Kondo[3] and *S. Ishio*[1] *1. Department of Materials Science and Engineering, Akita University, Akita, Japan; 2. Japan Synchrotron Radiation Research Institute, Hyogo, Japan; 3. Akita Prefectural R&D Center, Akita, Japan*

FR-07. Enhancement in thickness of nano-composite film magnets with α-Fe + Nd-Fe-B dispersed structure. M. Nakano[1], *K. Fujiyama*[1], K. Motomura[1], T. Yanai[1] and H. Fukunaga[1] *1. Nagasaki University, Nagasaki, Japan*

FR-08. Fabrication of nanostructured FePt/ Fe composite rings and their magnetic properties. *R. Kurosu*[1], H. Iwama[1], M. Doi[1,2] and T. Shima[1,2] *1. Tohoku Gakuin University, Tagajo, Japan; 2. Technology Research Association of Magnetic Materials for High-Efficiency Motors (MagHEM), Tokyo, Japan*

FR-09. PLD-fabricated isotropic Pr-Fe-B/α-Fe multi-layered nano-composite thick-film magnets. M. Nakano[1], *S. Oshima*[1], K. Fujiyama[1], T. Yanai[1] and H. Fukunaga[1] *1. Nagasaki university, Nagasaki, Japan*

FR-10. Non-aqueous electrochemical deposition of Sm_2Co_{17} nanowires with magnetic field annealing effect on structural and magnetic properties. *S.S. Ali*[1,2], K. Javed[2], G. Zhai[1], D. Shi[2], P. Liu[2] and X. Han[2] *1. National Space Science Center, Chinese Academy of Sciences, Beijing, China; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

FR-11. The synthesis of FePt/Fe_3O_4 nanocomposite particles with high coercivity. R. Wang[3,2], B. Bian[2], J. He[1,4], W. Xia[2], J. Zhang[2], *J. Du*[2], Z. Guo[5], W. Li[6], A. Yan[2] and J. Liu[6] *1. ShenYang Normal University, Ningbo, China; 2. Division of Magnetic Materials and Devices, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 3. Ningbo university, Ningbo, Zhejiang, China; 4. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 5. Division of Functional Materials, Central Iron and Steel Research Institute, Beijing, China; 6. University of Texas at Arlington, Arlington, TX*

FR-12. Temperature dependence of the cubic magnetocrystalline anisotropy constant of nanoparticulate powders of (Mg-Zn) Fe_2O_4 mixed ferrites. *P. Ribeiro*[2], G. Barbosa[2], F. Machado[2], M. Silva[1] and A. Franco Jr.[1] *1. Instituto de Física, Universidade Federal de Goiás, Goiânia, GO, Brazil; 2. Física, Universidade Federal de Pernambuco, Recife, PE, Brazil*

FR-13. Synthesis and characterization of hard magnetic $BaFe_{12}O_{19}$-polystyrene deposited on soft magnetic NiCoP film for potential applications. *A.H. Elsayed*[1], O.M. Hemeda[2], A. TawfiK[2], M.A. Hamad[2] and A.A. El-Gendy[3] *1. Physics, Alexandria University, Egypt, Alexandria, Egypt; 2. Physics, Tanta University, Tanta, Egypt; 3. Nanotechnology and Nanometrology Lab, National Institute for Standards, Giza, Egypt*

FR-14. Enhanced coercivity and remanence of $PrCo_5$ nanoflakes prepared by surfactant-assisted ball milling with the heat-treated starting powder. W. Zuo[1], M. Zhang[1], E. Niu[1], X. Shao[1], *J. Lu*[1], F. Hu[1], J. Sun[1] and B. Shen[1] *1. State Key Laboratory of Magnetism, Institute of Physics, Beijing, China*

FR-15. Fabrication and magnetic properties of composite film utilizing metal magnetic nanoparticles by electrochemical method. *Y. Hayashi*[1], S. Hashi[1], H. Kura[2], T. Yanai[3], T. Ogawa[2], K. Ishiyama[1], M. Nakano[3] and H. Fukunaga[3] *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Department of Electronic Engineering, Tohoku University, Sendai, Japan; 3. Electrical and Electronic Engineering, Nagasaki University, Nagasaki, Japan*

FR-16. Co-Pt thick-films prepared by electroplating method. *K. Furutani*[1], T. Yanai[1], M. Nakano[1] and H. Fukunaga[1] *1. Nagasaki University, Nagasaki, Japan*

THURSDAY
AFTERNOON
2:30

CORAL 4 (POSTERS)

Session FS
VOLTAGE CONTROL OF MAGNETIC ANISOTROPY AND MAGNETIC TUNNEL JUNCTIONS (Poster Session)

Daichi Chiba, Chair

FS-01. Voltage Scaling of Electric–Field-Controlled Perpendicular Magnetic Memory Bits. *X. Cai*[1], F. Ebrahimi[1], J.G. Alzate[1], J.A. Katine[2], J. Langer[3], B. Ocker[3], P.K. Amiri[1,4] and K. Wang[1] *1. Department of Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 2. HGST Inc., San Jose, CA; 3. Singulus Technologies, Kahl am Main, Germany; 4. Inston Inc., Los Angeles, CA*

FS-02. Macrospin study of high-frequency voltage-assisted magnetization reversal in a perpendicularly magnetized disk. *H. Arai*[1], H. Imamura[1] and T. Nozaki[1] *1. National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan*

FS-03. Electric field-induced modification of magnetism of Fe/MgO and Pt/Fe/MgO: a first principles study. P. Taivansaikhan[1], D. Odkhuu[1] and *S. Hong*[1] *1. Physics, University Of Ulsan, Ulsan, Ulsan, Republic of Korea*

FS-04. Piezo-Voltage Manipulation of the Magnetization and Magnetic Reversal in CoFeAl . *K. Wang*[1] *1. Institute of Semiconductors,Chinese Academy of Sciences, Beijing, China*

FS-05. Enhancement of variation in direction of magnetization by RF voltage with frequency close to ferromagnetic resonance. *K. Miura*[1], M. Yamada[1], O. Rousseau[2], B. Rana[2], S. Ogawa[1], H. Takahashi[1], Y. Fukuma[2,3] and Y. Otani[2,4] *1. Hitachi Central Research Laboratory, Kokubunji, Japan; 2. Center for Emergent Matter Science, RIKEN, Wako, Japan; 3. Frontier Research Academy for Young Researchers, Kyushu Institute of Technology, Kawazu, Japan; 4. Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan*

FS-06. Electric-field-induced low current densities in CoFeB based perpendicular magnetic tunnel junctions. *M. Glas*[1], K. Rott[1], L. Stockfisch[1], A. Gebauer[1], D. Ebke[2], J.M. Schmalhorst[1] and G. Reiss[1] *1. Physics, Bielefeld University, Bielefeld, NRW, Germany; 2. Max Planck Institute for Chemical Physics of Solids, Dresden, Sachsen, Germany*

FS-07. Curie temperatures of transition-metal thin films in external electric field. *M. Oba*[1], K. Nakamura[1], T. Akiyama[1] and T. Ito[1] *1. Physics Engineering, Mie-University, Tsu, Mie, Japan*

FS-08. Switching of perpendicular exchange bias in Pt/Co/Pt/α-Cr_2O_3 thin film system by magneto-electric effect. *K. Toyoki*[1], Y. Shiratsuchi[1], S. Harimoto[1], H. Nomura[1] and R. Nakatani[1] *1. Osaka University, Osaka, Japan*

FS-09. Electrical control of edge magnetism in two-dimensional buckled honeycomb lattices. *L. Zou*[1], W. Bao[1], K. Chang[2] and H. Lin[2] *1. Key Laboratory of Materials Physics,, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, Anhui, China; 2. Beijing Computational Science Research Center, Beijing, China*

FS-10. Effect of MgO cap layers on the magnetic properties of CoFeB with perpendicular magnetic anisotropy. *G. Hu*[1], L. Liu[1] and C. Murray[1] *1. IBM T J Watson Research Center, Yorktown Heights, NY*

FS-11. Growth of a high-quality ultrathin Fe(001) layer on MgO(001) by insertion of an ultrathin Fe oxide layer.
T. Nozaki[1,2], T. Ohkubo[3], Y. Shiota[4,2], A. Fukushima[1,2], K. Hono[3], Y. Suzuki[4,2] and S. Yuasa[1,2] *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan; 2. JST-CREST, Kawaguchi, Saitama, Japan; 3. National Institute for Materials Science, Tsukuba, Ibaraki, Japan; 4. Osaka University, Toyonaka, Osaka, Japan*

FS-12. Improvement of electric and magnetic properties of patterned magnetic tunnel junctions by recovery of damaged layer using oxygen showering post-treatment process.
J. Jeong[1,3] and T. Endoh[1,2] *1. Electric Energy System Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Center for Innovative Integrated Electronic Systems, Sendai, Miyagi, Japan; 3. Semiconductor R&D Division, Samsung Electronics Co., Ltd., Hwasung-si, Gyeonggi-do, Republic of Korea*

FS-13. Perpendicular magnetic anisotropy of Ta-capped and MgO-capped tunnel junctions.
L. Cuchet[1], B. Rodmacq[1], S. Auffret[1], R. Sousa[1] and B. Dieny[1] *1. CEA/INAC/SPINTEC, Grenoble, France*

FS-14. Impact of Ion Beam Etch (IBE) on TMR and Switching Current of pMTJ STT-MRAM Cells on 300mm Wafers.
J. Zhang[1], D. Jung[1], K. Satoh[1], Z. Wang[1], X. Hao[1], Y. Zhou[1] and Y. Huai[1] *1. Avalanche Technology, Fremont, CA*

FS-15. Effect of edge damage on energy barrier of perpendicular nanomagnets.
K. Song[2] and K. Lee[2,1] *1. Dept. of Mat. Sci. & Eng., Korea University, Seoul, Republic of Korea; 2. KU-KIST Graduate School, Korea University, Seoul, Republic of Korea*

FS-16. The investigation of TMR effects in the magnetic tunnel junctions including spinel ferrite layers.
N. Takahashi[2], T. Kawai[2], T. Yanase[2], T. Nagahama[1] and T. Shimada[1] *1. Graduate School of Engineering, Hokkaido University, Sapporo, Japan; 2. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Sapporo, Japan*

Session FT
AMORPHOUS AND NANOCRYSTALLINE SOFT MAGNETS II
(Poster Session)

Maria Daniil, Chair

FT-01. Characteristics of magnetic exchange in Fe rich amorphous alloy by AIMD simulation. *Y. Wang*[1], A. Makino[1], Y. Liang[2] and Y. Kawazoe[2,3] *1. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan; 2. New Industry Creation Hatchery Center, Tohoku University, Sendai, Miyagi, Japan; 3. Kutateladze Institute of Thermophysics, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russian Federation*

FT-02. Low Temperature Behavior of Hyperfine Fields in Amorphous and Nanocrystalline FeMoCuB. J. Kohout[3], *D. Kubániová*[3], T. Kmječ[3], K. Závěta[3], A. Lančok[4], L. Sklenka[2] and M. Miglierini[2,1] *1. Institute of Nuclear and Physical Engineering, Faculty of Electrical Engineering and Information Technology, Slovak University of Technology, Bratislava, Czech Republic; 2. Department of Nuclear Reactors, Faculty of Nuclear Science and Physical Engineering, Czech Technical University, Prague, Czech Republic; 3. Department of Low Temperature Physics, Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic; 4. Institute of Inorganic Chemistry, Academy of Sciences of the Czech Republic, Husinec - Řež, Czech Republic*

FT-03. Effect of the external field on the soft magnetic properties and microstructure of directly cast $Fe_{75}P_{8.7}B_5C_7Si_{4.3}$ nanocrystalline sheets. *C. Shih*[1], Y. Lin[1], H. Chang[2], Y. Lee[1] and W. Chang[1] *1. Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. Department of Applied Physics, Tunghai University, Taichung, Taiwan*

FT-04. Magnetic Properties of 120-mm Wide Ribbons of High B_s and Low Core-Loss NANOMET® Alloy. *A.D. Setyawan*[1], K. Takenaka[1], P. Sharma[1], K. Shimizu[1], N. Nishiyama[1] and A. Makino[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

FT-05. Thermodynamic Analysis of Binary $Fe_{85}B_{15}$ to Quinary $Fe_{85}Si_2B_8P_4Cu_1$ Alloys for Primary Crystallizations of α-Fe in Nanocrystalline Soft Magnetic Alloys. *A. Takeuchi*[1], Y. Zhang[1], K. Takenaka[1] and A. Makino[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

FT-06. Dynamics of Magnetization Processes in Complex Permeability Spectra of Fe-Based Soft Magnetic Ribbons and Derived Powder Cores. *J. Fuzer*[1], S. Dobak[1] and P. Kollar[1] *1. Department of Condensed Matter Physics, P.J. Safarik University, Kosice, Slovakia*

FT-07. Investigation on high-temperature magnetic permeability of Si-rich nanocrystalline $(Fe_{0.9}Co_{0.1})_{74.5}Nb_2Si_{17.5}B_5Cu_1$ alloy.
L. Wen[1], *Z. Wang*[1] and J. Wang[1] *1. Department of Applied Physics, Tianjin University, Tianjin, Tianjin, China*

FT-08. Effect of magnetic annealing methods on soft magnetic properties for nanocrystalline $(Fe_{0.5}Co_{0.5})_{73.5}Si_{13.5}B_9Nb_3Cu_1$ alloy.
M. Liu[1], *Z. Wang*[1] and H. Zhang[1] *1. Department of Applied Physics, Tianjin University, Tianjin, Tianjin, China*

FT-09. Structure and magnetic properties of Si-rich FeAlSiBNbCu alloys.
L. Wen[1], *Z. Wang*[1], Y. Han[1] and Y. Xu[1] *1. Department of Applied Physics, Tianjin University, Tianjin, Tianjin, China*

FT-10. Modulation of unidirectional anisotropy for Co-based amorphous ribbons by longitudinal pulse field.
J. He[1], Z. Xia[1], X. Ou[1] and D. Zhao[1] *1. Division of Functional Material Research, Central Iron & Steel Research Institute, Beijing, China*

FT-11. Effect of Ni content on the crystallization, soft magnetic properties and GMI effect in amorphous $Co_{68}Fe_{7-x}Ni_xSi_{15}B_{10}$ (x = 0, 1.5, 3, 4.5) ribbons.
W. Lu[1], Y. Song[1], M. Jia[1], M. Lin[1] and X. Li[2] *1. School of Materials Science and Engineering, Tongji University, Shanghai, China; 2. School of Materials Science and Engineering, University of Shanghai for Science and Technology, Shanghai, China*

FT-12. Spin Waves and Magnetic Anisotropy in Nanocrystalline Nickel.
P. Madduri[1] and S. Kaul[1] *1. School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

FT-13. Design of Advanced Magnetic Materials with Properties Tailored for RF Applications.
S.A. Montoya[1], A. Vaschenko[1] and E.E. Fullerton[1] *1. Center for Magnetic Recording Research, University of California San Diego, La Jolla, CA*

FT-14. Influence of tensile stress on permeability properties of type 304 stainless steel.
K. Kinoshita[1] *1. Department of Energy Conversion Science, Kyoto University, Kyoto, Japan*

FT-15. Withdrawn

FT-16. Withdrawn

Session FU
INDUCTORS AND TRANSFORMERS
(Poster Session)

Hongbin Yu, Co-Chair
Hao Wu, Co-Chair

FU-01. Effect of ferrite addition parallel to the coils on coupling factor of wireless power transfer to vehicles. *T. Batra*[1] and E. Schaltz[1] *1. Department of Energy Technology, Aalborg University, Aalborg, Denmark*

FU-02. Suppressing Magnetomechanical Vibration Based on Reducing Magnetostriction for Three-Phase Power Transformer. *C. Hsu*[2], C. Lee[3], C. Chang[1], J. Liu[4] and S. Cheng[5] *1. Department of Information and Telecommunications Engineering, Ming Chuan University, Tao-Yuan, Taiwan; 2. Division of Electrical Engineering, Fortune Electric Company, Tao-Yuan, Taiwan; 3. Department of Electrical Engineering, Chung Yung Christian University, Tao-Yuan, Taiwan; 4. Department of Multimedia and M-Commerce, Kai Nan University, Lu-Zhu, Taiwan; 5. Department of Aircraft Engineering, Army Academy R.O.C, Tao-Yuan 320, Taiwan*

FU-03. Omnidirectional Wireless Power Transfer for Moving Receiver. *B. Che*[1], F. Meng[1], Y. Lv[1], W. Zhu[1], K. Zhang[1], G. Yang[1], J. Fu[1] and Q. Wu[1] *1. Dept. of Microwave Engineering, Harbin Institute of Technology, Harbin, Heilongjiang province, China*

FU-04. Wireless Power Transfer and Fault Diagnosis of High-Voltage Powerline via Robotic Bird. *C. Liu*[1], K. Chau[1], Z. Zhang[1] and C. Qiu[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China*

FU-05. Restoration of Inductor and Transformer Performance after Ferrite Machining for Broadband Applications. *D. Bowen*[1], A.W. Lee[1], C. Krafft[2] and I. Mayergoyz[1] *1. University of Maryland, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD*

FU-06. A Study on Preventing Frequency Splitting for High Efficiency in Wireless Power Transfer System. *Z. Li*[2] and S. Huang[1] *1. College of Electrical and Information Engineering, Hunan University, Changsha, Hunan, China; 2. College of Electrical and Information Engineering, Hunan University, Changsha, Hunan, China*

FU-07. Design Strategy of Lap-Winding type Three-Phase Variable Inductor. *K. Nakamura*[1], H. Koya[1], T. Ohinata[2], K. Arimatsu[2] and O. Ichinokura[1] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Tohoku Electric Power Co., Inc., Sendai, Japan*

FU-08. Performance of a prototype power transformer constructed by nanocrystalline Fe-Co-Si-B-P-Cu soft magnetic alloys. *N. Nishiyama*[1], K. Takenaka[1], A.D. Setyawan[1], P. Sharma[1] and A. Makino[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

FU-09. Magnetic Flux Distributions and Power Losses in Power Transformer Core Joints. *Q. Tang*[1], S. Guo[1] and Z. Wang[1] *1. School of Electrical and Electronic Engineering, The University of Manchester, Manchester, United Kingdom*

FU-10. Magnetic-Thermal-Fluidic Characteristics of Variable Inductor Employing Magneto-Rheological Fluid Driven by High Frequency Pulsed Voltage. *H. Lee*[1] and S. Lee[1] *1. Department of Electrical Engineering, Kyungpook National University, Daegu, Republic of Korea*

FU-11. Experimental and Numerical Analysis of Mechanical Vibration in Transformer Due to Body Force Density Employing Virtual Air-Gap Scheme. J. Kim[1], D. Hong[2], W. Kim[3], H. Choi[1] and *S. Lee*[1] *1. Department of Electrical Engineering, Kyungpook National University, Daegu, Republic of Korea; 2. Electric Propulsion Research Division, Korea Electrotechnology Research Institute, Changwon, Republic of Korea; 3. Dynamics Research Department, Hyundai Heavy Industry, Ulsan, Republic of Korea*

FU-12. Manganese oxide-coated Fe-6.5%Si powder cores with low power loss and high DC-bias permeability. *J. Li*[1], R. Gong[1], X. Wang[1], Z. Feng[1], Y. Nie[1], Y. Chen[2] and V. Harris[2] *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, Hubei, China; 2. Department of Electrical and Computer Engineering, Center for Microwave Magnetic Materials and Integrated Circuits, Boston, MA*

FU-13. Research of transformer winding deformation detection based on finite elements method. *J. Yuan*[1] and J. Yuan[1] *1. Electrical Engineering, Wuhan University, Wuhan, Hubei, China*

FU-14. A Comparative Study of Amorphous and Nanocrystalline Magnetic Materials for High-Frequency High Power Density Transformer Application. X. Liu[1,2], M. Islam[2], J. Zhu[2], *Y. Wang*[1], G. Lei[2] and C. Liu[1,2] *1. Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Tianjin, China; 2. School of Electrical, Mechanical and Mechatronic system, University of Technology, Sydney, Sydney, NSW, Australia*

FU-15. Nanocrystalline Magnetic Materials Dynamic and Thermal Behavior in Power Converter Application. *A. Hilal*[1], M. Raulet[1] and C. Martin[1] *1. CNRS UMR5005 AMPERE, Lyon1 University, Villeurbanne, France*

FU-16. The Characteristics Comparison of a Transformer for Inverter Type Arc Welding Machine according to Core Material Selection. *I. Kim*[1] and H. Hong[1] *1. Hanyang University, Seoul, Republic of Korea; 2. KETEP, Seoul, Democratic People's Republic of Korea; 3. Keimyung University, Daegu, Democratic People's Republic of Korea*

THURSDAY AFTERNOON 2:30

CORAL LOUNGE (POSTERS)

Session FV
MAGNETIZATION DYNAMICS AND DAMPING II (Poster Session)

Alan MacDonald, Chair

FV-01. Empirical relation between Gilbert damping and coercive field by annealing CoFeB films sandwiched by Ta, Ru, and Pd layers. *C. Cho*[1], J. Moon[1], J. Kim[1], C. Moon[2], B. Min[2], S. Kim[3], S. Park[3] and S. Choe[1] *1. Physics, Seoul National University, Seoul, Republic of Korea; 2. Center for Spintronics, Korea Institute of Science and Technology, Seoul, Republic of Korea; 3. Division of Material Science, Korea Basic Sicence Institute, Daejeon, Republic of Korea*

FV-02. Damping in individual nanomagnets with different sizes and thicknesses. *H. Nembach*[1,2], J. Shaw[1] and T. Silva[1] *1. NIST, Boulder, CO; 2. JILA, University of Colorado, Boulder, CO*

FV-03. Strong impact of the eddy-current shielding on ferromagnetic resonance response of sub-skin-depth-thick conducting magnetic multilayers. I. Maksymov[1], Z. Zhang[1,2], C. Chang[1] and *M. Kostylev*[1] *1. School of Physics, University of Western Australia, Crawley, WA, Australia; 2. University of Science and Technology of China, Beijing, China*

FV-04. Phosphorus dependence of the spin stiffness in the ferromagnetic semiconductor GaMnAsP. S. Shihab[2], *L. Thevenard*[2], H. Riahi[1], A. Lemaître[3] and C. Gourdon[2] *1. Laboratoire Matériaux Molécules et Applications, Institut Préparatoire aux Etudes Scientifiques et Techniques, Université de Carthage, Tunis, Tunisia; 2. Institut des Nanosciences de Paris, UPMC CNRS, Paris, France; 3. Laboratoire de Photonique et Nanostructures, Marcoussis, France*

FV-05. Effect of Ru thickness on spin pumping in Ru /Py bilayer. N. Behera[1], M. Singh[1], *P.K. Muduli*[1], S. Chaudhary[1] and D.K. Pandya[1] *1. Physics, Indian Institute of Technology Delhi, New Delhi, Delhi, India*

FV-06. Spin diode effect in spin valve GMR stripes. *S. Zietek*[1], W. Skowronski[1], P. Wisniowski[1], M. Frankowski[1], J. Checinski[1] and T. Stobiecki[1] *1. Department of Electronics, AGH University of Science and Technology, Krakow, Poland*

FV-07. Dynamic Resonance Field Bias Effect in IrMn/Ru/NiFe/Ru/IrMn Multilayer. *L. Jin*[1,2], D. Zhang[3], H. Zhang[1], X. Tang[1], Z. Zhong[1], X. Fan[2] and J. Xiao[2] *1. Microelectronics and Solid-State Electronics, University of Electronic Science and Technology of China, Newark, DE; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE; 3. Department of Electrical and Computer Engineering, University of Delaware, Newark, DE*

FV-08. Observation of multiple end modes in FeNi nanodisks by ferromagnetic resonance measurement. Y. Huo[1], C. Zhou[1], L. Sun[1], S. Chui[2] and *Y. Wu*[1] *1. Physics Department, Fudan University, Shanghai, China; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE*

FV-09. Tunable spin pumping efficiency in Co/Pt thin films with various crystallographic textures. *S. Isogami*[1] and S. Hinata[2] *1. Fukushima National College of Technology, Iwaki, Japan; 2. Tohoku University, Sendai, Japan*

FV-10. Tunable magnetization dynamics in disordered FePdPt ternary alloys: effects of spin orbit coupling. *L. Ma*[1], S. Li[2], P. He[3], W. Fan[1], X. Xu[4], Y. Jiang[4], T. Lai[2], F. Chen[1] and S. Zhou[1] *1. Physics, Tongji University, Shanghai, Shanghai, China; 2. Sun Yat-Sen University, Guangzhou, China; 3. Fudan University, Shanghai, China; 4. University of Science and Technology Beijing, Beijing, China*

FV-11. Ferromagnetic resonance measurements of anisotropy and damping in CoFeB in the ultra-thin regime. *J. Shaw*[1], H. Nembach[1], T. Silva[1], M. Weiler[1], J. Sun[2] and D.C. Worledge[2] *1. NIST, Boulder, CO; 2. Thomas J. Watson Research Center, IBM, Yorktown Heights, NY*

FV-12. Noise induced drift in magnetization dynamics of nanomagnets. G. Bertotti[1], I. Mayergoyz[4], M. d'Aquino[3], *S. Perna*[2], A. Quercia[2] and C. Serpico[2] *1. INRIM, Torino, Italy; 2. University of Naples 'Federico II', Napoli, Italy; 3. University of Naples 'Parthenope', Napoli, Italy; 4. University of Maryland, College Park, MD*

FV-13. Interferometric properties of standing spin waves and the application to a phase comparator. *X. Ya*[1], H. Chen[1], S. Oyabu[1], B. Peng[1], H. Otsuki[1], T. Tanaka[1] and K. Matsuyama[1] *1. Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Fukuoka, Japan*

FV-14. Synchronization of spin-Hall nano oscillators. *A. Giordano*[1], M. Carpentieri[2], A. Laudani[3], G. Gubbiotti[4], B. Azzerboni[1] and G. Finocchio[1] *1. Department of Electronic Engineering, Industrial Chemistry and Engineering, University Of Messina,, Messina, Italy; 2. Department of Electrical and Information Engineering, University of Bari, Bari, Italy; 3. Department of Engineering, University of Roma Tre, Roma, Italy; 4. Istituto Officina dei Materiali del CNR (CNR-IOM), Perugia, Italy*

FV-15. Dynamic Control of Metastable Remanent States in Mesoscale Elliptical Elements. *J. Ding*[1], S. Lendinez[1,2], S. Jain[1], J.E. Pearson[1] and V. Novosad[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Departament de Fisica Fonamental, Universitat de Barcelona, Barcelona, Spain*

FV-16. Simulations of electric-field and spin-transfer-torque induced magnetization switching in tunnel junctions with perpendicular anisotropy. X. Zhang[1], *Z. Zhang*[1] and Y. Liu[2] *1. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 2. Tongji University, Shanghai, China*

THURSDAY AFTERNOON 2:30 — CORAL LOUNGE (POSTERS)

Session FW
SPIN INJECTION II (Poster Session)

