

61ST ANNUAL CONFERENCE ON MAGNETISM AND MAGNETIC MATERIALS

NEW ORLEANS, LOUISIANA
OCTOBER 31 – NOVEMBER 4, 2016

MMM
2016

New Orleans



op. 61



IEEE
MAGNETICS



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

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GENERAL CONFERENCE INFORMATION

SCOPE OF THE CONFERENCE

The 61st Annual Conference on Magnetism and Magnetic Materials (2016 MMM) is sponsored jointly by AIP Publishing and the IEEE Magnetics Society, 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 and contribute to the technical sessions. The technical program will include invited and contributed papers in oral and poster sessions, invited symposia, and an evening session, with about 1700 presentations overall. This Conference provides an outstanding opportunity for worldwide participants to meet their colleagues and collaborators and discuss developments in all areas of magnetism research.

NEW ORLEANS, LOUISIANA

New Orleans is one of the world's most fascinating cities. It is home to a unique melting pot of culture, food and music, and is one of America's most culturally and historically rich destinations. To learn more about the city, consider taking a city tour, a plantation tour, or even a swamp tour! Go to www.magnetism.org under "Travel Guide/City Information" to book a tour and receive a 10% discount.

The Conference will be held at the **New Orleans Marriott Hotel**, located adjacent to the famous French Quarter. This hotel offers easy access to the best restaurants in the city and an array of live music venues and Bourbon Street nightlife. Nearby attractions include the National WWII Museum, the Audubon Aquarium of the Americas and the bustling French Market. Please support our efforts to keep registration fees low by booking your room here. Discounted rates are available until October 7, 2016 at www.magnetism.org under "Travel Guide/ Hotel Information".

SPECIAL CONFERENCE SESSIONS

Tutorial: A Primer for Topology in Magnetism (Session YA)

.....

Monday, October 31 2:00 - 4:30 pm
Mardi Gras Ballroom A-E

Chair: Stephane Mangin (Université de Lorraine – CNRS)

Speakers: Ashvin Vishvanath (Harvard University)
 "Topology in Magnetism: Theory"

 André Thiaville (Université Paris-Sud)
 "Topology in Magnetism"

 Christos Panagopoulos (Nanyang Technological
University)
 "Interplay of Spin Orbit Coupling with Magnetism
in Low-Dimensions for Room Temperature Device
Applications"

Evening Session: Neuromorphic Computing (Session ZA)

Wednesday, November 2 6:00 - 7:40 pm
Mardi Gras Ballroom A-E

Chair: Peter Fischer (Lawrence Berkeley National Laboratory)

Speakers: Ivan K. Schuller (University of California, San Diego)
“Neuromorphic Computing”
Tetsuo Endoh (Tohoku University)
“Nonvolatile Brain-Inspired VLSIs Based on CMOS/MTJ Hybrid Technology for Ultralow-Power Performance and Compact Chip”
Julie Grollier (Unité Mixte de Physique CNRS/Thales)
“Spintronic Nanodevices for Bio-Inspired Computing”

At 6:00 pm, the Best Student Presentation Award winner will be announced.

Symposia

Eight symposia are scheduled during the Conference. These sessions consist entirely of invited talks by experts in the field and will take place in the Mardi Gras Ballroom on the 3rd floor.

AA	Spin Transport in Antiferromagnets
BA	Topological Insulator/Ferromagnet Heterostructures for Spintronics
CA	New Developments in Nanoscale Sensing with Nitrogen-Vacancy Center Magnetometry
DA	Voltage-Controlled Spintronics for Nanoelectronics Beyond Moore’s Law
EA	Terahertz Spintronics
FA	Spintronics with Superconductivity
GA	Ultralow Damping
HA	All Optical Switching

SPECIAL CONFERENCE EVENTS

Welcome Reception

All aboard! Conference attendees are invited to attend a Welcome Reception on Tuesday, November 1, sponsored by the IEEE Magnetics Society, to be held aboard the Natchez and Creole Queen Riverboats. We’ll begin at 6:00 pm with a private parade just for MMM attendees, departing from the New Orleans Marriott and proceeding down to the docks (about 0.4 miles). Then we set sail from 6:30 – 8:30 pm. Take in the sites of New Orleans from the Mississippi. This will be a fantastic and memorable networking event where you can connect with colleagues and friends. It is not to be missed!

Conference attendees will receive one ticket to the reception included in their registration. Additional guest tickets may be purchased in advance or onsite (\$70 for adults, \$35 for children 6-12 years old). All reception attendees must have a ticket to board the boat, including children. More information can be found at www.magnetism.org under “Program/ Reception”.

Meet the Experts

Supported by:



Students who have registered in advance of the Conference to attend one of these events will have the exclusive opportunity to participate in small, informal discussion groups with their designated Expert. Students are encouraged to bring their own lunch as only beverages will be provided. This event will be held Tuesday through Thursday from 12:00 - 1:00 pm in Studio 6. **You must register in advance.**

Thank you to the IEEE Magnetism Society for sponsoring the following networking events.

Student Networking Reception

The Student Networking Reception will be held on Wednesday, November 2nd from 5:00 - 6:30 pm in the Grand Ballroom Foyer on the 3rd floor. This event is open to all current college and graduate students.

Young Professionals Networking Event

The Young Professionals Networking Event will be held on Wednesday, November 2nd from 7:45 - 9:15 pm in Balcony I/J on the 4th floor. If you have just recently entered the professional workforce, join us for professional development insights, networking and refreshments.

Women in Magnetism Networking Event

Expand your professional network! Don't miss the Women in Magnetism Networking Event, sponsored by the IEEE Magnetism Society, on Thursday, November 3rd from 5:00 - 6:30 pm in the beautiful St. Charles Room on the 41st floor. This is an opportunity to become acquainted with women in the profession and to discuss a range of topics including leadership, work-life balance, and professional development. All graduate students, researchers and retirees are encouraged to attend. For more information, contact the event organizer Pallavi Dhagat at: dhagat@eecs.oregonstate.edu.

Bierstuben

Join us for a taste of New Orleans! A different Abita Brewing Company beer will be featured each evening at this event on the 3rd floor.

Monday	4:30 - 6:00 pm
Wednesday	5:00 - 6:30 pm
Thursday	5:00 - 6:30 pm

Coffee

Complimentary coffee service will be available Tuesday through Friday mornings from 8:15 - 9:45 am in the Exhibit/Poster Hall.

REGISTRATION

The Registration Desk, located in the Grand Ballroom Foyer on the 3rd floor, will be open during the following hours:

Monday	12:30 pm - 7:00 pm
Tuesday	7:00 am - 6:00 pm
Wednesday	8:00 am - 2:00 pm
Thursday	8:00 am - 2:00 pm

For registration assistance on Friday go to the Office in Studio 5.

Onsite Registration Rates:

Full	\$610 USD
Student	\$300 USD
Unemployed/Retired	\$300 USD

Attendees are required to wear name badges to enter all Conference events. A ticket is also required to attend the Welcome Reception.

CAMERA, CELL PHONE AND VIDEO RECORDING POLICIES

Attendees are not permitted to take pictures of speaker slides or posters, or to make video recordings of presentations. Furthermore, attendees are asked to be respectful of their colleagues by silencing all cell phones before entering the session rooms.

#MMM61

Be sociable—share! #MMM61



Follow us on Twitter
@MagnetismOrg



Like our Facebook page
www.facebook.com/magnetism.org/

WIRELESS INTERNET ACCESS

Wi-Fi for attendees is sponsored by the IEEE Magnetics Society. Select the “Marriott_Conf” network on your mobile device or computer under the available wireless networks. Open an internet browser and Agree to the Terms and Conditions. When prompted, enter the password “MMM2016”.

PUBLICATIONS

Conference papers will be published in a special issue of *AIP Advances* in early 2017 (aipadvances.aip.org) at no additional cost to the author. *AIP Advances* is a peer-reviewed, fully open access, multidisciplinary journal covering all areas of the physical sciences (experimental, theoretical, and applied). *AIP Advances*’ inclusive scope and publication standards make it an excellent outlet for scientists across the physical sciences.

To check the status of their papers, authors should refer to the PXP submission site at <http://mmm.peerx-press.org>. For all other publications questions, visit the Conference Office in Studio 5.

SESSION CHAIRS

Poster and Oral Session Chairs are expected to attend the Session Chair Breakfast at 7:15 am in Balcony L/M on the 4th floor **on the day of their session**. If you are chairing an oral session, you must bring your laptop computer to your session or arrange to borrow one, as it is the **Session Chair’s laptop that will be used for session timing**.

SPEAKER REHEARSAL ROOM

Speakers may use the Speaker Rehearsal Room in Regent on the 4th floor to practice their presentations with the provided audiovisual equipment (LCD projector and screen). This room will be available from Monday at 1:00 pm until Friday at 1:00 pm.

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. **Mac OS users must make sure 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 Rehearsal Room or in the session room prior to the start of the session. There will be no technical support provided for speaker-supplied equipment. It is suggested that speakers bring a backup copy of their presentation on a USB flash drive. Session timing must be maintained and no additional presentation time will be given in the event of technical difficulties.

BEST STUDENT PRESENTATION AWARD

Supported by:



The American Physical Society Topical Group on Magnetism and its Applications (GMAG) is sponsoring the competition for the Best Student Presentations. The competition recognizes and encourages excellence in graduate studies in the field of magnetism. There will be a \$1000 USD one-year fellowship for the winner and \$250 USD one-year fellowship for the remaining finalists, who will be announced Wednesday evening prior to the start of the Evening Session. Conference attendees are encouraged to attend the finalist’s talks and support these young scientists.

Finalists:

- AB-09** *Micromagnetic Investigations of Higher Order Anisotropy in Ultra-Thin Films with Fluctuating Perpendicular Anisotropy*
Jamileh Beik Mohammadi (University of Alabama)
- AD-04** *Unusual Nature of the Martensite and Ferromagnetic Transitions in $Ni_2Mn_{0.4-x}Fe_xCr_{0.6}$ Heusler Alloys*
Jeffrey Brock (Miami University)
- BH-11** *Brain-Inspired Computing Using the Transient Dynamics of Spin-Torque Oscillators*
Matthew Riou (CNRS/Thales)
- CF-06** *Coupling Electrodynamics and Micromagnetics: Modeling of Eddy Currents*
Simon Couture (University of California, San Diego)
- CH-01** *The Experimental and Theoretical Study of Mn Doped Bi_2Te_3*
Arsham Ghasemi (University of York)

**Congratulations to the winners at the
2016 Joint MMM – Intermag Conference:**

IEEE Magnetics Society Best Student Presentation Award:
Winner: Afshin Houshang, University of Gothenburg (BC-15)
Finalists: David Ellsworth, Yan Ni, Sergiu Ruta, Noriyuki Sato

APS-GMAG Best Student Presentation Award:
Winner: Natalia Rinaldi-Montes, University of Oviedo (AE-11)
Finalists: Jizhai Cui, Ye Du, Anil Rajapitamahuni,
Chenattukuzhiyil Safeer, Xufeng Zhang

POSTER SESSIONS

Poster Sessions will be held Tuesday through Thursday from 9:30 am - 12:30 pm and 2:30 - 5:30 pm. On Friday there will be a Poster Session from 9:30 am - 12:30 pm.

Poster presenters should set up their materials at least 30 minutes before their session starts, and must be present at their poster, at a minimum, for the first *and* last hour 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.

BEST POSTER PRESENTATION AWARD

Supported by:

GMW

All posters will be eligible for nomination for this award provided that they meet the requirements and guidelines described on the Conference website. It is required that an author be registered for the Conference and be present at the first and last hour 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 the nominated posters. 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 each poster session, and winners will receive a \$50 USD cash award, thanks to the generous support of GMW. 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 the 2016 Joint MMM-Intermag Conference is available on the Conference website.

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 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. The recipients for this Conference will be informed about their selection in late September. 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 for this Conference have already 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

General Chair	Kai Liu
Chair Elect	Pallavi Dhagat
Past Chair	Bruce Gurney
Co-Treasurers	June W. Lau and Maria Varela
Program Co-Chairs	Peter Fischer, Chih-Huang Lai, and Stephane Mangin

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Publications Editors:	Farkhad Aliev, Victorino Franco, Olle Heinonen, Ron Jansen, Shang-Fan Lee, Connie Li, Seiji Mitani, Marek Przybylski, Di Wu
Exhibits Chair	Mingzhong Wu
Publicity Chair	Brian Maranville
Social Media Chair	Daniel Lottis
Student Awards/Travel Chair	Barry Zink
Editor, <i>AIP Advances</i>	Vincent Crespi
Conference Managers	Molly Bartkowski and Diane Melton
Abstracts/Publications Manager	Regina Mohr
Exhibits Manager	Jennifer Fiske
Registration Manager	Ashley Cesare

ADVISORY COMMITTEE

Chair.....	Bruce Gurney
Chair-Elect	Kai Liu
Executive Treasurer	June W. Lau
Recording Secretaries	Diane Melton and Regina Mohr
Term expiring December 1, 2016: ...	Paul Crowell, Pallavi Dhagat, Kai Liu, Hariharan Shrikanth, Mark Stiles, Koki Takanashi, Bruce Terris, Suzanne te Velthuis, Shinji Yuasa
Term expiring December 1, 2017: ...	Petru Andrei, Katayun Barmak, Jeff Childress, Alina Maria Deac, Atsufumi Hirohata, Xiaofeng Jin, Mark Kief, Vivian Ng, Tiffany Santos, Matt Willard
Term expiring February 1, 2019:	Cindi Dennis, Peter Fischer, Chih-Huang Lai, June W. Lau, Kyung-Jin Lee, Laura Lewis, Alan MacDonald, Stephane Mangin, Christopher Marrows

SPONSORING SOCIETY REPRESENTATIVES

AIP Publishing	Bill Burke
IEEE Magnetism Society	Randall Victora

ADDITIONAL INFORMATION

To join our mailing list, please visit www.magnetism.org or contact info@mmmconference.com.

FUTURE CONFERENCES

2017 Intermag Conference

April 24-28, 2017, Dublin, Ireland

2017 Magnetism and Magnetic Materials Conference

November 6-10, 2017, Pittsburgh, PA

2018 Intermag Conference

April 23-27, 2018, Singapore

2018 International Conference on Magnetism

July 16-20, 2018, San Francisco, CA

2019 Joint MMM-Intermag Conference

January 14-18, 2019, Washington, DC

2019 Magnetism and Magnetic Materials Conference

November 4-8, 2019, Las Vegas, NV

2020 Magnetism and Magnetic Materials Conference

November 16-20, 2020, Fort Lauderdale, FL

2022 Joint MMM- Intermag Conference

January 10-14, 2022, New Orleans, LA

EXHIBITORS *(AS OF MONTH DAY, 2016)*

An exhibition of magnetism-related services, equipment, materials, and software will be held in the Grand Ballroom on the 3rd floor.

Exhibit hours:

Tuesday	9:00 am – 5:30 pm
Wednesday	9:00 am – 7:00 pm
Thursday	9:00 am – 7:00 pm



AJA INTERNATIONAL, Inc.

Booth 21

Thin Film Deposition Systems (Sputtering, E-beam, Thermal, Ion Beam, PLD and Multi-Technique). Ion Beam Etch Systems with SIMS (Ion Milling, RIBE). R&D and Pilot Scale Equipment. UHV and HV Magnetron Sputter Sources and Thermal Evaporation Sources. Wide range of Substrate Holders featuring Azimuthal Rotation, RF/DC Biasing, Heating, Water Cooling, LN₂ Cooling and Tilting. Sputter Targets and Evaporation Materials. RF/DC Power Supplies.

Contact: Michael Hale
Email: topgun@ajaint.com
Website: www.ajaint.com



American Magnetics

Booth 24

American Magnetics, Inc. (AMI) has been a manufacturer of superconducting magnet systems and cryogenic equipment for more than 45 years. Founded in 1968, AMI supplies turn-key cryogen-free and liquid helium based superconducting magnet systems, with custom solutions ranging from completely conduction cooled multi-axis systems combined with an integrated variable temperature insert to large room temperature bore zero boiloff helium recondensing systems (ReconTM). When AMI's innovative superconducting magnets, such as the multi-axis (MaxesTM) series, are coupled with cutting-edge cryostats, the customer is buying a winning combination. Topping off AMI's premier superconducting magnet systems is the Model 430 power supply programmer, which yields extreme accuracy, high automation and easy control for customers, all via Ethernet. AMI offers a complete line of capacitance and resistance based instrumentation that can be utilized to measure any cryogenic fluid with unparalleled accuracy and reliability. AMI stands behind its products with a warranty offering full system protection for 15 months.

Contact: Seth Rector
Email: sales@americanmagnetics.com
Website: americanmagnetics.com



Booth 25

Attocube offers an extensive portfolio of cutting-edge scanning probe microscopes for operation in high magnetic fields and cryogenic temperatures. Our one-inch microscope inserts, specifically designed for the PPMS from Quantum Design, allow for highly sensitive SPM measurements such as AFM, MFM, SHPM, as well as optical experiments such as confocal & RAMAN microscopy. The attoDRY800, the world's first cryo-optical table with integrated cold breadboard, is the perfect platform for challenging quantum and nano-optics experiments. Nano-precise piezo positioning systems for extreme environments and interferometric sensor solutions complete Attocube's ample product portfolio.

Contact: Anja Schmalz
Email: info@attocube.com
Website: www.attocube.com



Booth 10

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

GMW Associates

Booths 2 & 3

GMW will show: Metrolab Three-Component Magnetic Field Probes with USB Interface and LabView software. Full-scale ranges of $\pm 100 \mu\text{T}$ (1 G), $\pm 8 \text{ mT}$ (80 G), $\pm 3 \text{ T}$ and $\pm 20 \text{ T}$. Senis One-, Two- and Three-Component Hall Transducers with analog output, full scale field ranges to $\pm 20 \text{ T}$ and frequency response from dc to 75 kHz. The Senis Probes can be used stand-alone or in Senis Magnetic Field Mapping Systems. GMW Electromagnets for magnetic material and thin film studies including the Miniature Projected Field Electromagnet family: model 5201 for in-plane fields, 5203 for vertical fields, 5205 series for larger volume, modest vertical fields, and the new 5204 for generating any field direction and amplitude from three components. HTS-110 compact Electromagnets including Short Solenoids to $\pm 3 \text{ T}$, Shielded Solenoids to $\pm 16 \text{ T}$ and Shielded Dipoles to $\pm 8 \text{ T}$. Matesy Magneto-Optic Sensor systems for visualization of vertical dc and ac magnetic fields at the surface of a planar sample.

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



Booth 14

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

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



Booth 11

Intlvac Thin Films 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 manufacturers 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 is an established 40-year-old company focused on providing world class ion source products for the vacuum process community. Focused on ion/plasma sources, electron neutralizers, and power supply controllers needed in crucial deposition and etching processes such as ion assisted deposition, in-situ preclean and ion beam sputtering. Our product technology includes high current gridless plasma sources, filamentless RFICP gridded sources, and low energy electron sources.

Contact: Derek Kauffman
Email: dkauffman@ionsources.com
Website: www.ionsources.com

**Booth 4**

A leading innovator in solutions for measuring materials under controlled magnetic field and temperature conditions, Lake Shore offers vibrating sample magnetometers (VSMs) for characterizing magnetic properties over a range of temperatures (4.2 K to 1273 K) and fields to 3.42 T; magnetic test and measurement instruments; cryogenic probe stations with integrated vertical and horizontal field magnets (to 2.5 T) for on-wafer magneto-transport, DC, RF, or microwave measurements; and an integrated system for exploring the electronic and magnetic properties of materials at THz frequencies as a function of variable temperature (5 K to 300 K) and field (to 9 T).

Contact: Sarah Kinhead
Email: general@lakeshore.com
Website: www.lakeshore.com

**Booth 8**

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, MBE, and Nanoparticle deposition systems as well as modular R&D deposition systems that can be customized for your application. We offer a range of sputter magnetron sources, RF atom and ion sources, e-beam evaporators, thermal gas crackers, and unique nanoparticle technology. Our highly skilled team of engineers, physicists, and designers will be happy to work with you on your next deposition challenge. Our partner company, Sigma Surface Science, specializes in state-of-the-art UHV SPM and ESCA technology for cutting-edge surface science.

Contact: Jessica Hilton
Email: jessica.hilton@mantis-sigma.com
Website: www.mantisdeposition.com



MicroSense

Booth 9

MicroSense is a leading manufacturer of magnetic measurement systems for research and production quality control. Our Vibrating Sample Magnetometer (VSM) systems are used at many 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 5

MTI Corporation has been providing a total solution for materials research labs since 1995. MTI supplies ceramic, crystal, metallic substrates from A-Z and nano-powder. We also provide laboratory R&D equipment including mixing, cutting, polishing machines, high temperature muffle and tube furnaces, pressing machines, film coat-ers, glove boxes, high vacuum systems, high pressure furnaces, RTP furnaces, CSS and PECVD furnace systems, high pressure and hy-drogen furnaces, melting and casting systems, crystal growth systems as well as compact XRD/X-Ray orientation unit and equipment for battery and energy materials research.

Contact: Andy Huang

Email: andy@mtixtl.com

Website: www.mtixtl.com



NANOMAGNETICS INSTRUMENTS

Booths 22 & 23

NanoMagnetics Instruments Ltd. (NMI) is one of the world lead-ing companies in the field of Scanning Probe Microscopes (SPMs) and measurement systems for various field of science and technol-ogy. Founded in 1999 as the first nanotechnology spin off in Turkey, markets its products in the world under NanoMagnetics Instruments Ltd. brand, which is a fully owned subsidiary. Prestigious universities like Oxford, MIT, Kyoto, and Harvard, research labs like Los Alamos National Lab., Argonne National Lab., TATA-Institutes, government institutes like NASA and companies like Seagate, Microsoft, and Samsung are among our customers. Four universities in the top 10 list and 20 universities in the top 100 list are our customers.

Contact: Seda Bayrakci

Email: sales@nanomagnetics-inst.com

Website: www.nanomagnetics-inst.com



Booth 1

NanoScan is a member of the IonTof group of companies specializing in high-vacuum Scanning Probe Microscopes. Our flagship microscope, the VLS-80, offers a standalone solution for high-vacuum SPM. It runs all dynamic modes of imaging and has two phase-locked loops to enable dual modes. Magnetic imaging is a key strength of the VLS-80, with 10-nm lateral resolution guaranteed; an industry best. The large stage offers excellent positioning repeatability over the complete range of 100mm x 100mm.

Contact: Tim Ashworth
Email: tvashworth@nanoscan.ch
Website: www.nanoscan.ch



Quantum Design

Booths 6 & 7

Quantum Design manufactures automated material characterization systems providing temperatures from 0.05 to 1000 K, magnetic fields up to 16 tesla, and a wide range of measurements, including: VSM magnetometry, magneto resistance, and sample rotator. Instruments include the Physical Property Measurement System (PPMS®), SQUID-based Magnetic Property Measurement System (MPMS®3), VersaLab, and PPMS® DynaCool. All systems have cryogen-free options. Quantum Design also manufactures advanced helium liquefiers (ATL80, ATL160) and helium recovery systems, and a magneto-optic probe for THz-Raman measurement in a cryomagnetic platform. Quantum Design International distributes direct write and 3D thermal scanning probe lithography systems, NanoMOKE, FMR spectrometers, single crystal furnaces, and scanning probe cryomagnetic systems.

Contact: Melissa Figueroa
Email: info@qdusa.com
Website: www.qdusa.com



RHK Technology

Imaging the Future of Nanoscience

Booth 17

Your partner in nanoscale research to explore with confidence and make discoveries that will keep your laboratory first in science. Choose RHK for your application needs: PanScan Freedom LT SPM, Beetle VT SPM, and QuadraProbe SPM. Award winning PanScan Freedom, the world's first cryogen-free UHV system for stable low-temperature performance and exceptional results in a surprisingly compact package. RHK's revolutionary R9.5, a single box AFM-STIM ultra-performance Controller, is engineered for the most advanced applications yet easily operated by new users. Keeping your laboratory first in nanoscale science.

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Contact: Bernhard Krause
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Contact: Daniel Bijl
Email: d.bijl@smarttip.nl
Website: www.smarttip.nl



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Contact: Dieter Suess
Email: office@suessco.com
Website: www.suessco.com/simulations



Tohoku Steel Co., Ltd.

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Tohoku Instrumentation Technologies

Booth 18

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 H_c 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: soushi@sm.rim.or.jp

Website: www.tohokusteel.com/en



Ube Material Industries, Ltd.

Booth 12

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

Contact: Yoshihiro Nishimura

Email: takuya.mishima@ubematerials.co.jp

Website: www.ubematerial.com

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MMM publications will now be published in AIP Advances!

This year, the invited and contributed papers presented at the MMM Conference will be published in the fully open access journal *AIP Advances*. *AIP Advances* is a peer reviewed journal covering all the areas of the physical sciences (experimental, theoretical, and applied), making it a good fit for the range of research on magnetism and magnetic materials now being presented at the MMM Conference.



The IEEE Magnetics Society is the leading international professional organization for magnetism and related professionals throughout the world. The IEEE Magnetics Society promotes the advancement of science, technology, applications and training in magnetism. It fosters presentation and exchange of information among its members and within the global technical community, including education and training of young engineers and scientists. It seeks to nurture positive interactions between all national and regional societies acting in the field of magnetism.

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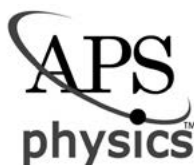
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Contact: Alex Menendez
Email: menendez@aps.org
Website: www.journals.aps.org



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Contact: Rudolf Schaefer

Email: r.schaefer@evico-magnetics.de

Website: www.evico-magnetics.de

CONFERENCE PROGRAM-AT-A-GLANCE

MONDAY, OCTOBER 31, 2016

2:00 pm - 4:30 pm

YA Tutorial: A Primer for Topology
in Magnetism

Mardi Gras A-E (L3)

TUESDAY, NOVEMBER 1, 2016

8:30 am - 11:30 am • Oral Sessions

AA Symposium: Spin Transport
in Antiferromagnets

Mardi Gras A-E (L3)

AB Ferromagnetic Resonance

Mardi Gras F-H (L3)

AC Magnetic Skyrmions I

La Galeries 1-2 (L2)

AD New Magnetic Materials

La Galeries 3 (L2)

AE Ultrafast Switching

La Galeries 4-5 (L2)

AF MRAM and Magnetic Logic Devices I

Studio 1-2 (L2)

AG Biochemical and Biomedical Applications I

Studio 9-10 (L2)

AH Nanowires and Nanoparticles I

Studio 7-8 (L2)

AI Anisotropy Effects in Thin Films I

Studio 3-4 (L2)

9:30 am - 12:30 pm • Poster Sessions

Grand Ballroom (L3)

AP Magnetic Recording I

AQ Energy Assisted Recording I

AR High Frequency and Microwave Devices I

AS Magnetic Sensors I

AT Magneto-Elastic and Magneto-Optic Materials

AU Electronic Structure

AV Voltage Controlled Magnetism I

AW Fundamental Properties: Spin Glasses and Frustration I

1:30 pm - 4:30 pm • Oral Sessions

BA Symposium: Topological Insulator/Ferromagnet
Heterostructures for Spintronics

Mardi Gras A-E (L3)

BB Spin Hall Effect I

Mardi Gras F-H (L3)

BC Magnetic Skyrmions II

La Galeries 1-2 (L2)

BD Domain Wall and Domain Wall Devices I

La Galeries 3 (L2)

BE Multi-Layer Films and Superlattices I

La Galeries 4-5 (L2)

BF MRAM and Magnetic Logic Devices II

Studio 1-2 (L2)

BG Hyperthermia, MRI, and Other Bio-Assays I

Studio 9-10 (L2)

BH Magnetic Instrumentation
and Characterization I

Studio 7-8 (L2)

BI Superconductivity and Critical Phenomena

Studio 3-4 (L2)

2:30 pm - 5:30 pm • Poster Sessions

Grand Ballroom (L3)

BP Micromagnetic and Hysteresis Modeling

BQ Magnetoelectronic Materials and Transport I

BR Magnetoelectronic Materials and Transport II

BS Magnetoresistance and Critical Phenomena

BT Non-Rare-Earth Magnets

BU Permanent Magnet Synthesis and Processing I

BV Permanent Magnet Synthesis and Processing II

BW Complex Oxides I: Films and New Magnetic Materials

WEDNESDAY, NOVEMBER 2, 2016**8:30 am - 11:30 am • Oral Sessions**

CA	Symposium: New Developments in Nanoscale Sensing with Nitrogen-Vacancy Center Magnetometry	<i>Mardi Gras A-E (L3)</i>
CB	Magnonics I	<i>Mardi Gras F-H (L3)</i>
CC	Spin-Orbit Torque and Spin-Transfer Torque	<i>La Galeries 1-2 (L2)</i>
CD	Domain Wall, Vortex and Skyrmion Dynamics I	<i>La Galeries 3 (L2)</i>
CE	Patterned Films I	<i>La Galeries 4-5 (L2)</i>
CF	Micromagnetics and MRAM	<i>Studio 1-2 (L2)</i>
CG	Non-Rare-Earth Fe Alloys and Compounds	<i>Studio 9-10 (L2)</i>
CH	Novel Magnetic Order in Thin Films I	<i>Studio 7-8 (L2)</i>
CI	Coupling Effects in Magnetoelectrics and Complex Oxides	<i>Studio 3-4 (L2)</i>

9:30 am - 12:30 pm • Poster Sessions *Grand Ballroom (L3)*

CP	Spin Current and Related Effects I
CQ	Magnetization Dynamics I: Damping and Simulations
CR	Spin Hall Effect II
CS	Nanowires and Nanoparticles II
CT	Biochemical and Biomedical Applications II
CU	Complex Oxides II: Bulk and New Magnetic Materials
CV	Magneto-Caloric Materials I
CW	Inductors and Transformers I

1:30 pm - 4:30 pm • Oral Sessions

DA	Symposium: Voltage-Controlled Spintronics for Nanoelectronics Beyond Moore's Law	<i>Mardi Gras A-E (L3)</i>
DB	Magnonics II	<i>Mardi Gras F-H (L3)</i>
DC	Spin Pumping and Related Effects	<i>La Galeries 1-2 (L2)</i>
DD	Domain Wall, Vortex and Skyrmion Dynamics II	<i>La Galeries 3 (L2)</i>
DE	Interfacial DMI and Spin-Orbit Torques	<i>La Galeries 4-5 (L2)</i>
DF	2D and 3D Nanostructured Arrays I	<i>Studio 1-2 (L2)</i>
DG	Mn- and Co-Based High Anisotropy Systems	<i>Studio 9-10 (L2)</i>
DH	Complex Oxides III: Films and Heterostructures	<i>Studio 7-8 (L2)</i>
DI	Magnetic Microscopy and Imaging	<i>Studio 3-4 (L2)</i>

2:30 pm - 5:30 pm • Poster Sessions *Grand Ballroom (L3)*

DP	Power and Control Magnetics I
DQ	Power and Control Magnetics II
DR	Soft Magnetic Materials I
DS	Soft Magnetic Materials II
DT	Soft Magnetic Materials III
DU	Magnetic Sensors II
DV	Magnetic Instrumentation and Characterization II
DW	Hyperthermia, MRI, and Other Bio-Assays II

6:00 pm - 7:40 pm

ZA	Evening Session: Neuromorphic Computing	<i>Mardi Gras A-E (L3)</i>
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8:30 am - 11:30 am • Oral Sessions

EA	Symposium: Terahertz Spintronics	<i>Mardi Gras A-E (L3)</i>
EB	Magnonics III	<i>Mardi Gras F-H (L3)</i>
EC	Magnetization Dynamics II: Domains and Ultrafast Effects	<i>La Galeries 1-2 (L2)</i>
ED	Multiferroic Thin Films, Transport and Magnetoelectric Composites	<i>La Galeries 3 (L2)</i>
EE	Voltage Controlled Magnetism II	<i>La Galeries 4-5 (L2)</i>
EF	Magnetoresistance I: GMR and TMR	<i>Studio 1-2 (L2)</i>
EG	Elementally Modified Intermetallics	<i>Studio 9-10 (L2)</i>
EH	Magneto-Caloric Materials II	<i>Studio 7-8 (L2)</i>
EI	Electronic Structure and Magnetic Semiconductors	<i>Studio 3-4 (L2)</i>

9:30 am - 12:30 pm • Poster Sessions

Grand Ballroom (L3)

EP	Magnetic Fluids and Nanoparticles Applications
EQ	2D and 3D Nanostructured Arrays II
ER	Patterned Films II
ES	Superconductivity and Magnetic Semiconductors
ET	Domain Wall, Vortex and Skyrmion Dynamics III
EU	MRAM and Magnetic Logic Devices III
EV	Power Machines I
EW	Power and Control Magnetics III

1:30 pm - 4:30 pm • Oral Sessions

FA	Symposium: Spintronics with Superconductivity	<i>Mardi Gras A-E (L3)</i>
FB	Spin Current and Related Effects II	<i>Mardi Gras F-H (L3)</i>
FC	Antiferromagnetic Spintronics	<i>La Galeries 1-2 (L2)</i>
FD	Single-Phase Multiferroic and Magnetoelectric Materials	<i>La Galeries 3 (L2)</i>
FE	Spin-Orbit and Voltage Controlled Effects	<i>La Galeries 4-5 (L2)</i>
FF	Magnetoresistance II: GMR and TMR	<i>Studio 1-2 (L2)</i>
FG	Rare-Earth-Lean and Ce-Substituted Compounds	<i>Studio 9-10 (L2)</i>
FH	Magnetic Sensors III	<i>Studio 7-8 (L2)</i>
FI	Fundamental Properties: Spin Glasses and Frustration II	<i>Studio 3-4 (L2)</i>

2:30 pm - 5:30 pm • Poster Sessions

Grand Ballroom (L3)

FP	Ultrafast Switching and Domain Wall Motion
FQ	Magnetization Dynamics III: Spin Pumping and Other Effects
FR	Emergent and Novel Magnetic Order in Thin Films II
FS	Spin Injection, Spin Transfer Torque and Spin-Orbit Interaction
FT	Multi-Layer Films and Superlattices II
FU	Domain Wall and Domain Wall Devices II
FV	Microwave and Magnetocaloric Materials
FW	Power Machines II

FRIDAY, NOVEMBER 4, 2016**8:30 am - 11:30 am • Oral Sessions**

GA	Symposium: Ultralow Damping	<i>Mardi Gras A-E (L3)</i>
GB	Spin Seebeck and Related Effects	<i>Mardi Gras F-H (L3)</i>
GC	Magnetization Dynamics IV: Spin Torque and Interfacial Effects	<i>La Galeries 1-2 (L2)</i>
GD	Low-Dimensional Systems, Ferrites and Garnets	<i>La Galeries 3 (L2)</i>
GE	Spin Transport in Semiconductors and Artificial Structures	<i>La Galeries 4-5 (L2)</i>
GF	High Frequency and Microwave Devices II	<i>Studio 1-2 (L2)</i>
GG	Processing and Magnetic Hardening of Rare-Earth-Transition Metal Compounds	<i>Studio 9-10 (L2)</i>
GH	Magnetic Recording II	<i>Studio 7-8 (L2)</i>
GI	Inductors and Transformers II	<i>Studio 3-4 (L2)</i>

9:30 am - 12:30 pm • Poster Sessions*Grand Ballroom (L3)*

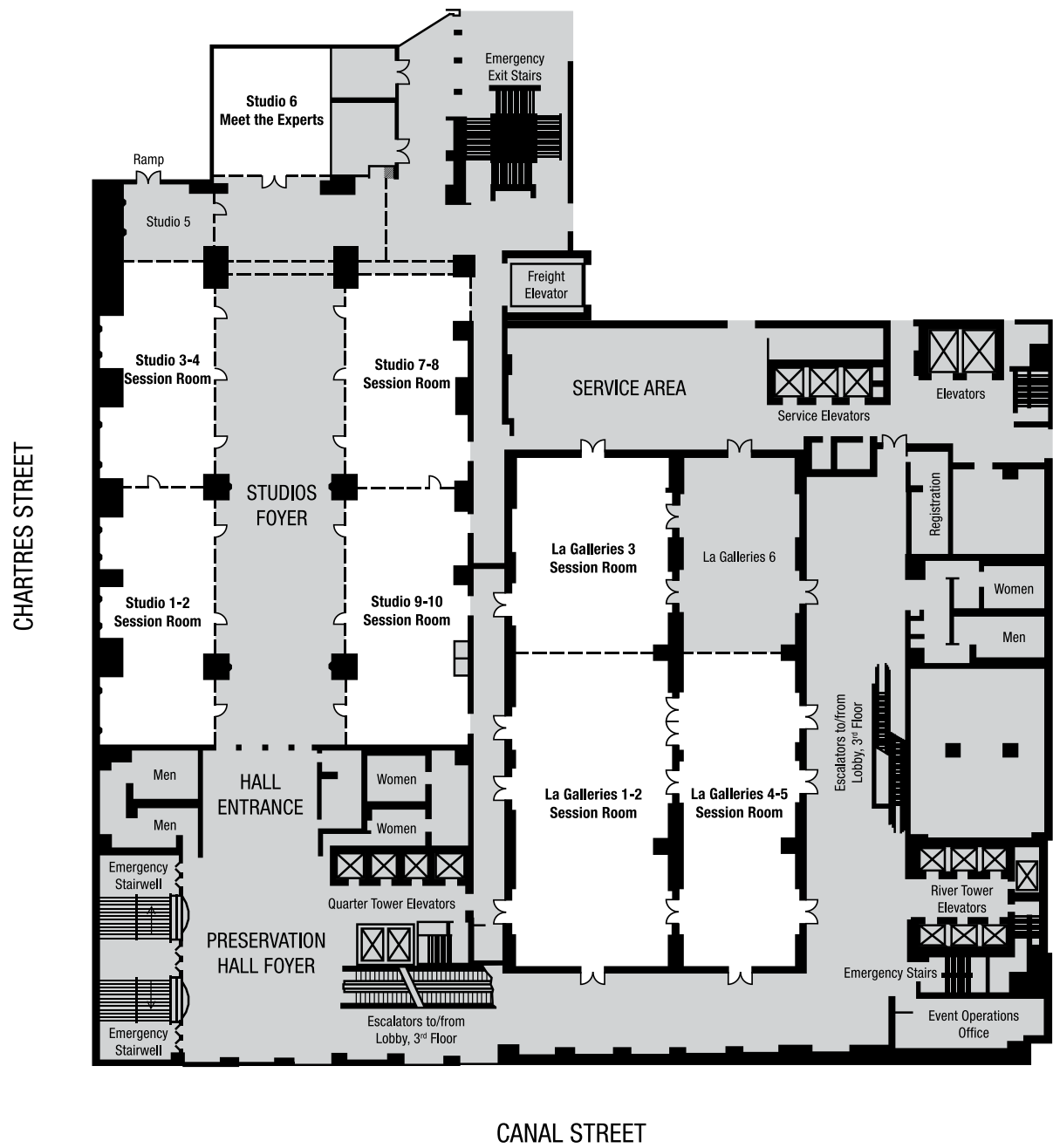
GP	Single-Phase Multiferroics and Magnetoelectrics
GQ	Anisotropy Effects in Thin Films II
GR	Exchange Bias I
GS	Exchange Bias II
GT	Magnonics IV
GU	DMI and Spin-Orbit Torques
GV	Voltage Controlled Magnetism III
GW	Power and Control Magnetics IV

1:30 pm - 4:30 pm • Oral Sessions

HA	Symposium: All Optical Switching	<i>Mardi Gras A-E (L3)</i>
HB	Spin Current and Related Effects III	<i>Mardi Gras F-H (L3)</i>
HC	Spin Torque Oscillators	<i>La Galeries 1-2 (L2)</i>
HD	Magnetoelectronic Materials and Transport III	<i>La Galeries 3 (L2)</i>
HE	Spin Transport in Two-Dimensional Materials	<i>La Galeries 4-5 (L2)</i>
HF	Soft Magnetic Materials IV	<i>Studio 1-2 (L2)</i>
HG	Magneto-Elastic, Magneto-Optic and Microwave Materials	<i>Studio 9-10 (L2)</i>
HH	Energy Assisted Recording II	<i>Studio 7-8 (L2)</i>
HI	Power and Control Magnetics V	<i>Studio 3-4 (L2)</i>

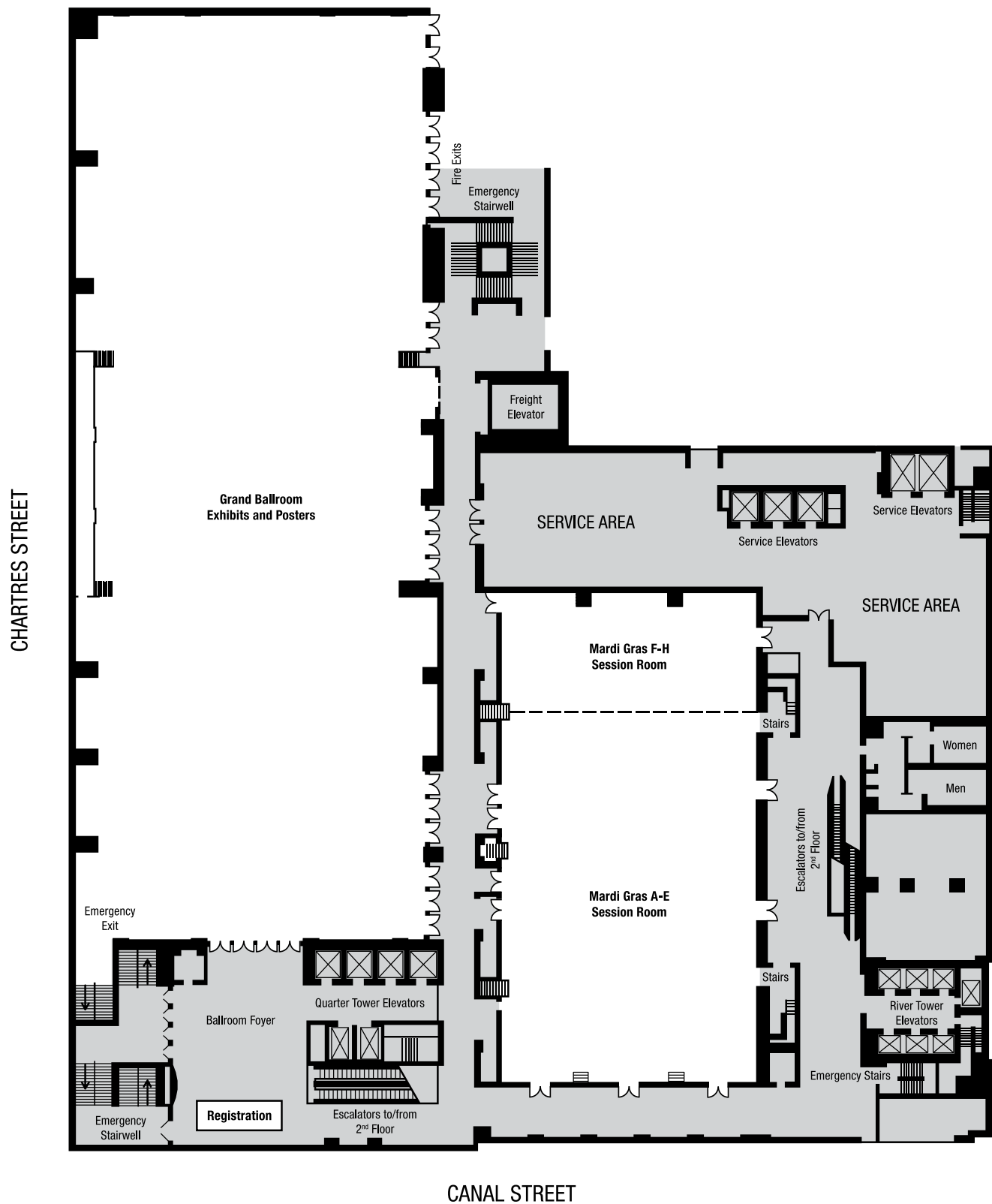
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MONDAY
AFTERNOON
2:00

MARDI GRAS A-E

Session YA
**TUTORIAL: A PRIMER FOR TOPOLOGY IN
MAGNETISM**

Stephane Mangin, Chair
Universite de Lorraine, Vandoeuvre-lès-Nancy, France

2:00

YA-01. Topology in Magnetism: Theory. (Invited) A. Vishvanath¹
1. Department of Physics, Harvard University, Cambridge, MA

2:50

YA-02. Topology in Magnetism. (Invited) A. Thiaville¹ *1. Lab. Physique des Solides, Universite Paris-Sud, Orsay, France*

3:40

YA-03. Interplay of Spin Orbit Coupling with Magnetism in Low-Dimensions for Room Temperature Device Applications. (Invited) C. Panagopoulos¹ *1. Nanyang Technological University, Singapore, Singapore*

TUESDAY
MORNING
8:30

MARDI GRAS A-E

Session AA
**SYMPOSIUM: SPIN TRANSPORT IN
ANTIFERROMAGNETS**

Chia-Ling Chien, Chair
Johns Hopkins University, Baltimore, MD

8:30

AA-01. Antiferromagnetic spin Seebeck effect. (Invited) S.M. Wu¹,
W. Zhang¹, K.C. Amit², P. Borisov², J.E. Pearson¹, S. Jiang¹,
D. Lederman², A. Hoffmann¹ and A. Bhattacharya¹ *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Department of Physics and Astronomy, West Virginia University, Morgantown, WV*

9:06

AA-02. Thermal generation of spin current in antiferromagnets and helimagnets. (Invited) S. Seki¹ *1. Center for Emergent Matter Science (CEMS), RIKEN, Wako, Japan*

9:42

AA-03. Enhanced Spin Current through an Antiferromagnetic Insulator. (Invited) W. Lin¹, K. Chen², S. Zhang² and C.L. Chien¹ *1. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 2. Department of Physics, University of Arizona, Tucson, AZ*

10:18

- AA-04. Orthogonal exchange bias for field-free switching by spin-Hall effect. (Invited)** *A. van den Brink*¹, *G. Verma*¹, *A. Solignac*², *J. Koo*¹, *J. Kohlhepp*¹, *H. Swagten*¹ and *B. Koopmans*¹ *1. Physics, Eindhoven University of Technology, Eindhoven, Netherlands; 2. CNRS, CEA Saclay, Gif-sur-Yvette, France*

10:54

- AA-05. Magnetization Switching by Spin-Orbit Torque in an Antiferromagnet-Ferromagnet Bilayer System. (Invited)** *S. Fukami*^{1,2}, *A. Kurenkov*¹, *W.A. Borders*¹, *T. Kanemura*¹, *C. Zhang*¹, *S. Dutttagupta*¹ and *H. Ohno*^{1,2} *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan*

TUESDAY
MORNING
8:30

MARDI GRAS F-H

Session AB
FERROMAGNETIC RESONANCE
Andrii Chumak, Chair
TU Kaiserslautern, Kaiserslautern, Germany

8:30

- AB-01. Magnetization dynamics in $\text{Co}_x\text{Gd}_{1-x}$ films by time resolved resonant photoemission.** *N. Bergeard*¹, *T. Ferti*¹, *G. Malinowski*³, *M. Hehn*², *F. Pressacco*⁵, *F. Sirotti*⁴ and *C. Boeglin*¹ *1. IPCMS, Strasbourg, France; 2. Institut Jean Lamour, Vandoeuvre lès Nancy, France; 3. P2M, Institut Jean Lamour, Vandoeuvre-lès-Nancy, France; 4. Synchrotron SOLEIL, Saint Aubin, France; 5. Synchrotron SOLEIL, Saint Aubin, France*

8:42

- AB-02. Broadband investigation of temperature-dependent magnetization dynamics in $\text{Ni}_{80}\text{Fe}_{20}/\text{Gd}$ heterostructures.** *B. Khodadadi*¹, *J. Beik Mohammadi*¹, *C.K. Mewes*¹, *T. Mewes*¹, *M. Manno*⁴, *C. Leighton*⁴, *T. Eagers*³ and *C.W. Miller*² *1. Physics and Astronomy / MINT, University of Alabama, Tuscaloosa, AL; 2. Materials Science, Rochester Institute of Technology, Rochester, NY; 3. Physics, University of South Florida, Tampa, FL; 4. Department of Chemical Engineering and Material Science, University of Minnesota, Minneapolis, MN*

- AB-03. Tuning Magnetization Dynamics in Nanometer-Thick Spinel Ferrite Films by Chemical Substitution.** *S. Emori*¹, M.T. Gray^{2,1}, B.A. Gray³, H. Jeon⁵, B. Howe³ and Y. Suzuki^{1,4}
 1. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA; 2. Materials Science and Engineering, Stanford University, Stanford, CA; 3. Materials and Manufacturing Directorate, Air Force Research Laboratory, Dayton, OH; 4. Applied Physics, Stanford University, Stanford, CA; 5. Electrical Engineering, Wright State University, Dayton, OH

- AB-04. Controlling magnetization dynamics in hybrid heterostructures with first-order phase transitions. (Invited)** *J. Ramirez*¹, J. de la Venta², S. Wang⁵, T. Saebeck⁶, A.C. Basaran⁷, X. Batlle³ and I.K. Schuller⁴
 1. Department of Physics, Universidad de los Andes, Bogotá, Colombia; 2. Department of Physics, Colorado State University, Fort Collins, CO; 3. Condensed Matter Physics, U. Barcelona, Barcelona, Spain; 4. Department of Physics, UC San Diego, La Jolla, CA; 5. Materials Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 6. Institut Max von Laue-Paul Langevin, Grenoble, France; 7. Department of Physics, Gebze Technical University, Gebze, Turkey

- AB-05. Non-monotonic Probability of Thermal Reversal in Low-anisotropy Thin-Film In-plane Nanomagnets.** *N. Kani*¹, S. Rakheja² and A. Naeemi³
 1. Electrical and Computer Engineering, Georgia Institute of Technology, Easton, CT; 2. Electrical and Computer Engineering, New York University, Brooklyn, NY; 3. Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA

- AB-06. Time resolved FMR measurement in non-linear regime on a Co/Pt multilayer dot measured by XMCD.** *N. Kikuchi*^{1,3}, T. Yomogita¹, D. Kanahara¹, S. Okamoto^{1,3}, O. Kitakami^{1,3}, T. Shimatsu^{5,6}, H. Osawa² and M. Suzuki²
 1. IMRAM, Tohoku University, Sendai, Japan; 2. JASRI/SPRING-8, Sayo, Hyogo, Japan; 3. CSRN, Tohoku University, Sendai, Japan; 5. FRIS, Tohoku University, Sendai, Japan; 6. RIEC, Tohoku University, Sendai, Japan

- AB-07. Calculated dependence of FePt damping on external field magnitude and direction.** *W. Hsu*¹, N.A. Natekar¹ and R.H. Victora¹
 1. Electrical and Computer Engineering, University of Minnesota-Twin Cities, Minneapolis, MN

- AB-08. Study of Interfacial Damping In Perpendicular Anisotropy Materials along Multiple Crystal Orientations.** *T. Qu*¹ and R.H. Victora²
 1. School of Physics & Astronomy, University of Minnesota-Twin Cities, Minneapolis, MN; 2. Electrical Engineering, University of Minnesota, Twin Cities, MN

10:30

- AB-09. Micromagnetic Investigations Of Higher Order Anisotropy In Ultra-thin Films With Fluctuating Perpendicular Anisotropy.** *J. Beik Mohammadi*^{1*}, K. Cole¹, T. Mewes¹ and C.K. Mewes¹ *1. Physics and Astronomy / MINT, University of Alabama, Tuscaloosa, AL*

10:42

- AB-10. Epitaxial strain induced magneto-elastic anisotropy in ultrathin YIG films grown on GGG and sGGG.** *L. Soumah*¹, C. Carretero¹, E. Jacquet¹, J. Ben Youssef², M. Bibes¹, P. Bortolotti¹, V. Cros¹ and A. Anane¹ *1. Unite Mixte de Physique CNRS, Thales, Univ. Paris Sud, Universite Paris-Saclay, Palaiseau, France; 2. Laboratoire de Magnetisme de Bretagne CNRS, Universite de Bretagne Occidentale, Laboratoire de Magnetisme de Bretagne CNRS, Universite de Bretagne Occidentale, Brest, France*

10:54

- AB-11. Magnetic anisotropy switching by irreversible magnetization rotation in FeCoN films.** *Y. Wu*¹, Y. Yang², Z. Yang² and J. Ding¹ *1. Materials Science & Engineering, National University of Singapore, Singapore, Singapore; 2. Temasek Laboratories, National University of Singapore, Singapore, Singapore*

11:06

- AB-12. First principles investigation of the effects of alloy disorder and tetragonal distortion on the Gilbert damping parameter of Co₂MnSi.** *B. Pradines*¹, R. Arras¹ and L. Calmels¹ *1. CEMES-CNRS, Toulouse Cedex 4, France*

11:18

- AB-13. Experimental Investigation Of Temperature-Dependent Gilbert Damping In Permalloy Thin Films.** *Q. Song*¹, Y. Zhao¹, S. Yang², W. Yuan¹, T. Su¹, S.S. Parkin^{2,3}, J. Shi⁴ and W. Han¹ *1. International Center for Quantum Materials, Peking University, Beijing, China; 2. IBM Almaden Research Center, San Jose, CA; 3. Max Planck Institute for Microstructure Physics, Halle (Saale), Germany; 4. Department of Physics and Astronomy, University of California Riverside, Riverside, CA*

Session AC
MAGNETIC SKYRMIONS I

Sujoy Roy, Chair
Lawrence Berkeley National Laboratory, Berkeley, CA

8:30

- AC-01. Room temperature chiral magnetic skyrmions in ultrathin magnetic nanostructures. (Invited)** O. Boulle¹, J. Vogel², H. Yang^{2,1}, S. Pizzini², D. Chaves², A. Locatelli³, T. Mentès³, A. Sala³, L.D. Buda-Prejbeanu¹, O. Klein¹, M. Belmeguenai⁵, Y. Roussigné⁵, A. Stashkevich⁵, S.M. Chérif⁵, L. Aballe⁴, M. Foerster⁴, M. Chshiev¹, S. Auffret¹, I. Miron¹ and G. Gaudin¹
1. SPINTEC, Univ. Grenoble Alpes CEA CNRS, Grenoble, France; 2. Institut Néel, CNRS, Grenoble, France; 3. Elettra Sincrotrone, Trieste, Italy; 4. ALBA synchrotron, Barcelona, Spain; 5. LSPM, Univ. Paris 13, Villetaneuse, France

9:06

- AC-02. Room-temperature creation and spin-orbit torque-induced manipulation of skyrmions in thin film.** G. Yu¹, P. Upadhyaya², X. Li¹, S. Kim², Y. Fan¹, Y. Tserkovnyak², P. Khalili¹ and K.L. Wang^{1,3}
1. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA; 3. Materials Science and Engineering, University of California, Los Angeles, Los Angeles, CA

9:18

- AC-03. Skyrmion Hall Effect Probed by Direct Time-Resolved X-Ray Microscopy Imaging of Skyrmion Trajectories.** K. Litzius^{1,2}, I. Lemesh³, B. Krüger¹, L.M. Caretta³, K. Richter¹, F. Buettner³, P. Bassirian¹, J. Förster², R.M. Reeve¹, M. Weigand², I. Bykova², H. Stoll², G.A. Schuetz², G. Beach³ and M. Kläui¹
1. Institute of Physics, Johannes Gutenberg University, Mainz, Germany; 2. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 3. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA

9:30

- AC-04. Magnetotransport detection of tunable skyrmions in Ir/Fe/Co/Pt multilayers.** M. Raju¹, A.K. Tan¹, A. Petrovic¹, P. Ho², L. Huang², A. Oyarce², A. Yagil³, A. Almoalem³, O. Auslaender³, A. Soumyanarayanan^{1,2} and C. Panagopoulos¹
1. Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore; 3. Department of Physics, Technion - Israel Institute of Technology, Technion City - Haifa, Israel

- AC-05. Tuning magnetic skyrmions in multilayers with perpendicular magnetic anisotropy.** *X. Wang*¹, *W. Jiang*², *S. Zhang*², *Q. Wang*², *K. Buchanan*³, *J.E. Pearson*², *C. Phatak*², *A. Petford-Long*², *A. Hoffmann*², *S. te Velthuis*² and *X. Cheng*¹
1. Department of Physics, Bryn Mawr College, Bryn Mawr, PA;
2. Materials Science Division, Argonne National Laboratory, Argonne, IL;
3. Colorado State University, Fort Collins, CO

- AC-06. Investigating skyrmion structure using Lorentz microscopy.** *S. McVitie*¹, *D. McGrouther*¹, *R.J. Lamb*¹, *M. Krajnák*¹, *S. McFadzean*¹, *R. Stamps*¹, *A. Leonov*^{3,4}, *A. Bogdanov*^{3,4} and *Y. Togawa*^{2,1}
1. School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom;
2. Osaka Prefecture University, Sakai, Japan;
3. IFW, Dresden, Germany;
4. Centre for Chiral Science, Hiroshima University, Hiroshima, Japan

- AC-07. An Energetic Treatment of Chiral Magnetic Bubble Domains Influenced by the Dzyaloshinskii-Moriya Interaction.** *V.M. Sokalski*¹, *D. Lau*¹, *V. Sundar*² and *J. Zhu*^{2,3}
1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA;
2. Electrical & Computer Engineering, Carnegie Mellon University, Pittsburgh, PA;
3. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA

- AC-08. Magnetic and transport characterization of nanostructured skyrmion based multilayers.** *D. Maccariello*¹, *N. Reyren*¹, *K. Garcia-Hernandez*¹, *W. Legrand*¹, *C. Moreau-Luchaire*¹, *K. Bouzehouane*¹, *V. Cros*¹ and *A. Fert*¹
1. Unité Mixte de Physique CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, Palaiseau, France

- AC-09. Lorentz-TEM imaging of Néel skyrmions in exchange coupled multilayers.** *S. Pollard*¹, *J.A. Garlow*^{2,3}, *J. Yu*¹, *Y. Zhu*² and *H. Yang*¹
1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore;
2. Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory, Upton, NY;
3. Material Science and Engineering Department, Stony Brook University, Stony Brook, NY

- AC-10. Possible Dzyaloshinskii-Moriya Interaction in BCC FeCoMn Films.** *R.J. Snow*¹, *H. Bhatkar*¹, *A.T. N'Diaye*², *E. Arenholz*² and *Y.U. Idzerda*¹
1. Physics, Montana State University, Bozeman, MT;
2. Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, CA

- AC-11. Mapping the Skyrmion Phase Diagram in MBE-grown FeGe Thin Films.** *A. Ahmed*¹, *S. Dunsinger*¹, *A. Thieken*¹, *M. Randeria*¹ and *R. Kawakami*¹
1. Physics, The Ohio State University, Columbus, OH

- AC-12. First-principles simulation and low-energy effective modeling of three-dimensional skyrmion in MnGe.** *H. Choi¹, Y. Tai¹ and J. Zhu¹* *1. Los Alamos National Laboratory, Los Alamos, NM*

**TUESDAY
MORNING
8:30**

LA GALERIES 3

**Session AD
NEW MAGNETIC MATERIALS**

Steven Disseler, Chair
NIST Center for Neutron Research, Gaithersburg, MD

8:30

- AD-01. Magnetic and transport measurements in nanoparticle-spin crossover molecules hybrid nanostructures.** *S. Usmani¹, J. Carrey¹, S. Tricard¹, J. Sanchez Costa³, G. Molnar², L. Salmon², B. Chaudret¹ and A. Bousseksou²* *1. Laboratoire de Physique et Chimie des Nano-objets - INSA, Toulouse, France; 2. Laboratoire de Chimie de Coordination, Toulouse, France; 3. IMDEA Nanoscience, Madrid, Spain*

8:42

- AD-02. Exchange and Dzyaloshinskii-Moriya interactions in bulk FeGe: Effects of atomic vacancies.** *J. Loh¹ and G. Chee Kwan¹* *1. Materials Science & Engineering, Institute of High Performance Computing, Singapore, Singapore*

8:54

- AD-03. Combinatorial XMCD on Fe₂Co_y(V,Mn)_{1-(x+y)} ternary systems.** *A.T. N'Diaye¹, S.W. Fackler^{2,3}, T. Gao², Y. Iwasaki², A. Mehta⁴, I. Takeuchi² and E. Arenholz¹* *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Materials Science & Engineering, University of Maryland, College Park, MD; 3. Joint Center for Artificial Photosynthesis, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory, Menlo Park, CA*

9:06

- AD-04. Unusual Nature of the Martensite and Ferromagnetic Transitions in Ni₂Mn_{0.4-x}Fe_xCr_{0.6}Ga Heusler Alloys.** *J.A. Brock^{1*} and M.U. Khan¹* *1. Department of Physics, Miami University, Oxford, OH*

9:18

- AD-05. High-temperature Shell-ferromagnetic Precipitates in Off-stoichiometric Martensitic Ni-Mn-based Heuslers Produced by Temper-annealing under Magnetic Field.** *A. Cakir^{2,1} and M. Acet¹* *1. Physics, Duisburg-Essen University, Duisburg, Germany; 2. Department of Metallurgical and Materials Engineering, Mugla University, Mugla, Turkey*

- AD-06. Shell-ferromagnetism in a Ni-Mn-based Off-stoichiometric Heusler Studied by Ferromagnetic Resonance.** *F. Scheibel*¹, D. Spoddig¹, R. Meckenstock¹, A. Cakir², M. Farle^{1,3} and M. Acet¹ *1. Faculty of Physics, University Duisburg-Essen, Duisburg, Germany; 2. Metallurgical and Materials Engineering, Muğla University, Muğla, Turkey; 3. Center for Functionalized Magnetic Materials, Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation*

- AD-07. Magneto-photothermal effects of pegylated Magnetite nanoparticles for bimodal Cancer therapy.** *S.A. Shah*¹, M. Khan², M. Hashmi³, S. Awan⁴, M. Naeem⁵ and M. Arshad⁶ *1. Physics, Forman Christian College (University), Lahore, Pakistan; 2. Polymer Engineering, University of the Punjab, Lahore, Pakistan; 3. Department of Applied Sciences, Superior University, Lahore, Pakistan; 4. Physics, COMSATS, Islamabad, Pakistan; 5. Physics, Islamic International University, Islamabad, Pakistan; 6. Nanoscience division, National Center for Physics, Islamabad, Pakistan*

- AD-08. Crystal structure and magnetic behavior of new ternary Ho₅Ni₂X₃ intermetallics (X = Si, Ge).** *A. Provino*^{1,2}, P. Manfrinetti^{1,2}, C. Ritter³ and M. Pani^{1,2} *1. Department of Chemistry, University of Genova, Genova, Italy; 2. Institute SPIN-CNR, Genova, Italy; 3. Institut Laue-Langevin, Grenoble, France*

- AD-09. Direct Magnetic Measurement of Ferromagnetic Two-Dimensional Materials.** *W. Liu*^{1,2}, K. Zhang³, N. Maltby², J. Robinson¹, J. Robinson³, Y. Xu² and S.S. Dhesi⁴ *1. Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 2. Electronics Department, University of York, York, United Kingdom; 3. Department of Materials Science and Engineering, Pennsylvania State University, Pennsylvania, PA; 4. Diamond Light Source, Didcot, United Kingdom*

- AD-10. A New Class Of Inherently Nanolaminated Magnetic Materials: Magnetic MAX Phases. (Invited)** *R. Salikhov*¹, Q. Tao², D. Weller¹, J. Rosén², U. Wiedwald¹ and M. Farle^{1,3} *1. Faculty of Physics and Center for Nanointegration (CENIDE), University of Duisburg-Essen, 47057 Duisburg, Germany; 2. Thin Film Physics, Department of Physics, Chemistry and Biology (IFM), Linköping University, Linköping, Sweden; 3. Center for Functionalized Magnetic Materials, Immanuel Kant Baltic Federal University, 236041 Kaliningrad, Russian Federation*

- AD-11. Magnetic properties of monolayer and multilayer MoS₂ films influenced by thickness and doping.** *D. Wang*¹, *W. Shi*¹, *J. Hao*¹, *F. Chen*¹, *L. Zhang*¹, *Y. Zhu*¹, *R. Peng*¹ and *M. Wang*¹ *1. Nanjing University, Nanjing, China*

11:06

- AD-12. Sulfur-doping Induced Magnetism In Graphene: Insights From Experiment And Electronic-structure Calculations.** J. Tucek¹, P.S. Blonski¹, Z. Sofer², P. Simek², M. Petr¹, M. Pumera³, M. Otyepka¹ and R. Zboril¹ *1. Department of Physical Chemistry, Regional Centre of Advanced Technologies and Materials, Palacky University Olomouc, Olomouc, Czech Republic; 2. Department of Inorganic Chemistry, University of Chemistry and Technology Prague, Prague, Czech Republic; 3. Division of Chemistry and Biological Chemistry, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*

11:18

- AD-13. Non Magnetic Chemical Tune the Magnetic Properties of Graphene Derivatives.** D. Lee¹, I. Nekrashevich¹, K. Martirosyan², H. Lee³, T. Lee³, D. Litvinov¹ and C. Dannangoda² *1. Materials Engineering, University of Houston, Houston, TX; 2. Physics & Astronomy, University of Texas, Brownsville, TX; 3. Chemistry, University of Houston, Houston, TX*

11:30

- AD-14. Withdrawn**

TUESDAY
MORNING
8:30

LA GALERIES 4-5

Session AE ULTRAFAST SWITCHING

Christine Boeglin, Chair
IPCMS, Strasbourg, France

8:30

- AE-01. Electric Current Induced Ultrafast Demagnetization.** R. Wilson^{1,2}, Y. Yang¹, J. Gorchon³, C.A. Lambert¹, S. Salahuddin¹ and J. Bokor¹ *1. EECS Department, University of California, Berkeley, CA; 2. Mechanical Engineering and Materials Science Program, University of California, Riverside, CA; 3. Lawrence Berkeley National Laboratory, Berkeley, CA*

8:42

- AE-02. Ultrafast Magnetic Switching of GdFeCo via Electronic Heat Currents.** R. Wilson^{1,2}, J. Gorchon³, C.A. Lambert², Y. Yang², S. Salahuddin² and J. Bokor^{2,3} *1. Mechanical Engineering and Materials Science Program, University of California, Riverside, CA; 2. EECS Department, University of California, Berkeley, CA; 3. Lawrence Berkeley National Laboratory, Berkeley, CA*

8:54

- AE-03. Insights into ultrafast all-optical spin switching through a ferromagnetically coupled two-spin system.** G. Zhang¹, Y. Bai¹ and T.F. George² *1. Indiana State University, Terre Haute, IN; 2. University of Missouri-St Louis, St Louis, MO*

9:06

- AE-04. Two types of all-optical magnetization switching mechanisms using femtosecond laser pulses.** M. El Hadri¹, P. Pirro¹, C.A. Lambert¹, S. Petit-Watelot¹, Y. Quessab¹, M. Hehn¹, F. Montaigne¹, G. Malinowski¹ and S. Mangin¹
1. Institut Jean Lamour, Vandoeuvre-lès-Nancy, France

9:18

- AE-05. Model for multi-shot all-thermal all-optical switching in ferromagnets.** J. Gorchon^{1,2}, Y. Yang² and J. Bokor^{1,2}
1. Lawrence Berkeley National Laboratory, Berkeley, CA;
2. University of California, Berkeley, CA

9:30

- AE-06. On the Possibility of the Ultra Fast Magnetisation Switching in TbCo Under Heating Mechanism.** O. Chubykalo-Fesenko¹, R. Moreno¹ and T.A. Ostler² *1. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain;* *2. Physique des Matériaux et Nanostructures, Université de Liège, Liège, Belgium*

9:42

- AE-07. Modeling All Optical Switching in Granular FePt Media.** M. Menarini¹, L.J. Sham² and V. Lomakin³ *1. Electrical and Computer Engineering, University of California San Diego, La Jolla, CA;* *2. Physics, University of California San Diego, La Jolla, CA;* *3. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA*

9:54

- AE-08. All-optical switching of FePt nanoparticle recording medium with inverse Faraday effect.** R. John¹, M. Berritta², D. Hinzke³, C. Mueller⁴, T. Santos⁵, P. Nieves⁶, H. Ulrichs⁷, J. Walowski¹, O. Chubykalo-Fesenko⁶, J. McCord⁴, P. Oppeneer², U. Nowak³ and M. Münzenberg¹ *1. Institute of Physics, Ernst-Moritz-Arndt University, Greifswald, Germany;* *2. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden;* *3. Physics Department, University of Konstanz, Konstanz, Germany;* *4. Institute for Materials Science, CAU Kiel, Kiel, Germany;* *5. Western Digital Corporation, San Jose, CA;* *6. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain;* *7. I. Phys. Institut, Georg-August-University, Goettingen, Germany*

10:06

- AE-09. Ultrafast Magnetization Dynamics In Ferrimagnetic DyCo₅.** A. Donges¹, S. Khmelevskyi², A. Deak³, R. Abrudan^{4,5}, F. Radu⁴, I. Radu^{4,6}, L. Szunyogh³ and U. Nowak¹ *1. Physics Department, University of Konstanz, Konstanz, Germany;* *2. Vienna University of Technology, Vienna, Austria;* *3. Budapest University of Technology and Economics, Budapest, Hungary;* *4. Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany;* *5. Ruhr-Universität Bochum, Bochum, Germany;* *6. Technical University Berlin, Berlin, Germany*

10:18

- AE-10. Ultrafast electron, spin, and lattice dynamics in half-metallic Fe₃O₄ thin films.** *X. Lu*¹, *B. Liu*², *G. Li*¹, *Y. Wang*¹, *H. Ling*³, *J. Sizeland*¹, *T. Ostler*¹, *J. Wu*¹, *X. Ruan*², *V. Lazarov*¹, *R. Chantrell*¹ and *Y. Xu*³ *1. Department of Physics, University of York, York, United Kingdom; 2. Jiangsu Provincial Key Laboratory of Advanced Photonic and Electronic Materials, Collaborative Innovation Center of Advanced Microstructures, School of Electronic Science and Engineering, Nanjing University, Nanjing, China; 3. Department of Electronics, University of York, York, United Kingdom*

10:30

- AE-11. Single-shot All-Optical Switching of ferromagnetic films.** *Y. Yang*¹, *J. Gorchon*², *C.A. Lambert*¹, *R. Wilson*^{1,3}, *S. Salahuddin*^{1,2} and *J. Bokor*^{1,2} *1. University of California, Berkeley, CA; 2. Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Mechanical Engineering, University of California, Riverside, CA*

10:42

- AE-12. All-optical control of magnetization in He⁺-irradiated ferromagnetic Co/Pt multilayers.** *M. El Hadri*¹, *M. Hehn*¹, *G. Malinowski*¹, *C.A. Lambert*¹, *C. Beigne*³, *D. Ravelosona*² and *S. Mangin*¹ *1. Institut Jean Lamour, Vandoeuvre-lès-Nancy, France; 2. Institut d'Electronique Fondamentale, Orsay, France; 3. Univ. Grenoble Alpes – CEA Grenoble, Grenoble, France*

10:54

- AE-13. Ultrafast Magneto-Acoustic in Magnetostrictive Materials.** *A. Hillion*¹, *T. Parpiiev*³, *V. Vlasov*³, *V. Temnov*³, *V. Polewczyk*¹, *S. Andrieu*¹, *A. Anane*², *V. Gusev*³, *K. Dumesnil*¹, *N. Bergeard*¹, *G. Malinowski*¹ and *T. Pezeril*³ *1. Institut Jean Lamour, Universite de Lorraine, Vandoeuvre, France; 2. CNRS Thales, Palaiseau, France; 3. IMMM, Le Mans, France*

11:06

- AE-14. Off-Resonant Excitation of Cobalt Thin Film Magnetization by Intense Single-Cycle THz Pulses: Computer Simulations and Experiments.** *A. Donges*¹, *M. Shalaby*², *C. Vicario*², *K. Carva*³, *P. Oppeneer*⁴, *C. Hauri*² and *U. Nowak*¹ *1. Physics Department, University of Konstanz, Konstanz, Germany; 2. SwissFEL, Paul Scherrer Institute, Villigen PSI, Switzerland; 3. Dept. Condensed Matter Physics, Charles University, Prague, Czech Republic; 4. Uppsala University, Uppsala, Sweden*

11:18

- AE-15. Domain size criterion for the observation of all-optical helicity-dependent switching in magnetic thin films.** *M. El Hadri*¹, *M. Hehn*¹, *P. Pirro*¹, *C.A. Lambert*¹, *J. Rojas-Sanchez*¹, *G. Malinowski*¹, *E.E. Fullerton*² and *S. Mangin*¹ *1. Institut Jean Lamour, Vandoeuvre-lès-Nancy, France; 2. UC San Diego 0401, La Jolla, CA*

Session AF
MRAM AND MAGNETIC LOGIC DEVICES I

Alexey Khvalkovskiy, Chair
Crocus Nanoelectronics, LLC, Dolgoprudny, Russian Federation

8:30

- AF-01. Perpendicularly-Magnetized Double Magnetic Tunnel Junctions for Spin-Torque MRAM. (Invited)** *G. Hu^{1,2}, J. Lee², J.J. Nowak^{1,2}, J. Sun^{1,2}, J. Harms¹, A.J. Annunziata^{1,2}, S. Brown^{1,2}, W. Chen¹, Y. Kim², G. Lauer^{1,2}, N. Marchack^{1,2}, S. Murthy¹, E. O'Sullivan^{1,2}, J. Park², M. Reuter^{1,2}, R. Robertazzi^{1,2}, P.L. Trouilloud^{1,2}, Y. Zhu^{1,2} and D. Worledge^{1,2}* *1. IBM-Micron MRAM Alliance, IBM TJ Watson Research Center, Yorktown Heights, NY; 2. IBM-Samsung MRAM Alliance, IBM TJ Watson Research Center, Yorktown Heights, NY*

9:06

- AF-02. Dual-Referenced Composite Free Layer Design for Improving Switching Efficiency of Spin-Transfer Torque RAM.** *R.C. Bell¹, J. Hu¹ and R.H. Victora¹* *1. Electrical and Computer Engineering, University of Minnesota at Twin-Cities, Minneapolis, MN*

9:18

- AF-03. Thermally robust perpendicular magnetized magnetic tunnel junction with a large exchange coupling using Ir spacer.** *K. Nakamura¹, H. Maehara², H. Tomita¹, Y. Tanaka¹, T. Kitada¹, S. Furukawa¹ and N. Watanabe¹* *1. Tokyo Electron Yamanashi Limited, Nirasaki City, Yamanashi, Japan; 2. Tokyo Electron Limited, Tokyo, Japan*

9:30

- AF-04. Second order anisotropy contribution in perpendicular magnetic tunnel junctions.** *A. Timopheev¹, R.C. Sousa¹, M. Chshiev¹, T.H. Nguyen¹ and B. Diény¹* *1. CEA-INAC / CNRS, SPINTEC, Univ. Grenoble Alpes, Grenoble, France*

9:42

- AF-05. Giant Interfacial Perpendicular Magnetic Anisotropy in MgO/CoFe/Capping Layer Structure.** *S. Peng^{1,2}, W. Zhao^{1,2}, J. Qiao^{1,2}, L. Su^{1,2}, J. Zhou^{1,2}, H. Yang^{3,4}, Q. Zhang^{1,5}, Y. Zhang^{1,2}, C. Grezes⁶, P.K. Amiri^{6,7} and K.L. Wang⁶* *1. Fert Beijing Institute, Beihang University, Beijing, China; 2. School of Electronic and Information Engineering, Beihang University, Beijing, China; 3. Unité Mixte de Physique, CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, Palaiseau, France; 4. Univ. Grenoble Alpes, INAC-SPINTEC, CNRS, SPINTEC, CEA, INAC-SPINTEC, F-38000 Grenoble, France; 5. School of Materials Science and Engineering, Beihang University, Beijing, China; 6. Department of Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 7. Inston Inc., Los Angeles, CA*

- AF-06. Broadband ferromagnetic resonance study of perpendicular magnetic tunnel junctions.** *D.B. Gopman¹, C. Dennis¹, B. McMichael², X. Hao³, Z. Wang³, H. Gan³, X. Wang³, Y. Zhou³ and Y. Huai³* *1. Materials Science & Engineering Division, National Institute of Standards and Technology, Gaithersburg, MD; 2. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 3. Avalanche Technology, Fremont, CA*

10:06

- AF-07. Ferromagnetic resonance study of composite Co/Ni - FeCoB free layers with perpendicular anisotropy.** *T. Devolder¹, E. Liu², J. Swerts², S. Couet², S. Mertens², T. Lin², S. Van Elshocht², G.S. Kar², A. Furnemont² and J. De Boeck²* *1. IEF, Orsay, France; 2. Imec, Leuven, Belgium*

10:18

- AF-08. Spin-transfer-torque Switching in a Free Layer with Higher-order Perpendicular Magnetic Anisotropy.** *R. Matsumoto¹, H. Arai^{2,1}, S. Yuasa¹ and H. Imamura¹* *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 2. PRESTO, Japan Science and Technology Agency (JST), Kawaguchi, Japan*

10:30

- AF-09. Instability Mechanism for STT-RAM Switching: Normal Mode Analysis.** *P.B. Visscher¹, K. Munira¹ and R.J. Rosati^{1,2}* *1. Physics and MINT Center, University of Alabama, Tuscaloosa, AL; 2. Physics, University of Texas, Austin, TX*

10:42

- AF-10. Origin of variation of shift field via annealing at 400°C in a perpendicular-anisotropy magnetic tunnel junction with [Co/Pt]-multilayers based synthetic ferrimagnetic reference layer.** *H. Honjo^{1,5}, S. Sato^{1,5}, S. Ikeda^{1,3}, H. Sato^{3,1}, T. Watanebe^{1,5}, S. Miura^{1,5}, T. Nasuno^{1,5}, Y. Noguchi^{1,5}, M. Yasuhira^{1,5}, T. Tanigawa^{1,5}, H. Koike^{1,3}, M. Muraguchi^{1,2}, M. Niwa^{1,5}, K. Ito¹, H. Ohno^{3,4} and T. Endoh^{1,2}* *1. Center for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan; 2. Graduate School of Engineering, Tohoku University, Sendai, Japan; 3. Center for Spintronics Integrated Systems, Sendai, Japan; 4. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 5. JST ACCEL, Sendai, Japan*

10:54

- AF-11. Electrical magnetization switching in CoFeB/MgO magnetic tunnel junctions in nanosecond regime.** *N. Ohshima¹, J. Llandro¹, H. Sato^{2,3}, S. Kanai^{1,2}, S. Fukami^{1,2}, 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 Spintronics Research Network, Tohoku University, Sendai, Japan; 4. WPI Advanced Institute for Materials Research (WPI-AIMR), Tohoku University, Sendai, Japan*

- AF-12. Time Resolved Studies of Spin-Torque Switching in Perpendicularly Magnetized Magnetic Tunnel Junction Devices.** C. Hahn¹, A.D. Kent¹, G. Wolf², B. Kardasz², S. Watts² and M. Pinarbasi² *1. Department of Physics, New York University, New York, NY; 2. Spin Transfer Technologies, Inc., Fremont, CA*

- AF-13. Characterization of Thermal Conductance in MgO-based Magnetic Tunnel Junction by Picosecond Time-domain Thermoreflectance.** N. Sato¹, R. Cheaito², R.M. Whtie³, M. Asheghi², K.E. Goodson² and S.X. Wang^{3,1} *1. Department of Electrical Engineering, Stanford University, Stanford, CA; 2. Department of Mechanical Engineering, Stanford University, Stanford, CA; 3. Department of Materials Science & Engineering, Stanford University, Stanford, CA*

TUESDAY
MORNING
8:30

STUDIO 9-10

Session AG

BIOCHEMICAL AND BIOMEDICAL APPLICATIONS I

Stephen Russek, Chair
NIST, Boulder, CO

8:30

- AG-01. The removal of uranium from contaminated water by specific chelator grafted onto magnetic nanoparticles.** E. Mazario¹, A.S. Helal^{3,1}, A. Mayoral⁴, P. Decorse¹, A. Chevillot¹, S. Novak¹, C. Perruchot¹, C. Lion¹, R. Losno^{5,2}, S. Ammar¹, J. El Hage Chahine¹ and M. Hemadi¹ *1. ITODYS, Université Paris Diderot, PRES Sorbonne Paris Cité, CNRS UMR-7086, Paris, France; 2. Université Paris Diderot, Paris, France; 3. Nuclear Materials Authority, Cairo, Egypt; 4. Instituto de Nanociencia de Aragón (INA) - Universidad de Zaragoza, Madrid, Spain; 5. Institut de Physique du Globe de Paris, Paris, France*

8:42

- AG-02. Magnetic characteristic measurements of ethanol-water mixtures using a hybrid-type HTS-SQUID magnetometer.** K. Tsukada¹, Y. Matsunaga¹, R. Isshiki¹, Y. Nakamura¹, K. Sakai² and T. Kiwa¹ *1. Okayama University, Okayama, Japan; 2. Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan*

8:54

- AG-03. Magnetic Particle Relaxometer For Characterization Of Magnetic Nanoparticle Tracers For Magnetic Particle Imaging.** N. Garraud¹, R. Dhavalikar², D. Prestridge³, D.P. Arnold¹ and C. Rinaldi^{2,3} *1. Electrical and Computer Engineering, University of Florida, Gainesville, FL; 2. Department of Chemical Engineering, University of Florida, Gainesville, FL; 3. J.Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, FL*

AG-04. Understanding Particle Stability and Interaction With Tissue Using a Magnetic Particle Spectrometer.

R. Dhavalikar¹, A.C. Bohorquez³, D. Prestridge³, N. Garraud², A. Chiu Lam¹, D.P. Arnold² and C. Rinaldi^{1,3} 1. *Chemical Engineering, University of Florida, Gainesville, FL;* 2. *Electrical and Computer Engineering, University of Florida, Gainesville, FL;* 3. *J.Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, FL*

AG-05. A Room Temperature Ultrasensitive Magnetoelectric Susceptometer for the Quantitative Tissue Iron Detection.

H. Xi¹, X. Qian¹, M. Lu¹, L. Mei¹, S. Rupprecht², Q. Yang^{2,3} and Q. Zhang^{1,4} 1. *Electrical Engineering, The Pennsylvania State Univeristy, University Park, PA;* 2. *Radiology, Penn State College of Medicine, Hershey, PA;* 3. *Neurosurgery, Penn State College of Medicine, Hershey, PA;* 4. *Materials Research Insititue, The Pennsylvania State Univeristy, University Park, PA*

AG-06. MRI Based Susceptibility Mapping for In-Vivo Iron and Blood Oximetry Measurements.

H. Erdevig^{1,2}, S.E. Russek¹, S. Carnicka¹, K. Stupic¹ and K.E. Keenan¹ 1. *National Institute of Standards and Technology, Boulder, CO;* 2. *Department of Physics, University of Colorado Boulder, Boulder, CO*

AG-07. Ultrasensitive detection of single iron oxide nanoparticles by nucleation of domain walls in CoFeB nanostructures.

J. Wells¹, A. Fernandez-Scarioni³, H.W. Schumacher³, R. Mansell², R. Cowburn² and O. Kazakova¹ 1. *National Physical Laboratory, Teddington, United Kingdom;* 2. *University of Cambridge, Cambridge, United Kingdom;* 3. *Physikalisch-Technische Bundesanstalt, Braunschweig, Germany*

AG-08. High throughput Salmonella detection with Tunnel Magnetoresistance sensors.

M.A. Torija¹, L. Maldonado-Camargo², C. Rinaldi³, S. Sreevatsan⁴, M. Tondra⁵ and P. Mueller¹ 1. *Ad tech, NVE Corporation, Eden Prairie, MN;* 2. *University of Florida, Gainesville, FL;* 3. *University of Florida, Gainesville, FL;* 4. *University of Minnesota, St. Paul, MN;* 5. *Diagnostic Biosensors, St. Paul, MN*

AG-09. Magnetic Tunneling Junction - Based Platform For Recording Neuronal Activity.

P.P. Sharma¹, G. Gervasoni², E. Albisetti¹, D. Moretti³, F. D'Ercoli¹, N. Forte³, G. Ferrari², P. Baldelli³, M. Sampietro², F. Benfenati³, R. Bertacco¹ and D. Petti¹ 1. *Physics, Politecnico di Milano, Milano, Italy;* 2. *Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano, Milano, Italy;* 3. *Istituto Italiano di Tecnologia, Genova, Italy*

10:18

AG-10. Magnetic Micro-/Nano- Structures for Bio-Manipulations. (Invited) H. Huang¹, C. Huang¹ and Z. Wei¹ *1. National Tsing Hua University, Hsinchu, Taiwan*

10:54

AG-11. A Magnetic Probe Equipped with Small-Tip Permanent Magnet for Sentinel Lymph Node Biopsy. M. Kaneko¹, K. Ohashi¹, S. Chikaki¹, A. Kuwahata¹, M. Shiozawa², M. Kusakabe¹ and M. Sekino¹ *1. University of Tokyo, Bunkyo-ku, Japan; 2. Ibaraki Prefectural Central Hospital, Ibaraki, Japan*

11:06

AG-12. Simulation of Transcranial Magnetic Stimulation in the Presence of Deep Brain Stimulation Probes for Treatment of Parkinson's Disease. F. Syeda¹, K. Holloway² and R.L. Hadimani^{1,3} *1. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 2. Department of Neurosurgery, Virginia Commonwealth University, Richmond, VA; 3. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*

11:18

AG-13. Helical microrobot with navigating, drug-delivery and drilling capabilities in human blood vessels by external rotating magnetic field. J. Nam¹, W. Lee¹, B. Jang¹ and G. Jang¹ *1. Dept of Mechanical Convergence Engineering, Hanyang University, Seoul, The Republic of Korea*

TUESDAY
MORNING
8:30

STUDIO 7-8

Session AH
NANOWIRES AND NANOPARTICLES I
Ping Liu, Chair
University of Texas-Arlington, Arlington, TX

8:30

AH-01. Magnetization Reversal of Multisegmented FeCo/Cu Cylindrical Nanowires. C. Bran¹, J. Meier¹, E.M. Palmero¹, R. Perez¹, E. Berganza¹, A. Asenjo¹, L.A. Rodriguez², C. Gatel², D.F. Reyes², E. Snoek², J.A. Fernandez-Roldan¹, O. Chubykalo-Fesenko¹ and M. Vázquez¹ *1. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain; 2. CEMES-CNRS, Toulouse, France*

8:42

AH-02. Magnetic structure of 3D Domain Wall in modulated cylindrical nanowires. I. Ivanov¹, S. Lopatin², A. Chuvilin³ and J. Kosel¹ *1. Sensing, Magnetism, and Microsystems Research Group, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 2. King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia; 3. EM Lab, CIC nanoGUNE, San Sebastian, Spain*

8:54

- AH-03. Visualization of magnetization in CoFe nanofibers by Lorentz TEM.** S. Zhang¹, Z. Zhou², G. Grocke², A. Petford-Long¹, Y. Liu³, X. Chen² and C. Phatak¹
1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Energy Sciences Division, Argonne National Laboratory, Lemont, IL; 3. Center for Nanoscale Materials, Argonne National Laboratory, Lemont, IL

9:06

- AH-04. Nanoscale study of the geometry-induced spin configuration in diameter-modulated cylindrical FeCo-based nanowires.** L.A. Rodríguez González¹, C. Bran², D.F. Reyes Vasquez¹, C. Gatel¹, E. Berganza², M. Vazquez², A. Asenjo² and E. Snoeck¹ *1. CEMES-CNRS 29 rue Jeanne Marvig, B.P. 94347 F-31055, Toulouse, France; 2. ICMN-CSIC, Madrid, Spain*

9:18

- AH-05. Magnetization Distribution in Cylindrical Co-based Nanowires with Tailored Anisotropy.** C. Bran¹, E.M. Palmero¹, R. Perez del Real¹, A. Asenjo¹, A. Fraile Rodríguez² and M. Vázquez¹ *1. Institute of Materials Science of Madrid (ICMM-CSIC), Madrid, Spain; 2. Departament de Física de la Matèria Condensada and Institut de Nanociència i Nanotecnologia (IN2UB), Universitat de Barcelona, Barcelona, Spain*

9:30

- AH-06. Imaging Orthoradial Domains in Electroless-deposited Magnetic Nanotubes.** M. Stano¹, S. Schäfer², A. Wartelle¹, J. Toussaint¹, A. Sala³, T. Mentès³, A. Locatelli³, M. Rioult⁴, R. Belkhou⁴, W. Ensinger² and O. Fruchart^{1,5} *1. Institut Néel, Grenoble, France; 2. Technische Universität Darmstadt, Darmstadt, Germany; 3. Elettra – Sincrotrone Trieste S.C.p.A, Trieste, Italy; 4. Synchrotron SOLEIL, Gif-sur-Yvette, France; 5. Spintec, CNRS, Grenoble, France*

9:42

- AH-07. Thermal Switching of Magnetization States in Fe₃O₄ Nanocubes.** B. Parks¹, A.M. Abdelgawad², F. Fan¹, A. Wu¹ and S. Majetich¹ *1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Materials Science Engineering, Carnegie Mellon University, Pittsburgh, PA*

9:54

- AH-08. Structure and Magnetism of CoN Nanoparticles.** B. Balasubramanian^{1,2}, Y. Jin^{1,2}, X. Xu^{1,2}, S. Valloppilly² and D.J. Sellmyer^{1,2} *1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE*

10:06

- AH-09. Magnetic Field Assisted Cobalt Nanoparticle Synthesis.** A. Mosey¹, B. Gaire¹, R. Cheng¹, J. Kim² and J. Ryu² *1. Physics, Indiana University Purdue University Indianapolis, Indianapolis, IN; 2. Mechanical Engineering, Indiana University Purdue University Indianapolis, Indianapolis, IN*

10:18

- AH-10. Enhancement of Orbital and Spin Moments in Co Clusters Doped with Gold or Rhodium.** D. Dieleman¹, M. Tombers², L. Peters¹, J. Meyer², J. Jalink¹, M. Neeb³, S. Peredkov⁴, G. Niedner-Schatteburg² and A. Kirilyuk¹ *1. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands; 2. Fachbereich Chemie und Forschungszentrum OPTIMAS, TU Kaiserslautern, Kaiserslautern, Germany; 3. BESSY II, Helmholtz-Zentrum Berlin fuer Materialien und Energie, Berlin, Germany; 4. Max-Planck-Institut für Chemische Energiekonversion, Mülheim an der Ruhr, Germany*

10:30

- AH-11. Magnetic properties of CoTb nanoparticles prepared by mass-selected low energy cluster beam deposition.** A. Robert¹, A. Tamion¹, C. Albin¹, D. Le Roy¹ and V. Dupuis¹ *1. Institut Lumière Matière, Villeurbanne, France*

10:42

- AH-12. Effect of the particle size on the magnetic properties of Co₂FeAl Heusler alloy nanoparticles.** S. Alikhanzadeh-Arani¹ *1. University of Kashan, Institute of Nano Science and Nano Technology, Kashan, The Islamic Republic of Iran*

10:54

- AH-13. Synthesis and Characterization of Magnetochromatic Fe₃O₄ Particles by a Facile Ultrasound-assisted Process.** W. Wang¹, L. Zhuang¹, R. Hong¹, L. Zheng¹, F. Lu¹ and A. Zheng¹ *1. Sun Yat-sen University, Guangzhou, China*

11:06

- AH-14. Improving Magnetic Properties Of Iron Oxide Nanoparticles By Eliminating The Magnetic Dead Layer.** M. Unni¹, A. Uhl³, S. Savliwala¹, J. Andrew³ and C. Rinaldi^{1,2} *1. Chemical Engineering, University of Florida, Gainesville, FL; 2. J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, Gainesville, FL; 3. Materials Science and Engineering, University of Florida, Gainesville, FL*

11:18

- AH-15. Enhanced Ferromagnetic Properties in Fe₅Si₃ Nanoclusters.** B. Das¹, B. Balasubramanian¹, R. Skomski¹, P. Manchanda¹, G. Hadjipanayis² and D.J. Sellmyer¹ *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*

Session AI
ANISOTROPY EFFECTS IN THIN FILMS I

Seiji Mitani, Chair
NIMS, Tsukuba, Japan

8:30

- AI-01. Tailoring Perpendicular Magnetic Coupling by XMCD.** *Y.U. Idzerda*¹, *R.J. Snow*¹, *H. Bhatkar*¹, *A.T. N'Diaye*² and *E. Arenholz*² *1. Physics, Montana State University, Bozeman, MT; 2. LBNL, Berkeley, CA*

8:42

- AI-02. Observation of magnetic domain structure initiated by competition among the magnetoelastic anisotropy and shape anisotropy using XMCD-PEEM.** *A. Yamaguchi*¹, *T. Ohkochi*², *A. Yasui*², *T. Kinoshita*² and *K. Yamada*³ *1. Laboratory of Advanced Science and Technology for Industry, University of Hyogo, Ako-gun, Japan; 2. JASRI/SPring-8, Sayo, Japan; 3. Gifu University, Gifu, Japan*

8:54

- AI-03. Interfacial Exchange Coupling in FeCo/MnGa Studied by X-ray Magnetic Circular Dichroism.** *J. Okabayashi*¹, *K.Z. Suzuki*² and *S. Mizukami*² *1. Research Center for Spectrochemistry, The University of Tokyo, Tokyo, Japan; 2. WPI-AIMR, Tohoku University, Sendai, Japan*

9:06

- AI-04. Microstructure and Magnetism of Epitaxial Grown $\text{Li}_0\text{-MnGa}(001)$ on $\eta\text{-Mn}_3\text{N}_2$.** *J.P. Corbett*¹, *A.O. Mandru*¹, *A.L. Richard*¹, *J. Gallagher*³, *F. Yang*², *D.C. Ingram*¹ and *A.R. Smith*¹ *1. Physics and Astronomy, Ohio University, Athens, OH; 2. Physics, The Ohio State University, Columbus, OH; 3. Physics and Astronomy, The Ohio State University, Columbus, OH*

9:18

- AI-05. Interfacial magnetic anisotropy in rare-earth metal ultra-thin films.** *K. Nawa*¹, *T. Akiyama*¹, *T. Ito*¹, *T. Oguchi*², *M. Weinert*³ and *K. Nakamura*¹ *1. Physics Engineering, Mie University, Tsu, Japan; 2. The Institute of Scientific and Industrial Research, Osaka University, Ibaraki, Japan; 3. Physics, University of Wisconsin-Milwaukee, Milwaukee, WI*

9:30

- AI-06. Effect of anisotropy on magnetic and Ferromagnetic Resonance Studies on Tb-Fe thin films.** *P. Rajasekhar*¹ and *G. Markandeyulu*¹ *1. Physics, Indian Institute of Technology, Chennai, India*

- AI-07. Interfacial perpendicular magnetization and atomic interdiffusion at $\text{Co}_2\text{FeAl/MgAl}_2\text{O}_4$ spinel interface.** *H. Sukegawa*¹, J.P. Hadorn¹, T. Ohkubo¹, S. Mitani¹ and K. Hono¹ *1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science, Tsukuba, Japan*

- AI-08. Enhanced annealing stability and anisotropy in perpendicular magnetic tunnel junctions using W layer.** *J. Chatterjee*¹, N. Perrissin¹, S. Auffret¹, R.C. Sousa¹ and B. Diény¹ *1. SPINTEC, Univ. Grenoble Alpes / CEA / CNRS, Grenoble, France*

- AI-09. Enhancement of $L1_0$ ordering with the c -axis perpendicular to the substrate in FePt alloy film by using an epitaxial cap-layer.** *M. Ohtake*^{1,3}, M. Nakamura¹, M. Futamoto¹, F. Kirino⁴ and N. Inaba² *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Faculty of Engineering, Yamagata University, Yamagata, Japan; 3. Faculty of Engineering, Kogakuin University, Tokyo, Japan; 4. Graduate School of Fine Arts, Tokyo University of the Arts, Tokyo, Japan*

- AI-10. Thickness-induced spin-reorientation originated from competing magnetic shape anisotropies.** *J. Tang*¹, W. He¹, X. Zhang¹ and Z. Cheng¹ *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

- AI-11. Strain-induced In-plane Spin Reorientation Of BCC-like Iron Films Grown On Cu(001).** *E. Corredor Vega*¹, J.I. Arnaudas^{2,3}, M. Ciria^{4,2}, F. Lofink¹, S. Rössler¹, R. Frömter¹ and H.P. Oepen¹ *1. Institut für Nanostruktur- und Festkörperphysik, Universität Hamburg, Hamburg, Germany; 2. Departamento de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain; 3. Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza, Spain; 4. ICMA-Universidad de Zaragoza, Zaragoza, Spain*

- AI-12. Controlling phase transformation and magnetic properties in $\text{Fe}_{100-x}\text{Pd}_x$ thin films by current annealing.** *M. Coisson*¹, G. Barrera¹, F. Celegato¹, M. Cialone², P. Rizzi² and *P. Tiberto*¹ *1. INRIM, Torino, Italy; 2. Chemistry, Università di Torino, Torino, Italy*

- AI-13. Magnetisation reversal in ultra-thin FeRh films grown on MgO (001) substrates.** C.W. Barton¹, T.A. Ostler², C. Kinane³, G. Hrkac⁴ and T. Thomson¹ 1. *Nano Engineering and Storage Technologies, School of Computer Science, University of Manchester, Manchester, United Kingdom*; 2. *Physique des solides, interfaces et nanostructures, University of Liege, Liege, Belgium*; 3. *Rutherford Appleton Laboratory, Harwell Science and Innovation Campus, Didcot, United Kingdom*; 4. *Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom*

- AI-14. Cobalt thickness independent inverse magnetostriction effect in Pt/Co/Pt structure formed on a flexible substrate.** S. Ota¹, R. Asai², T. Kozeki², H. Akamine², T. Fujii³, T. Namazu⁴, T. Takenobu⁵, T. Koyama⁶ and D. Chiba⁷ 1. *Applied Physics, The University of Tokyo, Bunkyo-ku, Japan*; 2. *University of Hyogo, Himeji, Japan*; 3. *Akita Prefectural University, Akita-shi, Japan*; 4. *Aichi Institute of Technology, Nagoya-shi, Japan*; 5. *Nagoya University, Nagoya-shi, Japan*; 6. *The University of Tokyo, Tokyo, Japan*; 7. *Department of Applied Physics, The University of Tokyo, Tokyo, Japan*

- AI-15. Vanadium-induced modification of magnetic anisotropy in Cr/ultrathin Fe/MgO.** A. Koziol-Rachwal^{1,2}, T. Nozaki¹, V. Zayets¹, H. Kubota¹, A. Fukushima¹, S. Yuasa¹ and Y. Suzuki^{1,3} 1. *Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*; 2. *Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Kraków, Poland*; 3. *Graduate School of Engineering Science, Osaka University, Toyonaka, Japan*

TUESDAY
MORNING
9:30

GRAND BALLROOM

Session AP
MAGNETIC RECORDING I
(Poster Session)
Boris Livshitz, Chair
Western Digital, San Jose, CA

- AP-01. FORC-study of magnetization reversal of L1₀-FePt based exchange coupled composite films.** G. Situ¹, J. Wang² and B. Ma^{2,1} 1. *Fudan University, Shanghai, China*; 2. *Electrical and computer Engineering, University of Minnesota, Minneapolis, MN*

- AP-02. A Reduced BER by Using Layered Decoding of LDPC Codes over HAMR System.** *W. Wongtrairat¹, T. Sopon¹, S. Wongsuthavas², W. Phakphisut³ and P. Supnithi³* 1. Faculty of Engineering and Architecture, Rajamangala University of Technology Isan, Nakhonratchasima, Thailand; 2. Faculty of Science and Liberal Arts, Rajamangala University of Technology Isan, Nakhonratchasima, Thailand; 3. Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand
- AP-03. Bit Aspect Ratio Conversion in Two-Track Simultaneous Reading Scheme.** *H. Muraoka¹ and S. Greaves¹* 1. RIEC, Tohoku University, Sendai, Japan
- AP-04. Suppression of ITI by array head reading and 2D-equalization.** *Y. Nakamura¹, R. Suzuto¹, H. Osawa¹, Y. Okamoto¹, Y. Kanai² and H. Muraoka³* 1. Department of Electrical and Electronic Engineering and Computer Science, Ehime University, Matsuyama, Japan; 2. IEE, Niigata Institute of Technology, Kashiwazaki, Japan; 3. RIEC, Tohoku Univ, Sendai, Japan
- AP-05. Iterative Intertrack Interference (ITI) Mitigation with 2D Varying Equalizers for Bit Patterned Media Recording.** *Y. Wang¹ and V. Bhagavatula¹* 1. Electrical and Computer Engineering Department, Carnegie Mellon University, Pittsburgh, PA
- AP-06. High K_u and low intergranular exchange coupling CoPt-based alloy granular media with B_2O_3 grain boundary material.** *R. Kushibiki¹, K. Tham¹, S. Hinata² and S. Saito²* 1. Tanaka Kikinzoku Kogyo K.K, Tsukuba, Japan; 2. Department of Electronic Engineering, Tohoku University, Sendai, Japan
- AP-07. Effective damping factor for CoPt-based alloy film with stacking faults and compositional modulated atomic layered structure.** *S. Hinata¹ and S. Saito¹* 1. Department of Electronic Engineering, Tohoku University, Sendai, Japan
- AP-08. LDPC Product Coding Scheme with Extrinsic Information for Bit Patterned Media Recording.** *S. Jeong¹ and J. Lee¹* 1. School of Electronic Engineering, Soongsil University, Seoul, The Republic of Korea
- AP-09. First order reversal curve diagrams of bit patterned MnGa fabricated by local ion irradiation.** *D. Oshima¹, T. Kato² and S. Iwata³* 1. Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan; 2. Department of Electrical Engineering and Computer Science, Nagoya University, Nagoya, Japan; 3. Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan
- AP-10. Layer Stacked Co/Pt Films with High Perpendicular Anisotropy Sputter Deposited at Room Temperature.** *N. Honda¹, S. Hinata³ and S. Saito²* 1. Electronics and Intelligent Systems, Tohoku Institute of Technology, Sendai, Japan; 2. Electronic Engineering, Tohoku University, Sendai, Japan; 3. Department of Electronic Engineering, Tohoku University, Sendai, Japan

Session AQ
ENERGY ASSISTED RECORDING I
(Poster Session)

Mi-Young Im, Chair
Lawrence Berkeley National Laboratory, Berkeley, CA

- AQ-01. Exchange coupled composite FePt/TbCo/[Co/Ni]_N films with an TbCo interlayer.** B. Ma^{1,2}, H. Chu², G. Situ² and J. Wang¹
1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Fudan University, Shanghai, China
- AQ-02. Investigation of Writing Error in Staggered Heated-Dot Magnetic Recording Systems.** W. Tipcharoen¹, C. Warisarn¹, D. Tongsoomporn², D. Karns³ and P. Kovintavewat⁴
1. College of Advanced Manufacturing Innovation, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand; 2. Seagate Technology (Thailand), Samutprakarn, Thailand; 3. Seagate Technology US NRM Facility, Bloomington, MN; 4. Data Storage Technology Research Center, Nakhon Pathom Rajabhat University, Nakhon Pathom, Thailand
- AQ-03. First versus second order phase transition materials for heat-assisted magnetic recording.** C. Vogler¹, C. Abert², F. Bruckner¹ and D. Suess¹
1. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 2. Institute of Solid State Physics, Christian Doppler Laboratory for Advanced Magnetic Sensing and Materials, Vienna University of Technology, Vienna, Austria
- AQ-04. The Effect of a Novel Energetic Carbon Overcoat Deposition on the Magnetic and Structural Properties of FePt Recording Medium.** S. Bhatti¹, O. Bo², R.S. Rawat² and S.N. Piramanayagam¹
1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore; 2. Natural Sciences and Science Education, National Institute of Education, Singapore, Singapore
- AQ-05. Multiscale Modeling of Organic Molecules Contamination in Head-Disk Interface under High Thermal Stress Coupled With Magnetic Fields.** W. Song¹, P. Chung², M.S. Jhon¹ and L.T. Biegler¹
1. Chemical Engineering, Carnegie Mellon Univ, Pittsburgh, PA; 2. Samsung Electro-mechanics, Suwon si, The Republic of Korea
- AQ-06. Non-equilibrium Responses of PFPE Lubricants with Various Atomistic/Molecular Architecture at Elevated Temperature.** P. Chung¹, W. Song² and M.S. Jhon²
1. Samsung Electro-mechanics, Suwon, The Republic of Korea; 2. Chemical Engineering, Carnegie Mellon University, Pittsburgh, PA
- AQ-07. Resonance frequency distribution of ECC grains in microwave assisted magnetic recording.** S. Greaves¹, Y. Kanai² and H. Muraoka¹
1. RIEC, Tohoku University, Sendai, Japan; 2. IEE, Niigata Institute of Technology, Kashiwazaki, Japan

- AQ-08. Micromagnetic Model Analysis of Double- and Tri-Layered Spin Torque Oscillators with Write Head for Microwave-Assisted Magnetic Recording.** *Y. Kanai¹, R. Itagaki¹, S. Greaves², K. Yoshida³ and H. Muraoka²* 1. *IEE, Niigata Institute of Technology, Kashiwazaki, Japan;* 2. *RIEC, Tohoku University, Sendai, Japan;* 3. *Kogakuin University, Tokyo, Japan*
- AQ-09. Damping Constant Dependence of SNR at Track Edge for Shingled Microwave-Assisted Magnetic Recording.** *T. Tanaka¹, D. Sakamoto¹, Y. Kanai² and K. Matsuyama³* 1. *Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan;* 2. *IEE, Niigata Institute of Technology, Kashiwazaki, Japan;* 3. *Department of Electronics, Kyushu University, Fukuoka, Japan*
- AQ-10. Selective Excitation of Ferromagnetic Resonance Using Circularly Polarized Magnetic Fields Generated by Coplanar Cross Waveguides.** *I. Kan¹ and Y. Nozaki¹* 1. *Dept. of Physics, Keio University, Yokohama, Japan*
- AQ-11. Switching Probability Under Spin Wave Excitation in an In-plane Magnetized $L1_0$ -FePt / $Ni_{81}Fe_{19}$ Exchange-coupled Bilayer.** *W. Zhou¹, T. Seki^{1,2}, T. Yamaji³, H. Imamura³ and K. Takanashi^{1,4}* 1. *Institute for Materials Research, Tohoku University, Sendai, Japan;* 2. *JST PRESTO, Saitama, Japan;* 3. *Spintronics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan;* 4. *Center for Spintronics Research Network, Tohoku University, Sendai, Japan*
- AQ-12. Computational analysis of microwave assisted magnetization reversal in unstable switching process.** *T. Tanaka¹, Y. Nozaki² and K. Matsuyama³* 1. *Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan;* 2. *Keio University, Yokohama, Japan;* 3. *Department of Electronics, Kyushu University, Fukuoka, Japan*
- AQ-13. Current-induced spin oscillation in ferromagnetic cross structure.** *J. Wang¹, X. Zhang², X. Lu³, Y. Yan¹, Y. Zhou² and Y. Xu¹* 1. *Department of Electronics, University of York, York, United Kingdom;* 2. *School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, Hong Kong;* 3. *Department of Physics, University of York, York, United Kingdom*
- AQ-14. Influence of Exchange on Signal-To-Noise Ratio In $[CoX/Pt]_4$ Media.** *Z. Zhao¹, J. Li¹, L. Wang¹ and D. Wei¹* 1. *School of Materials Science and Engineering, Tsinghua University, Beijing, China*
- AQ-15. Influence of the second order perpendicular anisotropy on the spin-torque diode effect in MTJ and implications on energy harvesting.** *R. Tomasello¹, M. Ricci¹, G. Siracusano², P. Burrascano¹, Z. Zeng³, M. Carpentieri⁴ and G. Finocchio²* 1. *Department of Engineering, Polo Scientifico Didattico di Terni, University of Perugia, Perugia, Italy;* 2. *Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy;* 3. *Suzhou Institute of Nano-tech and Nano-bionics, CAS, Suzhou, China;* 4. *Ingegneria Elettrica e dell'Informazione, Politecnico di Bari, Bari, Italy*

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

Nian Sun, Co-Chair
Northeastern University, Boston, MA
Xin Fan, Co-Chair
University of Denver, Denver, CO

- AR-01. Spin-torque oscillator with a conically magnetized free layer.** *H. Arai*^{1,2}, R. Matsumoto², S. Yuasa² and H. Imamura²
1. JST-PRESTO, Kawaguchi, Japan; 2. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan
- AR-02. Scaling Effect of Spin Torque Oscillators for Magnetic Read Sensor.** *X. Chao*¹, M. Jamali¹ and J. Wang¹
1. Electrical & Computer Eng., University of Minnesota, Minneapolis, MN
- AR-03. Three-terminal spin-torque oscillator devices using MgO-based magnetic tunnel junctions.** *E.R. Evarts*¹, M. Pufall¹ and W. Rippard¹
1. Spin Electronics Group, National Institute of Standards and Technology, Boulder, CO
- AR-04. Soft Magnetic Property and Magnetization Reversal Mechanism of Oblique Sputtered FeCoDy Thin Film for High-Frequency Application.** *Z. Xu*¹, Z. Zhang¹, F. Hu¹, E. Liu¹ and F. Xu¹
1. School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, China
- AR-05. Impact of Polycrystalline Co Layer of High Frequency Impedance and Surface Magnetism of Amorphous FeNi-based Ribbons.** *T.M. Eggers*¹, D.S. Lam^{1,2}, O. Thiabhog¹, J. Marcin³, P. Svec⁴, I. Skorvanek³, H. Srikanth¹ and M. Phan¹
1. Department of Physics, University of South Florida, Tampa, FL; 2. Faculty of Physics, Hanoi University of Science, Hanoi, Vietnam; 3. Institute of Experimental Physics, Slovak Academy of Sciences, Kosice, Slovakia; 4. Institute of Physics, Slovak Academy of Sciences, Bratislava, Slovakia
- AR-06. Powerful And Tunable THz Emitters Based On The Fe/Pt Magnetic Heterostructure.** *D. Yang*¹, J. Liang², C. Zhou², L. Sun², R. Zheng³, S. Luo¹, Y. Wu² and J. Qi¹
1. The Peac Institute of Multiscale Sciences, Chengdu, China; 2. Department of Physics, State Key Laboratory of Surface Physics and Collaborative Innovation Center of Advanced Microstructure, Fudan University, Shanghai, China; 3. Department of Physics, Ocean University of China, Qingdao, China
- AR-07. Perpendicularly Magnetized YIG-film Resonators and Waveguides with High Operating Power.** *M. Balinskiy*¹, B. Mongolov², D. Gutierrez¹, H. Chiang¹, A.N. Slavin³ and A. Khitun¹
1. University of California Riverside, Riverside, CA; 2. National Technical University of Ukraine, Kiev, Ukraine; 3. Physics, Oakland University, Rochester Hills, MI

- AR-08. Wiedemann Effect Enabled Mechanical Mode Coupling to Ferromagnetic Resonance.** *S. Cho¹, M. Cho¹ and Y. Park¹*
1. Department of Physics & Astronomy, Seoul National University, Seoul, The Republic of Korea
- AR-09. Circularly Polarized Antennas Realization by NiZn Ferrite Full Film Loading Substrates.** *W. Bao¹, H. Lin¹ and N.X. Sun²*
1. ECE, Northeastern University, Boston, MA; 2. Northeastern University, Boston, MA
- AR-10. Excitation of Spin Wave by Direct Injection of RF Current in NiFe Film.** *H. Chiang¹, M. Balinskiy¹, D. Gutierrez¹ and A. Khitun¹* *1. Electrical and Computer Engineering, University of California, Riverside, Riverside, CA*
- AR-11. Spin Wave Interference in YIG Cross Junction.**
M. Balinskiy¹, D. Gutierrez¹, H. Chiang¹, Y. Filimonov², A. Kozhevnikov² and A. Khitun¹ *1. University of California Riverside, Riverside, CA; 2. Kotel'nikov Institute of Radioengineering and Electronics of Russian Academy of Sciences, Saratov Branch, Saratov, Russian Federation*
- AR-12. An Integrated Tunable Nonlinear Wideband Bandstop Filter.** *Y. Gao^{2,1}, H. Chen¹, X. Yang³, Y. He¹, X. Wang¹, Y. Wei¹ and N.X. Sun¹* *1. ECE, Northeastern University, Boston, MA; 2. Winchester Technologies, LLC., Burlington, MA; 3. School of Information and Electronics, Beijing Institute of Technology, Beijing, China*
- AR-13. Radiated EMI Simulation for High-Power Ultra-Precision PMSM System Driven by PWM Converter.** *Y. Huangfu¹ and S. Wang¹* *1. State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China*
- AR-14. Experiment-based simulations of the magnetization reversal for ns-range clocked nanomagnetic logic.** *G. Ziemys¹, S. Breitzkreutz-v. Gamm¹, G. Csaba², D. Schmitt-Landsiedel¹ and M. Becherer³* *1. Institute for Technical Electronics, Technical University of Munich, Munich, Germany; 2. University of Notre Dame, Notre Dame, IN; 3. Institute for Nanoelectronics, Technical University of Munich, Munich, Germany*

**TUESDAY
MORNING
9:30**

GRAND BALLROOM

**Session AS
MAGNETIC SENSORS I
(Poster Session)**

Daniel Gopman, Chair
National Institute of Standards and Technology, Gaithersburg, MD

- AS-01. A New Sensor Structure for Rotational Core Loss Measurement of Nanocrystalline alloy.** *L. Chen¹, Y. Wang¹ and H. Zhao¹* *1. Hebei University of Technology, Tianjin, China*

- AS-02. Large Magnetoresistance Effect In Nitrogen-doped Silicon.** *W. Tao*¹, *Z. Yang*¹, *W. Wang*⁵, *M. Si*³, *H. Liu*⁴, *D. Yang*² and *X.D. Sheng*³ 1. *Lanzhou Univercity, Lanzhou, China*; 2. *Lanzhou University, Lanzhou, China*; 3. *Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, China*; 4. *Institute of Modern Physics, Chinese Academy of Sciences, Lanzhou, China, Lanzhou, China*; 5. *Lanzhou University, Lanzhou, China*
- AS-03. Temperature and frequency-dependent dynamic magnetoresistance in silicon $p-n$ junction devices.** *W. Tao*¹, *Y. Cao*¹, *D. Yang*¹, *Q. Liu*² and *X.D. Sheng*¹ 1. *Lanzhou University, Lanzhou, China*; 2. *Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou, China*
- AS-04. Magneto-transport properties in [Amorphous CoSiB/Pt] multilayer films.** *H. Lee*¹ and *T. Kim*¹ 1. *Sejong University, Seoul, The Republic of Korea*
- AS-05. Effect of bias voltage on sensitivity-bandwidth product of single and series connected tunneling magnetoresistance sensors.** *M. Dabek*^{1,2}, *P. Wisniowski*¹, *T. Stobiecki*¹, *J. Wrona*³, *S. Cardoso*⁴ and *P.P. Freitas*⁵ 1. *Electronics, AGH University of Science and Technology, Krakow, Poland*; 2. *Silicon Creations, Krakow, Poland*; 3. *Singulus Technologies AG, Kahl am Main, Germany*; 4. *INESC-MN and IN – Institute of Nanoscience and Nanotechnology, Lisbon, Portugal*; 5. *INL-International Iberian Nanotechnology Laboratory, Braga, Portugal*
- AS-06. Magnetic-domain control of Fe-based amorphous ribbons for highly sensitive fluxgate sensors.** *H. Miyata*^{1,2}, *R. Yamamoto*², *Y. Morimoto*² and *M. Takezawa*² 1. *MTI Co., Ltd., Kitakyushu, Japan*; 2. *Faculty of Engineering, Kyusyu Institute of Technology, Kitakyushu, Japan*
- AS-07. Development of a planar-type high sensitivity metallic contaminant detector.** *S. Okabe*¹ and *I. Sasada*¹ 1. *Applied Science for Electronics and Materials, Kyushu University, Kasha, Japan*
- AS-08. New Method to Improve Linearity and Measurement Range of Tunneling Magnetoresistance Sensors.** *X. Wang*¹, *J. Ouyang*², *L. Chen*¹ and *X. Yang*¹ 1. *School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China*; 2. *Huazhong University of Science and Technology, Wuhan, China*
- AS-09. Tunneling magnetoresistance sensors with or without a soft magnetic coupled free layer.** *Y. Liu*¹, *X. Yin*², *Y. Yang*¹, *D. Ewing*³, *P. De Rego*⁴ and *S. Liou*⁵ 1. *Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*; 2. *National Institute of Standards and Technology, Boulder, CO*; 3. *Department of Energy's National Security Campus, Kansas City, KS*; 4. *Department of Energy's National Security Campus, Albuquerque, NM*; 5. *University of Nebraska - Lincoln, Lincoln, NE*

- AS-10. A high-sensitivity zero-biased magnetoelectric sensor using five-phase laminate composites based on FeCoV nanocrystalline soft magnetic alloy.** *J. Qiu*¹, *Y. Wen*¹, *P. Li*¹ and *X. Xu*¹ *1. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*
- AS-11. Temperature induced ringing in low-field magnetic sensors.** *N. Prabhu Gaunkar*¹, *C.I. Nlebedim*¹, *I. Bulu*², *M. Mina*¹, *Y. Song*² and *D.C. Jiles*¹ *1. Iowa State University, Ames, IA; 2. NMR Fluids Research Division, Schlumberger-Doll Research, Cambridge, MA*
- AS-12. A Miniaturized Magnetoelectric Device Based on Single-Phase Hexaferritein Sensor/Tuning Applications.** *S. Zare*¹ and *C. Vittoria*² *1. Northeastern University, Boston, MA; 2. ECE, Northeastern University, Boston, MA*
- AS-13. Detectivity of Highly Sensitive MTJ arrays for bio-magnetic field sensor.** *S. Cakir*¹, *D. Kato*¹, *K. Fujiwara*¹, *J. Jono*², *M. Oogane*¹ and *Y. Ando*¹ *1. Applied Physics, Tohoku University, Sendai, Japan; 2. Konica Minolta Inc., Tokyo, Japan*
- AS-14. Investigation of a Dual-Stator Magnetic Gravity Compensator for Vibration Isolation System.** *B. Kou*¹, *Y. Zhou*¹, *F. Xing*¹, *X. Yang*¹ and *H. Zhang*² *1. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China; 2. Electrical Engineering, Harbin Institute of Technology, Harbin, China*
- AS-15. A Single-Phase Axially-Magnetized Permanent-Magnet Oscillating Alternator for Miniature Aerospace Power Source.** *Y. Sui*¹ and *P. Zheng*¹ *1. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*

Session AT
MAGNETO-ELASTIC AND MAGNETO-OPTIC
MATERIALS
(Poster Session)

Nicholas Jones, Co-Chair

Naval Surface Warfare Center, Carderock Division, Bethesda, MD

Bethanie Stadler, Co-Chair

University of Minnesota, Minneapolis, MN

- AT-01. Magneto-optical spectra of Ni-Mn-In-Si based Heusler alloys thin films in martensitic and austenitic states.** A. Sokolov¹, A. Novikov², E. Ganshina², A. Quetz³, S. Pandey³, A. Aryal³, I. Dubenko³, S. Stadler⁴, N. Ali³, I. Titov², I. Rodionov², A.P. Zhukov⁵, A. Granovsky², E. Lahderanta⁶, E. Kirianov⁷, N. Al-Aqtash⁸ and R. Sabirianov⁹ 1. *University of Nebraska-Lincoln, Lincoln, NE*; 2. *Department of Physics, Moscow State University, Moscow, Russian Federation*; 3. *Physics, Southern Illinois University Carbondale, Carbondale, IL*; 4. *Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA*; 5. *Phys. Mater., UPV/EHU, San Sebastián, Spain*; 6. *Lappeenranta University of Technology, Lappeenranta, Finland*; 7. *Lincoln Southwest High School, Lincoln, NE*; 8. *Hasemite University, Zarqa, Jordan*; 9. *University of Nebraska - Omaha, Omaha, NE*
- AT-02. A Nonlinear Electromagnetic-Mechanical-Thermal Multi-field Coupled Model For Galfenol Rods.** Y. Li¹, B. Wang¹, W. Huang¹, R. Zhao^{1,2} and X. Cui¹ 1. *Key Laboratory of Electro-Magnetic Field and Electrical Apparatus Reliability of Hebei Province, Hebei University of Technology, Tianjin, China*; 2. *School of Mechanical and Electrical Engineering, Nanchang Institute of Technology, Nanchang, China*
- AT-03. Thickness dependence of solid-state single crystal conversion in magnetostrictive Fe-Ga alloy from thin foil to thick sheet.** S. Na¹ and A.B. Flatau¹ 1. *Aerospace Engineering, University of Maryland, College Park, MD*
- AT-04. Compressive pre-stress effects on magnetostrictive behaviors of highly textured Galfenol and Alfenol thin sheets.** J. Downing¹, S. Na² and A.B. Flatau^{1,2} 1. *Materials Science and Engineering, University of Maryland, College Park, MD*; 2. *Aerospace Engineering, University of Maryland, College Park, MD*
- AT-05. Magnetostrictive Energy Harvester with Adjustable-air gap for Low Frequency Human Walking.** B. Yan¹ 1. *Zhejiang University, Zhejiang Province, China*
- AT-06. Large Room-Temperature Magnetostrain in Magnetic Field-Aligned Mn_{0.965}CoGe Compound.** Q. Hu^{1,2}, Y. Hu¹, Y. Fang³, D. Wang¹, Q. Cao¹ and Y. Du¹ 1. *Physics, Nanjing University, Nanjing, China*; 2. *Department of Mathematics and Science, Luoyang Institute of Science and Technology, Luoyang, China*; 3. *Changshu Institute of Technology, Soochow, China*

- AT-07. Enhancement of directional sensitivity of magnetostrictive phased array sensor using a circular comb-shaped nickel patch.** B. Yoo¹ and D.J. Pines¹ *1. Aerospace Engineering, University of Maryland, College Park, MD*
- AT-08. Structural Design and Output Characteristic Analysis of Magnetostrictive Actuator.** B. Wang¹, X. Cui¹, Y. Li¹, Z. Zou¹ and W. Huang¹ *1. Key Laboratory of Electro-magnetic Field and Electrical Apparatus Reliability of Hebei Province, Hebei University of Technology, Tianjin, China*
- AT-09. Large electric field tunability of microwave ferromagnetic properties of $\text{Fe}_{50.8}\text{Co}_{24.0}\text{B}_{25.2}/\text{PZN-PT}$ multiferroic heterostructure.** S. Li^{1,2}, R. Yang¹, N.X. Sun³ and H. Lin³ *1. Qingdao University, Qingdao, China; 2. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China; 3. Northeastern University, Boston, MA*
- AT-10. Field-Anneal-Induced Magnetic Anisotropy in Highly Textured Fe-Al Magnetostrictive Strips.** J. Park¹, S. Na¹ and A.B. Flatau¹ *1. Aerospace Engineering, University of Maryland, College Park, MD*
- AT-11. Effect of magnetic fields on the green color formation in frog skin.** H. Kashiwagi¹, A. Kashiwagi² and M. Iwasaka³ *1. AdSM, Hiroshima University, Higashi-Hiroshima, Japan; 2. Graduate School of Science, Institute for Amphibian Biology, Hiroshima University, Higashi-Hiroshima, Japan; 3. Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashi-Hiroshima, Japan*
- AT-12. Magneto-Optical Spectroscopy Of $\text{Ce}_{0.95-x}\text{Hf}_x\text{Co}_{0.05}\text{O}_{2-d}$ Thin Films.** M. Zahradnik¹, L. Beran¹, R. Antoš¹, M. Kucera¹, M. Veis¹, M. Li², J. Qin², Y. Zhang² and L. Bi² *1. Charles University, Prague, Czech Republic; 2. National Engineering Research Center of Electromagnetic Radiation Control Materials, University of Electronic Science and Technology of China, Chengdu, China*
- AT-13. Magneto-optical Properties of BiLuIG Single Crystal Film with in-plane easy magnetization axis.** Q. Yang¹ *1. University of Electronic Science and Technology of China, Chengdu, China*
- AT-14. Magneto-optical Properties Of Ultrathin Ce:YIG Films On (100), (110) And (111) GGG Substrates.** L. Beran¹, M. Onbasli², M. Zahradnik¹, L. Ohnoutek¹, R. Antoš¹, M. Kucera¹, C.A. Ross² and M. Veis¹ *1. Charles University, Prague, Czech Republic; 2. MIT, Cambridge, MA*
- AT-15. Optical And Magneto-Optical Properties Of $\text{Gd}_{18.3}\text{Fe}_{81.7}$ And $\text{Gd}_{24.7}\text{Fe}_{75.3}$ Thin Films In The Photon Energy Range From 1.5 To 5.5 eV.** E. Jesenska^{1,2}, J. Dušek¹, L. Beran¹, R. Antoš¹, M. Pavelka¹, T. Ishibashi², K. Kuga³, K. Aoshima³, K. Machida³, H. Kinjo³ and M. Veis¹ *1. Institute of Physics, Charles University in Prague, Prague, Czech Republic; 2. Department of Materials Science & Technology, Nagaoka University of Technology, Niigata, Japan; 3. Science and Technology Research Laboratories, NHK Japan Broadcasting Corporation, Tokyo, Japan*

Session AU
ELECTRONIC STRUCTURE
(Poster Session)

Oscar Cespedes, Chair
University of Leeds, Leeds, United Kingdom

- AU-01. Tailoring of detrimental effect of surface states on spin polarization of Co_2MnSi .** J. Herran¹, I. Tutic², P. Grey³, E. Kiryanov⁴, P. Lukashev² and A. Sokolov⁵ 1. Chemistry, University of Northern Iowa, Cedar Falls, IA; 2. Physics, University of Northern Iowa, Cedar Falls, IA; 3. Computer Science, University of Northern Iowa, Cedar Falls, IA; 4. Lincoln South West High School, Lincoln, NE; 5. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE
- AU-02. A Warping Effect of Dirac Cone by the Perturbation up to 5th Order under the Symmetry of C_{3v} .** K. Kondo¹ and H. Teramoto² 1. Laboratory of Nanostructure Physics, Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan; 2. Molecule & Life Nonlinear Sciences Laboratory, Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan
- AU-03. Half-Metallic Magnetism in $\text{Ti}_3\text{Co}_{5-x}\text{Fe}_x\text{B}_2$.** R. Pathak¹, I. Ahamed¹, W. Zhang², S. Valloppilly², D.J. Sellmyer², R. Skomski² and A. Kashyap¹ 1. School of Basic Sciences, Indian Institute of Technology Mandi Himachal Pradesh, MANDI, India; 2. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE
- AU-04. Effects of Rattling Vibrations in the ESR of Er^{3+} Doped Kondo Insulator SmB_6 .** G.G. Lesseux¹, P.F. Rosa², P. Pagliuso¹, R.R. Urbano¹, Z. Fisk³, P. Schlottmann⁴ and C. Rettori^{1,5} 1. IFGW - University of Campinas, Campinas, Brazil; 2. Los Alamos National Laboratory, Los Alamos, NM; 3. Department of Physics and Astronomy, University of California Irvine, Irvine, CA; 4. Department of Physics, Florida State University, Tallahassee, FL; 5. CCNH - Universidade Federal do ABC, Santo André, Brazil
- AU-05. Strain effects on spin state of L1_0 FePt as measured by x-ray emission spectroscopy.** P. Quarterman¹, J. Deng², C. Sun³, J. Chen² and J. Wang⁴ 1. Electrical Engineering, University of Minnesota, Minneapolis, MN; 2. Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 3. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 4. Electrical and Computer Engineering, School of Physics & Astronomy, Minneapolis, MN
- AU-06. Pressure-induced structural, magnetic and transport transitions in Sr_2FeO_3 from the first-principles.** T. Jia¹, Z. Zeng^{1,2} and H. Lin³ 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. Beijing Computational Science Research Center, Beijing, China

- AU-07. Relating Symmetry to Magnetic Anisotropy in a Trigonal Mn^{III} Complex Using EPR.** *J.J. Marbey*¹, *P. Gan*², *E. Yang*² and *S. Hill*¹ *1. Florida State University and NHMFL, Tallahassee, FL; 2. Chemistry Department, Fu Jen Catholic University, Taipei, Taiwan*
- AU-08. Electron Paramagnetic Resonance Studies of the Interconversion between Organic Radicals and Dimers.** *S.M. Greer*^{1,2}, *A. Dragulescu-Andrasi*¹, *J. McKay*², *R. Oakley*³, *M. Shatruk*¹ and *S. Hill*⁴ *1. Chemistry, Florida State University, Tallahassee, FL; 2. National High Magnetic Field Laboratory, Tallahassee, FL; 3. University of Waterloo, Waterloo, ON, Canada; 4. Florida State University and NHMFL, Tallahassee, FL*
- AU-09. Electronic Structure and Magnetism of the Heusler Alloys Co₂VIn and CoVIn.** *Z.W. Muthui*^{1,2}, *R. Pathak*², *J.M. Mwabora*¹, *R.J. Musembi*¹, *R. Skomski*³ and *A. Kashyap*² *1. Physics, University of Nairobi, Nairobi, Kenya; 2. School of Basic Sciences, Indian Institute of Technology, Mandi, Mandi, India; 3. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE*
- AU-10. Thickness-dependent magnetism of a CrPt₃(001) thin film.** *T. Jeong*¹, *S. Jekal*¹, *S. Rhim*¹ and *S. Hong*¹ *1. Physics, University of Ulsan, Ulsan, The Republic of Korea*
- AU-11. The Role of Crystal Field Effects on the Topological States in Rare Earth Doped Half-Heuslers.** *J.C. Souza*¹, *G.G. Lesseux*², *C.R. Jesus*³, *R.R. Urbano*¹, *C. Rettori*¹ and *P. Pagliuso*¹ *1. DEQ, Instituto de Física Gleb Wataghin - Unicamp, Campinas, Brazil; 2. IFGW-Unicamp, Campinas, Brazil; 3. Eletrônica Quântica, Universidade Estadual de Campinas, Campinas, Brazil*
- AU-12. Spin-polarization Trade-off of the Co₂FeAl Heusler Compound Probed by X-ray Magnetic Spectroscopy.** *J. Liang*¹, *S. Chang*¹, *Y. Lin*¹ and *Y. Tseng*¹ *1. Materials Science & Engineering, National Chiao-Tung University, Hsin-Chu, Taiwan*
- AU-13. First-principles insights into magnetic insulators proximity induced effect in graphene.** *A. Hallal*¹, *F. Ibrahim*¹, *H. Yang*¹, *S. Roche*³ and *M. Chshiev*¹ *1. UMR 8191 CEA/CNRS/UJF, SPINTEC, Grenoble, France; 3. Catalan Institute of Nanoscience and Nanotechnology (ICN2), Barcelona, Spain*
- AU-14. Electronic structure and magnetic anisotropy driven magnetostructural transformations in 4f correlated rare-earth dialuminides.** *D. Paudyal*¹, *T. Hackett*¹, *A. Pathak*¹ and *V.K. Pecharsky*^{1,2} *1. Ames Laboratory, Ames, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames, IA*
- AU-15. First principles investigation of the Co(0001)/MoS₂ and Ni(111)/WSe₂ interfaces for spin injection in a transition metal dichalcogenide monolayer.** *T. Garandel*^{1,2}, *R. Arras*¹, *X. Marie*², *P. Renucci*² and *L. Calmels*¹ *1. CEMES-CNRS, Toulouse Cedex 4, France; 2. INSA, LPCNO, Toulouse, France*