Ezekiel Johnston-Halperin, Chair

FW-01. Spin injection and detection in $In_{0.53}Ga_{0.47}As$ nanomembrane channels epitaxially transferred onto Si substrates. J. Shin[2,1], J. Chang[2], H. Koo[2,3] and *H. Kim*[2,1] *1. Department of Nanomaterials Science and Engineering, Korea University of Science & Technology, Daejeon, Republic of Korea; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Republic of Korea; 3. KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, Republic of Korea*

FW-02. Spin Injection, Diffusion, Detection, and Magneto-Transport Properties in a MoS_2 Lateral Spin Valve. *B. Chun*[1], C. Hwang[1], W. Kim[1] and K. Moon[1] *1. KRISS, Daejeon, Republic of Korea*

FW-03. Experimental observation of contact-induced spin relaxation in Hanle spin precession measurements. *B.T. Bolon*[1,2], L. O'Brien[2,3], N. Krueger[4], T. Peterson[4], D. Spivak[4], M. Erickson[4], C.C. Geppert[4], C. Leighton[2] and P.A. Crowell[4] *1. Physics, Hamline University, Saint Paul, MN; 2. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 3. Thin Film Magnetism, Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 4. Physics and Astronomy, University of Minnesota, Minneapolis, MN*

FW-04. Spin transport in graphene based lateral spin valves on $SrTiO_3$. *R. Ruiter*[1], V. Mathkar[1], A.M. Kamerbeek[1] and T. Banerjee[1] *1. Physics of Nanodevices, Zernike Institute for Advanced Materials, Groningen, Netherlands*

FW-05. Spin polarization and geometric structure of interface in Fe_3Si/ Ge (111) contacts. *T. Furukawa*[1], S. Honda[2] and H. Itoh[1,3] *1. Department of Pure and Applied Physics, Kansai University, Suita, Japan; 2. Faculty of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; 3. Japan Science and Technology Agency, CREST, Tokyo, Japan*

FW-06. Inverse spin Hall effect induced by spin pumping into ZnO:Co. *P. Tai*[2], J. Lee[2], T. Chiang[2], Y. Chen[2] and J. Huang[2,1] *1. Advanced Optoelectronic Technology Center, National Cheng Kung University, Tinan, Taiwan; 2. Physics, National Cheng Kung University, Tainan, Taiwan*

FW-07. Spin injection based on the spin gapless semiconductor(SGS)/semiconductor heterostructures. *G. Xu*[1], X. Zhang[1], E. Liu[1], W. Wang[1] and G. Wu[1] *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

FW-08. Thermal effects on spin currents in non-local metallic spin valves. *A. Hojem*[1], D. Wesenberg[1] and B. Zink[1] *1. Physics & Astronomy, University of Denver, Denver, CO*

FW-09. Withdrawn

FW-10. Electrical detection of nuclear magnetic resonance in GaAs using transient oblique Hanle effect measurements. *T. Uemura*[1], T. Akiho[1], Y. Ebina[1] and M. Yamamoto[1] *1. Hokkaido University, Sapporo, Japan*

FW-11. Spin accumulation in Si channels using CoFe/MgO/Si and CoFe/AlO_x/Si tunnel contacts with high quality tunnel barriers prepared by radical-oxygen annealing. *T. Akushichi*[1], Y. Takamura[2], Y. Shuto[1] and S. Sugahara[1] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan; 2. Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*

FW-12. Room temperature spin-valley polarization in single layer WS_2 by optical pumping. *A.T. Hanbicki*[1], G. Kioseoglou[2], M. Currie[1], C.S. Hellberg[1], A.L. Friedman[1] and B.T. Jonker[1] *1. Naval Research Laboratory, Washington, DC; 2. University of Crete, Heraklion, Greece*

FW-13. Effect of reducing Schottky barrier height on spin accumulation in Fe/GeO_2/non-degenerate *n*-type Ge junctions. *H. Saito*[1], T. Takada[1], Y. Sato[1], A.M. Spiesser[1], R. Jansen[1] and S. Yuasa[1] *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan*

FW-14. Exchange Driven Spin Relaxation in Ferromagnet/Oxide/ Semiconductor Heterostructures. *Y. Ou*[1], Y. Chiu[1], P. Odenthal[2], R. Kawakami[1,2] and E. Johnston-Halperin[1] *1. Physics, The Ohio State University, Columbus, OH; 2. Physics and Astronomy, University of California, Irvine, Irvine, CA*

FW-15. Fabrication of a CoFe/TiO_2/Si tunnel contact and its spin-injector application. *Y. Shuto*[1], K. Takahashi[1], T. Akushichi[1], Y. Takamura[2] and S. Sugahara[1] *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan; 2. Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*

FW-16. Spin Filtering in Graphene/Hexagonal Boron Nitride/ Ferromagnet Heterostructures. *V. Mutta*[1], A. Dankert[1], P. Kelly[2] and S.P. Dash[1] *1. Department of Microtechnology and Nanoscience, Chalmers University of Technology, Gothenburg, Västra Götaland, Sweden; 2. Faculty of Science and Technology and MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

THURSDAY
EVENING
6:00

CORAL 3

Session ZA
EVENING SESSION: GEOMAGNETISM
Evgeny Tsymbal, Chair

6:00

ZA-01. Whispers from the earth's core: how magnetic minerals in rocks record the history of the earth's magnetic field. ***(Invited)*** *J. Feinberg*[1] *1. University of Minnesota, Minneapolis, MN*

Session GA
SKYRMIONS AND CHIRAL SPIN STRUCTURES IN THIN FILMS AND NANOCRYSTALS

Thomas Moore, Chair

8:30

GA-01. Confinement and stability of isolated skyrmions in ultrathin films. ***(Invited)*** *S. Rohart*[1], J. Miltat[1] and A. Thiaville[1]
1. Université Paris-Sud, Orsay, France

9:06

GA-02. Manipulation of magnetic skyrmions with spin-polarized STM. ***(Invited)*** *K. von Bergmann*[1] *1. University of Hamburg, Hamburg, Germany*

9:42

GA-03. Thermally driven ratchet motion of a skyrmion microcrystal and topological magnon Hall effect. ***(Invited)*** *M. Mochizuki*[1,2]
1. College of Science and Engineering, Aoyama Gakuin University, Chuo-ku Fuchinobe, Kanagawa, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Saitama, Japan

10:18

GA-04. Lorentz TEM study on dynamical skyrmions. ***(Invited)*** *X. Yu*[1] and Y. Tokura[1,2] *1. RIKEN CEMS, Wako, Saitama, Japan; 2. Univ. of Tokyo, Tokyo, Japan*

10:54

GA-05. Ab-initio calculations of transport properties in non-collinear spin textures. ***(Invited)*** F. Freimuth[1], J. Weischenberg[1], S. Bluegel[1] and *Y. Mokrousov*[1]
1. Forschungszentrum Julich, Peter Grunberg Institut and Institute for Advanced Simulation, Julich, Germany

Session GB
DOMAIN WALLS II
Russell Cowburn, Chair

8:30

GB-01. Modeling of asymmetric domain wall pinning in a PMA nanowire by a single in-plane nanomagnet. *R. van Mourik*[1,2], C. Rettner[1], B. Koopmans[2] and S.S. Parkin[1] *1. IBM Almaden Research Center, San Jose, CA; 2. Eindhoven University of Technology, Eindhoven, Netherlands*

8:42

GB-02. Negligible transient effect for current-induced domain-wall motion in ferromagnetic Co/Ni nanowires. *K. Kim*[1], T. Moriyama[1], H. Tanigawa[2], E. Kariyada[2] and T. Ono[1] *1. Kyoto University, Kyoto, Japan; 2. RENESAS Electronics Corporation, Sagamihara, Kanagawa, Japan*

8:54

GB-03. Effects of edge taper on domain wall structure and current-driven Walker breakdown in a ferromagnetic thin film wire. *J. Zhang*[1], J.A. Currivan[2,3], L. Tryputen[1], M. Baldo[2] and C. Ross[1] *1. Materials Science and Engineering, MIT, Cambridge, MA; 2. Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA; 3. Physics, Harvard University, Cambridge, MA*

9:06

GB-04. Non-Trivial Subdivided Bloch Walls in Permalloy Patterns. *M. Im*[1,2], K. Lee[3], W. Chao[1], J. Hong[2] and P. Fischer[1,4] *1. CXRO, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. DGIST, Daegu, Republic of Korea; 3. UNIST, Ulsan, Republic of Korea; 4. UCSC, Santa Cruz, CA*

9:18

GB-05. Deterministic, strain-based, electric field control of magnetic domain wall rotation in patterned ring. *M.E. Nowakowski*[3], H. Sohn[4], C. Liang[5], J.L. Hockel[5], K. Wetzlar[5], S. Keller[5], M.A. Marcus[2], A. Doran[2], A.T. Young[2], M. Kläui[1], C.S. Lynch[5], G.P. Carman[5], J. Bokor[3] and R.N. Candler[4] *1. Department of Physics, University of Mainz, Mainz, Germany; 2. ALS, Lawrence Berkeley National Lab, Berkeley, CA; 3. Department of Electrical Engineering and Computer Science, University of California, Berkeley, Berkeley, CA; 4. Department of Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 5. Department of Mechanical and Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA*

9:30

GB-06. Control of domain wall depinning fields in nanowires using induced uniaxial anisotropy. *A.W. Rushforth*[1], D.E. Parkes[1], A.C. Irvine[2], T.J. Hayward[3], J.D. Wheelwright[3] and D.A. Allwood[3] *1. School of Physics & Astronomy, University of Nottingham, Nottingham, United Kingdom; 2. Microelectronics Research Centre, University of Cambridge, Cambridge, United Kingdom; 3. Department of Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom*

9:42

GB-07. Unlocking Bloch-type chirality in ultrathin magnets through uniaxial strain. G. Chen[1], A.T. N'Diaye[1], S. Kang[2], H. Kwon[2], C. Won[2], Y. Wu[3], Z. Qiu[4] and *A.K. Schmid*[1] *1. Berkeley Lab, Berkeley, CA; 2. Kyung Hee University, Seoul, Republic of Korea; 3. Fudan University, Shanghai, China; 4. University of California at Berkeley, Ber, CA*

9:54

GB-08. Stabilizing an "impossible" spin texture by anisotropy engineering. *G. Chen*[1], A.T. N'Diaye[1], H. Kwon[2], C. Won[2], Y. Wu[3] and A.K. Schmid[1] *1. Berkeley Lab, Berkeley, CA; 2. Kyung Hee University, Seoul, Republic of Korea; 3. Fudan University, Shanghai, China*

10:06

GB-09. Domain Wall Magneto-Seebeck Effect. *P. Krzysteczko*[1], X. Hu[1], N. Liebing[1], S. Sievers[1] and H.W. Schumacher[1] *1. Physikalisch-Technische Bundesanstalt, Braunschweig und Berlin, Germany*

10:18

GB-10. The effect of curvature on domain wall energy in ferromagnetic nanostructures. J.E. Bickel[1,2], F. Kaya[1] and *K.E. Aidala*[1] *1. Department of Physics, Mount Holyoke College, South Hadley, MA; 2. Department of Physics, Cleveland State University, Cleveland, OH*

10:30

GB-11. Resonance in Magnetostatically Coupled Domain Walls. *A. Galkiewicz*[4], L. O'Brien[3], P.S. Keatley[2], R. Cowburn[1] and P.A. Crowell[4] *1. Thin Film Magnetism Group, Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 2. School of Physics, University of Exeter, Exeter, United Kingdom; 3. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 4. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN*

10:42

GB-12. Interactions between dynamic propagating domain walls and nanowire vertices. *D.M. Burn*[1], S.K. Walton[1], M. Chadha[1], L.F. Cohen[1] and W.R. Branford[1] *1. Imperial College London, London, United Kingdom*

10:54

GB-13. Spin-current sources and detectors based on magnetic domain walls. W. Savero Torres[1], L. Vila[1], *P. Laczkowski*[1], V. Nguyen[1], J. Rojas Sanchez[1], A. Marty[1], C. Vergnaud[1], C. Beigné[1], L. Notin[1], M. Jamet[1], V. Pham[1] and J. Attané[1]
1. Insitut Nanosciences et Cryogenie, CEA Grenoble and Université Grenoble Alpes, Grenoble, France

11:06

GB-14. Ferromagnetically and antiferromagnetically coupled nanowire multilayers with ultra-high domain wall velocities. *M. Kuteifan*[1], M.V. Lubarda[2,1], S. Fu[1], R. Chang[1], M.A. Escobar[1], S. Mangin[3], E.E. Fullerton[1] and V. Lomakin[1]
1. Center for Magnetic Recording Research, University of San Diego, La Jolla, CA; 2. Faculty of Polytechnics, University of Donja Gorica, Podgorica, Montenegro; 3. Institut Jean Lamour, Universite de Lorraine, Vandoeuvre-Les-Nancy, France

11:18

GB-15. Antiferromagnetic domain nucleation and domain wall propagation in epitaxial Fe/CoO/MgO(001) system. *Q. Li*[1], G. Chen[2], J. Zhu[1], A. N'Diaye[3], T. Ma[1], Y. Huo[1] and Y. Wu[1]
1. Department of Physics, Fudan University, Shanghai, China; 2. NCEM, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA

FRIDAY MORNING 8:30 — CORAL 1

Session GC
MAGNETIC MICROSCOPY II
Benjamin McMorran, Chair

8:30

GC-01. Detection of Vortex Chirality via Local Hysteresis Loops Measured by Magnetic Force Microscopy. *M. Coisson*[1], G. Barrera[1,2], F. Celegato[1], A. Manzin[1], P. Tiberto[1] and F. Vinai[1]
1. Electromagnetics, INRIM, Torino, TO, Italy; 2. Chemistry, Università degli Studi di Torino, Torino, TO, Italy

8:42

GC-02. High Resolution Quantitative Magnetic Force Microscopy with Accurate Control of Tip-Sample Distance for Imaging Horizontal Domain Walls in Exchange Coupled Media.
J. Schwenk[1], M.A. Marioni[1], X. Zhao[1], S. Romer[1], N.R. Joshi[3] and *H.J. Hug*[1,2] *1. Nanoscale Materials Science, Empa, Swiss Federal Laboratories for Materials Science and Technology, Duebendorf, Switzerland; 2. Department of Physics, University of Basel, Basel, Switzerland; 3. Mangalore Institute of Technology & Engineering, Nano Science and Technology Centre (NSTC), Mangalore, India*

8:54

GC-03. Reverse Spin-Polarization Induced by d-d and p-d Hybridization in Organic-Ferromagnet Systems.
Y. Chu[1], C. Hsu[1], P. Hsu[1], C. Lu[1], H. Yang[1], T. Yang[1], C. Kaun[2,3], G. Hoffmann[1,3] and M. Lin[1,4] *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Research Center of Applied Sciences, Academia Sinica, Taipei City, Taiwan; 3. Physics, National Tsing Hua University, Hsinchu, Taiwan; 4. Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei City, Taiwan*

9:06

GC-04. Diffraction contrast suppression in Lorentz microscopy.
M. Krajnak[1] and S. McVitie[1] *1. School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

9:18

GC-05. Incorporating Nanosecond Time Resolution into Scanning Electron Microscopy with Polarization Analysis.
R. Frömter[1,3], S. Rössler[1], F. Kloodt[1], D.R. Cavicchia[1], L. Bocklage[2,3] and H. Oepen[1,3] *1. Universität Hamburg, Hamburg, Germany; 2. DESY, Hamburg, Germany; 3. The Hamburg Center for Ultrafast Imaging, Hamburg, Germany*

9:30

GC-06. Magnetic imaging of TbCo alloys through Pt capping layers using two photon photoemission spectro-microscopy.
P. Thielen[1,2], M. Rollinger[1], P. Melchior[1], U. Bierbrauer[1], M. Barkowski[1], C. Schneider[1], S. Alebrand[1], M. Hehn[3], S. Mangin[3], S. Mathias[1], M. Cinchetti[1] and M. Aeschlimann[1] *1. Physics Department and Research Center OPTIMAS, TU Kaiserslautern, Kaiserslautern, Germany; 2. Graduate School of Material Science in Mainz, TU Kaiserslautern, Kaiserslautern, Germany; 3. Département Physique de la matière et des matériaux (P2M), Institut Jean Lamour, Nancy, France*

9:42

GC-07. Advances in multidimensional characterization with magnetic x-ray spectro-microscopies. ***(Invited)*** *P. Fischer*[1,2], M. Im[1,3], R. Streubel[4], M.J. Robertson[1,5] and D. Makarov[4] *1. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Physics Department, University of California, Santa Cruz, CA; 3. Daegu Gyeongbuk Institute of Science and Technology, Daegu, Republic of Korea; 4. Institute for Integrative Nanosciences, IFW Dresden, Dresden, Germany; 5. Physics Department, University of California, Berkeley, CA*

10:18

GC-08. X-ray Ptychography on magnetic nanostructures. *X. Shi*[1,2], S. Roy[1], J.C. Lee[1], E.E. Fullerton[3], S.A. Montoya[3] and S. Kevan[1,2] *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Physics, University of Oregon, Eugene, OR; 3. UCSD, La Jolla, CA*

10:30

GC-09. Time Resolved Imaging at 10GHz and Beyond Using the SSRL Scanning Transmission X-ray Microscope. *H. Ohldag*[1], S. Bonetti[2], R. Kukreja[2], Z. Chen[2], J. Frisch[1], H. Duerr[1] and J. Stoehr[1] *1. SLAC National Accelerator Laboratory, Menlo Park, CA; 2. Stanford University, Stanford, CA*

10:42

GC-10. Transmission soft x-ray microscopy imaging of magnetic bubble domains in ultrathin films with strong Dzyaloshinskii-Moriya interaction. *S. Woo*[1], M. Im[2], P. Fischer[2] and G. Beach[1] *1. Materials Sci. & Eng., Massachusetts Institute of Technology, Cambridge, MA; 2. The Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA*

10:54

GC-11. Towards Magnetic X-ray Computed Tomography. *R. Streubel*[1], F. Kronast[2], P. Fischer[3,4], O. Schmidt[1,5] and D. Makarov[1] *1. Institute for Integrative Nanosciences, IFW Dresden, Dresden, Saxony, Germany; 2. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Berlin, Germany; 3. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Physics Department, UC Santa Cruz, Santa Cruz, CA; 5. Material Systems for Nanoelectronics, TU Chemnitz, Chemnitz, Saxony, Germany*

11:06

GC-12. A Materials Selection Study for Magnetic Imaging Based on Singlet Exciton Fission. *M. Hodges*[1], N. Morley[1] and D. Allwood[1] *1. University of Sheffield, Sheffield, United Kingdom*

11:18

GC-13. Enhancing the magneto-optical Kerr effect with a near field plasmonic antenna. *T. Loughran*[1], P.S. Keatley[1], E. Hendry[1], W.L. Barnes[1], R.J. Hicken[1], A. Amy[2], W.R. Hendren[2], J.F. Einsle[2], P. Dawson[2] and R.M. Bowman[2] *1. School of Physics, University of Exeter, Exeter, Devon, United Kingdom; 2. Centre for Nanostructured Media, Queen's University Belfast, Belfast, Ulster, United Kingdom*

FRIDAY MORNING 8:30

CORAL 2

Session GD
SPIN WAVES
Kristen Buchanan, Chair

8:30

GD-01. Quantum size effects for spin waves in thin films. *(Invited)* *R. Jayaraman*[1,2], H. Ibach[1] and C.M. Schneider[1] *1. PGI-6, Research Center Jülich GmbH, 52425 Jülich, Germany; 2. Laboratory for Ultrafast Microscopy and Electron Scattering, École Polytechnique Fédérale de Lausanne, CH-1015 Lausanne, Switzerland*

9:06

GD-02. Time-resolved Kerr microscopy of isolated confined spin-wave packets and direct observation of backward volume modes with counterpropagating phase and group velocity in permalloy. *P. Wessels*[1,2], M. Wieland[3,1], J. Tödt[4], A. Vogel[4], G. Meier[1,4] and M. Drescher[1,3] *1. The Hamburg Centre for Ultrafast Imaging, University of Hamburg, Hamburg, Hamburg, Germany; 2. Institute of Laser-Physics, University of Hamburg, Hamburg, Hamburg, Germany; 3. Institute of Experimental Physics, University of Hamburg, Hamburg, Hamburg, Germany; 4. Institute of Applied Physics, University of Hamburg, Hamburg, Hamburg, Germany*

9:18

GD-03. Time-resolved Brillouin light scattering measurements of shock-excited spin waves in a thermal gradient. *G.A. Riley*[1], C.L. Ordóñez-Romero[2] and K.S. Buchanan[1] *1. Physics, Colorado State University, Fort Collins, CO; 2. Instituto de Física, Universidad Nacional Autónoma de México, Ciudad de México, CU, Mexico*

9:30

GD-04. Complex Spin Wave Spectra in Perpendicularly Magnetized $Ni_{80}Fe_{20}$ rings. *X. Zhou*[1], J. Ding[1], M. Kostylev[2] and A. Adeyeye[1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. School of Physics, University of Western Australia, Crawley, WA, Australia*

9:42

GD-05. Tunable eigenmodes of coupled magnetic vortex oscillators. M. Haenze[1], C.F. Adolff[1], M. Weigand[3] and *G. Meier*[1,2] *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 2. Centre for Ultrafast Imaging, University of Hamburg, Hamburg, Germany; 3. Max Planck Institute for Intelligent Systems, Stuttgart, Germany*

9:54

GD-06. Quantized spin wave modes on nanosized Co/Pt multilayer dots. *N. Kikuchi*[1], M. Furuta[1], S. Okamoto[1], O. Kitakami[1] and T. Shimatsu[2,3] *1. IMRAM Tohoku University, Sendai, Japan; 2. FRIS, Tohoku University, Sendai, Japan; 3. RIEC, Tohoku University, Sendai, Japan*

10:06

GD-07. Detection of localized spin wave modes in CoFeB single nanodot. *S. Tamaru*[1], H. Kubota[1], K. Yakushiji[1], A. Fukushima[1] and S. Yuasa[1] *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan*

10:18

GD-08. Probing spin waves via nuclear resonant scattering. *L. Bocklage*[2,1], K. Schlage[2], H. Wille[2], C. Swoboda[3], L. Dzemiantsova[2,1], G. Meier[3,1] and R. Röhlsberger[2,1] *1. The Hamburg Centre for Ultrafast Imaging, Hamburg, Hamburg, Germany; 2. Photon Science, Deutsches Elektronen-Synchrotron DESY, Hamburg, Hamburg, Germany; 3. Institut für Angewandte Physik, Universität Hamburg, Hamburg, Hamburg, Germany*

10:30

GD-09. Fast spin-wave propagation in an epitaxial Fe film. *N. Ishida*[1], K. Sekiguchi[1,2] and H. Sukegawa[3] *1. Keio Univ., Yokohama, Kanagawa, Japan; 2. JST-PRESTO, Chiyoda-ku, Tokyo, Japan; 3. NIMS, Tsukuba, Ibaraki, Japan*

10:42

GD-10. Stopping field for collective spin waves at the edge of magnetization reversal. *F. Montoncello*[1] and L. Giovannini[1] *1. Department of Physics and Earth Sciences, University of Ferrara, Ferrara, Italy*

10:54

GD-11. Unidirectional spin wave edge mode in an array of magnetic nanopillars with antiferromagnetic order. *I. Lisenkov*[2,1], V. Tyberkevych[2], S.A. Nikitov[1,3] and A. Slavin[2] *1. Kotel'nikov Institute of Radioengineering and Electronics of RAS, Moscow, Russian Federation; 2. Department of Physics, Oakland University, Auburn Hills, MI; 3. Moscow Institute of Physics and Technology, Moscow, Russian Federation*

11:06

GD-12. Electric modulation of propagating spin-wave in Fe.
K. Nawaoka[1,2], Y. Shiota[1,2], S. Miwa[1,2], N. Mizuochi[1], T. Shinjo[1] and Y. Suzuki[1,2] *1. Engneering Science, Osaka University Graduate School, Toyonaka, Osaka, Japan; 2. CREST, Tokyo, Japan*

11:18

GD-13. Strongly Non-Reciprocal Dipole-Exchange Spin Wave Mode in Antiferromagnetically Coupled Magnetic Bilayers.
V. Tyberkevych[1], A. Slavin[1], S. Wintz[2], D. Slobodianiuk[3] and G. Melkov[3] *1. Department of Physics, Oakland University, Rochester, MI; 2. Helmholtz Zentrum Dresden-Rossendorf, Dresden, Germany; 3. Faculty of Radiophysics, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*

FRIDAY MORNING 8:30

SOUTH PACIFIC 1 & 2

Session GE
MAGNETOELECTRICS III
Jorg Strempfer, Chair

8:30

GE-01. Dynamics of magnetoelectric coupling at metal surfaces.
(Invited) *L. Gerhard*[1], R.J. Wesselink[2], T.K. Yamada[3], A.F. Takács[4], M. Daene[5], M. Fechner[6], S. Ostanin[6], A. Ernst[6], I. Mertig[6,7] and W. Wulfhekel[1,8] *1. Institute of Nanotechnology (INT), Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen, Germany; 2. University of Twente, Enschede, Netherlands; 3. Graduate School of Advanced Integration Science, Chiba University, Chiba, Japan; 4. Babes-Bolyai University, Cluj-Napoca, Romania; 5. Oak Ridge National Laboratory, Oak Ridge, TN; 6. Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany; 7. Institut für Physik, Martin-Luther-Universität Halle-Wittenberg, Halle, Germany; 8. Physikalisches Institut, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany*

9:06

GE-02. Magnetic Field Directed Assembly of Superstructures of Ferrite-Ferroelectric Core-Shell Nanoparticles and Studies on Magneto-electric Interactions.
G. Srinivasan[1], G. Sreenivasulu[1] and F. Chavez[2] *1. Physics, Oakland University, Rochester, MI; 2. Chemiatry, Oakland University, Rochester, MI*

9:18

GE-03. DRIE Inducing Giant Electric Field Tunability of Magnetism in FeGaB/PMN-PT Multiferroic Laminates for RFIC Applications.
Y. Gao[1], X. Wang[1] and N. Sun[1] *1. Northeastern University, Northeastern University, Boston, MA*

9:30

GE-04. Electric control of magnetic anisotropy in self-assembled vertical nanocomposites of $BiFeO_3$-$CoFe_2O_4$ grown on electromechanical substrates. *M. Rafique*[1,2], K. Dörr[3] and S. Manzoor[1] *1. Magnetism Laboratory, Physics Department, COMSATS Institute of Information Technology, Islamabad, Pakistan; 2. IFW, Dresden, Germany; 3. Institute for Physics, Martin Luther University Halle-Wittenberg, Halle, Germany*

9:42

GE-05. Magnetic Anisotropy of CFO nanopilars imbed in a BFO matrix using an external electric field. *R. Lopes*[1,2], M. Cain[1] and S. Lepadatu[1] *1. National Physical Laboratory, Teddington, United Kingdom; 2. University of Leeds, Leeds, United Kingdom*

9:54

GE-06. Influence of Ga-Concentration on the Electrical and Magnetic Properties of Magnetoelectric $BaTiO_3$/ $CoGa_xFe_{2-x}O_4$ Composite. *Y. Ni*[1], C.I. Nlebedim[1,2], Z. Zhang[1] and D.C. Jiles[1] *1. Department of Electrical and Computer Engineering, Iowa State Univeristy, Ames, IA; 2. Ames Laboratory, Ames, IA*

10:06

GE-07. Giant asymmetric exchange bias and magnetoelectric coupling in BFO nanocomposite. T. Maity[2], L. Keeney[2], S. Goswami[1], D. Bhattacharya[1] and *S. Roy*[2] *1. Nano-structured Materials Division, CGCRI, Kolkata, West Bengal, India; 2. Tyndall National Institute, Cork, Ireland*

10:18

GE-08. Coexistance of Magnetomechanical and Electromechanical Resonances in Multiferroic Composites. *L.M. Malkinski*[1] and R. Eskandari[1] *1. Advanced Materials Research Insititue, University of New Orleans, New Orleans, LA*

10:30

GE-09. Spin-chain incipient magnetodielectric coupling and phase-co-existence in geometrically frustrated single crystalline compound $Ca_3Co_2O_6$ *T. Basu*[1], K.K. Iyer[1], K. Singh[1,2], P.L. Paulose[1] and E.V. Sampathkumaran[1] *1. Condensed Matter Physics and Material Science, Tata Institute of Fundamental Research, Mumbai, Maharashtra, India; 2. 3UGC-DAE Consortium for Scientific Research, Indore - 452001, India*

10:42

GE-10. Isothermal electrical switching of exchange bias in Cr_2O_3/ Co/Pt thin film. *T. Ashida*[1], M. Oida[1], N. Shimomura[1], T. Nozaki[1], T. Shibata[2] and M. Sahashi[1] *1. Department of Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. TDK Corporation, Ichikawa, Japan*

10:54

GE-11. Phase transitions dynamics and far-infrared dielectric response in relaxor ferroelectric $Pb(In_{1/2}Nb_{1/2})O_3$-$Pb(Mg_{1/3}Nb_{2/3})O_3$-$PbTiO_3$ single crystals. *J. Zhu*[1,2], J. Zhang[1,2], G. Xu[3], X. Zhang[2], Z. Hu[2] and J. Chu[1,2] *1. Shanghai Institute of Technical Physics, Chinese Academy of Sciences, Shanghai, China; 2. Department of Electronic Engineering, East China Normal University, Shanghai, China; 3. Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China*

11:06

GE-12. Piezoelectric strain control of domain wall creep motion in perpendicular Pt/Co/Pt. *P.M. Shepley*[1], A. Rushforth[2], G. Burnell[1] and T.A. Moore[1] *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom*

11:18

GE-13. Magnetodielectric effect in $Eu_{0.4}Ba_{0.6}TiO_3$ *R. Mahendiran*[1] and K. Rubi[1] *1. Physics Dept, National University of Singapore, Singapore, Singapore*

FRIDAY MORNING 8:30

SOUTH PACIFIC 3 & 4

Session GF
HARD MAGNETS: MATERIALS AND PROCESSING II

Bala Balamurugan, Chair

8:30

GF-01. Novel Structures and Physics of High-Anisotropy Nanomagnets. ***(Invited)*** *D.J. Sellmyer*[1], B. Balasubramanian[1], B. Das[1], P. Mukherjee[1], R. Skomski[1] and G. Hadjipanayis[2] *1. Nebraska Center for Materials & Nanoscience and Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Physics & Astronomy, University of Delaware, Newark, DE*

9:06

GF-02. The synthesis and magnetic properties of Co(Fe)Pt nanoparticles. *J. Du*[1], B. Bian[1], W. Xia[1], J. Zhang[1], A. Yan[1] and J. Liu[2] *1. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Department of Physics, University of Texas at Arlington, Arlington, TX*

9:18

GF-03. Exchange-Coupled Ferromagnetism in the Co-Pt Self-Assembled Nanochessboard Structure. P. Ghatwai[1], E. Vetter[1], W.A. Soffa[1] and *J.A. Floro*[1] *1. Materials Science and Engineering, University of Virginia, Charlottesville, VA*

9:30

GF-04. Anisotropic $SmCo_5$/FeCo Core/Shell Nanocomposite Chips Prepared via Electroless Coating. *N. Poudyal*[1], K.H. Gandha[1], K.E. Elkins[1] and J. Liu[1] *1. Physics, University of Texas at Arlington, Arlington, TX*

9:42

GF-05. Simulating thermally-activated coercivity in core-shell permanent magnets. *S. Bance*[1], H. Oezelt[1], F. Reichel[1], M. Gusenbauer[1], A. Kovacs[1], J. Fischbacher[1] and T. Schrefl[1] *1. Technology, St. Poelten University of Applied Sciences, St. Poelten, Lower Austria, Austria*

9:54

GF-06. Magnetization Processes in Core/Shell Exchange-Spring Structures. *S. Jiang*[1] *1. Argonne National Laboratory, Argonne, IL*

10:06

GF-07. Optimization of energy product in planar exchange spring permanent magnets using three dimensional micromagnetic simulations. *J. Beik Mohammadi*[1], C.K. Mewes[1], T. Mewes[1], T. Suzuki[1] and A. Tuggle[1] *1. Physics, MINT, University of Alabama, Tuscaloosa, AL*

10:18

GF-08. Micromagnetism of MnBi:FeCo Thin Films. *T.H. Rana*[1,2], B. Balasubramanian[2], P. Manchanda[2], A. Kashyap[3] and R. Skomski[2] *1. Department of Physics, The LNM Institute of Information Technology, Jaipur, Rajasthan, India; 2. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska, lincoln, NE; 3. School of Basic Science, Indian Institute of Technology, MANDI, Himachal Pradesh, India*

10:30

GF-09. FORC Theory of Permanent Magnets. *G. Zimanyi*[1], D.A. Gilbert[1], K. Liu[1] and M. Winklhofer[2] *1. Physics, UC Davis, Davis, CA; 2. Earth & Environmental Sciences, Ludwig-Maximilians-Universität, Munchen, Germany*

10:42

GF-10. Remanence and energy product enhancement in isotropic $CoFe_2O_4$/FeCo composites. C. Granados[2], *A. Quesada*[1], F. Rubio-Marcos[1], M. Stingaciu[2], M. Christensen[2], F.J. Mompean[3], M. García-Hernández[3], F. Pedrosa[4], A. Bollero[4] and J. Fernández[1] *1. Electroceramics, Instituto de Cerámica y Vidrio, Madrid, Madrid, Spain; 2. Center for Materials Crystallography, Department of Chemistry and iNANO, Aarhus University, Aarhus, Denmark; 3. ICMM-CSIC, Madrid, Spain; 4. IMDEA Nanoscience, Madrid, Spain*

10:54

GF-11. Synthesis and Characterization of $CoFe_2O_4$ Nanoparticles with High Coercivity. *K. Gandha*[1], K. Elkins[1], N. Poudyal[1] and J. Liu[1] *1. Department of Physics, The University of Texas at Arlington, Arlington, TX*

11:06

GF-12. $CoFe_2O_4$ films with oriented dendritic arrays by using a combined method of electrochemical deposition and anode activating. *H. He*[1], N. Qian[1] and N. Wang[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices and School of Microelectronics and Solid-State Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

11:18

GF-13. Microstructural and magnetic properties of Nd-Fe-B alloys processed by equal-channel angular pressing. *E. Onal*[1], A. Lapovok[1], D. Kishimoto[2], D. Kato[2], P. Davies[3] and K. Suzuki[4] *1. Department of Materials Engineering, Monash University, Melbourne, VIC, Australia; 2. Toyota Motor Corporation, Susono, Shizuoka, Japan; 3. Department of Mechanical and Aerospace Engineering, Monash University, Melbourne, VIC, Australia; 4. Department of Materials Engineering, Monash University, Melbourne, VIC, Australia*

FRIDAY MORNING 8:30

HIBISCUS 1 & 2

Session GG
SPECIAL MATERIALS
Ron Goldfarb, Chair

8:30

GG-01. Magnetic rare-earth-based quasicrystals. ***(Invited)*** *A.I. Goldman*[1,2], T. Kong[1,2], A. Kreyssig[1,2], S. Bud'ko[1,2] and P.C. Canfield[1,2] *1. Ames Laboratory US DOE, Ames, IA; 2. Physics and Astronomy, Iowa State University, Ames, IA*

9:06

GG-02. Effective spin meron pairs in ferromagnetic multilayer elements. ***(Invited)*** *S. Wintz*[1], J. Raabe[2] and J. Fassbender[1,3] *1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Paul Scherrer Institut, Villigen, Switzerland; 3. Technische Universität Dresden, Dresden, Germany*

9:42

GG-03. Magnetic Frustration Dependence on Superexchange Bonds in Titanomagnetites. *W.M. Schoenthal*[1], M. Jaime[2], M. Diaz-Michelena[3], D.E. Laughlin[1] and M.E. McHenry[1] *1. Material Science & Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. National High Magnetic Field Lab, Los Alamos National Labs, Los Alamos, NM; 3. Payloads and Instrumentation Area, INTA-Instituto Nacional de Técnica Aeroespacial, Madrid, Spain*

9:54

GG-04. Size Effect of the Electrical Spin-state Switching of SCO Nanorods. *J. Dugay*[3], M. Giménez-Marqués[2], T. Kozlova[1], H.W. Zandbergen[1], E. Coronado[2] and H.S. van der Zant[3] *1. National Center for High Resolution Electron Microscopy, Kavli institute of Nano Science, Delft University of Technology, Delft, Lorentzweg 1, 2628 CJ, Netherlands; 2. 46980 Paterna, Instituto de Ciencia Molecular, Unversidad de Valencia, Valencia, Catedrático José Beltrán 2, Spain; 3. Molecular Electronics and Devices, Kavli Institute of Nano Science, Delft University of Technology, Delft, Lorentzweg 1, 2628 CJ, Netherlands*

10:06

GG-05. Structural Integrity of Single bis(Phthalocyaninato)-Neodymium(III) Molecules On Metal Surfaces with Different Reactivity. S. Fahrendorf[1,4], F. Matthes[1,4], C. Besson[3,4], N. Attodiresei[2,4], V. Caciuc[2,4], P. Kögerler[3,4], *D.E. Bürgler*[1,4], S. Blügel[2,4] and C.M. Schneider[1,4] *1. Peter Grünberg Institute (PGI-6), Forschungszentrum Jülich, Jülich, Germany; 2. Institute for Advanced Simulation (IAS-1), Forschungszentrum Jülich, Jülich, Germany; 3. Institute of Inorganic Chemistry, RWTH Aachen University, Aachen, Germany; 4. Jülich-Aachen Research Alliance (JARA-FIT), Jülich, Germany*

10:18

GG-06. Twofold spin reorientation and field induced incomplete phase transition in single crystal $Dy_{0.5}Pr_{0.5}FeO_3$ H. Wu[1], *S. Cao*[1], W. Ren[1], X. Qin[1], B. Kang[1] and J. Zhang[1] *1. Department of Physics, Shanghai University, Shanghai, China*

10:30

GG-07. Large non-collinearity and spin-reorientation in the novel Mn_2RhSn Heusler magnet. *O. Meshcheriakova*[1], S. Chadov[1], A. Nayak[1], U. Roessler[2], J. Kuebler[3], G. Andre[4], A.A. Tsirlin[1] and C. Felser[1] *1. Inorganic Chemistry, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 2. Institute for Theoretical Solid State Physics, Leibniz Institute for Solid State and Materials Research, Dresden, Germany; 3. Institute of Solid State Physics, Technical University of Darmstadt, Darmstadt, Germany; 4. Laboratoire Leon Brillouin, CEA-CNRS Saclay, Gif-sur-Yvette, France*

10:42

GG-08. *Towards Design of Carbon-based Materials with Strong Ferromagnetic Coupling.* *N.A. Tuan*[1,2], T.V. Nguyen[1], T.V. Do[1], P. Tuan Anh[1], N. Huy Sinh[1] and D. Hieu Chi[2] *1. Faculty of Physics, Hanoi University of Science, Vietnam National University, Hanoi, Hanoi, Vietnam; 2. Japan Advanced Institute of Science and Technology, Nomi, Ishikawa, Japan*

10:54

GG-09. Flexible $FeNi_3$-bacterial cellulose nanocomposite magnetic actuator and electrical conductor. *T. Vijayabaskaran*[1] and S. Vitta[1] *1. Department of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, Mumbai-400076, Maharashtra, India*

11:06

GG-10. The Interfacial Exchange coupling in cubic Heusler/ tetragonal Heusler Mn_3Ga Bilayers. *R. Ranjbar*[1,2], S. Mizukami[1], Q. Ma[1], A. Sugihara[1], K. Suzuki[1], X. Zhang[1], Y. Ando[2] and T. Miyazaki[1] *1. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Japan*

11:18

GG-11. Phase evolution and magnetic properties of $HoIn_{3-x}Co_x$ S. Chen[1], Y. Guo[1] and *Q. He*[1] *1. School of Energy Power and Mechanical Engineering, North China Electric Power University, Beijing, China*

Session GH
MAGNETIC SENSORS
Sy-Hwang Liou, Chair

8:30

GH-01. Advanced magnetoimpedance based biosensing using functionalized nanoparticles. ***(Invited)*** *M. Phan*[1]
1. Department of Physics, University of South Florida, Tampa, FL

9:06

GH-02. Effect of electrode composition on low frequency magnetic noise in MgO/CoFeB sensors with perpendicular anisotropy. *P. Wisniowski*[1], M. Dabek[1], J. Wrona[2], T. Stobiecki[1], S. Cardoso[3] and P. Freitas[3] *1. Electronics, AGH-UST, Krakow, Poland; 2. Singulus Technologies AG, Kahl am Main, Germany; 3. INESC-MN, Lisbon, Portugal*

9:18

GH-03. An efficient Device Model for GMR Sensors based on the Stoner-Wohlfarth Model. *F. Bruckner*[1], B. Bergmair[1], A. Buder[1], P. Palmesi[1], A. Satz[2] and D. Suess[1] *1. Institute of Solid State Physics, Christian Doppler Laboratory for Advanced Magnetic Sensing and Materials, Vienna, Vienna, Austria; 2. Infineon Technologies Austria AG, Villach, Carinthia, Austria*

9:30

GH-04. Reactivable passive radio-frequency identification (RFID) temperature indicator. *R. Windl*[1], T. Huber[1], F. Bruckner[1], C. Vogler[1], C. Abert[1], A. Satz[2] and D. Suess[1] *1. Institute of Solid State Physics, CD-Laboratory: Advanced Magnetic Sensing and Materials, University of Technology Vienna, Vienna, Austria; 2. Infineon Technologies Austria AG, Villach, Carinthia, Austria*

9:42

GH-05. Mixed anisotropy [Co/Pd]/Cu/CoFe/NiFeCo pseudo spin valves for high field sensor applications. *J.E. Davies*[1], M. Torija[1], C. Nordman[1] and P.G. Eames[1] *1. Advanced Technology Group, NVE Corp., Eden Prairie, MN*

9:54

GH-06. Magnetic Particle Detection in Unshielded Environment Using Orthogonal Fluxgate Gradiometer. *A.L. Elrefai*[1] and I. Sasada[1] *1. Applied Science for Electronics and Materials, Kyushu University, Kasuga, Fukuoka, Japan*

10:06

GH-07. Shapeable Magnetic Sensorics. *M. Melzer*[1], D. Makarov[1], D. Karnaushenko[1], I. Mönch[1], G. Lin[1], N. Pérez[1] and O.G. Schmidt[2,3] *1. Magnetic Nanomembranes, IFW Dresden, Dresden, Germany; 2. Institute for Integrative Nanosciences, IFW Dresden, Dresden, Germany; 3. Material Systems for Nanoelectronics, Chemnitz University of Technology, Chemnitz, Germany*

10:18

GH-08. Ultra Light-Weight and Highly Stretchable Magnetoelectronics for Imperceptible on-Skin Sensorics. *M. Melzer*[2], M. Kaltenbrunner[5,3], D. Makarov[2], T. Sekitani[5,4], T. Someya[5,6] and O.G. Schmidt[1,7] *1. Institute for Integrative Nanosciences, IFW Dresden, Dresden, Germany; 2. Magnetic Nanomembranes, IFW Dresden, Dresden, Germany; 3. Soft Matter Physics, JKU Linz, Linz, Austria; 4. The Institute of Scientific and Industrial Research, Osaka University, Osaka, Japan; 5. Electrical and Electronic Engineering and Informati on Systems, The University of Tokyo, Tokyo, Japan; 6. Exploratory Research for Advanced Technology (ERATO), Japan Science and Technology Agency (JST), Tokyo, Japan; 7. Material Systems for Nanoelectronics, Chemnitz University of Technology, Chemnitz, Germany*

10:30

GH-09. High frequency NEMS magnetoelectric resonator for broadband magnetic field detection. *T. Nan*[1], Y. Hui[1], M. Rinaldi[1] and N.X. Sun[1] *1. ECE, Northeastern University, Boston, MA*

10:42

GH-10. Design and Manufacturing of a Three-Dimensional, Ultra-thin Magnetic Field Sensor based on Giant Magnetoresistance. *R.M. Kruppe*[1], A. Wienecke[1] and L. Rissing[1] *1. Institute for Micro Production Technology of Leibniz Universitaet Hannover, Garbsen, Germany*

10:54

GH-11. Micromagnetic Analysis of Spin Polarization for the Design of Co/Cu Nanopillar GMR Sensors. *R.A. McCann*[2], T.C. Le[1] and H. Yoon[3] *1. Electrical and Electronics Engineering, Ho Chi Minh City University of Technology, Ho Chi Minh City, Vietnam; 2. Electrical Engineering, University of Arkansas, Fayetteville, AR; 3. Department of Engineering, Norfolk State University, Norfolk, VA*

11:06

GH-12. Modification of resonant modes in a magnetic disc by nanoparticles: opportunities for nano-oscillator based sensing. *M. Albert*[1], P. Metaxas[2], D. Chernyshenko[1], M. Bisotti[1], W. Wang[1], M. Beg[1] and H. Fangohr[1] *1. University of Southampton, Southampton, United Kingdom; 2. School of Physics, University of Western Australia, Perth, WA, Australia*

11:18

GH-13. Detecting magnetic nanoparticles with a magnonic crystal. *P. Metaxas*[1], M. Sushruth[1], R. Begley[1], J. Ding[2], R. Woodward[1], I. Maksymov[1], M. Albert[3], W. Wang[3], H. Fangohr[3], A. Adeyeye[2] and M. Kostylev[1] *1. School of Physics, University of Western Australia, Crawley, WA, Australia; 2. Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore; 3. Engineering and the Environment, University of Southampton, Southampton, United Kingdom*

FRIDAY MORNING 8:30

SEA PEARL 2-4

Session GI
INDUCTORS, TRANSFORMERS, AND NANOPARTICLES

Barry Zink, Co-Chair
Johan van Lierop, Co-Chair

8:30

GI-01. Eliminating closure domains in laminated Co-Zr-Ta-B films for on-chip inductor applications. *H. Wu*[1], U. Sajjad[2], D.S. Gardner[3], J. McCord[2] and H. Yu[1] *1. Arizona State University, Tempe, AZ; 2. Institute for Materials Science, Kiel University, Kiel, Germany; 3. Intel Corp., Santa Clara, CA*

8:42

GI-02. Magnetic Resonant Wireless Power Transfer for Propulsion of Implantable Micro-Robot. D. Kim[1], M. Kim[1], J. Yoo[1], H. Park[2] and *S. Ahn*[1] *1. CCS Graduate School for Green Transportation, Korea Advanced Institute of Science and Technology, Daejeon, Republic of Korea; 2. Electronic Engineering, The University of Suwon, Suwon, Republic of Korea*

8:54

GI-03. Mutual Inductance Calculation Method of Multiple Coils at an Arbitrary Spatial Pose. *J. Zhao*[1], X. Huang[1] and C. Chen[1] *1. Southeast University, Nanjing, China*

9:06

GI-04. Antiferromagnetic order and Neel temperature in $Co_{1-X}Mn_X$ (X=0-1) alloy nanostructures. *N. Ahmad*[1] *1. Institute of Physics, Beijing, Beijing, China*

9:18

GI-05. Quantitative comparison between constant stress along depth and a stress-depth gradient using frequency domain Barkhausen noise statistics. *O. Kypris*[1], C.I. Nlebedim[1] and D.C. Jiles[1] *1. Electrical and Computer Engineering, Iowa State University, Ames, IA*

9:30

GI-06. Statics and motion of domain walls in cylindrical nanowires. O. Fruchart[5,1], S. Da Col[5,1], *S. Jamet*[5,1], J. Toussaint[5,1], R. Afid[5,1], A. Locatelli[2], T. Mentes[2], L. Cagnon[5,1], B. Santos Burgos[2], N. Rougemaille[5,1], M. Bonfim[5,1], S. Pizzini[5,1], M. Darques[5,1], C. Thirion[5,1], A. Wartelle[5,1], J. Bachmann[3], S. Bochmann[3], P. Goering[4] and M. Lelonek[4] *1. Universite Joseph Fourier, CNRS, Grenoble, France; 2. Elletra Sincrotrone Trieste, Trieste, Italy; 3. Department of Chemistry, Univ. Erlangen, Erlangen, Germany; 4. SmartMembranes GmbH, Halle, Germany; 5. Institut Neel, CNRS, Grenoble, France*

9:42

GI-07. MOKE Characterization of Electrodeposited Y-Junction Magnetic Nanostructures. S. Pathak[2] and *M. Sharma*[1] *1. Atrenta India Pvt. Ltd., Noida, U.P., India; 2. Yonsei University, Seoul, Republic of Korea*

9:54

GI-08. Magnetic Core-shell Iron-Iron Oxide Nanowires. *A. Alfadhel*[1], Y.P. Ivanov[1], M. Alnassar[1] and J. Kosel[1] *1. Computer, Electrical and Mathematical Sciences and Engineering Division (CEMSE), King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia*

10:06

GI-09. Angular dependence of hysteresis scaling and coercivity for anisotropically distributed ferromagnetic nanoparticles in the paramagnetic matrix. *K. Miura*[1], S. Kobayashi[1], J. Szpunar[2], Y. Onuki[2] and Y. Kamada[1] *1. Materials and Engineering, Iwate University, Morioka, Iwate, Japan; 2. University of Saskatchewan, Saskatoon, SK, Canada*

10:18

GI-10. Withdrawn

FRIDAY MORNING 9:30

CORAL 4 (POSTERS)

Session GP
MAGNETIZATION DYNAMICS III (Poster Session)

Weigang Wang, Chair

GP-01. Magnetization Dynamics in Exchange-Coupled NiFe/IrMn/NiFe Trilayer Films. *J. Sohn*[1,2], H. Song[2], K. Lee[1], C. You[3] and S. Shin[1,2] *1. KAIST, Daejeon, Republic of Korea; 2. DGIST, Daegu, Republic of Korea; 3. Inha University, Incheon, Republic of Korea*

GP-02. Spin waves in micro-structured yttrium iron garnet thin film. *M. Jungfleisch*[1], W. Zhang[1], W. Jiang[1], H. Chang[2], J.E. Pearson[1], M. Wu[2] and A. Hoffmann[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Department of Physics, Colorado State University, Fort Collins, CO*

GP-03. Thickness and temperature dependent magnetodynamic properties of YIG thin films. *M. Haidar*[1], M. Ranjbar[1], M. Balinskiy[1], R.K. Dumas[1], S. Khartsev[2] and J. Åkerman[1,2] *1. Physics, Gothenburg University, Gothenburg, Sweden; 2. Department of Condensed Matter Physics and Materials Physics, School of ICT, Royal Institute of Technology (KTH), Kista, Sweden*

GP-04. Micromagnetic simulation of Snell's law for spin waves. *H. Hata*[1], T. Moriyama[1], K. Tanabe[2], K. Kobayashi[2], R. Matsumoto[3], S. Murakami[3], J. Ohe[4], D. Chiba[5] and T. Ono[1] *1. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 2. Department of Physics, Osaka University, Toyonaka, Osaka, Japan; 3. Department of Physics, Tokyo Institute of Technology, Meguro, Tokyo, Japan; 4. Department of Physics, Toho University, Funabashi, Chiba, Japan; 5. Department of Applied Physics, The University of Tokyo, Bunkyo, Tokyo, Japan*

GP-05. Ultrafast Magnetization Dynamics Investigation of the Verwey Transition in Fe_3O_4 thin films. *J. Sizeland*[1], X. Lu[1], D. Gilks[1], V. Lazarov[1], J. Wu[1], Y. Xu[2] and W. Liu[2] *1. Physics, University of York, York, North Yorkshire, United Kingdom; 2. Electronics, University of York, York, United Kingdom*

GP-06. Effect of spacer layer on the magnetization dynamics of permalloy/rare-earth/permalloy trilayers. C. Luo[1], D. Zhang[1], S. Jiang[1], J. Yue[1], *Y. Zhai*[1] and H. Zhai[2] *1. Department of Physics, Southeast University, Nanjing, China; 2. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China*

GP-07. Damping Factor Estimation using Spin Waves Attenuation in Permalloy Film. *T. Manago*[1], K. Yamanoi[2], S. Kasai[3] and S. Mitani[3] *1. Fukuoka University, Fukuoka, Japan; 2. Kyushu University, Fukuoka, Japan; 3. National Institute for Materials Science, Tsukuba, Japan*

GP-08. Frequency displacement nonreciprocity spin wave isolator with the coupling of magnetostatic waves in a ferromagnetic bilayer. *S. Shichi*[1], K. Matsuda[1], S. Okajima[1], T. Hasegawa[1], K. Fujimoto[1], T. Okada[1], N. Kanazawa[2], T. Goto[2], H. Takagi[2] and M. Inoue[2] *1. Devices Development Dept., Murata Manufacturing Co., Ltd., Nagaokakyo, Kyoto, Japan; 2. Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Toyohashi, Aichi, Japan*

GP-09. High angular resolution study on ferromagnetic resonance and standing spin waves by spin rectification. Y. Zhang[1], *X. Fan*[1], X. Zhao[1], J. Rao[1], H. Zhou[1] and D. Xue[1] *1. The Key Lab for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, Lanzhou, China*

GP-10. Research on Anomalous Hall Effect rectification in CoFeB thin films with perpendicular magnetic anisotropy.
W. Kong[1], *X. Fan*[1], H. Zhou[1] and D. Xue[1] *1. The Key Lab for Magnetism and Magnetic Materials of Ministry of Education, Lanzhou University, Lanzhou, China*

GP-11. Magnetic metamaterial analog of electromagnetically induced transparency and absorption.
L. Zhu[1], F. Meng[1], Q. Wu[1], L. Dong[2], J. Fu[1], K. Zhang[1] and G. Yang[1] *1. Harbin Institute of Technology, Harbin, China; 2. Qiqihar University, Qiqihar, China*

GP-12. Intrinsic Gilbert Damping Constant in epitaxial $Co_2Fe_{0.4}Mn_{0.6}Si$ Heusler alloys films .
A.L. Kwilu[1] *1. Applied Physics, Tohoku University, Sendai, Miyagi, Japan*