Session AV
VOLTAGE CONTROLLED MAGNETISM I
(Poster Session)

Jia Zhang, Co-Chair
University of Nebraska, Lincoln, NE
Shinji Miwa, Co-Chair
Osaka University, Osaka, Japan

- AV-01. Anisotropic magnetoelectric coupling effect in magnetization-graded multiferroic composites.** *L. Chen^{1,2} and Y. Wang³* 1. Key Lab of Computer Vision and Intelligent Information System, Chongqing University of Arts and Sciences, Chongqing, China; 2. College of Optoelectronic Engineering, chongqing university, Chongqing, China; 3. Electrical and Computer Engineering Department, Carnegie Mellon University, Pittsburgh, PA
- AV-02. Strain-induced 180° magnetization switching in Fe/BaTiO₃(110) heterostructured multiferroics.** *G. Venkataiah¹, M. Itoh² and T. Taniyama²* 1. School of Physics, University of Hyderabad, Hyderabad, India; 2. Laboratory for Materials and Structures, Tokyo Institute of Technology, Yokohama, Japan
- AV-03. Surface-effect Enhanced Magneto-electric Coupling In FePt/PMN-PT Multiferroic Heterostructures.** *Y. Yang^{1,2}, J. Li^{1,2}, X. Peng^{1,2}, X. Wang^{1,2}, B. Hong^{1,2} and H. Ge^{1,2}* 1. College of Materials Science and Engineering, China Jiliang University, Hangzhou 310018, China; 2. Zhejiang Province Key Laboratory of Magnetism, China Jiliang University, Hangzhou 310018, China
- AV-04. Electric-field control of magnetization in the flexible P(VDF-TrFE)/CoFeB multiferroic heterostructure.** *Z. Tang¹, J. Gao¹, L. Wang¹, H. Ni¹ and Y. Qi¹* 1. Department of Physics, The University of Hong Kong, Hong Kong, Hong Kong
- AV-05. Giant non-volatile modulation of magnetic moments at the interface of La_{0.7}Sr_{0.3}MnO₃/PbZr_{0.2}Ti_{0.8}O₃ at room temperature.** *Q. Liu¹, J. Miao¹, K. Meng¹, Y. Wu¹, X. Xu¹ and Y. Jiang¹* 1. University of Science and Technology Beijing, Beijing, China
- AV-06. Interchanged core/shell assembly of diluted magnetic semiconductor CeO₂ and ferromagnetic ferrite Fe₃O₄ for electromagnetic wave absorption.** *J. Wang^{1,2}, P. Zhu¹, J. Wang¹ and S. Or²* 1. Department of Mechanical Engineering, Hefei University of Technology, Hefei, China; 2. Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong

- AV-07. Ionic-liquid Gating of Perpendicularly Magnetized CoFeB/MgO Thin Films.** *Y. Liu*¹, G. Agnus¹, S. Ono², L. Ranno², A. Bernand-Mantel³, R. Soucaille¹, J. Adam¹, J. Langer⁴, B. Ocker⁴, D. Ravelosona¹ and L.H. Diez¹ *1. Centre de Nanosciences et de Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France; 2. Institut Néel, CNRS and Université Joseph Fourier, Grenoble, France; 3. Institut Néel, CNRS, Grenoble, France; 4. Singulus AG, Kahl, Germany*
- AV-08. A non-volatile memory based on nonlinear magnetoelectric effects.** J. Shen¹, J. Cong¹, Y. Chai¹, D. Shang¹, S. Shen¹, K. Zhai¹, Y. Tian¹ and Y. Sun¹ *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- AV-09. Effect of Residual Strain on the Electronic Transport and Magnetoresistance Properties of Multiferroic in thin film of $\text{La}_{0.9}\text{Ca}_{0.1}\text{MnO}_3/0.7\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3-0.3\text{PbTiO}_3$.** *Y. Qi*¹, J. Gao¹ and L. Wang² *1. Physics, The University of Hong Kong, Hong Kong, Hong Kong; 2. School of Materials Science and Engineering, Shanghai University, Shanghai, China*
- AV-10. Coexistence of large tunneling electroresistance and tunneling magnetoresistance in multiferroic tunnel junctions.** L. Jiang¹, L. Tao², B. Yang¹, J. Wang² and X. Han¹ *1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Department of Physics and the Center of Theoretical and Computational Physics, The University of Hong Kong, Hong Kong, China*
- AV-11. Co-existence of Tetragonal and Pseudo-cubic Phases in BiFeO₃ Film Deposited on TiN Under Layer.** *Y. Wang*¹, J. Wang², T. Harumoto¹, Y. Nakamura¹, K. Nakada³, S. Nakagawa⁴ and J. Shi¹ *1. School of Materials and Chemical Engineering, Tokyo Institute of Technology, Tokyo, Japan; 2. Magnetic Materials Unit, Magnetic Materials Gr., National Institute for Materials Science (NIMS), Tsukuba, Japan; 3. Technical Center, TDK Corporation, Tokyo, Japan; 4. Engineering School, Tokyo Institute of Technology, Tokyo, Japan*

Session AW
FUNDAMENTAL PROPERTIES: SPIN GLASSES AND
FRUSTRATION I
(Poster Session)

Naëmi Leo, Chair
Paul Scherrer Institute, Villigen PSI, Switzerland

AW-01. Low temperature magnetic properties of Fe₂MnAl thin films. V. Novosad¹, P.N. Lapa¹, J.E. Pearson¹, A. Bogach², M. Gorshenkov³ and V. Khovaylo³ *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Prokhorov General Physics Institute, Moscow, Russian Federation; 3. National University of Science and Technology "MISIS", Moscow, Russian Federation*

AW-02. Withdrawn

AW-03. Evidence For Reentrant Spin Glass Behavior in Co_{55.5}M₃Ga_{41.5} (M = Cr, Fe, Co). S. Yasin¹, M. Vagadia², S. Kasiviswanathan¹, V. Srinivas¹ and A.K. Nigam² *1. Department of Physics, Indian Institute of Technology Madras, Chennai, India; 2. Department of Condensed Matter Physics and Materials Science, Tata Institute of Fundamental Research, Mumbai, India*

AW-04. Magnetic Dynamics of Interacting Cu_{0.25}Co_{0.25}Zn_{0.5}Fe₂O₄ Nanoparticles. H. Bhargava¹, L. Nambakkat² and K. Venugopalan² *1. Dept. of Physics, T John Institute of Technology, Bangalore, India; 2. Department of Physics, Mohan Lal Sukhadia University, Udaipur, India*

AW-05. Low-energy singlet sector in spin-1/2 J₁-J₂ Heisenberg model on square lattice. A. Aktersky¹ *1. Petersburg Nuclear Physics Institute, St Petersburg, Russian Federation*

AW-06. Magnetic susceptibility and specific heat of Cs₂CuCl_{4-x}Br_x (x = 0-4) single crystals. H. Xu¹, J. Song¹, J. Wu¹, X. Liu¹, J. Zhao¹, X. Zhao² and X. Sun¹ *1. Hefei National Laboratory for Physical Sciences at Microscale, University of Science and Technology of China, Hefei, China; 2. School of Physical Sciences, University of Science and Technology of China, Hefei, China*

AW-07. Local Structure And d-electron Occupancy In The Disordered S = 3/2 Spin System BaTi_{1/2}Mn_{1/2}O₃. R.L. Serrano¹, F.A. Garcia², R.P. Amaral¹, E. Granado³, U.F. Kaneko³, J.G. Duque³, P. Pagliuso⁴ and J. Sichelschmidt⁵ *1. Institute of Physics, Federal University of Uberlândia, Uberlândia, Brazil; 2. IFUSP, Univ. de São Paulo, 05508-090, São Paulo, Brazil; 3. Inst Fis Gleb Wataghin, Univ. Estadual de Campinas, 13083-970, Campinas, Brazil; 4. DEQ, Instituto de Física Gleb Wataghin - Unicamp, Campinas, Brazil; 5. Max Planck Institute for Chemical Physics of Solids, D-01187, Dresden, Germany*

AW-08. Synthesis and magnetic characterization of DMF-protected Gold nanoclusters. M. Inada¹, T. Koshida¹, Y. Yoshihara¹, A. Matsuo², Y. Yamamoto³ and T. Saitoh¹ *1. Pure and Applied Physics, Kansai University, Osaka, Japan; 2. ISSP, Univ. of Tokyo, Kashiwa, Japan; 3. Engineering Science, Akita University, Akita, Japan*

AW-09. Structural and Antiferromagnetic Properties of Sm-doped Chrysene. X. Wang^{1,2}, G. Zhong^{1,3}, J. Han^{1,4}, X. Chen⁵ and H. Lin¹ *1. Beijing Computational Science Research Center, Beijing, China; 2. Department of Physics, University of Science and Technology of China, Hefei, China; 3. Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China; 4. Peking University, Beijing, China; 5. Center for High Pressure Science and Technology Advanced Research, Shanghai, China*

AW-10. Quantum effects in nanomagnets by means phase-space Weyl symbols. R. Vaia^{1,2} *1. Institute for Complex Systems, National Research Council, Sesto Fiorentino (FI), Italy; 2. Sezione di Firenze, Istituto Nazionale di Fisica Nucleare, Sesto Fiorentino (FI), Italy*

AW-11. Structural and magnetic properties of spin-1/2 layered ferrimagnet Bi₂Cu₅B₄O₁₄. U. Arjun¹, R. Nath¹ and V. Ramakrishnan¹ *1. Physics, Indian Institute of Science Education and Research, Trivandrum, India*

AW-12. Magnetic-glassy behavior associated with discontinuous Morin type spin reorientation transition in SmCrO₃. M. Tripathi¹, R.J. Choudhary¹ and D.M. Phase¹ *1. Magnetization Lab, UGC DAE Consortium for Scientific Research, Indore, India*

TUESDAY
AFTERNOON
1:30

MARDI GRAS A-E

Session BA
**SYMPOSIUM: TOPOLOGICAL INSULATOR/
FERROMAGNET HETEROSTRUCTURES
FOR SPINTRONICS**

Shufeng Zhang, Chair
University of Arizona, Tucson, AZ

1:30

BA-01. Enhanced spin Seebeck effect in topological insulator/magnetic insulator heterostructures. (Invited) J. Shi¹, Z. Jiang¹, C. Chang², M. Ramezani Masir³, C. Tang¹, Y. Xu¹, J. Moodera² and A.H. MacDonald³ *1. Department of Physics and Astronomy, University of California Riverside, Riverside, CA; 2. Francis Bitter Magnet Lab, MIT, Cambridge, MA; 3. Department of Physics, University of Texas at Austin, Austin, TX*

- BA-02. Room temperature spin pumping and giant spin Hall effect in topological insulator and ferromagnet heterostructures. (Invited)** J. Wang¹, M. Jamali¹, J. Lee², J. Jeong⁴, F. Mahfouzi³, B. Nikolic³, N. Samarth², K.A. Mkhoyan⁴, D. Mahendra⁵, Y. Lv¹ and Z. Zhao¹ 1. *Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN;* 2. *Physics, Penn State University, University Park, PA;* 3. *Physics, University of Delaware, Newark, DE;* 4. *Materials Science, University of Minnesota, Minneapolis, MN;* 5. *Department of Physics, University of Minnesota, Minneapolis, MN*

- BA-03. Spin to charge conversion at room temperature with recently discovered topological insulators. (Invited)** L. Vila¹, J. Attane¹, J. Rojas-Sanchez⁴, Y. Fu¹, P. Noël¹, G. Zahnd¹, V. Pham¹, P. Laczkowski³, J. George³, N. Reyren³, H. Jaffres³, E. Lesne³, M. Bibes³, M. Jamet¹, C. Vergnaud¹, A. Marty¹, A. Taleb-Ibrahimi², Y. Ohtsubo², S. Oyarzun¹ and A. Fert³ 1. *SPINTEC, SOLEIL, Institut Nanosciences et Cryogenie, Univ. Grenoble Alpes, Grenoble, France;* 2. *Synchrotron Soleil, Palaiseau, France;* 3. *Unité mixte de Physique CNRS Thales, CNRS, Palaiseau, France;* 4. *Institut Jean Lamour, Univ. Lorraine, CNRS, Vandoeuvre les Nancy, France*

- BA-04. Topological Insulator/Ferromagnet Heterostructures for Spintronics. (Invited)** K.L. Wang^{1,2}, G. Yu¹, Y. Fan¹, Q. He¹ and P. Upadhyaya^{1,3} 1. *Electrical Engineering, University of California, Los Angeles, Los Angeles, CA;* 2. *Materials Science and Engineering, University of California, Los Angeles, Los Angeles, CA;* 3. *Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA*

- BA-05. Photo-Spin-Voltaic Effect. (Invited)** M. Wu¹, D. Ellsworth¹, L. Lu¹, J. Lan^{2,3}, H. Chang¹, P. Li¹, Z. Wang³, D. Qu⁴, A.A. Jara², J. Hu², B. Johnson¹, Y. Bian¹, J. Xiao³, I. Krivorotov², C.L. Chien⁴ and R. Wu^{2,3} 1. *Department of Physics, Colorado State University, Fort Collins, CO;* 2. *Physics and Astronomy, University of California, Irvine, Irvine, CA;* 3. *Physics Department, Fudan University, Shanghai, China;* 4. *Physics and Astronomy, Johns Hopkins University, Baltimore, MD*

Session BB
SPIN HALL EFFECT I

Olivier Boulle, Chair
Spintec, Grenoble cedex 9, France

1:30

- BB-01. Spin Hall Effect In Epitaxial Cu(111) Films With δ -doped Bi Measured By H-Pattern. (Invited)** C. Chen¹ and X. Jin¹
1. Fudan University, Shanghai, China

2:06

- BB-02. Tuning the Spin Hall Effect of Pt from the Moderately Dirty to the Superclean Regime.** E. Sagasta¹, Y. Omori², M. Isasa¹, M. Gradhand³, L.E. Hueso^{1,4}, Y. Niimi^{2,5}, Y. Otani^{2,6} and F. Casanova^{1,4} *1. CIC nanoGUNE, Donostia-San Sebastian, Spain; 2. ISSP, University of Tokyo, Kashiwa, Japan; 3. University of Bristol, Bristol, United Kingdom; 4. IKERBASQUE, Bilbao, Spain; 5. Department of Physics, Osaka University, Toyonaka, Japan; 6. RIKEN-CEMS, Wako, Japan*

2:18

- BB-03. Significantly Enhanced Spin Hall Angle of Pd by B Doping.** P. Chen¹, Y. Du¹, C. Lai¹ and M. Pakala² *1. National Tsing Hua University, HsinChu, Taiwan; 2. Applied Materials, Inc., Santa Clara, CA*

2:30

- BB-04. Structure Dependent Spin Hall Angle In Permalloy/Tantalum Bilayers.** M. Tang¹, R. Ramaswamy², Z. Shi¹, H. Yang², X. Qiu¹ and S. Zhou¹ *1. School of Physics Science and Engineering, Tongji University, Shanghai, China; 2. National University of Singapore, Singapore, Singapore*

2:42

- BB-05. Spin Hall Effects from Mesoscopic NiFe Films in Lateral Structures.** C. Qin¹, S. Chen¹, Y. Cai¹ and Y. Ji¹ *1. Department of Physics and Astronomy, University of Delaware, Newark, DE*

2:54

- BB-06. Is MOKE a viable method for probing spin Hall effect in metals?** Y. Su¹, H. Wang¹, C. Tian¹, X. Jin¹ and Y. Shen^{1,2}
1. Fudan University, Shanghai, China; 2. University of California, Berkeley, Berkeley, CA

3:06

- BB-07. Ferromagnetic/nonmagnetic nanostructures for the electrical measurement of the Spin Hall effect.** V. Pham¹, L. Vila¹, G. Zahnd¹, A. Marty¹, P. Noël¹, W. Saverio-Torres¹ and J. Attane¹ *1. SPINTEC, INAC, CEA-Grenoble, Grenoble, France*

- BB-08. Spin-Hall nano-oscillator with oblique magnetization and Dzyaloshinskii-Moriya interaction as generator of skyrmions and nonreciprocal spin-waves.** *A. Giordano*¹, *R.V. Verba*², *R. Zivieri*³, *A. Laudani*⁴, *V. Puliafito*⁵, *G. Gubbiotti*⁶, *R. Tomasello*⁷, *G. Siracusano*⁸, *B. Azzerboni*⁵, *M. Carpentieri*⁹, *A.N. Slavin*¹⁰ and *G. Finocchio*¹ *1. Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy; 2. Institute of Magnetism, Kyiv, Ukraine; 3. Department of Physics and Earth Sciences, University of Ferrara, Ferrara, Italy; 4. Department of Engineering, University of Roma Tre, Roma, Italy; 5. Department of Engineering, University of Messina, Messina, Italy; 6. IOM-CNR, Perugia, Italy; 7. Department of Engineering, Polo Scientifico Didattico di Terni, Università di Perugia, Perugia, Italy; 8. Department of Electronic Engineering, Industrial Chemistry and Engineering, University of Messina, Messina, Italy; 9. Ingegneria Elettrica e dell'Informazione, Politecnico of Bari, Bari, Italy; 10. Physics, Oakland University, Rochester Hills, MI*

- BB-09. Ultra-low-current spin Hall nano-oscillators based on NiFe/W bilayers.** *H. Mazraati*^{1,2}, *S. Chung*^{2,3}, *A. Houshang*³, *F. Qejvanaj*^{1,2}, *S. Jiang*², *T.Q. Le*² and *J. Åkerman*^{1,3} *1. NanOsc AB, Stockholm, Sweden; 2. Materials and Nano Physics, School of ICT, KTH Royal Institute of Technology, Stockholm, Sweden; 3. Physics, University of Gothenburg, Gothenburg, Sweden*

- BB-10. Enhancement of Spin Hall Oscillator Power via Giant Magneto-Resistance Effect.** *J. Chen*¹, *A. Smith*¹ and *I. Krivorotov*¹ *1. Physics and Astronomy, University of California, Irvine, Irvine, CA*

- BB-11. Spin Hall and spin swapping torques in ferromagnets.** *C. Ortiz Pauyac*^{1,2}, *S. Nikolaev*², *M. Chshiev*² and *A. Manchon*³ *1. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 2. UMR 8191 CEA/CNRS/UJF, SPINTEC, Grenoble, France; 3. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

- BB-12. Contribution of the Spin Hall Effect Generated Spin Current to the Field-like Spin-orbit Torque in Normal Metal/Ferromagnet Heterostructures.** *Y. Ou*¹, *C. Pai*², *S. Shi*¹, *D. Ralph*¹ and *R. Buhrman*¹ *1. Cornell University, Ithaca, NY; 2. National Taiwan University, Taipei, Taiwan*

- BB-13. Compositional dependence of interfacial spin-orbit phenomena in Co_xFe_{1-x} / Pt bilayers.** *E. Edwards*¹, *J. Shaw*¹, *M. Weiler*^{2,3} and *H. Nembach*¹ *1. Quantum Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO; 2. Walther-Meißner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 3. Physik-Department, Technische Universität München, Garching, Germany*

Session BC
MAGNETIC SKYRMIONS II

Vincent Cros, Chair
Unité Mixte de Physique CNRS/Thales, Palaiseau, France

1:30

- BC-01. Skyrmion Generation by Domain Wall and Magnetic Skyrmion Motion in the Antiferromagnetically Exchange-coupled Bilayer System. (Invited)** *Y. Zhou¹ 1. Physics, The University of Hong Kong, Hong Kong, Hong Kong*

2:06

- BC-02. Current-induced skyrmion dynamics in symmetric bilayers.** *A. Hrabec¹, I. Gross², J. Sampaio¹, M. Belmeguenai³, W. Akhtar², V. Jacques², A. Thiaville¹ and S. Rohart¹ 1. Lab. Physique des Solides, Université Paris-Sud, Orsay, France; 2. Laboratoire Charles Coulomb, CNRS, Montpellier, France; 3. LSPM, Université Paris 13, Villetaneuse, France*

2:18

- BC-03. Magnetic Skyrmion Racetrack Memory with Voltage Manipulation.** *W. Kang¹, Y. Huang¹, X. Zhang², Y. Zhou² and W. Zhao¹ 1. Beihang University, Beijing, China; 2. University of Hong Kong, Hong Kong, China*

2:30

- BC-04. Topological Torques in Magnetic Skyrmions and Vortices.** *C.A. Akosa¹, P.B. Ndiaye¹ and A. Manchon¹ 1. Material Science & Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

2:42

- BC-05. Stability of interfacial Skyrmions, Solitons and Bound Monopoles: How to store Energy in topological magnetic Quasiparticles. (Invited)** *O. Vedmedenko¹ 1. University of Hamburg, Hamburg, Germany*

3:18

- BC-06. Voltage controlled reversal of fixed magnetic skyrmions.** *D. Bhattacharya¹, M. Al-Rashid² and J. Atulasimha¹ 1. Virginia Commonwealth University, Richmond, VA; 2. Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, VA*

- BC-07. Room Temperature Planar Artificial Skyrmion Lattices.** *D.A. Gilbert¹, T. Stücker², K. Lenz³, I. Gilbert⁴, J. Unguris⁴, B.B. Maranville¹, J. Fassbender³, H. Yu², K. Liu⁵ and J. Borchers¹* 1. *NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD;* 2. *Fert Beijing Research Institute, School of Electronic and Information Engineering, Beihang University, Beijing, China;* 3. *Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Dresden, Germany;* 4. *Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD;* 5. *Physics Department, University of California, Davis, CA*

- BC-08. Ultrafast dynamics of skyrmions in multiferroic compound Cu_2OSeO_3 .** *S. Roy¹, M. Langner², S. Huang¹, Y. Chuang¹, J.C. Lee¹, G. Dakovski³, J. Turner³, J. Robinson², S. Seki⁴, Y. Tokura⁴ and R. Schoenlein³* 1. *Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA;* 2. *Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA;* 3. *LCLS, SLAC National Accelerator Laboratory, Menlo Park, CA;* 4. *RIKEN, Center for Emergent Matter Science, Wako 351-0198, Japan*

- BC-09. Skyrmion Gas Manipulation for Unconventional Computing.** *D. Pinna¹, J. Kim³, V. Cros¹, D. Querlioz³, P. Bessi  re², J. Droulez² and J. Grollier¹* 1. *Unit   Mixte de Physique CNRS/Thales, Palaiseau, France;* 2. *Institut des Syst  mes Intelligents et de Robotique - UPMC, Paris, France;* 3. *C2N Centre for Nanoscience and Nanotechnology - CNRS, Univ. Paris-Sud, Orsay, France*

- BC-10. Skyrmionic Synaptic Device With Weight Plasticity.** *Y. Huang^{1,2}, W. Kang^{1,2} and W. Zhao^{1,2}* 1. *Fert Beijing Research Institute, Beihang University, Beijing, China;* 2. *Beijing Advanced Innovation Center for Big Data and Brain Computing (BDBC), Beihang University, Beijing, China*

- BC-11. Investigation of the Dzyaloshinskii-Moriya Interaction in W/CoFeB/MgO with room temperature skyrmions.** *S. Jaiswal^{1,2}, K. Litzius^{1,3}, J. Langer², G. Jakob¹, B. Ocker² and M. Kl  ui¹* 1. *Institute of Physics, Johannes Gutenberg Universit  t Mainz, Mainz, Germany;* 2. *Singulus Technologies AG, Kahl am Main, Germany;* 3. *Max Planck Institute for Intelligent Systems, Stuttgart, Germany*

Session BD

DOMAIN WALL AND DOMAIN WALL DEVICES I

Vincent Sokalski, Chair
Carnegie Mellon, Pittsburgh, PA

1:30

- BD-01. Adiabatic spin transfer torque induced domain wall creep in a magnetic metal. (Invited)** *S. Duttagupta*¹, S. Fukami^{1,2}, M. Yamanouchi^{1,2}, C. Zhang¹, H. Sato^{2,3}, F. Matsukura^{1,2} and H. Ohno^{1,2} *1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Centre for Spintronics Integrated Systems, Tohoku University, Miyagi, Japan; 3. Centre for Innovative Integrated Electronic Systems, Tohoku University, Sendai, Japan*

2:06

- BD-02. Spin-orbit torque induced high speed domain wall motion in Co/Pt dual stack.** *P. Sethi*^{1,2}, S. Krishna¹, W. Gan¹, F.N. Kholid¹, Y. Chen², S.H. Leong² and W. Lew¹ *1. Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore; 2. Data Storage Institute, (A*STAR) Agency for Science, Technology and Research, Singapore, Singapore*

2:18

- BD-03. Efficient Magnetic Domain Wall Propagation by Spin Transfer Torque in Ferrimagnetic Alloys.** J. Sampaio¹, R. Weil¹, E. Haltz¹ and A. Mougin¹ *1. CNRS, Univ. Paris-Sud, Universite Paris-Saclay, Laboratoire de Physique des Solides, Orsay, France*

2:30

- BD-04. Synthetic ferrimagnet nanowires with very low critical current density for coupled domain wall motion.** S. Lepadatu^{1,2}, H.M. Saarikoski³, R. Beacham⁴, M. Benitez⁴, T. Moore¹, G. Burnell¹, S. Sugimoto¹, D. Yesudas¹, M.C. Wheeler¹, J. Miguel⁵, S. Dhesi⁵, D. McGrouther⁴, S. McVitie⁴, G. Tatara³ and C.H. Marrows¹ *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. School of Physical Sciences and Computing, University of Central Lancashire, Preston, United Kingdom; 3. RIKEN CEMS, Wako, Saitama, Japan, Wako, Japan; 4. Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 5. Diamond Light Source, Didcot, United Kingdom*

2:42

- BD-05. Precession Torque Driven Domain Wall Motion in Out Of Plane Materials.** *M. Peeters*¹, F. Ummelen¹, M.L. Laliu¹, J. Kim¹, H. Swagten¹ and B. Koopmans¹ *1. Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

2:54

- BD-06. Ring-shaped Racetrack memory based on spin orbit torque driven chiral domain wall motion.** *Y. Zhang¹, X. Zhang^{1,2}, J. Hu³, J. Nan¹, Z. Zheng¹, Z. Zhang¹, Y. Zhang¹, N. Vernier², D. Ravelosona² and W. Zhao¹* *1. Fert Beijing Institute, Beihang University, Beijing, China; 2. IEF, Univ. Paris-Sud/CNRS, Orsay, France; 3. School of Electrical and Computer Engineering, Oklahoma State University, Stillwater, OK*

3:06

- BD-07. Withdrawn**

3:18

- BD-08. Local studies of domain wall dynamics using anomalous Nernst effect.** *J. Wells¹, P. Krzysteczko², H.W. Schumacher², R. Mansell³, R. Cowburn³ and O. Kazakova¹* *1. National Physical Laboratory, Teddington, United Kingdom; 2. Nanomagnetism, PTB, Braunschweig, Germany; 3. University of Cambridge, Cambridge, United Kingdom*

3:30

- BD-09. Influence of Interfacial Dzyaloshinskii-Moriya Interaction and Damping on Domain Wall Behaviour in Structurally Modulated Nanowires.** *J. Brandao^{1,2} and D. Atkinson^{1,2}* *1. Durham University, Durham, United Kingdom; 2. Centre for Materials Physics, Durham University, Durham, United Kingdom*

3:42

- BD-10. Electric-current-induced dynamics of bubble domains in ferrimagnetic Tb/Co multilayer wires below and above the magnetic compensation point.** *M. Tanaka¹, S. Sumitomo¹, N. Adachi¹, S. Honda², A. Hiroyuki³ and K. Mibu¹* *1. Nagoya Institute of Technology, Nagoya, Japan; 2. Kansai University, Suita, Japan; 3. Toyota Technological Institute, Nagoya, Japan*

3:54

- BD-11. Inner interface effect enhances spin-orbit torques in Tb/Co multilayered wires.** *B. Do^{1,5}, J. Yu³, X. Qiu³, A. Hiroyuki¹, A. Manchon⁴ and H. Yang²* *1. Toyota Technological Institute, Nagoya, Japan; 2. National University of Singapore, Singapore, Singapore; 3. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 4. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 5. Institute of Materials Science, Hanoi, Hanoi, Vietnam*

4:06

- BD-12. In Situ TEM Investigation of Domain Walls in Nanostructured FeRh-Based Thin Films.** *T.P. Almeida¹, R.C. Temple², J. Massey², K. Fallon¹, D. McGrouther¹, C.H. Marrows² and S. McVitie¹* *1. School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*

- BD-13. Chiral Magnetic Domain Walls Revealed by Resonant Soft X-ray Diffraction.** *P. Shafer*¹, G. Chen², A.T. N'Diaye¹, Y. Wu⁴, A.K. Schmid⁵ and E. Arenholz^{1,5} *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Physics Department, Fudan University, Shanghai, China; 5. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA*

TUESDAY
AFTERNOON
1:30

LA GALERIES 4-5

Session BE MULTI-LAYER FILMS AND SUPERLATTICES I

Jose de la Venta, Chair
Colorado State University, Fort Collins, CO

1:30

- BE-01. Enhanced Ordering Temperature and Emergent Spin Structure at Magnetic Topological Insulator / Antiferromagnet Interfaces.** *A. Grutter*¹, Q. He², X. Kou^{2,3}, L. Pan², X. Che², Y. Liu², D.A. Gilbert¹, S.M. Disseler¹, B.J. Kirby¹, J. Borchers¹, W.D. Ratcliff¹, P. Shafer⁴, A.T. N'Diaye⁴, E. Arenholz⁴ and K.L. Wang² *1. NIST Center for Neutron Research, NIST, Gaithersburg, MD; 2. Department of Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 3. School of Information Science and Technology, ShanghaiTech University, Shanghai, China; 4. Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, CA*

1:42

- BE-02. Impact of Seed Layer Diffusion on the Properties of Co/Ni Multilayers with Perpendicular Magnetic Anisotropy.** *E. Liu*^{1,2}, J. Swerts¹, T. Devolder³, S. Couet¹, S. Mertens¹, T. Lin¹, T. Conard¹, S. Van Elshocht¹, G.S. Kar¹, A. Furnemont¹ and J. De Boeck^{1,2} *1. Imec, Leuven, Belgium; 2. Department of Electrical Engineering, KU Leuven, Leuven, Belgium; 3. IEF, Orsay, France*

1:54

- BE-03. Dzyaloshinskii-Moriya interaction in Pt/Co/Pt films prepared by chemical vapor deposition with various substrate temperatures.** *M. Quinsat*¹, Y. Ootera¹, T. Shimada¹, M. Kado¹, S. Hashimoto¹, H. Morise¹, S. Nakamura¹ and T. Kondo¹ *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

2:06

- BE-04. Engineering of positive and negative perpendicular magnetic anisotropy in W/Fe/W trilayer.** Y. Matsumoto¹, S. Okamoto^{1,2}, N. Kikuchi^{1,2}, O. Kitakami^{1,2} and Y. Miura³
1. IMRAM, Tohoku University, Sendai, Japan; 2. CSRN, Tohoku University, Sendai, Japan; 3. Electrical Engineering and Electronics, Kyoto Institute of Technology, Kyoto, Japan

2:18

- BE-05. Reconfigurable magnetic states in multi-layered synthetic antiferromagnets.** A. Fernandez-Pacheco¹, N. Steinke², A. Welbourne¹, S. Chin¹, D. Mahendru¹, R. Mansell¹, D.C. Petit¹, J. Lee¹, R. Dalglish², S. Langridge³ and R. Cowburn¹
1. University of Cambridge, Cambridge, United Kingdom; 2. Rutherford Appleton Laboratory, ISIS Neutron Source, Oxon, United Kingdom; 3. Rutherford Appleton Laboratory, Chilton, United Kingdom

2:30

- BE-06. Exchange Spring Effect in Py/Gd Bilayer and Multilayer Films.** P.N. Lapa^{1,2}, J. Ding¹, J.E. Pearson¹, V. Novosad¹, S. Jiang¹ and A. Hoffmann¹
1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Department of Physics and Astronomy, Texas A&M University, College Station, TX

2:42

- BE-07. T_c Localization Limit in Compositionally Graded $\text{Co}_{1-x}\text{Ru}_x$ alloy films.** B.J. Kirby¹, L. Fallarino², M. Pancaldi², P. Riego² and A. Berger²
1. NIST Center for Neutron Research, NIST, Gaithersburg, MD; 2. CIC nanoGUNE, San Sebastian - Donostia, Spain

2:54

- BE-08. Probing the depth dependent magnetization of FeGa/NiFe multilayers using polarized neutron reflectometry.** C.R. Rementer¹, M.E. Jamer², J. Borchers², A. Grutter², B.J. Kirby², Q. Xu³, P. Nordeen⁴, G. Carman⁴, Y. Wang³ and J.P. Chang¹
1. Chemical and Biomolecular Engineering, UCLA, Los Angeles, CA; 2. Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 3. Electrical Engineering, UCLA, Los Angeles, CA; 4. Mechanical & Aerospace Engineering, UCLA, Los Angeles, CA

3:06

- BE-09. Magnetic Proximity Asymmetries Illuminated by Combined PNR and XRRS Profiling of Pt/CoFeBTa/Pt Trilayers.** C. Kinane¹, O. Inyang⁵, L. Bouchenoire³, M. Tokac⁵, T. Charlton^{1,4}, T.P. Hase², D. Atkinson⁵ and A. Hindmarch⁵
1. Rutherford Appleton Laboratory, STFC, Didcot, United Kingdom; 2. Physics, University of Warwick, Coventry, United Kingdom; 3. XMaS, ESRF, Grenoble, France; 4. SNS, Oak Ridge National Lab, Oak Ridge, TN; 5. Durham University, Durham, United Kingdom

- BE-10. Giant scaling of spin-orbit torques in ferrimagnetic Co/Tb multilayers.** *J. Yu*¹, *B. Do*², *X. Qiu*³, *R. Mishra*¹, *A. Hiroyuki*² and *H. Yang*¹ *1. National University of Singapore, Singapore, Singapore; 2. Toyota Technological Institute, Nagoya, Japan; 3. Shanghai Key Laboratory of Special Artificial Macrostructure Materials and Technology, Tongji University, Shanghai, China*

- BE-11. Topological non-trivial magnetic textures in NiFe/CoPd nanostructures.** *A. Hierro-Rodriguez*¹, *D. Navas*¹, *X. Zhou*², *A. Adeyeye*², *R.V. Verba*^{1,3}, *B. Ivanov*³, *K. Guslienko*^{4,5} and *G.N. Kakazei*¹ *1. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal; 2. Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore; 3. Institute of Magnetism, Kyiv, Ukraine; 4. Fisica de Materiales, Universidad del Pais Vasco UPV/EHU, San Sebastian, Spain; 5. IKERBASQUE, the Basque Foundation for Science, Bilbao, Spain*

- BE-12. Switching Study of Exchange-Coupled Nanomagnets by Vector Coil Vibrating Sample Magnetometry.** *H.S. Dey*¹, *G. Csaba*¹, *G.H. Bernstein*¹, *A. Orlov*¹ and *W. Porod*¹ *1. Electrical Engineering, University of Notre Dame, South Bend, IN*

- BE-13. Origin of antiferromagnetism at the Fe/Fe₃O₄ interface.** *A. Pratt*¹, *X. Sun*², *J. Zhang*¹, *M. Kurahashi*³ and *Y. Yamauchi*³ *1. Physics, University of York, York, United Kingdom; 2. University of Science and Technology of China, Hefei, China; 3. National Institute for Materials Science, Tsukuba, Japan*

- BE-14. Growth, structure, and magnetic properties of epitaxial NiFe₂O₄ films grown on Si(111) substrates.** *R. Nakane*^{1,2} and *M. Tanaka*^{1,3} *1. Dept of Electronic Engineering, Univ Tokyo, Tokyo, Japan; 2. Institute for Innovation in International Engineering Education, Univ. of Tokyo, Tokyo, Japan; 3. Center for Spintronics Research Network (CSRN), Univ. of Tokyo, Tokyo, Japan*

- BE-15. Effect of Spatial Confinement on the Strain-modulated Phase Separation and Percolative Transport in Pr_{0.7}(Ca_{0.6}Sr_{0.4})_{0.3}MnO₃/PMN-PT Heterostructure.** *H. Kuang*¹, *J. Wang*¹, *Y. Zhao*¹, *Y. Liu*¹, *F. Hu*¹, *J. Sun*¹ and *B. Shen*¹ *1. State Key Laboratory of Magnetism, Institute of Physics, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Beijing, China*

Session BF
MRAM AND MAGNETIC LOGIC DEVICES II

Changman Park, Chair
Tokyo Electron Ltd, San Jose, CA

1:30

- BF-01. Non-Volatile Magnetic Logic-Memory Device. (Invited)**
X. Zhang¹ 1. School of Materials Science and Engineering, Tsinghua University, Beijing, China

2:06

- BF-02. Multilevel thermally assisted magnetoresistive random access memory based on exchange-biased vortex configurations.** *C. Levartoski de Araujo^{1,2}, L.D. Buda-Prejbeanu² and B. Diény² 1. Universidade Federal de Viçosa, Viçosa, Brazil; 2. CEA, INAC-SPINTEC, Grenoble, France*

2:18

- BF-03. Low-Power Spin-Valve and Domain-Wall Non-volatile Logic.**
S. Chang¹, S. Manipatruni², D.E. Nikonov², I. Young² and A. Naeemi¹ 1. Georgia Institute of Technology, Atlanta, GA; 2. Components Research, Intel, Hillsboro, OR

2:30

- BF-04. Towards Chirality-Encoded Domain Wall Logic Devices.**
K.A. Omari¹, T.J. Broomhall², R.W. Dawidek², R. Bradley², M. Hodges², M. Rosamond³, E. Linfield³, P. Fischer^{4,5}, M. Im^{6,7} and T.J. Hayward² 1. Material Engineering, University of Sheffield, Sheffield, United Kingdom; 2. Department of Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 3. School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom; 4. Lawrence Berkley National Laboratory, Berkeley, CA; 5. Department of Physics, University of California, Santa Cruz, Santa Cruz, CA; 6. CXRO, Lawrence Berkeley National Laboratory, Berkeley, CA; 7. Daegu Gyeongbuk Institute of Science and Technology, Daegu, The Republic of Korea

2:42

- BF-05. Reconfigurable Magnetic Nanostructures for Logic and Magnonic Applications. (Invited)** *A. Adeyeye¹, A. Haldar¹ and X. Zhou¹ 1. Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore*

3:18

- BF-06. Cryogenic Cooling Post MgO Promoting The Free Layer Coercivity And TMR In Perpendicular Bottom Pinned Co/Ni STT-MRAM Devices.** *J. Swerts¹, S. Mertens¹, S. Couet¹, T. Lin¹, E. Liu¹, Y.F. Tomczak¹, S. Rao¹, W. Kim¹, S. Van Elshocht¹, A. Furnemont¹, G.S. Kar¹, K. Nishimura², H. Okuyama², T. Seino² and K. Tsunekawa² 1. imec, Leuven, Belgium; 2. Canon ANELVA, Kawasaki, Japan*

- BF-07. Nanosecond-timescale low error switching of in-plane magnetic tunnel junctions through dynamic Oersted-field assisted spin-Hall effect.** *S.V. Aradhya*¹, G. Rowlands^{1,2}, J. Oh¹, D. Ralph^{1,3} and R. Buhrman¹ *1. Cornell University, Ithaca, NY; 2. Raytheon BBN Technologies, Ithaca, NY; 3. Kavli Institute at Cornell, Ithaca, NY*

- BF-08. Exchange coupling in Co₂FeSi/Mn₃Ge bilayers with high spin polarization and perpendicular magnetic anisotropy.** *S. Nakagawa*¹, N. Matsushita¹, Y. Naganuma¹, T. Yabushita¹, Y. Takamura¹ and Y. Sonobe² *1. School of Engineering, Tokyo Institute of Technology, Tokyo, Japan; 2. Samsung R&D Institute Japan, Yokohama, Japan*

- BF-09. Asymmetric magnetization switching probability in STT driven perpendicular magnetic tunnel junction.** *M.P. Lavanant*¹, S. Petit-Watlot², G.D. Chaves-O'Flynn³, V. Lomakin⁴, J. Sun⁵, A.D. Kent⁶ and S. Mangin²
1. Spintronics & Nanomagnetism, Université de Lorraine, Toulouse, France; 2. Institut Jean Lamour, Université de Lorraine, Vandoeuvre-les-Nancy, France; 3. Mathematical Sciences, New Jersey Institute of Technology, Newark, NJ; 4. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA; 5. IBM Research, Yorktown Heights, NY; 6. Department of Physics, New York University, New York, NY

- BF-10. Strain Assisted Logic Propagation in Scalable Circular Magnetic Nanodot Wire.** *M. Al-Rashid*^{1,2}, M. Salehi-Fashami⁴, W. Sun³, P. Nordeen³, A. Chavez³, S. Bandyopadhyay¹, G. Carman³ and J. Atulasimha^{2,1} *1. Electrical and Computer Engineering, Virginia Commonwealth University, Richmond, VA; 2. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 3. Mechanical and Aerospace Engineering, University of California, Los Angeles, CA; 4. Physics and Astronomy, University of Delaware, Newark, DE*

- BF-11. Evaluation of Spin Orbit Memories for High Performance Embedded Spintronics.** *S. Manipatruni*¹, D.E. Nikonov¹ and I. Young¹ *1. Intel Components Research, Portland, OR*

Session BG

HYPERTHERMIA, MRI, AND OTHER BIO-ASSAYS I

Hariharan Srikanth, Chair
University of South Florida, Tampa, FL

1:30

BG-01. Mixed Ferrites Core/Shell Nanoparticles based Ferrofluids for Hyperthermia and Magnetic Cooling Applications.

V. Pilati¹, G.S. Gomide², P. Coppola³, R. Cabreira Gomes², F. Gomes da Silva², F. Luis de Oliveira Paula², G. Goya⁴, R. Perzynski⁵, J. Depeyrot² and R. Aquino⁶ *1. Departamento de Física, Universidade de Brasília, Brasília, Brazil; 2. Institute of Physics, Universidade de Brasília, Brasília, Brazil; 3. Institute of Chemistry, Universidade de Brasília, Brasília, Brazil; 4. Aragon Institute of Nanoscience, Universidad de Zaragoza, Zaragoza, Spain; 5. Laboratoire PHENIX, Université Pierre et Marie Curie, Paris, France; 6. Material Science Program, Universidade de Brasília, Brasília, Brazil*

1:42

BG-02. Magnetic hysteresis in Ni₈₀Fe₂₀ nanodisks for hyperthermia.

P. Tiberto², G. Barrera², F. Celegato², M. Coisson², R. Ferrero^{1,2} and A. Manzin² *1. Dipartimento di Elettrotecnica e Telecomunicazioni, Politecnico di Torino, Torino, Italy; 2. INRIM, Torino, Italy*

1:54

BG-03. Anisotropic Magnetic Nanostructures For Enhanced Hyperthermia.

Z. Nemat¹, J. Alonso Masa², R. Das¹, E. Garaio³, I. Rodrigo², J. García^{4,2}, M. Phan⁵ and H. Srikanth¹ *1. Physics, University of South Florida, Tampa, FL; 2. BCMaterials, Derio, Spain; 3. Electricity and Electronics, University of Basque Country, Leioa, Spain; 4. Applied Physics II, University of Basque Country, Leioa, Spain; 5. Department of Physics, University of South Florida, Tampa, FL*

2:06

BG-04. Multi-Segmented Magnetic Nanowires as Advanced Nanorobotic Platforms for Biomedical Applications.

(Invited) J. Sort¹, J. Zhang¹, S. Agramunt-Puig¹, N. del Valle¹, C. Navau¹, S. Estradé², F. Peiró², S. Pané³, A. Sánchez¹, J. Nogués⁴ and E. Pellicer¹ *1. Physics, Universitat Autònoma de Barcelona, Bellaterra, Spain; 2. Universitat de Barcelona, Barcelona, Spain; 3. ETHZ, Zurich, Switzerland; 4. Catalan Institute of Nanoscience and Nanotechnology, Bellaterra, Spain*

2:42

BG-05. Superparamagnetic response from nanoparticles in splenic macrophages.

U. Wiedwald¹, M. Spasova¹, A. Elsukova¹, Z. Ma¹ and M. Farle^{1,2} *1. Faculty of Physics and Center for Nanointegration, University of Duisburg-Essen, Duisburg, Germany; 2. Center for Functionalized Magnetic Materials, Immanuel Kant Baltic Federal University, 236041 Kaliningrad, Russian Federation*

- BG-06. Magnetic field controlled oscillations of Fe-Cr-Nb-B magnetic particles for destruction of osteosarcoma cells.** *H. Chiriac*¹, *E. Radu*¹, *D. Herea*¹, *G. Stoian*¹, *T.A. Ovari*¹ and *N. Lupu*¹ *1. National Institute of R&D for Technical Physics, Iasi, Romania*

- BG-07. Zinc Doped Copper Ferrite Particles as Temperature Sensors for Magnetic Resonance Imaging.** *J.H. Hankiewicz*¹, *N. Alghamdi*², *N.M. Hammelev*³, *N.R. Anderson*¹, *R.E. Camley*², *M. Przybylski*⁴, *J. Zukrowski*⁵ and *Z. Celinski*² *1. BioFrontiers, University Colorado Colorado Springs, Colorado Springs, CO; 2. Physics, University of Colorado, Colorado Springs, Colorado Springs, CO; 3. Engineering Physics, Colorado School of Mines, Golden, CO; 4. Academic Centre for Materials and Nanotechnology, Krakow, Poland; 5. Physics, AGH University of Science and Technology, Cracow, Poland*

- BG-08. Electrodeposited Fe and Fe-Au Nanowires as MRI Contrast Agents.** *D. Shore*¹, *S. Pailloux*², *J. Zhang*³, *M. Garwood*³, *V.C. Pierre*² and *B. Stadler*⁴ *1. Chemical Engineering, University of Minnesota, Minneapolis, MN; 2. Chemistry, University of Minnesota, Minneapolis, MN; 3. Radiology, University of Minnesota, Minneapolis, MN; 4. Electrical Engineering, University of Minnesota, Minneapolis, MN*

- BG-09. A New Actuator Design for Focusing Magnetic Micro/nano-carrier in Targeted Drug Delivery.** *X. Zhang*^{1,2}, *L. Tuan-Anh*¹ and *J. Yoon*¹ *1. Gyeongsang National University, Jinju-si, The Republic of Korea; 2. School of Naval Architecture and Ocean Engineering, Harbin Institute of Technology at Weihai, Shandong, China*

- BG-10. Soft anisotropic magnetic polymer composites for efficient magnetophoretic trapping applications in microfluidic devices.** *K. Bhattacharya*^{1,2}, *S. Mekkaoui*², *P. Deb*¹, *V. Dupuis*², *A. Tamion*², *J. Desgouttes*³, *A. Deman*³ and *D. Le Roy*² *1. Physics, Tezpur University, Tezpur, India; 2. Institut Lumière Matière, Villeurbanne, France; 3. Institut des Nanotechnologies de Lyon, Villeurbanne, France*

- BG-11. Microfluidic Platform For Cell Membrane Deformation Utilizing Magnetic Particles.** *G. Kokkinis*¹ and *I. Giouroudi*^{1,2} *1. Vienna University of Technology, Vienna, Austria; 2. DWI - Leibniz Institute for Interactive Materials, Aachen, Germany*

4:06

- BG-12. Magnetic Control of Active Substrates for Mechanical Excitation of Single Cells.** *T. Devillers^{1,2}, C. Bidan^{3,4}, M. Fratzl^{2,1}, P. Moreau^{3,4}, G. Shaw^{2,1}, A. Dupont^{3,4} and N. Dempsey^{2,1}* *1. Institut NEEL, Université Grenoble Alpes, Grenoble, France; 2. Institut NEEL - CNRS, Grenoble, France; 3. LIPhy, CNRS, Grenoble, France; 4. LIPhy, Université Grenoble Alpes, Grenoble, France*

4:18

- BG-13. Dissecting cellular dynamics with magnetically actuated micropost arrays.** *Y. Shi¹, J.C. Crocker² and D. Reich¹* *1. Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 2. Chemical and Biomolecular Engineering, University of Pennsylvania, Philadelphia, PA*

TUESDAY
AFTERNOON
1:30

STUDIO 7-8

Session BH
MAGNETIC INSTRUMENTATION AND
CHARACTERIZATION I

Dario Arena, Chair
University of South Florida, Tampa, FL

1:30

- BH-01. In-situ imaging techniques for the study of magnetocaloric materials. (Invited)** *A. Waske^{1,2}, A. Funk^{1,2}, A. Rack³ and R. Schaefer^{1,2}* *1. IFW Dresden, Dresden, Germany; 2. TU Dresden, Dresden, Germany; 3. ESRF, Grenoble, France*

2:06

- BH-02. Soft magnetic sensors for the visualization of supercurrents.** *C. Stahl¹, S. Ruoss¹, P. Zahn^{1,2}, J. Bayer^{1,2}, J. Gräfe¹, G.A. Schuetz¹ and J. Albrecht²* *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany, Stuttgart, Germany; 2. Research Institute for Innovative Surfaces FINO, Aalen University, Aalen, Germany*

2:18

- BH-03. CORELLI for Magnetism and Magnetic Materials: The Elastic Diffuse Neutron Scattering Spectrometer at SNS.** *Y. Liu¹, F. Ye¹, W. Ross¹, J. Carruth¹ and G. Rennich¹* *1. Instrument and Source Division, Oak Ridge National Laboratory, Oak Ridge, TN*

2:30

- BH-04. Pure nuclear resonant surface diffraction at magnetic nanostructures.** *K. Schlage¹, L. Dzemiantsova^{1,2}, L. Bocklage^{1,2}, H. Wille¹, G. Meier^{2,3} and R. Röhlberger^{1,2}* *1. Photon Science, DESY, Hamburg, Germany; 2. The Hamburg Centre for Ultrafast Imaging, Hamburg, Germany; 3. Max Plank Institute for the Structure and Dynamics of Matter, Hamburg, Germany*

2:42

- BH-05. Spin chirality induced X-ray magnetic circular dichroism and new type of chiral spin textures in in-plane magnet. (Invited) G. Chen¹** 1. National Center for Electron Microscopy, Lawrence Berkeley National Laboratory, Berkeley, CA

3:18

- BH-06. Direct observation of temperature-driven magnetic symmetry transitions by vectorial-resolved MOKE magnetometry.** J. Fernandez Cunnado^{2,1}, F. Pedrosa¹, F. Ajejas¹, A. Bollero¹, P. Perna¹, R. Miranda^{1,2} and J. Camarero^{2,1} 1. IMDEA NANOSCIENCE, Madrid, Spain; 2. Universidad Autónoma de Madrid, Madrid, Spain

3:30

- BH-07. Understanding the kinetics of ink drying through *in operando* Magneto-optical Kerr Effect.** P. Silwal¹, S. Engmann¹, L. Richter¹, C. Snyder¹, C. Dennis¹ and J.W. Lau¹ 1. Material Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD

3:42

- BH-08. Direct Measurement and Microscale Mapping of nanoNewton to milliNewton Magnetic Forces.** C. Velez¹, R. Carroll¹ and D.P. Arnold¹ 1. Electrical and Computer Engineering, University of Florida, Gainesville, FL

3:54

- BH-09. Vibrating Sample Magnetometer (VSM) 2D and 3D Magnetization Hysteresis Effects Associated with Different Initial Magnetization Conditions.** R.E. Lukins¹ 1. R&D, Measurement Analysis Corporation, Torrance, CA

4:06

- BH-10. High performance THz emitters based on heavy metal/ferromagnet heterostructures.** Y. Wu¹, M. Elyasi¹, X. Qiu², L. Ke³ and H. Yang¹ 1. National University of Singapore, Singapore, Singapore; 2. Tongji University, Shanghai, China; 3. Institute of Materials Research and Engineering (IMRE), Singapore, Singapore

4:18

- BH-11. Brain-inspired Computing Using the Transient Dynamics of Spin-torque Oscillators.** M. Riou^{1*}, J. Torrejon¹, F. Abreu Araujo¹, M. Stiles², G. Khalsa², S. Tsunegi³, A. Fukushima³, H. Kubota³, S. Yuasa³, D. Querlioz⁴, V. Cros¹ and J. Grollier¹ 1. Unité Mixte CNRS/Thales, Palaiseau, France; 2. National Institute of Standards and Technology - Gaithersburg, Gaithersburg, MD; 3. Spintronics Research Center, National Institute of Advanced Industrial Science And Technology (AIST), Tsukuba, Japan; 4. IEF, Orsay, France

Session BI
SUPERCONDUCTIVITY AND CRITICAL PHENOMENA

Nathan Satchell, Chair
ISIS Neutron and Muon Facility, Didcot, United Kingdom

1:30

- BI-01. Neuromorphic Computing using Magnetically Tunable Josephson Junctions.** *S.E. Russek¹, M. Schneider¹ and C.A. Donnelly¹ 1. NIST, Boulder, CO*

1:42

- BI-02. Magnetoresistive response of single-crystalline Ni nanowires with superconducting contacts.** *S. Manna¹, H. Ren² and E.E. Fullerton³ 1. Nanoengineering, University of California San Diego, La Jolla, CA; 2. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA; 3. University of California San Diego, La Jolla, CA*

1:54

- BI-03. Magnetic and Superconducting Proximity Effects at Oxide Insulating Antiferromagnet / Superconductor Interfaces.** *W. Liu^{1,2}, S. Cheng³, R. Fan⁴, D.M. Burn⁴, A. Di Bernardo¹, J. Lin³, P. Steadman⁴, Y. Xu² and J. Robinson¹ 1. Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom; 2. Electronics Department, University of York, York, United Kingdom; 3. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 4. Diamond Light Source, Didcot, United Kingdom*

2:06

- BI-04. 4D Magnetic mapping of Majorana Fermions in proximate honeycomb Kitaev material $\alpha\text{-RuCl}_3$. (Invited)** *A. Banerjee¹, J. Knolle², Y. Jiaqiang³, M. Stone¹, M. Lumsden¹, T.A. David¹, R. Moessner⁴ and S.E. Nagler¹ 1. Quantum Condensed Matter Division, Oak Ridge National Laboratory, Oak Ridge, TN; 2. Department of Physics, Cambridge University, Cambridge, United Kingdom; 3. Material Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN; 4. Institute for Complex Systems, Max Planck Institute, Dresden, Germany*

2:42

- BI-05. Controlled Generation of Odd-frequency Triplet Superconductivity by Spin-orbit Coupling.** *N. Banerjee¹, J. Ouassou², Y. Zhu³, J. Linder² and M. Blamire³ 1. Physics, Loughborough University, Loughborough, United Kingdom; 2. Physics, Norwegian University of Science and Technology (Trondheim), Trondheim, Norway; 3. Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom*

- BI-06. Identification of the low-energy excitations that cause dynamic scaling in a doped quantum critical system.** T. Heitmann¹, J. Lamsal^{1,2}, S. Watson³, E. Ross³, W. Chen³, Y. Zhao^{3,4} and W. Montfrooij^{1,2} *1. The Missouri Research Reactor, University of Missouri, Columbia, MO; 2. Department of Physics and Astronomy, University of Missouri, Columbia, MO; 3. National Institute of Standards and Technology, Gaithersburg, MD; 4. Department of Materials Science and Engineering, University of Maryland, College Park, MD*

- BI-07. Theory of BEC and Superfluidity of Magnons in Yttrium Iron Garnet Films.** V. Pokrovsky^{1,2} *1. Physics and Astronomy, Texas A&M University, College Station, TX; 2. Landau Institute for Theoretical Physics, Chernogolovka, Russian Federation*

- BI-08. Macroscopic Phase Diagram of The Chiral Helimagnet $\text{Cr}_{1/3}\text{NbS}_2$.** E. Clements¹, R. Das¹, L. Li², P. Lampen-Kelley², M. Phan¹, V. Keppens², D. Mandrus² and H. Srikanth¹ *1. Department of Physics, University of South Florida, Tampa, FL; 2. Department of Materials Science and Engineering, The University of Tennessee, Knoxville, TN*

- BI-09. Sc-induced Ferromagnetism in Magnetoresponse $\text{Gd}_{5x}\text{Sc}_x\text{Ge}_4$.** Y. Mudryk¹, J. Liu^{1,2}, D. Paudyal¹, K.A. Gschneidner^{1,2} and V.K. Pecharsky^{1,2} *1. The Ames Laboratory, U.S. Department of Energy, Iowa State University, Ames, IA; 2. Materials Science and Engineering, Iowa State University, Ames, IA*

- BI-10. Behavior of $\text{U}_4\text{Ru}_7\text{Ge}_6$ in the vicinity of thermal and quantum transitions.** M. Vališka¹, J. Valenta¹, P. Dolezal¹, V. Tkáč¹, J. Prokleska¹, M. Diviš¹ and V. Sechovsky¹ *1. Department of Condensed Matter Physics, Charles University in Prague, Prague, Czech Republic*

- BI-11. Ultrasharp magnetization steps in $\text{LaFe}_{12}\text{B}_6$ an amplitude-modulated antiferromagnetic itinerant-electron system.** O. Isnard¹ and L. Diop¹ *1. MCMF, Institut Néel, Université Grenoble Alpes, Grenoble, France*

- BI-12. Domain wall depinning as a critical phenomena: quantitative scaling of avalanches in soft magnetic materials.** G. Durin^{1,3}, F. Bohn², M.A. Correa², R.L. Sommer⁴, K. Wiese⁵ and P. Le Doussal⁵ *1. Nanoscience and Material, Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 2. Fisica Teorica e Experimental, Univ. Federal do Rio Grande do Norte, Natal, Brazil; 3. ISI Foundation, Torino, Italy; 4. EXP, Centro Brasileiro de Pesquisas Fisicas, Rio de Janeiro, Brazil; 5. CNRS-Lab. de Physique Théorique, Ecole Normale Supérieure, Paris, France*

- BI-13. Spin Reorientation effect on Phonon Raman Scattering in NdFeO₃ Single Crystal.** *M.K. Singh¹, G. Singh¹, A. Kumar¹ and B. Khan¹* *1. Centre of Material Sciences, University of Allahabad, Allahabad, India*

TUESDAY
AFTERNOON
2:30

GRAND BALLROOM

Session BP

MICROMAGNETIC AND HYSTERESIS MODELING (Poster Session)

Dmytro Apalkov, Co-Chair
Samsung Semiconductor, Milpitas, CA
Sue Wang, Co-Chair
Samsung Semiconductor, San Jose, CA

- BP-01. Non-volatile spin-wave majority gate at the nanoscale.** *O. Zografos^{1,2}, S. Dutta³, M. Manfrini¹, B. Sorée^{1,2}, A. Naeemi³, P. Raghavan¹, R. Lauwereins^{1,2} and I.P. Radu¹* *1. Logic Technologies, Imec, Leuven, Belgium; 2. ESAT, KU Leuven, Leuven, Belgium; 3. Department of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA*
- BP-02. A compact physical model for the simulation of pNML-based architectures.** *G. Turvani¹, F. Riente¹, E. Plozner², D. Schmitt-Landsiedel¹ and S. Breitzkreutz-v. Gamm¹* *1. Institute for Technical Electronics, Technische Universität München, Munich, Germany; 2. Department of electronics and telecommunications, Politecnico di Torino, Turin, Italy*
- BP-03. A variable variance Preisach model for multilayers with perpendicular magnetic anisotropy.** *C. Garcia¹, C.A. Ross², J. Akerman^{3,4}, R.K. Dumas⁴, A.F. Franco⁵, C.A. Gonzalez⁶ and R. Morales⁷* *1. Physics, UTFSM-Universidad Técnica Federico Santa María, Valparaíso, Chile; 2. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 3. Materials Physics, School of ICT, Royal Institute of Technology (KTH), Stockholm, Sweden; 4. Physics, University of Gothenburg, Gothenburg, Sweden; 5. Physics, Universidad Técnica Federico Santa María, Valparaíso, Chile; 6. Physics, UTFSM, Valparaíso, Chile; 7. Chemical-Physics Dept. & BCMaterials, University of Basque Country UPV/EHU & IKERBASQUE, Leioa, Spain*
- BP-04. Comparison of Limiting Loop Method and Elemental Operator Model for Magnetic Hysteresis of Silicon Steel Sheet.** *W. Xu¹, N. Duan¹, S. Wang¹, J. Zhu² and Y. Guo²* *1. Xi'an Jiaotong University, Xi'an, China; 2. University of Technology Sydney, Sydney, NSW, Australia*
- BP-05. Numerical Implementation of the Elemental Operator Method for Magnetic Hysteresis Model.** *W. Xu¹, N. Duan¹, S. Wang¹, J. Zhu² and Y. Guo²* *1. Xi'an Jiaotong University, Xi'an, China; 2. University of Technology Sydney, Sydney, NSW, Australia*

- BP-06. Refinement of the magnetic composite model of type 304 stainless steel by considering misoriented ferromagnetic martensite particles.** *K. Kinoshita*¹ 1. *Department of Energy Conversion Science, Kyoto University, Kyoto-shi, Japan*
- BP-07. Investigation of effects of long-term thermal aging on magnetization processes in low-alloy pressure vessel steels using first-order-reversal-curves.** *S. Kobayashi*¹, *F. Gillemot*², *A. Horvath*², *M. Horvath*² and *A. Laszlo*² 1. *Iwate University, Morioka, Japan*; 2. *KFKI Atomic Energy Research Institute, Budapest, Hungary*
- BP-08. High Frequency Characterization of Galfenol Minor Flux Density Loops.** *L. Weng*¹, *X. Hu*¹, *Y. Sun*¹, *W. Huang*¹ and *B. Wang*¹ 1. *Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability of Hebei Province, Hebei University of Technology, Tianjin, China*
- BP-09. Magnetic Field Distribution Analysis for HTS Cable Considering Magnetic Hysteresis.** *N. Duan*¹, *W. Xu*¹, *S. Wang*¹ and *J. Zhu*² 1. *Xi'an Jiaotong University, Xi'an, China*; 2. *University of Technology, Sydney, Sydney, NSW, Australia*
- BP-10. Improved Transient Magnetic Core Loss in Rotational Magnetization.** *C. Zhang*¹, *Y. Li*¹, *Q. Yang*¹ and *J. Zhu*² 1. *Hebei University of Technology, TIANJIN, China*; 2. *University of Technology, Sydney, Sydney, NSW, Australia*
- BP-11. Vector Magnetization of a Distribution of Particles with Cubic Anisotropy.** *A. Jamali*¹, *H. ElBidweihy*², *E. Della Torre*¹ and *E. Cardelli*³ 1. *Department of Electrical and Computer Engineering, The George Washington University, Ashburn, VA*; 2. *Department of Electrical and Computer Engineering, United States Naval Academy, Annapolis, MD*; 3. *Dipartimento Ingegneria, Università di Perugia, Perugia, Italy*
- BP-12. Double Langevin Function for Description of Anhyseretic Magnetization Curves.** *S. Steentjes*¹, *M. Petrun*², *G. Glehn*¹, *D. Dolinar*² and *K. Hameyer*¹ 1. *Institute of Electrical Machines, RWTH Aachen University, Aachen, Germany*; 2. *FERI, University of Maribor, Maribor, Slovenia*
- BP-13. Effect of radial anisotropy distribution on the magnetic behavior of rapidly solidified amorphous nanowires.** *C. Rotarescu*¹, *O. Chubykalo-Fesenko*², *M. Vázquez*², *H. Chiriac*¹, *N. Lupu*¹ and *T.A. Ovari*¹ 1. *National Institute of Research and Development for Technical Physics, Iasi, Romania*; 2. *Instituto de Ciencia de Materiales de Madrid (CSIC), Madrid, Spain*
- BP-14. FORC based study of interactions in 2D magnetic nanostructures. Experiment and simulation.** *B. Negulescu*¹, *L. Stoleriu*² and *A. Stancu*² 1. *GREMAN, University Francois Rabelais, Tours, France*; 2. *Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*
- BP-15. Nambu mechanics for stochastic magnetization dynamics.** *P. Thibaudeau*¹, *T. Nussle*² and *S. Nicolis*² 1. *DAM, Commissariat à l'Energie Atomique, Monts, France*; 2. *Laboratoire de Mathématiques et Physique Théorique, Université François Rabelais, Tours, France*

Session BQ
MAGNETOELECTRONIC MATERIALS AND
TRANSPORT I
(Poster Session)

Ryan Desautels, Chair
Oak Ridge National Laboratory, Oak Ridge, TN

- BQ-01. Generation of Perpendicular Magnetic Anisotropy in Co₂FeAl Full-Heusler Alloy Thin Film.** T. Huang¹, X. Cheng¹, X. Guan¹, S. Wang¹ and X. Miao¹ *1. School of Optical and Electronic Information, Huazhong University of Science & Technology, Wuhan, China*
- BQ-02. Magnetic anisotropy of epitaxial Co₂Fe-Ge Heusler alloy films on MgO (100) substrates.** A. Pogorily¹, A. Kravets^{1,2}, V. Nevdacha¹, D. Podyalovskiy¹, S. Ryabchenko³, V. Kalita³, M. Kulik³, A. Lozenko³, A. Vovk⁴, M. Godinho⁴, L. Maurel⁵, J.A. Pardo⁵, C. Magén⁵ and V. Korenivski² *1. Institute of Magnetism, National Academy of Sciences of Ukraine, Kyiv, Ukraine; 2. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden; 3. Institute of Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; 4. BioISI- Biosystems & Integrative Sciences Institute, Faculdade de Ciências, Universidade de Lisboa, Lisbon, Portugal; 5. Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza, Spain*
- BQ-03. Magnetic properties of stoichiometric Mn₂VAl Heusler alloy thin films.** T. Tsuchiya¹, R. Kobayashi¹, T. Kubota^{1,2} and K. Takanashi^{1,2} *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Center for Spintronics Research Network, Tohoku University, Sendai, Japan*
- BQ-04. Crystallographic and magnetic properties of TiN buffered Co₂FeAl thin films.** J. Ludwig¹, A. Niesen¹, D. Meier¹, J. Schmalhorst¹ and G. Reiss¹ *1. Department of Physics, Bielefeld University, Bielefeld, Germany*
- BQ-05. Design of highly-dispersive spin gapless semiconductors by containing rare-earth element in quaternary Heusler compounds.** G. Xu¹, E. Liu¹, Y. Gong¹, Z. Xu¹, F. Xu¹ and W. Wang² *1. School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, China; 2. Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- BQ-06. Significant Enhanced Anomalous Hall Resistivity by Structural Disorder in Heterogeneous Heusler Alloys FeCr_{1-x}Co_xSi.** B. Ding¹, Y. Du¹, Y. Wang¹, Z. Hou¹, E. Liu¹, W. Wang¹ and G. Wu¹ *1. Institute of Physics, Chinese Academy of Science, Beijing, China*