GP-13. Nonlinear regimes of magnetoelastic oscillations in multilayer structures.
V. Vlasov[1], M. Dianov[1], M. Kirushev[1], L. Kotov[1], D. Pleshev[2], V. Shcheglov[3] and V. Shavrov[3] *1. Syktyvkar State University, Syktyvkar, Russian Federation; 2. Syktyvkar Forest Institute (branch) of Saint-Petersburg State Forest Technical University named after S.M. Kirov, Syktyvkar, Russian Federation; 3. Institute of Radio Engineering and Electronics of RAS, Moscow, Russian Federation*

GP-14. The influence of changing shape particles on magnetic properties composite films for different concentration.
I.N. Razmyslov[1], V. Vlasov[1], L. Kotov[1] and A. Popova[1] *1. Radiophysics, Syktyvkar State University, Syktyvkar, Komi Republic, Russian Federation*

GP-15. Static and Dynamic Properties of Interacting Planar Magnetic Nanowire Arrays.
S. Khanal[1], N.M. Vargas[2,1], D. Adams[1], M. Stokes[1], D. Altbir[2], J.C. Denardin[2] and L. Spinu[1,3] *1. AMRI, University of New Orleans, New Orleans, LA; 2. Physics, University of Santiago de Chile, Santiago, Chile; 3. Physics, University of New Orleans, New Orleans, LA*

GP-16. Nonreciprocal spin waves in a magnonic crystal with in-plane static magnetization.
R. Verba[1], V. Tiberkevich[2] and A. Slavin[2] *1. Institute of Magnetism, Kyiv, N/A, Ukraine; 2. Oakland University, Rochester, MI*

Session GQ
MAGNETOELASTIC MATERIALS II
(Poster Session)

Manh-Huong Phan, Co-Chair
Nicoleta Lupu, Co-Chair

GQ-01. Mechanocaloric effects near a spin crossover transition. *K. Sandeman*[1,2] *1. Department of Physics, Brooklyn College, CUNY, Brooklyn, NY; 2. Department of Physics, Imperial College London, London, United Kingdom*

GQ-02. Epitaxial Ni-Mn-Sn thin films with out-of-plane composition gradient. *N. Teichert*[2], A. Behler[3,1], L. Helmich[2], A. Waske[3] and A. Hütten[2] *1. Department of Physics, Institute for Solid State Physics, Dresden University of Technology, Dresden, Germany; 2. Department of Physics, Thin Films and Physics of Nanostructures, Bielefeld University, Bielefeld, Germany; 3. Institute for Complex Materials, IFW Dresden, Dresden, Germany*

GQ-03. The microstructure, magnetostriction and hysteresis of $(Tb_{0.3}Dy_{0.7}Fe_{1.9})_{1-x}(Tb_{0.15}Ho_{0.85}Fe_{1.9})_x$ alloys. *B. Wang*[1], Y. Lv[1], G. Li[1], W. Huang[1], L. Weng[1] and B. Cui[2] *1. Electrical Engineering, Hebei University of Technology, Tianjin, China; 2. Electron Energy Corporation, Landisville, PA*

GQ-04. Enhanced magnetostrictive effect in epoxy-bonded $Tb_xDy_{0.9-x}Nd_{0.1}(Fe_{0.8}Co_{0.2})_{1.93}$ pseudo 1-3 particulate composites. J. Liu[1], Z. Pan[1], Z. Zhang[1], X. Song[1] and *W. Ren*[2] *1. Faculty of Materials Science & Chemical Engineering, Ningbo University, Ningbo, China; 2. Institute of Metal Research,Chinese Academy of Sciences, Shenyang, China*

GQ-05. Rhombohedral Magnetostriction in Dilute Iron(Co) Alloys. *N.J. Jones*[2], G. Petculescu[1], M. Wun-Fogle[2], J.B. Restorff[2], A.E. Clark[5], K.B. Hathaway[4], D. Schlagel[3] and T.A. Lograsso[3] *1. Physics Department, University of Louisiana at Lafayette, Lafayette, LA; 2. Metallurgy and Fasteners Branch, Naval Surface Warfare Center, Carderock Division, Bethesda, MD; 3. Materials Science and Engineering, Ames Laboratory, Ames, IA; 4. Spectrum Technology Group, Inc., Gaithersburg, MD; 5. Clark Associates, Adelphi, MD*

GQ-06. Influence of Zr doping on the structural, magnetic and magnetoelastic properties of Cobalt-ferrites. *V. Monaji*[1] and D. Das[1] *1. School of Engineering Sciences & Technology, University Of Hyderabad, Hyderabad, Telangana, India*

GQ-07. Suppression of martensitic transformation in $Fe_{49}Mn_{23.5}Ga_{27.5}$ melt spun ribbons. D. Zhang[1], H. Zhang[1,2], *M. Yue*[1], W. Wang[2], E. Liu[2] and G. Wu[2] *1. Beijing University of Technology, Beijing, China; 2. State Key Laboratory of Magnetism, Institute of Physics and Beijing National Laboratory for Condensed Mater Physics, Chinese Academy of Sciences, Beijing, China*

GQ-08. Hysteresis of the resonance frequency of magnetostrictive bending cantilevers. *M. Löffler*[1], A. Sutor[1] and R. Lerch[1] *1. Chair of Sensor Technology, Friedrich-Alexander-University Erlangen-Nuremberg, Erlangen, Germany*

GQ-09. Effects of phase transformation on the microstructures and magnetostriction of Fe-Ga and Fe-Ga-Zn ferromagnetic shape memory alloys . *Y. Lin*[1] *1. National Kaohsiung University of Applied Sciences, Kaohsiung, Taiwan*

GQ-10. First-principles study on the elastic properties of $Fe_{16-x}Ga_x$ alloys. L. Heyan[1], H. Wang[1], Y. Li[1], X. Dai[1], H. Luo[1] and *G. Liu*[1] *1. Hebei University of Technology, Tianjin, China*

GQ-11. Optical and Magneto-optical Studies of Martensitic Transformation in Ni-Mn-Ga Magnetic Shape Memory Alloys. *L. Beran*[1], P. Cejpek[1], M. Zahradnik[1], R. Antos[1], V. Holy[1], M. Veis[1], L. Straka[2] and O. Heczko[3] *1. Charles University in Prague, Prague, Czech Republic; 2. Aalto University, Aalto, Finland; 3. Institute of Physics, ASCR, Prague, Czech Republic*

GQ-12. Electromagnetic-mechanical-thermal fully coupled model for Terfenol-D devices. *W. Huang*[2,1], Z. Deng[1], M.J. Dapino[1] and B. Wang[2] *1. The Ohio State university, Columbus, OH; 2. Hebei University of Technology, Tianjin, China*

GQ-13. Characterization of magnetostrictive patch transducer using Fe-Ga alloy flakes-polymer composites. *B. Yoo*[1], S. Na[1] and D.J. Pines[1] *1. Aerospace Engineering, University of Maryland, College Park, MD*

GQ-14. Structural and Magnetic Properties of Ferromagnetic Shape Memory Alloy $Ni_{70+x}Mn_5Ga_{25-x}$ Nanowires Fabricated by Electrochemical Method. *K. Javed*[1], S. Ali[1], D. Shi[1], P. Liu[1], U. Khan[1] and X. Han[1] *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

GQ-15. Magnetization and magnetostriction of $L1_2$ ordered $Fe_{73}Ga_{27}$ *T. Ma*[1,2], S. Hu[1], X. Pan[1] and X. Ren[2] *1. Department of Materials Science and Engineering, Zhejiang Unviersity, Hangzhou, China; 2. Ferroic Physics Group, National Institute for Materials Science, Tsukuba, Japan*

GQ-16. Magnetic Domains and Surface Morphology of Twinned Microstructure of Ni-Mn-Ga Martensite Exhibiting Magnetic Shape Memory Effect. *V. Kopecký*[1], L. Fekete[1], J. Kopeček[1], L. Straka[2] and O. Heczko[1] *1. Functional Materials, Institute of Physics ASCR, Prague 8, Czech Republic; 2. Aalto University School of Science and Technology, Aalto, Finland*

Session GR
RARE-EARTH FREE AND L10 HARD MAGNETS II (Poster Session)

Jeffrey Shield, Co-Chair
Masaki Mizuguchi, Co-Chair

GR-01. Intrinsic magnetic properties of $L1_0$ FeNi obtained from meteorite NWA 6259. E. Poirier[7,6], *F.E. Pinkerton*[5], R. Kubic[5], R.K. Mishra[5], N. Bordeaux[4], A. Mubarok[3,8], L.H. Lewis[4], J.I. Goldstein[3], R. Skomski[2] and K. Barmak[1] *1. Department of Applied Physics and Applied Mathematics, Columbia University, New York, NY; 2. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 3. Department of Mechanical and Industrial Engineering, University of Massachusetts, Amherst, Amherst, MA; 4. Department of Chemical Engineering, Northeastern University, Boston, MA; 5. Chemical and Materials Systems Lab, GM Research and Development Center, Warren, MI; 6. Ford Motor Co., Dearborn, MI; 7. MEDA Engineering and Technical Services, Southfield, MI; 8. Deringer-Ney, Bloomfield, CT*

GR-02. Fabrication of $L1_0$-FeNi phase by sputtering of Fe/Ni multilayers and subsequent rapid thermal annealing. *T.Y. Tashiro*[2], M. Mizuguchi[2], T. Kojima[2], T. Koganezawa[1], M. Kotsugi[1] and K. Takanashi[2] *1. Japan Synchrotron Radiation Research Institute, Sayo, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

GR-03. Effect of annealing on the structure and magnetic properties of MnBi nanoflakes. Y. Li[1], *M. Yue*[1], P. Wang[1], D. Zhang[1] and W. Liu[1] *1. Beijing University of Technology, Beijing, China*

GR-04. Fabrication of MnBi magnet using warm extrusion method. *J. Cui*[1], M. Dahl[1], W. Xie[1], M. Bowden[1], E. Polikarpov[1] and J. Choi[1] *1. Pacific Northwest National Laboratory, Richland, WA*

GR-05. High temperature performance of SPS-compacted MnBi bulk magnets. *Y. Chen*[1], G. Gregori[2], A. Leineweber[1], F. Qu[3], C. Chen[2], T. Tietze[1], H. Kronmüller[1], G. Schütz[1] and E.J. Goering[1] *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany; 3. Institute of Materials Science, Universität Stuttgart, Stuttgart, Germany*

GR-06. Structure and hard magnetic properties of $Mn_{1.2}Ga$. J. Wei[1], R. Wu[1], Y. Xia[1], Y. Yang[1], H. Du[1], J. Han[1], C. Wang[1], Y. Yang[1] and *J. Yang*[1] *1. School of Physics, Peking University, Beijing, China*

GR-07. The phase structure and magnetic properties of $Mn_{70}Ga_{25}Ge_5$ alloy ribbons. *X. Zhao*[1,2], M. Tong[1], C. Shih[2], W. Chang[2], W. Liu[1] and Z. Zhang[1] *1. Shenyang National Laboratory for Materials Science and International Center for Materials Physics, Institute of Metal Research, Chinese academy of Sciences, Shenyang, Liaoning, China; 2. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan*

GR-08. Exchange spring magnetic behaviour in Mn-Ga thin films. *D. Ebke*[1], R. Sahoo[1], G. Rana[1], B. Ernst[1], A.K. Nayak[1], C. Felser[1], S. Selle[2] and T. Höche[2] *1. Inorganic Chemistry, Max-Planck-Institute for Chemical Physics of Solids, Dresden, Germany; 2. Fraunhofer Institute for Mechanics of Materials IWM, Halle, Germany*

GR-09. Magnetic properties of MnGa films sputtered on Si/SiO_2 and glass substrates. J. Feng[1], *W. Liu*[1], W. Gong[1], W. Ren[1], X. Zhao[1], C. Shih[2], W. Chang[2] and Z. Zhang[1] *1. Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, Liaoning, China; 2. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan*

GR-10. Synthesis and Magnetism of Single-Phase Mn-Ga Films. *W. Zhang*[1,2], S. Valloppilly[2], R. Skomski[1,2] and D. Sellmyer[1,2] *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE*

GR-11. Magnetic property improvement of sputter-prepared FePd films on glass substrates with W underlayer. *H.W. Chang*[1], W. Chen[2], D. Wei[2], M. Lin[1], C. Wang[1], C. Shih[3] and W. Chang[3] *1. Department of Applied Physics, Tunghai University, Taichung, Taiwan; 2. Institute of Mechatronic Engineering, National Taipei University of Technology, Taipei, Taiwan; 3. Department of Physi, National Chung Cheng University, Chia-Yi, Taiwan*

GR-12. Effect of growth temperature and stoichiometry on the magnetic properties and crystal structure of polycrystalline Fe-Pd films on glass substrate. *S. Hsiao*[1,2], Y. Chang[3], C. Chen[2], S. Liu[2], S. Chen[2], H. Lee[1] and J. Dhu[3] *1. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 2. Materials Science and Engineering, Feng Chia University, Taichung, Taiwan; 3. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

GR-13. Interlayer magnetic coupling behavior of microfabricated FePt/MgO/FePt circular dot arrays. *H. Makuta*[1], H. Iwama[1], M. Doi[1] and T. Shima[1] *1. Tohoku Gakuin University, Tagajo, Japan*

GR-14. X-ray magnetic circular dichroism investigation of $L1_0$-FePt / Co exchange-coupled composite media. *K. Son*[1], S. Tripathi[1], Y. Chen[1], T. Tietze[1], P. Nagel[3], S. Schuppler[3], E.J. Goering[1], D. Goll[2] and G. Schütz[1] *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Aalen University, Aalen, Germany; 3. Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*

GR-15. Fabrication of MnAl films with perpendicular anisotropy on Si substrates. *E.Y. Huang*[1] and M.H. Kryder[1] *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

GR-16. Magnetic and Magnetization Properties of $L1_0$ Ordered $Co_{1-x}Pt_x$ Thin Films and Nanowires *S. Riaz*[1] and S. Naseem[1] *1. Centre of Excellence in Solid State Physics, University of the Punjab, Lahore, Pakistan*

FRIDAY MORNING 9:30

CORAL 4 (POSTERS)

Session GS
SPIN TRANSFER TORQUES AND RELATED EFFECTS (Poster Session)

Connie Li, Chair

GS-01. A Modulation Adaptive Scheme based on a Spin-Torque Oscillator to Match Communication Channel Features. *V. Puliafito*[1], G. Campobello[1], G. Consolo[2], G. Finocchio[1] and B. Azzerboni[1] *1. Department of Electronic Engineering, Industrial Chemistry and Engineering, University of Messina, Messina, Italy; 2. Department of Mathematics and Computer Science, University of Messina, Messina, Italy*

GS-02. Stability and bifurcations in a spin-torque device with field-susceptible polarizer. *V. Sluka*[1] and A.M. Deac[1] *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*

GS-03. State Diagram of Dipolar Coupling Phase Locked Spin-Torque Oscillators. *M. Zhang*[1], D. Wei[1] and K. Gao[2] *1. School of Materials Science and Engineering, Tsinghua University, Beijing, Beijing, China; 2. Advanced Technology Development, Seagate Technology, Bloomington, MN*

GS-04. Micromagnetic study of synchronization of spin-torque nano-oscillators through dipolar interactions. *T. Wu*[2,1] and C. Lee[2,1] *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*

GS-05. High-resolution electron microscopy in spin pumping NiFe/Pt interface. *D. Ley Domínguez*[1], R.J. Sáenz-Hernández[1], A. Faudoa Arzate[1], Á.I. Arteaga Duran[1], C.E. Ornelas Gutiérrez[1], O.O. Solís Canto[1] and J.A. Matutes-Aquino[1] *1. Centro de Investigación en Materiales Avanzados, S.C., Chihuahua, Chihuahua, Mexico*

GS-06. Annealing effects on the spin injection characteristics in ferromagnet/insulator/semiconductor tunnel contacts. *J. Park*[1], C. Baek[1], K. Lee[1] and B. Park[1] *1. Materials Science and Engineering, KAIST, Daejeon, Yuseong-gu, Republic of Korea*

GS-07. Analysis and design of nonlocal spin devices with bias-induced spin-transport acceleration. *Y. Takamura*[2,1], T. Akushichi[2], Y. Shuto[2] and S. Sugahara[2] *1. Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan; 2. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

GS-08. Three-dimensional modeling of charge and spin transport in lateral spin valves. *G. Mihajlovic*[1] *1. HGST, a Western Digital Company, San Jose, CA*

GS-09. The Correlation of DC Voltage from Inverse-Spin and Anomalous Hall Effect. *S. Kim*[1], D. Kim[2], M. Seo[1], B. Park[2], Y. Choi[1] and S. Park[1] *1. Division of Materials Science, Korea Basic Science Institute, Daejeon, Republic of Korea; 2. Department of Materials Science and Engineering, KAIST, Daejeon, Republic of Korea*

GS-10. Ferromagnetic-resonance field shift in Py/Cu/Pt tri-layer films. *K. Kondou*[1], Y. Fukuma[1,2] and Y. Otani[1,3] *1. RIKEN-CEMS, Wako, Japan; 2. Frontier Research Academy for Young Researchers, Kyushu Institute of Technology, Iizuka, Fukuoka, Japan; 3. Institute for Solid State Physics,University of Tokyo, Kashiwa, Japan*

GS-11. Magnetic Field Bias-Free Spin Hall Oscillators with Tunable Charge Mediated Coupling. *S. Manipatruni*[1], D.E. Nikonov[1] and I. Young[1] *1. Components Research, Intel Corporation, Portland, OR*

GS-12. Room temperature polarimeter based on the inverse spin Hall effect. *L. Nádvorník*[1,2], J.A. Haigh[3], J. Wunderlich[1,3], K. Olejník[1], V. Novák[1], A.C. Irvine[4] and T. Jungwirth[1,5] *1. Institute of Physics, Academy of Sciences of the Czech Republic, Prague, Czech Republic; 2. Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic; 3. Hitachi Cambridge Laboratory, Cambridge, United Kingdom; 4. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 5. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom*

GS-13. Temperature dependence of spin Hall magnetoresistance in platinum and other amorphous metals deposited on YIG thin films. *S. Marmion*[1], M. Ali[1], D. Williams[2] and B.J. Hickey[1] *1. School of Physics, University of Leeds, Leeds, United Kingdom; 2. Hitachi Laboratory Cambridge, Cambridge, United Kingdom*

GS-14. Unconventional Large Spin Hall Angle in Pt and Iron Nitride Bilayer. *H. Li*[1], M. Jamali[1], X. Li[1] and J. Wang[1] *1. University of Minnesota, Minneapolis, MN*

GS-15. High Efficiency of the Spin-orbit Torques Induced Domain Wall Motion in Tb/Co Multilayer Wires. *B. Do*[1,2] and H. Awano[1] *1. Toyota Technological Institute, Nagoya, Japan; 2. Institute of Materials Science, VAST, Hanoi, Vietnam*

GS-16. Investigation of Spin Current Induced Tunable Damping in $Pt/Ni_{81}Fe_{19}$ Bi-layer Film Using Time Resolved Kerr Microscopy . *A. Ganguly*[1], R. Robinson[2], A. Haldar[1], S. Jaiswal[2], J. Sinha[1], A. Hindmarch[2], D. Atkinson[2] and A. Barman[1] *1. Department of Condensed Matter Physics and Material Sciences, S N Bose National Centre For Basic Sciences, Kolkata, West Bengal, India; 2. Department of Physics, Durham University, Durham, United Kingdom*

FRIDAY MORNING 9:30

CORAL LOUNGE (POSTERS)

Session GT
MAGNETIC FLUIDS AND SEPARATIONS (Poster Session)

Norman Wereley, Chair

GT-01. Magnetorhelogy of Iron associated magnetic metal-organic framework nanoparticle. X. Quan[1], Y. Liu[1,2] and *H. Choi*[1] *1. Department of Polymer Science and Engineering, Inha Univ, Incheon, Republic of Korea; 2. State Key Laboratory of Metastable Materials Science and Technology, Yanshan University, Qinhuangdao, China*

GT-02. Closed-circuit magnetic separation of nanoparticles on a packed bed of spheres. C. Magnet[1], M. Akouala[1], *P. Kuzhir*[1], G. Bossis[1] and N.M. Wereley[2] *1. Laboratory of Condensed Matter Physics, Nice, France; 2. University of Maryland, Martin Hall, MD*

GT-03. Experiment and Analysis of Magnetic Separation System Using Traveling Wave in Flowing Water. *K. Lee*[1], M. Baek[1] and I. Park[1] *1. Electronic and Electrical Engineering, Sungkyunkwan University, Suwon, Republic of Korea*

GT-04. Microscopic observation of behavior of magnetic particle clusters during torque transfer between magnetic poles. *T. Oshima*[1], K. Nagato[1], S. Washino[2], A. Kuwayama[2], H. Okada[2], T. Matsushima[3], S. Takagi[1], M. Nakao[1] and T. Hamaguchi[1] *1. Mechanical Engineering, University of Tokyo, Tokyo, Japan; 2. Denso, Aichi, Japan; 3. Tsukuba University, Chiba, Japan*

GT-05. Ferrohydrodynamic Simulation Considering Fluid Dynamics and Magnetics for Magnetic Particle Separation. S. Noguchi[1] and *S. Kim*[2] *1. Hokkaido University, Sapporo, Japan; 2. Okayama University, Okayama, Japan*

GT-06. Rheological Characterization of a Magnetorheological Ferro-Fluid. *L. Armijo*[2], L.A. Powell[1] and N.M. Wereley[1] *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD; 2. Center for High Technology Materials, University of New Mexico, Albuquerque, NM*

GT-07. Induced Negative Viscosity Effect on a Polymer-based Ferrofluid. *L. Sanchez-Botero*[1], A. Garcia[2] and J. Hinestroza[1] *1. Department of Fiber Science, Cornell University, Ithaca, NY; 2. Department of Physics, Cornell University, Ithaca, NY*

GT-08. Maximizing Semi-Active Vibration Isolation Utilizing a Magnetorheological Damper with an Inner Bypass Configuration. *X. Bai*[1], N.M. Wereley[2] and W. Hu[2] *1. Dept. of Vehicle Engeering, Hefei University of Technology, Hefei, Anhui, China; 2. Dept. of Aerospace Engineering, University of Maryland, College Park, MD*

GT-09. Disconnection-reconnection dynamics of ferromagnetic microcube chains under magnetic field control. *S. Lee*[2,4], J. Shim[2], Y. Lee[3], S. Park[4], S. Sacanna[1], G. Yi[5] and D. Kim[2] *1. Department of Chemistry, New York University, New York, NY; 2. Physics, Chungbuk national University, Cheongju, Chungcheongbuk-do, Republic of Korea; 3. Center for Research Facilities, Chungnam National University, Daejeon, Chungcheongnam-Do, Republic of Korea; 4. Division of Material Science, Korea Basic Science Institute, Daejeon, Chungcheongnam-Do, Republic of Korea; 5. School of Chemical Engineering, Sungkyunkwan Universtiy, Seoul, Republic of Korea*

GT-10. Squeeze Strengthening of Magnetorheological Fluids Using Mixed Mode Operation. *A.C. Becnel*[1], N.M. Wereley[1], W. Hu[1] and S. Sherman[1] *1. Aerospace Engineering, University of Maryland, College Park, MD*

GT-11. Scaling Temperature Dependent Rheology of Magnetorheological Fluids. S.G. Sherman[1], L.A. Powell[1], A.C. Becnel[1] and *N.M. Wereley*[1] *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD*

GT-12. Vertical Axis Inductance Monitoring System Characterizes Stratification of an Opaque Highly Stable Magnetorheological Fluid. *L. Xie*[1,2], L.A. Powell[1], C. Liao[2] and N.M. Wereley[1] *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD; 2. Key Laboratory of Opto-electronic Technology & Systems, Chongqing University, Chongqing, China*

GT-13. The influence and mechanism of chain length of modifier on the stability of MR fluids. *H. Cheng*[1] and C. Liu[1] *1. Wuhan University of Technology, Wuhan, Hubei, China*

GT-14. Functional Magnetic Nanoparticles for Microalgal Biomass Harvesting. *C. Liu*[1], C. Guo[1], S. Wang[1], F. Wang[1] and Y. Hu[1] *1. National Key Laboratory of Biochemical Engineering, Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China*

GT-15. Effects of a superparamagnetic state of particles of a paraffin based magnetic colloid. *S.A. Kunikin*[1], Y. Dikansky[1], A. Ispiryan[1] and A. Radionov[2] *1. Mathematics and Natural Sciences, North-Caucasus Federal University, Stavropol, Stavropol province, Russian Federation; 2. Ferrohydrodynamics, Nikolaev, Ukraine*

FRIDAY MORNING 9:30

CORAL LOUNGE (POSTERS)

Session GU
MULTILAYERS AND THIN FILMS III (Poster Session)

Adekunle Adeyeye, Chair

GU-01. Magnetic Properties for Monatomic Layer-Controlled Co/Ni Epitaxial Superlattices. A. Shioda[1], J. Shimada[1], *T. Seki*[1] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan*

GU-02. Interface structure and magnetism of CoFe/A1-FePt films for perpendicular spintronic device. *X. Guan*[1,2], X. Cheng[1,2], T. Huang[1,2] and X. Miao[1,2] *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, Hubei, China; 2. Wuhan National Laboratory for Optoelectronics, Wuhan, Hubei, China*

GU-03. Compositional modulated atomic layer stacking and uniaxial magnetocrystalline anisotropy of CoPt alloy sputtered films with close-packed plane orientation. *S. Saito*[1], N. Nozawa[1], S. Hinata[1], M. Takahashi[2], K. Shibuya[3], K. Hoshino[3] and S. Awaya[3] *1. Electronic Engineering, Tohoku Univ., Sendai, Miyagi, Japan; 2. New Industry Creation Hatchery Center, Tohoku Univ., Sendai, Miyagi, Japan; 3. Foundation for Promotion of Material Science and Technology of Japan, Tokyo, Japan*

GU-04. Maximizing domain-wall speed via magnetic anisotropy adjustment in Pt/Co/Pt films. *D. Kim*[1], S. Yoo[1,2], D. Kim[1], K. Moon[1,3], S. Je[1], C. Cho[1], B. Min[2] and S. Choe[1] *1. Center for Subwavelength Optics and Department of Physics, Seoul National University, Seoul, Republic of Korea; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Republic of Korea; 3. Korea Research Institute of Standards and Science, Daejeon, Republic of Korea*

GU-05. Giant perpendicular magnetocrystalline anisotropy of 3*d* transition-metal thin films on MgO. *K. Nakamura*[1], T. Akiyama[1] and T. Ito[1] *1. Physics Engineering, Mie University, Tsu, Japan*

GU-06. Structural and Magnetic Properties of Co-based Spin Quantum Cross Devices Utilizing Stray Magnetic Fields. *H. Kaiju*[1], H. Kasa[1], T. Komine[2], T. Abe[1], S. Mori[1], T. Misawa[1] and J. Nishii[1] *1. Research Institute for Electronic Science, Hokkaido University, Sapporo, Hokkaido, Japan; 2. Faculty of Engineering, Ibaraki University, Hitachi, Ibaraki, Japan*

GU-07. Atomic structures and local electronic properties of modified Fe_3O_4(001) film surfaces. *S. Hiura*[1], A. Ikeuchi[1], A. Subagyo[1] and K. Sueoka[1] *1. Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Japan*

GU-08. Correlation between Dzyaloshinskii-Moriya interaction and spin-orbit torques in Pt/Co/Pt wires. S. Yun[1], S. Yoo[1,2], D. Kim[1], D. Kim[1], *H. Whang*[1], B. Min[2] and S. Choe[1] *1. Department of Physics, Seoul National University, Seoul, Republic of Korea; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Republic of Korea*

GU-09. Temperature controllable exchange bias in Fe/FeRh heterostructures. *I. Suzuki*[1], M. Itoh[1] and T. Taniyama[1] *1. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

GU-10. Kinetics of first order magnetostructural transition in single crystalline FeRh thin film. *W. Lu*[1], Y. Song[1], X. Li[2] and B. Yan[1] *1. School of Materials Science and Engineering, Tongji University, Shanghai, China; 2. School of Materials Science and Engineering, University of Shanghai for Science and Technology, Shanghai, China*

GU-11. Field and current switching in perpendicular magnetic MgO/CoFeB/Ta and Ta/CoFeB/MgO structures. *C. Cheng*[1], W. Tzeng[1] and G. Chern[1] *1. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan*

GU-12. Structures and magnetic properties of Co/Si(100) with rubrene insertion. C. Hsu[1], Y. Jhou[1], C. Yang[1] and *J. Tsay*[1] *1. Department of Physics, Natl Taiwan Normal University, Taipei, Taiwan*

GU-13. Thermal energy mediated magnetic anisotropy variation of $CoFe_2O_4$ films[§] D. Lee[1], C. Cho[1], J. Bae[2] and *S. Park*[1] *1. Physics, Pusan National University, Busan, Republic of Korea; 2. Busan Center, Korea Basic Science Institute, Busan, Republic of Korea*

GU-14. Atomic layer deposition of magnetite nanostructures with controlled magnetism. *M. Liu*[2], Y. Zhang[2], X. Wu[2], W. Ren[2] and Z. Ye[2,1] *1. Department of Chemistry, Simon Fraser University, Burnaby, BC, Canada; 2. School of Electrical and Information Engineering, Xi'an Jiaotong University, Xi'an, Shannxi, China*

GU-15. Iron oxide thin films: MBE growth in low oxygen pressure and electrical and magnetic properties. D. Dung[1], *S. Cho*[1], F. Wuwei[1], D. Thiet[1] and Y. Shin[1] *1. Department of Physics, University of Ulsan, Ulsan, Republic of Korea*

GU-16. Magnetic anisotropy and magnetic moment of tetragonal distorted FeCo films on $L1_0$ FePt underlayer. *B. Wang*[1], H. Oomiya[1], A. Arakawa[1], T. Hasegawa[1], H. Sasaki[1] and S. Ishio[1] *1. Department of Materials Science and Engineering, Akita University, Akita, Akita, Japan*

FRIDAY MORNING 9:30

CORAL LOUNGE (POSTERS)

Session GV
POWER AND CONTROL MAGNETICS (Poster Session)

Ziyao Zhou, Chair

GV-01. Magneto-resistive Sensor for Nondestructive Testing of Rotor Blade Tips. *E. Cardelli*[1], A. Faba[1], R. Marsili[1], G. Rossi[1] and R. Tomassini[1] *1. Ingegneria, Universita di Perugia, Perugia, Italy*

GV-02. A crawling and drilling microrobot driven by an external precessional magnetic field. S. Kim[1], *G. Jang*[1], S. Jeon[1] and J. Nam[1] *1. Dept of Mechanical Convergence Engineering, Hanyang University, Seoul, Republic of Korea*

GV-03. Multiple-Receptor Wireless Power Transfer for Magnetic Sensors Charging on Mars via Magnetic Resonant Coupling. *C. Liu*[1], K. Chau[1], Z. Zhang[1] and C. Qiu[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China*

GV-04. An Orientated Approach for Wireless Charging System in Electric Vehicle Application . *F. Lin*[1], K.T. Chau[1] and C. Liu[1] *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong*

GV-05. Determination of Ferrite Magnet Shape Considering Magnetization Process. *K. Kim*[1], J. Lee[2], S. Chai[1] and J. Hong[1] *1. Automotive engineering, Hanyang Univ., Seoul, Republic of Korea; 2. KETI, Bucheon, Republic of Korea*

GV-06. Study on Magnetic Flux Cancellation Phenomena in Multiple-transmitter Wireless Charging System. *C. Qiu*[1], K. Chau[1], C. Liu[1] and Z. Zhang[1] *1. The University of Hong Kong, Hong Kong, Hong Kong*

GV-07. Optimization of a thermomagnetic motor. *V. Franzitta*[1], G. Cipriani[1], V. Di Dio[1], F. Raimondi[1] and A. Viola[1] *1. DEIM, University of Palermo, Palermo, Italy*

GV-08. Thermoelectric property of ferromagnetic nanowire enhanced by substrate roughness. *H. Huang*[1] and Z. Wei[2] *1. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan; 2. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*

GV-09. Performance of improved magnetostrictive vibrational power generator, simple and high power output for practical applications. *T. Ueno*[1] *1. Kanazawa University, Kanazawa, Japan*

GV-10. A magnetic microrobot with anchoring and drilling capabilities in tubular environments actuated by external magnetic fields. *K. Choi*[1], G. Jang[1], S. Jeon[1] and J. Nam[1] *1. Dept of Mechanical Engineering, Hanyang University, Seoul, Republic of Korea*

GV-11. Three-dimensional control methodology of the magnetic force generated by magnetic navigation system for the precise manipulation of microrobots in human blood vessels. J. Nam[1], *G. Jang*[1], S. Jeon[1] and W. Lee[1] *1. Dept of Mechanical Engineering, Hanyang University, Seoul, Republic of Korea*

GV-12. Passive Shielding Effect on Space Profile of Magnetic Field for Wireless Power Transfer to Vehicles. *T. Batra*[1] and E. Schaltz[1] *1. Department of Energy Technology, Aalborg University, Aalborg, Denmark*

GV-13. Dynamic Hysteretic Sensing Model of Bending-Mode Galfenol Transducer. *S. Cao*[1], J. Zheng[1], J. Sang[1], P. Zhang[1] and B. Wang[1] *1. Hebei University of Technology, Tianjin, China*

GV-14. A novel magnetic conversion analysis for heterogeneous magnetic materials using a virtual permeability. *J. Seo*[1] and S. Rhyu[1] *1. KETI, Yakdae Wonmigu Bucheon, Republic of Korea*

GV-15. A Novel Claw Pole Memory Machine for Wide-Speed-Range Applications. Y. Gong[1] and *L. Jian*[1] *1. Electrical and Electronic Engineering, South University of Science and Technology of China, Shenzhen, Guangdong, China*

GV-16. Design and Analysis of a Direct-Drive Wind Power Generator with Ultra-High Torque Density. J. Wei[1] and *L. Jian*[1] *1. Electrical and Electronic Engineering, South University of Science and Technology of China, Shenzhen, Guangdong, China*

Session GW
SPIN DYNAMICS IN NANOSTRUCTURES
(Poster Session)

Hendrik Ohldag, Co-Chair
Stephane Mangin, Co-Chair

GW-01. Optimization of switching times of magnetic nanoelements. Z. Xin[2], H. Oezelt[2], A. Kovacs[2], J. Fischbacher[2], S. Bance[2] and *T. Schrefl*[1,2] *1. Center for Integrated Sensor Systems, Danube University Krems, Wiener Neustadt, Austria; 2. St. Poelten University of Applied Sciences, St. Poelten, Austria*

GW-02. THz oscillations in antiferromagnetically coupled sublattices, multilayers and heterostructures mediating all-optical helicity-dependent magnetic switching. E. Oniciuc[1], L. Stoleriu[1], D. Cimpoesu[1] and *A. Stancu*[1] *1. Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*

GW-03. Analysis of reliable ultra-fast spin-torque switching under transverse bias magnetic fields. *M. d'Aquino*[1], S. Perna[2], C. Serpico[2], G. Bertotti[3] and I.D. Mayergoyz[4] *1. Dipartimento di Ingegneria, Università di Napoli "Parthenope", Napoli, Italy; 2. Dipartimento di Ingegneria Elettrica e delle Tecnologie dell'Informazione, Università degli Studi di Napoli Federico II, Napoli, Napoli, Italy; 3. Istituto Nazionale di Ricerca Metrologica, Torino, Torino, Italy; 4. ECE Department and UMIACS, University of Maryland, College Park, MD*

GW-04. Transient chaos in nanomagnets subject to time-harmonic excitations. *C. Serpico*[1], G. Bertotti[2], I. Mayergoyz[3], M. d'Aquino[4], S. Perna[1], A. Quercia[1] and P. Ansalone[2] *1. University of Naples 'Federico II', Napoli, Napoli, Italy; 2. INRIM, Torino, Torino, Italy; 3. University of Maryland, College Park, MD; 4. University of Naples 'Parthenope', Napoli, Napoli, Italy*

GW-05. Stochastic magnetization process of antivortex formation in X-shaped cross wire investigated by magnetoresistance measurement and magnetic force microscopy. *M. Goto*[1], T. Tanazawa[1], K. Sekiguchi[1,2] and Y. Nozaki[1,3] *1. Department of Physics, Keio University, Kanagawa, Japan; 2. JST PRESTO, Tokyo, Japan; 3. JST CREST, Tokyo, Japan*

GW-06. Static and Dynamic Properties of Magnetic Antivortices in Patterned Permalloy Nanomagnets. *V. Karakas*[1], M. Mete[1], A.T. Habiboğlu[1], A. Coskuner[1], A. Gokce[1], O. Ozatay[1], A. Giordano[2], M. Carpentieri[5], G. Finocchio[2], F. Celegato[4] and P. Tiberto[3] *1. Physics, Bogazici University, Istanbul, Turkey; 2. Department of Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 3. Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 4. CNR-Institute of Materials for Electronics and Magnetism (IMEM), Parma, Italy; 5. Dipartimento di Elettrotecnica ed Elettroni ca Politecnico di Bari, Bari, Italy*

GW-07. Observing antiferromagnetic domain dynamics in NiO with time resolved x-ray scattering techniques. *C. Giles*[2,1], R.F. Vescovi[2], K.R. Tasca[2], C. Adriano[2], H. Wen[1], Y. Li[1] and D.A. Walko[1] *1. Advanced Photon Source, Argonne National Laboratory, Lemon, IL; 2. Instituto de Fisica Gleb Wataghin, Universidade Estadual de Campinas, Campinas, Sao Paulo, Brazil*

GW-08. Current-induced dynamics of bubble domains in TbFeCo wires. *M. Tanaka*[1], H. Kanazawa[1], S. Sumitomo[1], S. Honda[2], K. Mibu[1] and H. Awano[3] *1. Nagoya Institute of Technology, Nagoya, Japan; 2. University of Tsukuba, Tsukuba, Ibaraki, Japan; 3. Toyota Technological Institute, Nagoya, Aichi, Japan*

GW-09. Control of Dzyaloshinskii-Moria interaction by adjusting asymmetric layer structure. *D. Kim*[1], D. Kim[1], J. Moon[1], S. Yoo[1,2], B. Min[2] and S. Choe[1] *1. Center for Subwavelength Optics and Department of Physics, Seoul National University, Seoul, Republic of Korea; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Republic of Korea*

GW-10. Vortex domain wall chirality tailored by multiple asymmetric notches. J. Brandão[1], F. Garcia[1], A.d. Mello[1], *P. Soledade*[1] and L. Sampaio[1] *1. APL, Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Rio de Janeiro, Brazil*

GW-11. Realization of field-free magnetic vortex oscillator based on spin valve structure with triangular cross-section. *T. Zeng*[1], Y. Zhou[2], K. Lin[3], P. Lai[1] and P. Pong[1] *1. Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong; 2. Physics, The University of Hong Kong, Hong Kong, Hong Kong; 3. Materials Engineering, National Chung Hsing University, Taichung, Taiwan*

GW-12. Effect of Dzyaloshinskii-Moriya interaction on the magnetic vortex oscillator driven by spin-polarized current. S. Chen[1], S. Zhang[1], Q. Zhu[1], Q. Zheng[1], X. Liu[1], J. Wang[1] and *Q. Liu*[1] *1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou, China*

GW-13. Experimental and computational study of the combined effect of spin transfer torque and Ampere field in vortex oscillators. *D. Olivenza*[2], L. Lopez-Diaz[2], L. Torres[2], M. Muñoz[3], J. Prieto[1] and M. Carpentieri[4] *1. ISOM - Universidad Politécnica de Madrid, Madrid, Spain; 2. Applied Physics, University of Salamanca, Salamanca, Spain; 3. Instituto de Microelectrónica de Madrid (CNM, CSIC), Madrid, Spain; 4. Politecnico di Bari, Bari, Italy*

GW-14. Tabletop MOKE detection of magnetic vortex core reversal. *G. Dieterle*[1], J. Gräfe[1], M. Noske[1], A. Gangwar[1,2], M. Weigand[1], H. Stoll[1], G. Woltersdorf[3], C. Back[2] and G. Schütz[1] *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Department of Physics, University of Regensburg, Regensburg, Germany; 3. Department of Physics, Martin Luther University Halle, Halle, Germany*

GW-15. Heat-assisted Magnetic Vortex Core Polarities Switching in Coupled Magnetic Dots. *J. Ding*[1], B.M. Jungfleisch[1], S. Jain[1], J.E. Pearson[1] and V. Novosad[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL*

GW-16. Duffing oscillation induced magnetic vortex core reversal. *C. Hwang*[1], B. Chun[1], W. Kim[1], Z. Qiu[2] and K. Moon[1] *1. Center of Nano measurements, Korea Research Institute of Standards and Science, Daejeon, Republic of Korea; 2. Physics Department, University of California at Berkeley, Berkeley, CA*

FRIDAY AFTERNOON 1:30

CORAL 3

Session HA
MAGNETIC MATERIALS FOR ENERGY
Karl Sandeman, Chair

1:30

HA-01. Origin of the Giant Magnetocaloric Effect. ***(Invited)*** *R.A. de Groot*[1] *1. IMM, ESM, Nijmegen, Gelderland, Netherlands*

2:06

HA-02. From Energy Product to Energy Efficiency. ***(Invited)*** *J. Liu*[1] *1. University of Texas-Arlington, Arlington, TX*

2:42

HA-03. Challenges for Magnetic Materials in Vehicle Electrification. ***(Invited)*** *M.A. Willard*[1], M. Daniil[1], S. Lan[1] and K.E. Knipling[2] *1. Materials Science and Engineering, Case Western Reserve University, Cleveland, OH; 2. Naval Research Laboratory, Washington, DC*

3:18

HA-04. Recent progress of magnetocaloric effect and magnetic refrigerant materials of Mn- and Fe-based compounds. ***(Invited)*** *H. Wada*[1], T. Takahara[1], K. Katagiri[1], T. Ohnishi[2] and K. Yamashita[2] *1. Department of Physics, Kyushu University, Fukuoka, Japan; 2. Dyden Cooperation, Saga, Japan*

3:54

HA-05. Thermal-Magnetic Energy Harvesting, Analytical & Experimental. ***(Invited)*** *G. Carman*[1] *1. MAE Deprt, UCLA, Los Angeles, CA*

FRIDAY AFTERNOON 1:30

CORAL 5

Session HB
SPIN PUMPING AND THE SPIN SEEBECK EFFECT

Jean-Marie George, Chair

1:30

HB-01. Spin pumping and the importance of the proximity effect in YIG/Pt interface. *M. Härtinger*[1], J. Lotze[2,3], M. Weiler[2], S. Geprägs[2], H. Huebl[2], C.H. Back[1], S.T. Goennenwein[2] and G. Woltersdorf[1,4] *1. Department of Physics, University of Regensburg, Regensburg, Germany; 2. Walter-Meißner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 3. Department of Physics, Technische Universität München, Garching, Germany; 4. Department of Physics, Martin-Luther-Universität Halle, Halle, Germany*

1:42

HB-02. Spin pumping by Bose-Einstein condensate of magnons in YIG/Pt bilayers. *D.A. Bozhko*[1,2], A. Kirihara[1,3], A.V. Chumak[1], B. Hillebrands[1] and A.A. Serga[1] *1. Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. Graduate School Materials Science in Mainz, Kaiserslautern, Germany; 3. Smart Energy Research Laboratories, NEC Corporation, Tsukuba, Japan*

1:54

HB-03. Spin pumping voltage generated in magnetic hybrid structures is still in need of a clear interpretation. *A. Azevedo*[1], J.B. Mendes[1], R.O. Cunha[1], O. Alves-Santos[1], L.H. Vilela-Leão[1], R.L. Rodríguez-Suárez[2] and S.M. Rezende[1] *1. Departamento de Fisica, UFPE, Recife, PE, Brazil; 2. Facultad de Física, Pontificia Universidad Católica de Chile, Santiago, Chile*

2:06

HB-04. Quantum well state oscillation of spin pumping in Fe/Au/Pd(001) heterostructures. *E. Montoya*[1], B. Heinrich[1] and E. Girt[1] *1. Department of Physics, Simon Fraser University, Burnaby, BC, Canada*

2:18

HB-05. DC voltage generation by shortwavelength microwave magnons. Y.V. Kobljanskyj[2], G.A. Melkov[2], *A.A. Serga*[1], A.N. Slavin[3] and B. Hillebrands[1] *1. Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. Faculty of Radiophysics, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 3. Department of Physics, Oakland University, Rochester, MI*

2:30

HB-06. Simultaneous detection of the Spin-Hall Magnetoresistance and Spin-Seebeck Effect in Platinum on Yttrium Iron Garnet. *N. Vlietstra*[1], J. Shan[1], J. Ben Youssef[2] and B.J. van Wees[1] *1. Physics of Nanodevices, Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands; 2. Laboratoire de Magnétisme de Bretagne, CNRS, Université de Bretagne Occidentale, Brest, France*

2:42

HB-07. Separation of the inverse spin Hall effect and anomalous Nernst effect in a single ferromagnetic metal using the spin Seebeck effect. *S.M. Wu*[1], J. Hoffman[1], J.E. Pearson[1] and A. Bhattacharya[1] *1. Materials Science Division, Argonne National Laboratory, Argonne, IL*

2:54

HB-08. Spin Seebeck Thermoelectrics. A.B. Cahaya[1], *O.A. Tretiakov*[1] and G.E. Bauer[1] *1. IMR, Tohoku University, Sendai, Japan*

3:06

HB-09. Light-induced spin Seebeck effect in self-biased barium hexagonal ferrites. *P. Li*[1], D. Ellsworth[1], H. Chang[1], P. Janantha[1], D. Richardson[1], P. Phillips[1], T. Vijayasarathy[1] and M. Wu[1] *1. Department of Physics, Colorado State Unviersity, Fort Collins, CO*

3:18

HB-10. Longitudinal spin Seebeck signal in transverse spin Seebeck geometry for YIG/Pt and NFO/Pt. *D. Meier*[1], D. Reinhardt[1], M. van Straaten[1], C. Klewe[1], M. Schmid[3], M. Althammer[2], C.H. Back[3], S.T. Goennenwein[2], A. Gupta[4], J. Schmalhorst[1], T. Kuschel[1] and G. Reiss[1] *1. Department of Physics, Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany; 2. Walther-Meissner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 3. Institute of Experimental and Applied Physics, Regensburg University, Regensburg, Germany; 4. Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL*

3:30

HB-11. Origin of the spin Seebeck effect in YIG and GIG. *A. Kehlberger*[1], G. Jakob[1], U. Ritzmann[2], D. Hinzke[2], U. Nowak[2], M.C. Onbasli[3], D. Kim[3], C.A. Ross[3], .B. Jungfleisch[4], B. Hillebrands[4], S. Geprägs[5], F.D. Coletta[5], A. Kamra[5], H. Huebl[5], S.T. Goennenwein[5], R. Gross[5] and M. Klaeui[1] *1. Johannes Gutenberg Universität Mainz, Mainz, Germany; 2. Department of Physcis, University of Konstanz, Konstanz, Germany; 3. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 4. Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 5. Walther-Meißner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany*

3:42

HB-12. Femtosecond optical pump-probe study of the spin Seebeck effect within a YIG/Cu/$Ni_{81}Fe_{19}$ trilayer. *H. Mohamad*[1,3], U. Al-Jarah[1], L. Shelford[1], S. Marmion[2], B.J. Hickey[2] and R.J. Hicken[1] *1. University of Exeter, Exeter, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 3. Physics Department, The University of Mustansiriyah, Baghdad, Iraq*

3:54

HB-13. Measurement of Thermal Effects by Thermoelectric Coolers. *J. Zhang*[1], J.A. Gifford[1], C. Snider[1], N. Vargas[1] and T. Chen[1] *1. Physics, Arizona State University, Tempe, AZ*

4:06

HB-14. Observation of longitudinal spin-Seebeck effect in Cobalt-ferrite epitaxial thin film. *T. Niizeki*[2], T. Kikkawa[1], K. Uchida[1,3], E. Saitoh[1,2], M. Oka[4], K.Z. Suzuki[4,2], H. Yanagihara[4] and E. Kita[4] *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. WPI-AIMR, Tohoku University, Sendai, Japan; 3. PRESTO, Japan Science and Technology Agency, Tokyo, Japan; 4. Institute of Applied Physics, University of Tsukuba, Tsukuba, Japan*

4:18

HB-15. Evaluation of thermal gradients in longitudinal spin Seebeck effect measurements. *A. Sola*[1], M. Kuepferling[1], V. Basso[1] and M. Pasquale[1] *1. Inrim, Turin, Italy*

Session HC
SKYRMIONS II
Ozhan Ozatay, Chair

1:30

HC-01. Creation and Dynamics of Single Skyrmion in Helimagnets. ***(Invited)*** *J. Zang*[1] *1. Physics and Astronomy, Johns Hopkins University, Baltimore, MD*

2:06

HC-02. Dynamics of Skyrmionic Spin Structures. *C. Moutafis*[1], F. Büttner[2], A. Bisig[2,3], B. Krueger[2], C.A. Vaz[2,1], P. Warnicke[1], M. Foerster[2], M.A. Mawass[2], M. Schneider[4], C.M. Günter[4], J. Geilhufe[5], C. v. Korff Schmising[4], J. Mohanty[4], B. Pfau[4], S. Schaffert[4], T. Schulz[2], M. Weigand[6], J.H. Franken[7], R. Lavrijsen[7], J. Raabe[1], H. Swagten[7], M. Klaeui[2] and S. Eisebitt[4,5] *1. Paul Scherrer Institute, Villigen, Switzerland; 2. Institute of Physics, Johannes Gutenberg Universität Mainz, Mainz, Germany; 3. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 4. Institut für Optik und Atomare Physik, Technische Universität Berlin, Berlin, Germany; 5. Helmholtz Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany; 6. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 7. Department of Applied Physics, Center for NanoMaterials, Eindhoven University of Technology, Eindhoven, Netherlands*

2:18

HC-03. Manipulation of Skyrmion Bubbles in a Magnetic Insulator via Pure Spin Currents. *W. Jiang*[1], P. Upadhyaya[2], Q. Yang[3], G. Yu[2], Z. Wang[2], J. Tang[2], K. Wong[2], M. Akyol[2], L. Chang[2], M. Lang[2], Y. Fan[2], Q. Wen[3], H. Zhang[3], S.G. te Velthuis[1], R. Schwartz[2], Y. Tserkovnyak[4], K. Wang[2] and A. Hoffmann[1] *1. Material Science Division, Argonne National Laboratory, Darien, IL; 2. Electrical engineering department, University of California Los Angeles, Los Angeles, CA; 3. University of Electrical Science and Techolonogy, Chengdu, Sichuan, China; 4. Physics Department, University of California Los Angeles, Los Angeles, CA*

2:30

HC-04. Skyrmion lattice in Fe/Gd alloy thin films with perpendicular anisotropy. *J.C. Lee*[2,3], X. Shi[3], S. Montoya[1], S. Mishra[2], D. Parks[3], S. Kevan[2,3], E.E. Fullerton[1] and S. Roy[2] *1. Center for Magnetic Recording Research, University of California, San Diego, CA; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Department of Physics, University of Oregon, Eugene, OR*

2:42

HC-05. Experimental Realization of Artificial Skyrmion Lattices. *D.A. Gilbert*[1], B. Maranville[2], B.J. Kirby[2], A.L. Balk[3,4], J. Unguris[3], P. Fischer[5,6], J.A. Borchers[2] and K. Liu[1] *1. Physics Department, University of California, Davis, CA; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 3. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 4. Maryland Nanocenter, University of Maryland, College Park, MD; 5. Center for X-Ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA; 6. Physics Department, University of California, Santa Cruz, CA*

2:54

HC-06. Controlling skyrmion motion by tuning exchange interactions. *K. Koumpouras*[1] and A. Bergman[1] *1. Physics and Astronomy, Uppsala University, Uppsala, Sweden*

3:06

HC-07. Finite size effects and stability of skyrmionic textures in nanostructures. *M. Beg*[1], M. Albert[1], M. Bisotti[1], W. Wang[1], D. Chernyshenko[1], R.L. Stamps[2] and H. Fangohr[1] *1. Faculty of Engineering and the Environment, University of Southampton, Southampton, United Kingdom; 2. SUPA School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

3:18

HC-08. Skyrmions in magnetic materials without the Dzyaloshinskii-Moriya interaction. *F. Garcia*[2], J. Sinnecker[2], É.R. Novais[2], C.C. Passos[2,1] and A.P. Guimarães[2] *1. Departamento de Física, Universidade Federal do Espirito Santo, Espirito Santo, Espirito Santo, Brazil; 2. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Rio de Janeiro, Brazil*

3:30

HC-09. Skyrmion size dependence of current induced skyrmion motion in perpendicular magnetic nanowires. *J.J. Ding*[1,2], T. Zhu[1] and X.F. Yang[2] *1. Chinese Academy of Sciences, Institute of Physics, Beijing, Beijing, China; 2. School of Optical and Electronic Information, Electronic Information, Wuhan, Hubei, China*

3:42

HC-10. Skyrmion based racetrack memories. *R. Tomasello*[1], E. Martinez[2], R. Zivieri[3], L. Torres[2], M. Carpentieri[4] and G. Finocchio[5] *1. Department of Computer Science, Modeling, Electronics and System Science, University of Calabria, Arcavacata di Rende, Cosenza, Italy; 2. Department of Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain; 3. Department of Physics and Earth Sciences, University of Ferrara, Ferrara, Italy; 4. Department of Electrical and Information Engineering, Politecnico of Bari, Bari, Italy; 5. Department of Electronic Engineering, Industrial Chemistry and Engineering, University of Messina, Messina, Italy*

3:54

HC-11. Skyrmions and chiral spin structures in ultra-thin films: Fe on Ir(111). N. Kiselev[1,2], D.G. Bauer[1,2], G. Bihlmayer[1,2], Y. Mokrousov[1,2] and *S. Blügel*[1,2] *1. Peter Grünberg Institut and Institute for Advanced Simulation, Forschungszentrum Jülich, Jülich, NRW, Germany; 2. Jülich Aachen Research Alliance (JARA), Jülich, NRW, Germany*