- BQ-07. Electrical Determination of Néel Transitions in Heusler Alloy Thin Films.** *J. Sinclair*¹, *T. Huminiuc*¹, *T. Tsuchiya*², *T. Sugiyama*², *T. Kubota*², *K. Takanashi*², *K. O'Grady*¹ and *A. Hirohata*¹ *1. Department of Physics & Electronics, University of York, York, United Kingdom; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*
- BQ-08. Effect of Fe Substitution for Ti on the Structural, Magnetic and Electronic Band Properties of Half-metallic Co₂TiSi.** *Y. Jin*¹, *P.R. Kharel*², *P. Lukashev*³, *J. Waybright*², *I. Tutic*³, *J. Herran*³, *S. Valloppilly*⁴ and *D.J. Sellmyer*⁴ *1. Physics and Astronomy, University of Nebraska Lincoln, Lincoln, NE; 2. Physics, South Dakota State University, Brookings, SD; 3. Department of Physics, University of Northern Iowa, Cedar Falls, IA; 4. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE*
- BQ-09. Substitution Effect and Magnetic Performance in Off-stoichiometric Fe₂CrGa System.** *H. Zhang*¹, *J. Chen*¹, *Y. Ming*¹, *E. Liu*², *Q. Lu*¹, *D. Zhang*¹, *W. Liu*¹ and *Q. Wu*¹ *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China; 2. Institute of Physics, Beijing, China*
- BQ-10. Understanding Interfacial Behavior with Out-of-Plane Magnetoresistance Measurements of Ferromagnetic/Non-Magnetic Bi-layer Thin Films.** *S.A. Azzawi*¹ *1. Physics, Durham University, Durham, United Kingdom*
- BQ-11. Robust spin-current injection in lateral spin valves with two-terminal Co₂FeSi spin injectors.** *S. Oki*¹, *T. Kurokawa*¹, *S. Honda*², *S. Yamada*¹, *T. Kanashima*¹, *H. Itoh*² and *K. Hamaya*¹ *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Pure and Applied Physics, Kansai University, Suita, Japan*
- BQ-12. Tunneling magnetoresistance in nanogranular La_{1-x}Sr_xMnO₃ (x=0.47).** *J. Hejtmanek*¹, *Z. Jirak*¹, *O. Kaman*¹ and *S. Vratislav*² *1. Institute of Physics of the ASCR, Prague, Czech Republic; 2. Faculty of Nuclear Sciences and Physical Engineering, CTU, Prague, Czech Republic*
- BQ-13. Spin Splitting of Monolayer WTe₂ on Top of Fe₃O₄(111).** *Y. Song*¹, *Q. Zhang*¹ and *W. Mi*¹ *1. Department of Applied Physics, Tianjin University, Tianjin, China*
- BQ-14. Magnetic properties of Ni films deposited on crystalline Bi₂Se₃ surface.** *T. Yoo*¹, *A. Nasir*², *S. Bac*², *S. Choi*², *S. Lee*², *H. Lee*², *S. Lee*², *X. Liu*¹ and *J. Furdyna*¹ *1. Physics Department, University of Notre Dame, Notre Dame, IN; 2. Physics department, Korea University, Seoul, The Republic of Korea*
- BQ-15. Magneto-Conductivity in OLEDs Blended with Magnetic Nanoparticles.** *R. Geng*¹, *K. Stojak Repa*², *M. Phan*² and *T. Nguyen*¹ *1. Physics and Astronomy, The University of Georgia, Athens, GA; 2. Department of Physics, University of South Florida, Tampa, FL*

Session BR
MAGNETOELECTRONIC MATERIALS AND
TRANSPORT II
(Poster Session)

Lars Bocklage, Chair
DESY, Hamburg, Germany

- BR-01. Hall effect and magnetoresistive study of Co/Ni multilayers.** *E.H. Krenkel¹, J.M. Rizko¹, B.C. Cheng¹, P.D. Sparks¹, J.C. Eckert¹, S.K. Patel² and E.E. Fullerton²* *1. Physics, Harvey Mudd College, Claremont, CA; 2. CMRR, UCSD, La Jolla, CA*
- BR-02. Different Angular Dependent Magnetoresistance in Single Crystalline Pt/Fe And Pt/Co Bilayers.** *X. Xiao¹, J. Li¹, M. Jia¹, L. Sun¹, C. Zhou¹ and Y. Wu¹* *1. Department of Physics, State Key Laboratory of Surface Physics and Advanced Materials Laboratory, Center for Spintronic Devices and Applications, Fudan University, Shanghai, China*
- BR-03. Unusual magnetoresistance in Heusler compounds Antiferromagnet/Ferromagnet bilayers.** *M. Matsushita¹, T. Hajiri¹, K. Ueda¹ and H. Asano¹* *1. Crystalline Materials Science, Nagoya University, Nagoya, Japan*
- BR-04. Investigation of Structural Magnetic, Electrical and Thermal Transport Properties of Sm Substituted Polycrystalline $\text{La}_{0.7-x}\text{Sm}_x\text{Ba}_{0.3}\text{MnO}_3$ ($0 \leq x \leq 0.2$) Manganites.** *N. Gaur¹ and A. Modi¹* *1. Physics, Barkatullah University, Bhopal, Madhya Pradesh, India*
- BR-05. Static and Dynamic Signatures of Anisotropic Electronic Phase Separation in $\text{La}_{2/3}\text{Ca}_{1/3}\text{MnO}_3$ Thin Films under Anisotropic Strain.** *L. Hu¹, L. Yu¹, P. Xiong¹, L. Wang³, W. Wu³, X. Wang² and J. Zhao²* *1. Florida State University, Tallahassee, FL; 2. Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China; 3. Hefei National Laboratory for Physical Science at Microscale, University of Science and Technology of China, Hefei, China*
- BR-06. Polarization-mediated perpendicular magnetic anisotropy in a $\text{BiFeO}_3/\text{Al}_2\text{O}_3/\text{Pt}/\text{Co}/\text{Pt}$ multiferroic hybrid structure.** *P.F. Liu¹, J. Miao¹, K. Meng¹, Y. Wu¹, X. Xu¹ and Y. Jiang¹* *1. School of Materials Science and Engineering, University of Science & Technology Beijing, Beijing, China*
- BR-07. Electrical and Magnetic Properties of DLC-Co Nano-composite Films by Hybrid Deposition Method.** *Y. Zhang¹, H. Kosukegawa¹, H. Miki¹, N. Kobayashi², S. Ohnuma^{1,2}, T. Takagi¹ and H. Masumoto¹* *1. Tohoku University, Sendai, Japan; 2. Research Institute for Electromagnetic Materials, Sendai, Japan*

- BR-08. Large Room Temperature MR in Electrically-Modulated Magnetic Nano-structure.** *W. Xue¹, G. Liu¹ and R. Li¹*
1. Magnetic Materials and Advanced Devices, Ningbo Institute of Industrial Technology, Chinese Academy of Sciences, Ningbo, China
- BR-09. Electric and Magnetic Transport Characterization of Post-Growth Annealing Process of Co-C Grown by Focused-Electron-Beam-Induced Deposition.** *M.V. Puydinger dos Santos^{1,2}, M. Velo¹, R.D. Domingos¹, Y. Zhang³, X. Maeder³, C. Guerra-Nunez³, F. Béron¹, K.R. Pirola¹, S. Moshkalev², J.A. Diniz² and I. Utke³*
1. Universidade Estadual de Campinas, Campinas, Brazil; 2. CCS, Universidade Estadual de Campinas, Campinas, Brazil; 3. Swiss Federal Laboratories for Material Science and Technology, Thun, Switzerland
- BR-10. Tuning the linear anomalous Hall effect by the current induced spin-orbit torque.** *T. Zhu¹*
1. State Key Lab for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China
- BR-11. Anisotropic Electronic States In The Fractional Quantum Hall Regime.** *O. Ciftja¹*
1. Department of Physics, Prairie View A&M University, Prairie View, TX
- BR-12. Topological Hall Effect of Skyrmions in Epitaxial Grown FeGe Thin Films.** *K. Meng^{1,2}, J. Gallagher², J. Fuhrman³, J. Brangham², H. Wang⁴, B. Esser¹, D. McComb¹ and F. Yang¹*
1. The Ohio State University, Columbus, OH; 2. Physics, The Ohio State University, Columbus, OH; 3. The University of Alabama, Tuscaloosa, AL; 4. The Pennsylvania State University, University Park, PA
- BR-13. Klein Tunneling Transport in Type-II Weyl Fermion under The Influence of Magnetic Field.** *C. Yesilyurt¹, Z. Siu¹, S. Tan^{2,1}, G. Liang¹ and M.B. Jalil¹*
1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Agency of Science, Technology and Research (A Star), Singapore, Singapore*
- BR-14. Proximity-induced magnetoresistance in two-dimensional massless Dirac electrons on ferromagnetic insulators.** *T. Chiba¹, S. Takahashi¹ and G.E. Bauer^{1,2}*
1. Institute for Materials Research (IMR), Tohoku University, Sendai, Japan; 2. Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands
- BR-15. Weak localization effect in Bi₂Te₃ nanoplates.** *S.W. Chen¹, Z.L. Yang¹, W. Tao¹, D. Yang¹ and X.D. Sheng¹*
1. Lanzhou University, Lanzhou, China

Session BS
MAGNETORESISTANCE AND CRITICAL
PHENOMENA
(Poster Session)

Thomas Ambrose, Chair
Northrup Grumman Corporation, Linthicum, MD

- BS-01. Magnetoresistance and All-electrical Control Magnetization Coupling In a Molecular Junction.** *L. Tao¹ and J. Wang¹*
1. Department of Physics, The University of Hong Kong, Hong Kong, Hong Kong
- BS-02. Ferromagnetic GaMnP: magneto-transport properties and co-doping effect.** *S. Zhou¹, C. Xu¹, Y. Yuan², M. Wang¹, H. Hentschel¹, R. Boettger¹ and M. Helm¹*
1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany
- BS-03. Comparison of Laser Induced and Intrinsic Tunnel Magneto-Seebeck Effects.** *T. Huebner¹, A. Boehnke¹, U. Martens², A. Thomas³, J. Schmalhorst¹, G. Reiss¹, M. Münzenberg² and T. Kuschel^{1,4}*
1. Physics Department, Bielefeld University, Bielefeld, Germany; 2. Institute of Physics, Ernst-Moritz-Arndt University, Greifswald, Germany; 3. Institute for Metallic Materials, Leibniz Institute for Solid State and Materials Research Dresden (IFW Dresden), Dresden, Germany; 4. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands
- BS-04. Temperature Dependence of Tunneling Magnetoresistance in GdO_x Based Magnetic Tunnel Junctions.** *T. Newhouse-Illige¹, Y. Xu¹, C. Bi¹, M. Xu¹ and W. Wang¹*
1. Department of Physics, University of Arizona, Tucson, AZ
- BS-05. High temperature stable bottom pinned perpendicular magnetic tunnel junctions.** *J. Wrona¹, M. Zhu², J. Langer¹, S. Tibus¹, M. Smalley², S. Bennett² and B. Ocker¹*
1. Singulus Technologies AG, Kahl am Main, Germany; 2. Colleges of Nanoscale Science and Engineering, SUNY Polytechnic Institute, Albany, NY
- BS-06. A compositional study of CoPd alloy pinned p-pMTJs for STT-RAM.** *B.D. Clark¹, A. Natarajarathinam¹, Z.R. Tadisina¹, J. Beik Mohammadi¹, T. Mewes¹, A.P. Chen², R. Shull² and S. Gupta¹*
1. Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL; 2. National Institute of Standards and Technology, Gaithersburg, MD
- BS-07. Tailoring the interfacial exchange coupling of perpendicularly magnetized Co/Li₀Mn_{1.5}Ga bilayers.** *J. Xiao¹, J. Lu¹, W. Liu², H. Wang¹, L. Zhu¹, H. Deng¹, D. Wei¹, Y. Xu² and J. Zhao¹*
1. State Key Laboratory For Superlattices And Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China; 2. The University of York, York, United Kingdom

- BS-08. Effect of Fermi arcs and inter-valley coupling on tunneling in a Dirac semimetal.** Z. Siu¹, C. Yesilyurt¹ and M.B. Jalil¹
1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore
- BS-09. Crystal structure and magnetic properties of $\text{Li}_{1-x}\text{Na}_x\text{FePO}_4$ Investigated with Mössbauer Spectroscopy.** B. Ko¹, H. Choi¹, T. Kouh¹ and C. Kim¹ *1. Department of Physics, Kookmin University, Seoul, The Republic of Korea*
- BS-10. Pressure Induced Quantum Phase Transition in the Itinerant Ferromagnet UCoGa.** M. Mišek¹, P. Opletal², J. Kaštil¹, J. Kamarád¹ and V. Sechovsky² *1. Department of Magnetism and Superconductors, Institute of Physics, Academy of Sciences of the Czech Republic, Prague, Czech Republic; 2. Department of Condensed Matter Physics, Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic*
- BS-11. Co-site substitution effects on the simultaneous metal-insulator and spin-state transition in $(\text{Pr}_{1-y}\text{Gd}_y)_{1-x}\text{Ca}_x\text{CoO}_3$.** T. Naito¹, H. Fujishiro¹ and K. Nitta² *1. Iwate University, Morioka, Japan; 2. Japan Synchrotron Radiation Research Institute, Sayo, Japan*
- BS-12. Electron Spin Resonance of Gd^{3+} Ions in $\text{Gd}_x\text{Y}_{1-x}\text{Ni}_3\text{Ga}_9$ ($0.05 \leq x \leq 1.00$).** J.G. Duque^{1,2}, E.C. Mendonça², L.S. Silva², C.B. Jesus¹, P. Pagliuso¹ and R. Lora-Serrano³ *1. DEQ, Instituto de Física Gleb Wataghin - Unicamp, Campinas, Brazil; 2. Physics, Programa de Pós-Graduação em Física, Campus Prof. José Aluísio de Campos, UFS, 49100-000 São Cristóvão, SE, Brazil, São Cristóvão, Brazil; 3. Physics, Universidade Federal de Uberlândia, 38408-100, Uberlândia, MG, Brazil, Uberlândia, Brazil*
- BS-13. Photo-excited enhancement of Cr charge-density-wave ordering by dynamic electron-phonon interaction.** S.K. Patel^{1,2}, A. Singer², R. Kukreja^{1,2}, V. Uhlir¹, J.C. Wingert², S. Festersen³, D. Zhu⁴, J.M. Glowina⁴, H. Lemke⁴, S. Nelson⁴, K. Rossnagel³, M. Bauer³, B.M. Murphy^{5,3}, O.M. Magnussen^{3,5}, E.E. Fullerton¹ and O.G. Shpyrko² *1. Center for Memory and Recording Research, University of California, San Diego, La Jolla, CA; 2. Physics Department, University of California, San Diego, La Jolla, CA; 3. Institute for Experimental and Applied Physics, University of Kiel, Kiel, Germany; 4. LCLS, SLAC National Accelerator Laboratory, Menlo Park, CA; 5. Ruprecht Haensel Laboratory, University of Kiel, Kiel, Germany*
- BS-14. Finite-size scaling behavior of Néel temperature in magnetoelectric corundum Cr_2O_3 thinfilm.** S. Pati¹, M. Al-Mahdawi¹, S. Ye¹, Y. Shiokawa¹, T. Nozaki¹ and M. Sahashi^{1,2} *1. Department of Electronic Engineering, Tohoku University, Sendai, Japan; 2. ImPACT Program, Japan Science and Technology Agency, Tokyo, Japan*

- BS-15. Evolution from 4f-electron antiferromagnetic to ferromagnetic order in the CeCu(Ge_{1-x}Sn_x) alloy series (0 ≤ x ≤ 1).** B.M. Sondezi¹, A. Altayeb^{3,1}, M.B. Tchoula Tchokonte², A. Strydom¹ and D. Kaczorowski⁴ *1. Physics, University of Johannesburg, Johannesburg, South Africa; 2. Physics, University of the Western Cape, Bellville, South Africa; 3. Physics, University of the Western Cape, Bellville, South Africa; 4. Magnetic, Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wroclaw, Poland*
- BS-16. Magnetic Ground State At The Dysprosium Site in DyNiAl₄.** W.D. Hutchison¹, G.A. Stewart¹, S. Cadogan¹ and D. Ryan² *1. School of Physical, Environmental and Mathematical Sciences, University of New South Wales, Canberra, ACT, Australia; 2. Centre for the Physics of Materials and Physics Department, McGill University, Montreal, QC, Canada*

TUESDAY
AFTERNOON
2:30

GRAND BALLROOM

Session BT
NON-RARE-EARTH MAGNETS
(Poster Session)
Wenyong Zhang, Chair
University of Nebraska, Lincoln, NE

- BT-01. Magnetic properties of Nd(Fe_{1-x}Co_x)_{10.5}M_{1.5} (M=Mo and V, x=0-1) and their nitrides.** J. Fu¹, W. Yang¹, Y. Xia¹ and J. Yang¹ *1. School of Physics, Peking University, Beijing, China*
- BT-02. Large Magnetocrystalline Anisotropy in AlFe₂B₂ Single Crystals.** B. Lejeune¹, G. Hadjipanayis² and L. Lewis¹ *1. Chemical Engineering, Northeastern University, Boston, MA; 2. Physics and Astronomy, University of Delaware, Newark, DE*
- BT-03. Characterization of Mo-substituted Co-ferrite Thin Films Prepared by Metal-organic Decomposition Method.** T. Ishibashi¹, T. Ikari¹, A. Meguro¹, H. Yanagihara² and E. Kita² *1. Department of Materials Science & Technology, Nagaoka University of Technology, Niigata, Japan; 2. Institute of Applied Physics, University of Tsukuba, Tsukuba, Japan*
- BT-04. Irreversible Magnetization Process and Switching Mechanism in L1₀ FePt thin films.** A. Lisfi¹, S. Pokharel¹, O. Akioya¹, N. Alqhtany¹ and M. Wuttig² *1. Physics, Morgan State University, Baltimore, MD; 2. Materials Science and Engineering, University of Maryland at College Park, College Park, MD*

- BT-05. Study of exchange coupling in MnAlC/ α -Fe nanocomposite magnets prepared by cryogenic milling.** J.S. Trujillo Hernandez^{1,2}, L. Marshall^{3,4}, I. McDonald^{3,4}, L. Lewis^{3,4} and G.A. Pérez Alcázar¹ 1. *Department of Physics, Universidad del Valle, Cali, Colombia*; 2. *Faculty of Natural Sciences and Mathematics, Universidad de Ibagué, Ibagué, Colombia*; 3. *Department of Chemical Engineering, Northeastern University, Boston, MA*; 4. *Department of Mechanical and Industrial Engineering, Northeastern University, Boston, MA*
- BT-06. Rare-earth (RE:Tb and Dy) Doped SrFe_{12-x}RE_xO₁₉: Magnetic and XPS Study.** M. Ghimire¹, F. Perez², L. Wang³, H. Adhikari¹ and S.R. Mishra¹ 1. *Department of Physics and Materials Science, The University of Memphis, Memphis, TN*; 2. *Integrated Microscopy Center, The University of Memphis, Memphis, TN*; 3. *Department of Electrical Engineering, University of Memphis, Memphis, TN*
- BT-07. Structure and Magnetic Properties of Mn_{51-x}Fe_xBi₄₉(x=0, 3, 6, 9) Compounds.** D. Zhang¹, P. Wang¹, M. Yue¹, J. Li¹, Q. Lu¹ and W. Liu¹ 1. *College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*
- BT-08. α "-Fe₁₆N₂ powders prepared by high energy ball milling method.** J. Liu¹, B. Ma¹, Y. Jiang¹ and J. Wang¹ 1. *Electrical and Computer Engineering, University of Minnesota, Twin Cities, Minneapolis, MN*
- BT-09. Search for Rare-Earth Free Permanent Magnets in Cobalt Nitrides by Adaptive Genetic Algorithm.** X. Zhao¹, C. Wang¹, L. Ke² and K. Ho¹ 1. *Ames Laboratory and Department of Physics, Iowa State University, Ames, IA*; 2. *Ames Laboratory, Ames, IA*
- BT-10. Effect of Mo on microstructure and thermal stability for Alnico 8 alloys.** J. Zhao¹ and Y. Sun¹ 1. *Magnetic Department, Ningbo Institute of Material Technology and Engineering, Ningbo, China*
- BT-11. Magnetic Anisotropy in spherical Fe₁₆N₂ core-shell nanoparticles determined by torque measurements.** E. Kita^{1,2}, Y. Sasaki³, M. Kishimoto¹ and H. Yanagihara¹ 1. *Institute of Applied Physics, University of Tsukuba, Tsukuba, Japan*; 2. *NIT, Ibaraki College, Hitachinaka, Japan*; 3. *Hitachi Maxell, Oyamazaki, Japan*
- BT-12. Morphology control of hexagonal strontium ferrite micro/nano-particles.** D. Chen^{1,2}, Y. Meng¹, D. Zeng¹, H. Yu¹ and P. Liu³ 1. *South China University of Technology, Guangzhou, China*; 2. *South China Normal University, Guangzhou, China*; 3. *University of Texas at Arlington, Arlington, TX*
- BT-13. Large Magnetic Anisotropy in HfMnP.** T. Lamichhane^{3,1}, V. Taufour³, M. Masters¹, S. Thimmaiah³, S. Bud'ko^{3,1}, D. Parker² and P.C. Canfield^{1,3} 1. *Physics, Iowa State University, Ames, IA*; 2. *ORNL, Oak Ridge, TN*; 3. *Ames Lab, Ames, IA*
- BT-14. Single nanometer-size hard magnetic ferrite based on ϵ -Fe₂O₃.** S. Ohkoshi¹ 1. *The University of Tokyo, Tokyo, Japan*

- BT-15. Role of nanostructural non-uniformity on alnico magnetic properties.** L. Ke¹, R. Skomski², C. Wang¹, T. Hoffmann³, L. Zhou¹, I.E. Anderson¹ and M.J. Kramer¹ *1. Ames Laboratory, Ames, IA; 2. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE; 3. 1137 W Emerald Ave, Mesa, AZ*
- BT-16. Magnetocrystalline Anisotropy of Mn_xGa: A first-principles Study.** X. Liu¹, D. Ryan², M. Wang³, Q. Lu³, H. Zhang³, Y. Ming⁴ and Z. Altounian² *1. Physics Department, McGill University, Montreal, QC, Canada; 2. McGill University, Montreal, QC, Canada; 3. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China; 4. Beijing University of Technology, Beijing, China*

TUESDAY
AFTERNOON
2:30

GRAND BALLROOM

Session BU
PERMANENT MAGNET SYNTHESIS AND
PROCESSING I
(Poster Session)

Ming Yue, Chair
Beijing University of Technology, Beijing, China

- BU-01. Directly obtained τ -MnAl phase with high magnetization using melt rapid-hardening method.** Z. Shao¹, Z. Hui¹, W. Yang¹, J. Zeng², S. Guo², H. Du¹, C. Wang¹, Y. Yang¹ and J. Yang¹ *1. School of Physics, Peking University, Beijing, China; 2. Rare Earth Magnetic Materials Laboratory, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*
- BU-02. Microstructure evolution and coercivity enhancement in Nd-Fe-B thin films diffusion-processed by R-Al alloys (R=Nd, Pr).** C. Weibin^{1,2}, H. Zhong^{1,2}, Y. Fu^{1,2}, Q. Wang¹, K. Lokendra³ and Y. Qiang³ *1. Key Laboratory of Electromagnetic Processing of Materials (Ministry of Education), Northeastern University, Shenyang, China; 2. Department of Physics and Chemistry of Materials, Northeastern University, Shenyang, China; 3. Physics Department, University of Idaho, Moscow, ID*
- BU-03. Micromagnetic Simulation of the Influence of Grain Boundary Phase on Ce Substituted Nd-Fe-B Magnets.** D. Liu¹, T. Zhao¹, J. Lu¹, J. Sun¹, M. Zhang¹, R. Shang¹, R. Li¹, J. Xiong¹, X. Zhao¹, J. Zhang¹ and B. Shen¹ *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- BU-04. Enhanced Performances of Electroplated Hard Magnet Layers Via a Texture Inducing Underlayer.** C. Tseng¹, C. Hsiao¹, L. Tsai², J. Chang², C. Sung² and T. Chin¹ *1. Material Science and Engineering, Feng Chia University, Taichung City, Taiwan; 2. Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*

- BU-05. Magnetic Domain Observation on Demagnetization of Nd–Fe–B Sintered Magnets under Compressive Stress and Elevated Temperatures.** *M. Takezawa*¹, *K. Fukushima*¹, *Y. Morimoto*¹ and *Y. Nakano*² *1. Kyushu Institute of Technology, Kitakyushu, Japan; 2. Mitsubishi Electric Corporation, Amagasaki, Japan*
- BU-06. Magnetization reversal process in (Sm, Dy, Gd) (Co, Fe, Cu, Zr)_z magnets with different cellular structure.** *L. Liu*¹, *Z. Liu*¹, *M. Li*¹, *C. Wang*¹, *F. Yanping*¹, *X. Zhang*¹, *D. Lee*¹ and *A. Yan*¹ *1. Ningbo Institute of Material Technology and Engineering, CAS, Ningbo, China*
- BU-07. The magnetic properties of textured MMCo₅ (MM=Mischmetal)nanoflakes prepared by multistep (three steps) surfactant-assisted ball milling.** *X. Zhao*¹, *W. Zuo*¹, *D. Liu*¹, *J. Xiong*¹, *R. Shang*¹, *T. Zhao*¹, *J. Zhang*¹, *J. Sun*¹ and *B. Shen*¹ *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- BU-08. Characterizations of magnetic phase transitions in PrMn₂Ge₂ compounds investigated by magnetization and magnetic hyperfine field measurements.** *B. Bosch-Santos*¹, *A.W. Carbonari*¹, *G. Cabrera-Pasca*¹ and *R.S. Freitas*² *1. Instituto de Pesquisas Energéticas e Nucleares (IPEN/USP), São Paulo, Brazil; 2. Instituto de Física, Universidade de São Paulo (IFUSP), São Paulo, Brazil*
- BU-09. Effects of doping on the magnetic properties of La-Ce misch-metal based (La,Ce)₂Fe₁₄B melt spun ribbons: 2:14:B phases for cost effective permanent magnets.** *S. Fabbri*^{1,2}, *A. Gabay*³, *R. Cabassi*², *F. Albertini*², *E. Agostinelli*¹ and *G. Hadjipanayis*³ *1. ISM-CNR, Rome, Italy; 2. IMEM-CNR, Parma, Italy; 3. Physics and Astronomy, University of Delaware, Newark, DE*
- BU-10. Controlling the microstructure and associated magnetic properties of Ni_{0.2}Mn_{3.2}Ga_{0.6} melt spun ribbons by annealing.** *M.U. Khan*¹, *O.F. Alshammari*¹, *B. Balasubramanian*², *B. Das*², *D.J. Sellmyer*², *A. Us Saleheen*³ and *S. Stadler*³ *1. Physics, Miami University, Oxford, OH; 2. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 3. Physics & Astronomy, Louisiana State University, Baton Rouge, LA*
- BU-11. Magnetic properties of Sm-Fe-N bulk magnets prepared from Cu-plated Sm-Fe-N powder.** *T. Saito*¹, *T. Deguchi*² and *H. Yamamoto*² *1. Chiba Institute of Technology, Chiba, Japan; 2. KRI, Kyoto, Japan*
- BU-12. Texture And Magnetism In Nanocrystalline (SmCo₅)_{0.6}(PrCo₅)_{0.4} Permanent Magnets.** *X. Xu*¹, *H. Zhang*¹, *M. Yue*¹, *Q. Lu*¹, *D. Zhang*¹, *W. Liu*¹ and *Q. Wu*¹ *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*
- BU-13. Microstructure and Magnetic Properties of Hot Deformed Pr₂(Fe,Co)₁₄B/PrCo₅ Hybrid Magnet Doped by PrCu Alloy.** *D. Zhou*¹, *D. Zhang*¹, *Y. Ming*¹, *Q. Lu*¹, *W. Liu*¹ and *J. Zhang*¹ *1. College of Materials Science and Engineering, Beijing University of Technology, BeiJing, China*

- BU-14. Revealing on Metallurgical Behavior of Iron-rich $\text{Sm}(\text{Co}_{0.65}\text{Fe}_{0.26}\text{Cu}_{0.07}\text{Zr}_{0.02})_{7.8}$ Sintered Magnets.** K. Song¹, W. Sun¹, H. Chen¹, N. Yu¹, Y. Fang¹, M. Zhu¹ and W. Li¹
1. Division of Functional Materials, Central Iron and Steel Research Institute, China, Beijing, China
- BU-15. Cold Plasma Cleaning of Magnetic Nanoparticle Surface with Optimized Pulse Processing.** N. Poudyal¹, G. Han¹, Z. Qiu¹, K. Elkins¹, J. Mohapatra¹, K.H. Gandha¹, R. Timmons² and P. Liu¹ 1. Department of Physics, University of Texas at Arlington, Arlington, TX; 2. Department of Chemistry and Biochemistry, University of Texas at Arlington, Arlington, TX
- BU-16. Double shifted hysteresis loops in ferrimagnetic heterostructures.** B. Hebler¹, O. Hellwig² and M. Albrecht¹
1. Experimentalphysik IV, University Augsburg, Augsburg, Germany; 2. Western Digital Company, San Jose, CA

TUESDAY
AFTERNOON
2:30

GRAND BALLROOM

Session BV
PERMANENT MAGNET SYNTHESIS AND
PROCESSING II
(Poster Session)

A-Ru Yan, Chair
NIMTE, Ningbo, China

- BV-01. The microstructure and magnetic properties of La doped Pr-Fe-B magnet.** Y. Li¹, M. Zhang², K. Wu¹, B. Shen² and J. Sun² 1. Faculty of Science, Wuhan University of Science and Technology, Wuhan, China; 2. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China
- BV-02. Variation of coercivity with Ce content in $(\text{PrNdCe})_2\text{Fe}_{14}\text{B}$ sintered magnets.** X. Zhang¹, L. Zhang¹, Z. Li¹, J. Lan¹, Y. Liu¹, Q. Ma¹, Y. Li¹ and Q. Zhao¹ 1. Key Laboratory of Integrated Exploitation of Bayan Obo Multi-Metal Resources, Inner Mongolia University of Science and Technology, Baotou, China
- BV-03. Production of $\text{Sm}_5\text{Fe}_{17}$ magnets by spark plasma sintering method.** Y. Sajima¹, T. Horita¹ and T. Saito¹ 1. Chiba Institute of Technology, Chiba, Japan
- BV-04. Coercivity of Nd-Fe-B hot-deformed magnets prepared by the spark plasma sintering method.** T. Saito¹, S. Nozaki¹ and Y. Sajima¹ 1. Chiba Institute of Technology, Chiba, Japan

- BV-05. Structure and Properties of Sintered MM–Fe–B Magnets.** R. Shang¹, J. Xiong¹, R. Li¹, W. Zuo¹, J. Zhang¹, T. Zhao¹, R. Chen², B. Shen¹ and J. Sun¹ *1. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*
- BV-06. Magnetic Properties Of (Misch-metal, Nd)-Fe-B Melt Spun Magnets.** R. Li¹, R. Shang¹, J. Xiong¹, D. Liu¹, H. Kuang¹, W. Zuo¹, T. Zhao¹, J. Sun¹ and B. Shen¹ *1. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- BV-07. Magnetic properties of microfabricated Nd-Fe-B thin films with grid pattern.** A. Sugawara¹, R. Kurosu¹, H. Iwama¹, M. Doi¹ and T. Shima¹ *1. Faculty of Engineering, Tohoku Gakuin University, Tagajo, Japan*
- BV-08. Enhancement in $(BH)_{\max}$ of PLD-made isotropic Nd-Fe-B thick film magnets deposited on Si substrates.** Y. Chikuba¹, D. Shimizu¹, A. Yamashita¹, T. Yanai¹, M. Nakano¹ and H. Fukunaga¹ *1. Nagasaki University, Nagasaki, Japan*
- BV-09. Thermal activation analysis on Nd-Fe-B hot-deformed magnets with Pr-Cu grain boundary diffusion process.** L. Zhang¹, S. Okamoto⁶, T. Yomogita⁶, N. Kikuchi³, O. Kitakami⁶, H. Sepehri-Amin⁵, T. Ohkubo⁴, K. Hono⁴, T. Akiya² and K. Hioki² *1. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan; 2. Daido Steel Co., Ltd, Daido-cho, Japan; 3. IMRAM Tohoku University, Sendai, Japan; 4. Magnetic Materials Unit, NIMS, Tsukuba, Japan; 5. NIMS, Japan, Tsukuba, Japan; 6. IMRAM, Tohoku University, Sendai, Japan*
- BV-10. Hot-pressed graphene/Nd₂Fe₁₄B composite magnets with improved thermal and mechanical properties.** L. Zheng^{1,2}, Y. Sun¹, M. Zhu¹ and W. Li¹ *1. Central Iron & Steel Research Institute, Beijing, China; 2. Hebei University of Engineering, Handan, China*
- BV-11. Grain Boundary Diffusion of Different Rare Earth Elements in Nd-Fe-B Sintered Magnets by Experiment and FEM Simulation.** K. Loewe¹, D. Benke¹, M. Duerrschnabel¹, L. Molina-Luna¹, K.P. Skokov¹ and O. Gutfleisch¹ *1. Department of Material- and Geosciences, TU Darmstadt, Darmstadt, Germany*
- BV-12. Microstructural analysis of anisotropic α -Fe/Nd-Fe-B exchange-spring magnets produced by high pressure crystallization.** Z. Turgut¹, R. Wheeler^{1,2}, Y. Shen^{1,3}, J. Horwath¹ and L. Semiatin¹ *1. Air Force Research Laboratory, Wright-Patterson AFB, OH; 2. UES Inc., Dayton, OH; 3. University of Dayton, Dayton, OH*
- BV-13. Characterization of bulk anisotropic nanocrystalline RCo₅ (R=Sm, Pr) permanent magnets.** Y. Ming¹, D. Zhang¹ and W. Liu¹ *1. Beijing University of Technology, Beijing, China*

- BV-14. Nitrogenation process of $\text{Sm}_2\text{Fe}_{17}\text{N}_x$ in mixed-gas of NH_3 and H_2 .** *N. Imaoka*^{1,2}, *K. Ozaki*¹ and *T. Iriyama*³ *1. Advanced Industrial Science and Technology (AIST), Nagoya, Japan; 2. Asahi Kasei Corporation, Fuji, Japan; 3. Daido Steel Co., Ltd., Nagoya, Japan*
- BV-15. Strain Effect on FeN Bulk Magnet Introduced by 9 T High Field Annealing.** *Y. Jiang*¹, *M. Brady*³, *O. Rios*³ and *J. Wang*² *1. MINT center, Minneapolis, MN; 2. Electrical and Computer Engineering, School of Physics & Astronomy, Minneapolis, MN; 3. Oak Ridge National Laboratory, Oak Ridge, TN*
- BV-16. Texture Development Mechanism during Desorption-Recombination in HDDR Processed Nd-Fe-B Magnet.** *T. Kim*¹, *J. Lee*², *H. Kwon*³ and *C. Yang*¹ *1. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, The Republic of Korea; 2. Powder & Ceramics Division, Korea Institute of Materials Science, Changwon, The Republic of Korea; 3. Department of Materials Science and Engineering, Pukyong National University, Busan, The Republic of Korea*

TUESDAY
AFTERNOON
2:30

GRAND BALLROOM

Session BW
COMPLEX OXIDES I: FILMS AND NEW MAGNETIC MATERIALS
(Poster Session)

Liang-Jian Zou, Chair
Institute of Solid State Physics, Chinese Academy of Sciences,
Hefei, China

- BW-01. A novel structural expansion in SrTiO_3 substrate tuned by electric field and visible-light.** *Y. Li*¹, *S. Peng*¹, *T. Mao*¹, *D. Wang*¹, *K. Wu*¹ and *J. Sun*² *1. Faculty of Science, Wuhan University of Science and Technology, Wuhan, China; 2. State key laboratory for Magnetism, Chinese Academy of Sciences, Institute of Physics, Beijing, China*
- BW-02. Enhancement in β -phase and Energy Harvesting Capability of PVDF Films Embedded with Room Temperature Ferromagnetic Gd_5Si_4 Nanoparticles.** *N.M. D'Souza*¹, *S. Harstad*¹, *N. Soin*², *S. Gupta*³, *V.K. Pecharsky*³, *T. Shah*², *E. Siores*² and *R. Hadimani*¹ *1. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 2. Institute of Renewable Energy & Environment Technology, University of Bolton, Bolton, United Kingdom; 3. Division of Materials Science and Engineering, Ames Laboratory, Ames, IA*
- BW-03. Point Defects in MgO Single Crystal Induced by ^{60}Co γ -ray and Neutron Irradiation.** *M. Cao*¹, *Y. Ma*¹, *X. Wang*¹, *C. Ma*¹, *W. Zhou*¹, *X. Wang*¹, *W. Tan*¹ and *J. Du*² *1. Nanjing University of Science and Technology, Nanjing, China; 2. Physics, Nanjing University, Nanjing, China*

- BW-04. Ag₃PO₄ nanoparticle-decorated Ni/C nanocapsules with tunable electromagnetic properties.** C. Cui^{1,2}, P. Zhou^{1,2}, X. Liu^{1,2} and S. Or² *1. School of Materials Science and Engineering, Anhui University of Technology, Maanshan, China; 2. Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong*
- BW-05. Unsaturated Magnetoconductance of Epitaxial La_{0.7}Sr_{0.3}MnO₃ Thin Films in Pulsed Magnetic Fields up to 60 T.** W. Niu¹, X. Wang¹, Y. Xu¹ and R. Zhang¹ *1. Nanjing University, Nanjing, China*
- BW-06. Rectifying characteristics, photoelectric properties and magnetoresistance in heterojunctions composed of La_{0.9}Hf_{0.1}MnO₃/0.05%Nb-doped SrTiO₃.** Y. Qi¹, J. Gao¹ and L. Wang² *1. Physics, The University of Hong Kong, Hong Kong, Hong Kong; 2. School of Materials Science and Engineering, Shanghai University, Shanghai, China*
- BW-07. Study of the Metastable State of La_xHf_{1-x}MnO₃ using Scanning Tunneling Microscopy.** J. Zeng¹ and J. Gao¹ *1. Physics, The University of Hong Kong, Hong Kong, Hong Kong*
- BW-08. Abnormal Enhancement of Ferromagnetism for thin LaMnO_{3+δ} films with decreasing oxygen pressure.** A. Zhang¹, W. Zhang¹, J. Lin³ and X. Wu² *1. College of Science, Hohai University, Nanjing, China; 2. Nanjing University, Nanjing, China; 3. Taiwan University, Taipei, Taiwan*
- BW-09. Electric Field Control of the Small-polaron Hopping Conduction in Pr_{0.7}(Ca_{0.6}Sr_{0.4})_{0.3}MnO₃/PMN-PT Heterostructure.** H. Kuang¹, J. Wang¹, Y. Zhao¹, Y. Liu¹, F. Hu¹, J. Sun¹ and B. Shen¹ *1. State Key Laboratory of Magnetism, Institute of Physics, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Beijing, China*
- BW-10. Novel temperature dependent photoelectronic behaviors of ultrathin films manganite-based junctions.** L.H. Huang^{1,2} *1. Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. College of Science, Wuhan University of Science and Technology, Wuhan, China*
- BW-11. Thermodynamic Stability and Control of Oxygen Reactivity at Functional Oxide Interfaces: EuO on ITO.** T. Gerber¹, P. Lömker¹, B. Zijlstra¹, C. Besson^{2,3}, D.N. Mueller¹, W. Zander⁴, J. Schubert⁴, M. Gorgoi⁵ and M. Müller¹ *1. Peter Grünberg Institute, PGI-6, Research Center Jülich, Jülich, Germany; 2. Institute of Inorganic Chemistry, RWTH Aachen University, Aachen, Germany; 3. Department of Chemistry, George Washington University, Washington, DC; 4. Peter Grünberg Institute, PGI-9, Research Center Jülich, Jülich, Germany; 5. Helmholtz Center Berlin, Berlin, Germany*
- BW-12. Strain Effect on Electronic Structure in La_{2/3}Sr_{1/3}MnO₃/BiFeO₃ Bilayers.** L. Yin¹ and W. Mi¹ *1. Department of Applied Physics, Tianjin University, Tianjin, China*

BW-13. Spin-Orbit Induced Anisotropy in the Magnetoconductance of the Two-Dimensional Electron System in α -Al₂O₃-SrTiO₃ Heterostructures. *D. Fuchs*¹, *K. Wolff*¹, *R. Schäfer*¹, *R. Schneider*¹ and *H. von Löhneysen*¹ *1. Institute for Solid State Physics, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*

BW-14. Magnetoelectric properties and ferromagnetic resonance linewidth of Pb(Zr_{0.5}Ti_{0.5})O₃/BaFe₁₂O₁₉ multiferroic heterostructures. *D. Chen*¹, *Y. Li*^{3,2}, *H. Zhang*^{4,2} and *G. Wang*¹ *1. College of Materials and Chemical Engineering, Hainan University, Haikou, China; 2. School of Microelectronics and Solid-State Electronics, University of Electronic Science and Technology of China, Chengdu, China; 3. State Key Lab of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 4. University of Electronic Science and Technology of China, Chengdu, China*

BW-15. Enhanced Magnetization in Pulsed Laser Deposited Nano-Crystalline Gallium ferrite thin films. *H. Roy Dakua*^{1,3}, *R. Mahendiran*³, *N. Venkataramani*² and *S. Prasad*¹ *1. Physics, Indian Institute of Technology Bombay, Mumbai, India; 2. Department of Metallurgical Engineering & Materials Science, Indian Institute of Technology Bombay, Mumbai, India; 3. Physics Dept, National University of Singapore, Singapore*

WEDNESDAY
MORNING
8:30

MARDI GRAS A-E

Session CA
SYMPOSIUM: NEW DEVELOPMENTS IN
NANOSCALE SENSING WITH NITROGEN-VACANCY
CENTER MAGNETOMETRY

André Thiaville, Chair
Universite Paris-Sud, Orsay, France

8:30

CA-01. Imaging magnetism at the nanoscale with a single spin microscope. (Invited) *V. Jacques*¹ *1. Laboratoire Charles Coulomb, CNRS and Université de Montpellier, Montpellier, France*

9:06

CA-02. Magneto-optical imaging of thin magnetic films using spins in diamond. (Invited) *D.A. Simpson*^{1,3}, *J. Tetienne*¹, *J. McCoe*¹, *K. Ganesan*¹, *L. Hall*¹, *S. Petrou*⁴, *R. Scholten*¹ and *L. Hollenberg*^{1,3} *1. Physics, University of Melbourne, Parkville, VIC, Australia; 3. Centre for Neural Engineering, University of Melbourne, Parkville, VIC, Australia; 4. Florey Neuroscience Institute, University of Melbourne, Parkville, VIC, Australia*

9:42

- CA-03. Detecting magnetic fields from nuclear spins using nitrogen-vacancy centers in diamond. (Invited)** *D. Rugar¹, J. Mamin¹ and M. Sherwood¹ 1. IBM Almaden Research Center, San Jose, CA*

10:18

- CA-04. Nanoscale Magnetic Imaging With A Single-Spin Based Quantum Sensor. (Invited)** *P. Maletinsky¹ 1. Physics, University of Basel, Basel, Switzerland*

10:54

- CA-05. Nanoscale measurement of magnetic field with high dynamic range. (Invited)** *J. Wrachtrup¹ 1. Physics, University of Stuttgart, Stuttgart, Germany*

WEDNESDAY
MORNING
8:30

MARDI GRAS F-H

**Session CB
MAGNONICS I**

Yan Zhou, Chair
University of Hong Kong, Hong Kong

8:30

- CB-01. Propagating spin waves with sub-100 nm wavelength in nanostructured magnetic thin film. (Invited)** *H. Yu^{1,3}, O. D’Allivy Kelly², V. Cros², R. Bernard², P. Bortolotti², A. Anane², F. Brandl³, F. Heimbach³ and D. Grundler⁴ 1. Fert Beijing Research Institute, School of Electronic and Information Engineering, Beihang University, Beijing, China; 2. Unite Mixte de Physique, CNRS, Thales, Univ Paris- Sud, Universite, Paris-Saclay, Palaiseau, France; 3. Physics Department, Technische Universitaet Muenchen, Garching b. Muenchen, Germany; 4. Laboratory of Nanoscale Magnetic Materials and Magnonics, Institute of Materials, School of Engineering, Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, Switzerland*

9:06

- CB-02. Characterization of spin wave propagation in YIG micro-fabricated waveguides.** *M. Collet¹, O. Gladii³, M. Evelt², P. Bortolotti¹, V. Cros¹, S. Demokritov², Y. Henry³, M. Bailleul³, V.E. Demidov² and A. Anane¹ 1. Unité Mixte de Physique CNRS/Thales and Université Paris Sud, Palaiseau, France; 2. Institute for Applied Physics, University of Muenster, Muenster, Germany; 3. Institut de Physique et Chimie des Matériaux de Strasbourg, Strasbourg, France*

9:18

- CB-03. Propagation Of Confined Spin-Wave Modes In Sub-Micron Sized CoFeB Waveguides.** *F. Ciubotaru*^{1,2}, *C. Adelmann*¹, *T. Fischer*^{3,4}, *A. Chumak*³, *M. Manfrini*¹, *P. Pirro*³, *T. Devolder*⁵, *B. Hillebrands*³ and *I.P. Radu*¹ *1. imec, Leuven, Belgium; 2. Departement Electrotechniek (ESAT), KU Leuven, Leuven, Belgium; 3. Department of Physics and Landesforschungszentrum OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany; 4. MAINZ Graduate School of Excellence, Mainz, Germany; 5. University Paris-Sud, Orsay, France*

9:30

- CB-04. Magnetic domain walls as reconfigurable spin-wave nanochannels. (Invited)** *K. Wagner*^{1,2}, *A. Kakay*¹, *K. Schultheiss*¹, *A. Henschke*¹, *T. Sebastian*¹ and *H. Schultheiss*^{1,2} *1. Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. TU Dresden, Dresden, Germany*

10:06

- CB-05. Spin wave energy distribution and the formation of bandgaps in a magnonic crystal.** *C.L. Ordóñez-Romero*¹, *Z. Lazcano-Ortiz*¹, *C. Rodriguez-Reyes*¹, *M. Aguilar-Huerta*¹, *J. Donlucas-Perez*¹, *M.O. Viguera-Zuniga*², *N. Qureshi*³, *O. Kolokoltsev*³ and *G. Monsivais*¹ *1. Solid State, Physics Institute, UNAM., Mexico City, Mexico; 2. Facultad de Ingenieria, Universidad de Veracruz, Boca del Rio, Mexico; 3. CCADET, UNAM, Ciudad de Mexico, Mexico*

10:18

- CB-06. Spin Wave Dynamics in Periodically Modulated One Dimensional Magnonic Crystals.** *S. Khanal*¹ and *L. Spinu*¹ *1. AMRI, University of New Orleans, New Orleans, LA*

10:30

- CB-07. Dynamically Switchable Signal Splitting In 2D Magnonic Microchips By Locally Controlled Spin-wave Caustics.** *F. Heussner*¹, *P. Pirro*¹, *A.A. Serga*¹ and *B. Hillebrands*¹ *1. Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, 67663 Kaiserslautern, Germany*

10:42

- CB-08. Spin-texture-based control of spin waves in patterned magnetic microstrips.** *K. Buchanan*¹, *G.A. Riley*¹ and *M.A. Asmat-Uceda*¹ *1. Physics, Colorado State University, Fort Collins, CO*

10:54

- CB-09. Spin Wave Quantization in Ferromagnetic Nanostripes with Width Down to 50 nm.** *S. Saha*^{1,4}, *S. Barman*², *Y. Otani*^{3,6} and *A. Barman*² *1. Laboratory for Mesoscopic Systems, Department of Materials, ETH Zurich, Zurich, Switzerland; 2. Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Centre for Basic Sciences, Kolkata, India; 3. ISSP, University of Tokyo, Kashiwa, Japan; 4. Laboratory for Micro- and Nanotechnology, Paul Scherrer Institute, Villigen, Switzerland; 6. RIKEN-CEMS, Wako, Japan*

11:06

- CB-10. Thickness Dependence of the Normal Modes in Artificial Square Spin Ice.** *Y. Li*¹, G. Gubbiotti², S. Morley³, F. Goncalves¹, M. Rosamond⁴, E. Linfield⁴, C.H. Marrows³, S. McVitie¹ and R. Stamps¹ *1. Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 2. Dipartimento di Fisica e Geologia, Istituto Officina dei Materiali del Consiglio Nazionale delle Ricerche, Perugia, Italy; 3. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 4. School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom*

11:18

- CB-11. Towards Magnonic Architectures in Circuit QED.** *A.D. Karenowska*¹, A.F. Van Loo¹, R.G. Morris¹ and S. Kosen¹ *1. Physics, University of Oxford, Oxford, United Kingdom*

WEDNESDAY
MORNING
8:30

LA GALERIES 1-2

Session CC
SPIN-ORBIT TORQUE AND SPIN-TRANSFER
TORQUE

Alice Mizrahi, Chair
Unité Mixte CNRS/Thales, Bourg la Reine, France

8:30

- CC-01. Field-free switching of perpendicular magnetization using spin-orbit torque and exchange bias of antiferromagnet.** *(Invited)* S.C. Baek¹, Y. Oh¹, C. Yang^{2,3}, E. Park^{3,4}, K. Lee², K. Kim^{5,6}, G. Go², J. Jeong⁷, B. Min³, H. Lee⁵, K. Lee² and B. Park¹ *1. Korea Advanced Institute of Science and Technology (KAIST), Daejeon, The Republic of Korea; 2. Korea University, Seoul, The Republic of Korea; 3. Center for Spintronics, Korea Institute of Science and Technology (KIST), Seoul, The Republic of Korea; 4. KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, The Republic of Korea; 5. Department of Physics, Pohang University of Science and Technology, Pohang, The Republic of Korea; 6. CNST, National Institute of Standards and Technology, Gaithersburg, MD; 7. Department of Materials Science & Engineering, Chungnam National University, Daejeon, The Republic of Korea*

9:06

- CC-02. Microscopic theory of spin-orbit torques in ferromagnet/heavy metal bilayers.** I. Ado¹, O. Tretiakov^{2,3} and M. Titov¹ *1. Radboud University, Nijmegen, Netherlands; 2. Tohoku University, Sendai, Japan; 3. Far Eastern Federal University, Vladivostok, Russian Federation*

9:18

- CC-03. Spin Orbit Torque in Co/Pt Bilayer Depending on Pt Crystal Structure.** *J. Ryu*^{1,2}, *C. Avci*², *M. Mann*², *M. Kohda*¹, *J. Nitta*¹ and *G. Beach*² *1. Materials Science, Tohoku University, Sendai, Japan; 2. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

9:30

- CC-04. Swapping Torque in Magnetic Bilayers.** *A. Manchon*¹ and *H.B. Saidaoui*¹ *1. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

9:42

- CC-05. Quantifying angular dependence of spin-orbit torques in Ta/CoFeB/MgO trilayers with perpendicular magnetic anisotropy.** *Y. Chen*¹, *H. Celik*¹, *T. Wang*¹, *H. Kannan*¹ and *J. Xiao*¹ *1. Physics and Astronomy, University of Delaware, Newark, DE*

9:54

- CC-06. Ultrafast spin-orbit torque switching with large field like torque.** *J. Lee*¹, *J. Kwon*¹, *J. Yoon*¹, *W. Legrand*¹, *X. Qiu*¹, *J. Son*¹, *R. Ramaswamy*¹, *R. Mishra*¹ and *H. Yang*¹ *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

10:06

- CC-07. Sign of Spin-Orbit Torques in ferrimagnetic GdFeCo.** *N. Roschewsky*¹, *T. Matsumura*², *S. Cheema*³, *T. Kato*², *S. Iwata*⁴ and *S. Salahuddin*⁵ *1. Department of Physics, University of California, Berkeley, Berkeley, CA; 2. Department of Electrical Engineering and Computer Science, Nagoya University, Nagoya, Japan; 3. Department of Materials Science and Engineering, University of California, Berkeley, Berkeley, CA; 4. Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan; 5. Department of Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA*

10:18

- CC-08. Spinterface Properties and Magnetic Anisotropy of the Perpendicular Magnetized Ferrimagnetic Insulator $\text{Tm}_3\text{Fe}_5\text{O}_{12}$.** *A. Quindeau*¹, *C. Avci*¹, *W. Liu*⁵, *C. Sun*³, *M. Mann*¹, *A. Tang*¹, *M. Onbasli*¹, *D. Bono*¹, *P. Voyles*³, *Y. Xu*², *J. Robinson*⁶, *G. Beach*¹ and *C.A. Ross*¹ *1. MIT, Cambridge, MA; 2. The University of York, York, United Kingdom; 3. Materials Science and Engineering, University of Wisconsin Madison, Madison, WI; 5. Electronics, University of York, York, United Kingdom; 6. University of Cambridge, Cambridge, United Kingdom*

10:30

- CC-09. Inverse Spin Hall Effect in Au-Ta Alloys.** *D. Qu*¹, *S. Huang*² and *C. Chien*¹ *1. Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 2. Department of Physics, National Taiwan University, Taipei, Taiwan*

10:42

CC-10. Spin-transfer-torque switching in magnetic tunnel junctions with perpendicular magnetized CoFeB-based free layer.

*H. Tomita*¹, *Y. Tanaka*¹, *H. Maehara*², *K. Nakamura*¹, *T. Kitada*¹, *S. Furukawa*¹, *H. Kubota*³, *A. Fukushima*³, *K. Yakushiji*³, *S. Yuasa*³ and *N. Watanabe*¹ *1. Tokyo Electron Yamanashi Limited, Nirasaki, Japan; 2. Tokyo Electron Limited, Tokyo, Japan; 3. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

10:54

CC-11. Tuning Spin Transfer Torque In Double Barrier Magnetic Tunnel Junctions.

*P. Coelho*¹, *P. Clément*¹, *C. Ducruet*², *L. Vila*¹, *R.C. Sousa*¹, *A. Timopheev*¹, *M. Chshiev*¹ and *C. Baraduc*¹ *1. SPINTEC, Univ. Grenoble-Alpes / CEA / CNRS, F-3800 Grenoble, France; 2. Crocus Technology, F-38000 Grenoble, France*

11:06

CC-12. Micromagnetic Modeling and Optimization of Co/Cu Multilayered Nanowire STT-MRAM.

*M. Al-Rashid*¹, *M. Maqableh*², *B. Stadler*² and *J. Atulasimha*¹ *1. Virginia Commonwealth University, Richmond, VA; 2. University of Minnesota, Minneapolis, MN*

11:18

CC-13. Thermally Driven Spin Transfer Torque in Magnetic Tunnel Junctions.

*A. Bose*¹, *A. Shukla*^{1,3}, *K. Konishi*³, *S. Jain*¹, *N. Asam*¹, *H.B. Sing*¹, *S. Bhuktare*¹, *D.D. Lam*², *Y. Fujii*², *S. Miwa*², *Y. Suzuki*² and *A. Tulapurkar*¹ *1. Electrical Engineering, Indian Institute of Technology, Bombay, Mumbai, India; 2. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 3. Osaka University, Osaka, Japan*

WEDNESDAY
MORNING
8:30

LA GALERIES 3

Session CD
DOMAIN WALL, VORTEX AND SKYRMION
DYNAMICS I

Jan Vogel, Chair
Institut Néel, CNRS, Grenoble, France

8:30

CD-01. Generation of skyrmions by chopping magnetic chiral stripe domains with an electric current.

*S. Lin*¹ *1. Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM*

8:42

CD-02. Collapse of a skyrmion in an ultrathin magnetic film.

S. Rohart^{1,2}, *J. Miltat*² and *A. Thiaville*² *1. Université Paris-Sud, Orsay, France; 2. Lab. Physique des Solides, Université Paris-Sud, Orsay, France*

- CD-03. Room-Temperature Stability and Motion Under Current of sub-100nm Skyrmions in Magnetic Nanotracks.** *W. Legrand¹, D. Maccariello¹, N. Reyren¹, K. Garcia-Hernandez¹, C. Moreau-Luchaire¹, K. Bouzehouane¹, V. Cros¹ and A. Fert¹* *1. Unité Mixte de Physique CNRS/Thales and Université Paris-Sud, Palaiseau, France*

9:06

- CD-04. Magnetic Skyrmion In Multigrain Systems.** *M. Yoo^{1,2}, J. Adam¹, K. Garcia-Hernandez², C. Moreau-Luchaire², N. Reyren², V. Cros² and J. Kim¹* *1. Centre for Nanoscience and Nanotechnology (C2N), CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France; 2. Unité Mixte de Physique, CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, Palaiseau, France*

9:18

- CD-05. Magneto-transport Properties of Skyrmions in Amorphous Fe/Gd Multilayers.** *S.A. Montoya^{1,2}, M.V. Lubarda⁴, S. Couture^{1,2}, J.J. Chess³, B.J. McMorran³, V. Lomakin^{1,2} and E.E. Fullerton^{1,2}* *1. Center for Memory Recording Research, University of California San Diego, La Jolla, CA; 2. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA; 3. Department of Physics, University of Oregon, Eugene, OR; 4. Faculty of Polytechnics, University of Donja Gorica, Podgorica, Montenegro*

9:30

- CD-06. Chiral magnetic excitations in FeGe films.** *E. Turgut¹, A. Park¹, A. Moehle¹ and G.D. Fuchs¹* *1. Applied and Engineering Physics, Cornell University, Ithaca, NY*

9:42

- CD-07. Experimental Observation of the Skyrmion Hall Effect. (Invited)** *W. Jiang¹, X. Zhang³, G. Yu⁴, W. Zhang¹, X. Wang², M. Jungfleisch¹, J.E. Pearson¹, X. Cheng², O. Heinonen¹, K.L. Wang⁴, Y. Zhou³, A. Hoffmann¹ and S. te Velthuis¹* *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Department of Physics, Bryn Mawr College, Bryn Mawr, PA; 3. Department of Physics, The University of Hong Kong, Hong Kong, Hong Kong; 4. Electrical Engineering, UCLA, Los Angeles, CA*

10:18

- CD-08. Coupled vortex gyration in the diamond state studied by time-resolved scanning electron microscopy with polarization analysis.** *F. Klödt¹, R. Frömter¹, S. Kuhrau¹, P. Staack¹ and H. Oepen¹* *1. Institut für Nanostruktur- und Festkörperphysik, Universität Hamburg, Hamburg, Germany*

10:30

- CD-09. Collective modes in three-dimensional magnonic vortex crystals.** *G. Meier¹, M. Hünz², C.F. Adolff², B. Schulte², J. Möller² and M. Weigand³* *1. Max Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany; 2. University of Hamburg, Hamburg, Germany; 3. Max Planck Institute for Intelligent Systems, Stuttgart, Germany*

- CD-10. Synchronizing Spin Torque Vortex Oscillators For Pattern Recognition.** *P. Talatchian*¹, M. Romera¹, R. Lebrun¹, F. Abreu Araujo¹, P. Bortolotti¹, V. Cros¹, J. Grollier¹, K.J. Merazzo^{2,3}, L. Vila^{2,4}, R. Ferreira⁶, M. Cyrille^{2,3}, U. Ebels², D. Vodenicarevic⁵, N. Locatelli⁵ and D. Querlioz⁵ *1. Unité Mixte de Physique, CNRS/Thales, Univ. Paris-Sud, Université Paris-Saclay, Palaiseau, France; 2. Univ. Grenoble Alpes, CEA, CNRS, SPINTEC, Grenoble, France; 3. Univ. Grenoble Alpes, CEA, LETI MINATEC, Grenoble, France; 4. Univ. Grenoble Alpes, CEA, INAC, NM, Grenoble, France; 5. Institut d'Électronique Fondamentale, CNRS UMR 8622, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France; 6. International Iberian Nanotechnology Laboratory (INL), Braga, Portugal*

- CD-11. Control of Deterministic Chaos in a Nucleation of a Magnetic Vortex.** *H. Han*¹, S. Lee¹, D. Jung¹, M. Im^{2,3}, J. Hong³, P. Fischer⁴ and K. Lee¹ *1. School of Materials Science and Engineering, Ulsan National Institute of Science and Technology, Ulsan, The Republic of Korea; 2. CXRO, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Department of Emerging Materials Science, Daegu Gyeongbuk Institute of Science and Technology, Daegu, The Republic of Korea; 4. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA*

- CD-12. Resonant Excitation of the First Order Gyromode in Magnetic Vortex Structures: Time-Resolved Imaging and Vortex Core Reversal.** *G. Dieterle*¹, A. Gangwar^{1,2}, J. Förster¹, M. Noske¹, H. Stoll¹, I. Bykova¹, M. Weigand¹, G. Woltersdorf³, C. Back² and G.A. Schuetz¹ *1. Modern Magnetic Systems, Max-Planck-Institut für Intelligent Systems, Stuttgart, Germany; 2. Universität Regensburg, Regensburg, Germany; 3. Department of Physics, University of Halle, Halle, Germany*

- CD-13. Spin-wave excitation modes in thick vortex-state circular ferromagnetic nanodots.** *R.V. Verba*^{1,2}, A. Hierro-Rodriguez¹, D. Navas¹, J. Ding³, X. Liu³, A. Adeyeye³, K. Guslienko^{4,5} and G.N. Kakazei^{1,3} *1. IFIMUP-IN/Department of Physics and Astronomy, University of Porto, Porto, Portugal; 2. Institute of Magnetism, Kyiv, Ukraine; 3. Department of Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore; 4. Departamento de Física de Materiales, Universidad del País Vasco, San Sebastian, Spain; 5. IKERBASQUE, the Basque Foundation for Science, Bilbao, Spain*

Session CE
PATTERNED FILMS I

Axel Hoffmann, Chair
Argonne National Laboratory, Argonne, IL

8:30

- CE-01. Light localization and magneto-optic enhancement in magneto-plasmonic meta-structures. (Invited)** M. Rollinger¹, P. Thielen¹, E. Melander², E. Östman², V. Kapaklis², M. Cinchetti¹, A. Garcia-Martin³, M. Aeschlimann¹ and E. Papaioannou¹ *1. Physics, TU Kaiserslautern, Kaiserslautern, Germany; 2. Physics & Astronomy, Uppsala University, Uppsala, Sweden; 3. IMM-Instituto de Microelectronica de Madrid, Madrid, Spain*

9:06

- CE-02. Efficient Excitation of Perpendicular Standing Spin-Waves in CoFeB and YIG Films.** A. Navabi¹, M. Yazdani¹, P. Khalili¹ and K.L. Wang¹ *1. UCLA, Los Angeles, CA*

9:18

- CE-03. Single-Step Nanopatterning of Multicomponent Magnetic Metamaterials.** M. Urbanek^{1,2}, V. Krizakova², J. Gloss³, M. Horky², L. Flajsman¹, M. Schmid³, T. Sikola^{1,2} and P. Varga^{3,1} *1. CEITEC BUT, Brno University of Technology, Brno, Czech Republic; 2. Institute of Physical Engineering, Brno University of Technology, Brno, Czech Republic; 3. Institute of Applied Physics, Vienna University of Technology, Vienna, Austria*

9:30

- CE-04. Formation of Induced Anisotropy in Alternating Co/Pt and Co/Pd Stripe Patterns.** S. Kim¹, Y. Nam², Y. Kim¹, J. Choi³, H. Lee¹ and S. Lim¹ *1. Materials Science and Engineering, Korea University, Seoul, The Republic of Korea; 2. Research and Development Division, SK Hynix Semiconductor Inc., Icheon, The Republic of Korea; 3. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, The Republic of Korea*

9:42

- CE-05. Splitting of the Vortex Gyrotropic Mode in Ferromagnetic Disks with a Nonmagnetic Void.** J. Ding¹, S. Lendinez¹, P.N. Lapa^{1,2}, T. Khaire¹, J.E. Pearson¹, A. Hoffmann¹ and V. Novosad¹ *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Texas A&M University, College Station, TX*

CE-06. Ordered Arrays of Hard/Soft Bilayer Magnetic Antidots Prepared By Focused Ion Beam Nanopatterning.