4:06

HC-12. Nucleation, stabilization and dynamics of individual magnetic skyrmions in a confined dot. *V. Cros*[1], C. Moreau-Luchaire[1], J. Sampaio[1], N. Vanhorne[1], N. Reyren[1], F. Garcia-Sanchez[2], S. Rohart[3], J. Kim[2], J. George[1], A. Thiaville[3] and A. Fert[1] *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 2. Institut d'Electronique Fondamentale, Orsay, France; 3. Laboratoire de Physique des Solides, Orsay, France*

4:18

HC-13. Thiele's Equation for Magnetic Skyrmion in the Presence of Spin Hall Current. *R. Zivieri*[4], R. Tomasello[3], M. Carpentieri[2] and G. Finocchio[1] *1. Department of Electronic Engineering, Industrial Chemistry and Engineering, University of Messina, Messina, ME, Italy; 2. Department of Electrical and Information Engineering, Politecnico of Bari, Bari, BA, Italy; 3. Department of Computer Science, Modelling, Electronics and System Science, University of Calabria, Rende, CS, Italy; 4. Department of Physics and Earth Sciences, University of Ferrara, Ferrara, FE, Italy*

FRIDAY AFTERNOON 1:30

CORAL 2

Session HD
MAGNONICS
Paul Keatley, Chair

1:30

HD-01. Realization of spin-wave multiplexer. ***(Invited)*** K. Vogt[1,2], F. Fradin[3], J.E. Pearson[3], *T. Sebastian*[1,4], S.D. Bader[3,5], B. Hillebrands[1], A. Hoffmann[3] and H. Schultheiss[3,4] *1. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. Graduate School of Excellence "MAterials science IN mainZ", Kaiserslautern, Germany; 3. Materials Science Division, Argonne National Laboratory, Argonne, IL; 4. Institut für Ionenstrahlphysik und Materialforschung, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 5. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

2:06

HD-02. Magnonic metamaterial with reconfigurable anisotropy based on a magnetic nanodot array with triangular lattice. *R. Khymyn*[1], I. Lisenkov[1,2], E. Bankowski[3], T. Meitzler[3], V. Tyberkevych[1] and A. Slavin[1] *1. Department of Physics, Oakland University, Auburn Hills, MI; 2. Institute of Radio-engineering and Electronics of RAS, Moscow, Russian Federation; 3. TARDEC, Warren, MI*

2:18

HD-03. Spin-wave nanograting coupler. *H. Yu*[2,1], G. Duerr[2], R. Huber[2], M. Bahr[2], T. Schwarze[2], F. Brandl[2] and D. Grundler[2] *1. Spintronics Interdisciplinary Center, Beihang University, Beijing, China; 2. Physics department, Technical University Munich, Munich, Bayern, Germany*

2:30

HD-04. Manipulation of linearly-polarized electromagnetic waves by the metasurface in microwave region. *K. Zhang*[1], Q. Wu[1], G. Yang[1], J. Fu[1] and F. Meng[1] *1. Dept.of Electronic & Communications Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China*

2:42

HD-05. $Ni_{80}Fe_{20}$ films with periodically modulated thickness for magnonic applications. *G.N. Kakazei*[1,2], X. Liu[1], J. Ding[1] and A. Adeyeye[1] *1. Department of Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore; 2. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal*

2:54

HD-06. Spin wave dispersion in square antidot lattices: thickness dependence and effect of the surface anisotropy at hole edges. *S. Tacchi*[1], P. Gruszecki[2], G. Gubbiotti[1], M. Madami[3], G. Carlotti[3], J.W. Klos[2], M. Krawczyk[2] and A. Adeyeye[4] *1. Istituto Officina dei Materiali IOM-CNR, Perugia, Italy; 2. Faculty of Physics, Adam Mickiewicz University in Poznan, Poznan, Poland; 3. Dipartimento di Fisica e Geologia, Università di Perugia, Perugia, Italy; 4. Information Storage Materials Laboratory, Department of Electrical and Computer Engineering,, National University of Singapore, Singapore, Singapore*

3:06

HD-07. Berry-curvature dynamics of wavepackets of magnetostatic spin wave. *S. Murakami*[1], R. Matsumoto[1] and A. Okamoto[1] *1. Department of Physics, Tokyo Institute of Technology, Tokyo, Japan*

3:18

HD-08. Spin wave dynamics in a ferromagnetic layer with the interface Dzyaloshinskii-Moriya interaction. *M. Kostylev*[1]
1. School of Physics, The University of Western Australia, Crawley, WA, Australia

3:30

HD-09. Evolution of Spin Wave Modes in Periodically Perturbed Thin Films. *M. Langer*[1,3], R. Gallardo[4], A. Banholzer[1,3], A. Jansen[1,3], T. Schneider[1,3], K. Wagner[1,3], V. Demidov[2], S. Demokritov[2], P. Landeros[4], K. Lenz[1], J. Lindner[1] and J. Fassbender[1,3] *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Saxony, Germany; 2. Institute of Applied Physics, University Münster, Münster, Germany; 3. Technical University of Dresden, Dresden, Germany; 4. Magnetism, University Valparaiso, Valparaiso, Chile*

3:42

HD-10. Magnetostatic spin waves in irregular narrow ferromagnetic waveguides. *D. Kalyabin*[1,2], E.N. Beginin[3], A. Sadovnikov[3], Y. Sharaevskii[3] and S.A. Nikitov[1,3] *1. Nanoelectronics, Kotel'nikov Institute of Radioengineering and Electronics of RAS, Moscow, Russian Federation; 2. Physical and Quantum Electronics, Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russian Federation; 3. Nonlinear Physics, Saratov State University, Saratov, Russian Federation*

3:54

HD-11. A comparison of spin wave excitation efficiency in the magnetostatic backward volume wave and surface wave configurations in permalloy microstrips. J. Liu[1], G.A. Riley[1] and *K.S. Buchanan*[1] *1. Department of Physics, Colorado State University, Fort Collins, CO*

4:06

HD-12. Bound spin wave modes in a circular array of magnetic inclusions in a ferromagnetic matrix. Y. Barabanenkov[1], S. Osokin[1,2], D. Kalyabin[1,2] and *S.A. Nikitov*[1,3]
1. Nanoelectronics, Kotel'nikov Institute of Radioengineering and Electronics, Russian Academy of Sciences, Moscow, Russian Federation; 2. Moscow Institute of Physics and Technology (State University), Dolgoprudny, Russian Federation; 3. Nonlinear Physics, Saratov State University, Saratov, Russian Federation

4:18

HD-13. Spin waves and domain wall modes in curved magnetic nanowires. *L. Bocklage*[1,2], S. Motl-Ziegler[3], J. Topp[3], T. Matsuyama[3] and G. Meier[3,2] *1. Photon Science, Deutsches Elektronen-Synchrotron DESY, Hamburg, Hamburg, Germany; 2. The Hamburg Centre for Ultrafast Imaging, Hamburg, Hamburg, Germany; 3. Institut für Angewandte Physik, Universität Hamburg, Hamburg, Hamburg, Germany*

Session HE
MRAM AND MAGNETIC LOGIC DEVICES

Anne Bernand-Mantel, Co-Chair
Geoffrey Beach, Co-Chair

1:30

HE-01. All-Magnetic MRAM Based on Four Terminal mCell Device. *D. Bromberg*[1], H. Sumbul[1], J. Zhu[1] and L. Pileggi[1] *1. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

1:42

HE-02. Three-terminal spin-orbit torque magnetic random access memory with perpendicular magnetization. *M. Cubukcu*[2], C. Hamelin[2], O. Boulle[2], N. Lamard[1], M. Drouard[2], K. Garello[3], I.M. Miron[2], J. Langer[4], B. Ocker[4], P. Gambardella[3] and G. Gaudin[2] *1. CEA, LETI, Minatec Campus, Grenoble, France; 2. Univ. Grenoble Alpes, CNRS, CEA, INAC-SPINTEC, Grenoble, France; 3. Department of Materials, ETH Zurich, Zurich, Switzerland; 4. Singulus AG, Kahl, Germany*

1:54

HE-03. Pulse with DC voltage induced spin orbit torque switching. *J. Kwon*[1], X. Qiu[1] and H. Yang[1] *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

2:06

HE-04. Spin Torque Majority Gates: Operating Conditions and A New Design for Enhanced Reliability. *A. Vaysset*[2,1], D.E. Nikonov[3], I.A. Young[3], G. Pourtois[1], S. Sayan[4], J. De Boeck[1], T. Min[1], A. Thean[1] and I.P. Radu[1] *1. IMEC, Leuven, Belgium; 2. Departement elektrotechniek (ESAT), KU Leuven, Leuven, Belgium; 3. Components Research, Intel, Hillsboro, OR; 4. Intel Corp., Santa Clara, CA*

2:18

HE-05. MRAM-based non-volatile asynchronous Muller cell for ultra-low power autonomous applications. *G. Di Pendina*[2], E. Zianbetov[2] and E. Beigne[1] *1. Univ. Grenoble Alpes, CEA, LETI, Grenoble, France; 2. Univ. Grenoble Alpes, INAC, CNRS, CEA, SPINTEC, Grenoble, France*

2:30

HE-06. MTJ-Based Low-Energy Nonvolatile Flip-Flop Using Area-Efficient Self-Terminated Write Driver. *D. Suzuki*[2] and T. Hanyu[1,2] *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan; 2. Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Miyagi, Japan*

2:42

HE-07. Design strategies to optimize non-reciprocity in all-spin logic (ASL) devices. *J. Hu*[1], N. Haratipour[1] and S.J. Koester[1] *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

2:54

HE-08. Soliton ratchet using periodic AF1-AF2-F RKKY coupled perpendicularly magnetized layers. *R. Mansell*[2], R. Lavrijsen[1], A. Fernandez-Pacheco[2], D.C. Petit[2], J. Lee[2], B. Koopmans[1], H. Swagten[1] and R. Cowburn[2] *1. Eindhoven University of Technology, Eindhoven, Netherlands; 2. University of Cambridge, Cambridge, United Kingdom*

3:06

HE-09. Soliton propagation in micron-sized magnetic ratchet elements. *J. Lee*[1], D.C. Petit[1], R. Lavrijsen[1], R. Mansell[1], A. Fernandez-Pacheco[1] and R. Cowburn[1] *1. Physics, University of Cambridge, Cambridge, United Kingdom*

3:18

HE-10. Unidirectional Anisotropy for Synchronous Nanomagnet Logic Operation. *F.A. Shah*[1], G. Csaba[1], W. Porod[1] and G.H. Bernstein[1] *1. Electrical Engineering, University of Notre Dame, Notre Dame, IN*

3:30

HE-11. Time-dependent Domain Wall Nucleation Probability in Field-coupled Nanomagnets with Perpendicular Anisotropy. *S. Breitkreutz*[1], I. Eichwald[1], G. Ziemys[1], D. Schmitt-Landsiedel[1] and M. Becherer[1] *1. Lehrstuhl für Technische Elektronik, Technische Universität München, Munich, Germany*

3:42

HE-12. Prototypes of Domain Wall Logic in Ferromagnetic Wires with Tunnel Junction Readout. *J. Currivan*[1,2], S.A. Siddiqui[2], S. Dutta[2], E.R. Evarts[3], W. Rippard[3], M. Baldo[2] and C. Ross[4] *1. Physics, Harvard University, Cambridge, MA; 2. Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA; 3. Magnetic Devices, National Institute of Standards and Technology, Boulder, CO; 4. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

3:54

HE-13. Achieving Boolean Logic and Information Propagation in Multiferroic Nanomagnets through Straintronics.
N.M. D'Souza[1], M. Salehi Fashami[1], S. Bandyopadhyay[2] and J. Atulasimha[1] *1. Mechanical & Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 2. Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, VA*

4:06

HE-14. Electric control of perpendicular magnetization in Cu/Ni multilayer/$BaTiO_3$ multiferroic heterostructures.
T. Taniyama[1], R. Shiina[1], Y. Shirahata[1], E. Wada[2] and M. Itoh[1] *1. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 2. Research Center for Materials with Integrated Properties, Toho University, Funabashi, Japan*

4:18

HE-15. Control of domain walls in magnetic nanorings in a multiferroic system. *J.D. Wheelwright*[1] and D. Allwood[1] *1. Materials Science and Engineering, University of Sheffield, Wakefield, West Yorkshire, United Kingdom*

FRIDAY AFTERNOON 1:30

SOUTH PACIFIC 3 & 4

Session HF
THIN FILMS AND SURFACE EFFECTS II
Alexander Grutter, Chair

1:30

HF-01. The role of Ag buffer layer in Fe islands growth on Ge (111) surfaces. *T. Fu*[1], J. Wu[1], M. Jhou[1] and H. Hsu[1] *1. Physics, National Taiwan Normal University, Taipei, Taiwan*

1:42

HF-02. Diffusion of Co clusters on √3x√3-R30°-Ag/Si(111) and related magnetic phases. *C. Chang*[1], C. Kao[1] and J. Tsay[1] *1. Department of Physics, National Taiwan Normal University, Taipei 116, Taiwan, Taipei 116, Taiwan, Taiwan*

1:54

HF-03. Blocking of the interdiffusion and related magnetic properties for annealed Fe/Ir(111) ultrathin films. W. Chen[1], P. Jiang[1] and *J. Tsay*[1] *1. Department of Physics, Natl Taiwan Normal University, Taipei, Taiwan*

2:06

HF-04. Metastable Behavior of the Dynamically Ordered Phase in Uniaxial Cobalt Films. *A. Berger*[1], O. Idigoras[1] and P. Vavassori[1,2] *1. CIC nanoGUNE, Donostia, Spain; 2. Ikerbasque, Bilbao, Spain*

2:18

HF-05. Reorientation of the polarization domains in epitaxial Cr thin films. M. Leroy[1,2], *A.M. Bataille*[1], E. Ressouche[3], C. Gatel[4] and S. Andrieu[2] *1. IRAMIS/LLB, CEA, Gif sur Yvette, France; 2. Institut Jean Lamour, Vandoeuvre-les-Nancy, France; 3. ILL, Grenoble, France; 4. CEMES, Toulouse, France*

2:30

HF-06. Enhanced magnetization at the Cr/MgO(001) interface. M. Leroy[1,2], *A.M. Bataille*[1], M. Fitzsimmons[3], Q. Wang[3], F. Bertran[4], P. Le Fèvre[4], A. Taleb-Ibrahimi[4], A. Vlad[4], A. Coati[4], T. Hauet[2], C. Gatel[5], F. Ott[1] and S. Andrieu[2] *1. IRAMIS/LLB, CEA, Gif sur Yvette, France; 2. Institut Jean Lamour, Vandoeuvre-les-Nancy, France; 3. LANL, Los Alamos, NM; 4. Synchrotron Soleil, Saint Aubin, France; 5. CEMES, Toulouse, France*

2:42

HF-07. Electronic structures of $L1_0$-ordered FeNi thin films studied by photoelectron spectroscopy. *M. Mizuguchi*[1], S. Ueda[2], Y. Miura[3], T. Kojima[1], M. Shirai[4] and K. Takanashi[1] *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. National Institute for Materials Science, Sayo, Japan; 3. Graduate School of Science and Technology, Kyoto Institute of Technology, Kyoto, Japan; 4. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

2:54

HF-08. Microscopic origin of magnetic anisotropy in TbCo amorphous films probed by x-ray diffraction and magnetic circular dichroism. *T. Ueno*[1], N. Inami[2], Z. Wen[1], M. Hayashi[1], S. Mitani[1], R. Sagayama[2], R. Kumai[2] and K. Ono[2] *1. National Institute for Materials Science, Tsukuba, Japan; 2. Institute of Materials Structure Science, High Energy Accelerator Research Organization, Tsukuba, Japan*

3:06

HF-09. Mössbauer study on epitaxial $Co_xFe_{4-x}N$ films grown by molecular beam epitaxy. *K. Ito*[1,2], T. Sanai[1], Y. Yasutomi[1], T. Gushi[1], K. Toko[1], H. Yanagihara[1], M. Tsunoda[3], E. Kita[1] and T. Suemasu[1] *1. Institute of Applied Physics, University of Tsukuba, Tsukuba, Ibaraki, Japan; 2. Japan Society for the Promotion of Science, Chiyoda-ku, Tokyo, Japan; 3. Department of Electronic Engineering, Tohoku University, Sendai, Japan*

3:18

HF-10. The effect of inserted Pd layer on the perpendicular magnetic anisotropy of Ta/Pd (0-4.8 nm)/ $Co_2FeAl_{0.5}Si_{0.5}$/ MgO/Ta structured films. H. Fu[1], *C. You*[1], X. Zhang[1] and N. Tian[1] *1. School of Materials Science and Engineering, Xi'an University of Technology, Xi'an, ShaanXi Province, China*

3:30

HF-11. Dzyaloshinskii–Moriya interaction effects in planar thin films. S. McVitie[1], K. Fallon[1] and *R. Stamps*[1] *1. Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

3:42

HF-12. Complete Vertical M-H loop Shift in $La_{0.7}Sr_{0.3}MnO_3$/$SrRuO_3$ Thin Film Heterostructures. *S. Singamaneni*[1,2], J. Prater[2,1] and J. Narayan[1] *1. Materials Science and Engineering, North Carolina State University, Raleigh, NC; 2. Army Research Office, Raleigh, NC*

3:54

HF-13. Antiferromagnetic spin reorientation driven by the interface exchange coupling in NiO/CoO bilayers. J. Zhu[1], Q. Li[1], J. Li[1], Z. Ding[1], J. Liang[1], X. Xiao[1], Y. Luo[1], C. Hua[2], H. Lin[2], T. Pi[2], Z. Hu[3], C. Won[4] and *Y. Wu*[1] *1. Department of Physics, Fudan University, Shanghai, China; 2. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 3. Max-Planck-Institut für Chemische Physik fester Stoffe, Dresden, Germany; 4. Department of Physics, Kyung Hee University, Seoul, Republic of Korea*

4:06

HF-14. Tuneable magnetic dipoles controlling magnetic properties in ferromagnetic thin film. T. Maity[1] and *S. Roy*[1] *1. Tyndall National Institute, Cork, Ireland*

4:18

HF-15. Magnetism of transition-metal dichalcogenide thin films. *P. Manchanda*[1], V. Sharma[2], A. Kashyap[3], D.J. Sellmyer[1] and R. Skomski[1] *1. Department of Physics and Astronomy and NCMN, University of Nebraska, Lincoln, NE; 2. Department of Materials Science and Engineering, University of Connecticut, Storrs, CT; 3. School of Basic Sciences, Indian Institute of Technology Mandi, Mandi, Himachal Pradesh, India*

Session HG
DILUTED MAGNETIC SEMICONDUCTORS AND HALF-METALLIC MATERIALS I
Berend Jonker, Chair

1:30

HG-01. Surface acoustic wave driven ferromagnetic resonance and magnetization switching in a magnetic semiconductor. ***(Invited)*** *L. Thevenard*[1], J. Prieur[1], J. von Bardeleben[1], S. Vincent[1], L. Becerra[1], C. Gourdon[1] and J. Duquesne[1] *1. Institut des Nanosciences de Paris, Paris, France*

2:06

HG-02. Anisotropic magnetic dynamics in (Ga,Mn)As film. *S. Dong*[1], T. Yoo[1], X. Li[1], S. Mello[1], X. Liu[1], M. Dobrowolska[1] and J.K. Furdyna[1] *1. Department of Physics, University of Notre Dame, Notre Dame, IN*

2:18

HG-03. Magnetic proximity effect in different ferromagnet/(Ga,Mn) As bilayers. H. Wang[1], S. Nie[1], J. Lu[1] and *J. Zhao*[1] *1. State Key Laboratory For Superlattices And Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China*

2:30

HG-04. Dichroism and magnetism in epitaxially grown highly spin polarised B20 ε-$Fe_{1-x}Co_xSi$ thin films. *P. Sinha*[1], N.A. Porter[1], C.S. Spencer[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 Lab, Upton, NY*

2:42

HG-05. Epitaxial CuMnAs for thin film antiferromagnetic spintronics. ***(Invited)*** *P. Wadley*[2], V. Hills[2], V. Novák[1], R.P. Campion[2], E.P. Smakman[3], P. Koenraad[3], H. Reichlová[1], J. Železný[1], J. Gazquez[4], D. Khalyavin[5], S. Langridge[5], V. Holy[6], A. Rushforth[2], K.W. Edmonds[2], B.L. Gallagher[2], T. Foxon[2] and T. Jungwirth[1,2] *1. Department of Spintronics and Nanoelectronics, Institure of Physics ASCR, Prague, Czech Republic; 2. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; 3. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, United Kingdom; 4. Institut de Cincia de Materials de Barcelona, ICMAB-CSIC, Bellaterra, Spain; 5. ISIS, Rutherford Appleton Laboratory, Harwell Science and Innovation Campus, Science and Technology Facilities Council, Oxford, United Kingdom; 6. Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic*

3:18

HG-06. Structural and magnetic properties of the tetragonal Mn_2PtGa Heusler thin film. *R. Sahoo*[1], A.K. Nayak[1], B. Ernst[1], D. Ebke[1] and C. Felser[1] *1. Inorganic Chemistry, Max Planck Institute for Chemical Physics of Solids, Dresden, Saxony, Germany*

3:30

HG-07. Co_2TiSi thin film on GaAs(001) for spincaloric and spintronic application. M.T. Dau[1], B. Jenichen[1] and *J. Herfort*[1] *1. Paul-Drude-Institute, Berlin, Germany*

3:42

HG-08. From a non-magnet to a ferromagnet: Mn implantation into different TiO_2 structures. *O. Yildirim*[1,2], S. Cornelius[1], M. Butterling[3], W. Anwand[3], A. Wagner[3], C. Baehtz[1,4], A. Smekhova[5] and K. Potzger[1] *1. Institute of Ion Beam Physics and Materials Researchs, Helmholtz-Zentrum Dresden-Rossendorf e.V, Dresden, Germany; 2. Institute for Physics of Solids, Technische Universität Dresden, Dresden, Germany; 3. Institute of Radiation Physics, Helmholtz-Zentrum Dresden-Rossendorf e.V, Dresden, Germany; 4. Rossendorf Beamline, European Synchrotron Radiation Facility, Grenoble, France; 5. Faculty of Physics, Lomonosov Moscow State University, Moscow, Russian Federation*

3:54

HG-09. Giant negative magnetoresistance in Mn-substituted ZnO. X. Wang[1,2], Q. Shao[1], R. Lortz[3], J. Wang[3] and *A. Ruotolo*[1] *1. City University of Hong Kong, Kowloon, Hong Kong; 2. State Key Laboratory of Superlattices and Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China; 3. Department of Physics, The Hong Kong University of Science and Technology, Kowloon, Hong Kong*

4:06

HG-10. Ferromagnetic order induced by magnetic impurity spins in tellurium based chalcopyrite. N. Xie[1], *Y. Guo*[1] and Q. He[1] *1. School of Energy Power and Mechanical Engineering, North China Electric Power University, Beijing, China*

Session HH
FLUIDIC AND BIOCHEMICAL APPLICATIONS OF NANOPARTICLES
Stephen Russek, Chair

1:30

HH-01. Synthesis, structure and magnetic properties of Fe@Pt core-shell nanoparticles. *K.L. Pisane*[1], S. Singh[1] and M.S. Seehra[1] *1. Physics and Astronomy, West Virginia University, Morgantown, WV*

1:42

HH-02. Magnetite nanoparticles as efficient supports for noble metals in the valorization of biomass. *V.I. Parvulescu*[1], V. Kuncser[2], N. Alina[1], M. Tudorache[1] and S.M. Coman[1] *1. Chemical Technology and Catalysis, University of Bucharest, Bucharest, Romania; 2. IFTM, Bucharest-Magurele, Romania*

1:54

HH-03. Immobilization of cellulase on functionalized magnetic nanospheres and determination of its activity and stability. *W. Zhang*[1], J. Qiu[1], H. Feng[2] and E. Sakai[1] *1. Department of Machine Intelligence and Systems Engineering, Akita Prefectural University, Yulihonjo, Akita, Japan; 2. College of Petrochemical Engineering, Lanzhou University of Technology, Lanzhou, Gansu, China*

2:06

HH-04. Spin-Modified Catalysis. R. Choudhary[2,1], P. Manchanda[1], *A. Enders*[1], B. Balamurugan[1], A. Kashyap[2], D.J. Sellmyer[1], C. Sykes[3] and R. Skomski[1] *1. Department of Physics and Astronomy, NCMN. University of Nebraska-Lincoln, Lincoln, NE; 2. School of Basic Sciences (Physics), Indian Institute of Technology, Mandi (HP), Mandi, Himachal Pradesh, India; 3. Department of Chemistry, Pearson Chemistry Laboratory, Tufts University, Medford, MA*

2:18

HH-05. Interaction of FeP and FePc with magnetic surfaces: adsorption structures, magnetic coupling and spin manipulation. *B. Brena*[1], S. Bhandary[1], D. Klar[2,3], H. Wende[2,3], O. Eriksson[1] and B. Sanyal[1] *1. Dept of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Faculty of Physics, University of Duisburg-Essen, Duisburg, Germany; 3. Center for Nanointegration Duisburg-Essen (CENIDE), University of Duisburg-Essen, Duisburg, Germany*

2:30

HH-06. Photocatalytic activity of Fe_3O_4/Bi_2MoO_6 hybrid composites towards Rhodamine B. *J. Liu*[1], M. Zeng[1] and R. Yu[1] *1. School of Materials Science and Engineering, Beihang University, Beijing, China*

2:42

HH-07. Large-area patterned substrates for micromagnetic actuation of superparamagnetic microbeads. *M. Ouk*[1] and G. Beach[1] *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

2:54

HH-08. Dipole-dipole interaction and its concentration dependence of magnetic fluid evaluated by ac hysteresis measurement. S. Ota[1], T. Yamada[1] and *Y. Takemura*[1] *1. Electrical and Computer Engineering, Yokohama National University, Yokohama, Japan*

3:06

HH-09. A New MCF (Magnetic Compound Fluid) slurry and its Performance in Magnetic Field-assisted polishing of oxygen-free copper. *Y. Wang*[1], Y. Wu[2], H. Guo[1], M. Fujimoto[2], M. Nomura[2] and K. Shimada[3] *1. Graduate School, Akita Prefectural University, Yulihonjo, Akita, Japan; 2. Dept. of Machine Intelligence and Systems Engineering, Akita Prefectural University, Yurihonjo, Akita, Japan; 3. Dept. of Industrial Systems, Fukushima University, Fukushima, Fukushima, Japan*

3:18

HH-10. Withdrawn

3:30

HH-11. Flow Energy Harvesting Using Magnetic Nanofluids in Millimeter-Sized Channel Employing In-Phase Mode of Magnetizations. *I. Kim*[1], J. Lee[2], S. Lee[3], G. Jeong[4] and S. Lee[1] *1. Department of Electrical Engineering, Kyungpook National University, Daegu, Republic of Korea; 2. School of Mechanical & Automotive Engineering, Gangneung-Wonju National University, Wonju, Republic of Korea; 3. Biomedical Research Institute, Korea Institute of Science and Technology, Seoul, Republic of Korea; 4. LS Cable & System, Gumi, Republic of Korea*