A. Kaidatzis¹, R. Perez del Real², R. Alvaro³, D. Niarchos¹ and J. Garcia-Martin³ 1. NCSR Demokritos, Aghia Paraskevi, Greece; 2. ICMM, Madrid, Spain; 3. IMM-Instituto de Microelectronica de Madrid, CSIC, Tres Cantos, Spain

10:06

CE-07. Temperature and orientation dependent exchange coupling in epitaxial nanomagnets. M.S. Lee¹, T. Wynn¹, E. Folven²,

R.V. Chopdekar³, A. Scholl⁴, A. Young⁴, S.T. Retterer⁵, J.K. Grepstad² and Y. Takamura¹ 1. Materials Science & Engineering, UC Davis, Davis, CA; 2. Department of Electronics and Telecommunications, NTNU, Trondheim, Norway; 3. Chemical Engineering/Materials Science, University of California, Davis, Davis, CA; 4. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 5. Oak Ridge National Laboratory, Oak Ridge, TN

10:18

CE-08. Artificial Spin Ice: New Developments in Vertex Frustrated Lattices and in Magnetotransport. (Invited) P. Schiffer¹,

I. Gilbert¹, B.L. Le¹, J. Sklenar¹, J. Park¹, Y. Lao¹, C. Nisoli², G. Chern³, D. Rench⁴, N. Samarth⁴, A. Scholl⁵, M. Manno⁶, J.D. Watts⁶ and C. Leighton⁶ 1. University of Illinois at Urbana-Champaign, Champaign, IL; 2. Los Alamos National Laboratory, Los Alamos, NM; 3. University of Virginia, Charlottesville, VA; 4. Penn State University, University Park, PA; 5. ALS - LBNL, Berkeley, CA; 6. University of Minnesota, Minneapolis, MN

10:54

CE-09. Thermally-achieved low energy states in manganite-based artificial spin ice arrays. R.V. Chopdekar¹, M.S. Lee¹,

A.M. Kane¹, S.T. Retterer³, A. Scholl² and Y. Takamura¹ 1. Materials Science and Engineering, University of California - Davis, Davis, CA; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Center for Nanophase Materials Science, Oak Ridge National Laboratory, Oak Ridge, TN

11:06

CE-10. Thermally induced magnetic relaxation in square artificial spin ice. M.S. Andersson¹, S.D. Pappas², H. Stopfel²,

E. Östman², A. Stein³, P. Nordblad¹, R. Mathieu¹, B. Hjörvarsson² and V. Kapaklis² 1. Engineering Sciences, Uppsala University, Uppsala, Sweden; 2. Materials Physics, Uppsala University, Uppsala, Sweden; 3. Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY

11:18

CE-11. Order and thermal excitations in square artificial spin ice modeled with Monte Carlo simulations. E. Östman¹,

J.C. Andresen³, H. Stopfel¹, U. Arnalds², A. Stein⁴, B. Hjörvarsson¹, P. Helenius³ and V. Kapaklis¹ 1. Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. University of Iceland, Reykjavik, Iceland; 3. Royal Institute of Technology, Stockholm, Sweden; 4. Brookhaven National Laboratory, Brookhaven, NY

Session CF
MICROMAGNETICS AND MRAM

Chun-Yeol You, Chair
DGIST EMS, Daegu, The Republic of Korea

8:30

- CF-01. Fast computation of nucleation field maps in permanent magnets.** J. Kuehnel¹, J. Fischbacher², L. Exl^{3,4}, E. Mehofer¹ and T. Schrefl² *1. Faculty of Computer Science, University of Vienna, Vienna, Austria; 2. Danube University Krems, Wiener Neustadt, Austria; 3. Faculty of Mathematics, University of Vienna, Vienna, Austria; 4. Solid State Physics, TU Vienna, Vienna, Austria*

8:42

- CF-02. Solving the Inverse Magnetostatic Problem using the Adjoint Method.** F. Bruckner¹, G. Wautischer¹, C. Abert¹, C. Huber¹, C. Vogler² and D. Suess¹ *1. Institute of Solid State Physics, Christian Doppler Laboratory for Advanced Magnetic Sensing and Materials, Vienna University of Technology, Vienna, Austria; 2. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria*

8:54

- CF-03. Python interface for OOMMF.** M. Beg¹, R. Pepper¹ and H. Fangohr¹ *1. Computational Modelling Group, University of Southampton, Southampton, United Kingdom*

9:06

- CF-04. Virtual Micromagnetics: A Platform for Accessible and Reproducible Micromagnetic Simulation.** M. Vousden¹, M. Bisotti¹, M. Albert¹ and H. Fangohr¹ *1. Computational Modelling Group, University of Southampton, Southampton, United Kingdom*

9:18

- CF-05. Concurrent Processing Approach to Micromagnetic Simulations.** S. Fu^{1,3}, M. Kuteifan^{1,3}, S. Couture^{1,3}, M. Menarini^{1,3}, I. Volvach^{1,2} and V. Lomakin^{1,3} *1. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 2. Material Science and Engineering, University of California, San Diego, San Diego, CA; 3. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA*

- CF-06. Coupling Electrodynamics and Micromagnetics: Modeling of Eddy Currents.** *S. Couture*^{1*}, *R. Chang*², *I. Volvach*³, *S. Fu*⁴ and *V. Lomakin*⁵ *1. Electrical Engineering, University of California, San Diego, La Jolla, CA; 2. Oracle Corporation, San Diego, CA; 3. Material Science and Engineering, University of California, San Diego, La Jolla, CA; 4. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 5. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA*

- CF-07. Monitoring Bloch Points Using Winding Number In Micromagnetic Simulations.** *A. Wartelle*¹, *S. Jamet*², *C. Thirion*³, *O. Fruchart*⁴ and *J. Toussaint*³ *1. QUEST, Institut Néel, Grenoble, France; 2. Nano, Institut Neel, Grenoble, France; 3. Institut Néel, CNRS, Grenoble, France; 4. SPINTEC, CNRS, Grenoble, France*

- CF-08. A self-consistent spin-diffusion model for micromagnetics.** *C. Abert*¹, *M. Ruggeri*⁴, *F. Bruckner*³, *C. Vogler*³, *A. Manchon*², *D. Praetorius*⁴ and *D. Suess*³ *1. Institute of Solid State Physics, Christian Doppler Laboratory for Advanced Magnetic Sensing and Materials, Vienna University of Technology, Vienna, Austria; 2. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 3. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 4. Institute for Analysis and Scientific Computing, TU Wien, Vienna, Austria*

- CF-09. Probing colored magnetization dynamics by formulae of differentiation.** *P. Thibaudeau*¹, *J. Tranchida*^{1,2} and *S. Nicolis*² *1. DAM, Commissariat à l'Energie Atomique, Monts, France; 2. Laboratoire de Mathématiques et Physique Théorique, Université François Rabelais, Tours, France*

- CF-10. All-optical helicity dependent magnetization manipulation in Co/Pt and Co/Pd multilayers.** *G. Kichin*¹, *Y. Tsema*¹, *O. Hellwig*², *V.V. Mehta*², *A. Kimel*¹, *A. Kirilyuk*¹ and *T. Rasing*¹ *1. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands; 2. Research, HGST, A Western Digital Company, San Jose, CA*

- CF-11. Materials and Device Optimization in Micromagnetic Systems.** *A. Kovacs*¹, *H. Oezelt*¹, *S. Bance*², *M. Schabes*³ and *T. Schrefl*¹ *1. Center for Integrated Sensor Systems, Danube University Krems, Wiener Neustadt, Austria; 2. Research and Development, Seagate Technology, Londonderry, United Kingdom; 3. Spin Transfer Technologies, Fremont, CA*

10:42

- CF-12. Current induced configurations in composite spring magnets.** *C.H. Lambert^{1,5}, M. Kuteifan⁴, M.V. Lubarda², E.E. Fullerton⁴, V. Lomakin⁴ and S. Mangin³* *1. Department of Electrical Engineering and Computer Science, UC Berkeley, Berkeley, CA; 2. Faculty of Polytechnics, Univeristy of Donja Gorica, San Diego, CA; 3. Institut Jean Lamour, Universite de Lorraine, Vandoeuvre-les-Nancy, France; 4. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA; 5. UMR CNRS 7198 – Université de Lorraine, Institut Jean Lamour, Nancy, France*

10:54

- CF-13. Write error rates of perpendicular spin-transfer-torque random access memory including micromagnetic effects.** *T. Pramanik¹, U. Roy², L.F. Register¹ and S.K. Banerjee¹* *1. Microelectronics Research Center, Department of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX; 2. TDK-Headway Technologies Inc., Milpitas, CA*

11:06

- CF-14. Influence of incomplete Boron removal on magnetic properties of CoFeB/MgO PMA systems for STT-MRAM.** *S. Wang¹, D. Apalkov¹, R.F. Evans², A. Meo² and R. Chantrell²* *1. Semiconductor R&D Center, Samsung Electronics, San Jose, CA; 2. Department of Physics, University of York, York, United Kingdom*

11:18

- CF-15. Significant reduction in switching current by transient pulse current for p-MTJ.** *S. Pathak¹, J. Cha¹, S. Lee¹ and J. Hong¹* *1. Materials Science and Engineering, Yonsei University, Seoul, The Republic of Korea*

WEDNESDAY
MORNING
8:30

STUDIO 9-10

Session CG

NON-RARE-EARTH FE ALLOYS AND COMPOUNDS

Balamurugan Balasubramanian, Chair
University of Nebraska, Lincoln, NE

8:30

- CG-01. Accelerating the Discovery of Permanent Magnet Alloys: A Bulk Combinatorial Approach. (Invited)** *C.I. Nlebedim¹, J. Geng¹, R. Ott¹ and M.J. Kramer²* *1. Critical Materials Institute, Ames Laboratory, US Department of Energy, Ames, IA; 2. Division of Materials Science and Engineering, Ames Laboratory, US Department of Energy, Ames, IA*

9:06

- CG-02. Withdrawn**

9:18

- CG-03. Fabrication and characterization of $L1_0$ -FeNi films with coercivity in excess of 1 kOe using a combinatorial sputtering approach.** A. Kaidatzis¹, G. Giannopoulos¹, V. Psycharis¹ and D. Niarchos¹ *1. Institute of Nanoscience and Nanotechnology, NCSR Demokritos, Athens, Greece, Athens, Greece*

9:30

- CG-04. Synthesis of $L1_0$ FeNi thin films via rapid thermal annealing.** J.C. De Rojas¹, D.A. Gilbert², J.W. Lau² and K. Liu¹ *1. Physics Department, University of California, Davis, Davis, CA; 2. NIST, Gaithersburg, MD*

9:42

- CG-05. Direct Liquid Phase Synthesis of ordered $L1_0$ FePt Nanoparticles with Bi Doping.** V. Tzitzios¹, F.M. Abel¹, N. Tzitzios², V. Alexandrakis² and G. Hadjipanayis¹ *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. NCSR Demokritos, Institute of Nanoscience and Nanotechnology, Athens, Greece*

9:54

- CG-06. Engineering Tetragonality and Microstructure in Fe_5SiB_2 -based Intermetallic Compounds.** R. Barua^{1,4}, B. Lejeune², I. McDonald², V. Harris^{1,4}, L. Lewis² and G. Hadjipanayis³ *1. Center for Microwave Magnetic Materials and Integrated Circuits, Northeastern University, Boston, MA; 2. Chemical Engineering, Northeastern University, Boston, MA; 3. Physics and Astronomy, University of Delaware, Newark, DE; 4. Electrical and Computer Engineering, Northeastern University, Boston, MA*

10:06

- CG-07. Correlation of Phase Fraction to Coercivity of Alnico Magnet Alloys.** W. Tang¹, L. Zhou¹, A. Palasyuk¹, K.W. Dennis¹, J. Cui¹, M.J. Kramer¹ and I.E. Anderson¹ *1. Ames Laboratory, Iowa State University, Ames, IA*

10:18

- CG-08. Study on the Structure and Magnetism of $Fe_3Co_3Nb_2$ Using Neutron Powder Diffractions.** X. Xu^{1,2}, B. Balasubramanian^{2,1}, B. Das^{1,2}, Y. Liu³, A. Huq³ and D.J. Sellmyer^{4,2} *1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE; 3. Oak Ridge National Laboratory, Oak Ridge, TN; 4. University of Nebraska - Lincoln, Lincoln, NE*

10:30

- CG-09. Core-shell α'' - $Fe_{16}N_2$ /Fe composite particles.** B. Ma¹, J. Liu¹ and J. Wang¹ *1. Electrical and computer Engineering, University of Minnesota, Minneapolis, MN*

10:42

- CG-10. Additive Manufacturing Of Enhanced Net-Shape Alnico Magnets.** E.M. White¹, A. Kassen¹, E. Simsek¹, W. Tang¹, R. Ott¹ and I.E. Anderson¹ *1. Division of Materials Sciences and Engineering, Ames Lab (USDOE), Ames, IA*

10:54

- CG-11. Cooperative and Non-Cooperative Magnetization Reversal in Alnico Permanent Magnets.** *R. Skomski¹, L. Ke², M.J. Kramer², I.E. Anderson², C. Wang², W. Zhang¹ and D.J. Sellmyer¹* 1. *Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE*; 2. *Ames Laboratory, Ames, IA*

11:06

- CG-12. Development of Controlled Solid State Grain Alignment for Alnico Permanent Magnets in Near-Final Shape.** *I.E. Anderson², A. Kassen², E. White², A. Palasyuk⁵, L. Zhou⁵, W. Tang⁵ and M.J. Kramer⁵* 2. *Division of Materials Sciences and Engineering, Ames Lab (USDOE), Ames, IA*; 5. *Ames Laboratory, Iowa State University, Ames, IA*

WEDNESDAY
MORNING
8:30

STUDIO 7-8

Session CH

NOVEL MAGNETIC ORDER IN THIN FILMS I

Christy Kinane, Chair

Rutherford Appleton Laboratory, STFC, Didcot, United Kingdom

8:30

- CH-01. The Experimental and Theoretical Study of Mn Doped Bi_2Te_3 .** *A. Ghasemi^{1*}, D. Kepaptsoglou², A.I. Figueroa³, G. Naydenov¹, P.J. Hasnip¹, M. Probert¹, Q.M. Ramasse⁴, G. van der Laan³, T. Hesjedal⁵ and V. Lazarov¹* 1. *University of York, York, United Kingdom*; 2. *SuperSTEM Laboratory, Daresbury, United Kingdom*; 3. *Diamond Light Source, Didcot, United Kingdom*; 4. *SuperSTEM Laboratory, Daresbury, United Kingdom*; 5. *University of Oxford, Oxford, United Kingdom*

8:42

- CH-02. Hidden Interfaces and Interface-driven ferromagnetic states in topological insulator heterostructures.** *V. Lauter¹, F. Katmis^{2,3}, D. Heiman⁴ and J. Moodera^{2,3}* 1. *QCMD, Neutron Sciences Directorate, Oak Ridge National Laboratory, Oak Ridge, TN*; 2. *Department of Physics, Massachusetts Institute of Technology, Cambridge, MA*; 3. *Francis Bitter Magnet Laboratory, Massachusetts Institute of Technology, Cambridge, MA*; 4. *Department of Physics, Northeastern University, Boston, MA*

8:54

- CH-03. Large Enhancement of Spin Orbit Torque Originated from Topological Surface States in Bi_2Se_3 .** *Y. Wang¹, D. Zhu¹, S. Shi¹, R. Mishra¹ and H. Yang¹* 1. *Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

9:06

- CH-04. Physicochemical Analysis Of Bi_2Te_3 – (Fe, Eu) – Bi_2Te_3 Junctions Grown By Molecular Beam Epitaxy Method.** *K.A. Balin*^{1,2}, *R. Rapacz*^{1,2}, *M. Weis*^{1,3}, *P. Ruello*³, *M. Lejman*³, *G. Vaudel*³, *B. Wilk*^{1,3} and *J. Szade*^{1,2} *1. A. Chelkowski Institute of Physics, University of Silesia in Katowice, Katowice, Poland; 2. Silesian Center for Education and Interdisciplinary Research, University of Silesia in Katowice, Chorzów, Poland; 3. Institut des Molécules et Matériaux du Mans, UMR CNRS 6283, Université du Maine, Le Mans, France*

9:18

- CH-05. Emerging Magnetic Order In Metallic Copper Induced By Proximity To Cobalt: A Detailed X-Ray Spectromicroscopy Study.** *Z. Chen*¹, *H. Ohldag*², *S. Redjai Sani*³, *A.D. Kent*³, *R. Kukreja*⁴, *E.E. Fullerton*⁴, *S. Bonetti*⁵, *T. Chase*⁶, *H. Durr*² and *J. Stohr*² *1. Physics, Stanford University, Stanford, CA; 2. SLAC National Accelerator Laboratory, Menlo Park, CA; 3. Department of Physics, New York University, New York, NY; 4. UC San Diego, La Jolla, CA; 5. Department of Physics, Stockholm University, Stockholm, Sweden; 6. Applied Physics, Stanford University, Stanford, CA*

9:30

- CH-06. Interface magnetism in Pt/ferromagnet heterostructures probed by XMCD and XRMR.** *C. Klewe*¹, *P. Shafer*¹, *P. Bougiatioti*², *J. Schmalhorst*², *D. Meier*², *O. Kuschel*³, *J. Wollschläger*³, *L. Bouchenoire*^{4,5}, *S. Brown*^{4,5}, *G. Reiss*², *T. Kuschel*⁶ and *E. Arenholz*¹ *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany; 3. Center of Physics and Chemistry of New Materials, Osnabrück University, Osnabrück, Germany; 4. XMaS, European Synchrotron Radiation Facility, Grenoble, France; 5. Department of Physics, University of Liverpool, Liverpool, United Kingdom; 6. Physics of Nanodevices, Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands*

9:42

- CH-07. Modifications of ultrathin Pt/Co/Pt films induced by visual and extreme ultraviolet light pulses.** *A. Maziewski*¹, *I. Sveklo*¹, *J. Kisielewski*¹, *Z. Kurant*¹, *A. Bartnik*², *M. Jakubowski*³, *E. Dynowska*³, *D. Klinger*³, *R. Sobierajski*³ and *A. Wawro*³ *1. Faculty of Physics, University of Białystok, Białystok, Poland; 2. Institute of Optoelectronics, Military University of Technology, Warsaw, Poland; 3. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland*

9:54

- CH-08. Novel magnetic states in gadolinium induced by interfacial hybridization with C_{60} .** *T. Moorsom*¹, *C. Kinane*², *S. Langridge*², *P. Gargiani*³, *M. Valvidares*³, *J.D. Witt*¹, *B. Hickey*¹, *G. Burnell*¹ and *O. Cespedes*¹ *1. School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom; 2. Rutherford Appleton Laboratory, Chilton, United Kingdom; 3. BOREAS beamline, ALBA Synchrotron Light Facility, Barcelona, Spain*

10:06

- CH-09. Observation of hybrid interfaces states at C_{60} /ferromagnetic heterojunctions.** *J. Zhang*², *C. Woffinden*² and *A. Pratt*^{1,2}
1. International Center for Young Scientists, National Institute for Materials Science, Tsukuba, United Kingdom; 2. Physics, University of York, York, United Kingdom

10:18

- CH-10. Determining the Induced Magnetic Moment in Graphene by Polarised Neutron Reflectivity and X-ray Magnetic Circular Dichroism.** *R. Aboljadaye*¹, *D.M. Love*¹, *T. Charlton*², *C. Kinane*², *C. Vas*³, *A. Ionescu*¹, *J. Llandro*¹, *M. Martin*⁴, *R. Weatherup*⁴, *C. Barnes*², *S. Hofmann*⁴ and *S. Langridge*¹
1. Cavendish Laboratory, Physics Department, University of Cambridge, Cambridge, United Kingdom; 2. ISIS, Rutherford Appleton Laboratory, Chilton, United Kingdom; 3. Paul Scherrer Institute, Zurich, Switzerland; 4. Department of Engineering, University of Cambridge, Cambridge, United Kingdom

10:30

- CH-11. Asymmetric intramolecular hybridization-induced spin polarization of TPT molecules chemisorbed on Fe/W(110) films and Co/Cu(111) nanoislands.** *D.E. Bürgler*¹, *V. Hess*¹, *T. Esat*¹, *R. Friedrich*^{2,3}, *F. Matthes*¹, *V. Caciuc*^{2,3}, *N. Atodiresel*^{2,3}, *S. Blügel*^{2,3} and *C.M. Schneider*¹ *1. Peter Grünberg Institute (PGI-6), Forschungszentrum Jülich, Jülich, Germany; 2. Institute for Advanced Simulation (IAS-1), Forschungszentrum Jülich, Jülich, Germany; 3. Peter Grünberg Institute (PGI-1), Forschungszentrum Jülich, Jülich, Germany*

10:42

- CH-12. Extended antiferromagnetic coupling at organic semiconductor/ferromagnetic interfaces.** *A. Pratt*², *P. Graziosi*³, *K. Tarafder*⁴, *I. Bergenti*¹, *J. Zhang*², *P. Oppeneer*⁴, *V.A. Dediu*³ and *Y. Yamauchi*⁵ *1. ISMN-CNR, Bologna, Italy; 2. Physics, University of York, York, United Kingdom; 3. CNR-ISMN, Bologna, Italy; 4. Uppsala University, Uppsala, Sweden; 5. National Institute for Materials Science, Tsukuba, Japan*

10:54

- CH-13. Magnetoresistance and anomalous Hall effect measurements in $B_{20}Fe_{1-x}Co_xGe$ epilayers with changing Helix wavelength.** *C.S. Spencer*¹, *J. Gayles*^{2,3}, *N.A. Porter*¹, *F. Freimuth*⁴, *S. Blügel*⁴, *J. Sinova*^{2,3}, *Y. Mokrousov*⁴ and *C.H. Marrows*¹
1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Institut für Physik, Mainz, Germany; 3. Texas A&M University, College Station, TX; 4. Peter Grünberg Institut and Institute for Advanced Simulation, Forschungszentrum Jülich, Jülich, Germany

11:06

- CH-14. Revealing the Spiral Magnetic Phase in Textured Erbium using Neutron Diffraction and Reflectometry.** *N. Satchell*^{1,2}, *J.D. Witt*², *C. Kinane*¹, *P. Curran*³, *S. Langridge*¹, *G. Burnell*² and *J. Cooper*¹ *1. Rutherford Appleton Laboratory, Chilton, United Kingdom; 2. Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 3. Physics, University of Bath, Bath, United Kingdom*

- CH-15. Depth Profile Investigation of $\text{LaAlO}_3(001)/\text{EuO}(001)$ using Polarised Neutron Reflectivity and Low Energy Muon Spin Rotation.** *R. Aboljadayel*¹, P. Baker², N. Steinke², T. Saerbeck³, A. Ionescu¹, Z. Salman⁴, C. Barnes¹, T. Prokscha⁴ and S. Langridge² *1. Cavendish Laboratory, Physics Department, University of Cambridge, Cambridge, United Kingdom; 2. ISIS, Rutherford Appleton Laboratory, Harwell, United Kingdom; 3. Institut Laue-Langevin, Grenoble, France; 4. Laboratory for Muon-Spin Spectroscopy, Paul Scherrer Institut, Zurich, Switzerland*

WEDNESDAY
MORNING
8:30

STUDIO 3-4

Session CI

COUPLING EFFECTS IN MAGNETOELECTRICS AND COMPLEX OXIDES

Dustin Gilbert, Chair
NIST, Gaithersburg, MD

8:30

- CI-01. Strain-Modulated Magnetic Reversal In Amorphous TbFe Film.** *T. Lee*¹, M.K. Panduranga² and G. Carman^{1,2} *1. Materials Science and Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Mechanical & Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA*

8:42

- CI-02. Extraction of Magnetoelastic Coefficients Using Acoustically Driven Ferromagnetic Resonance.** *D. Labanowski*¹, P. Gowtham¹, A. Jung¹ and S. Salahuddin¹ *1. University of California, Berkeley, Berkeley, CA*

8:54

- CI-03. An Impedance Spectroscopy Study Of Magnetodielectric Coupling In $\text{BaTiO}_3\text{-CoFe}_2\text{O}_4$ Nanostructured Multiferroics.** *U. Acevedo*^{1,2}, R. Lopez-Noda³, R. Breitwieser², F. Calderón⁴, S. Ammar² and R. Valenzuela¹ *1. Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Ciudad de México, Mexico; 2. ITODYS, CNRS UMR-7086, Université Paris Diderot, Sorbonne Paris Cité, Paris, France; 3. Departamento de Física Aplicada, Instituto de Cibernética, Matemáticas y Física, La Habana, Cuba; 4. Instituto de Ciencia y Tecnología de Materiales, Universidad de la Habana, La Habana, Cuba*

9:06

- CI-04. Polarization Fatigue Of BiFeO₃ Films With Ferromagnetic Metallic Electrodes.** C. Chen¹, J. Wang^{2,3}, C. Li^{3,4}, Z. Wen⁵, J. Du^{2,3} and Q. Xu^{1,2} *1. Department of Physics, Southeast University, Nanjing, China; 2. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China; 3. Department of Physics, Nanjing University, Nanjing, China; 4. Department of Materials Science and Engineering, Nanjing University, Nanjing, China; 5. College of Physics, Qingdao University, Qingdao, China*

9:18

- CI-05. Core-shell Nanowire Magnetic/Ferroelectric Multiferroic Heterostructure for Voltage Tunable RF Devices.** Z. Zhou¹, G. Grocke¹, X. Wang², Y. Gao², N.X. Sun², B.M. Howe³ and X. Chen¹ *1. Energy Systems Division, Argonne National Laboratory, Lemont, IL; 2. ECE, Northeastern University, Boston, MA; 3. Materials and Manufacturing Directorate, Air Force Research Lab, Wright Patterson Air Force Base, OH*

9:30

- CI-06. Monte Carlo Investigation Of The Coupling Between Ferroelectric Polarization And Magnetic Order In Delafossite CuCrO₂.** A. Al Baalbaky¹, D. Ledue¹, R. Patte¹ and R. Fresard² *1. Normandie Univ., INSA Rouen, UNIROUEN, CNRS, GPM, 76800 Rouen, France; 2. Normandie Univ, ENSICAEN, UNICAEN, CNRS, CRISMAT, 14050 Caen, France*

9:42

- CI-07. Self cooled, piezoelectric controlled non volatile memory effect in charge-strain co-mediated magnetoelectric coupling based energy efficient multiferroic heterostructures.** K. Singh¹ and D. Kaur¹ *1. Physics Department, IIT Roorkee, Roorkee, India*

9:54

- CI-08. Coverage Dependent Magnetization Switching in an Ultrathin Fe Film on Ferroelectric Surfaces.** D. Odkhuu¹ and T. Tumurbaatar² *1. Department of Physics, Incheon National University, Incheon, The Republic of Korea; 2. Department of Physics, University of Ulsan, Ulsan, The Republic of Korea*

10:06

- CI-09. Bound states and charge transport on magnetic domain walls in Weyl semimetals.** Y. Araki^{1,2}, A. Yoshida¹ and K. Nomura¹ *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Sendai, Japan*

10:18

- CI-10. Ferromagnetic Ground State Properties of Nb-doped EuTiO₃ Single Crystal.** S. Roy¹, N. Khan¹ and P. Mandal¹ *1. Experimental Condensed Matter Physics, Saha Institute of Nuclear Physics, Calcutta, India*

10:30

- CI-11. **The Temperature Dependent Structural Studies on the Spin Correlated System A_2FeCoO_6 ($A= Sm, Eu, Dy$ and Ho) using Synchrotron Radiation.** *G. Haripriya*¹, *R. Pradheesh*¹, *M. Singh*², *A. Sinha*², *K. Sethupathi*¹ and *V. Sankaranarayanan*¹
1. Department of Physics, IIT Madras, Chennai, India; 2. Indus Synchrotron Utilization Division, RRCAT, Indore, India

10:42

- CI-12. **Sign reversal of magnetization and exchange bias in $NdFe_{0.5}Cr_{0.5}O_3$.** *M. Sharannia*¹, *S. De*¹, *R. Singh*², *A. Das*², *R. Nirmala*¹ and *P. Santhosh*¹
1. Department of Physics, Indian Institute of Technology Madras, Chennai, India; 2. Solid State Physics Division, Bhabha Atomic Research Centre, Mumbai, India

10:54

- CI-13. **Magnetostructural Transition and Cobalt Spin Behavior in Metallic $Pr_{0.50}Sr_{0.50}CoO_3$ Perovskite.** *J. Padilla-Pantoja*¹, *J. Herrero-Martín*², *B. Bozzo*¹, *E. Pellegrin*², *J. Rodríguez-Velamazán*³, *J. Blasco*⁴ and *J. Garcia-Muñoz*¹
1. Institut de Ciència de Materials de Barcelona -CSIC, E-08193 Bellaterra, Spain; 2. ALBA Synchrotron Light Facility, 08290 Cerdanyola del Vallès, Spain; 3. Institute Laue Langevin, 38042 Grenoble Cedex 9, France; 4. Instituto de Ciencia de Materiales de Aragón, CSIC-Univ. de Zaragoza, 50009 Zaragoza, Spain

11:06

- CI-14. **Anomalous spin disordered magnetic properties of strongly correlated honeycomb compound $In_3Cu_2VO_9$.** *S. Jia*¹, *X. Yu*¹, *Q. Wang*¹ and *L. Zou*¹
1. Research Laboratory of Computational Materials Sciences, Institute of Solid State Physics, the Chinese Academy of Sciences, Hefei, China

11:18

- CI-15. **Magnetization Reversal Induced By Adsorption Of Chiral Molecules On Ferromagnet.** *O. Ben Dor*¹, *S. Yochelis*¹, *L.T. Baczewski*², *R. Naaman*³ and *Y. Paltiel*¹
1. Applied Physics Department, The Hebrew University of Jerusalem, Jerusalem, Israel; 2. Institute of Physics Polish Academy of Sciences, Warszawa, Poland; 3. The Weizmann Institute of Science, Rehovot, Israel

Session CP
SPIN CURRENT AND RELATED EFFECTS I
(Poster Session)

Ssu-Yen Huang, Chair
National Taiwan University, Taipei, Taiwan

- CP-01. Berry phase of valley and spin quantum Hall conductance of silicene coupled to a ferroelectric layer.** *M.B. Jalil¹, Z. Siu¹, S. Tan² and Y. Li³* *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. Department of Physics, Hangzhou Dianzi University, Hangzhou, China*
- CP-02. Interface selective magnon coupling in compensated ferrimagnets.** *J. Cramer^{1,2}, E. Guo³, S. Geprägs⁴, A. Kehlberger¹, G. Jakob¹, S.T. Goennenwein⁴ and M. Kläui^{1,2}* *1. Institute of Physics, Johannes Gutenberg-Universität Mainz, Mainz, Germany; 2. Graduate School of Excellence Materials Science in Mainz, Mainz, Germany; 3. Quantum Condensed Materials Division, Oak Ridge National Laboratory, Oak Ridge, TN; 4. Walther-Meißner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany*
- CP-03. Effect of surface hybridization on interlayer exchange coupling in ferromagnet/topological insulator/ferromagnet trilayer.** *C. Ho¹ and M.B. Jali²* *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore*
- CP-04. Thermoelectric Power based on Spin Seebeck effect in YIG/[Ta/W]_n system.** *H. Yuasa^{1,2}, N. Onizuka¹ and K. Tamae¹* *1. Graduate School and Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan*
- CP-05. Current-induced magnetization switching in heavy metal/ferromagnet multilayers without magnetic field.** *A. Zelalem¹, K. Meng¹, B. Zhao¹, Y. Wu¹, J. Miao¹, X. Xu¹ and Y. Jiang¹* *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China*
- CP-06. Spin transport property in thermally evaporated pentacene films by using a dynamical spin injection method.** *Y. Tani¹, Y. Teki² and E. Shikoh¹* *1. Engineering, Osaka City University, Osaka, Japan; 2. Science, Osaka City University, Osaka, Japan*
- CP-07. Spin mediated enhanced negative magnetoresistance in Ni₈₀Fe₂₀ and p-silicon bilayer.** *S. Kumar¹ and P. Lou¹* *1. UC, Riverside, Riverside, CA*

- CP-08. Spin Seebeck effect and magnon-mediated magnetoresistance in nonlocal YIG/Pt nanostructures.** Y. Cai¹, Y. Wu¹, K. Meng¹, X. Xu¹, J. Miao¹ and Y. Jiang¹
1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China
- CP-09. Magnetoresistance Induced by Magnetic Scattering and Spin Orbital Coupling in PtTa/YIG.** B. Miao¹, L. Sun^{1,2}, D. Wu^{1,2}, C. Chien³ and H. Ding^{1,2} 1. National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, China; 2. Collaborative Innovation Center of Advanced Microstructures, Nanjing University, Nanjing, China; 3. Department of Physics of Astronomy, Johns Hopkins University, Baltimore, MD
- CP-10. Spin polarization induced by zero average magnetic fields in nanowires.** H. Lin¹, Y. Su² and S. Chen¹ 1. Department of Applied Physics and Chemistry, University of Taipei, Taipei, Taiwan; 2. Physics, National Taiwan University, Taipei, Taiwan
- CP-11. Theoretical study of spin currents in ferrimagnets.** T. Kumamoto¹, D. Miura¹ and A. Sakuma¹ 1. Applied physics, Tohoku University, Sendai, Japan
- CP-12. XMCD detection of induced paramagnetic moment in Pt on Y₃Fe₅O₁₂.** T. Kikkawa¹, M. Suzuki², J. Okabayashi³, K. Uchida^{4,5}, D. Kikuchi¹, Z. Qiu^{6,7} and E. Saitoh^{1,7} 1. Institute for Materials Research and WPI AIMR, Tohoku University, Sendai, Japan; 2. JASRI/SPRING-8, Sayo, Hyogo, Japan; 3. Research Center for Spectrochemistry, University of Tokyo, Tokyo, Japan; 4. Institute for Materials Research, Tohoku University, Sendai, Japan; 5. PRESTO, Japan Science and Technology Agency, Saitama, Japan; 6. WPI-AIMR, Tohoku University, Sendai, Sendai, Japan; 7. Spin Quantum Rectification Project, ERATO, Japan Science and Technology Agency, Sendai, Japan
- CP-13. Magnetization switching induced by spin-orbit torques in perpendicularly magnetized Ta / GdFeCo bilayers.** T. Matsumura², D. Oshima³, T. Kato², N. Roschewsky¹, S. Salahuddin⁴ and S. Iwata³ 1. Department of Physics, University of California, Berkeley, Berkeley, CA; 2. Department of Electrical Engineering and Computer Science, Nagoya University, Nagoya, Japan; 3. Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan; 4. Department of Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA
- CP-14. Improvement of spin thermoelectric voltage with three different structures of ferromagnet/non-magnetic stacks.** C. Jeon¹, D. Kim¹, K. Lee¹, S. Srivathsava², J. Jeong² and B. Park¹ 1. Department of Material Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea; 2. Department of Materials Science & Engineering, Chungnam National University, Daejeon, The Republic of Korea
- CP-15. Nonuniformity of microwave power induced dc voltage in YIG/NM system.** H. Zhou¹, X. Fan¹, L. Ma², S. Zhou² and X.D. Sheng¹ 1. Lanzhou University, Lanzhou, China; 2. Physics, Tongji University, Shanghai, China

Session CQ
MAGNETIZATION DYNAMICS I: DAMPING AND
SIMULATIONS
(Poster Session)

Ki-Suk Lee, Co-Chair

Ulsan National Institute of Science Technology, Ulsan,
The Republic of Korea

Jung-Il Hong, Co-Chair

Daegu Gyeongbuk Institute of Science and Technology, Daegu,
The Republic of Korea

CQ-01. Enhancement of magnetization dynamic damping and two-magnon scattering effect in Fe thin films with Gd dopants.

S. Jiang¹, L. Sun², Y. Fu¹, Q. Chen¹, X. Zhou¹, J. Yue¹,
H. Yuan¹, Y. Yin¹, Z. Huang¹, Y. Zhai^{1,3} and H. Zhai³

1. Department of Physics, Southeast University, Nanjing, China; 2. College of Physics and Electronic Engineering, Hainan Normal University, Haikou, China; 3. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China

CQ-02. The dynamic damping and magnetization in Tb/Cr/Py with different Cr layer thickness.

L. Sun¹, J. Yue³, S. Jiang²,
H. Yuan³, Q. Chen³, X. Zhou³, Z. Huang³, E. Liu^{5,3}, Z. Yao¹,
Y. Zhai³ and H. Zhai⁴

1. College of Physics and Electronic Engineering, Hainan Normal University, Haikou, China; 2. KTH Royal Institute Technology, Stockholm, Sweden; 3. Department of Physics, Southeast University, Nanjing, China; 4. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, China; 5. School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, China

CQ-03. Theoretical Investigation of Damping in Exchange Bias Systems.

A.E. Farrar¹, J. Beik Mohammadi², T. Mewes² and C.K. Mewes²

1. Mathematics / MINT, University of Alabama, Tuscaloosa, AL; 2. Physics and Astronomy / MINT, University of Alabama, Tuscaloosa, AL

CQ-04. Influence of Thickness Dependent Crystal Ordering on Magnetization Damping in Half-Metallic Co₂Fe_{0.4}Mn_{0.6}Si Thin Films.

S. Pan¹, S. Saha¹, J. Sinha¹, T. Seki^{2,3},
K. Takanashi^{2,4} and A. Barman¹

1. Condensed Matter Physics and Material Sciences, S N Bose National Centre For Basic Sciences, Kolkata, India; 2. Institute for Materials Research, Tohoku University, Sendai, Japan; 3. JST PRESTO, Saitama, Japan; 4. Center for Spintronics Research Network, Tohoku University, Sendai, Japan

CQ-05. Magnetic damping of sputter deposited, exchange coupled bilayers: Py|Fe.

P. Omelchenko¹, E.A. Montoya², C. Coutts¹,
B. Heinrich¹ and E. Girtl¹

1. Physics, Simon Fraser University, Burnaby, BC, Canada; 2. Physics & Astronomy, University of California, Irvine, Irvine, CA

- CQ-06. Towards Suppression of Stochastic Pinning Though Modification of Gilbert Damping.** *T.J. Broomhall¹, A. Rushforth² and T.J. Hayward¹* *1. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 2. School of Physics & Astronomy, University of Nottingham, Nottingham, United Kingdom*
- CQ-07. Thickness dependent of perpendicular magnetic anisotropy and Gilbert damping on amorphous FeTaC films.** *B. Samantaray^{1,2}, A.K. Singh³, A. Perumal³ and P. Mandal¹* *1. Condensed Matter Physics, Saha Institute of Nuclear Physics, Kolkata, India; 2. Institute of Physics, Bhubaneswar, India; 3. Physics, Indian Institute of Technology Guwahati, Guwahati, India*
- CQ-08. Magnetization dynamics and magnetic anisotropy of ion irradiated L1₀-MnGa films.** *T. Kato¹, H. Kano¹, D. Oshima³, S. Takahashi², Y. Sonobe² and S. Iwata³* *1. Department of Electrical Engineering and Computer Science, Nagoya University, Nagoya, Japan; 2. Samsung R&D Institute Japan, Yokohama, Japan; 3. Institute of Materials and Systems for Sustainability, Nagoya University, Nagoya, Japan*
- CQ-09. Multi-scale Modelling of Interfacial Stress in Magnetic Systems.** *A.P. Wynn¹, J.S. Dean¹ and C.L. Freeman¹* *1. Department of Materials Science and Engineering, The University of Sheffield, Sheffield, United Kingdom*
- CQ-10. Dynamic Response of Strain-Mediated Perpendicular Magnetic Tunnel Junctions.** *Q. Wang¹, C. Liang¹, X. Li¹ and G. Carman²* *1. Department of Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA; 2. UCLA, Los Angeles, CA*
- CQ-11. Large Curvature Effects on Thin Ferromagnetic Films Leading to Controllable Anisotropy.** *O. Tretiakov¹, M. Morini², V. Slastikov³ and S. Vasylykevych³* *1. Tohoku University, Sendai, Japan; 2. Universita di Parma, Parma, Italy; 3. University of Bristol, Bristol, United Kingdom*
- CQ-12. Modeling the effects of magnetic nanoparticle shapes on the reversible transverse susceptibility for amplification of nuclear magnetic resonance signals.** *H. ElBidweihy¹ and M. Barbic²* *1. Department of Electrical and Computer Engineering, United States Naval Academy, Annapolis, MD; 2. Applied Physics and Instrumentation Group, Howard Hughes Medical Institute, Janelia Research Campus, Ashburn, VA*
- CQ-13. Approach to three-dimensional magnetic domain structure reorganization in SANS measurement.** *M. Tokii¹, E. Kita^{2,3}, C. Mitsumata⁴, K. Ono⁵, H. Yanagihara² and M. Matsumoto¹* *1. Univ. of Tsukuba, Tsukuba, Japan; 2. Institute of Applied Physics, University of Tsukuba, Tsukuba, Japan; 3. National Institute of Technology, Ibaraki College, Hitachinaka, Japan; 4. NIMS, Tsukuba, Japan; 5. KEK, Tsukuba, Japan*
- CQ-14. Local Shape Anisotropy Control in Ferromagnetic Antidot Networks.** *L. Stoleriu¹, A. Stancu¹ and J. Gräfe²* *1. Department of Physics, Al. I. Cuza University of Iasi, Iasi, Romania; 2. Max Planck Institute for Intelligent Systems, Stuttgart, Germany*

CQ-15. Investigation Of Magnetization Dynamics Of $\text{Fe}_{20}\text{Pd}_{80}$ Circular Island Arrays Employing Ferromagnetic Resonance Measurements And Micromagnetic Simulations. A. Ciuciulkaite¹, R. Brucas², E. Östman¹, A. Kumar², P. Svedlindh², B. Hjörvarsson¹ and V. Kapaklis¹ *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden*

WEDNESDAY
MORNING
9:30

GRAND BALLROOM

Session CR
SPIN HALL EFFECT II
(Poster Session)

Wei Zhang, Chair
Oakland University, Rochester, MI

- CR-01. Enhancement of Extrinsic Spin-Orbital Coupling Induced by Ta Impurities in Copper.** Y. Wang^{1,2}, J. Wu², X. Zhou¹, Q. Chen¹, X. Fan², Y. Zhai¹ and J. Xiao² *1. Department of Physics, Southeast University, Nanjing, China; 2. Physics and Astronomy, University of Denver, Denver, CO*
- CR-02. Giant Spin Hall Angle From Bismuth Selenide And Heavy Metal Multilayers.** D. Mahendra¹, J. Chen³, D. Zhang³, P. Quarterman³, Z. Zhao³, H. Li² and J. Wang^{3,1} *1. Physics and Astronomy, University of Minnesota, Minneapolis, MN; 2. Chemical Engineering and Material Science, University of Minnesota, Minneapolis, MN; 3. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*
- CR-03. Inverse spin-Hall effect voltage generation by nonlinear spin-wave excitation.** L. Feiler¹, K. Sentker¹, M. Brinker¹, N. Kuhlmann¹, F. Stein¹ and G. Meier² *1. Institute for Applied Physics, University of Hamburg, Hamburg, Germany; 2. Max Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany*
- CR-04. Large Spin Hall Angles in Permalloy/Gold Heterostructures Resulting from Magnetic Impurities.** R. Benner¹, A. Hojem², W. Li¹, D. Wesenberg², X. Fan² and B. Zink¹ *1. University of Denver, Denver, CO; 2. Physics and Astronomy, University of Denver, Denver, CO*
- CR-05. Effect Of Magnetic Anisotropy On Spin Hall Magnetoresistance In Pt/Spinel Ferrites.** T. Tainosho², T. Niizeki¹, J. Inoue², S. Sharmin², E. Kita² and H. Yanagihara² *1. WPI-AIMR, Tohoku University, Sendai, Japan; 2. Institute of Applied Physics, University of Tsukuba, Tsukuba, Japan*
- CR-06. Temperature Dependence of the Inverse Spin Hall Effect in $\text{Ni}_{80}\text{Fe}_{20}$ /Pt Bilayers.** J. Gomez¹, L. Avilés-Félix¹, J. Vargas¹ and A. Butera¹ *1. Magnetic Resonance Laboratory, CONICET / Centro Atomico Bariloche, Bariloche, Argentina*

- CR-07. Temperature and Underlayer Thickness Dependence of Spin Hall Effect in Ta/CoFeB/MgO.** M. Cecot¹, W. Skowronski¹, J. Wrona², J. Kanak¹, A. Zywczyk³, L. Karwacki⁴, A. Dyrda⁴, J. Barnas⁴ and T. Stobiecki¹ *1. Department of Electronics, AGH University of Science and Technology, Krakow, Poland; 2. Singulus Technologies AG, Kahl am Main, Germany; 3. Academic Center of Materials and Nanotechnology, AGH University of Science and Technology, Kraków, Poland; 4. Faculty of Physics, Adam Mickiewicz University, Poznan, Poland*
- CR-08. Role of atomic-layer alignments to intrinsic spin Hall conductivity in Pt-based superlattices film.** T. Ito¹, K. Nawa¹, A. Pradipto^{1,2}, T. Akiyama¹, T. Ito¹, T. Ono² and K. Nakamura¹ *1. Physics Engineering, Mie University, Tsu, Japan; 2. Institute for Chemical Research, Kyoto University, Uji, Japan*
- CR-09. Spin Hall magnetoresistance in non-magnet/ferromagnet/non-magnet tri-layer structures.** J. Choi¹, J. Lee¹, S.C. Baek¹ and B. Park¹ *1. Korea Advanced Institute of Science and Technology (KAIST), Daejeon, The Republic of Korea*
- CR-10. Spin-to-charge interconversion: a study on spin memory loss at metallic interfaces.** V. Pham^{1,2}, L. Vila^{1,2}, G. Zahnd^{1,2}, A. Marty², P. Noël^{1,2}, P. Laczkowski¹, V. Nguyen¹, M. Jamet¹, W. Savero-Torres¹ and J. Attane^{1,2} *1. SPINTEC, INAC, CEA-Grenoble, Grenoble, France; 2. Université Grenoble Alpes, Grenoble, France*
- CR-11. Interplay of spin dependent effects in Pt/TmIG bilayer with perpendicular magnetic anisotropy.** C. Avci², A. Quindeau¹, M. Mann², C. Pai², C.A. Ross² and G. Beach² *1. Massachusetts Institute of Technology, Cambridge, MA; 2. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*
- CR-12. Unidirectional spin Hall magnetoresistance in Pt/CoFe/Ta multilayers.** D. Meier¹, A. Pfeiffer¹, R. Klett¹, N. Shephard¹, J. Schmalhorst¹ and G. Reiss¹ *1. Department of Physics, Bielefeld University, Bielefeld, Germany*
- CR-13. Unidirectional spin Hall magnetoresistance in Ta/Fe and Pt/Fe bilayers.** Y. Lv¹, D. Zhang¹ and J. Wang¹ *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*
- CR-14. Driving Currents by Magnetization Dynamics in systems with Inversion Asymmetry: From the DC-Limit to Optical Frequencies.** F. Freimuth¹ *1. IAS-I, Forschungszentrum Julich, Julich, Germany*
- CR-15. Magnon excitation in YIG by spin Hall effect and spin Seebeck effect.** H. Wu¹, C. Wan¹, X. Zhang¹, Z. Yuan¹, Q. Zhang¹, J. Qin¹, X. Han¹ and S. Zhang² *1. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. University of Arizona, Tucson, AZ*

Session CS
NANOWIRES AND NANOPARTICLES II
(Poster Session)

Jordi Sort, Chair

Universitat Autònoma de Barcelona, Bellaterra, Spain

- CS-01. Local probing of exchange-bias using X-ray magnetic circular dichroism and ^{57}Fe Mössbauer spectrometry on polyol-made $\text{NiFe}_2\text{O}_4\text{-CoO}$ nano-aggregates.** T. Gaudisson¹, S.K. Sharma¹, S. Ammar¹, N. Yaacoub², J. Grenèche², N. Menguy³, M. Arrio³, P. Saintavitt³ and E. Otero⁴ *1. ITODYS, CNRS UMR-7086, Université Paris Diderot, Sorbonne Paris Cité, Paris, France; 2. IMMM, CNRS UMR-6283, Université du Maine, Le Mans, France; 3. IMPMC, CNRS UMR-7590, Université Pierre & Marie Curie, Sorbonne Universités, Paris, France; 4. Synchrotron SOLEIL, Orme les Merisiers, France*
- CS-02. Fully Integrated Continuous and Scalable Production of High Quality Nanofibers/Nanotubes as Functional Nano Building Blocks for Devices.** X. Chen¹, G. Grocke¹, Z. Zhou¹ and P. Ignacio-de Leon¹ *1. Energy Systems Division, Argonne National Laboratory, Lemont, IL*
- CS-03. Chiral Magnetization Switching In Magnetic Nanoparticles.** N. Grisewood¹, G. Duff¹, R.V. Hügeli¹ and H. Braun¹ *1. School of Physics, University College Dublin, Dublin, Ireland*
- CS-04. Creep induced anisotropy in CoFeSiB cold drawn amorphous microwires.** H. Chiriac¹, A. Damian^{1,2}, S. Corodeanu¹, V. Dobrea¹, T.A. Ovari¹ and N. Lupu¹ *1. National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. Faculty of Physics, Alexandru Ioan Cuza University, Iasi, Romania*
- CS-05. Magnetic field tunability of heat transfer properties in a ferromagnetic nanowire.** C. Li¹, H. Huang¹, Z. Wei¹, W. Tang¹ and C. Wu¹ *1. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan*
- CS-06. Magnetic Properties of Variable Diameter Multi-Walled Carbon Nanotubes Filled with Magnetite Nanoparticles.** K. Stojak Repa¹, E.M. Palmero², J. Alonso Masa^{1,3}, M. Phan¹, M. Vázquez² and H. Srikanth¹ *1. Department of Physics, University of South Florida, Tampa, FL; 2. Instituto de Ciencia de Materiales de Madrid (CSIC), Madrid, Spain; 3. Basque Center for Materials/University of Basque Country, Derio, Spain*
- CS-07. Stable tetragonal phase and magnetic properties of Fe-doped HfO_2 nanoparticles.** T.S. Sales¹, F.H. Cavalcante^{1,2}, B. Bosch-Santos¹, L.F. Pereira¹, G. Cabrera-Pasca¹, A.W. Carbonari¹, R.S. Freitas³ and R.N. Saxena¹ *1. CRPq, IPEN/USP, São Paulo, Brazil; 2. Department of Electrical and Computer Engineering, Colorado State University, Fort Collins, CO; 3. Instituto de Física, Universidade de São Paulo, São Paulo, Brazil*

- CS-08. Magnetic and structural properties of CoFe_2O_4 nanoparticles investigated by hyperfine interactions.** *I.T. Matos¹, N.M. Nascimento¹, G. Cabrera-Pasca¹, F.B. Effenberger³, R.S. Freitas² and A.W. Carbonari¹* 1. CRPq, IPEN-CNEN/SP, Sao Paulo, Brazil; 2. Departamento de Física dos Materiais e Mecânica, Instituto de Física, Universidade de São Paulo, São Paulo, Brazil; 3. Centro Universitário FEI, São Paulo, Brazil
- CS-09. Temperature dependence of magnetic hysteresis scaling for cubic Fe_3O_4 nanoparticles.** *T. Sato¹, K. Nagaoka¹, S. Kobayashi², J. Manjanna³ and T. Murakami²* 1. Engineering, Iwate University, Morioka, Japan; 2. Iwate University, Morioka, Japan; 3. Rani Channamma University, Belagavi, India
- CS-10. Magnetic Behaviors of Superparamagnetic Iron Oxide Nanoparticles : A Mathematical Model and Experimental Investigations.** *K. Wu¹ and J. Wang²* 1. Electrical Engineering, University of Minnesota, Minneapolis, MN; 2. Electrical and Computer Engineering, School of Physics & Astronomy, Minneapolis, MN
- CS-11. Tracking the magnetization evolution in $\gamma\text{-Fe}_2\text{O}_3$ / metallic Fe core-shell nanoparticle variants.** *C. Kons¹, Z. Nemati¹, H. Srikanth¹, M. Phan¹ and D.A. Arena¹* 1. Department of Physics, University of South Florida, Tampa, FL
- CS-12. Magnetic Shielding Of 3-Phase Current By A Composite Material At Low Frequencies.** *K. Livesey¹, R.E. Camley¹, Z. Celinski¹ and S. Maat²* 1. Physics, University of Colorado, Colorado Springs, Colorado Springs, CO; 2. YTC - America, Camarillo, CA
- CS-13. Green sol-gel auto-combustion synthesis of magnetic chitosan nanocomposites.** *M. Salavati-Niasari¹ and F. Ansari¹* 1. Institute of Nano Science and Nano Technology, University of Kashan, Kashan, The Islamic Republic of Iran
- CS-14. Magnetic and Structural Properties of Mn_5Ge_3 Nanoparticles.** *O. Tosun¹, M. Salehi-Fashami¹, B. Balasubramanian², R. Skomski², D.J. Sellmyer² and G. Hadjipanayis¹* 1. Physics&Astronomy, University of Delaware, Newark, DE; 2. Physics&Astronomy, University of Nebraska Lincoln, Lincoln, NE
- CS-15. Magnetic field annealing effect and superparamagnetic contributions in one-dimensional CoPt nanostructures.** *S.S. Ali^{1,2}, L. Wenjing¹, K. Javed¹, M. Irfan¹, F. Aleem², G. Zhai³ and X. Han¹* 1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Department of Physics, The University of Lahore, Lahore, Pakistan; 3. National Space Science Center, Chinese Academy of Sciences, Beijing, China

Session CT
BIOCHEMICAL AND BIOMEDICAL APPLICATIONS II
(Poster Session)

Olga Kazakova, Co-Chair

NPL, Teddington, United Kingdom

Nikoleta Theodoropoulou, Co-Chair

Texas State University, San Marcos, TX

- CT-01. Magneto-visco-elastic properties of biohybrids based on superparamagnetic iron oxide nanoparticles coupled to aliginate polymer chains: A comparative study on the nature of the particle/polymer link.** T.T. Nguyen¹, G. Franceschin¹, F. Mammeri¹, S. Ammar¹, S. Gantz², C. Galindo-Gonzales² and A. ponton² *1. ITODYS, CNRS UMR-7086, Université Paris Diderot, Sorbonne Paris Cité, Paris, France; 2. MSC, CNRS UMR-7057, Université Paris Diderot, Sorbonne Paris Cité, Paris, France*
- CT-02. Precise control of a helical microrobot in pulsatile flow by controlling the rotating frequency of the external magnetic field.** J. Kim¹, J. Nam¹, W. Lee¹, B. Jang¹ and G. Jang¹ *1. Dept of Mechanical Convergence Engineering, Hanyang University, Seoul, The Republic of Korea*
- CT-03. A Modular Helical Magnetic Millirobot for the Effective Helical Navigating and Stable Unclogging Motions in Curved Human Blood Vessels.** S. Jeon¹, D. Lee¹, W. Kim¹ and H. Cho¹ *1. Div. Mechanical and Automotive Engineering, Kongju National University, Cheonan, The Republic of Korea*
- CT-04. Design and Analysis of a Field Modulated Magnetic Screw for Artificial Heart.** Z. Ling¹, W. Zhao¹ and J. Ji¹ *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- CT-05. Three-dimensional sensitivity mapping of a handheld magnetic probe for sentinel lymph node biopsy.** A. Kuwahata¹, S. Chikaki¹, A. Ergin¹, M. Kaneko¹, M. Kusakabe¹ and M. Sekino¹ *1. The University of Tokyo, Tokyo, Japan*
- CT-06. Remote sensing micro-fluidic tracer by utilizing light scattering micro-crystals under magnetic fields.** Y. Takanezawa¹, T. Chikashige² and M. Iwasaka^{1,2} *1. AdSM, Hiroshima University, Higashi-Hiroshima, Japan; 2. RNBS, Hiroshima University, Higashi-Hiroshima, Japan*
- CT-07. Self-organized soft micro-magnets in polymer matrix for microfluidic devices.** S. Mekkaoui^{1,2}, K. Bhattacharya¹, A. Tamion¹, V. Dupuis¹, J. Chateaux², J. Desgouttes², D. Le Roy¹ and A. Deman² *1. Institute of Light and Matter, Villeurbanne, France; 2. Institut des Nanotechnologies de Lyon, Villeurbanne, France*

- CT-08. Superparamagnetic Nanoparticle Detection System by Using a Fundamental Mode Orthogonal Fluxgate(FM-OFG) Gradiometer.** *H. Karo*¹ and *I. Sasada*¹ *1. Department of Applied Science for Electronics and Materials, Kyushu University, Kasuga, Japan*
- CT-09. Blood Clot Detection Using Magnetic Nanoparticles.** *H. Khurshid*^{1,2}, *B. Friedman*^{3,4}, *B. Berwin*⁵ and *J. Weaver*^{2,1}
1. Thayer School of Engineering, Dartmouth College, Lebanon, NH; 2. Radiology, Dartmouth-Hitchcock Medical Center, Lebanon, NH; 3. Geisel School of Medicine, Dartmouth-Hitchcock Medical Center, Lebanon, NH; 4. Section of Cardiology, Dartmouth-Hitchcock Medical Center, Lebanon, NH; 5. Microbiology and Immunology Department, Dartmouth-Hitchcock Medical Center, Lebanon, NH
- CT-10. Interfacing Engineered Magnetic Materials and Living Systems.** *E.A. Rozhkova*¹ *1. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*
- CT-11. Modulation of light localization in the iridophores of the deep-sea highlight hatchetfish *Sternoptyx pseudobscura* under magnetic field.** *M. Iwasaka*¹ and *S. Ohtsuka*²
1. Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashi-Hiroshima, Japan; 2. 2) Graduate School of Biosphere Science, Hiroshima University, Higashi-Hiroshima, Japan
- CT-12. Magnetically tunable control of light reflection in an unusual optic protein of squid.** *M. Iwasaka*¹, *K. Tagawa*² and *Y. Kikuchi*^{2,3} *1. Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashi-Hiroshima, Japan; 2. Marine Biological Laboratory, Graduate School of Science, Hiroshima University, Onomichi, Japan; 3. Department of Biological Science, Graduate School of Science, Hiroshima University, Higashi-Hiroshima, Japan*
- CT-13. Magneto-biomimetic analysis of fish iris efficiency for assisting eyes in human.** *Y. Mizukawa*^{1,2}, *M. Iwasaka*^{1,3} and *S. Ohtsuka*⁴ *1. Graduate School of Advanced Sciences of Matter, Hiroshima University, Higashihiroshima, Japan; 2. Japan Society for the Promotion of Science, Tokyo, Japan; 3. Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashihiroshima, Japan; 4. Graduate School of Biosphere Science, Hiroshima University, Higashihiroshima, Japan*
- CT-14. Deep-sea fish skin as a model for developing magnetic treatments of gout.** *Y. Mizukawa*^{1,2}, *M. Iwasaka*^{1,3} and *S. Ohtsuka*⁴ *1. Graduate School of Advanced Sciences of Matter, Hiroshima University, Higashihiroshima, Japan; 2. Japan Society for the Promotion of Science, Tokyo, Japan; 3. Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashihiroshima, Japan; 4. Graduate School of Biosphere Science, Hiroshima University, Higashihiroshima, Japan*
- CT-15. Unconscious Awareness of the Flicker in Supraliminal Stimulus with Pseudo-“Blindsight”.** *H. Nakagawa*¹ and *S. Ueno*² *1. Department of Electrical and Electronic Engineering, Tokyo Denki University, Adachi-ku, Japan; 2. Department of Applied Quantum Physics, Kyushu University, Fukuoka, Japan*

Session CU
COMPLEX OXIDES II: BULK AND NEW MAGNETIC
MATERIALS
(Poster Session)

Wenqing Liu, Chair
University of Cambridge, Cambridge, United Kingdom

- CU-01. Carrier induced ferromagnetism and magnetoresistance in $\text{Eu}_{1-x}\text{La}_x\text{TiO}_3$.** K. Rubi¹ and R. Mahendiran² *1. Physics, National University of Singapore, Singapore, Singapore; 2. Physics Dept, National University of Singapore, Singapore, Singapore*
- CU-02. Doping dependent magnetism and exchange bias in $\text{CaMn}_{1-x}\text{Re}_x\text{O}_3$.** V. Markovich¹, I. Fita², A. Wisniewski², R. Puzniak², C. Martin³, D. Mogilyansky¹, G. Jung^{1,2} and G. Gorodetsky¹ *1. Department of Physics and The Ilse Katz Institute for Nanoscale Science and Technology, Ben-Gurion University of the Negev, Beer-Sheva, Israel; 2. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland; 3. Laboratoire CRISMAT, UMR 6508, ISMRA, Caen, France*
- CU-03. Optical Sensing Of Magnetic Nanooxides Before And After Deformation.** A. Telegin¹, E.V. Mostovshchikova¹, B.A. Gizhevskii¹ and S.V. Naumov¹ *1. M.N. Miheev Institute of Metal Physics UB of RAS, Yekaterinburg, Russian Federation*
- CU-04. Thermal conductivity of ferrimagnet $\text{GdBaMn}_2\text{O}_{5.0}$ single crystals.** J. Wu¹, J. Zhao¹, H. Xu¹, X. Liu¹, A. Taskin², Y. Ando², X. Zhao³ and X. Sun¹ *1. Hefei National Laboratory for Physical Sciences at Microscale, University of Science and Technology of China, Heifei, China; 2. II. Physikalisches Institut, Universität zu Köln, Köln, Germany; 3. School of Physical Sciences, University of Science and Technology of China, Heifei, China*
- CU-05. Structure, magnetism, and transport properties for Ca doping in Sr_2IrO_4 .** G. Zhou², X. Gu², X. Yang², X. Gao², J. Peng², A. Zhang¹ and X. Wu² *1. College of Science, Hohai University, Nanjing, China; 2. Nanjing University, Nanjing, China*
- CU-06. Magnetic susceptibility of multiferroics and chemical ordering.** M. Marysko¹, V. Laguta¹, I.P. Raevski², R.O. Kuzian^{3,4}, N. Olekhnovich⁵, A.V. Pushkarev⁵, Y.V. Radyush⁵, S.I. Raevskaya² and V.V. Titov² *1. Institute of Physics ASCR, Praha 6, Czech Republic; 2. Dep. of Physics, Research Institute of Physics, Rostov on Don, Russian Federation; 3. Institute for Problems of Materials Science, Kiev, Ukraine; 4. Domostia Int. Physics Center, San Debestian, Spain; 5. Scientific-Practical Materials Res. Centre, Minsk, Belarus*

- CU-07. Synthesis and Study of Magnetic properties of Hard-soft $\text{SrFe}_{12-x}\text{Al}_x\text{O}_{19-x}$ Wt.% $\text{Ni}_{0.5}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$ nanocomposite Ferrite.** *H. Adhikari*¹, *M. Ghimire*¹, *D. Neupane*¹ and *S.R. Mishra*¹ *1. Physics and Materials Science, The University of Memphis, Memphis, TN*
- CU-08. Magnetic spatial profile across a molecular / metal interface.** *J. Shoup*¹, *F. Al Ma'Mari*², *M.D. Rogers*², *O. Cespedes*², *C. Kinane*³, *S. Langridge*³, *J. Borchers*⁴, *B.J. Kirby*⁴ and *D.A. Arena*¹ *1. Dept. of Physics, University of South Florida, Tampa, FL; 2. School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom; 3. Rutherford Appleton Laboratory, Chilton, United Kingdom; 4. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD*
- CU-09. Magnetic and Electrical Properties of MBE-Grown Mn_2CoAl Films.** *K. Yamasaki*¹, *K. Arima*¹, *Y. Togami*¹, *M. Tsukahara*¹, *S. Yamada*¹, *T. Kanashima*¹ and *K. Hamaya*¹ *1. Graduate of Engineering Science, Osaka University, Toyonaka, Japan*
- CU-10. Depth-Directional Magnetic Modification To Produce Magnetic Layered Structure By High Energetic Ion-Irradiation And Annealing For Bulk FeRh.** *R. Soma*¹, *A. Iwase*¹, *Y. Saitoh*³, *R. Ishigami*⁴ and *T. Matsui*² *1. Department of Materials Science, Osaka Prefecture University, Sakai, Japan; 2. Research Organization for the 21st Century, Osaka Prefecture University, Sakai, Japan; 3. Takasaki Advanced Radiation Research Institute, National Institutes for Quantum and Radiological Science and Technology, Takasaki, Japan; 4. Wakasawan Energy Research Center, Tsuruga, Japan*
- CU-11. High Entropy Magnetic Alloys for Magnetocaloric Applications.** *M. Kurniawan*¹, *A. Perrin*¹, *P. Xu*¹, *V. Keylin*¹ and *M.E. McHenry*² *1. Materials Science Engineering, Carnegie Mellon, Pittsburgh, PA; 2. Carnegie Mellon University, Pittsburgh, PA*
- CU-12. Effect of Disorder on the Magnetic and Electronic Band Properties of a Prospective Spin-gapless Semiconductor MnCrVA .** *P.R. Kharel*¹, *P. Lukashev*⁴, *Y. Jin*³, *J. Waybright*¹, *S. Gilbert*¹, *P. Grey*⁵, *B. Staten*⁴, *S. Valloppilly*⁶, *Y. Huh*¹ and *D.J. Sellmyer*² *1. Physics, South Dakota State University, Brookings, SD; 2. University of Nebraska - Lincoln, Lincoln, NE; 3. Physics and Astronomy, University of Nebraska Lincoln, Lincoln, NE; 4. Department of Physics, University of Northern Iowa, Cedar Falls, IA; 5. Department of Computer Science, University of Northern Iowa, Cedar Falls, IA; 6. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE*
- CU-13. Kinetics of First Order Magnetostructural Transition in Single Crystalline FeRh Thin Film.** *Y. Song*¹, *T. Wang*¹, *Z. Xiang*¹, *S. Ma*¹ and *W. Lu*¹ *1. School of Materials Science and Engineering, Tongji University, Shanghai, China*

CU-14. Effects of Energetic Electron Irradiation on Magnetic Properties of Cu-1%Fe Alloy. A. Iwase¹, Y. Fujimura¹, S. Semboshi³, Y. Saitoh⁴ and T. Matsui² *1. Department of Materials Science, Osaka Prefecture University, Sakai, Japan; 2. Research Organization for the 21st Century, Osaka Prefecture University, Sakai, Japan; 3. Institute for Materials Research, Tohoku University, Sakai, Japan; 4. National Institutes for Quantum and Radiological Science and Technology, Takasaki, Japan*