3:42

HH-12. Magnetic Energy Storage. *E. Vedmedenko*[1] *1. University of Hamburg, Hamburg, Germany*

3:54

HH-13. Mathematical Models for the Calculation of the Temperature Field around Iron Oxide Nanoparticles. *M. Trapanese*[1] and D. Valenti[2] *1. DEIM, Università di Palermo, Palermo, Italy; 2. Dipartimento di Fisica e Chimica, Palermo University, Palermo, Italy*

HH-15. A Compact Frequency Tunable RF Phase Shifter with Patterned Permalloy Enabled Transmission Line.
B. Rahman[1], R. Divan[2], D. Rosennmann[2], Y. Peng[1], T. Wang[1] and G. Wang[1] *1. Electrical Engineering, University of South Carolina, Columbia, SC; 2. Center for Nano-scale Material, Argonne National Laboratory, Lemont, IL*

FRIDAY AFTERNOON 2:30

CORAL 4 (POSTERS)

Session HP
HYSTERESIS MODELING AND MAGNETIC RECORDING (Poster Session)

Gino Hrkac, Co-Chair
Gergely Zimanyi, Co-Chair

HP-01. Modeling the effect of creep cavitation on magnetic hysteresis property in heat-resistant steels.
S. Zhang[1], S. Tu[1] and J. Tan[1] *1. Key Laboratory of Pressure Systems and Safety, MOE, School of Mechanical and Power Engineering, East China University of Science and Technology, Shanghai, China*

HP-02. Magnetization and Field of a Ferromagnetic Pipe.
C.S. Schneider[1], S.D. Gedney[2] and J.C. Young[2] *1. Physics, U.S. Naval Academy, Annapolis, MD; 2. Electrical Engineering, University of Kentucky, Lexington, KY*

HP-03. Macroscopic magnetization modeling of silicon steel sheets using the assembly of six-domain particles.
S. Ito[1], T. Mifune[1], T. Matsuo[1] and C. Kaido[2] *1. Dept. Electrical Engineering, Kyoto University, Kyoto, Japan; 2. Kitakyushu National College of Technology, Kitakyushu, Japan*

HP-04. Equivalent Circuit Modeling of Dynamic Hysteretic Property of Silicon Steel Sheet Under PWM Excitation.
T. Miyazaki[1], T. Mifune[1], T. Matsuo[1], Y. Shindo[2], Y. Takahashi[3] and K. Fujiwara[3] *1. Dept. Electrical Engineering, Kyoto University, Kyoto, Japan; 2. Kawasaki Heavy Industries, Ltd., Akashi, Japan; 3. Doshisha University, Kyotanabe, Japan*

HP-05. A neural approach for the numerical modeling of two-dimensional magnetic hysteresis.
E. Cardelli[1], A. Faba[1], A. Laudani[2], F. Riganti Fulginei[2] and A. Salvini[2] *1. Ingegneria, Universita di Perugia, Perugia, Italy; 2. Ingegneria, Università Roma3, Roma, Italy*

HP-06. Vector Properties of Magnetostriction. E. Della Torre[1], *H. ElBidweihy*[1], C. Burgy[2] and L.H. Bennett[1] *1. Department of Electrical and Computer Engineering, The George Washington University, Washington, DC; 2. Carderock Division, Naval Surface Warfare Center, West Bethesda, MD*

HP-07. Modeling and Analysis of Hysteresis by Harmonic Balance Method. *W. Cheng*[2] and Y. Saito[1] *1. Hosei University, Tokyo, Japan; 2. Japan Power Engineering and Inspection Corporation, Yokohama, Japan*

HP-08. Energy barriers for bit-encoding states based on 360-degree domain walls in ultrathin ferromagnetic nanorings. *C. Muratov*[1], V.V. Osipov[2] and E. Vanden-Eijnden[3] *1. Mathematical Sciences, NJIT, Newark, NJ; 2. NASA Ames, Moffett Field, CA; 3. Mathematics, New York University, New York, NY*

HP-09. The effect of multiple occurrences of physical hysterons on the FORC diagram for 2D arrays of magnetic nanowires. C. Dobrota[1] and *A. Stancu*[1] *1. Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*

HP-10. Heat Assisted Magnetic Recording Processes of Exchange Coupled Composite Media. *W. Fan*[1,2], R.F. Evans[1] and R.W. Chantrell[1] *1. Department of Physics, University of York, York, United Kingdom; 2. School of Physics Science and Engineering, Tongji University, Shanghai, China*

HP-11. Modeling of exchange interaction energy in magnetic recording. *M. Igarashi*[1], S. Tonooka[1], H. Katada[1], M. Maeda[1], M. Nishida[1] and R. Wood[2] *1. JRL, HGAT Japan, Odawara, Kanagawa, Japan; 2. HGST, San Jose, CA*

HP-12. Grain modeling based on a real media. *T. Jin*[1] and H. Muraoka[1] *1. RIEC, Tohoku University, Sendai, Miyagi, Japan*

HP-13. Performance Evaluation of Signal Dependent Noise Predictive ML Detector for TDMR R/W Channel. *S. Kawamura*[1], Y. Okamoto[1], Y. Nakamura[1], H. Osawa[1], Y. Kanai[2] and H. Muraoka[3] *1. Graduate School of Science and Engineering, Ehime University, Matsuyama, Japan; 2. Department of Information and Electronics Engineering, Niigata Institute of Technology, Kashiwazaki, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

HP-14. A closed form hysteresis model. *Z. Szabó*[1] and J. Füzi[2] *1. Department of Broadband Infocommunications and Electromagnetic Theory, Budapest University of Technology and Economics, Budapest, Hungary; 2. Neutron Spectroscopy Department, Wigner Research Centre for Physics, Budapest, Hungary*

HP-15. Imaging and anisotropy control of magnetic switching in spintronic electrodes. *L.C. Phillips*[1], W. Yan[1], X. Moya[1,2], M. Ghidini[1,3], F. Maccherozzi[4], S. Dhesi[4] and N.D. Mathur[1] *1. Department of Materials, University of Cambridge, Cambridge, United Kingdom; 2. Facultat de Fisica, Universitat de Barcelona, Barcelona, Spain; 3. DiFeST, Univesity of Parma, Parma, Italy; 4. Diamond Light Source, Chilton, United Kingdom*

HP-16. Magnetic properties of cylindrical nanostructures with wire-tube morphology. A. Pereira[1], J. Palma[1], D. Salazar Aravena[1], M. Vázquez[2], J.C. Denardin[1] and *J. Escrig*[1] *1. Departamento de Física, Universidad de Santiago Chile, Santiago, Chile; 2. Institute of Materials Science of Madrid, Madrid, Spain*

FRIDAY AFTERNOON 2:30 CORAL 4 (POSTERS)

Session HQ
LOW-DIMENSIONAL & MOLECULAR MAGNETISM II (Poster Session)
Yeong-Ah Soh, Chair

HQ-01. Kinetic effects on double hysteresis in spin crossover molecular magnets analyzed with FORC diagram technique. R. Stan[1], R. Gaina[1], R. Tanasa[1], C. Enachescu[1], *A. Stancu*[1] and R. Bronisz[2] *1. Al. I. Cuza University Iasi, Iasi, Romania; 2. University of Wroclaw, Wroclaw, Poland*

HQ-02. High temperature spin dynamics in linear magnetic chains, molecular rings and segments by NMR. F. Adelnia[1,2], M. Mariani[3], L. Ammannato[4], A. Caneschi[4], D. Rovai[4], R. Winpenny[5], G. Timco[5], *M. Corti*[2], A. Lascialfari[1,2] and F. Borsa[2] *1. Dipartimento di Fisica, Universita' degli Studi di Milano and INSTM, Milano, Italy; 2. Dipartimento di Fisica, Universita' degli Studi di Pavia and INSTM, Pavia, Italy; 3. Dipartimento di Fisica, Universita' di Bologna, Bologna, Italy; 4. Dipartimento di Chimica, Universita' degli Studi di Firenze and INSTM, Firenze, Italy; 5. School of Chemistry, The University of Manchester, Manchester, United Kingdom*

HQ-03. Large perpendicular magnetic anisotropy of single Co atom on MgO monolayer: A first-principles study. *B. Shao*[3], M. Feng[1] and X. Zuo[2] *1. School of Physics, Nankai University, Tianjin, Tianjin, China; 2. College of Electronic Information and Optical Engineering, Nankai University, Tianjin, Tianjin, China; 3. Department of Physics, Tsinghua University, Beijing, Beijing, China*

HQ-04. Local spin dynamics at low temperature in the slowly relaxing molecular chain $[Dy(hfac)_3\{NIT(C_6H_4OPh)\}]$: a μ^+SR study. *P. Arosio*[3], M. Corti[2], M. Mariani[1], L. Bogani[4], A. Caneschi[5] and A. Lascialfari[3,2] *1. Department of Physics and Astronomy, Università di Bologna, Bologna, Italy; 2. Department of Physics, Università degli Studi di Pavia, and INSTM, Pavia, Italy; 3. Department of Physics, Università degli Studi di Milano, and INSTM, Milano, Italy; 4. 1.Physikalisches Institut, Universität Stuttgart, Stuttgart, Germany; 5. INSTM and Department of Chemistry, University of Florence, Firenze, Italy*

HQ-05. Magnetism and exchange interaction in small Terbium clusters. S. Ghosh[1,2], B. Sanyal[2], L. Peters[3], C. van Dijk[4], J. Bowlan[5], W. de Heer[7], A. Delin[2,6], *I. Di Marco*[2], O. Eriksson[2], M.I. Katsnelson[3,8] and A. Kirilyuk[3] *1. School of Applied and Engineering Physics, Cornell University, Ithaca, NY; 2. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 3. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands; 4. Van 't Hoff Institute for Molecular Sciences, University of Amsterdam, Amsterdam, Netherlands; 5. Max-Planck-Gesellschaft, Fritz-Haber-Institut, Berlin, Germany; 6. Department of Materials and Nanophysics, Royal Institute of Technology (KTH), Stockholm, Sweden; 7. School of Physics, Georgia Institute of Technology, Atlanta, GA; 8. Department of Theoretical Physics and Applied Mathematics, Ural Federal University, Ekaterinburg, Russian Federation*

HQ-06. First Order Reversal Curves (FORC) analysis of the thermal hysteresis of spin crossover nanoparticles within the mechanoelastic model. *L. Stoleriu*[1], P. Chakraborty[2], A. Hauser[2], A. Stancu[1] and C. Enachescu[1] *1. Faculty of Physics, Alexandru Ioan Cuza University, Iasi, Romania; 2. Département de chimie physique, Université de Genève, Genève, Switzerland*

HQ-07. Electron density redistribution as a result of magnetic ordering in $(DOEO)_4[HgBr]_4TCE$ crystals. *A. Chernenkaya*[1,2], A. Kotov[3], K. Medjanik[2], A. Gloskovskii[4], P. Nagel[5], M. Merz[5], S. Schuppler[5], O. Koplak[3], R. Morgunov[3], E. Yagubskii[3], H. Elmers[2] and G. Schönhense[2] *1. Graduate School of Excellence Materials Science in Mainz, Mainz, Germany; 2. Institut für Physik, Johannes Gutenberg-Universität, Mainz, Germany; 3. Institute of Problems of Chemical Physics, Russian Academy of Science, Chernogolovka, Russian Federation; 4. Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany; 5. Institut für Festkörperphysik, Karlsruhe Institute of Technology, Karlsruhe, Germany*

HQ-08. Tuning the magnetism in low-dimensional Ising Fe-doped $CoNb_2O_6$ with a strongly ferrimagnetic system. *C.I. Nlebedim*[1,2] and D.C. Jiles[2,1] *1. Ames Laboratory, US Department of Energy, Iowa State University, Ames, IA; 2. Electrical and Computer Engineering, Iowa State University, Ames, IA*

HQ-09. Monte Carlo study of surface effect on a mixed spin-1 and spin 3/2 Ising ferrimagnetic system with two alternative layers. *W. Wang*[1] and W. Jiang[1] *1. Shenyang University of Technology, Shenyang, Liaoning, China*

HQ-10. Novel magneto-optical phenomena in cyano-bridged bimetal assemblies. *S. Ohkoshi*[1,2] *1. The University of Tokyo, Tokyo, Japan; 2. CREST, JST, Tokyo, Japan*

HQ-11. Ligand-driven Spin-crossover Behavior of Fe^{II} Molecules. D. Viet Thang[1], *N.A. Tuan*[1,2], N. Van Thanh[1], P. Thi Tuan Anh[1], N. Huy Sinh[1] and D. Hieu Chi[2] *1. Faculty of Physics, Hanoi University of Science, Vietnam National University, Hanoi, Hanoi, Vietnam; 2. Japan Advanced Institute of Science and Technology, Nomi, Ishikawa, Japan*

HQ-12. Determination of the internal magnetic structure of the macrocyclic tetranuclear 3d-4f complexes with Cu_3Tb core by means of x-ray magnetic circular dichroism (XMCD). *K. Kuepper*[1], K. Balinski[1], L. Schneider[1], M. Neumann[1], S. Brooker[2], H.L. Feltham[2], A.K. Powell[3], L. Joly[4], F. Bondino[5], E. Magnano[5], S. Nappini[5] and I. Píš[6] *1. School of Physics, Osnabrück University, Osnabrück, Germany; 2. Department of Chemistry and the MacDiarmid Institute, University of Otago, Dunedin, New Zealand; 3. Karlsruhe Institute of Technology, Karlsruhe, Germany; 4. IPCMS UCMS 7504 CNRS, Université de Strasbourg, Strasbourg, France; 5. Laboratorio TASC, CNR-IOM, Area Science Park Basovizza (Ts), Trieste, Italy; 6. Sincrotrone Trieste, Area Science Park Basovizza (Ts), Trieste, Italy*

HQ-13. Magnetic ordering and 2D-spin frustration in $Na_x(Co_{2/3}Mn_{2/9}Ni_{1/9})O_2$. *M. Wikberg*[1], S. Doubaji[2], M. Dahbi[3], I. Saadoune[2], T. Gustafsson[3], K. Edström[3], P. Svedlindh[4] and O. Karis[1] *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Faculty of Sciences and Technologies, University Cadi Ayyad, Marrakech, Morocco; 3. Department of Materials Chemistry, Uppsala University, Uppsala, Sweden; 4. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden*

HQ-14. Strain controlled orbital state and magnetization in $LaMnO_{3+\delta}$ films. *A. Zhang*[1], S. Cheng[2], J. Lin[2] and X. Wu[3] *1. College of Science, Hohai University, Nanjing, China; 2. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 3. Lab of Solid State Microstructures, Department of Physics,, Nanjing University, Nanjing, China*

HQ-15. Temperature Dependence of RKKY Interaction. A. Kundu[1] and *S. Zhang*[1] *1. Department of Physics, University of Arizona, Tucson, AZ*

HQ-16. Temperature Dependence of Magnetic Dead Layer Thicknesses in Ferromagnet / Semiconductor Hybrid Heterostructures. *M. Tokac*[1], C.J. Kinane[2], R.R. Robinson[1], D. Atkinson[1] and A. Hindmarch[1] *1. Physics Department, Durham University, Durham, United Kingdom; 2. ISIS, Rutherford Appleton Laboratory, Oxford, United Kingdom*

Session HR
MULTIFERROICS III
(Poster Session)
Nicolas Jaouen, Chair

HR-01. Spin-phonon study of $EuMn_2O_5$ nanorods. *T. Hsu*[1], C. Yang[1], Y. Tong[1], W. Shih[1] and K. Lin[2] *1. Department of Physics, Chung Yuan Christian University, Chung-Li, Taiwan; 2. Department of Chemical Engineering & Materials Science, Yuan Ze University, Chung-Li, Taoyuan, Taiwan*

HR-02. Investigation of spin reorientation in $YMn_{1-x}Fe_xO_3$ (x = 0.55, 0.6, 0.7, 0.8, 0.9, 1.0) by Mössbauer spectroscopy. *J. Lim*[1], Y. Choi[2], B. Lee[3] and C. Kim[1] *1. Department of Physics, Kookmin University, Seoul, Republic of Korea; 2. Department of Physics, Yonsei University, Seoul, Republic of Korea; 3. Department of Physics, Hankuk University of Foreign studies, Yongin, Republic of Korea*

HR-03. Local geometric and electronic structures, and origin of magnetism in Co-doped $BaTO_3$ multiferroics. *T. Phan*[1], T. Ho[1], V. Tien[1], T. Thanh[2] and S. Yu[1] *1. Chungbuk National University, Cheongju, Republic of Korea; 2. Vietnam Academy of Science and Technology, Hanoi, Vietnam*

HR-04. Low-temperature thermal conductivity of multiferroic orthoferrites $RFeO_3$ (R = Gd and Dy). *X. Zhao*[1], Z. Zhao[2], F. Zhang[2] and X. Sun[2] *1. School of Physical Sciences, University of Science and Technology of China, Hefei, Anhui, China; 2. Hefei National Laboratory for Physical Sciences at Microscale, University of Science and Technology of China, Hefei, Anhui, China*

HR-05. Modulated multiferroic phases and ferroelectric polarization in $Mn_{1-x}Ru_xWO_{4+\delta}$. H. Yu[1], X. Li[1], M. Liu[1], Z. Yan[1], *X. Zhou*[1] and J. Liu[1] *1. Physics, Nanjing University, Nanjing, China*

HR-06. Spin structural transition in orthorhombic perovskite $Sm_{1-x}Lu_xMnO_3$: evidenced by the emergence of ferroelectric polarization. N. Zhang[1,3], S. Dong[2], F. Chang[1], Z. Fu[1] and *J. Liu*[3] *1. Department of Physics, Henan Normal University, Xinxiang, Henan, China; 2. Department of Physics, Southeast University, Nanjing, Jiangsu, China; 3. Laboratory of Solid State Microstructures, Nanjing University, Nanjing, Jiangsu, China*

HR-07. First-principles investigation of the multiferroics in double perovskite: Zn_2FeTaO. *B. Shao*[2], M. Feng[3] and X. Zuo[1] *1. College of Electronic Information and Optical Enginnering, Nankai University, Tianjin, Tianjin, China; 2. Department of Physics, Tsinghua University, Beijing, Beijing, China; 3. School of Physics, Nankai University, Tianjin, Tianjin, China*

HR-08. Unique spin reorientation behavior of $DyFeO_3$ - $DyMnO_3$ single crystal. H. Shen[1,2], *Z. Cheng*[2], F. Hong[2], J. Xu[1] and X. Wang[2] *1. Shanghai Institute of Technology, Shanghai, China; 2. Institute for Superconducting and Electronic Materials, Wollongong, NSW, Australia*

HR-09. Soft Mode Behavior in Up-up-down-down Spin Magnet. *Y. Guo*[2,1] *1. Deparment of Physics, Nanjing University, Nanjing, Jiangsu, China; 2. School of Physics and Engineering, Jiangsu Second Normal University, Nanjing, Jiangsu, China*

HR-10. Roles of Ho^{3+} and Mn^{3+} spin orders in ferroelectricity generation of orthorhombic $HoMnO_3$: Investigation on Ho/Mn nonstoichiometricity. J. Wang[1], *Z. Yan*[1], X. Zhou[1] and J. Liu[1] *1. Physics, Laboratory of Solid State Microstructures, Nanjing University, Nanjing, Jiangsu, China*

HR-11. Unusual ferroelectricity generation in highly frustrated Fe-doped $Ho_2Ti_2O_7$. L. Lin[1], *Y. Xie*[1], J. Wen[2], Z. Yan[1], X. Zhou[1] and J. Liu[1] *1. Laboratory of Solid State Microstructures, Nanjing University, Nanjing, Jiangsu Province, China; 2. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD*

HR-12. Size effect on multiferroic $TbMn_2O_5$ nanorods. *C. Yang*[1], Y. Tong[1], Y. Chen[1,2], T. Hsu[1], P. You[1], T. Chan[3] and Y. Chen[4] *1. Department of Physics, Chung Yuan Christian University, Chung-Li, Taiwan; 2. Department of Photonics and Institute of Electro-Optical Engineering, National Chiao Tung University, Hsinchu, Taiwan; 3. National Synchrotron Radiation Research Center, HsinChu, Taiwan; 4. Institute of Physics, Academia Sinica, Taipei, Taiwan*

HR-13. Effect of metamagnetism on multiferroic property in double perovskite Sm_2CoMnO_6. L. Wang[1], W. Zhou[1], *D. Wang*[1], Q. Cao[1] and Y. Du[1] *1. National Laboratory of Solid State Microstructures and Key Laboratory of Nanomaterials for Jiangsu Province, Department of Physics, Nanjing University, Nanjing, Jiangsu, China*

HR-14. Effects of aluminum substitution on the crystal structure and magnetic properties in Zn_2Y-type hexaferrites. *J. Yang*[1] *1. East China Normal University, Shanghai, China*

HR-15. Microstructure and properties of Sc-modified $BiFeO_3$-$BaTiO_3$ multiferroic ceramics with MnO_2 addition. *B. Zhu*[1], Y. Wan[2], Y. Zhang[1], D. Lin[2], J. Ou-Yang[1], S. Chen[1] and X. Yang[1] *1. School of Optical and Electronic Information,, Huazhong University of Science and Technology, Wuhan, Hubei, China; 2. College of Chemistry and Materials Science, and Visual Computing and Virtual Reality Key Laboratory of Sichuan Province, Sichuan Normal University, Chengdu, Sichuan, China*

HR-16. Unusual enhancement of multiferroicity in YMn_2O_5 due to ferroelectrically active TiO_6 oxygen octahedral units. S. Li[2], X. Jiang[2], Z. Yan[1], X. Zhou[1] and *J. Liu*[1] *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 2. School of Mathematics and Physics, Hubei Polytechnic University, Huanhshi, China*

FRIDAY AFTERNOON 2:30

CORAL 4 (POSTERS)

Session HS
MULTILAYERS AND THIN FILMS IV (Poster Session)

Di Wu, Chair

HS-01. Anisotropic magnetoresistance of Co/Ni multilayers. C.J. Thompson[2], G.A. Bellino[2], B. Chen[2], S.K. Patel[2], P.D. Sparks[2], *J.C. Eckert*[2], M. Gottwald[1], J.J. Kan[1] and E.E. Fullerton[1] *1. Center of Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 2. Physics, Harvey Mudd College, Claremont, CA*

HS-02. Domains structures and magnetization reversal in Co/Pd and CoFeB/Pd multilayers. *R. Sbiaa*[2], M. Ranjbar[1] and J. Akerman[1,3] *1. Physics, University of Gothenburg, Gothenburg, Sweden; 2. Physics, Sultan Qaboos University, Al-Khod, Oman; 3. Materials Physics, Royal Institute of Technology (KTH), Kista, Sweden*

HS-03. Blocking the collapse of domain size during the spin-reorientation transition of canted Co/Pt multilayer films by second-order anisotropy. *R. Frömter*[1], K. Bagschik[1], J. Bach[1], B. Beyersdorff[1], G. Winkler[1], L. Müller[2], S. Schleitzer[2], M. Berntsen[2], C. Weier[3], R. Adam[3], G. Grübel[2] and H. Oepen[1] *1. Universität Hamburg, Hamburg, Germany; 2. DESY, Hamburg, Germany; 3. PGI, FZ Jülich, Jülich, Germany*

HS-04. Dynamic behavior of multilayer rings: effects of interlayer exchange coupling. *X. Zhou*[1], J. Ding[1] and A. Adeyeye[1] *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

HS-05. Effect of microstructure on the magnetic properties of Co/Ni multilayer films for use in STT-MRAM. M. Arora[1], *N.R. Lee-Hone*[1], R. Huebner[2], T. Mckinnon[1], E. Montoya[1], B. Heinrich[1], D.M. Broun[1] and E. Girt[1] *1. Physics, Simon Fraser University, Surrey, BC, Canada; 2. Institute for Ion Beam Physics and Materials Research, Helmholtz Zentrum Dresden Rossendorf, Dresden, Saxony, Germany*

HS-06. Dirac cones in transition metal doped boron nitride.
M. Feng[1], *X. Zuo*[2] and B. Shao[3] *1. School of Physics, Nankai University, Tianjin, China; 2. College of Electronic Information and Optical Engineering, Nankai University, Tianjin, China; 3. Department of Physics, Tsinghua University, Beijing, China*

HS-07. High-frequency magnetic properties of $[FeCo/FeCo\text{-}SiO_2]_n$ multilayered films deposited on flexible substrate.
L. Zhang[3,2], W. Zhu[3,1], H. Zheng[1], X. Wang[3,2], J. Xie[3,2] and J. Deng[3,2] *1. School of Microelectronics and Solid-State Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China; 3. National Engineering Research Center of Electromagnetic Radiation Control Materials, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

HS-08. Controlling room temperature ferromagnetism-antiferromagnetic in CoO/CoO_x core–shell structure.
M. Yang[1,2], C. Lai[1] and M. Tung[2] *1. National Tsing Hua University, Hsinchu, Taiwan; 2. Industrial Technology Research Institute, Hisinchu, Taiwan*

HS-09. The annealing induced decrease of blocking temperature in exchange biased Co/CoO film.
R. Wu[1], X. Peng[1], J. Wei[1], J. Fu[1], Y. Xia[1], C. Wang[1], J. Han[1], H. Du[1] and *J. Yang*[1] *1. School of Physics, Peking University, Beijing, Beijing, China*

HS-10. Synthesis and characterization of exchange bias system NiFe/ $La_{0.45}Sr_{0.55}MnO_3$ using atomically flat antiferromagnetic manganite film.
B. Kim[1], S. Ki[1] and J. Dho[1] *1. Physics, Kyungpook National University, Daegu, Republic of Korea*

HS-11. On the crystal growth mechanism of magnetically contrasted $Fe_{3-x}O_4$-CoO nano-aggregates in polyol.
S. Ammar[2], T. Gaudisson[2], N. Yaacoub[3], J. Grenèche[3], R. Valenzuela[1], P. Sainctavit[4] and N. Menguy[4] *1. Instituto de Investigaciones en Materiales (IIM), Universidad Nacional Autonoma de Mxico (UNAM), Mexico, Mexico; 2. ITODYS, Université Paris Diderot, Sorbonne Paris Cité, Paris, France; 3. IMMM, Université du Maine, Le Mans, France; 4. IMPMC, Université Pierre et Marie Curie, Sorbonne Univ., Paris, France*

HS-12. Influence of growth conditions on exchange bias of NiMn-based spin valves.
A. Wienecke[1], R. Kruppe[1] and L. Rissing[1] *1. Institute for Microproduction Technology, Leibniz Universitaet Hannover, Garbsen, Germany*

HS-13. Anomalous Hall effect in Fe/Au multilayers.
Q. Zhang[1], P. Li[1,2], Z. Guo[3], I. Li[3] and X. Zhang[1,3] *1. Division of Physical Science and Engineering, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia; 2. School of Science, Tianjin University, Tianjin, China; 3. Advanced Nanofabrication and Imaging & Characterization, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia*

HS-14. Anomalous Hall-effect at paramagnetic phase in MnAs/GaAs superlattices. *J. Song*[2,1], J. Lee[2], Y. Cui[2] and J. Ketterson[2] *1. Physics, Chungnam National University, Daejeon, Republic of Korea; 2. Physics and Astronomy, Northwestern University, Evanston, IL*