CU-15. Study on the Magnetic Hardening and Anisotropy of L1₀-Ordered Mn_{1.15}Ga Alloy. C. Li¹, Q. Lu¹, M. Wang¹, H. Zhang¹, D. Zhang¹, D. Liu² and M. Yue¹ *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China; 2. Institute of Microstructure and Property of Advanced Materials, Beijing University of Technology, Beijing, China*

WEDNESDAY
MORNING
9:30

GRAND BALLROOM

Session CV MAGNETO-CALORIC MATERIALS I (Poster Session)

Maximilian Fries, Co-Chair
TU Darmstadt, Darmstadt, Germany
Zaven Altounian, Co-Chair
McGill University, Montreal, Canada

CV-01. Enhanced mechanical properties and age stability of room temperature magnetocaloric plates La_{0.8}Ce_{0.2}Fe_{12.5}Mn_{0.2}Si_{1.3}H₈ with extra Fe. Y. Li¹, F. Shen¹, F. Liang¹, M. Zhang¹, J. Wang¹, H. Kuang¹, F. Hu¹, R. Ji¹ and B. Shen¹ *1. State Key Laboratory of Magnetism, Institute of Physics, University of Chinese Academy of Sciences, Chinese Academy of Sciences, Beijing, China*

CV-02. Effect of partial substitution of La by Ce on the nature of phase transition in the La_{1-x}Ce_xFe_{11.2}Co_{0.7}Si_{1.1} alloys. P. Gebara¹, J. Marcin¹ and I. Skorvanek¹ *1. Magnetism, Institute of Physics, Slov. Acad. Sci., Kosice, Slovakia*

CV-03. How to enable bulk-like martensitic transformation in epitaxial films? M. Wodniok¹, N. Teichert¹, L. Helmich¹ and A. Huetten¹ *1. Physics Department, Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany*

CV-04. Effect of Hydrostatic Pressure on Saturation Magnetization And Magnetocaloric Effect in Ni-Mn-In Heusler Alloy. F. Liang¹, F. Hu¹, J. Wang¹, H. Kuang¹, J. Sun¹ and B. Shen¹ *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

- CV-05. Magnetostructural Transformation And Magnetocaloric Effect In $\text{Ni}_{42}\text{Mn}_{47.5}\text{Sn}_{10.5}$ And $\text{Ni}_{41.5}\text{Mn}_{47.5}\text{Sn}_{10.5}\text{Zn}_{0.5}$ Ferromagnetic Shape Memory Alloys.** N. ul Hassan¹, I. Shah¹, J. Liu¹, Y. Gong¹, G. Xu¹ and F. Xu¹ *1. School of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, China*
- CV-06. Effects Of Partial Substitution Of Ni By Cr On The Transport, Magnetic Entropy, And Adiabatic Temperature Changes Of $\text{Ni}_{50}\text{Mn}_{37}\text{In}_{13}$.** S. Pandey¹, A. Quetz¹, A. Aryal¹, T. Samanta³, M. Blinov², I. Rodionov², I. Dubenko¹, D. Mazumdar¹, A. Granovsky², V. Prudnikov², S. Stadler³ and N. Ali¹ *1. Physics, Southern Illinois University, Carbondale, IL; 2. Physics, Lomonosov Moscow State University, Moscow, Russian Federation; 3. Physics, Louisiana State University, Baton Rouge, LA*
- CV-07. Magnetostructural Phase Transitions and Magnetocaloric Effects in $\text{Mn}_{1-x}\text{Al}_x\text{CoGe}$ Compounds.** P. Hill¹, A. Aryal², A. Quetz², S. Pandey², T. Samanta³, I. Dubenko², D. Mazumdar², S. Stadler³ and N. Ali² *1. Physics & Engineering Physics, Southeast Missouri State University, Cape Girardeau, MO; 2. Physics, Southern Illinois University, Carbondale, USA, Carbondale, IL; 3. Physics & Astronomy, Louisiana State University, Baton Rouge, LA*
- CV-08. Magnetostructural Coupling and Magnetocaloric Effect in Co and Ge Doped MnNiSi System.** J. Chen¹, H. Zhang¹, M. Yue¹, E. Liu², Q. Lu¹, D. Zhang¹, W. Liu¹ and Q. Wu¹ *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China; 2. State Key Laboratory of Magnetism, Institute of Physics, Beijing, China*
- CV-09. Thermodynamics and Magnetism at the First-order Magnetostructural Transition in Mn_3GaC Powder and Single Crystal Samples.** F. Scheibel¹, T. Gottschall², M. Ghorbani Zavareh^{3,4}, Y. Skourski³, Ö. Cakir^{5,6}, R. Meckenstock¹, F. Cugini⁷, O. Gutfleisch², J. Wosnitza^{3,4}, M. Solzi⁷, M. Farle^{1,8} and M. Acet¹ *1. Faculty of Physics, University Duisburg-Essen, Duisburg, Germany; 2. FB11, FG FM, TU Darmstadt, Darmstadt, Germany; 3. Dresden High Magnetic Field Laboratory (HLD-EMFL), Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 4. Institut für Festkörperphysik, TU Dresden, Dresden, Germany; 5. Physics Department, Yildiz Technical University, Istanbul, Turkey; 6. Physics Engineering Department, Ankara University, Ankara, Turkey; 7. Physics Department and CNISM, University of Parma, Parma, Italy; 8. Center for Functionalized Magnetic Materials, Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation*
- CV-10. Magnetism and magnetocaloric effect in $(\text{Gd}_{5-x}\text{Sc}_x)\text{Si}_{1.8}\text{Ge}_{2.2}$.** K. Rudolph¹, A. Pathak¹, Y. Mudryk¹ and V.K. Pecharsky^{1,2} *1. The Ames Laboratory, U.S. Department of Energy, Iowa State University, Ames, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames, IA*
- CV-11. The Impact Of Doping On Electronic Structure And Magnetic Properties Of Fe_2P Class Magnetocalorics.** J. Goraus¹ *1. Institute of Physics, University of Silesia, Katowice, Poland*

CV-12. Magnetocaloric properties of GdZn₂. *K. Matsumoto¹ and K. Hiraoka¹ 1. Ehime University, Matsuyama, Japan*

CV-13. Magnetocaloric Effect In ErNi₂ Melt-Spun Ribbons. *J.L. Sanchez Llamazares¹, P. Ibarra-Gaytán¹, C. Sanchez-Valdes^{2,4} and P. Alvarez-Alonso³ 1. División de Materiales Avanzados, Instituto Potosino de Investigación Científica y Tecnológica A.C., San Luis Potosi, Mexico; 2. División Multidisciplinaria, Ciudad Universitaria, Universidad Autónoma de Ciudad Juárez, Ciudad Juarez, Mexico; 3. Electricidad y Electrónica, Universidad del País Vasco, Lejona, Spain; 4. Departamento de Materiales Avanzados, Centro de Nanociencias y Nanotecnología, Universidad Nacional Autónoma de México, Ensenada, Mexico*

CV-14. Observation of large magnetocaloric effect in equiatomic binary compound ErZn. *L. Li¹, C. Xu², Y. Yuan², Y. Qi¹ and S. Zhou² 1. Northeastern University, Shenyang, China; 2. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*

CV-15. The Effect of Particle Size on the Magnetic Properties of Nanostructured Y₂Fe₁₇. *A. Aslani¹, M. Ghahremani^{2,1}, L.H. Bennett¹ and E. Della Torre¹ 1. Electrical and Computer Engineering, The George Washington University, Washington, DC; 2. CME, Shepherd University, Shepherdstown, WV*

**WEDNESDAY
MORNING
9:30**

GRAND BALLROOM

**Session CW
INDUCTORS AND TRANSFORMERS I
(Poster Session)**

Joseph Davies, Co-Chair
NVE Corporation, Eden Prairie, MN
Katie Sunday, Co-Chair
Drexel University, Philadelphia, PA

CW-01. Load Characteristics of Wireless Power Transfer System with Different Resonator Number and Resonant Type. *Y. Zhang¹ 1. Department of Electrical Engineering, Tsinghua University, Beijing, China*

CW-02. A Multilayer Power Inductor Fabricated By Ceramic/ferrite Materials Co-firing System Based on LTCC Technology. *Y. Li^{1,2}, D. Chen³, L. Han¹, H. Su¹, Y. Xie² and H. Zhang⁴ 1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE; 3. Hainan University, Haikou, China; 4. University of Electronic Science and Technology of China, Chengdu, China*

- CW-03. The Design and Fabrication of DC-DC Converter Substrates Based On LTCC Technology.** *Y. Li^{1,2}, L. Han¹, D. Chen³, H. Su¹, H. Zhang⁴ and Y. Xie²* 1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE; 3. Hainan University, Haikou, China; 4. University of Electronic Science and Technology of China, Chengdu, China
- CW-04. Dynamical Stability Analysis of Magnetically Controlled Saturable Reactor.** *B. Tong¹, Q. Yang^{1,2}, R. Yan¹ and L. Zhu²* 1. Hebei University of Technology, Tianjin, China; 2. Municipal Key Laboratory of Advanced Technology of Electrical Engineering and Energy, Tianjin, China
- CW-05. PWM Inverter-Excited Iron Loss Characteristics of Reactor Core.** *A. Yao¹, K. Tsukada¹, K. Fujisaki¹, Y. Shindo², N. Yoshikawa² and T. Yoshitake²* 1. Toyota Technological Institute, Nagoya-city, Japan; 2. Kawasaki Heavy Industries Ltd., Akashi, Japan
- CW-06. DC Magnetic Field-controlled Voltage Amplification Effect in Magnetostrictive-piezoelectric Transformer Laminates.** *S. Zhang¹, M. Zhang¹, S.W. Or¹ and S.L. Ho¹* 1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, Hong Kong
- CW-07. Measurement Research on Magnetic Properties of Electrical Sheet Steel under Different Temperature, Frequency and DC Bias.** *D. Chen¹ and B. Bai¹* 1. School of Electrical Engineering, Shenyang University of Technology, Shenyang, China
- CW-08. Performance Evaluation of Nanocrystalline versus Ferrite Magnetic Materials in Solid-State Transformers.** *M. Bahmani¹* 1. Electric Power Engineering, Chalmers University of Technology, Gothenburg, Sweden
- CW-09. Orthogonal Decomposition Of Core Loss In The Rolling And Transverse Directions Of The Non-Grain Oriented Silicon Steels.** *Y. Li¹, X. Wan¹, J. Li¹, Q. Yang^{1,2} and J. Zhu³* 1. Province-Ministry Joint Key Laboratory of EFEAR, Hebei University of Technology, Tianjin, China; 2. Tianjin Key Laboratory of AEEET, Tianjin Polytechnic University, Tianjin, China; 3. School of EMMS, University of Technology, Sydney, Sydney, NSW, Australia
- CW-10. High-Frequency Electrical Characterization of Nanocrystalline Magnetic Materials Considering Non-Sinusoidal Waveforms.** *M. Bahmani¹* 1. Electric Power Engineering, Chalmers University of Technology, Gothenburg, Sweden
- CW-11. Modeling and Simulation of Power Transformer for the Design of Residual Flux Detection.** *W. Ge¹ and Y. Wang²* 1. School of Control and Mechanical Engineering, Tianjin Chengjian University, Tianjin, China; 2. Hebei University of Technology, Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Tianjin, China

- CW-12. Electromotive Force Analysis of Current Transformer during Lightning Surge Inflow using Fourier Series Expansion.** *Y. Kim*¹ and *K. Lee*¹ *1. Department of Electrical and Electronic Engineering, Joongbu University, Goyang, The Republic of Korea*
- CW-13. Reactor Vibration Reduction Based on Giant Magnetostrictive Materials.** *R. Yan*¹, *W. Liu*¹, *Y. Wu*¹, *M. Duan*¹, *X. Zhang*¹ and *L. Zhu*² *1. Hebei University of Technology, Tianjin, China; 2. Tianjin Polytechnic University, Tianjin, China*
- CW-14. Push-Button Rotational Electromagnetic Energy Harvesting System.** *D. Dinulovic*¹, *M. Shousha*¹, *M. Brooks*¹, *M. Haug*¹ and *T. Petrovic*² *1. R&D, Würth Elektronik eiSos, Garhing, Germany; 2. Faculty of Mechanical Engineering, University of Niš, Niš, Serbia*
- CW-15. Three-Phase Transformer Core Magnetism dependent on Stress Dissipation by using Angle-Shaped Forming Method: A Case Study.** *C. Hsu*^{1,2}, *Y. Huang*² and *M. Hsieh*³ *1. Research and Development Center, Fortune Electric Company, Chung-Li, Taiwan; 2. Department of Mechanical Engineering, National Central University, Chung-Li, Taiwan; 3. National Cheng Kung University, Tainan, Taiwan*

WEDNESDAY
AFTERNOON
1:30

MARDI GRAS A-E

Session DA
SYMPOSIUM: VOLTAGE-CONTROLLED
SPINTRONICS FOR NANOELECTRONICS BEYOND
MOORE'S LAW

Brian Kirby, Chair
NIST, Gaithersburg, MD

1:30

- DA-01. Voltage-Driven Magnetization Control in Topological Insulator/Magnetic Insulator Heterostructures. (Invited)** *M.E. Flatte*¹ *1. Physics, University of Iowa, Iowa City, IA*

2:06

- DA-02. Mechanisms of Electric Field Control of Spin-Orbit Phenomena at Ferromagnet/Nonmagnet Interfaces: Perpendicular Magnetic Anisotropy and Dzyaloshinskii-Moriya Interaction. (Invited)** *H. Yang*^{1,2}, *F. Ibrahim*¹, *A. Hallal*¹, *B. Diény*¹, *O. Boulle*¹, *V. Cros*², *A. Fert*² and *M. Chshiev*¹ *1. SPINTEC, UMR 8191 Univ. Grenoble Alpes, CNRS, CEA-INAC, Grenoble, France; 2. Unité Mixte de Physique CNRS, Thales, Univ. Paris-Sud, Univ. Paris-Saclay, Palaiseau, France*

2:42

- DA-03. Beyond the Interface: Structural and Magnetic Depth Profiles of Magneto-Ionic Heterostructures. (Invited)** *D.A. Gilbert¹, A. Grutter¹, E. Arenholz², B.J. Kirby¹, J. Borchers¹ and B.B. Maranville¹* *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. LBNL, Berkeley, CA*

3:18

- DA-04. Voltage control of platinum orbit: contribution to interfacial magnetic anisotropy change. (Invited)** *S. Miwa^{1,6}, M. Suzuki², M. Tsujikawa^{3,7}, K. Matsuda¹, T. Nozaki⁴, K. Tanaka¹, M. Goto^{1,6}, Y. Kotani², T. Ohkubo⁵, F. Bonell¹, K. Hono⁵, T. Nakamura², M. Shirai^{3,7} and Y. Suzuki^{1,6}* *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Japan Synchrotron Radiation Research Institute (JASRI), Sayo, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 4. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 5. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science (NIMS), Tsukuba, Japan; 6. Center for Spintronics Research Network, Osaka University, Toyonaka, Japan; 7. Center for Spintronics Research Network, Tohoku University, Sendai, Japan*

3:54

- DA-05. Voltage controlled interlayer coupling in perpendicular magnetic tunnel junctions. (Invited)** *W. Wang¹* *1. Department of Physics, University of Arizona, Tucson, AZ*

WEDNESDAY
AFTERNOON
1:30

MARDI GRAS F-H

Session DB MAGNONICS II

Helmut Schultheiss, Chair
Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany

1:30

- DB-01. Electrically Driven Magnetization Dynamics In Yttrium Iron Garnet. (Invited)** *M. Jungfleisch¹, W. Zhang¹, J. Sklenar^{1,3}, W. Jiang¹, J. Ding¹, H. Chang², F.Y. Fradin¹, S.M. Wu¹, J.E. Pearson¹, A. Bhattacharya¹, J.B. Ketterson³, V. Novosad¹, M. Wu² and A. Hoffmann¹* *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Department of Physics, Colorado State University, Fort Collins, CO; 3. Physics and Astronomy, Northwestern University, Evanston, IL*

DB-02. Reconfigurable nano-scale spin-wave directional coupler.

A. Chumak¹, Q. Wang¹, P. Pirro¹, B. Hillebrands¹, R.V. Verba² and A.N. Slavin³ 1. *Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany;* 2. *Institute of Magnetism, Kyiv, Ukraine;* 3. *Department of Physics, Oakland University, Rochester Hills, MI*

DB-03. A three-input spin wave interferometer using yttrium iron garnet.

N. Kanazawa¹, T. Goto^{1,2}, K. Sekiguchi^{3,2}, A.B. Granovsky⁴, C.A. Ross⁵, H. Takagi¹, Y. Nakamura¹, H. Uchida¹ and M. Inoue¹ 1. *Department of Electrical and Electronic Information Engineering, Toyohashi University of Technology, Toyohashi, Japan;* 2. *PRESTO, JST, Kawaguchi, Japan;* 3. *Department of Physics, Keio University, Yokohama 223-8522, Japan;* 4. *Faculty of Physics, Moscow State University, Leninskie Gory, Russian Federation;* 5. *Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

DB-04. Observation of Envelope Dispersive Shock Waves in

Yttrium Iron Garnet Thin Films. *P.A. Janantha¹, M. Hoefer² and M. Wu¹* 1. *Department of Physics, Colorado State University, Fort Collins, CO;* 2. *Applied Mathematics, University of Colorado, Boulder, Boulder, CO*

DB-05. Stabilization of a Bose-Einstein condensate of magnons through interaction of two condensates with opposite wave vectors.

O. Dzyapko¹, P. Nowik-Boltyk¹, V.E. Demidov¹, S. Demokritov^{1,2}, B. Koene³, A. Kirilyuk³, J. Jersch¹, T. Rasing³, I. Lisenkov^{4,5}, V. Tyberkevych⁴ and A.N. Slavin⁴ 1. *Institute for Applied Physics and Center for Nanotechnology, University of Muenster, Muenster, Germany;* 2. *Institute of Metal Physics, Ural Division of RAS, Yekaterinburg, Russian Federation;* 3. *Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands;* 4. *Department of Physics, Oakland University, Rochester, MI;* 5. *Kotelnikov Institute for Radioengineering and Electronics, Moscow, Russian Federation*

DB-06. Stabilization of spin wave amplitude by parametric pumping in ferromagnetic nanowires.

R.V. Verba¹, V. Tyberkevych² and A.N. Slavin² 1. *Institute of Magnetism, Kyiv, Ukraine;* 2. *Department of Physics, Oakland University, Rochester, MI*

3:06

- DB-07. Magnetic droplet nucleation boundary in orthogonal nano-contact spin-torque oscillator.** *S. Chung*^{1,2}, *A. Eklund*³, *E. Iacocca*^{4,5}, *S.M. Mohseni*⁶, *S. Redjai Sani*², *L. Bookman*⁷, *M. Hoefer*⁴, *R.K. Dumas*¹ and *J. Åkerman*^{1,8} *1. Department of Physics, University of Gothenburg, 412 96 Gothenburg, Sweden; 2. Department of Physics and Astronomy, Uppsala University, 751 20 Uppsala, Sweden; 3. Integrated Devices and Circuits, School of ICT, KTH-Royal Institute of Technology, Stockholm, Sweden; 4. Department of Applied Mathematics, University of Colorado, Boulder, CO; 5. Department of Physics, Division for theoretical physics, Chalmers University of Technology, 412 96, Gothenburg, Sweden; 6. Department of Physics, Shahid Beheshti University, Tehran 19839, The Islamic Republic of Iran; 7. Department of Mathematics, Yale University, New Haven, CT; 8. Department of Materials and Nano Physics, School of ICT, KTH-Royal Institute of Technology, Stockholm, Sweden*

3:18

- DB-08. Anderson localization of spin waves in chiral magnets in momentum space: coherent back- and forward scattering.** *M. Evers*¹, *C. Müller*¹ and *U. Nowak*¹ *1. Physics Department, University of Konstanz, Konstanz, Germany*

3:30

- DB-09. Withdrawn**

3:42

- DB-10. Spin Nernst Effect of Magnons in Collinear Antiferromagnets.** *R. Cheng*¹, *S. Okamoto*² and *D. Xiao*¹ *1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Oak Ridge National Laboratory, Oak Ridge, TN*

3:54

- DB-11. Resonant Optical Excitation of Ultrafast Magnetization Dynamics in Iron Garnets by a Sequence of Optical Pulses.** *M. Jäckl*¹, *V.I. Belotelov*^{2,3}, *I. Akimov*^{1,4}, *I. Savochkin*², *D. Yakovlev*^{1,4}, *A. Zvezdin*³ and *M. Bayer*^{1,4} *1. Technical University Dortmund, Dortmund, Germany; 2. Lomonosov Moscow State University, Moscow, Russian Federation; 3. Russian Quantum Center, Skolkovo, Russian Federation; 4. Ioffe Institute, Russian Academy of Sciences, St. Petersburg, Russian Federation*

4:06

- DB-12. Propagating spin-wave generated by a focused pulse laser in NiFe films.** *S. Iihama*¹, *Y. Sasaki*^{2,1}, *A. Sugihara*², *A. Kamimaki*^{2,1}, *Y. Ando*¹ and *S. Mizukami*² *1. Dept. Appl. Phys., Tohoku University, Sendai, Japan; 2. WPI-AIMR, Tohoku University, Sendai, Japan*

- DB-13. Spin-Wave Mode Conversion via Optically Induced Landscapes of the Saturation Magnetization.** *M. Vogel*¹, R. Aßmann¹, A. Chumak¹, B. Hillebrands¹ and G. von Freymann^{1,2} *1. Physics Department and State Research Center OPTIMAS, TU Kaiserslautern, Kaiserslautern, Germany; 2. Institute for Physical Measurement Techniques IPM, Fraunhofer-Institute, Kaiserslautern, Germany*

WEDNESDAY
AFTERNOON
1:30

LA GALERIES 1-2

Session DC SPIN PUMPING AND RELATED EFFECTS

William Bailey, Chair
Columbia University, New York, NY

1:30

- DC-01. Unidirectional spin Hall magnetoresistance in ferromagnet/normal metal bilayers. (Invited)** *C. Avci*¹, K. Garello¹, A. Ghosh¹, M. Gabureac¹, S.F. Alvarado¹ and P. Gambardella¹ *1. Department of Materials, ETH Zürich, Zürich, Switzerland*

2:06

- DC-02. Spin pumping-inverse spin Hall effect: Essential role of magnetization precession cone angle.** *S. Gupta*¹, R. Medwal¹, D. Kodama¹, K. Kondou², Y. Otani^{2,3} and Y. Fukuma^{1,2} *1. Frontier Research Academy for Young Researchers, Kyushu Institute of Technology, Iizuka, Japan; 2. RIKEN-CEMS, Wako, Japan; 3. ISSP, University of Tokyo, Kashiwa, Japan*

2:18

- DC-03. Interface effects at Pt/ferromagnetic insulator bilayers probed by spin Hall magnetoresistance and magnon excitations.** *S. Velez*¹, M. Isasa¹, E. Sagasta¹, J.M. Gomez-Perez¹, A. Bedoya-Pinto¹, W. Yan¹, N. Dix⁴, F. Sanchez⁴, J. Fontcuberta⁴, F. Rivadulla⁵, C. Bui⁵, L.E. Hueso^{1,3} and F. Casanova^{1,3} *1. CIC nanoGUNE, Donostia-San Sebastian, Spain; 2. IKERBASQUE, Bilbao, Spain; 3. Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Bellaterra, Spain; 4. Centro de Investigación en Química Biológica y Materiales Moleculares (CIQUS), Universidad de Santiago de Compostela, Santiago de Compostela, Spain*

2:30

- DC-04. Interfacial Fe in the Transport of YIG/Metal Bilayers.** *A.L. Westerman*¹, M. Ali¹, L. Banniar^{2,1} and B. Hickey¹ *1. School of Physics & Astronomy, University of Leeds, Castleford, United Kingdom; 2. Phelma Grenoble INP, Grenoble, France*

- DC-05. Spin Mixing Conductance Enhancement by NiFe Insertion at YIG/Pt Interface.** *H. Yuasa*^{1,2}, *K. Tamae*¹ and *N. Onizuka*¹
 1. Graduate School and Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan;
 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan

- DC-06. Spin mixing conductance in epitaxial and polycrystalline FM/Pt,Ta bilayers (FM= Fe, CoFeB).** *A. Conca*^{1,2}, *S. Keller*^{1,2}, *T. Kehagias*³, *G. Dimitrakopoulos*³, *B. Hillebrands*¹ and *E. Papaioannou*^{1,2}
 1. Physics, TU Kaiserslautern, Kaiserslautern, Germany; 2. Landesforschungszentrum OPTIMAS, Kaiserslautern, Germany; 3. Physics Department, Aristotle University of Thessaloniki, Thessaloniki, Greece

- DC-07. The role of magnetic anisotropy on spin pumping revealed in epitaxial Fe/NM (Pt, Pd, Au) systems.** *S. Keller*¹, *M.R. Schweizer*¹, *J. Greser*¹, *D. Karfaridis*², *L. Mihalceanu*¹, *G. Vourlias*², *A. Conca*¹, *B. Hillebrands*¹ and *E. Papaioannou*¹
 1. Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. Physics Department, Aristotle University of Thessaloniki, Thessaloniki, Greece

- DC-08. Spatial symmetry of spin pumping and inverse spin Hall effect in Pt/Y₃Fe₅O₁₂ system.** *X. Fan*¹, *H. Zhou*¹, *L. Ma*², *S. Zhou*² and *X.D. Sheng*¹
 1. Lanzhou University, Lanzhou, China; 2. Physics, Tongji University, Shanghai, China

- DC-09. Temperature Dependent Spin Hall Magnetoresistance in Pt/Fe₃O₄/MgO/Ta Multilayered Structures.** *T. Pham*¹, *N. Lee*¹, *Y. Bae*¹, *K. Kang*², *E. Park*⁴, *A. Michel*³ and *T. Kim*¹
 1. Department of Physics, Ewha Womans University, Seoul, The Republic of Korea; 2. Department of Materials Science and Engineering, Hanyang University, Seoul, The Republic of Korea; 3. Physique et Mécanique des Matériaux, CNRS-Université de Poitiers-ENSMA, Futuroscope-Chasseneuil, France; 4. KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, The Republic of Korea

- DC-10. Intrinsic Spin Hall conductivity of Pt probed by its Spin-Hall magnetoresistance in Pt/[NiCo] multilayers.** *H. Jaffrès*¹, *P. Laczkowski*¹, *S. Collin*¹, *N. Reyren*¹, *L. Vila*² and *J. George*¹
 1. Unité Mixte de Physique CNRS Thales, CNRS, Palaiseau, France; 2. SPINTEC, CEA, Grenoble, France

- DC-11. Spin Pumping in La_{2/3}Sr_{1/3}MnO₃/SrRuO₃ Bilayers Probed by Broadband Ferromagnetic Resonance Spectroscopy.** *S. Emori*¹ and *Y. Suzuki*²
 1. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA; 2. Applied Physics, Stanford University, Stanford, CA

DC-12. Low Damping Spinel Ferrites for Spin Pumping.

M.T. Gray^{1,2}, *S. Emori*², *B.A. Gray*³, *H. Jeon*^{3,4}, *B.M. Howe*³ 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. Materials and Manufacturing Directorate, Air Force Research Laboratory, Dayton, OH; 4. Electrical Engineering, Wright State University, Dayton, OH; 5. Applied Physics, Stanford University, Stanford, CA*

4:18

DC-13. Current-Induced Switching in a Magnetic Insulator.

*C. Avci*¹, *A. Quindeau*¹, *C. Pai*¹, *M. Mann*¹, *L.M. Caretta*¹, *A. Tang*¹, *M. Onbasli*¹, *C.A. Ross*¹ and *G. Beach*¹ *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

WEDNESDAY
AFTERNOON
1:30

LA GALERIES 3

Session DD**DOMAIN WALL, VORTEX AND SKYRMION DYNAMICS II**

Suzanne G.E. te Velthuis, Chair
Argonne National Laboratory, Argonne, IL

1:30

DD-01. Field-Driven Domain Wall Dynamics In Soft Cylindrical

Nanowires. *A. Wartelle*¹, *C. Thirion*¹, *B. Trapp*¹, *S. Bochmann*³, *J. Bachmann*³, *M. Foerster*⁴, *L. Aballe*⁴, *A. Sala*⁵, *T. Mentès*⁵, *A. Locatelli*⁵, *J. Toussaint*¹ and *O. Fruchart*² *1. Institut Néel, CNRS, Grenoble, France; 2. SPINTEC, CNRS, Grenoble, France; 3. Friedrich-Alexander Universität, Erlangen, Germany; 4. Alba Synchrotron Light Facility, CELLS, Barcelona, Spain; 5. Elettra – Sincrotrone Trieste S.C.p.A, Trieste, Italy*

1:42

DD-02. Very large domain wall velocities in Pt/Co/Gd and Pt/Co/GdOx trilayers with strong Dzyaloshinskii-Moriya interaction.

*S. Pizzini*¹, *J. Vogel*¹, *J. Sampaio*², *J. Rojas-Sanchez*¹, *M. Bonfim*³, *D. Chaves*¹, *T. Pham*¹ and *A. Thiaville*² *1. Institut Néel, CNRS, Grenoble, France; 2. Lab. Physique des Solides, Université Paris-Sud, Orsay, France; 3. Universidade Federal do Paraná, Departamento de Engenharia Elétrica, Curitiba, Brazil*

1:54

DD-03. Current induced domain wall propagation in Co-rich amorphous microwires.

V. Zhukova^{1,3}, *J. Blanco*³, *A. Chizhik*^{1,3}, *M. Ipatov*^{1,3} and *A.P. Zhukov*^{1,2} *1. Dept. Phys. Mater., UPV/EHU, San Sebastián, Spain; 2. Ikerbasque, Bilbao, Spain; 3. Dept. Appl. Phys., University of Basque Country, San Sebastian, Spain*

2:06

- DD-04. Formation and stability of individual skyrmions in confined geometries. (Invited)** H. Du¹ 1. *High Magnetic Field Lab Hefei Institutes of Physical Sciences, CAS, HeFei, China*

2:42

- DD-05. Domain wall dynamics by non-local thermal gradients.** S. Moretti¹, V. Raposo¹ and E. Martinez¹ 1. *Departamento de Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain*

2:54

- DD-06. Spatially Localized Excitations in Antiferromagnets Driven by Spin Current.** B. Ivanov^{1,2}, E. Galkina³, R. Khymyn⁴, V. Tyberkevych⁴ and A.N. Slavin⁴ 1. *Institute of Magnetism, National Academy of Science of Ukraine, Kyiv, Ukraine;* 2. *Taras Shevchenko National University, Kyiv, Ukraine;* 3. *Institute of Physics, National Academy of Science of Ukraine, Kyiv, Ukraine;* 4. *Department of Physics, Oakland University, Rochester, MI*

3:06

- DD-07. Coupling of high frequency strain and azimuthal spin wave modes in Magnetostrictive Nanostructures.** T.A. Ostler¹ and S.A. Cavill² 1. *L'Université de Liège, Liege, Belgium;* 2. *Physics, University of York, York, United Kingdom*

3:18

- DD-08. Magnetoelectric domain wall dynamics and its implications for magnetoelectric memory.** K. Belashchenko¹, O. Tchernyshyov², A. Kovalev¹ and O. Tretiakov^{3,4} 1. *Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE;* 2. *Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD;* 3. *Tohoku University, Sendai, Japan;* 4. *School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation*

3:30

- DD-09. Mechanism of all-optical control of ferromagnetic multilayers with circularly polarized light.** R. Medapalli¹, D. Afanasiev³, D. Kim¹, Y. Quessab^{1,2}, S. Manna¹, S.A. Montoya¹, A. Kirilyuk³, T. Rasing³, A. Kimel³ and E.E. Fullerton¹ 1. *Center for Recording Research, University of California San Diego, La Jolla, CA;* 2. *Universite de Lorraine, Institut Jean Lamour, Nancy, France;* 3. *Radboud University Nijmegen, Institute for Molecules and Materials, Heyendaalseweg 135, 6525 AJ Nijmegen, Nijmegen, Netherlands*

3:42

- DD-10. Probing Two Dipolar-coupled Spin-transfer Vortex Oscillators With External Microwave Field.** Y. Li¹, F. Abreu Araujo², X. de Milly¹, O. Klein³, V. Cros², J. Grollier² and G. de Loubens¹ 1. *Service de Physique de l'Etat Condensé, CEA Saclay, Saclay, France;* 2. *Unité Mixte de Physique, CNRS/Thales, Paris, France;* 3. *Spintec, CEA Grenoble, Grenoble, France*

3:54

- DD-11. Spin-Hall Effect Driven Magnetic Domain Wall Motion under the Application of In-plane Fields in PMA Nanowires.** *S. Nasser^{1,5}, E. Martinez⁴, C. Serpico² and G. Durin^{3,1}* 1. *ISI Foundation, Torino, Italy*; 2. *University of Naples, Napoli, Italy*; 3. *Nanoscience and Material, Istituto Nazionale di Ricerca Metrologica, Torino, Italy*; 4. *Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain*; 5. *Politecnico di Torino, Torino, Italy*

4:06

- DD-12. Theory of Magnon Motive Force in Chiral Ferromagnets.** *A. Kovalev¹ and U. Gungordu¹* 1. *Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*

4:18

- DD-13. Over 10 μ W emission power in a vortex-type spin torque oscillator.** *S. Tsunegi¹, K. Yakushiji¹, A. Fukushima¹, S. Yuasa¹ and H. Kubota¹* 1. *Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Palaiseau, France*

WEDNESDAY
AFTERNOON
1:30

LA GALERIES 4-5

Session DE
INTERFACIAL DMI AND SPIN-ORBIT TORQUES

Luqiao Liu, Chair
MIT, Cambridge, MA

1:30

- DE-01. Control of spin-orbit torques through crystal symmetry in WTe₂/ferromagnet bilayers.** *G.M. Stiehl¹, D. MacNeill¹, M.H. Guimaraes^{1,2}, R. Buhrman¹, J. Park^{1,2} and D. Ralph^{1,2}* 1. *Cornell University, Ithaca, NY*; 2. *Kavli Institute at Cornell for Nanoscale Science, Ithaca, NY*

1:42

- DE-02. Strongly enhanced valley splitting in monolayer transition metal dichalcogenides due to magnetic exchange field.** *C. Zhao¹, T. Scrace¹, P. Zhao², Y. Cheng², P. Taheri¹, P. Zhang¹, G. Miao³, R. Sabirianov⁴, A. Petrou¹ and H. Zeng¹* 1. *Physics, University at Buffalo, SUNY, Buffalo, NY*; 2. *Physics, Nanjing Tech University, Nanjing, China*; 3. *Institute for Quantum Computing, University of Waterloo, Waterloo, ON, Canada*; 4. *Physics, University of Nebraska-Omaha, Omaha, NE*

1:54

- DE-03. Strong Rashba-Edelstein Effect-Induced Spin-Orbit Torques in Monolayer Transition Metal Dichalcogenides/Ferromagnet Bilayers.** *Q. Shao¹, G. Yu¹, Y. Lan¹, Y. Shi², M. Li², C. Zheng¹, L. Li², P. Khalili¹ and K.L. Wang¹* 1. *Electrical engineering, UCLA, Los Angeles, CA*; 2. *Physical Sciences and Engineering Division, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia*

2:06

- DE-04. Large Spin Orbit Torques Originated From Bi₂Se₃/Ag Interface.** *S. Shi*¹, *Y. Wang*¹ and *H. Yang*¹ *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

2:18

- DE-05. Band structure and spin texture of Bi₂Se₃/3d ferromagnetic metal interface.** *J. Zhang*¹, *J. Velez*^{2,1}, *X. Dang*¹ and *E.Y. Tsymbal*¹ *1. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Department of Physics and Astronomy, University of Puerto Rico, San Juan, PR*

2:30

- DE-06. Influence of oxygen coverage on the Dzyaloshinskii-Moriya interaction in CoFe/Pt bilayers.** *H. Nembach*^{1,2}, *E.R. Evarts*¹, *E. Jué*¹ and *J. Shaw*¹ *1. National Institute of Standards and Technology, Boulder, CO; 2. JILA, University of Colorado, Boulder, CO*

2:42

- DE-07. Enhancement of voltage induced interfacial Dzyaloshinskii-Moriya interaction at Fe|MgO by one monolayer insertion of Pt.** *K. Nawaoka*¹, *S. Miwa*¹, *T. Nozaki*², *M. Goto*¹, *E. Tamura*¹, *S. Yuasa*² and *Y. Suzuki*¹ *1. Graduate School of Engineering Science, Osaka University, Osaka, Japan; 2. Spintronics Research Center, AIST, Tsukuba, Japan*

2:54

- DE-08. Coupling Of Coexisting Non-Collinear Spin States In The Fe Monolayer On Re(0001).** *A. Palacio Morales*¹, *A. Kubetzka*¹, *K. von Bergmann*¹ and *R. Wiesendanger*¹ *1. Institute of Applied Physics and Interdisciplinary Nanoscience Center Hamburg, Hamburg University, Hamburg, Germany*

3:06

- DE-09. Spin-orbit torques at ferromagnet/oxide interface.** *A. Mouillon*¹, *M. Drouard*¹, *L. Cuchet*¹, *B. Rodmacq*¹, *S. Auffret*¹, *I. Miron*¹, *O. Boulle*¹ and *G. Gaudin*¹ *1. SPINTEC, Univ. Grenoble Alpes/CNRS/CEA-INAC, Grenoble, France*

3:18

- DE-10. Effects of Interlayer Coupling in Ultrathin Multilayer Films with Interfacial DMI.** *J.F. Pulecio*¹, *A. Hrabec*², *K. Zeissler*³, *Y. Zhu*⁴ and *C.H. Marrows*³ *1. Quantum Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO; 2. LPS, CNRS, Orsay, France; 3. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 4. Brookhaven Nat.l Lab, Upton, NY*

- DE-11. Dzyaloshinskii-Moriya interaction and the magnetic chirality in 3d/5d interfaces.** *A. Belabbes¹, G. Bihlmayer², F. Bechstedt³, S. Blügel² and A. Manchon¹* *1. Physical Science and Engineering Division, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia; 2. Peter Grünberg Institut and Institute for Advanced Simulation, Forschungszentrum Jülich, Jülich, NRW, Germany, Jülich, Germany; 3. Institut für Festkörpertheorie und -optik, Friedrich-Schiller-Universität Jena, Jena, Germany*

- DE-12. Spin-Orbit Torque Studies In Hf/CoFeB/MgO as a Function of Hf Thickness.** *R. Ramaswamy¹, X. Qiu¹, T. Dutta¹, S. Pollard¹ and H. Yang¹* *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

- DE-13. Anisotropic Dzyaloshinskii-Moriya Interaction in Ultra-thin Epitaxial Au/Co/W(110).** *L. Camosi¹, O. Fruchart^{2,1}, S. Pizzini¹, M. Belmeguenai³, S. Rohart⁴, Y. Roussigné³, H. Yang², M. Chshiev², A. Stashkevich³, S.M. Chérif³ and J. Vogel¹* *1. Institut Néel, CNRS/Univ. Grenoble Alpes, Grenoble, France; 2. SPINTEC, CEA/CNRS/Univ. Grenoble Alpes, Grenoble, France; 3. LSPM, University Paris 13, Villetaneuse, France; 4. Université Paris-Sud, Orsay, France*

- DE-14. Thickness dependence of Dzyaloshinskii-Moriya interaction and spin-orbit torques in AlO_x .** *R. Lo Conte^{1,2}, E. Martinez³, G. Vijay Karnad¹, K. Lee¹, N. Kim^{1,4}, D. Han⁵, J. Kim⁵, T. Schulz¹, C. You⁴, H. Swagten⁵ and M. Kläui^{1,2}* *1. Department of Physics, Johannes Gutenberg - University Mainz, Mainz, Germany; 2. Graduate School of Excellence Materials Science in Mainz (MAINZ), Mainz, Germany; 3. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain; 4. Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, The Republic of Korea; 5. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands*

- DE-15. Observation of DMI and Skyrmions in Pt/Co/Os/Pt thin films.** *R.D. Tolley¹, S.A. Montoya¹, T. Hennen¹ and E.E. Fullerton¹* *1. Center for Memory and Recording Research, University of California San Diego, La Jolla, CA*

Session DF

2D AND 3D NANOSTRUCTURED ARRAYS I

Nicoleta Lupu, Chair

National Institute of Research and Development for Technical Physics,
Iasi, Romania

1:30

- DF-01. Potential dependent Tuning of magnetic and structural properties of electrodeposited NiZn nanowires in Al_2O_3 templates.** *N. Ahmad^{1,2}, S. Ghumen², L. Wenjing¹, S. Khan², S.A. Shah³, S.U. Awan⁴, J. Iqbal⁵, A. Majid⁶ and X. Han¹*
1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Department of Physics, International Islamic University, Islamabad, Pakistan; 3. Materials Science & Engineering, University of Washington, Seattle WA, USA, Seattle, WA; 4. Physics, COMSATS Institute Of Information Technology, Islamabad, Pakistan, Islamabad, Pakistan; 5. Physics, Quaid-i-azam University, Islamabad, Pakistan; 6. Physics, University of Gujrat, Gujrat, Pakistan

1:42

- DF-02. Controlled Electrodeposition of $\text{Co}_{35}\text{Fe}_{65}$ Nanowires with the Highest Magnetic Saturation for Biomedical Applications.** *A. Ghemes¹, O. Dragos¹, H. Chiriac¹, N. Lupu¹, M. Grigoras¹, D. Shore², B. Stadler² and I. Tabakovic²*
1. National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. ECE Department, University of Minnesota, Minneapolis, MN

1:54

- DF-03. Pushing Forward Electrodeposited Magnetic Nanowires: Trying to Pin Domain Walls.** *L.A. Costa Arzuza¹, D. Salazar-Aravena¹, V. Vega², V.M. de la Prida², F. Béron¹ and K.R. Pirota¹*
1. Universidade Estadual de Campinas, Campinas, Brazil; 2. Universidad de Oviedo, Oviedo, Spain

2:06

- DF-04. Wafer Scale Growth of Aligned Co Nanowires and Their Magnetic Properties.** *J. Mohapatra¹, K.H. Gandha¹, K. Elkins¹, N. Poudyal¹ and P. Liu¹*
1. Physics, University of Texas at Arlington, Arlington, TX

2:18

- DF-05. High Quality Magnetic Nanofibers Composites for RF applications.** *X. Chen¹, Z. Zhou¹ and G. Grocke¹*
1. Energy Systems Division, Argonne National Laboratory, Lemont, IL

2:30

- DF-06. Tailoring the Supermagnetic Order in Arrays of Dipolarly Coupled Nanomagnets.** *S. Sloetjes¹, H. Urdahl¹, J.K. Grepstad¹ and E. Folven¹*
1. Department of Electronics and Telecommunications, NTNU, Trondheim, Norway

- DF-07. Nonlinear response of classical nanoparticles: Equilibrium and dynamical.** *R. Lopez-Ruiz¹, F. Luis³, J. Bartolome³, C. Deranlot² and F. Petroff²* 1. *Universidade Estadual de Campinas (UNICAMP), Campinas, Brazil;* 2. *UMPhy CNRS/Thales, Palaiseau, France;* 3. *Instituto de Ciencia de Materiales de Aragón - CSIC - Universidad de Zaragoza, Zaragoza, Spain*

- DF-08. Three-Dimensional Magnetic Vortices in Cobalt Nanospheres.** *M. Urbanek^{1,3}, O. Vyrubal³, M. Kolibal^{1,3}, L. Flajsman¹, M. Vanatka¹, T.V. Ashworth² and T. Sikola^{1,3}* 1. *CEITEC BUT, Brno University of Technology, Brno, Czech Republic;* 2. *NanoScan AG, Duebendorf, Switzerland;* 3. *Institute of Physical Engineering, Brno University of Technology, Brno, Czech Republic*

- DF-09. Enhanced coercivity in Co-doped α -Fe₂O₃ cubic shaped nanocrystals assemblies synthesized via a magnetic field-assisted hydrothermal approach.** *K.H. Gandha¹, J. Mohapatra¹, N. Poudyal¹, K. Elkins¹ and P. Liu¹* 1. *Physics, University of Texas at Arlington, Arlington, TX*

- DF-10. Three-dimensional magneto-optic spatial light modulator with artificial magnetic lattice. (Invited)** *H. Takagi¹, K. Nakamura¹, T. Goto^{1,2}, Y. Nakamura¹, P. Lim¹, H. Uchida¹ and M. Inoue¹* 1. *Toyohashi University of Technology, Toyohashi, Japan;* 2. *JST, PRESTO, Kawaguchi, Japan*

- DF-11. 3D Printing of Polymer Bonded Rare-Earth Magnets With a Variable Magnetic Compound Density for a Predefined Stray Field.** *C. Huber¹, C. Abert¹, F. Bruckner¹, M. Groenefeld², S. Schuschnigg³, I. Teliban², G. Wautischer¹ and D. Suess¹* 1. *Institute of Solid State Physics, Christian Doppler Laboratory for Advanced Magnetic Sensing and Materials, Vienna University of Technology, Vienna, Austria;* 2. *Magnetfabrik Bonn GmbH, Bonn, Germany;* 3. *Montanuniversitaet Leoben, Leoben, Austria*

- DF-12. Highly-tunable Magnetic Properties In Novel Cu_{1-x}Ni_x Architectures: From Fully Dense Films To Patterned Pillars And Micro-/nanoporous Structures.** *A. Quintana Puebla¹, J. Zhang¹, A. Varea², S. Pané³, E. Pellicer¹ and J. Sort^{1,4}* 1. *Physics, Universitat Autònoma de Barcelona, Bellaterra, Spain;* 2. *Engineering: Electronics, Universitat de Barcelona, Barcelona, Spain;* 3. *ETH Zurich, Zürich, Switzerland;* 4. *Catalan Institution for Research and Advanced Studies (ICREA), Barcelona, Spain*

- DF-13. 3D Magnetic Nanowires: Fabrication and Advanced Magnetic Characterization.** *D. Sanz-Hernández*¹, J. Pablo-Navarro^{4,6}, L. Serrano-Ramón^{4,6}, C. Magén^{4,5}, R. Streubel², M. Im³, J. De Teresa^{4,6}, P. Fischer² and A. Fernandez-Pacheco¹ *1. University of Cambridge, Cambridge, United Kingdom; 2. LBNL, Berkeley, CA; 3. CXRO, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Laboratorio de Microscopías Avanzadas (LMA), Zaragoza, Spain; 5. Departamento de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain; 6. Instituto de Ciencia de Materiales de Aragón (ICMA), Zaragoza, Spain*

WEDNESDAY
AFTERNOON
1:30

STUDIO 9-10

Session DG

MN- AND CO-BASED HIGH ANISOTROPY SYSTEMS

Cristina Bran, Chair
ICMM-CSIC, Madrid, Spain

1:30

- DG-01. Rare-earth free permanent magnets: screening and processing the (Mn,X)-Ga system.** *S. Ener*¹, J. Kroder¹, K.P. Skokov¹, D.Y. Karpenkov^{1,2}, M. Kuz'min¹ and O. Gutfleisch¹ *1. Functional Materials, Technische Universität Darmstadt, Darmstadt, Germany; 2. National University of Science & Technology "MISIS", Tver, Russian Federation*

1:42

- DG-02. Thickness dependence of orbital moments in tetragonally distorted FeCo thin films.** *N. Inami*¹, T. Ueno², T. Hasegawa³, S. Ishio³ and K. Ono¹ *1. Institute of Materials Structure Science, KEK, Tsukuba, Japan; 2. National Institute for Materials Science, Tsukuba, Japan; 3. Department of Materials Science and Engineering, Akita University, Akita City, Japan*

1:54

- DG-03. Withdrawn**

2:06

- DG-04. Preparation And Characterisation Of Compositionally Graded SmCo Films.** *A. Dias*¹, G. Gómez Eslava¹, S. Le Denmat¹, D. Givord^{1,3}, M. Bonfim² and N. Dempsey¹ *1. Institut NEEL - CNRS, Grenoble, France; 2. Universidade Federal do Paraná, Curitiba, Brazil; 3. Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil*

2:18

- DG-05. Exchange-Coupled Hard Magnetic Fe-Co/CoPt Nanocomposite Films Fabricated by Electro-Infiltration.** *X. Wen*¹ and D.P. Arnold¹ *1. Electrical and Computer Engineering, University of Florida, Gainesville, FL*

- DG-06. Structural and Magnetic Properties of MnPtGa Heusler thin film.** R. Sahoo¹, A.K. Nayak¹, B. Ernst¹, S. Selle², T. Hoeche² and C. Felser¹ 1. *Inorganic Chemistry, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*; 2. *Fraunhofer Institute for Mechanics of Materials IWM, Halle, Germany, Halle, Germany*

- DG-07. Magnetic and Structural Properties of L1₀ MnGa Epitaxial Thin Films on MgO(100) and SrTiO₃(100).** S. Zhao^{1,2} and T. Suzuki^{1,3} 1. *Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL*; 2. *Department of Metallurgical and Materials Engineering, University of Alabama, Tuscaloosa, AL*; 3. *Department of Metallurgical and Materials Engineering & Electrical and Computer Engineering, University of Alabama, Tuscaloosa, AL*

- DG-08. CaO Matrix Processing of MnBi Alloys for Permanent Magnets.** A. Gabay¹ and G. Hadjipanayis¹ 1. *Physics and Astronomy, University of Delaware, Newark, DE*

- DG-09. Magnetic Properties and Structure of Low Temperature Phase MnBi with Islands Structure.** M. Itoh^{1,4}, Y. Tanaka⁴, G. Mankey^{1,3}, R. Schad^{1,3} and T. Suzuki^{1,2} 1. *Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL*; 2. *Departments of Electrical and Computer Engineering, and Metallurgical and Materials Engineering, University of Alabama, Tuscaloosa, AL*; 3. *Department of Physics and Astronomy, University of Alabama, Tuscaloosa, AL*; 4. *Materials Development Center, Technology HQ, TDK Cooperation, Ichikawa, Japan*

- DG-10. Electronic Structures of Ferromagnetic Mn_{0.5}TM_{0.5}Al Alloys (TM = Mn, Fe, and Co).** M. Choi¹, Y. Hong¹, J. Park¹, W. Lee¹, H. Won¹, C. Choi², W. Lee³ and M. Jung⁴ 1. *Electrical and Computer Engineering and MINT Center, The University of Alabama, Tuscaloosa, AL*; 2. *Korea Institute of Materials Science, Changwon, The Republic of Korea*; 3. *Department of Materials Science and Engineering, Yonsei University, Seoul, The Republic of Korea*; 4. *Department of Physics, Sogang University, Seoul, The Republic of Korea*

- DG-11. The Phase Stability And Intrinsic Magnetic Properties Of MnAl Alloys Doped With Carbon.** S. Zhao¹, C. Jiang¹, J. Wang², T. Zhang² and J. Liu² 1. *Beihang University, Beijing, China*; 2. *School of Materials Science and Engineering, Beihang University, Beijing, China*

- DG-12. Manipulation Of Morphology And Magnetic Properties In Cobalt Nanowires.** C. Li¹, Q. Wu¹, M. Yue¹, H. Xu¹, K. Elkins² and P. Liu² 1. *College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*; 2. *University of Texas-Arlington, Arlington, TX*

3:54

DG-13. Magnetic Exchange Coupled MnAl/Fe₇₀Co₃₀ Bilayer.

M. Choi¹, Y. Hong¹, J. Park¹, W. Lee¹, H. Won¹, H. Lee², C. Choi³ and G. Mankey⁴ 1. *Electrical and Computer Engineering and MINT Center, The University of Alabama, Tuscaloosa, AL;* 2. *National Institute for Materials Science, Tsukuba, Japan;* 3. *Korea Institute of Materials Science, Changwon, The Republic of Korea;* 4. *Department of Physics & Astronomy and MINT Center, The University of Alabama, Tuscaloosa, AL*

4:06

DG-14. Phase Decomposition of Metastable Co₃C Powders.

M.S. Lucas¹, Z. Turgut², J. Horwath³ and E. Karapetrova⁴ 1. *RXCC, Air Force Research Laboratory, Wright-Patterson AFB, OH;* 2. *RQQM, AFRL, Wright-Patterson AFB, OH;* 3. *Air Force Research Laboratory, Wright-Patterson AFB, OH;* 4. *Advanced Photon Source, Argonne, IL*

WEDNESDAY
AFTERNOON
1:30

STUDIO 7-8

Session DH
COMPLEX OXIDES III: FILMS AND
HETEROSTRUCTURES

Alpha N'Diaye, Chair
Lawrence Berkeley National Laboratory, Berkeley, CA

1:30

DH-01. Strong spin-orbit interaction on SrTiO₃ thin films on Si substrates. *N. Theodoropoulou¹, R.C. Cottier¹, D.A. Currie¹ and B.D. Koehne¹* 1. *Physics, Texas State University, San Marcos, TX*

1:42

DH-02. A Strain Mediated Ferromagnetic to Antiferromagnetic Transition in ESMO Thin Films. *S.M. Disseler¹, A. Grutter¹, E. Moon², D.A. Gilbert¹, E. Arenholz³ and S. May⁴* 1. *NIST Center for Neutron Research, Gaithersburg, MD;* 2. *Drexel University, Philadelphia, PA;* 3. *LBNL, Berkeley, CA;* 4. *Materials Science and Engineering, Drexel University, Philadelphia, PA*

1:54

DH-03. Current-induced modulation of switching magnetic field in La_{0.67}Sr_{0.33}MnO₃/SrTiO₃ structures. *M. Yamanouchi¹, T. Oyamada², T. Katase¹ and H. Ohta¹* 1. *Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan;* 2. *Department of Electronics and Information Engineering, School of Engineering, Hokkaido University, Sapporo, Japan*

2:06

- DH-04. Electric Field Effects of Spin Accumulation in Nb doped SrTiO₃ with Ni/AlO_x as Spin Injection Contacts.** *A. Das*¹, A.M. Kamerbeek¹, A. Majumdar¹, A. Goossens¹ and T. Banerjee² *1. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands; 2. University of Groningen, Groningen, Netherlands*

2:18

- DH-05. Disentangling strain and charge-mediated magnetoelectric effects in complex oxide-based artificial multiferroic heterostructures.** *R.V. Chopdekar*¹ and Y. Takamura¹ *1. Materials Science and Engineering, University of California - Davis, Davis, CA*

2:30

- DH-06. Voltage-induced tuning of magnetism in La_{1-x}Sr_x MnO₃ films by means of an ionic liquid.** *A. Molinari*¹, P.M. Leufke¹, C. Reitz¹, S. Dasgupta¹, R. Kruk¹ and H. Hahn¹ *1. Institute of Nanotechnology (INT), Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen (Karlsruhe), Germany*

2:42

- DH-07. Complete Suppression of Magnetism in Gd/(LaSr)CoO₃ Films via Redox Design of Oxygen Distributions.** *P. Murray*¹, D.A. Gilbert², A. Grutter², A. Ionin³, R.V. Chopdekar³, A.T. N'Diaye⁴, B.J. Kirby², B.B. Maranville², Y. Takamura³, E. Arenholz⁴, K. Liu¹ and J. Borchers² *1. Physics Department, University of California, Davis, CA; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 3. Department of Materials Science and Engineering, University of California, Davis, CA; 4. Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, CA*

2:54

- DH-08. Complex Magnetic Interface Interactions at the (111)-oriented La_{0.7}Sr_{0.3}MnO₃/LaFeO₃ interface.** *I. Hallsteinsen*^{1,2}, M. Moreau¹, A. Grutter³, D.A. Gilbert³, A.T. N'Diaye², B.J. Kirby³, E. Arenholz² and T. Tybell¹ *1. Dep. of Electronics and Telecommunications, NTNU - Norwegian University of Science and Technology, Trondheim, Norway; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. NIST Center for Neutron Research, NIST, Gaithersburg, MD*

3:06

- DH-09. Interlayer Coupling-induced Distinct Spin Structure In The [LaCoO₃/LaMnO₃]₅ Superlattices.** *J. Zhang*¹, H. Zhang¹, X. Zhang¹, B. Liu¹ and J. Sun¹ *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China*

3:18

DH-10. Controlling Emergent Ferromagnetism at Complex Oxide Interfaces. (Invited) A. Grutter¹, A. Vailionis⁶, B.J. Kirby¹, J. Borchers¹, C. He², E. Arenholz³, M.T. Gray⁵, U.S. Alaam⁶, C. Flint⁴ and Y. Suzuki⁴ *1. NIST Center for Neutron Research, NIST, Gaithersburg, MD; 2. Materials Science and Engineering, University of California, Berkeley, CA; 3. LBNL, Berkeley, CA; 4. Stanford University, Stanford, CA; 5. Materials Science and Engineering, Stanford University, Stanford, CA; 6. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA*

3:54

DH-11. Dimension modulated magnetism in SrRuO₃/SrTiO₃ superlattices with controlling the RuO₆ octahedrons connections. M. Gu¹, K. Wang¹, Y. Wang¹, Q. Xie¹, A. Zhang², G. Zhang³ and X. Wu¹ *1. Nanjing University, Nanjing, China; 2. College of Science, Hohai University, Nanjing, China; 3. Physics, Indiana State University, Terre Haute, IN*

4:06

DH-12. Multiferroic Properties and Strain Induced Spin Phonon Coupling in BiFeO₃/CoFe₂O₄ Thin Film Heterostructures. M.K. Singh¹, G. Singh¹, A. Kumar¹, B. Khan¹ and R.S. Katiyar² *1. Centre of Material Sciences, University of Allahabad, Allahabad, India; 2. Department of Physics and Institute of Functional Nano Materials, University of Puerto Rico, San Juan, PR*

4:18

DH-13. Magnetic coupling and enhancement of the switching field in Fe₃O₄/NM/Fe tri-layer system. T. Nagahama¹, K. Oomori², T. Kawai², T. Yanase¹ and T. Shimada¹ *1. Graduate School of Engineering, Hokkaido University, Sapporo, Japan; 2. Graduate School of Chemical Sciences and Engineering, Hokkaido University, Sapporo, Japan*

WEDNESDAY
AFTERNOON
1:30

STUDIO 3-4

Session DI

MAGNETIC MICROSCOPY AND IMAGING

Stephen McVitie, Chair

University of Glasgow, Glasgow, United Kingdom

1:30

DI-01. Selective sensitivity in Kerr microscopy. I.V. Soldatov¹ and R. Schaefer^{1,2} *1. Institute for Metallic Materials, Leibniz Institute for Solid State and Materials Research (IFW) Dresden, Dresden, Germany; 2. Institute for Materials Science, TU Dresden, Dresden, Germany*

1:42

- DI-02. Magneto-Optic Kerr Effect CCD Imaging with Polarization Modulation Technique.** *S. Nakayama*¹, *M. Okano*¹, *Y. Nozaki*¹ and *S. Watanabe*¹ *1. Department of Physics, Faculty of Science and Technology, Keio University, Yokohama, Japan*

1:54

- DI-03. Magneto-optical Color Imaging Of Magnetic Field Distribution.** *Y. Nagakubo*¹, *Q. Liu*¹, *G. Lou*¹ and *T. Ishibashi*¹ *1. Department of Materials Science & Technology, Nagaoka University of Technology, Niigata, Japan*

2:06

- DI-04. Spectromicroscopic Proof Of Metal Penetration At Ferromagnet-Organics Heterojunctions.** *K. Lu*¹, *T. Chuang*¹, *C. Lu*¹, *Y. Hsu*¹ and *D. Wei*¹ *1. Nano Science, National Synchrotron Radiation Research Center, Hsinchu, Taiwan*

2:18

- DI-05. Imaging of Spin Hall Effect in Topological Insulators.** *Y. Liu*¹, *J. Besbas*¹, *Y. Wang*¹, *Y. Wu*¹, *J. Moon*², *S. Oh*², *L. Wang*³ and *H. Yang*¹ *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Department of Physics and Astronomy, The State University of New Jersey, Piscataway, NJ; 3. School of Applied Sciences, Department of Physics, RMIT University, Melbourne, VIC, Australia*

2:30

- DI-06. Investigation of dissipative magnetic solitons using x-ray holography with extended references.** *E.O. Burgos Parra*¹, *N. Bukin*¹, *M. Dupraz*², *G. Beutier*², *S. Redjai Sani*³, *S.A. Cavill*⁴, *J. Åkerman*⁵, *R.J. Hicken*¹, *G. van der Laan*⁶ and *F.Y. Ogrin*¹ *1. Physics and Astronomy, University of Exeter, Exeter, United Kingdom; 2. SIMaP, Grenoble-INP, CNRS, Grenoble, France; 3. Department of Material Science and Engineering, MIT - Massachusetts Institute of Technology, Cambridge, MA; 4. Physics, University of York, York, United Kingdom; 5. Univ. Gothenburg, Göteborg, Sweden; 6. Diamond Light Source, Didcot, United Kingdom*

2:42

- DI-07. Quantitative Magnetic Moment Mapping of Permanent Magnet Materials by X-Ray Magnetic Circular Dichroism Nano-Spectroscopy.** *T. Ueno*^{1,2}, *A. Hashimoto*², *Y. Takeichi*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*

- DI-08. Simultaneous control of circularity and polarity in vortex arrays.** *M. Im*¹, *K. Lee*², *P. Fischer*³, *G. Meier*⁴, *W. Chao*¹ and *J. Hong*⁵ *1. CXRO, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. School of Mechanical & Advanced Material Engineering, Ulsan National Institute of Science Technology, Ulsan, The Republic of Korea; 3. LBNL, Berkeley, CA; 4. Hamburg Centre for Ultrafast Imaging, Hamburg, Germany; 5. Emerging Materials Science, Daegu Gyeongbuk Institute of Science and Technology, Daegu, The Republic of Korea*

- DI-09. Magnetic scanning gate microscopy of CoFeB lateral spin valve.** *H. Corte-León*^{1,4}, *P. Krzysteczko*², *J. Lee*³, *A. Fernandez-Scarioni*², *D. Cox*^{1,5}, *R. Cowburn*³, *H.W. Schumacher*², *V. Antonov*⁴ and *O. Kazakova*¹ *1. TQEM, National Physical Laboratory, Teddington, United Kingdom; 2. Nanomagnetism, PTB, Braunschweig, Germany; 3. Physics, University of Cambridge, Cambridge, United Kingdom; 4. Royal Holloway University of London, Egham, United Kingdom; 5. Applied Technology Institute, Surrey University, Guildford, United Kingdom*

- DI-10. Effect of Defects, Magnetocrystalline Anisotropy, and Shape Anisotropy on Magnetic Structure of Iron Thin Films by Magnetic Force Microscopy.** *K. Xu*¹, *D. Schreiber*², *B. Johnson*² and *J. McCloy*^{1,3} *1. Material Science and Engineering Program, Washington State University, Pullman, WA; 2. Pacific Northwest National Laboratory, Richland, WA; 3. School of Mechanical and Materials Engineering, Washington State University, Pullman, WA*

- DI-11. Imaging Defects In Magnetic Multilayers Using Scanning Electron Microscopy.** *E. Jackson*¹, *S. Duttagupta*², *S. Fukami*², *H. Ohno*² and *A. Hirohata*¹ *1. Department of Electronics, University of York, York, United Kingdom; 2. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

- DI-12. High Resolution SEMPA Imaging of Domain Wall Spin Configurations in Mesoscopic Fe Rings.** *R.M. Reeve*¹, *P. Krautscheid*^{1,2}, *M. Lauf*¹, *B. Krüger*¹ and *M. Kläui*^{1,2} *1. Institut für Physik, Johannes Gutenberg-Universität Mainz, 55099 Mainz, Germany; 2. Graduate School of Excellence Materials Science in Mainz (MAINZ), 55128 Mainz, Germany*

- DI-13. Mapping Geometric Frustration in Quasicrystal Artificial Spin Ice Lattices.** *V. Brajuskovic*^{1,2}, *F. Barrows*^{1,3}, *C. Phatak*¹ and *A. Petford-Long*^{1,2} *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Materials Science and Engineering, Northwestern University, Evanston, IL; 3. Applied Physics Program, Northwestern University, Evanston, IL*

- DI-14. Determination of Domain Wall Chirality Using *in situ* Lorentz Transmission Electron Microscopy.** *J.J. Chess*¹, S.A. Montoya², E.E. Fullerton² and B.J. McMorran¹
1. Department of Physics, University of Oregon, Eugene, OR;
2. Center for Recording Research, University of California San Diego, La Jolla, CA

- DI-15. Electron Current Control of Biskyrmion Lattices.** *Y. Zhang*¹ and L. Peng¹ *1. Chinese Academy of Science, Institute of Physics, Beijing, China*

WEDNESDAY
 AFTERNOON
 2:30

GRAND BALLROOM

Session DP
POWER AND CONTROL MAGNETICS I
(Poster Session)

Takeshi Kato, Chair
 Nagoya University, Nagoya, Japan

- DP-01. Magnetic Properties of Ni-Zn Ferrite / Metal Composite Core in MHz Range.** *S. Mori*^{1,3}, T. Mitsuoka¹, T. Sato² and N. Matsushita³ *1. NGK Spark Plug Co., Ltd., Komaki, Japan;*
2. Shinshu University, Nagano, Japan; *3. Tokyo Institute of Technology, Yokohama, Japan*
- DP-02. Multi-directional Electromagnetic Vibration Energy Harvester Using Circular Halbach Array.** *J. Qiu*¹, X. Liu¹, Z. Hu¹, Q. Chang¹, Y. Wen¹ and P. Li¹ *1. Research Center of Sensors and Instruments, College of Optoelectronic Engineering, Chongqing University, Chongqing, China*
- DP-03. Magnetic Characterization of Nanocrystalline Materials with Cut-Core Effect in Power Electronics Applications.** *M. Bahmani*¹ *1. Electric Power Engineering, Chalmers University of Technology, Gothenburg, Sweden*
- DP-04. New Design of PMSM using Hybrid Type Permanent Magnet for Replacing Rare Earth Materials.** *C. Jeong*¹ and J. Hur¹ *1. Incheon National University, Incheon, The Republic of Korea*
- DP-05. Rotational Speed Control of Vertical Axis Current Turbine Power System with Generator Magnetic Flux-Adjusting Strategies.** *S. Xu*¹, H. Wang¹ and H. Pan² *1. Institute of electrical engineering, Chinese Academy of Sciences, Beijing, China;* *2. Zhejiang Ocean University, Zhoushan city, China*
- DP-06. Fuzzy-PI Combined Speed Control and Torque Ripple Minimization of Switched Reluctance Motors.** *H. Wei*¹ and J. Qi² *1. School of Electrical Engineering, Southeast University, Nanjing, China;* *2. Southeast University, NANJING, China*

- DP-07. Studies of High-Frequency Iron Core Loss for Synchronous Electric Machines Used in Electric Vehicles.** *R. Pei¹*
1. Shanghai Innmag New Energy Co., Ltd., Shanghai, China
- DP-08. A Low-velocity Water Generator Based On High-permeability Electromagnetic Transducer.** *Z. Lin¹, J. Yang¹, J. Zhao¹, N. Zhao¹ and Q. Awais¹* 1. Department of Optoelectronic Engineering, Research Center of Sensors and Instruments, Chongqing University, Chongqing, China
- DP-09. Modelling of an Electromagnetic Speed Reducer for Wind Energy Conversion Systems.** *G.C. Maniçoba¹, A.O. Salazar¹, F.E. Carvalho Souza², P.V. Silva², R.F. Pinheiro¹ and R.S. de Medeiros³* 1. Departamento de Engenharia de Computação e Automação, Universidade Federal do Rio Grande do Norte, Natal, Brazil; 2. Instituto Federal do Rio Grande do Norte, Natal, Brazil; 3. Departamento de Engenharia Mecânica, Universidade Federal do Rio Grande do Norte, Natal, Brazil
- DP-10. A New Hybrid Excitation Flux Switching Motor with Ferrite Permanent Magnet.** *Y. Du¹, Q. Wang¹, L. Quan¹ and X. Zhu¹*
1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China
- DP-11. Design of a New Four-Leg Three-Phase Voltage Source Inverter with Fewer Transistors.** *Y. Luo¹, C. Liu¹, F. Yu¹ and C. Lee²* 1. School of Energy and Environment, City University of Hong Kong, Hong Kong, China; 2. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China
- DP-12. A New Design of Wireless Charging for Micro Medical Robotics.** *C. Liu¹, Y. Luo¹ and C. Lee²* 1. School of Energy and Environment, City University of Hong Kong, Hong Kong, China; 2. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China
- DP-13. Power Distributions of A Co-Axial Dual-Mechanical-Port Flux-Switching Permanent Magnet Machine for Fuel-Based Extended Range Electric Vehicles.** *L. Zhou¹, H. Wei¹ and G. Zhang¹* 1. School of Electrical Engineering, Southeast University, Nanjing, China
- DP-14. Torque and Suspension Force Enhancement using Third-order Harmonic Injection of a Single Set Winding Multi-phase Bearingless Permanent Magnet Synchronous Motor.** *Y. Qin¹ and H. Zhu¹* 1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China
- DP-15. Effect of Pole Number and Slot Number on Performance of Dual Rotor Permanent Magnet Wind Power Generator using Ferrite Magnets.** *P. Xu¹, K. Shi¹, H. Zhu¹ and Y. Du²*
1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China; 2. Jiangsu University, Zhenjiang, China

Session DQ
POWER AND CONTROL MAGNETICS II
(Poster Session)

Igor Barsukov, Chair
University of California Riverside, Riverside, CA

- DQ-01. An Optimization Method of Back-EMF Waveforms for Outer-Rotor Permanent Magnet Brushless Machines with Different Magnet Configurations.** *H. Zhang¹ and H. Wei¹*
1. School of Electrical Engineering, Southeast University, Nanjing, China
- DQ-02. A Model Predictive Current Control of Flux-Switching Permanent Magnet Machines for Torque Ripple Minimization.** *W. Huang¹, H. Wei¹ and F. Yu²*
1. School of Electrical Engineering, Southeast University, Nanjing, China;
2. School of Electrical Engineering, Nantong University, Nantong, China
- DQ-03. Parametric Analysis and Optimized Torque Characteristic of Coaxial Magnetic Gear Based on Subdomain Analytical Model.** *K. Shin¹, H. Cho¹ and J. Choi¹*
1. Dept. of Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea
- DQ-04. Design and Analysis of Tubular Permanent Magnet Linear Generator for Small-Scale Wave Energy Converter.** *J. Kim¹, J. Choi¹, M. Koo¹, J. Jeong¹ and K. Hong³*
1. Chungnam National University, Dae-jeon, The Republic of Korea;
3. Offshore Plant Research Division, Korea Research Institute of Ships & Ocean Engineering, Daejeon, The Republic of Korea
- DQ-05. Design and Analysis of Linear Oscillatory Single-Phase Permanent Magnet Generator for Free-Piston Stirling Engine Systems.** *J. Kim¹, J. Choi¹, K. Lee² and S. Lee²*
1. Chungnam National University, Dae-jeon, The Republic of Korea;
2. Automotive Components & Materials Group, Korea Institute of Industrial Technology, Gwangju, The Republic of Korea
- DQ-06. An Inductance Fourier Decomposition-based Current-Hysteresis Control Strategy of Switched Reluctance Motors for Torque Ripple Minimization.** *H. Wei¹ and J. Qi¹*
1. School of Electrical Engineering, Southeast University, Nanjing, China
- DQ-07. Optimum Design characteristics for 210KW Traction Interior Permanent Magnet Synchronous Motor considering Torque Ripple Improvement.** *Y. Kim¹, S. Lee¹ and J. Lee¹*
1. Department of Electrical Engineering, Hanbat National University, Dongseo-daero, The Republic of Korea
- DQ-08. Withdrawn**

- DQ-09. Evaluation of Parameter Sensitivities for Flux-Switching Permanent Magnet Machines Based on Simplified Equivalent Magnetic Circuits.** *G. Zhang¹, H. Wei¹ and M. Cheng¹ 1. School of Electrical Engineering, Southeast University, Nanjing, China*
- DQ-10. Decoupling Analysis of A Novel Bearingless Flux-Switching Permanent Magnet Motor.** *C. Zhao¹ and H. Zhu¹ 1. Jiangsu University, Zhenjiang, China*
- DQ-11. Comparative Study and Experiment of a Double-Sided Permanent Magnet Linear Synchronous Generator According to Magnetization Pattern.** *S. Seo¹, M. Koo¹, G. Jang¹ and J. Choi¹ 1. Electrical Engineering, Chung Nam National University, Daejeon, The Republic of Korea*
- DQ-12. Characteristic Analysis for the Influence of Auxiliary Teeth and Notching on the Reduction of the Detent Force of a Permanent Magnet Linear Synchronous Machine.** *S. Seo¹, M. Koo¹ and J. Choi¹ 1. Electrical Engineering, Chung Nam National University, Daejeon, Korea, The Republic of Korea*
- DQ-13. Analysis and Experimental Verification for Unbalanced Magnetic Force of Permanent Magnet Machine according to Rotor Eccentricity.** *Y. Jeong Jin¹ 1. Chungnam National University, Daejeon, The Republic of Korea*
- DQ-14. A Study of Performance Degradation caused by Axial Leakage Magnetic Flux in Spoke-type BLDC.** *S. Lee¹ 1. Busan University of Foreign Studies, Busan, The Republic of Korea*
- DQ-15. Design and Implementation Analysis of a Double-layer Transverse Flux Induction Heating System with Distributed Spiral Coils.** *J. Wang¹, J. Li², M. Yao², K. Liu¹, M. Long¹ and Z. Fang¹ 1. School of Electrical Engineering, Wuhan University, Wuhan, China; 2. Wuhan University of Technology, Wuhan, China*

WEDNESDAY
AFTERNOON
2:30

GRAND BALLROOM

Session DR
SOFT MAGNETIC MATERIALS I
(Poster Session)

Albrecht Jander, Chair
Oregon State University, Corvallis, OR

- DR-01. Thermal stability and magnetic properties of MgFe₂O₄@ZnO nanoparticles.** *M. Shanigaram¹, D. Prabhu² and V. Srinivas³ 1. Indian Institute of Technology, Chennai, India; 2. Centre for Automotive Energy Materials, International Advanced Research Centre for Powder Metallurgy and New Materials, Chennai 600113, India, Chennai, India; 3. Department of Physics, Indian Institute of Technology Madras, Chennai, India*

- DR-02. Microstructural, Phase Stability and Mössbauer Studies of $\text{Mn}_{1-x}\text{Ni}_x\text{Fe}_2\text{O}_4$ ($x = 0.3, 0.7$) Ferrites Synthesized by Glycol-thermal Method.** *I.P. Ezekiel¹ and T. Moyo¹ 1. Physics, University of KwaZulu-Natal, Durban, South Africa*
- DR-03. Time evolution of magnetic properties of MgFe_2O_4 nano particles: Role of cation distribution.** *S. Raghuvanshi¹, F. Mazaleyra² and S. Kane¹ 1. School of Physics, Devi Ahilya University, Indore, India; 2. SATIE-CNRS, ENS Cachan, Cachan, France*
- DR-04. Effects of Zn-doping on magnetic and dielectric properties of magnetoelectric GaFeO_3 nanocrystals.** *T. Han¹, C. Yen¹ and Y. Chung¹ 1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*
- DR-05. High-Temperature Structural Changes and Thermal Hysteresis in Mixed Ferrite Core-Shell Nanoparticles.** *G.S. Gomide¹, V. Pilati¹, P. Coppola³, F. Gomes da Silva¹, F. Luis de Oliveira Paula^{1,4}, R. Perzynski⁴, R. Aquino^{2,1} and J. Depeyrot¹ 1. Institute of Physics, Universidade de Brasília, Brasília, Brazil; 2. Material Science Program, Universidade de Brasília, Brasília, Brazil; 3. Institute of Chemistry, Universidade de Brasília, Brasília, Brazil; 4. Laboratoire PHENIX, Université Pierre et Marie Curie, Paris, France*
- DR-06. Synthesis, chemical composition, Mossbauer and magnetic characterizations of iron oxide nanoparticles.** *S.K. Sharma¹, Sarveena², J. Vargas³, D. Shukla⁴, P. Zélis⁵, C. Meneses⁶ and M. Singh² 1. Physics, Universidade Federal do Maranhão, Sao Luis, Brazil; 2. Physics, H P University, Shimla, India; 3. Centro Atomico Bariloche (CNEA), Instituto Balseiro (U. N. Cuyo) and Conicet, 8400 San Carlos de Bariloche, Rio Negro, Argentina; 4. UGC DAE Consortium for Scientific Research, Indore, India; 5. Instituto de Física de La Plata (IFLP-CONICET), Universidade Nacional de La Plata (UNLP), La Plata, Argentina; 6. Núcleo de Pós-Graduação em Física, SE, Brazil*
- DR-07. Investigation on the magnetic and structural properties of $\text{CoAl}_{2-x}\text{Fe}_x\text{O}_4$.** *I. Ferraz¹, S. da Silva¹, T.D. Castro^{1,2}, A. Franco Jr³, J. Silva³ and P. Morais^{1,4} 1. Instituto de Física, Universidade de Brasília, Brasília, Brazil; 2. Instituto Federal de Educação, Ciência e Tecnologia de Brasília, Brasília, Brazil; 3. Instituto de Física, Universidade Federal do Goiás, Brasília, Brazil; 4. College of Chemistry and Chemical Engineering, Hefei, China*
- DR-08. Variations in the Ferromagnetic Resonance (FMR) Properties of Epitaxial Magnetite Thin Films across the Verwey Transition.** *A.V. Singh¹, J. Beik Mohammadi², T. Mewes^{2,1} and A. Gupta¹ 1. MINT, The University of Alabama, Tuscaloosa, AL; 2. Physics, MINT, University of Alabama, Tuscaloosa, AL*
- DR-09. Effects of Carbon Contents on Magnetic and Microwave Properties of FeGaC Thin Films.** *X. Liang¹, C. Dong¹, X. Wang¹ and Y. Gao¹ 1. ECE, Northeastern University, Boston, MA*

- DR-10. High-Temperature First-Order-Reversal-Curve (FORC) Applied to Soft Magnetic Nanocomposite Materials.** *P. Ohodnicki^{1,2}, A. Leary², M.E. McHenry², B. Dodrill³ and J. Lindemuth³* 1. National Energy Technology Laboratory, Pittsburgh, PA; 2. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Lakeshore Cryotronics, Columbus, OH
- DR-11. Improved structural, magnetic and spectroscopic properties of M-type strontium hexaferrite synthesised by citrate precursor method.** *K. Rana¹, P. Thakur¹ and A. Thakur¹* 1. School of Physics & material Science, Shoolini University, Solan, Solan, India
- DR-12. Effect of heat treatment on magnetic and electrical characteristics in FeSi@CrPO₄ core/shell composites.** *S. Tong¹, M.J. Tung¹, W.S. Ko¹, C.P. Wu¹, Y.P. Wang¹ and L.C. Wang¹* 1. Electromagnetic Material and Device Lab., Industrial Technology Research Laboratories, Hsinchu, Taiwan
- DR-13. New Metal Bonding for the Motor Core using Ceramic Precursor and Nano Ceramic Powder.** *K. Yun¹, M. Hirano¹, S. Yanase¹ and Y. Ohya¹* 1. Engineering, Gifu University, Gifu, Japan
- DR-14. First-principles calculations of the magnetic properties of Fe₂P-based alloys.** *I. Zhuravlev¹, V. Antropov² and K. Belashchenko¹* 1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. Ames Laboratory, Ames, IA
- DR-15. Flaky FeSiAl particles: prepared by ball milling and their orientation in a magnetic field.** *X. Peng¹, J. Li¹, Y. Yang², B. Hong², X. Wang² and H. Ge²* 1. China Jiliang University, Hangzhou, China; 2. College of Materials Science and Engineering, China Jiliang University, Hangzhou, China

WEDNESDAY
AFTERNOON
2:30

GRAND BALLROOM

Session DS
SOFT MAGNETIC MATERIALS II
(Poster Session)

Junjia Ding, Co-Chair
Argonne National Laboratory, Argonne, IL
Valentyn Novosad, Co-Chair
Argonne National Laboratory, Argonne, IL

- DS-01. Effect Of Sintering Temperature On High Frequency Core Loss Of NiZn Ferrite.** *G. Frajer^{1,2}, G. Delette^{1,2}, O. Isnard^{1,3}, H. Chazal^{1,4}, P. Perichon^{1,5} and F. Servant^{1,2}* 1. Université Grenoble Alpes, Grenoble, France; 2. CEA, LITEN, LMA, Grenoble, France; 3. Institut Néel, CNRS, Grenoble, France; 4. Laboratoire du Génie Electrique de Grenoble G2Elab, Grenoble, France; 5. CEA, LITEN, L2EP, Grenoble, France

- DS-02. Effect of Cr Substitution on Structural, and Magnetic Properties of Ni-Co Ferrite Composite.** *B. Nandan¹ and M.C. Bhatnagar¹ 1. Physics, IIT Delhi, New Delhi, India*
- DS-03. Tuning Magnetic Properties in Nickel Ferrite through Patterning and pH.** *A. Cruz¹ and J. Schwartz¹ 1. Material Science, North Carolina State University, Raleigh, NC*
- DS-04. Curie temperature and magnetic properties of low temperature sintered CoTi-dope barium ferrite thick films for microwave devices.** *D. Chen^{1,2}, G. Wang¹, Y. Li³ and H. Zhang⁴ 1. College of Materials and Chemical Engineering, Hainan University, Haikou, China; 2. School of Microelectronics and Solid-State Electronics, University of Electronic Science and Technology of China, Chengdu, China; 3. State Key Lab of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 4. University of Electronic Science and Technology of China, Chengdu, China*
- DS-05. Substitution effects on magnetic properties of $\text{Mg}_{1.3-x}\text{Mn}_x\text{Al}_y\text{Fe}_{1.8-y}\text{O}_4$ ferrite.** *M. Kuo¹ 1. China Steel Corporation, Kaohsiung, Taiwan*
- DS-06. Structure and magnetic properties of $\text{Mg}_{0.35}\text{Cu}_{0.2}\text{Zn}_{0.45}\text{Fe}_2\text{O}_4$ ferrite synthesized by co-precipitation method.** *B. Yang¹ and Z. Wang¹ 1. Department of Applied Physics, Tianjin University, Tianjin, China*
- DS-07. Untangling the contributions of cerium and iron ions to the magnetism of Ce-doped yttrium iron garnet.** *B. Casals¹, R. Cichelero¹, H. Babu Vasili², J. Geshev³, M. Espínola¹, S. Geprägs⁴, M. Opel⁴, R. Gross^{4,5}, J. Fontcuberta¹ and G. Herranz¹ 1. Institut de Ciència de Materials de Barcelona ICMAB-CSIC, Bellaterra, Spain; 2. ALBA Synchrotron Light Source, Cerdanyola del Vallès, Spain; 3. Instituto de Física, UFRGS, Porto Alegre, Brazil; 4. Walther-Meißner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 5. Physik-Department, Technische Universität München, Garching, Germany*
- DS-08. Synthesis and characterization of co-doped $\text{SrFe}_{12-x}(\text{DyAl})_x\text{O}_{19}$ Hexaferrite.** *H. Adhikari¹, M. Ghimire¹, D. Neupane¹ and S.R. Mishra¹ 1. Physics and Materials Science, The University of Memphis, Memphis, TN*
- DS-09. Observation of high negative uniaxial anisotropy in pulsed laser deposited Yttrium iron garnet thin films.** *B. Bhoi¹, N. Venkataramani², S. Prasad³, R. Aiyar¹, G. Kumar², I. Samajdar^{1,2} and M. Kostylev⁴ 1. Center for Research in Nanotechnology and Science, Indian Institute of Technology Bombay, Mumbai, India; 2. Department of Metallurgical and Material Science, Indian Institute of Technology Bombay, Mumbai, India; 3. Physics, Indian Institute of Technology Bombay, Mumbai, India; 4. School of Physics, The University of Western Australia, Crawley, WA, Australia*

- DS-10. Investigation of magnetic and thermal properties of the Bioplasma treated $\text{Ni}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$ based on Mössbauer spectroscopy.** *H. Choi*¹, *S. Kim*¹, *S. Yoon*² and *C. Kim*¹
1. Department of Physics, Kookmin University, Seoul, The Republic of Korea; 2. Department of Physics, Gunsan National University, Gunsan, The Republic of Korea
- DS-11. The crystalline, magnetic and dielectric properties of Zn doped strontium Z-type hexaferrite synthesized by polymerizable complex method.** *J. Lim*¹, *E. Hahn*², *I. Shim*¹ and *C. Kim*¹ *1. Kookmin University, Seoul, The Republic of Korea; 2. Suwon University, Hwaseong, The Republic of Korea*
- DS-12. The ferromagnetic resonance linewidth of thin La:YIG films prepared by liquid phase epitaxy method.** *Q. Yang*¹
1. University of Electronic Science and Technology of China, Chengdu, China
- DS-13. Effect of Thickness on Magnetic and Microwave Properties of RF-Sputtered Zn-Ferrite Thin Films.** *B. Sahu*¹, *N. Venkataramani*², *S. Prasad*¹ and *R. Krishnan*³ *1. Physics, Indian Institute of Technology Bombay, Mumbai, India; 2. Department of Metallurgical and Material Science, IIT Bombay, Mumbai, India; 3. Retired scientists, CNRS/Universite de Versailles-St-Quentin, Versailles Cedex, France*
- DS-14. Monodomain MgCuZn Ferrite With Equivalent Permeability And Permittivity In The Broad Frequency Range.** *H. Jia*¹, *W. Liu*¹, *Z. Zhang*¹, *F. Chen*¹, *Y. Li*¹, *J. Liu*¹ and *Y. Nie*¹ *1. Huazhong University of Science and Technology, Wuhan, China*
- DS-15. Spin Seebeck Effect of $\text{Y}_3\text{Fe}_5\text{O}_{12}$ (YIG) prepared by Sol-Gel Synthesis.** *M. Jang*¹, *K. Lee*¹ and *S. Baek*² *1. School of Mechanical & Advanced Material Engineering, Ulsan National Institute of Science Technology, Ulsan, The Republic of Korea; 2. Electronic Materials Research Center, Korea Institute of Science and Technology (KIST), Seoul, The Republic of Korea*

WEDNESDAY
 AFTERNOON
 2:30

GRAND BALLROOM

Session DT
SOFT MAGNETIC MATERIALS III
(Poster Session)

Michael McHenry, Chair
Carnegie Mellon University, Pittsburgh, PA

- DT-01. Magnetic Losses in Si-Fe Alloys for Avionic Applications.** *A. Faba*¹, *E. Cardelli*², *S. Quondam Antonio*¹ and *M. Pompei*¹
1. Department of Engineering, University of Perugia, Perugia, Italy; 2. Ingegneria, Universita di Perugia, Perugia, Italy
- DT-02. Effect of Aluminum on the magnetic domain walls of non-oriented electrical steels.** *H. Choi*¹, *Y. Koo*¹ and *S. Lee*²
1. POSTECH, Pohang, The Republic of Korea; 2. POSCO, Pohang, The Republic of Korea

- DT-03. Effect of cobalt doping on martensitic transformations and magnetic properties of $\text{Ni}_{50-x}\text{Co}_x\text{Mn}_{37}\text{Sn}_{13}$ ($x=1, 2, 3$) Heusler ribbons.** S. Loidi¹ and J. Sunol² 1. *Physics Departement, University of 20 August-1955 Skikda, Skikda, Algeria;* 2. *Physics, University of Girona, Dep. De Fisica, Universitat de Girona, Campus de Montilivi, Girona 17071, Spain., Spain*
- DT-04. Effect of amidosulfate in a DES-based bath on structural and magnetic properties of electroplated Fe-Ni films.** T. Akiyoshi¹, K. Azuma¹, T. Yanai¹, M. Nakano¹ and H. Fukunaga¹ 1. *Nagasaki University, Nagasaki, Japan*
- DT-05. FeSiAl soft magnetic composites with NiZn ferrite coating produced via solvothermal method.** J. Li¹, X. Peng¹, H. Ge¹ and X. Wang¹ 1. *China Jiliang University, Hangzhou, China*
- DT-06. Fe-rich Fe-Mo-Si-B-P amorphous alloy ribbons with stable good soft magnetic properties and corrosion resistance.** Y. Han¹, J. Ding¹, F. Kong², A. Inoue^{1,2}, S. Zhu¹ and Z. Wang³ 1. *School of Materials Science and Engineering, Tianjin University, Tianjin, China;* 2. *Josai International University, Togane, Japan;* 3. *Department of Applied Physics, Tianjin University, Tianjin, China*
- DT-07. Structure and magnetic properties of FeCoAlSiBNbCu alloys.** Z. Xie¹, Z. Wang¹ and Y. Xu¹ 1. *Department of Applied Physics, Tianjin University, Tianjin, China*
- DT-08. Upper limit for obtaining high B_s and low H_c in nanocrystalline FeCoSiBPCu alloys.** Y. Zhang¹, P. Sharma¹ and A. Makino¹ 1. *Institute for Materials Research, Tohoku University, Sendai, Japan*
- DT-09. The Deformation Behavior of $\text{Fe}_{83}\text{Si}_2\text{B}_{11}\text{P}_3\text{C}_1$ Amorphous Strips at Cryogenic Temperature.** W. Wei¹, C. Chang², Y. Wang¹, Y. Liu¹, Y. Long¹, S. Zong¹ and H. Kuang³ 1. *School of Material Science and Engineering, University of Science and Technology Beijing, Beijing, China, Beijing, China;* 2. *Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China;* 3. *Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- DT-10. Fe-Si-B-P-C-Cu Nanocrystalline Soft Magnetic Powders With High B_s And Low Coreloss.** T. Takahashi¹, K. Yoshida¹, Y. Shimizu¹, A.D. Setyawan², M. Bito¹, M. Abe¹ and A. Makino² 1. *Tohoku Magnet Institute Co., LTD, Sendai, Japan;* 2. *Research and Development Center for Ultra High Efficiency Nano-crystalline Soft Magnetic Materials, Institute for Materials Reserch, Tohoku University, Sendai, Japan*
- DT-11. Fabrication and Characterisation of Novel Amorphous/ SMA CoFeSiB/NiTi Multilayer Microwires Obtained by Functionally Graded Deposition of NiTi Thin Films.** F. Borza¹, S. Corodeanu¹, T.A. Ovari¹, M. Grigoras¹ and H. Chiriac¹ 1. *National Institute of Research and Development for Technical Physics, Iasi, Romania*

- DT-12. Zero-field NMR Studies of Mechanically Alloyed CoNi and FeCo.** *M. Fujioka*¹, *H. Jinushi*², *K. Matsumoto*¹ and *K. Hiraoka*¹
1. Graduate School of Science and Engineering, Ehime University, Matsuyama, Japan; 2. University Education Center, Fukuyama University, Fukuyama, Japan
- DT-13. Correlation between pre-annealing temperature and {110}<001> annealing texture in C- and Al-free Fe-3%Si-0.1%Mn-0.002%S electrical steel.** *E. Oh*¹, *N. Heo*¹ and *Y. Koo*¹ *1. POSTECH, Pohang, Gyeongbuk, The Republic of Korea*

WEDNESDAY
 AFTERNOON
 2:30

GRAND BALLROOM

Session DU
MAGNETIC SENSORS II
(Poster Session)

Joseph Davies, Chair
 NVE Corporation, Eden Prairie, MN

- DU-01. Magnetic Sensors for Motion Measurement of Avionic Ballscrews.** *A. Faba*¹, *E. Cardelli*¹, *M. Cibeca*¹, *R. Marsili*¹, *M. Pompei*¹ and *G. Rossi*¹ *1. Department of Engineering, University of Perugia, Perugia, Italy*
- DU-02. Correlation of Surface Magnetic Domain Structures by Magnetic Force Microscopy with Giant Magneto-impedance of Amorphous Microwires.** *T.M. Eggers*¹, *S. Jiang*², *O. Thiabhog*¹, *H.X. Shen*^{1,2}, *J. Liu*³, *J. Sun*², *H. Srikanth*¹ and *M. Phan*¹ *1. Department of Physics, University of South Florida, Tampa, FL; 2. School of Materials Science and Engineering, Harbin Institute of Technology, Harbin, China; 3. School of Materials Science and Engineering, Inner Mongolia University of Technology, Hohhot, China*
- DU-03. Analysis of thin-film magnetoimpedance behavior at low MHz region based on domain wall equation and bias susceptibility theory.** *C. Sumida*¹, *H. Kikuchi*¹, *H. Uetake*⁴, *S. Yabukami*⁴, *S. Hashi*³ and *K. Ishiyama*² *1. Iwate University, Morioka, Japan; 2. RIEC, Tohoku University, Sendai, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 4. Tohoku-Gakuin University, Tagajo, Japan*
- DU-04. Behavior of sensitivity at edge of thin-film magnetoimpedance element.** *S. Oe*¹, *H. Kikuchi*¹, *S. Yabukami*² and *H. Uetake*² *1. Iwate University, Morioka, Japan; 2. Tohoku-Gakuin University, Tagajo, Japan*
- DU-05. Long GMI sensors for the detection of repetitive deformation of a surface.** *S. Corodeanu*¹, *H. Chiriac*¹, *T.A. Ovari*¹ and *N. Lupu*¹ *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

- DU-06. Real-time brain activity measurement and signal processing system using highly sensitive MI sensor.** *K. Wang¹ and T. Uchiyama²* 1. Nagoya University, Nagoya, Japan; 2. Electrical Engineering, Nagoya University, Nagoya, Japan
- DU-07. MI-based vibration sensor for non-invasive flow rate measurements.** *S. Corodeanu¹, C. Hlenschi¹, F. Borza¹, H. Chiriac¹, N. Lupu¹ and T.A. Ovari¹* 1. National Institute of Research and Development for Technical Physics, Iasi, Romania
- DU-08. Sub-nano Tesla Magnetic Imaging Based On Room-temperature Magnetic Flux Sensors With Vibrating Sample Magnetometry.** *Y. Adachi¹ and D. Oyama¹* 1. Applied Electronics Laboratory, Kanazawa Institute of Technology, Shibuya-ku, Japan
- DU-09. Magneto-optical Micromechanical Systems for Magnetic Field Mapping.** *A. Truong¹* 1. CEA, Grenoble, France
- DU-10. Evaluation of Superficial Crack Depth Using Eddy Current Method with Magnetic Tunnel Junction.** *Z. Jin¹, M. Abe¹, K. Fujiwara¹, M. Oogane¹ and Y. Ando¹* 1. Applied Physics, Tohoku university, Sendai, Japan
- DU-11. Thin resolver using the easy magnetization axis of the grain-oriented silicon steel as an angle indicator.** *J. Oshino¹ and I. Sasada¹* 1. Applied Science for Electronics and Materials, Kyushu University, Kasuga, Japan
- DU-12. Tunneling magnetoresistance biosensor for the detection of E. coli O157:H7 bacteria.** *Y. Wu¹* 1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, NingBo, China
- DU-13. Magnetic Particles Detection By Using Spin-Valve Sensors And Magnetic Traps.** *A. Jitariu^{1,2}, C. Ghemes¹, N. Lupu¹ and H. Chiriac¹* 1. National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. Alexandru Ioan Cuza University, Iasi, Romania
- DU-14. Giant Magnetostrictive Thin Film Pressure Sensor Based on Villari Effect.** *S. Yu^{1,2} and B. Wang¹* 1. Electrical Engineering, Hebei University of Technology, Tianjin, China; 2. Information Engineering, Renai College of Tianjin University, Tianjin, China
- DU-15. Feasibility of Helmholtz Coils for Induced Voltage Measurements in a Magnetostrictive Position Sensor.** *E. Yoo¹, Y. Park¹, M.D. Noh² and M. Kim¹* 1. Mechatronics Engineering, Chungnam Natational University, Daejeon, The Republic of Korea; 2. Mechatronics Engineering, Chungnam National University, Daejeon, The Republic of Korea
- DU-16. Phase-sensitive dc magnetometer based on piezoelectric-magnetostrictive heterostructure.** *M. Zhang¹ and S. Or¹* 1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong

Session DV
MAGNETIC INSTRUMENTATION AND
CHARACTERIZATION II
(Poster Session)

Yaohua Liu, Co-Chair

Oak Ridge National Laboratory, Oak Ridge, TN

Claudia Stahl, Co-Chair

Max Planck Institute for Intelligent Systems, Stuttgart, Germany

- DV-01. Magneto-electroluminescence in OLED Devices with Ferromagnetic Electrodes.** *N. Lee¹, Y. Bae¹, H. Jung², C. Lee² and T. Kim¹* *1. Department of Physics, Ewha Womans University, Seoul, The Republic of Korea; 2. School of Electrical Engineering and Computer Science, Seoul National University, Seoul, The Republic of Korea*
- DV-02. Direct Imaging and Detection of Fast Magnetic Domain Behavior in Nanowires by Magnetic Domain Scope Method using Contact-scanning of Magnetic Recording Head with AC preamplifier.** *Y. Miyamoto¹, M. Okuda¹ and M. Kawana¹* *1. Science & Technology Research Labs., NHK (Japan Broadcasting Corporation), Tokyo, Japan*
- DV-03. Torque Magnetometry And Susceptometry Using Split-Beam Optomechanical Nanocavities.** *T. Firdous^{1,2}, M. Wu^{3,4}, N. Wu^{3,4}, F. Fani Sani^{1,2}, J. Losby^{1,2}, P. Barclay^{3,4} and M. Freeman^{1,2}* *1. Department of Physics, University of Alberta, Edmonton, AB, Canada; 2. National Institute for Nanotechnology, Edmonton, AB, Canada; 3. Department of Physics and Astronomy, University of Calgary, Calgary, AB, Canada; 4. Institute for Quantum Science and Technology, University of Calgary, Calgary, AB, Canada*
- DV-04. Advances in Magnetic Imaging using Scanning X-ray Microscopy.** *M. Weigand¹, I. Bykova¹, C. Stahl¹, S. Ruoss², H. Stoll¹, E.J. Goering³, B. Van Waeyenberge⁴ and G.A. Schuetz²* *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Modern Magnetic Systems, Max-Planck-Institut for Intelligent Systems, Stuttgart, Germany; 3. Schuetz, Max-Planck-Institute for Intelligent Systems, Stuttgart, Germany; 4. Subatomic and Radiation Physics, Vrije Universiteit Brussels, Gent, Belgium*
- DV-05. Optical technique for spin-orbit torque measurement based on linear and circular polarizations.** *J. Kim¹, S.C. Baek^{2,3}, B. Park² and S. Choe¹* *1. Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea; 2. Material Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea; 3. School of Electrical Engineering, Korea Advanced Institute of Science and Technology, Daejeon, The Republic of Korea*

- DV-06. Asymmetric Merons Studied by Magnetic Transmission X-ray Microscopy.** A. Hierro-Rodriguez¹, L. Alvarez-Prado^{2,3}, C. Blanco-Roldán^{2,3}, C. Quirós^{2,3}, A. Sorrentino⁴, J. Martin^{2,3}, J. Alameda^{2,3}, E. Pereiro⁴, M. Velez Fraga^{2,3} and S. Ferrer⁴
1. *Depto. Física e Astronomia, INESC-TEC, Faculdade de Ciencias, Universidade do Porto, Porto, Portugal*; 2. *Depto. Física, Universidad de Oviedo, Oviedo, Spain*; 3. *CINN (CSIC-Universidad de Oviedo), El Entrego, Spain*; 4. *ALBA Synchrotron, Cerdanyola del Valles, Spain*
- DV-07. Characterization of Magnetostriction and Delta-E Effect of FeGaB Thin Films Using Optical Technique.** C. Dong¹, H. Zhou¹, M. Li¹, Z. Wang¹, X. Wang¹, Y. Gao² and N.X. Sun³
1. *ECE, Northeastern University, Boston, MA*; 2. *Winchester Technologies, LLC., Burlington, MA*; 3. *Northeastern University, Boston, MA*
- DV-08. The Output Characteristic Of Cantilever-like Tactile Sensor Based On The Inverse-magnetostrictive Effect.** L. Wan¹ and B. Wang² 1. *Hebei University of Technology, Tianjin, China*; 2. *Electrical Engineering, Hebei University of Technology, Tianjin, China*
- DV-09. Mechanical-magnetic-electric coupled behaviors for stress-driven Terfenol-D energy harvester.** S. Cao¹, J. Zheng¹, B. Wang¹, R. Pan¹ and R. Zhao¹ 1. *Hebei University of Technology, Tianjin, China*
- DV-10. Novel Mechanical Magnetometry of a Micron-sized Superconducting Ring.** H. Choi^{1,2}, Y. Kim¹ and J. Choi^{1,2}
1. *Division of Physical Metrology, Korea Reserach Institute of Standards and Science, Daejeon, The Republic of Korea*; 2. *Nano science, University of Science and Technology, Deajeon, The Republic of Korea*
- DV-11. Thermoelectric Detection of Inclusions in Metallic Biomaterials by Magnetic Sensing.** H. Carreon¹
1. *Universidad Michoacana, Morelia, Mexico*
- DV-12. Beamline I21 – Resonant Inelastic X-ray Scattering (RIXS) at Diamond Light Source.** K. Zhou¹, A. Walters¹ and M. Garcia-Fernandez¹ 1. *Physical Science, Diamond Light Source Ltd, Didcot, United Kingdom*
- DV-13. Control of relaxation time by self-synchronization on a spin torque oscillator.** S. Tsunegi^{1,2}, E. Grimaldi², R. Lebrun², H. Kubota¹, K. Yakushiji¹, J. Grollier², A. Fukushima¹, S. Yuasa¹ and V. Cros¹ 1. *Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Palaiseau, France*; 2. *Unité Mixte de Physique CNRS/Thales, Palaiseau, France*
- DV-14. Tilt Angle Dependence of the Modulated Interference Effects in Photo-Elastic Modulators.** M. Talukder¹ and W.J. Geerts² 1. *Physics, Texas State University, Austin, TX*; 2. *Physics, Texas State University, San Marcos, TX*
- DV-15. Magnetoelectric intrinsic gradiometer with high sensitivity and high ambient noise rejection.** M. Zhang¹ and S. Or¹
1. *Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong*

Session DW

**HYPERTHERMIA, MRI, AND OTHER BIO-ASSAYS II
(Poster Session)**

Cindi Dennis, Chair
NIST, Gaithersburg, MD

**DW-02. Mesoporous Nanoparticle Supported Liposomes For
Magnetic Hyperthermia Triggered Drug Delivery.**

M. Eizadi Sharifabad¹, T. Mercer² and T. Sen¹ *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*

**DW-03. Experimental Ex-Vivo Validation Of PMMA-Based Bone
Cements Loaded With Magnetic Nanoparticles Enabling
Hyperthermia Of Metastatic Bone Tumors.**

M. Harabeche¹, N.R. Kiselovs², W. Maenhoudt², G. Crevecoeur¹, D. Van Roost² and L. Dupré¹ *1. Ghent University, Zwijnaarde - Ghent, Belgium; 2. Ghent University Hospital, Ghent, Belgium*

**DW-04. Magnetic, Structural, And Magnetocaloric Properties Of
Ni-Al And Ni-Si Binary Alloys For Self-Controlled
Hyperthermia Applications.**

S. Pandey¹, A. Quetz¹, A. Aryal¹, I. Dubenko¹, D. Mazumdar¹, S. Stadler² and N. Ali¹ *1. Physics, Southern Illinois University, Carbondale, IL; 2. Physics, Louisiana State University, Baton Rouge, LA*

DW-05. Withdrawn

**DW-06. Frequency Dependence of Initial Heat Generation in
Magnetite Nanoparticles.**

S. Yoon¹, C. Kim², H. Choi² and J. Choi² *1. Dept. of Physics, Gunsan National University, Gunsan, The Republic of Korea; 2. Department of Physics, Kookmin University, Seoul, The Republic of Korea*

**DW-07. Tissue temperature analysis in Magnetic Hyperthermia with
Fe-Cr-Nb-B magnetic particles.**

L. Astefanoaei¹, H. Chiriac² and A. Stancu¹ *1. Department of Physics, Alexandru Ioan Cuza University, Iasi, Romania; 2. National Institute of R&D for Technical Physics, Iasi, Romania*

**DW-08. Mossbauer study on silica magnetite composite
microspheres with different annealing temperature.**

Y. Zhu¹, W. Chao¹, Q. Chen¹, X. Zhou¹, J. Yue¹, H. Yuan¹, Y. Yin¹, H. Huang^{1,2}, Y. Zhai^{1,3}, B. You³ and J. Du³ *1. Department of Physics, Southeast University, Nanjing, China; 2. School of Material Science and Engineering, Southeast University, Nanjing, China; 3. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, China*

**DW-09. Relationship between Ion Concentration of Ferrofluid and
Response Signals of Magnetic Nanoparticles against AC
magnetic fields.**

S. Oda¹ and Y. Kitamoto¹ *1. Innovative and Engineered Materials, Tokyo Institute of Technology, Yokohama, Japan*

- DW-10. Effects of Magnetic Stimulation on K-Ras-Driven Lung Cancer in Mice.** N. Zhang^{1,2}, S. Wang¹, C. Zhang² and S. Wang¹ *1. State Key Laboratory of Electrical Insulation and Power Equipment, Faculty of Electrical Engineering, Xi'an Jiaotong University, Xi'an, China; 2. Oncology, Johns Hopkins University School of Medicine, Baltimore, MD*
- DW-11. Instrumentation for the Development of Ultra-Low Field Magnetic Resonance Contrast Agents.** X. Yin^{1,2}, Y. Nakashima^{1,3}, M.A. Boss¹, J. Mates¹, C. Clickner¹, J. Brown¹, E. Elliott^{1,4}, S. Liou² and J. Moreland¹ *1. National Institute of Standards and Technology, Boulder, CO; 2. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 3. Kyushu University, Fukuoka, Japan; 4. William G. Lowrie Department of Chemical and Biomolecular Engineering, The Ohio State University, Columbus, OH*
- DW-12. Spatial resolution and maximum compensation factor of two-dimensional selective excitation pulses for MRI of objects containing conductive implants.** T. Woo¹, D. Kim¹, T. Someya¹ and M. Sekino¹ *1. The University of Tokyo, Tokyo, Japan*
- DW-13. Effect of Varying MRI Data on Volume Stimulated in Brain during Transcranial Magnetic Stimulation.** F. Syeda¹, E.G. Lee², D.C. Jiles³ and R.L. Hadimani^{1,3} *1. Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 2. Department of Psychiatry, Massachusetts General Hospital, Boston, MA; 3. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*
- DW-14. Transcranial Magnetic Stimulation- Coil Design with Improved Focality.** P. Rastogi¹, E.G. Lee³, R. Hadimani² and D.C. Jiles¹ *1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. Department of Mechanical and Nuclear Engineering, Virginia Commonwealth University, Richmond, VA; 3. Department of Psychiatry, Massachusetts General Hospital, Harvard Medical School, Boston, MA*
- DW-15. Superparamagnetic-particles Mediated Quantification Of Biomarkers.** M. Rivas¹, D. Lago-Cachón¹, A. Moyano^{1,2}, M. Salvador^{1,2}, J.C. Martínez-García¹, J.A. García¹, M. Oliveira-Rodríguez², M. Blanco-López² and J. Rivas³ *1. Department of Physics, University of Oviedo, Gijón, Spain; 2. Department of Physical and Analytical Chemistry, University of Oviedo, Oviedo, Spain; 3. Applied Physics, Univ. Santiago de Compostela, Santiago de Compostela, Spain*

Session ZA

EVENING SESSION: NEUROMORPHIC COMPUTING

Peter Fischer, Chair
Lawrence Berkeley National Laboratory, Berkeley, CA

6:00

Introductions and Best Student Presentation Award

6:10

ZA-01. Neuromorphic Computing. (Invited) *I.K. Schuller¹ 1. Physics and Center for Advanced Nanoscience, UCSD, La Jolla, CA*

6:40

ZA-02. Nonvolatile Brain-Inspired VLSIs Based on CMOS/MTJ Hybrid Technology for Ultralow-Power Performance and Compact Chip. (Invited) *T. Endoh¹ and Y. Ma¹ 1. Tohoku University, Sendai, Japan*

7:10

ZA-03. Spintronic nanodevices for bio-inspired computing. (Invited) *J. Grollier¹ 1. Unité Mixte CNRS/Thales, Palaiseau, France*

Session EA

SYMPOSIUM: TERAHERTZ SPINTRONICS

Markus Münzenberg, Chair
Ernst-Moritz-Arndt University, Greifswald, Germany

8:30

EA-01. Ultrafast spintronics with terahertz radiation. (Invited) *T. Kampfrath¹ and T. Seifert¹ 1. Fritz Haber Institute, Max Planck Society, Berlin, Germany*

9:06

EA-02. THz-driven Ultrafast Spin-Lattice Scattering In Metallic Thin Films. (Invited) *S. Bonetti¹, M. Hoffmann², M. Sher², Z. Chen³, M. Hudl¹, S. Kovalev⁴, N. Awari⁴, B. Green⁴, M. Gensch⁴, S. Yang⁵, M. Samant⁵, S.S. Parkin⁶ and H. Durr² 1. Department of Physics, Stockholm University, Stockholm, Sweden; 2. SLAC National Accelerator Laboratory, Menlo Park, CA; 3. Physics, Stanford University, Stanford, CA; 4. HZDR, Dresden, Germany; 5. IBM Almaden Research Center, San Jose, CA; 6. Max Planck Institute for Microstructure Physics, Halle (Saale), Germany*

9:42

EA-03. THz Magnetization Dynamics and Transient Spin Currents. (Invited) *L. Bocklage*^{1,2} 1. Photon Science, Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany; 2. The Hamburg Centre for Ultrafast Imaging, Hamburg, Germany

10:18

EA-04. Theory of THz magnons in ferrimagnets and spin-pumping. (Invited) *J. Barker*¹ and *G.E. Bauer*^{2,3} 1. IMR, Tohoku University, Sendai, Japan; 2. IMR & WPI-AIMR, Tohoku University, Sendai, Japan; 3. Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands

10:54

EA-05. Ultrafast magnetization dynamics in ferromagnetic thin films induced by a THz pulse – from the weak to the strong-field regime. (Invited) *C. Hauri*¹ 1. SwissFEL, Paul Scherrer Institute, Hünzschwiler, Switzerland

THURSDAY
MORNING
8:30

MARDI GRAS F-H

Session EB MAGNONICS III

Haiming Yu, Chair
Beihang University, Beijing, China

8:30

EB-01. Magnetization oscillation and waves excited by the nonlocal spin injection. (Invited) *V.E. Demidov*¹, *S. Urazhdin*² and *S. Demokritov*¹ 1. University of Muenster, Muenster, Germany; 2. Emory University, Atlanta, GA

9:06

EB-02. Spin wave caustics driven by the Dzyaloshinskii-Moriya interaction and spin currents. *J. Kim*¹, *R. Stamps*² and *R.E. Camley*³ 1. Centre for Nanoscience and Nanotechnology (C2N), CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France; 2. SUPA School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 3. Department of Physics and Energy Science, University of Colorado, Colorado Springs, CO

9:18

EB-03. Doppler Effect In A Solid Medium: Spin Wave Emission By A Precessing Domain Wall In Spin Current. *H. Xia*¹, *J. Chen*¹, *X. Zeng*² and *M. Yan*¹ 1. Physics, Shanghai University, Shanghai, China; 2. Mathematics, Shanghai University, Shanghai, China

9:30

- EB-04. Direct Microscopic Observation of Spin Wave Focussing in a Fresnel Lens.** *J. Gräfe*¹, *M. Decker*⁴, *K. Keskinbora*¹, *M. Noske*¹, *P. Gawronski*⁵, *H. Stoll*¹, *C. Back*⁴, *G.A. Schuetz*² and *E.J. Goering*³ *1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany; 2. Modern Magnetic Systems, Max-Planck-Institut for Intelligent Systems, Stuttgart, Germany; 3. Schuetz, Max-Planck-Institute for Intelligent Systems, Stuttgart, Germany; 4. University of Regensburg, Regensburg, Germany; 5. Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Krakow, Poland*

9:42

- EB-05. Scanning Microwave Microscopy for the Study of Spin Waves.** *A. Lara*¹, *F. Aliev*¹, *J.L. Prieto*², *J. Weber*³, *S. Berweger*³, *S. Russek*³ and *P. Kabos*³ *1. Universidad Autónoma de Madrid, Madrid, Spain; 2. Física Aplicada, Universidad Politécnica de Madrid, Madrid, Spain; 3. National Institute of Standards and Technology, Boulder, CO*

9:54

- EB-06. All-electrical broadband phase-resolved spectroscopy of propagating spin waves in micrometer sized thin magnetic films.** *F. Ciubotaru*^{1,2}, *T. Devolder*³, *M. Manfrini*¹, *C. Adelmann*¹ and *I.P. Radu*¹ *1. imec, Leuven, Belgium; 2. KU Leuven, Leuven, Belgium; 3. University Paris-Sud, Orsay, France*

10:06

- EB-07. Withdrawn**

10:18

- EB-08. Voltage Induced Mechanical/Spin Wave Propagation Over Long Distances.** *C. Chen*¹, *C. Liang*¹, *G. Carman*¹ and *A.E. Sepulveda*¹ *1. Department of Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA*

10:30

- EB-09. The mechanical back-action of a spin-wave resonance in a magnetoelastic thin film on a surface acoustic wave.** *P. Gowtham*¹, *D. Labanowski*² and *S. Salahuddin*¹ *1. EECS, University of California, Berkeley, CA; 2. University of California, Berkeley, CA*

10:42

- EB-10. Spin wave propagation in a non-uniform temperature profile in a yttrium iron garnet (YIG) thin film.** *G.A. Riley*¹, *C.L. Ordóñez-Romero*² and *K. Buchanan*¹ *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. Solid State, Physics Institute, UNAM., Mexico City, Mexico*

- EB-11. Temperature-Dependent Spin Wave Stiffness, Damping, and Magnetization of Heavy-Metal-Doped Permalloy Films.** *Y. Yin*^{1,2}, *M. Ahlberg*², *P. Dürrenfeld*^{3,2}, *R.K. Dumas*², *Y. Zhai*¹ and *J. Åkerman*^{2,4} *1. Physics, Southeast University, Nanjing, China; 2. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 3. School of Electronic Science and Engineering, Nanjing University, Nanjing, China; 4. Department of Material and Nano Physics, School of ICT, KTH Royal Institute of Technology, Kista, Sweden*

- EB-12. Magnon-polaritons at milli-Kelvin temperatures.** *M.P. Weides*^{1,2}, *I. Boventer*¹, *J. Krause*², *M. Pfirrmann*², *A. Schneider*² and *M. Kläui*¹ *1. Physics, Johannes Gutenberg - University Mainz, Mainz, Germany; 2. Institute of Physics, Karlsruhe Institute of Technology, Karlsruhe, Germany*

- EB-13. Magnonics at Dilution Temperatures in a Planar Hybrid Magnonic/Superconducting Circuit.** *A.F. Van Loo*¹, *R.G. Morris*¹, *S. Kosen*¹ and *A.D. Karenowska*¹ *1. Physics, University of Oxford, Oxford, United Kingdom*

THURSDAY
MORNING
8:30

LA GALERIES 1-2

Session EC

MAGNETIZATION DYNAMICS II: DOMAINS AND ULTRAFAST EFFECTS

Grégoire de Loubens, Chair
CEA Saclay, Gif-sur-Yvette, France

- EC-01. Control of Magnetic States in Metallic Ferromagnets with Surface Acoustics Waves.** *N. Statuto*¹, *J. Hernández Ferras*¹, *M. Foerster*⁵, *S. Finizio*³, *A. Hernández-Mínguez*⁶, *S. Lendinez*^{4,1}, *P. Santos*⁶, *J. Fontcuberta*⁷, *M. Kläui*², *L. Aballe*⁵ and *F. Macià*^{7,1} *1. Condensed Matter Physics Department, University of Barcelona, Barcelona, Spain; 2. Physics, Johannes Gutenberg - University Mainz, Mainz, Germany; 3. SYN, Paul Scherrer Institut, Villigen PSI, Switzerland; 4. Materials Science Division, Argonne National Laboratory, Lemont, IL; 5. ALBA synchrotron light facility, Cerdanyola del Valles, Spain; 6. Paul-Drude-Institut für Festkörperelektronik, Berlin, Germany; 7. Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Bellaterra, Spain*

- EC-02. Domain wall velocity shift in the high field regime induced by vertical Bloch line dynamics and disorder.** *M. Voto*¹, *L. Lopez-Diaz*¹ and *L. Torres*¹ *1. Dept. Física Aplicada, Universidad de Salamanca, Salamanca, Spain*

- EC-03. High-Frequency Magnetization Dynamics of Individual Atomic-Scale Magnets.** *S. Krause¹, A. Sonntag¹, J. Hermenau¹, J. Friedlein¹ and R. Wiesendanger¹* *1. Department of Physics, University of Hamburg, Hamburg, Germany*

- EC-04. Crafting reconfigurable magnetic nanopatterns via thermally assisted scanning probe lithography. (Invited)** *E. Albisetti¹, D. Petti¹, M. Pancaldi⁴, M. Madami², S. Tacchi^{5,2}, J. Curtis⁶, W.P. King⁷, A. Papp³, G. Csaba³, W. Porod³, P. Vavassori⁴, E. Riedo⁸ and R. Bertacco¹* *1. Dipartimento di Fisica, Politecnico di Milano, Milano, Italy; 2. Dipartimento di Fisica e Geologia, Università di Perugia, Perugia, Italy; 3. University of Notre Dame, South Bend, IN; 4. CIC nanoGUNE Consolider, San Sebastian, Spain; 5. Istituto Officina dei Materiali del CNR (CNR-IOM), Perugia, Italy; 6. School of Physics, Georgia Institute of Technology, Atlanta, GA; 7. Department of Mechanical Science and Engineering, University of Illinois Urbana-Champaign, Urbana, IL; 8. CUNY-Advanced Science Research Center and City College New York, City University of New York, New York, NY*

- EC-05. Angular Dependent Magnetization Dynamics of Kagome Artificial Spin Ice Incorporating Topological Defects.** *V.S. Bhat¹, F. Heimbach², I. Stasinopoulos² and D. Grundler¹* *1. Materials Science and Engineering, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland; 2. Physik Department E10, Technische Universität München, Garching, Germany*

- EC-06. Stochastic Dynamics Of Strongly-Bound Magnetic Vortex Pairs.** *A. Bondarenko^{1,2}, E. Holmgren¹, B.C. Koop¹, T. Descamps¹, B. Ivanov² and V. Korenivski¹* *1. Nanostructure Physics, KTH Royal Institute of Technology, Stockholm, Sweden; 2. Institute of Magnetism, Kyiv, Ukraine*

- EC-07. Characterizing the magnetization processes in magnetic wires with dynamic FORC diagrams.** *D. Cimpoesu¹, I. Dumitru¹ and A. Stancu²* *1. Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania; 2. Department of Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*

- EC-08. Pump-Probe Holographic Imaging of Nanoscale Magnetic Domains.** S. Schleitzer¹, L. Müller¹, A. Philippi-Kobs^{1,5}, W. Roseker¹, C. Gutt³, M.H. Berntsen^{1,6}, B. Pfau⁴, D. Weder⁴, J. Geilhufe⁷, C. von Korff Schmising⁴, B. Vodungbo⁸, J. Gautier⁸, K. Li⁹, G. Malinowski², B. Tudu⁹, F. Capotondi¹⁰, E. Pedersoli¹⁰, M. Kiskinova¹⁰, J. Lüning⁹, S. Eisebitt^{4,7} and G. Grübel^{1,5} *1. Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; 2. Laboratoire de Physique des Solides, CNRS, Université Paris-sud, Orsay, France; 3. Universität Siegen, Siegen, Germany; 4. TU Berlin, Berlin, Germany; 5. The Hamburg Centre of Ultrafast Imaging, Hamburg, Germany; 6. KTH Royal Institute of Technology, Kista, Sweden; 7. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany; 8. Laboratoire d'Optique Appliquée, Palaiseau, France; 9. Laboratoire de Chimie Physique Matière et Rayonnement, Paris, France; 10. Elettra-Sincrotrone Trieste, Trieste, Italy*

- EC-09. Indirect excitation of ultrafast demagnetization: the role of hot electrons.** G. Malinowski¹, N. Bergeard², T. Ferte², A. Hillion¹, M. El Hadri¹, M. Hehn¹, C. Boeglin² and S. Mangin¹ *1. Institut Jean Lamour - CNRS - Université de Lorraine, Vandoeuvre-lès-Nancy, France; 2. IPCMS, Strasbourg, France*

- EC-10. Terahertz Radiation Driven Dynamics of Magnetic Domain Structures Probed by Free-Electron Laser Light.** L. Müller¹, M.H. Berntsen⁴, S. Schleitzer¹, W. Roseker¹, F. Lehmkuhler¹, R. Rysov¹, N. Stojanovic⁵, T. Golz⁵, A. Kobs², K. Bagschik³, J. Wagner³, R. Frömter³, C. Gutt⁶, H. Oepen³ and G. Grübel¹ *1. FS-CXS, DESY, Hamburg, Germany; 2. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 3. Institute of Nanostructure and Solid State Physics, University of Hamburg, Hamburg, Germany; 4. KTH, Stockholm, Sweden; 5. FS-FL, DESY, Hamburg, Germany; 6. Universität Siegen, Siegen, Germany*

- EC-11. Ultrafast Laser Induced Spin Dynamics in RE-TM Alloys in Magnetic Fields up to 30T.** J.J. Becker¹, A. Tsukamoto², A. Kirilyuk¹, J.C. Maan³, T. Rasing¹, P.C. Christianen³ and A. Kimel¹ *1. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands; 2. Electronic Engineering, College of Science and Technology Nihon University, Funabashi, Japan; 3. High Field Magnet Laboratory (HFML - EMFL), Radboud University, Nijmegen, Netherlands*

- EC-12. Ultrafast Demagnetization Dynamics in CoDy Alloys by TR-XMCD: Direct and Indirect Excitations.** T. Ferte¹, N. Bergeard¹, E. Terrier¹, M. Hehn², G. Malinowski³, L. Le Guyader⁴, K. Holldack⁵ and C. Boeglin¹ *1. IPCMS, Strasbourg, France; 2. Institut Jean Lamour, Vandoeuvre les nancy, France; 3. P2M, Institut Jean Lamour, Vandoeuvre-Lès-Nancy, France; 4. European XFEL, Hambourg, Germany; 5. Institute Methods and Instrumentation for Synchrotron Radiation Research, Berlin, Germany*

EC-13. Element specific study of demagnetization in a broad range of $\text{Fe}_{1-x}\text{Ni}_x$ alloys using a high harmonic generation source.