HS-15. Anomalous Hall effect of epitaxially grown Ni_xCo_{1-x} thin films. *W. Fan*[1], L. Ma[1], Z. Shi[1] and S. Zhou[1] *1. School of Physics Science and Engineering, Tongji University, Shanghai, China*

HS-16. Tb doping induced enhancement of the anomalous Hall effect in NiFe films. *L. Ma*[1], J. Zhu[1] and S. Zhou[1] *1. Physics, Tongji University, Shanghai, Shanghai, China*

FRIDAY AFTERNOON 2:30

CORAL LOUNGE (POSTERS)

Session HT
DOMAIN WALLS III
(Poster Session)

Sebastian Gliga, Co-Chair
Reinoud Lavrijsen, Co-Chair

HT-01. Normal modes of a pinned transverse domain wall: geometry dependence and resonance near depinning. *P. Metaxas*[3,2], M. Albert[1], A. Anane[2], H. Fangohr[1], S. Lequeux[2], J. Grollier[2] and V. Cros[2] *1. Engineering and the Environment, University of Southampton, Southampton, United Kingdom; 2. Unite Mixte de Physique CNRS/Thales & Universite Paris-Sud, Palaiseau, France; 3. School of Physics, University of Western Australia, Crawley, WA, Australia*

HT-02. Domain Wall Phenomena in High and Low Damping Materials with Perpendicular Magnetic Anisotropy. *J. Wells*[2], H. Corte-León[2,3], J. Lee[1], R. Mansell[1], J.P. Morgan[1], A. Beguivin[1], R. Cowburn[1], K. Rott[4], G. Reiss[4] and O. Kazakova[2] *1. Thin Film Magnetism, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom; 2. National Physical Laboratory, Teddington, United Kingdom; 3. Physics, Royal Holloway, University of London, Egham, Surrey, United Kingdom; 4. Universität Bielefeld, Bielefeld, Germany*

HT-03. Impact of Seed/Capping Layers on Spin-Orbit Torque Driven Domain Wall Motion in Co/Ni Multi-layers. *V.M. Sokalski*[1], D. Bromberg[2], M.T. Moneck[2], V. Sundar[1], Z. Dai[2] and J. Zhu[2] *1. MSE, Carnegie Mellon University, Pittsburgh, PA; 2. ECE, Carnegie Mellon University, Pittsburgh, PA*

HT-04. Spin wave induced domain wall motion with Dzyaloshinskii-Moriya interaction. *W. Wang*[1], M. Albert[1], M. Beg[1], M. Bisotti[1], D. Chernyshenko[1], D. Cortes[1], I. Hawke[2] and H. Fangohr[1] *1. Engineering and the Environment, Southampton, United Kingdom; 2. Mathematical Sciences, Southampton, United Kingdom*

HT-05. Domain walls in the weak and strong limits of Dzyaloshinskii-Moriya interaction. E. Martinez[1], *S. Emori*[3,2] and G. Beach[3] *1. Dpto. Fisica Aplicada., Universidad de Salamanca, Salamanca, Spain; 2. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA; 3. Department of Materials Science, Massachusetts Institute of Technology, Cambridge, MA*

HT-06. Emerging Chirality Combination for Remote Walker Breakdown in Multiple Nanowire System. *S. Krishnia*[1], I. Purnama[1] and W. Lew[1] *1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*

HT-07. Spin Hall torque driven domain wall creep. *T. Taniguchi*[1], K. Kim[1], Y. Yoshimura[1], T. Moriyama[1], H. Tanigawa[2], E. Kariyada[2] and T. Ono[1] *1. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 2. RENESAS Electronics Corporation, Sagamihara, Kanagawa, Japan*

HT-08. 360° Domain Wall Injection into Magnetic Thin Films. *A.L. Gonzalez Oyarce*[1], J. Llandro[1] and C.H. Barnes[1] *1. Cavendish Laboratory, University of Cambridge, Cambridge, Cambridgeshire, United Kingdom*

HT-09. Fast Formation of 360° Domain Wall by Current-Induced Oersted Field and Geometric Control. *D. Wang*[1], W. Ju[1], J. Bicke[2], K. Aidala[2] and M. Tuominen[1] *1. Physics, University of Massachusetts Amherst, Amherst, MA; 2. Physics, Mount Holyoke College, South Hadley, MA*

HT-10. Micromagnetic study of interaction between achiral and homochiral domain walls in ultrathin ferromagnetic strips. *Ó. Alejos*[1] and E. Martínez[2] *1. Electricidad y Electrónica, Universidad de Valladolid, Valladolid, Spain; 2. Física Aplicada, Universidad de Salamanca, Salamanca, Spain*

HT-11. Effect of spinmotive force on spin current in nonlocal spin valve. *J. Ieda*[1,4], M. Ichimura[2,4], S. Takahashi[3,4] and S. Maekawa[1,4] *1. ASRC, JAEA, Tokai, Ibaraki, Japan; 2. CRL, Hitachi, Ltd., Hatoyama, Saitama, Japan; 3. IMR, Tohoku Univ., Sendai, Miyagi, Japan; 4. CREST-JST, Chiyodaku, Tokyo, Japan*

HT-12. Direct control of the magnetic configuration in artifcial multiferroic structures by the inverse magneto-strictive effect. S. Finizio[1], M. Foerster[3], M. Buzzi[2], B. Krüger[1], *M. Jourdan*[1], C. Vaz[1], J. Hockel[4], T. Miyawaki[5], A. Tkach[1], S. Valencia[6], F. Kronast[6], G. Carman[4], F. Nolting[2] and M. Kläui[1] *1. Physics, Mainz University, Mainz, Germany; 2. Pau Scherrer Institute, Villingen, Switzerland; 3. ALBA Synchrotron Light Source, Carretera, Spain; 4. Mechanical and Aerospace Engineering, University of California, Los Angeles, CA; 5. Crystalline Materials Science, Nagoya University, Nagoya, Japan; 6. Helmholtz Zentrum Berlin für Materialien und Energie, Berlin, Germany*

HT-13. Detection of Current Driven Magnetic Domains in [Co/Pd] Nanowire by Tunneling Magnetoresistive Sensor. *M. Okuda*[1,2], Y. Miyamoto[3,1], E. Miyashita[1], N. Saito[1], N. Hayashi[1] and S. Nakagawa[2] *1. NHK Science & Technology Research Laboratories, Tokyo, Japan; 2. Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan; 3. NHK Engineering System, inc., Tokyo, Japan*

HT-14. Effective Magnetic Wire Fabrication Process with Nanoimprint Lithography for Current Driven Magnetic Wire Memory. *A. Takeuchi*[1], T. Asari[1] and H. Awano[1] *1. Toyota Technological Institute, Nagoya, Aichi, Japan*

HT-15. Towards Nonvolatile Magnetic Crossbar Arrays: A 3D-integrated Field-coupled Domain Wall Gate with Perpendicular Anisotropy. *S. Breitkreutz*[1], I. Eichwald[1], G. Ziemys[1], G. Hiblot[1], G. Csaba[2], D. Schmitt-Landsiedel[1] and M. Becherer[1] *1. Lehrstuhl für Technische Elektronik, Technische Universität München, Munich, Germany; 2. University of Notre Dame, Notre Dame, IN*

HT-16. Influence of eddy current on current-induced domain wall motion in a magnetic nanowire. *T. Komine*[1], T. Aono[1] and R. Ando[1] *1. Faculty of Engineering, Ibaraki University, Ibaraki, Japan*

FRIDAY AFTERNOON 2:30

CORAL LOUNGE (POSTERS)

Session HU
FERRITES AND GARNETS IV
(Poster Session)

N. Venkataramani, Chair

HU-01. First-principles analysis method for specific futures of Tb^{3+} magneto-optical properties in terbium iron ($Tb_3Fe_5O_{12}$) and terbium gallium ($Tb_3Ga_5O_{12}$) garnets. N. Tsidaeva[1], *V.V. Abaeva*[1], S. Khaimanov[1], A. Makiev[1] and A. Ramonova[1] *1. North-Ossetian State University, Vladikavkaz, Russian Federation*

HU-02. Specific futures of magneto-optical anisotropy of europium iron garnet. N. Tsidaeva[1], *S. Khaimanov*[1], A. Turiev[1], V.V. Abaeva[1] and A. Khubaev[1] *1. North-Ossetian State University, Vladikavkaz, Russian Federation*

HU-03. Effect of shell permutation on electromagnetic properties of $ZnFe_2O_4$, SiO_2, and polyaniline core/shell/shell nanostructured disks. J. Wang[1], C. Leung[1] and *S. Or*[1] *1. The Hong Kong Polytechnic University, Kowloon, Hong Kong*

HU-04. Structural and magnetic properties dependence in cooling rate of zinc ferrite obtained by mechano-activation. K.L. López Maldonado[2], P. de la Presa[1,3], J.M. Alonso-Rodríguez[1,3], A. Hernando Grande[1,3] and *J.T. Elizalde Galindo*[2,3] *1. Instituto de Magnetismo Aplicado, Las Rozas, Madrid, Spain; 2. Physics and Matemathics, Universidad Autonoma de Ciudad Juarez, Ciudad Juarez, Chihuahua, Mexico; 3. Departamento de Física de Materiales, Universidad Complutense de Madrid, Madrid, Madrid, Spain*

HU-05. The effect of α-FeOOH precursor on the magnetic properties of Y-type hexa-ferrite composite. *C. Kim*[1], E. Na[1], I. Kim[1] and H. Kim[1] *1. Samsung Eletro-Mechanics, Suwon-si, Gyeonggi-do, Republic of Korea*

HU-06. Annealing effect on electrical resistance transition temperature and magnetoresistance in nanostructured $MnFe_2O_4$. *L. Vazquez Zubiate*[2], P. de la Presa[3,1], J.R. Farias Mancilla[2], D.M. Carrillo Flores[2], J.F. Hernandez Paz[2], A. Hernando Grande[3,1] and J.T. Elizalde Galindo[2] *1. Departamento de Física de Materiales, Universidad Complutense de Madrid, Madrid, Madrid, Spain; 2. Physics and Matemathics, Universidad Autonoma de Ciudad Juarez, Ciudad Juarez, Chihuahua, Mexico; 3. Instituto de Magnetismo Aplicado, Las Rozas, Madrid, Spain*

HU-07. Left-handed metastructures with selective frequency transmission window for GHz shielding applications. G. Ababei[1], C.S. Olariu[1], N. Lupu[1] and *H. Chiriac*[1] *1. National Institute of Research & Development for Technical Physics, Iasi, Romania*

HU-08. Nonlinear spin waves with spatially modulated wave front in a two-sublattice antiferromagnet. *O.Y. Gorobets*[2,1], Y.I. Gorobets[1,2] and R.V. Verba[1] *1. Institute of Magnetism, Kyiv, Ukraine; 2. National Technical University of Ukraine "KPI", Kyiv, Ukraine*

HU-09. 1D Magnetic Materials of Fe_3O_4 and Fe with High Performance of Microwave Absorption Fabricated by Electrospinning Method. R. Han[1], D. Zhou[1], M. Zhu[1], F. Li[2] and *A. Li*[1] *1. Division of Functional Material, Central Iron & Steel Research Institute, Beijing, Beijing, China; 2. Institute of Applied Magnetics, Lanzhou University, Lanzhou, Gansu, China*

HU-10. Microwave and Millimeter Wave Dielectric Permittivity and Magnetic Permeability of Epsilon-Gallium-Iron-Oxide Nano-Powders. *L. Chao*[1] and M.N. Afsar[1] *1. Tufts University, Medford, MA*

HU-11. Adjustable way of broadening the low-frequency bandwidth of the magnetic absorber by metamaterial design. W. Wang[1], Y. Wang[1], Y. Cheng[1], D. Cheng[1], Y. Liu[1], *Y. Nie*[1] and R. Gong[1] *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, Hubei, China*

HU-12. FMR linewidth and magnetic properties of low-temperature sintered M-type barium hexaferrite. *Z. Zheng*[1], H. Zhang[1], Q. Yang[1] and F. Bai[1] *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

HU-13. Bandwidth-enhanced Microwave Absorbers Based on Carbonyl Iron and Metal-based Metamaterials. *W. Liang*[1] and R. Yang[1] *1. Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan*

HU-14. Perpendicularly oriented barium ferrite thin films with low microwave loss by pulsed laser deposition. Y. Li[1], J. Li[1], *H. Zhang*[1] and H. Su[1] *1. School of Microelectronics and Solid-State Electronics, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

HU-15. Giant magnetoimpedance in NiFe/Ta multilayer films on antidots and nanodome arrays. *J.C. Denardin*[1], R.B. da Silva[2], R.D. Della Pace[2] and L.S. Dorneles[2] *1. Fisica, Universidad de Santiago, Santiago, Chile; 2. Física, Universidade Federal de Santa Maria, Santa Maria, RS, Brazil*

HU-16. Hysteresis Loss Analysis of Soft Magnetic Materials under DC Bias Conditions. Z. Turgut[1,2], H. Kosai[1,2], J. Scofield[1], *S.L. Semiatin*[1] and J.C. Horwath[1] *1. AFRL, Wright-Patterson AFB, OH; 2. UES Inc., Dayton, OH*

FRIDAY AFTERNOON 2:30

CORAL LOUNGE (POSTERS)

Session HV
INDUCTORS AND TRANSFORMERS, AND NANOPARTICLES (Poster Session)

Zhiguang Wang, Co-Chair
Robert Shull, Co-Chair

HV-01. Quantitative Analysis of Mutual Coupling Effect for Multiple-Receptor Wireless Power Transfer via Magnetic Resonant Coupling. Z. Zhang[1], K. Chau[1], C. Liu[1] and *C. Qiu*[1] *1. Dept. of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong*

HV-02. An extension of the Neel-Brown model for systems with multiple switching pathways. *A. Roy*[1] and P. Kumar[1]
1. Department of Physics, Indian Institute of Science, Bangalore, Karnataka, India

HV-03. On the role of magnetism during <111> to <100> interstitial loop convergence in BCC Fe and FeCr-alloys.
K. Odbadrakh[1], G. Stocks[2], H. Xu[3], R. Stoller[2] and Y. Osetsky[2]
1. JICS, UT-ORNL, Oak Ridge, TN; 2. MSTD, ORNL, Oak Ridge, TN; 3. Material Science and Engineering, University of Tennessee, Knoxville, TN

HV-04. Design and Implementation Analysis of a Double-layer Transverse Flux Induction Heating System with Distributed Spiral Coils. *J. Wang*[1], L. Wang[1], J. Li[2] and K. Liu[1] *1. School of Electrical Engineering, Wuhan University, Wuhan, Hubei, China; 2. College of Mechanical Engineering, Wuhan University of Technology, Wuhan, China*

HV-05. A Study on Thermal Characteristics Analysis of High Frequency Switching Transformer. *J. Yoo*[1], C. Park[1], G. Lee[1] and T. Jung[1] *1. Kyungnam University, Chang-won, Republic of Korea*

HV-06. Original Technique Coil Design Method for Wireless Power Transmission via Electromagnetic Induction. *Y. Ota*[1], S. Miyahara[2], F. Sato[1] and H. Matsuki[2] *1. Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan*

HV-07. Correlation of Magnetostriction Variation on Magnetic Loss and Noise for Power Transformer. *C. Hsu*[3], C. Lee[1], J. Liu[2], C. Chang[4] and S. Cheng[5] *1. Department of Electrical Engineering, Chung Yung Christian University, Chung-Li, Taiwan; 2. Department of Multimedia and M-Commerce, Kai Nan University, Lu-Zhu, Taiwan; 3. Division of Electrical Engineering, Fortune Electric Company Ltd., Tao-Yuan, Taiwan; 4. Department of Information and Telecommunications Engineering, Ming Chuan University, Tao-Yuan, Taiwan; 5. Department of Aircraft Engineering, Army Academy R.O.C., Tao-Yuan 320, Taiwan*

HV-08. A vibration energy harvester using five-phase laminate composite transducer based on FeCuNbSiB nanocrystalline soft magnetic alloy. *J. Qiu*[1], Y. Wen[1], P. Li[1], H. Chen[1] and J. Yang[2,1] *1. College of Optoelectronic Engineering, Chongqing University, Chongqing, Chongqing, China; 2. Material Science Engineering, Georgia Institute of Technology, Atlanta, GA*

HV-09. Transfer Efficiency Analysis of Wireless Power Transfer System under Frequency Drift. S. Huang[2] and *Z. Li*[1]
1. College of Electrical and Information Engineering, Hunan University, Changsha, Hunan, China; 2. College of Electrical and Information Engineering, Hunan University, Changsha, Hunan, China

HV-10. Research on Optimal Characteristic Point of Metering Error of Multi-winding Potential Transformers. *G. Zhou*[1]
1. Southeast University, Nanjing, Jiangsu Province, China

HV-11. Effect of Mg-ions substitution on microstructure and magnetic properties of Ni-Cd ferrites nanoparticles.
M.M. Eltabey[2,3], A.M. Massoud[4,5] and *C. Radu*[1] *1. Lake Shore Cryotronics, Inc., Westerville, OH; 2. Basic Engineering Science Department, Faculty of Engineering, Menoufiya University, Menoufiya, Egypt; 3. Science Department, Faculty of Medicine, Jazan University, Jazan, Saudi Arabia; 4. Physics Department, Faculty of Science, Ain Shams University, Cairo, Egypt; 5. Physics Department, Faculty of Science, Jazan University, Jazan, Saudi Arabia*

HV-12. Hydrothermal fabrication of octahedral shaped Fe_3O_4 nanoparticles and their magnetorheological response.
H. Choi[1] and H. Jung[1] *1. Department of Polymer Science and Engineering, Inha Univ, Incheon, Republic of Korea*

HV-14. Generalized stacking fault in FePt nanoparticles and effects of extended defects on magnetocrystalline anisotropy energy.
A. Alsaad[2,1], N. Al-Aqtash[1] and R. Sabirianov[1] *1. Physics, University of Nebraska at Omaha, Omaha, NE; 2. Physics, Jordan University of Science and Technology, Irbid, Jordan*

HV-15. Investigation of thermal property of Co-Zn nanoparticles associated with plasma treatment for hyperthermia. *S. Lee*[1], S. Kim[1] and C. Kim[1] *1. Kookmin University, Seoul, Republic of Korea*

HV-16. Super-paramagnetic Behavior of $Co_{1-x}Zn_xFe_2O_4$ Nanoparticles. *H. Huang*[1], Y. Zhang[2], X. Yuan[2], Z. Ren[2], Y. Zhai[2,3], J. Du[3] and H. Zhai[3] *1. School of Material Science and Engineering, Southeast University, Nanjing, China; 2. Department of Physics, Southeast University, Nanjing, China; 3. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, China*

Session HW
MAGNETIC STIMULATION AND THE HUMAN INTERFACE
(Poster Session)

David Jiles, Chair

HW-01. A Wireless Charging Pillow for Implantable Hearing Aid: Design of Circular Array Coil for Minimization of Magnetic Weak Zone. *H. Lim*[1], K. Seong[2] and J. Cho[1] *1. Graduate School of Electronics Engineering, Kyungpook National University, Daegu, Republic of Korea; 2. Department of Biomedical Engineering, Kyungpook National University Hospital, Daegu, Republic of Korea*

HW-02. Effect of coil orientation and gyral folding pattern on induced electric fields during transcranial magnetic stimulation. *L.J. Crowther*[1], R.L. Hadimani[1] and D.C. Jiles[1] *1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*

HW-03. Magnetocardiogram measured by the fundamental mode orthogonal fluxgate array. *H. Karo*[1] and I. Sasada[1] *1. Applied Science for Electronics and Materials, Kyushu University, Fukuoka, Fukuoka, Japan*

HW-04. High Current Magnetic Field Generator (HCMFG) for Transcranial Magnetic Stimulation Application. *N.Y. Bouda*[1], J.W. Pritchard[1], R.J. Weber[1] and M. Mina[1] *1. ECpE, Iowa State University, Ames, IA*

HW-05. Shimming for High Field Magnetic Resonance Spectroscopy by Combining Spherical Harmonic Coils and Diamagnetic and Paramagnetic Materials. *J. Shen*[1] *1. NIMH, Bethesda, MD*

HW-06. Thermal and mechanical stability of adjustable "Halo coil" for transcranial magnetic stimulation. *Y. Meng*[1], R.L. Hadimani[1], J. Qu[1], Z. Xu[1], L.J. Crowther[1] and D.C. Jiles[1] *1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*

HW-07. Basic Study on the Influence of Inhibition Induced by the Magnetic Stimulation on the Peripheral Nerve. *A. Sato*[1,2], T. Torii[3], M. Iwahashi[1] and K. Iramina[2] *1. Department of Medical Care and Welfare Engineering, Tokai University, Kumamoto, Japan; 2. Graduate School of Systems Life Sciences, Kyushu University, Fukuoka, Japan; 3. Department of Medical Engineering, Junshin Gakuen University, Fukuoka, Japan*

HW-08. Functional Brain Measurements within the Prefrontal Area on Pseudo-"Blindsight" Induced by ELF Electromagnetic Stimulations. *H. Nakagawa*[1] and S. Ueno[2] *1. Department of Electrical and Electronic Engineering, Tokyo Denki University, Tokyo, Japan; 2. Department of Applied Quantum Physics, Kyushu University, Fukuoka, Japan*

HW-09. Auditory evoked field measurement using magneto-impedance sensors. *K. Wang*[1], S. Tajima[1], D. Song[1], N. Hamada[2], C. Cai[2] and T. Uchiyama[1] *1. Nagoya University, Nagoya, Aichi, Japan; 2. Aichi Steel Corporation, Tokai, Japan*

HW-10. Development of a mini centrifugal blood pump with magnetic bearing. T. Angelelli Nishiwaki[2], *C. Pai*[1,2] and S. Tadahiko[3] *1. Department of Mechatronics Engineering, Polytechnic School of University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil; 2. Biomedical Engineering, Federal University of ABC, Santo Andre, Sao Paulo, Brazil; 3. Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan*

HW-11. Magnetic Microrobot with Grip and Release Mechanisms for Object Delivery in Human Blood Vessels. *W. Lee*[1], G. Jang[1], S. Jeon[1] and J. Nam[1] *1. Dept of Mechanical Convergence Engineering, Hanyang University, Seoul, Republic of Korea*

HW-12. Design of a new wireless powering system for biomedical micro robot using magnetic resonance coupling. *W. Li*[1], K. Chau[1], T. Ching[2,1], C. Liu[1] and C. Qiu[1] *1. The University of Hong Kong, Hong Kong, Hong Kong; 2. University of Macau, Macao, China*

HW-13. Cell culture array using micron ferromagnetic ring-shaped thin films. *C. Huang*[2], Z. Wei[2], T. Ger[1] 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*

HW-14. Study on feasibility of hyper susceptibility to shearing motion for a flexible thin rubber sheet sensor. *K. Shimada*[1] and Y. Zheng[2] *1. Faculty of Symbiotic Systems Engineering, Fukushima University, Fukushima, Japan; 2. Department of Mechanical Engineering, Fukushima National College Technology, Iwaki, Fukushima, Japan*

HW-15. Application of bonded magnets: a tiny magnetic wireless pump for medical application. *S. Kim*[1,2], K. Ishiyama[2] and S. Hashi[2] *1. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Sendai, Japan; 2. Tohoku University, RIEC, Sendai, Japan*

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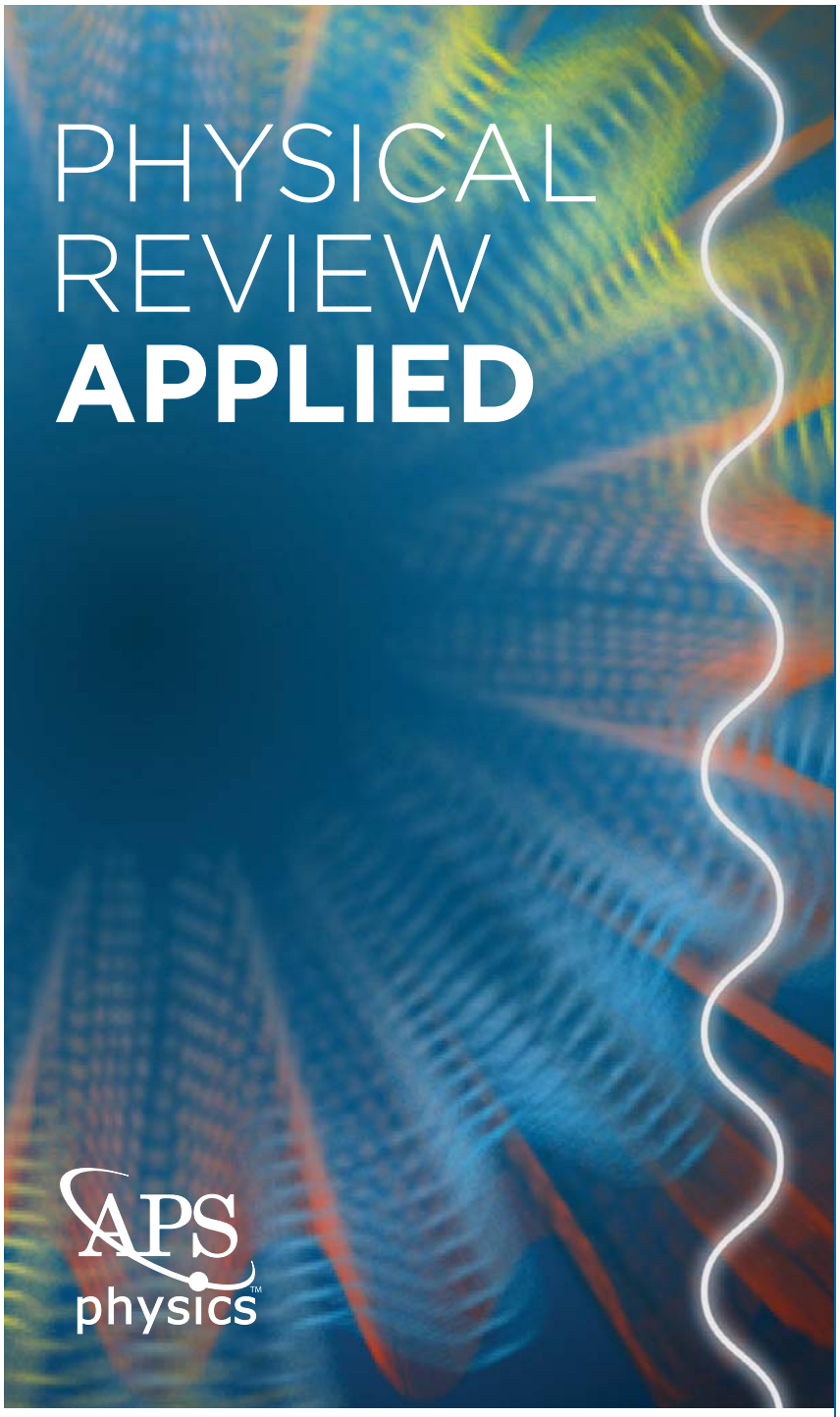

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