*S. Jana*¹, *R. Knut*¹, *R. Stefanuik*¹, *M. Ahlberg*², *S. Troisi*¹,
*J. Terschlusen*¹, *Y. Pogoryelov*¹, *R. Malik*¹, *J. Åkerman*²,
*J. Söderström*¹ and *O. Karis*¹ *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. University of Gothenburg, Gothenburg, Sweden*

THURSDAY
 MORNING
 8:30

LA GALERIES 3

Session ED**MULTIFERROIC THIN FILMS, TRANSPORT AND MAGNETOELECTRIC COMPOSITES**

Brandon Howe, Chair

Air Force Research Lab, Wright Patterson Air Force Base, OH

8:30

ED-01. Magnetostatic Coupling Effects in Small Magnetic Tunnel Junctions. (Invited) *S. Majetich*¹ *1. Carnegie Mellon University, Pittsburgh, PA*

9:06

ED-02. Voltage control of two magnon scattering and an enhanced ME coupling in multiferroic heterostructures. *X. Xue*¹, *Z. Zhou*^{1,2}, *M. Zhu*¹, *W. Ren*¹, *Z. Ye*^{1,3} and *M. Liu*¹ *1. School of Electrical and Information Engineering, Xian Jiaotong University, Xian, China; 2. Energy Systems Division, Argonne National Laboratory, Lemont, IL; 3. Department of Chemistry and 4D LABS, Simon Fraser University, Burnaby, BC, Canada*

9:18

ED-03. Tuning of magnetic properties of ferromagnetic and ferroelectric coupled composites. *A. Farheen*¹, *G. Thirupathi*¹ and *R. Singh*¹ *1. School of Physics, Univesity of Hyderabad, Hyderabad, India*

9:30

ED-04. Spin dependent scattering in non-magnetic metallo-molecular interfaces. *F. Al Ma'Mari*^{1,2}, *T. Moorsom*¹, *A. Shengelaya*³, *D. Daraselia*³, *D. Japaridze*³, *F. Herling*¹, *B. Hickey*¹ and *O. Cespedes*¹ *1. Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Physics, Sultan Qaboos University, Muscat, Oman; 3. Department of Physics, Faculty of Exact and Natural Sciences, Tbilisi State University, Tbilisi, Georgia*

9:42

- ED-05. CoFe₂/Al₂O₃/PMNPT multiferroic heterostructures by atomic layer deposition.** Z. Zhou¹, G. Grocke¹, A. Yanguas-Gil¹, X. Wang², Y. Gao², N.X. Sun², B.M. Howe³ and X. Chen¹ *1. Energy Systems Division, Argonne National Laboratory, Lemont, IL; 2. ECE, Northeastern University, Boston, MA; 3. Materials and Manufacturing Directorate, Air Force Research Lab, Wright Patterson Air Force Base, OH*

9:54

- ED-06. Ionic Liquid Gating Control of Interfacial Magnetism.** S. Zhao¹, Z. Zhou^{1,2}, B. Peng¹, Q. Yang¹, Y. Zhang¹, W. Ren¹, Z. Ye^{1,3} and M. Liu¹ *1. School of Electrical and Information Engineering, Xian Jiaotong University, Xian, China; 2. Energy Systems Division, Argonne National Laboratory, Chicago, IL; 3. Department of Chemistry and 4D LABS, Simon Fraser University, Burnaby, BC, Canada*

10:06

- ED-07. Giant magnetoimpedance effect in amorphous FeNiNbB-based bilayer and trilayer ribbons.** F. Andrejka¹, J. Marcin¹, P. Svec² and I. Skorvanek¹ *1. Magnetism, Institute of Experimental Physics Slov. Acad. Sci., Kosice, Slovakia; 2. Institute of Physics, Slov. Acad. Sci., Bratislava, Slovakia*

10:18

- ED-08. Imaging of magnetoelectric coupling mediated by entangled ferroelastic domain and polar domain walls in non-polar materials.** B. Casals¹, A. Casiraghi², D. López González², S.J. Hämäläinen², V. Skumryev^{1,3}, V. Laukhin^{1,3}, X. Granados¹, E. K. H. Salje⁴, J. Fontcuberta¹, S. van Dijken² and G. Herranz¹ *1. Institut de Ciència de Materials de Barcelona ICMA-B-CSIC, Bellaterra, Spain; 2. NanoSpin, Department of Applied Physics, Aalto University School of Science, FI-00076 Aalto, Finland; 3. ICREA, Barcelona, Spain; 4. Department of Earth Sciences, University of Cambridge, Cambridge, United Kingdom*

10:30

- ED-09. Exchange bias in Ba_{0.4}Sr_{0.6}TiO₃/La_{0.7}Sr_{0.3}MnO₃ heterostructures.** S. Singamaneni^{2,1}, J.T. Prater¹ and J. Narayan¹ *1. Materials Science and Engineering, North Carolina State University, Raleigh, NC; 2. Physics, University of Texas, El Paso, El Paso, TX*

10:42

- ED-10. Modeling Temperature Dependent Exchange Bias in Systems with Magnetoelectric Chromia.** R. Ahmed¹ and R.H. Victora¹ *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

10:54

- ED-11. Large electric-field control of perpendicular magnetic anisotropy in strained [Co/Ni] / PZT heterostructures.** *D.B. Gopman*¹, *C. Dennis*¹, *Y.L. Iunin*^{3,1}, *M. Staruch*², *P. Finkel*² and *R. Shull*¹ *1. Materials Science & Engineering Division, National Institute of Standards and Technology, Gaithersburg, MD; 2. Materials Science and Technology, Naval Research Laboratory, Washington, DC; 3. Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russian Federation*

11:06

- ED-12. Withdrawn**

THURSDAY
MORNING
8:30

LA GALERIES 4-5

Session EE

VOLTAGE CONTROLLED MAGNETISM II

Dafiné Ravelosona, Chair

Institut d'Electronique Fondamentale, Orsay, France

8:30

- EE-01. N-type carrier-induced ferromagnetic semiconductor and electrical control of ferromagnetism by wavefunction engineering. (Invited)** *L. Anh*¹, *P. Nam Hai*^{2,3}, *Y. Kasahara*^{4,5}, *Y. Iwasa*^{4,6} and *M. Tanaka*^{1,3} *1. Department of Electrical Engineering and Information Systems, University of Tokyo, Tokyo, Japan; 2. Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan; 3. Center for Spintronics Research Network, University of Tokyo, Tokyo, Japan; 4. QPEC & Department of Applied Physics, University of Tokyo, Tokyo, Japan; 5. Department of Physics and Astronomy, Kyoto University, Kyoto, Japan; 6. RIKEN Center for Emergent Matter Science, Wako, Japan*

9:06

- EE-02. Spin-Orbitronics with Ferroelectric Rashba Semiconductors.** *R. Bertacco*¹, *C. Rinaldi*¹, *S. Varotto*¹, *J. Slawinska*², *D. Di Sante*^{2,3}, *J. Rojas-Sánchez*⁴, *L. Vila*⁵, *M. Asa*¹, *M. Cantoni*¹, *J. George*⁶, *R. Calarco*⁷, *S. Picozzi*² and *A. Fert*⁸ *1. Department of Physics, Politecnico di Milano, Milano, Italy; 2. CNR-SPIN, Consiglio Nazionale delle Ricerche, Chieti, Italy; 3. Universitaet Wuerzburg, Wuerzburg, Germany; 4. Unité Mixte de Physique, CNRS, Thales, Palaiseau, France; 5. INAC-SP2M, Université Grenoble Alpes and CEA, Grenoble, France; 6. Unité Mixte de Physique CNRS Thales, CNRS, Palaiseau, France; 7. Paul-Drude-Institut für Festkörperelektronik, Berlin, Germany; 8. CNRS/Thales, University Paris-Sud, Palaiseau, France*

9:18

- EE-03. Electric field control of magnetic skyrmion bubbles nucleation and annihilation.** *A. Bernand-Mantel^{1,2}, M. Schott^{1,2}, J. Vogel^{1,2}, S. Pizzini^{1,2}, L. Ranno^{1,2}, H. Bea^{3,4} and D. Givord^{1,2}* *1. Institut Néel, CNRS, Grenoble, France; 2. Institut Néel, Univ. Grenoble Alpes, Grenoble, France; 3. SPINTEC, CNRS, Grenoble, France; 4. INAC-SPINTEC, CEA, Grenoble, France*

9:30

- EE-04. Direct Probe of Voltage-induced Fe Oxidation Effects on Spin Transport Property of the Fe/ZnO Ferromagnet-Semiconductor Device.** *S. Chang¹, S. Lo¹, P. Chang³, W. Lin² and Y. Tseng¹* *1. Materials Science & Engineering, National Chiao-Tung University, Hsin-Chu, Taiwan; 2. Department of Physics, National Taiwan Normal University, Taipei, Taiwan; 3. National Taiwan Normal University, Taipei, Taiwan*

9:42

- EE-05. Voltage controlled magnetism in Pt/Co/GdO_x structures.** *C. Bi¹, M. Xu¹, H. Almasi¹, T. Newhouse-Illige¹ and W. Wang¹* *1. Department of Physics, University of Arizona, Tucson, AZ*

9:54

- EE-06. Electric Field Control of Magnetization Direction in Ultrathin FeRh/MgO Bilayers across Metamagnetic Transition.** *N. Kioussis¹, G. Zheng^{1,2}, S. Ke², M. Miao¹, J. Kim¹ and R. Ramesh³* *1. Physics, California State University Northridge, Northridge, CA; 2. School of Physics Science and Engineering, Tongji University, Shanghai, China; 3. Materials Sciences Division, University of California, Berkeley, CA*

10:06

- EE-07. Enhancement of Voltage-Controlled Magnetic Anisotropy by Insertions at CoFeB/MgO Interface.** *X. Li¹, D. Wu², G. Yu¹, K.L. Wang¹, C. Grezes¹, Z. Zhang², P. Khalili^{1,3} and K.L. Wang¹* *1. Electrical Engineering, UCLA, Los Angeles, CA; 2. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 3. Inston Inc., Los Angeles, CA*

10:18

- EE-08. Voltage control of magnetic anisotropy in Pt/Co/MgO system with ionic liquid gate.** *T. Hirai¹, T. Koyama¹, A. Obinata¹, Y. Hibino¹, K. Miwa², S. Ono², M. Kohda³ and D. Chiba¹* *1. Department of Applied Physics, The University of Tokyo, Bunkyo, Japan; 2. Central Research Institute of Electric Power Industry, Yokosuka, Japan; 3. Department of Materials Science, Tohoku University, Sendai, Japan*

10:30

- EE-09. An EXAFS Study of an FePt/MgO Junction to Investigate Voltage-Induced Atomic Displacement.** *M. Suzuki¹, T. Tsukahara², R. Miyakaze², T. Furuta², K. Shimose², K. Matsuda², K. Tanaka², M. Goto², T. Nozaki³, S. Yuasa³, Y. Suzuki^{2,3} and S. Miwa²* *1. Japan Synchrotron Radiation Research Institute (JASRI), Sayo, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 3. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

10:42

- EE-10. Deterministic switching of PMA by electric field control of spin reorientation transition in ultrathin (Co/Pt)₃/PMN-PT (011) heterostructures.** B. Peng¹, T. Nan², Q. Yang¹, X. Wang², Y. Zhang¹, S. Zhao¹, W. Ren¹, Z. Ye^{1,3}, N.X. Sun^{1,2} and M. Liu¹ *1. Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, Xi'an, China; 2. Electrical and Computer Engineering Department, Northeastern University, Boston, MA; 3. Department of Chemistry and 4D LABS, Simon Fraser University, Burnaby, BC, Canada*

10:54

- EE-11. Influence of ultrathin Cr insertion on perpendicular magnetic anisotropy and its electric field induced change at Fe/MgO interface.** A. Koziol-Rachwal^{1,2}, T. Nozaki¹, V. Zayets¹, H. Kubota¹, A. Fukushima¹, S. Yuasa¹ and Y. Suzuki^{1,3} *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 2. Faculty of Physics and Applied Computer Science, AGH University of Science and Technology, Kraków, Poland; 3. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan*

11:06

- EE-12. Tuning Voltage Induced Precessional Switching in CoFeB-MgO Perpendicular Magnetic Tunnel Junctions.** M. Xu¹, H. Almasi¹, C. Bi¹, Y. Xu¹ and W. Wang¹ *1. Department of Physics, University of Arizona, Tucson, AZ*

11:18

- EE-13. Voltage control of magnetic properties in BaTiO₃ heterostructures.** O. Rousseau¹, R. Weil¹, S. Rohart¹ and A. Mougin¹ *1. CNRS, Univ. Paris-Sud, Universite Paris-Saclay, Laboratoire de Physique des Solides, Orsay, France*

THURSDAY
MORNING
8:30

STUDIO 1-2

Session EF

MAGNETORESISTANCE I: GMR AND TMR

Olaf van 't Erve, Chair

Naval Research Laboratory, Washington, DC

8:30

- EF-01. Stability of a highly spin polarized surface resonance of Co₂MnSi at spin-valve interfaces.** C. Lidig¹, A. Kronenberg¹, A. Hloskovsky², H. Elmers¹, J.G. Schoenhense¹, M. Kläui¹ and M. Jourdan¹ *1. Institut für Physik, Johannes Gutenberg Universität Mainz, Mainz, Germany; 2. Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany*

- EF-02. Temperature and Spacer-layer Thickness Dependence in $\text{Co}_2\text{Fe}_{0.4}\text{Mn}_{0.6}\text{Si}/\text{Ag-Mg}/\text{Co}_2\text{Fe}_{0.4}\text{Mn}_{0.6}\text{Si}$ CPP-GMR Devices.** *T. Kubota*^{1,2}, *Y. Ina*¹, *Z. Wen*¹ and *K. Takanashi*^{1,2} *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Center for Spintronics Research Network, Tohoku University, Sendai, Japan*

- EF-03. Magnetotransport properties in the magnetic junctions with a $\text{Cu}(\text{In}_{0.8}\text{Ga}_{0.2})\text{Se}_2$ semiconductor spacer and $\text{Co}_2\text{Fe}(\text{Ga}_{0.5}\text{Ge}_{0.5})$ ferromagnetic electrodes.** *K. Mukaiyama*¹, *K. Masuda*¹, *S. Kasai*^{1,2}, *Y. Takahashi*¹, *P. Cheng*¹, *I. Ikhtiar*¹, *Y. Miura*^{3,1}, *T. Ohkubo*¹, *S. Mitani*¹ and *K. Hono*¹ *1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Center for Emergent Matter, RIKEN, Wako, Japan; 3. Electrical Engineering and Electronics, Kyoto Institute of Technology, Kyoto, Japan*

- EF-04. Heusler Alloys with bcc Tungsten Seed Layers for GMR Junctions.** *W.J. Frost*¹ and *A. Hirohata*² *1. Department of Electronics, University of York, York, United Kingdom; 2. University of York, York, United Kingdom*

- EF-05. Fe_2MnGe : A comparison of bulk and thin film samples.** *B.D. Clark*¹, *S. Keshavarz*¹, *N. Naghibolashrafi*¹, *R. Martens*¹, *W. Butler*¹, *P.R. LeClair*¹, *A. Gupta*¹, *G. Mankey*¹ and *S. Gupta*¹ *1. Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL*

- EF-06. Giant spin-valve effect in $(\text{Ga,Fe})\text{Sb}/(\text{In,Fe})\text{As}$ spin diodes.** *T. Otsuka*¹, *Y. Arakawa*¹, *M. Tanaka*^{2,3} and *P. Nam Hai*¹ *1. Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Tokyo, Japan; 2. Department of Electrical Engineering and Information Systems, Univ. of Tokyo, Tokyo, Japan; 3. Center for Spintronics Research Network, The University of Tokyo, Tokyo, Japan*

- EF-07. Deposition and Spin Polarization Measurement of Fe_4N (001) Thin Film on Ag and Cr Underlayer.** *H. Li*¹, *X. Li*¹, *D. Zhang*², *T. Chen*³ and *J. Wang*² *1. University of Minnesota, Minneapolis, MN; 2. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 3. Physics, Arizona State University, Tempe, AZ*

- EF-08. Enhancement in Low-field Sensitivity of TMR in 2D Co/AlF Granular Films.** *Y. Cao*¹, *Y. Zhang*¹, *S. Ohnuma*^{1,2}, *N. Kobayashi*² and *H. Masumoto*¹ *1. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Sendai, Japan; 2. Research Institute for Electromagnetic Materials, DENJIKEN, Sendai, Japan*

10:06

- EF-09. Developing perpendicular magnetic tunnel junctions with $L1_0$ -phase FePd free layer.** D. Zhang¹, K. Schliep², P. Quarterman¹, Y. Lv¹, H. Li², J. Chen¹, Z. Zhao¹, X. Chao¹, M. Jamali¹ and J. Wang¹ *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

10:18

- EF-10. Spontaneous Room Temperature Exchange Bias Formation in Polycrystalline IrMn Based Spin Valves.** A. Migliorini¹, M. Muñoz², J. Fernandez Cunnado³, J. Camarero⁴, C. Aroca¹ and J.L. Prieto¹ *1. Instituto de Sistemas Optoelectrónicos y Microtecnología-ISOM. Universidad Politécnica de Madrid., Madrid, Spain; 2. Instituto de Microelectrónica de Madrid, IMM-CSIC, Madrid, Spain; 3. Magnetism, IMDEA Nanociencia, Madrid, Spain; 4. Universidad Autonoma de Madrid & IMDEA Nanoscience, Madrid, Spain*

10:30

- EF-11. Spin Scattering in Pt and at its Interfaces.** R. Freeman¹, A. Zholud¹ and S. Urazhdin¹ *1. Physics, Emory University, Decatur, GA*

10:42

- EF-12. Continuous control of spin polarization using a magnetic field.** J. Gifford¹, G. Zhao¹, B. Li¹, B. Tracy¹, J. Zhang¹, D. Kim¹, D. Smith¹ and T. Chen¹ *1. Physics, Arizona State University, Tempe, AZ*

10:54

- EF-13. Theory of spin loss at metallic interfaces.** K. Belashchenko¹, A. Kovalev¹ and M. van Schilfgaarde² *1. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE; 2. Department of Physics, King's College London, London, United Kingdom*

11:06

- EF-14. Free Functionality Design in Magneto-Resistive Multilayer Devices.** K. Schlage¹, L. Bocklage^{1,2}, D.J. Erb¹, H. Wille¹ and R. Röhlberger^{1,2} *1. Photon Science, Deutsches Elektronen-Synchrotron, Hamburg, Germany; 2. The Hamburg Centre for Ultrafast Imaging CUI, Hamburg, Germany*

11:18

- EF-15. Kondo-like behaviour and GMR effect in granular Co-Cu microwires.** V. Zhukova^{1,3}, J. Mino^{1,4}, J. del Val¹, R. Varga⁴, G. Martinez⁵, M. Baibich⁵ and A.P. Zhukov^{1,2} *1. Phys. Mater., UPV/EHU, San Sebastián, Spain; 2. Ikerbasque, Bilbao, Spain; 3. Dept. Appl. Phys., University of Basque Country, San Sebastian, Spain; 4. Institute of Physics, Faculty of Science, UPJS, Kosice, Slovakia; 5. UFRGS, Instituto de Física, C.P. 15051, 91501-970, Porto Alegre, Brazil*

Session EG
ELEMENTALLY MODIFIED INTERMETALLICS

Semih Ener, Chair
Technische Universität Darmstadt, Darmstadt, Germany

8:30

- EG-01. 4f electronic clouds in rare-earth based magnets: first-principles study with Wannier functions.** *H. Tsuchiura*¹, M. Mišina², T. Yoshioka¹ and P. Novák² *1. Department of Applied Physics, Tohoku University, Sendai, Japan; 2. Institute of Physics of ASCR, Prague, Czech Republic*

8:42

- EG-02. Role of granular microstructure on coercivity of nano- and microcrystalline Nd-Fe-B melt-spun magnets.** *J. Fidler*^{1,2}, G. Zickler^{1,2} and A. Asali² *1. TU Vienna, Vienna, Austria; 2. Institute of Solid State Physics, TU Vienna, Vienna, Austria*

8:54

- EG-03. Enhanced coercivity related to the microstructure of the sintered Nd-Fe-B magnets with Ho addition.** *J. Di*¹, S. Guo¹, L. Chen¹, G. Ding¹, K. Chen¹, J. Song¹ and A. Yan¹ *1. Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*

9:06

- EG-04. The Status of Chines Permanent Magnet Industry and R&D Activities.** *S. Dong*¹ and W. Li¹ *1. Central Iron & Steel Research Institute, Beijing, China*

9:18

- EG-05. Permanent magnets based on exchange coupled nanocomposites.** *V. Nachbaur*¹, F. Ayadi¹, N. Maat¹, R. Larde¹, J. Juraszek¹ and J. Le Breton¹ *1. Normandie Univ. UNIROUEN, INSA Rouen, CNRS, Groupe de Physique des Matériaux, 76000 Rouen, France*

9:30

- EG-06. Influence of cooling rate on structural and magnetic properties of $(\text{Fe}_{78}\text{Nb}_8\text{B}_{14})_{1-x}\text{Tb}_x$ alloys.** *G. Ziolkowski*¹, A. Chrobak¹, J. Klimontko¹, D. Chrobak³ and R. Nirina² *1. Institute of Physics, University of Silesia, Katowice, Poland; 2. Institut des Molécules et des Matériaux du Mans, Université du Maine, Le Mans, France; 3. Institute of Materials Science, University of Silesia, Chorzów, Poland*

9:42

- EG-07. Where are Cobalt and Gallium in a Nd-Fe-Co-B Sintered Magnet?** *H. Chen*¹, F. Yun¹, Z. Ye², S. Ringer³ and R. Zheng¹ *1. School of Physics, The University of Sydney, Sydney, NSW, Australia; 2. DMEGC, Dongyang, China; 3. Australian Institute for Nanoscale Science and Technology (AINST), The University of Sydney, Sydney, NSW, Australia*

- EG-08. Direct observation of reversed magnetic domains induced by Cu and Al additions in a sintered Nd-Fe-B magnet.** *H. Chen¹, Y. Yao², F. Yun¹, S. Ringer³ and R. Zheng¹* *1. School of Physics, The University of Sydney, Sydney, NSW, Australia; 2. Electron Microscope Unit, Mark Wainwright Analytical Centre, The University of New South Wales, Sydney, NSW, Australia; 3. Australian Institute for Nanoscale Science and Technology (AINST), The University of Sydney, Sydney, NSW, Australia*

10:06

- EG-09. Magnetization reversal in Dy-diffused permanent magnets.** *J. Fischbacher¹, L. Exl², T. Schrefl¹, H. Sepehri-Amin³, T. Ohkubo³ and K. Hono³* *1. Danube University Krems, Wiener Neustadt, Austria; 2. Vienna University, Vienna, Austria; 3. Magnetic Materials Unit, NIMS, Tsukuba, Japan*

10:18

- EG-10. Coercivity enhancement in Nd-Fe-B(Nb-Cu) nanocrystalline alloys by grain boundary infiltration.** *A. Martín-Cid¹, D. Salazar¹, J.S. Garitaonandia^{1,3}, R. Madugundo¹, J.M. Barandiaran^{1,3} and G. Hadjipanayis²* *1. BCMaterials, Derio, Spain; 2. Physics and Astronomy, University of Delaware, Newark, DE; 3. University of the Basque Country, Bilbao, Spain*

10:30

- EG-11. Enhancement of Coercivity in Sm(CoFeCuZr)_z Permanent Magnets by Doping Cu Powders.** *Y. Wang¹, M. Yue¹, S. Su¹, D. Zhang¹ and W. Liu¹* *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*

10:42

- EG-12. Structure and Magnetic Properties of (Nd,Tb)₂Fe₁₄B Nanoflakes Prepared by Surfactant-assisted Ball Milling.** *H. Li¹, M. Yue¹, Y. Li¹, W. Liu¹, D. Zhang¹ and Q. Lu¹* *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China*

10:54

- EG-13. High electrical resistivity Nd-Fe-B die-upset magnet doped with eutectic DyF₃-LiF salt mixture.** *K. Kim¹, H. Kwon¹, D. Kim², J. Lee³ and J. Yu³* *1. Pukyong National University, Busan, The Republic of Korea; 2. Star-group Ind. Co., Daegu, The Republic of Korea; 3. Korea Institute of Materials Science, Changwon, The Republic of Korea*

11:06

- EG-14. Mechanical anisotropy in Sm(CoFe_{0.09}Cu_{0.09}Zr_x)_{7.68} (x=0.020~0.035) magnets.** *F. Yanping^{1,2}, L. Liu¹, Z. Liu¹, M. Li¹, C. Wang^{1,3}, Y. Sun¹, D. Lee^{1,4} and A. Yan¹* *1. Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Ningbo, China; 2. School of Material Science and Engineering, Chongqing University of Technology, Chongqing, China; 3. University of Science and Technology of China, HeFei, China; 4. University of Dayton, Dayton, OH*

Session EH
MAGNETO-CALORIC MATERIALS II

Yaroslav Mudryk, Chair
Iowa State University, Ames, IA

8:30

- EH-01. Optimal Temperature Range for Determining Magnetocaloric Magnitudes from Heat Capacity.** *L.M. Moreno-Ramírez¹, J.S. Blázquez¹, J. Law¹, V. Franco¹ and A. Conde¹* *1. Condensed Matter Physics, Sevilla University, Sevilla, Spain*

8:42

- EH-02. Analysis of the thermal and magnetic hysteresis of Heusler type magnetocaloric alloys.** *V. Franco¹, J.S. Blázquez¹, A. Conde¹, T. Gottschall², K.P. Skokov² and O. Gutfleisch²* *1. Condensed Matter Physics, Sevilla University, Sevilla, Spain; 2. FM, TU Darmstadt, Darmstadt, Germany*

8:54

- EH-03. Platinum induced stabilization of the tetragonal phase in epitaxial NiPtMnGa films.** *L. Helmich¹, N. Teichert¹, F. Scheibel², R. Meckenstock², A. Gruenebohm², M. Acet² and A. Huetten¹* *1. Physics Department, Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany; 2. Faculty of Physics and CENIDE, University of Duisburg-Essen, Duisburg, Germany*

9:06

- EH-04. Microstructure and magnetocaloric effect of freestanding Ni-Co-Mn-Al thin films.** *N. Teichert¹ and A. Huetten¹* *1. Department of Physics, Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany*

9:18

- EH-05. The irreversible structural change in $\text{Mn}_{1.1}\text{Fe}_{0.9}\text{P}_{0.8}\text{Ge}_{0.2}$: A new magnetic driver?** *X. Liu¹, D. Ryan², L. Cranswick³, D. Liu⁴, Y. Ming⁴ and Z. Altounian²* *1. Physics Department, McGill University, Montreal, QC, Canada; 2. McGill University, Montreal, QC, Canada; 3. Canadian Neutron Beam Centre, Chalk River, ON, Canada; 4. Beijing University of Technology, Beijing, China*

- EH-06. Residual stress induced stabilization of martensite phase and its effect on the magneto-structural transition in Mn rich Ni-Mn-In/Ga magnetic shape memory alloys.** *S. Singh*¹, P. Kushwaha², F. Scheibel³, H. Liermann⁴, S. Barman⁵, M. Acet³, C. Felser² and D. Pandey⁶ *1. Solid state Chemistry, Max-Planck Institute For Chemical Physics of Solids, Dresden, Germany; 2. Max Planck Institute for Chemical Physics for Solids, Dresden, Germany; 3. Physics, Universität Duisburg-Essen, Duisburg, Germany; 4. Deutsches Elektronen Synchrotron (DESY), Hamburg, Germany; 5. UGC-DAE CSR, Indore, India; 6. Indian Institute of Technology (Banaras Hindu University), Varanasi, India*

- EH-07. Realization of room temperature magnetostructural transition and magnetocaloric/elastocaloric effects in NiMnGa alloys by isoelectronic substitution of In for Ga.** J. Wang¹, Q. Yu¹, J. Liu¹, T. Zhang¹ and C. Jiang¹ *1. School of Materials Science and Engineering, Beihang University, Beijing, China*

- EH-08. The role of intra-layer Mn-Mn distances in the metamagnetism of the CoMnSi compound.** R. Kou^{1,2}, J. Gao¹, Y. Ren², S.M. Heald², B.L. Fisher³ and C. Sun² *1. Key Laboratory of Electromagnetic Processing of Materials (Ministry of Education), Northeastern University, Shenyang, China; 2. Advanced Photon Source, Argonne National Laboratory, Westmont, IL; 3. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

- EH-09. Effect of B-doping on the structure and magnetocaloric properties of plate-shaped La_{0.6}Pr_{0.4}Fe_{11.4}Si_{1.6}H_x sintered in high-pressure H₂ atmosphere.** N. Sun¹ *1. School of Science, Shenyang Ligong University, Shenyang, China*

- EH-10. Exploring the hydrogen sorption kinetics in magnetocaloric La-Fe-Si structure via *in-situ* neutron diffraction.** X. Hai^{1,2}, C. Mayer², V. Nassif¹, F. Porcher³ and S. Miraglia¹ *1. Condensed Matter and Functional Materials, Néel Institute, Grenoble, France; 2. Erasteel SAS, Paris, France; 3. Laboratoire Léon Brillouin, Gif sur Yvette, France*

- EH-11. Wide temperature range magnetocaloric effect in novel Gd₃Fe₄Si multiphase alloy.** T.P. Rashid¹, I. Curlik², S. Ilkovic², M. Reiffers² and R. Nagalakshmi¹ *1. Physics, National Institute of Technology, Tiruchirappalli, India; 2. Faculty of Humanities and Natural Sciences, Presov University, Presov, Slovakia*

10:42

- EH-12. Gadolinium thin films as benchmark for magneto-caloric thin films.** L. Helmich¹, M. Bartke¹, N. Teichert¹, M. Dunz¹, B. Schleicher², A. Waske², J. Beik Mohammadi³, C.K. Mewes³, T. Mewes³ and A. Huetten¹ *1. Physics Department, Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany; 2. IFW Dresden, Dresden, Germany; 3. Physics and Astronomy / MINT, University of Alabama, Tuscaloosa, AL*

10:54

- EH-13. Magnetocaloric Effect of Gd-based Microwires from Binary to Quaternary System.** F. Qin¹, Y. Wang¹, Y. Wang¹, H. Wang¹ and H. Peng¹ *1. Materials Science and Engineering, Zhejiang University, Hangzhou, China*

11:06

- EH-14. Transition metal borides – Potential magnetocaloric materials for thermomagnetic energy harvesting.** M. Fries¹, Z. Gercsi², S. Ener¹, T. Gottschall¹, D. Benke¹, K.P. Skokov¹ and O. Gutfleisch¹ *1. Funktionale Materialien, Materialwissenschaft, TU Darmstadt, Darmstadt, Germany; 2. Physics, Trinity College Dublin, Dublin, Ireland*

11:18

- EH-15. Heusler Compounds for Waste Heat- to Electric Power Conversion Using Thermomagnetic Motors.** M. Maschek¹, X. You¹, N. van Dijk¹, N. Vida², C. Gossweiler³, D. Wymann^{2,3}, D. Studer^{3,2}, R. Brunner^{3,2} and E. Brück¹ *1. Fundamental Aspects of Materials and Energy (FAME), Delft University of Technology, Delft, Netherlands; 2. Swiss Blue Energy, Bad Zurzach, Switzerland; 3. Institute of Thermal and Fluid Engineering, University of Applied Sciences and Arts Northwestern Switzerland, Windisch, Switzerland*

THURSDAY
MORNING
8:30

STUDIO 3-4

Session EI ELECTRONIC STRUCTURE AND MAGNETIC SEMICONDUCTORS

Vlado Lazarov, Chair
University of York, York, United Kingdom

8:30

- EI-01. Direct evidence for a helical spin-locked Dirac state in the Half-Heusler compound YPtBi. (Invited)** M. Jourdan¹, A. Kronenberg¹, J. Braun³, J. Minar³, H. Elmers¹, D. Kutnyakhov¹, A. Zaporozhchenko¹, R. Wallauer¹, S. Chernov¹, K. Medjanik¹, J.G. Schoenhense¹, M. Kläui¹, S. Chadov² and H. Ebert³ *1. Institute of Physics, Johannes Gutenberg-University Mainz, Mainz, Germany; 2. Inorganic Chemistry, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 3. Chemistry Department, Ludwig-Maximilians-University Munich, Munich, Germany*

9:06

- EI-02. Influence of post-annealing on the structural and electronic properties of thin CoFe films.** *A. Gloskovskii*¹, *S. Chadov*², *J. Hamrle*³, *H. Elmers*⁴, *Y. Sakuraba*⁵, *K. Takanashi*⁶ and *W. Drube*¹ *1. Photon Science/DESY, Hamburg, Germany; 2. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 3. VSB–Technical University, Ostrava, Czech Republic; 4. Uni-Mainz, Mainz, Germany; 5. NIMS, Tsukuba, Japan; 6. Institute for Materials Research, Sendai, Japan*

9:18

- EI-03. Revealing the Hidden Structural Phase of FeRh.** *J. Kim*¹, *R. Ramesh*² and *N. Kioussis*¹ *1. Physics, California State University, Northridge, CA; 2. Materials Science & Engineering, University of California, Berkeley, CA*

9:30

- EI-04. Spin-resolved Band Structure of a Heisenberg Ferromagnet.** *T. Gerber*¹, *M. Eschbach*¹, *E. Mlynczak*¹, *P. Lömker*¹, *P. Gospodarcic*¹, *M. Gehlmann*¹, *R. Pentcheva*², *L. Plucinski*¹, *C.M. Schneider*^{1,2} and *M. Müller*^{1,2} *1. Peter Grünberg Institute, PGI-6, Research Center Jülich, Jülich, Germany; 2. Faculty of Physics, University Duisburg-Essen, Jülich, Germany*

9:42

- EI-05. Giant perpendicular magnetic crystalline anisotropy of Ir-doped α -Fe₂O₃: first-principles calculations.** *Y. Kitaoka*¹ and *H. Imamura*¹ *1. Spintronics Research Center, AIST, Tsukuba, Japan*

9:54

- EI-06. Role of Oxygen Vacancies in Fe-Doped NiO from *ab Initio* Calculations.** *J.E. Petersen*¹, *L. Scolfaro*¹, *P. Borges*² and *W.J. Geerts*¹ *1. Texas State University, San Marcos, TX; 2. Universidade de Vicosa, Minas Gerais, Brazil*

10:06

- EI-07. Electronic and Atomic Structure Study of Polar Fe₃O₄(111)/SrTiO₃(111) Interface.** *V. Lazarov*¹, *Z. Nedelkoski*¹, *B. Kuerbanjiang*¹, *K. Matsuzaki*², *T. Susaki*², *L. Lari*¹, *D. Kepaptsoglou*³, *Q.M. Ramasse*³, *S. Tear*¹ and *K.P. McKenna*¹ *1. Physics, University of York, York, United Kingdom; 2. Tokyo Institute of Technology, Yokohama, Japan; 3. SuperSTEM Laboratory, Daresbury, United Kingdom*

10:18

- EI-08. First-principles Study of the Residual Resistivity of Ni-based High Entropy Alloys.** *S. Mu*¹, *G.M. Stocks*¹, *G. Samolyuk*¹, *S. Khan*¹, *C. Troparevsky*¹, *S. Zhao*¹, *M. Daene*² and *S. Wimmer*³ *1. Materials Science and Technology Division, Oak Ridge National Lab, Oak Ridge, TN; 2. Physical and Life Sciences, Lawrence Livermore National Laboratory, Livermore, CA; 3. Department of Chemistry, Ludwig-Maximilian-Universitaet, Muenchen, Germany*

10:30

- EI-09. Interplay of localization and magnetism in (Ga,Mn)As and (In,Mn)As.** *Y. Yuan*¹, *M. Sawicki*², *T. Dietl*², *M. Helm*¹ and *S. Zhou*¹ *1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland*

10:42

- EI-10. The magnetic anisotropy of III-Mn-V ferromagnetic semiconductors prepared by ion implantation and pulsed laser melting.** *C. Xu*^{1,3}, *Y. Yuan*^{1,3}, *M. Sawicki*², *R. Boettger*¹, *M. Helm*^{1,3} and *S. Zhou*¹ *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Institute of Physics, Polish Academy of Sciences, Warszawa, Poland; 3. Technische Universität Dresden, Dresden, Germany*

10:54

- EI-11. Diluted magnetic semiconductors with narrow band gaps: Theoretical study of Mn-doped BaZn₂As₂ and BaZn₂Sb₂.** *B. Gu*¹ and *S. Maekawa*^{1,2} *1. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Japan; 2. ERATO, Japan Science and Technology Agency, Sendai, Japan*

11:06

- EI-12. Low Temperature Magnetic Hard Gap in Pb_{1-x}Mn_xS Films.** *G. Rimal*¹ and *J. Tang*¹ *1. Physics & Astronomy, University of Wyoming, Laramie, WY*

11:18

- EI-13. The Effect of Paramagnetic Impurities in Transparent Conducting BaSnO₃ Thin Films.** *U.S. Alaan*^{1,2}, *A.T. N'Diaye*³, *P. Shafer*³, *E. Arenholz*³ and *Y. Suzuki*^{1,4} *1. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA; 2. Department of Materials Science and Engineering, Stanford University, Stanford, CA; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Department of Physics and Applied Physics, Stanford University, Stanford, CA*

Session EP
MAGNETIC FLUIDS AND NANOPARTICLES
APPLICATIONS
(Poster Session)

Zoe Boekelheide, Chair
Lafayette College, Easton, PA

- EP-01. Monitoring Sedimentation of Magnetorheological Fluids Using a Vertical Axis Monitoring System with a Low Aspect Ratio Sensor Coil.** *M. Wen^{1,2}, N.M. Wereley¹, J. Chambers¹ and M. Yu²* *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD; 2. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*
- EP-02. Using Mason Number to Predict MR Fluid Damper Performance from Limited Test Data.** *A. Becnel¹ and N.M. Wereley¹* *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD*
- EP-03. Forced oscillatory motion of ferromagnetic particle chains under alternating external magnetic field.** *S. Lee¹, J. Shim^{2,3}, S. Kim¹, H. Piao⁴ and D. Kim¹* *1. Physics, Chungbuk National University, Cheongju, The Republic of Korea; 2. Physics & Center for Attosecond Science and Technology, Postech, Pohang, The Republic of Korea; 3. Max Planck POSTECH/KOREA Research Initiative, Max Planck Center for Attosecond Science, Pohang, The Republic of Korea; 4. School of Science, China Three Gorges University, Yichang, China*
- EP-04. Design and Test of a Magnetorheological Fluid-Based Universal Gripper.** *Y. Choi¹, C. Hartzell¹ and N.M. Wereley¹* *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD*
- EP-05. Response time of magnetorheological suspensions and its dependence on Mason number.** *S.G. Sherman¹ and N.M. Wereley¹* *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD*
- EP-06. Compressive Properties of Adaptive Magnetorheological Impact Foams.** *N.M. Wereley¹ and Y. Choi¹* *1. Dept. of Aerospace Engineering, University of Maryland, College Park, MD*
- EP-07. Magneto-viscosity of Hydrothermal Synthesized Cu-Zn Ferrite Ferrofluids.** *N. Gautam¹, G. Thirupathi¹ and R. Singh¹* *1. School of Physics, Univesity of Hyderabad, Hyderabad, India*
- EP-08. Recycling Magnets for Direct Reuse: an Ionic Liquid Approach.** *D. Prodius¹, A. Mudring¹ and C.I. Nlebedim¹* *1. Critical Materials Institute, Ames Laboratory, US Department of Energy, Ames, IA*
- EP-09. Withdrawn**

- EP-10. Electroacoustic quantification of nanoparticle surface properties in applied magnetic fields.** *Y. Wroczynskyj¹, P. Manna¹, J.H. Page¹, D. Miller² and J. van Lierop¹* *1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. Pharmacology and Therapeutics, University of Manitoba, Winnipeg, MB, Canada*
- EP-11. Development of Iron Quantification Method Using Nuclear Magnetic Resonance Relaxometer.** *J. Sherwood¹, K. Lovas¹ and Y. Bao¹* *1. University of Alabama, Northport, AL*
- EP-12. Locomotive Characteristics of a Sphericon-Shaped Magnetic Millirobot Rolling on a Surface.** *S. Jeon¹, D. Lee¹, K. Lee¹ and S. Kang¹* *1. Div. Mechanical and Automotive Engineering, Kongju National University, Cheonan, The Republic of Korea*
- EP-13. Magnetic light cloaking control in the marine planktonic copepod *Sapphirina*.** *H. Kashiwagi¹, Y. Mizukawa¹, M. Iwasaka^{1,2} and S. Ohtsuka³* *1. AdSM, Hiroshima University, Higashi-Hiroshima, Japan; 2. Research Institute for Nanodevice and Bio Systems, Hiroshima University, Higashi-Hiroshima, Japan; 3. Graduate School of Biosphere Science, Hiroshima University, Higashi-Hiroshima, Japan*
- EP-14. Temperature dependence of induced magnetic anisotropy in $\text{Co}_{80-x-y}\text{Fe}_x\text{Mn}_y\text{Nb}_4\text{B}_{14}\text{Si}_2$ soft magnetic nanocomposites.** *A. Leary¹, V. Keylin², P. Ohodnicki³ and M.E. McHenry¹* *1. Carnegie Mellon University, Pittsburgh, PA; 2. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. National Energy Technology Laboratory, Pittsburgh, PA*

THURSDAY
MORNING
9:30

GRAND BALLROOM

Session EQ 2D AND 3D NANOSTRUCTURED ARRAYS II (Poster Session)

Amalio Fernandez-Pacheco, Chair
University of Cambridge, Cambridge, United Kingdom

- EQ-01. Magnetostatic Interactions between CoFe Nanowires as a Tool for Probing the Self-Ordering of Nanopores in Anodic Alumina.** *A. Esmaeily¹, A. Razavian^{1,3}, M. Venkatesan¹ and M. Coey²* *1. School of Physics and CRANN, Trinity College Dublin, Dublin, Ireland; 2. Trinity College, Dublin, Dublin, Ireland; 3. Institute of Nanoscience and Nanotechnology, University of Kashan, Kashan, The Islamic Republic of Iran*

- EQ-02. Frustrated Long-Range Magnetic Domain Structure in High-Density Nanowire Arrays.** A. Grutter¹, K.L. Krycka¹, M. Reddy², O. Tartakivska⁴, E. Ortega³, B.J. Kirby¹, A. Ponce³, J. Borchers¹ and B. Stadler² 1. *NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD*; 2. *University of Minnesota, Minneapolis, MN*; 3. *Department of Physics and Astronomy, The University of Texas at San Antonio, San Antonio, TX*; 4. *Institute of Magnetism, National Academy of Sciences of Ukraine, Kiev, Ukraine*
- EQ-03. Fabrication, structural and Magnetic Properties of Electrodeposited Fe₃Pt Nanowires and Nanotubes.** U. Khan¹, A. Nairan², L. Wenjing¹, M. Irfan¹, K. Javed³ and X. Han¹ 1. *Institute of Physics, Beijing, China*; 2. *University of the Punjab, Lahore, Pakistan*; 3. *Physics, Forman Christian College, Lahore, Pakistan*
- EQ-04. Magnetization Dynamics in Highly Oriented Ferromagnetic Multilayered Nanowires Arrays.** S. Pathak¹, V. Singh² and V. Kaushik³ 1. *Materials Science and Engineering, Yonsei University, Seoul, The Republic of Korea*; 2. *Department of Applied Sciences & Humanities, Inderprastha Engineering College, Delhi, India*; 3. *Mechanical Engineering, Sungkyunkwan University, Suwon, The Republic of Korea*
- EQ-05. Electrodeposited Nanowires-A Route towards 3D Magnetic Recording?** B. Trapp^{1,2}, S. Bochmann³, S. Da Col^{1,2}, M. Stano^{1,2}, A. Wartelle^{1,2}, J. Bachmann³ and O. Fruchart^{4,1} 1. *CNRS-Institut Néel, Grenoble, France*; 2. *Univ. Grenoble Alpes, Institut Néel, Grenoble, France*; 3. *Friedrich-Alexander-Universität, Nürnberg-Erlangen, Germany*; 4. *SPINTEC, CNRS, Grenoble, France*
- EQ-06. Temperature dependent magnetic properties of Ni nanotubes synthesized by atomic layer deposition.** A. Pereira^{1,2}, J.L. Palma^{1,2}, J.C. Denardin^{1,2} and J. Escrig^{1,2} 1. *Departamento de Física, Universidad de Santiago Chile, Santiago, Chile*; 2. *CEDENNA, Universidad de Santiago de Chile, Santiago, Chile*
- EQ-07. Switching Behavior of Perpendicular Magnetic Nanodot Arrays Patterned by Block Copolymer Lithography.** K. Tu¹, J.C. Kally², T. Liu³, H. Almasi⁴, N. Samarth², M. Wu³, W. Wang⁴ and C.A. Ross¹ 1. *Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*; 2. *Pennsylvania State University, University Park, PA*; 3. *Department of Physics, Colorado State University, Fort Collins, CO*; 4. *Physics, The University of Arizona, Tucson, AZ*
- EQ-08. Magnetic Properties of GaAs-Fe₃Si Core-Shell Nanowires - A Comparison of Ensemble and Single Nanowire Investigation.** M. Hilse¹, B. Jenichen¹ and J. Herfort¹ 1. *Paul-Drude-Institute, Berlin, Germany*
- EQ-09. Electroless Plated Maghemite for Three-dimensional Magneto Photonic Crystals.** S. Mito¹, T. Kawaguchi¹, T. Kawashima¹, J. Sasano², H. Takagi² and M. Inoue² 1. *National Institute of Technology, Tokyo College, Hachioji, Japan*; 2. *Toyohashi University of Technology, Toyohashi, Japan*

- EQ-10. Study of Magnetization Reversal Process in Metallic Core-Shell Nanowires; M (M=Ni, Fe, Co)-CoO.** *A. Nairan¹, U. Khan² and M. Iqbal¹ 1. University of the Punjab, Lahore, Pakistan; 2. Institute of Physics, Beijing, China*
- EQ-11. Withdrawn**
- EQ-12. Morphological and magnetic characterization of FeCo nanoparticles synthesized via different chelate compounds of cobalt.** *S. Alikhanzadeh-Arani¹ 1. University of Kashan, Institute of Nano Science and Nano Technology, Kashan, The Islamic Republic of Iran*
- EQ-13. Facile sol-gel auto-combustion synthesis, characterization and magnetic property of CuFe₁₂O₁₉ nanostructures.** *M. Salavati-Niasari¹ and F. Ansari¹ 1. Institute of Nano Science and Nano Technology, University of Kashan, Kashan, The Islamic Republic of Iran*
- EQ-14. Self-assembled growth of Sr(Ti,Fe)O₃ - CoFe₂O₄ magnetic nanocomposite thin films.** *D. Kim¹, T. Kim¹ and C.A. Ross² 1. Myongji University, Gyeonggi-Do, The Republic of Korea; 2. MIT, Cambridge, MA*
- EQ-15. Magnetic Reversal Modes in Magnetite Nanotube Arrays Synthesized by Atomic Layer Deposition.** *J.L. Palma^{1,2}, A. Pereira^{1,2}, J.C. Denardin^{1,2} and J. Escrig^{1,2} 1. Physics, Universidad de Santiago, Santiago, Chile; 2. CEDENNA, Center for the Development of Nanotechnology and Nanoscience, Santiago, Chile*

THURSDAY
MORNING
9:30

GRAND BALLROOM

Session ER
PATTERNED FILMS II
(Poster Session)
Caroline Ross, Chair
MIT, Cambridge, MA

- ER-01. Modelling the charge and magnetic x-ray scattering from nanoscale FePd patterned arrays.** *T.P. Hase¹, D. Greving¹, R. Procter¹, E. Östman², U. Arnalds², V. Kapaklis², L. Bouchenoire^{3,4}, P. Thompson^{3,4}, D. Haskel⁵, Y. Choi⁶ and B. Hjörvarsson² 1. Physics, University of Warwick, Coventry, United Kingdom; 2. Physics and Astronomy, Materials Physics, Uppsala, Sweden; 3. Department of Physics, University of Liverpool, Liverpool, United Kingdom; 4. European Synchrotron Radiation Facility, XMaS Beamline, Grenoble, France; 5. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 6. X-ray Science Division, Argonne National Laboratory, Argonne, IL*
- ER-02. Size-dependent magnetic properties of FeGaB/AlOx multilayer micro-islands.** *X. Wang¹, Y. Gao², Z. Wang¹ and N.X. Sun¹ 1. ECE, Northeastern University, Boston, MA; 2. Winchester Technologies LLC, Winchester, MA*

- ER-03. Effect of volume fraction on the magnetic properties for FePt/ Fe nano-composites.** R. Kurosu¹, A. Sugawara^{1,2}, H. Iwama¹, M. Doi¹ and T. Shima¹ *1. Faculty of Engineering, Tohoku Gakuin University, Tagajo, Japan; 2. Tohoku Gakuin University, Tagajo, Japan*
- ER-04. Interplay Between Magnetic History and Geometrical Configuration in Hexagonal Networks with Weak Perpendicular Magnetic Anisotropy.** F. Valdés-Bango^{1,2}, J. Martín^{1,2}, M. Velez Fraga^{1,2}, L. Alvarez-Prado^{1,2} and J. Alameda^{1,2} *1. Dpto. Física, Universidad de Oviedo, Oviedo, Spain; 2. CINN (CSIC-Universidad de Oviedo), El Entrego, Spain*
- ER-05. Self-assembled surface nanostructure on CoPd thin film: magnetism and morphology evolution.** W. Lin¹, C. Hsu¹, P. Chang¹ and H. Chiu¹ *1. Department of Physics, National Taiwan Normal University, Taipei, Taiwan*
- ER-06. Self-biased microwave ferromagnetic performance of patterned Ni₈₀Fe₂₀ thin films.** R. Yang¹, X. Liu¹, N.X. Sun², H. Lin² and S. Li^{1,3} *1. Qingdao University, Qingdao, China; 2. Northeastern University, Boston, MA; 3. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China*
- ER-07. Arrays of magnetic nanodots studied by x-ray holographic microscopy and scattering.** R. Frömter¹, K. Bagschik¹, J. Wagner¹, S. Freercks¹, C. Thoenissen¹, B. Beyersdorff¹, L. Müller², S. Schleitzer², M.H. Berntsen³, G. Grübel² and H. Oepen¹ *1. Institut für Nanostruktur- und Festkörperphysik, Universität Hamburg, Hamburg, Germany; 2. FS-CXS, DESY, Hamburg, Germany; 3. KTH Royal Institute of Technology, Kista, Sweden*
- ER-08. Interplay between ferromagnetic resonance and surface plasma resonance on Ag/Co nano-dot arrays.** Y. Chang¹, K. Lin¹, D. Schmool² and J. Wu³ *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 2. Groupe d'Etude de la Matière Condensée GEMaC, CNRS, Université de Versailles/Saint-Quentin, Versailles, France; 3. Physics, National Changhua University of Education, Changhua, Taiwan*
- ER-09. Magnetism of electron beam lithographed T-shaped magnetic nanostructures.** E.H. Sinnecker¹, J. Sinnecker², R.A. Escobar³, D. Altbir³ and J. D'Albuquerque e Castro¹ *1. Instituto de Física, UFRJ, Rio de Janeiro, Brazil; 2. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil; 3. Universidad de Santiago de Chile, Santiago, Chile*
- ER-10. The enhancement of thermoelectric effect by surface roughness-controlled nanowire.** C. Li¹, H. Huang¹, Y. Xu¹, Y. Tsao¹ and Z. Wei¹ *1. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan*
- ER-11. Magnetic resonance spectra in arrays of dipole coupled nanomagnets.** I. Nekrashevich¹ and D. Litvinov¹ *1. Materials Engineering, University of Houston, Houston, TX*

- ER-12. Phase-Field Modeling of Ferromagnetic Thin Films with Patterned Surface Features.** *Y. Alvandi-Tabrizi*^{1,2}, *W. Chan*² and *J. Schwartz*² *1. Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC; 2. Materials Science and Engineering, North Carolina State University, Raleigh, NC*
- ER-13. Direct growth of perpendicular CoFeB/MgO structure on piezoelectric films for strain control of domain wall motion.** *D. Lam*¹, *J. Adam*¹, *G. Agnus*¹, *S. Eimer*¹, *L.H. Diez*¹, *N. Vernier*¹, *T. Devolder*¹, *T. Maroutian*¹, *P. Auber*¹, *P. Lecoeur*¹ and *D. Ravelosona*¹ *1. Centre de Nanosciences et de Nanotechnologies, CNRS, Univ. Paris-Sud, Univ Paris-Saclay, C2N, Orsay, France*

THURSDAY
MORNING
9:30

GRAND BALLROOM

Session ES
SUPERCONDUCTIVITY AND MAGNETIC
SEMICONDUCTORS
(Poster Session)

Sean Langridge, Chair

Rutherford Appleton Laboratory, Chilton, United Kingdom

- ES-01. The first-principles investigations on magnetic ground-state in Sm-doped phenanthrene.** *J. Han*^{1,2}, *G. Zhong*^{2,4}, *X. Wang*², *X. Chen*³ and *H. Lin*² *1. Peking University, Beijing, China; 2. Beijing Computational Science Research Center, Beijing, China; 3. Center for High Pressure Science and Technology Advanced Research, Shanghai, China; 4. Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China*
- ES-02. Transport properties of the iron-based superconductor FeSe_{0.5}Te_{0.5}.** *T. Wang*¹ and *Z. Xing*² *1. Mathematics, Nanjing University of Aeronautics and Astronautics, Nanjing, China; 2. National Laboratory of Solid State Microstructures, and School of Electronic Science and Engineering, Nanjing University, Nanjing, China*
- ES-03. Control of Superconductivity with a Single Ferromagnet in Nb/Er Bilayers.** *N. Satchell*^{1,2}, *J.D. Witt*², *M.G. Flokstra*³, *S. Lee*³, *J. Cooper*¹, *C. Kinane*¹, *S. Langridge*¹ and *G. Burnell*² *1. ISIS Neutron and Muon Facility, Didcot, United Kingdom; 2. Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 3. Physics and Astronomy, University of St Andrews, St Andrews, United Kingdom*
- ES-04. Vortices Propagating and Hall Effect in Nb Thin Films with Channeled Pinning Potential Landscapes.** *L. Horng*¹ and *T. Wu*² *1. Dep. Physics, National Changhua University of Education, Changhua, Taiwan; 2. Department of Electronic Engineering, National Formosa University, Yunlin, Taiwan*

- ES-05. Superconducting Properties of $\text{Zr}_{1+x}\text{Ni}_{2-x}\text{Ga}$ and $\text{Zr}_{1-x}\text{Ni}_{2+x}\text{Ga}$ Heusler compounds.** S.A. Alzahrani¹ and M.U. Khan¹ 1. *Physics Department, Miami University-Oxford, Oxford, OH*
- ES-06. Broken time-reversal symmetry probed by muon spin relaxation in the caged type superconductor $\text{Lu}_5\text{Rh}_6\text{Sn}_{18}$.** A. Bhattacharyya¹ 1. *Department of Physics, RKMVU, Belur Math, Belur, India*
- ES-07. High Temperature Ferromagnetism in (In,Fe)As Grown on Vicinal GaAs Substrates.** M. Yoshida¹, A. Nagamine¹, M. Tanaka^{2,3} and P. Nam Hai^{1,3} 1. *Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Tokyo, Japan;* 2. *Department of Electrical Engineering and Information Systems, University of Tokyo, Tokyo, Japan;* 3. *Center for Spintronics Research Network, University of Tokyo, Tokyo, Japan*
- ES-08. Temperature-dependent shape anisotropy in patterned ferromagnetic (Ga,Mn)As films with low Mn concentration.** X. Li¹, S. Dong¹, T. Yoo¹, X. Liu¹, J. Furdyna¹ and M. Dobrowolska¹ 1. *Department of Physics, University of Notre Dame, Notre Dame, IN*
- ES-09. A First Principles Study of Fe Doped Diamond: Control of Clustering and Ferromagnetic Stabilization by Charge State Manipulation.** E. Benecha¹ and E. Lombardi¹ 1. *School of Interdisciplinary and Graduate Studies, University of South Africa (UNISA), Pretoria, South Africa*
- ES-10. Magnetic and Electron Spin Resonance studies on $\text{SrSn}_{1-x}\text{Fe}_x\text{O}_{3-\delta}$ ($x=0.05$ and 0.08) nano-sticks.** K. Radhika¹ and H. Narayanan¹ 1. *Physics, IIT Madras, Chennai, India*
- ES-11. Probing spin polarization of various concentration of oxygen vacancies Co-doped ZnO via Point-contact Andreev reflection technique.** K.S. Yang¹, T. Huang¹, G.D. Dwivedi¹, L. Lin², S. Lee³, S. Sun⁴ and H. Chou⁵ 1. *Department of Physics, National Sun Yat-sen University, Kaohsiung, Taiwan;* 2. *Physics, Academia Sinica, Taipei, Taiwan;* 3. *Institute of Physics, Academia Sinica, Taipei, Taiwan;* 4. *Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan;* 5. *National Sun Yat-Sen University, Kaohsiung, Taiwan*
- ES-12. Magnetic anisotropy of quaternary GaMnAsP ferromagnetic semiconductor.** H. Lee¹, S. Lee¹, S. Choi¹, S. Bac¹, A. Nasir¹, S. Lee¹, A. Pardo², V. Kanzyuba^{3,4}, S. Dong³, X. Li³, S. Rouvimov^{4,5}, X. Liu³, J. Furdyna³ and M. Dobrowolska³ 1. *Physics, Korea University, Seoul, The Republic of Korea;* 2. *Physics, Universidad del Atlantico, Barranquilla, Colombia;* 3. *Department of Physics, University of Notre Dame, Notre Dame, IN;* 4. *Electrical Engineering, University of Notre Dame, Notre Dame, IN;* 5. *Integrated Imaging Facility, University of Notre Dame, Notre Dame, IN*
- ES-13. Magnetic Properties of Mn Doped Self Assembled Zinc Silicate Nanowires.** T. Khan¹, W. Mehmood³, M. Rafique³, A. Hamayun³ and S. Manzoor³ 1. *Institut für Experimentalphysik, Arnimallee 14, Freie Universität Berlin, Berlin, Germany;* 3. *Physics, COMSATS Institute of Information Technology, Islamabad, Pakistan*

- ES-14. Direct Evidence of Co 3d Impurity Band in Room-Temperature Ferromagnetism of Diluted Magnetism Semiconductors Co Doped ZnO by Hard X-ray Photoelectron Spectroscopy.** *P. Chuang*¹ *1. Physics, National Cheng Kung University, Tainan, Taiwan*
- ES-15. Theoretical and experimental study of nanostructures of ZnO doped with nickel (II) and chromium (III).**
*N. dos S. Castro*¹, *P. Borges*², *L. Scolfaro*³ and *R.C. de Lima*¹
1. Universidade Federal de Uberlandia, Uberlandia, Brazil;
2. Universidade Federal de Vicosa, Rio Paranaiba, Brazil;
3. Texas State University, San Marcos, TX

THURSDAY
 MORNING
 9:30

GRAND BALLROOM

Session ET
DOMAIN WALL, VORTEX AND SKYRMION
DYNAMICS III
(Poster Session)

Hendrik Ohldag, Co-Chair
 SLAC National Accelerator Laboratory, Menlo Park, CA
Elena Bankowski, Co-Chair
 U.S. Army TARDEC, Warren, MI

- ET-01. Current-driven skyrmion motion along disordered magnetic tracks.** *V. Raposo*¹, *R. Luis-Martinez*¹ and *E. Martinez*¹
1. Applied Physics, University of Salamanca, Salamanca, Spain
- ET-02. Electrical detection of single magnetic skyrmion at room temperature.** *R. Tomasello*¹, *M. Ricci*¹, *P. Burrascano*¹, *V. Puliafito*², *M. Carpentieri*³ and *G. Finocchio*⁴ *1. Department of Engineering, Polo Scientifico Didattico di Terni, University of Perugia, Terni, Italy; 2. Department of Engineering, University of Messina, Messina, Italy; 3. Department of Electrical and Information Engineering, Politecnico di Bari, Bari, Italy; 4. Department of Mathematical and Computer Sciences, University of Messina, Messina, Italy*
- ET-03. Study of Domain Wall Switching Behavior in Permalloy Thin Film Rings.** *K. Lai*¹, *L. Chan*¹, *D. Shiu*¹, *J. Wu*¹ and *L. Horng*¹ *1. Dep. Physics, National Changhua University of Education, Changhua, Taiwan*
- ET-04. Investigation of Exchange Bias Mediated Domain-wall Dynamics in a IrMn/CoFeB Multilayered & Crossed Magnetic Nanowire Device by Magneto-optical Kerr Effect Microscopy.** *Y. Hong*¹, *D. Shiu*¹, *C. Lin*¹, *K. Lai*¹, *J. Wu*¹ and *L. Horng*¹ *1. National Changhua University of Education, Changhua, Taiwan*
- ET-05. Effect of Gilbert damping constant on domain wall pinning in permanent magnets: effect of the damping constant at grain boundary.** *K. Yamada*¹ and *Y. Nakatani*² *1. Department of Chemistry and Biomolecular Science, Gifu University, Gifu, Japan; 2. University of Electro-communications, Tokyo, Japan*

- ET-06. Analytical study of field-driven bubble expansion in PMA materials under the application of in-plane fields.** *S. Nasser^{1,3} and G. Durin^{2,1} 1. ISI Foundation, Torino, Italy; 2. Nanoscience and Material, Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 3. Politecnico di Torino, Torino, Italy*
- ET-07. Magnetization reversal of spiral rhaped nanowires via domain wall motion.** *R. Schumm¹, N. Greenberg¹ and A. Kunz¹ 1. Physics, Marquette University, Milwaukee, WI*
- ET-08. Significant Enhancement of Domain Wall Speed in Ferromagnetic Pt/Co/Ti Film.** *M. Park¹, D. Kim¹, Y. Park^{1,2}, B. Min² and S. Choe¹ 1. Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea; 2. Center for Spintronics, Korea Institute of Science and Technology (KIST), Seoul, The Republic of Korea*
- ET-09. Control of the Magnetic Ground State of Thick Stadium-shaped Ferromagnetic Elements.** *S. Lendinez^{1,2}, J. Ding¹, P.N. Lapa^{1,3}, N. Domingo⁴, J. Hernández² and V. Novosad¹ 1. Materials Science Division, Argonne National Laboratory, Lemont, IL; 2. Física de la Matèria Condensada, Universitat de Barcelona, Barcelona, Spain; 3. Texas A&M University, College Station, TX; 4. Centre for Nanoscience and Nanotechnology, Bellaterra, Spain*
- ET-10. Magnetic nano-transistor.** *A. Espejo¹, N.S. Vidal¹, J. Lopez², D. Grolitz³, K. Nielsch³ and J. Escrig⁴ 1. Universidad de Santiago de Chile, Santiago, Chile; 2. Universidad Técnica Federico Santa María, Valparaíso, Chile; 3. University of Hamburg, Hamburg, Germany; 4. Departamento de Física, Universidad de Santiago Chile, Santiago, Chile*
- ET-11. Influence of Structural Inversion Asymmetry on Current-induced Domain Wall Motion in Bilayer Nanowires with Ferro- and Antiferromagnetic Coupling.** *T. Komine¹ and T. Aono¹ 1. Faculty of Engineering, Ibaraki University, Ibaraki, Japan*
- ET-12. Microwave Assisted Nucleation Of Magnetic Skyrmions.** *Y. Huang^{1,3}, J. Xia², X. Zhang², W. Kang^{1,3}, W. Zhao^{1,3} and Y. Zhou² 1. Fert Beijing Research Institute, Beihang University, Beijing, China; 2. Department of Physics, The University of Hong Kong, Hong Kong, Hong Kong; 3. Beijing Advanced Innovation Center for Big Data and Brain Computing (BDBC), Beihang University, Beijing, China*
- ET-13. Magnetic domain wall dynamics in constricted nanowire.** *M. Al Bahri¹ and R. Sbiaa¹ 1. Physics Department, Sultan Qaboos University, Muscat, Oman*
- ET-14. Velocity enhancement for current-induced skyrmion drift in a finite channel.** *J.C. Martinez¹, W. Gan², C. Ho¹, Z. Siu¹, W. Lew² and M.B. Jalil³ 1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore; 3. Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore*

- ET-15. Use of in-plane anisotropy to control energy transfer time in a pair of coupled magnetic vortex nanodisks.** *H. Vigo Cotrina*¹ and *A. Passos Guimarães*¹ *1. Centro Brasileiro de Pesquisas Físicas (CBPF), Rio de Janeiro, Brazil*

THURSDAY
MORNING
9:30

GRAND BALLROOM

Session EU
MRAM AND MAGNETIC LOGIC DEVICES III
(Poster Session)

Byong-Guk Park, Chair
Korea Advanced Institute of Science and Technology (KAIST), Daejeon,
The Republic of Korea

- EU-01. Micromagnetic analysis of geometrically controlled current-driven magnetization switching.** *O. Alejos*¹, *V. Raposo*², *M. Hernandez*², *L. Sanchez-Tejerina*¹, *S. Moretti*² and *E. Martinez*² *1. Electricidad y Electrónica, Universidad de Valladolid, Valladolid, Spain; 2. Applied Physics, University of Salamanca, Salamanca, Spain*

- EU-02. Voltage-Controlled Asymmetrical All Spin Logic Device.** *Z. Zhang*¹, *Y. Zhang*¹, *L. Su*¹, *Y. Zhang*¹ and *W. Zhao*¹ *1. Fert Beijing Institute, Beihang University, Beijing, China*

- EU-03. Novel Magnetic Wire Fabrication Process by way of Nanoimprint Lithography for Current Induced Magnetization Switching.** *T. Asari*¹, *A. Hiroyuki*¹ and *R. Shibata*¹ *1. Information Storage Materials Laboratory, Toyota Technological Institute, Nagoya, Japan*

- EU-04. Domain-wall mediated thermal switching of in-plane STT-MRAM cell.** *A. Belanovsky*¹, *N. Dmitriev*¹, *M. Kuteifan*², *V. Lomakin*² and *A.V. Khvalkovskiy*^{3,1} *1. Moscow Institute of Physics and Technology (State University), Moscow, Russian Federation; 2. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA; 3. Crocus Nano Electronics, Moscow, Russian Federation*

- EU-05. Increased boron content in perpendicular CoFeB/MgO-based MTJs for wider process tolerance.** *J.P. Pellegren*¹, *M. Furuta*², *V. Sundar*², *J. Zhu*^{2,3} and *V.M. Sokalski*¹ *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*

- EU-06. Magnetization Switching for Perpendicular Magnetic Tunnel Junctions Driven by Spin Torque from the Spin Hall Effect.** *C. Lee*¹, *T. Wu*¹ and *J. Wu*² *1. National Yunlin Univ. of Science and Technology, Douliou, Taiwan; 2. Physics, National Changhua University of Education, Changhua, Taiwan*

- EU-07. Design of changeable logic device using hybrid magnetic tunnel junctions with normal and inverse magnetoresistive effect.** *S. Isogami*¹ *1. Fukushima National College of Technology, Iwaki, Japan*
- EU-08. Transmission of Information along a Nanomagnetic Logic Path Clocked by Current.** *V. Puliafito*¹, *A. Giordano*², *B. Azzerboni*¹ and *G. Finocchio*² *1. Department of Engineering, University of Messina, Messina, Italy; 2. Department of Mathematical and Computer Sciences, Physical Sciences and Earth Sciences, University of Messina, Messina, Italy*
- EU-09. Controlled Data Storage for Emerging Non-Volatile Memory Based on Nano Magnetic Logic.** *F. Riente*¹, *G. Ziemys*¹, *C. Mattersdorfer*¹, *S. Boche*¹, *G. Turvani*¹ and *S. Breitzkreutz-v. Gamm*¹ *1. Institute for Technical Electronics, Technische Universität München, Munich, Germany*
- EU-10. Withdrawn**
- EU-11. Properties of easy-plane/perpendicular magnetic anisotropy bilayers with varied interlayer exchange coupling.** *L. Fallarino*¹, *V. Shuka*², *B. Kardasz*³, *M. Pinarbasi*³, *A. Berger*¹ and *A.D. Kent*² *1. CIC nanoGUNE, San Sebastian - Donostia, Spain; 2. Department of Physics, New York University, New York, NY; 3. Spin-Transfer Technologies Inc., Fremont, CA*
- EU-12. A Self-Terminated One-Phase Write Driver for Complementary-MTJ Based Memory Cells.** *D. Suzuki*¹ and *T. Hanyu*¹ *1. Tohoku University, Sendai, Japan*
- EU-13. Energy-efficient Spin-polarized Multilevel Information Processing.** *J. Hong*¹, *A. Hadjikhani*², *M. Stone*², *Y. Lee*¹, *J. Bokor*¹ and *S. Khizroev*² *1. EECS Department, University of California, Berkeley, CA; 2. Florida International University, Miami, FL*
- EU-14. Time-resolved magneto-optical Kerr effect study of the Co₄₀Fe₄₀B₂₀ films with a perpendicular magnetic anisotropy.** *D. Huang*¹, *X. Ruan*¹, *J. Cai*², *J. Wu*³, *B. Liu*¹, *L. He*¹, *M. Gao*¹, *H. Tu*¹, *J. Du*¹, *K. Wang*¹ and *Y. Xu*¹ *1. Nanjing University, Nanjing, China; 2. Chinese Academy of Sciences, Beijing, China; 3. The University of York, York, United Kingdom*
- EU-15. Perpendicular Magnetic Anisotropy of CoFeB/Ta Bilayers on ALD HfO₂.** *B.F. Vermeulen*^{1,2}, *J. Swerts*², *S. Couet*², *I.P. Radu*², *C. Detavernier*³, *J. Jochum*¹, *M. Van Bael*¹, *K. Temst*¹, *G. Groeseneken*⁴, *N. Shukla*⁵, *S. Miwa*⁵, *Y. Suzuki*⁵ and *K.M. Martens*² *1. Department of Physics and Astronomy, KU Leuven, Leuven, Belgium; 2. Imec, Leuven, Belgium; 3. Department of Physics, University of Ghent, Ghent, Belgium; 4. Department of Electrical Engineering, KU Leuven, Leuven, Belgium; 5. Graduate School of Engineering Science, Osaka University, Osaka, Japan*

Session EV
POWER MACHINES I
(Poster Session)

Vitaliy Lomakin, Chair
University of California, San Diego, La Jolla, CA

- EV-01. Design and Analysis of Novel PM Motor with Hybrid PM Excitation and Asymmetric Rotor Structure.** *G. Liu^{1,2}, G. Xu^{1,2}, W. Zhao^{1,2}, Q. Chen² and X. Du^{1,2}* *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China; 2. Jiangsu Key Laboratory of Drive and Intelligent Control for Electric Vehicle, Zhenjiang, China*
- EV-02. Characteristic Analysis and Design of a Novel Ironless Halbach-magnetized Permanent Magnet Linear Synchronous Motor.** *L. Zhang¹, B. Kou¹ and Y. Jin²* *1. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, China; 2. Harbin Institute of Technology, Harbin, China*
- EV-03. Design and Analysis of Reluctance Synchronous Machines With Asymmetric Salient Pole.** *Q. Chen^{1,2}, G. Liu^{1,2}, W. Zhao^{1,2}, G. Xu^{1,2} and X. Du^{1,2}* *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China; 2. Jiangsu Key Laboratory of Drive and Intelligent Control for Electric Vehicle, Zhenjiang, China*
- EV-04. A Consequent Pole Transverse-Flux PM Linear Machine for Direct-Drive Systems.** *S. Zhu¹ and P. Zheng¹* *1. Electrical Engineering, Harbin Institute of Technology, Harbin, China*
- EV-05. A Novel Linear Permanent-Magnet Vernier Motor for Long Stroke Applications.** *S. Wang^{1,2}, W. Zhao^{1,2} and J. Ji^{1,2}* *1. Jiangsu University, Zhenjiang, China; 2. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- EV-06. A Real-Time Model of a Maglev Planar Motor Based on Composite Numerical Integration.** *B. Kou¹, X. Feng¹, L. Zhang¹ and Y. Zhou^{2,1}* *1. Harbin Institute of Technology, Harbin, China; 2. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*
- EV-07. Relationship Between Iron Loss and Pole-Pair Number in Flux-Switching Permanent-Magnet Machines.** *J. Luo¹, J. Ji¹, W. Zhao¹ and J. Zheng¹* *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- EV-08. Magnetic Pole Shape Design for Reduction of Thrust Ripple of Slotless Permanent Magnet Linear Synchronous Motor with Arc-shaped Magnets considering End-effect based on Analytical Method.** *H. Park¹, K. Shin¹, K. Kim¹, S. Jang¹ and J. Choi¹* *1. Dept. of Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea*

- EV-09. Field Analysis of a Novel Permanent Magnet Linear Synchronous Motor with Ring-Structure Winding.** *L. Zhang¹ and B. Kou¹ I. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, China*
- EV-10. Eddy Current Loss Analysis and Axial Segmentation of Open-Slot Fault-Tolerant Permanent-Magnet Motors.** *J. Luo¹, J. Ji¹, W. Zhao¹ and Q. Lei¹ I. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- EV-11. A Study for Flux-Variable Memory Motor Depending on the Position of the Permanent Magnets.** *S. Kim¹ I. KETI, Gwangju, The Republic of Korea*
- EV-12. Thermal Analysis and Experimental Verification for a Staggered-Teeth Transverse-Flux Permanent-Magnet Linear Machine.** *P. Zheng¹, S. Zhang¹, B. Yu¹, J. Liu¹ and Z. Yin¹ I. School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*
- EV-13. A Double-winding Bearingless Flux-switching Permanent Magnet Machine.** *Y. Sun¹, H. Wu¹ and Y. Du¹ I. Jiangsu University, Zhenjiang, China*
- EV-14. Research on a Novel Axial-Flux Magnetic-Field-Modulated Brushless Double-Rotor Machine with Low Axial Force and High Efficiency.** *C. Tong¹, Z. Song¹ and P. Zheng¹ I. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, China*
- EV-15. Characteristic Analysis of a Novel Hybrid Permanent Magnet Assisted Synchronous Reluctance Motor for EVs Application.** *W. Wu¹, X. Zhu¹, Z. Xiang¹ and Q. Lu¹ I. School of electrical and information engineering, Jiangsu University, Zhen Jiang, China*

THURSDAY
MORNING
9:30

GRAND BALLROOM

Session EW
POWER AND CONTROL MAGNETICS III
(Poster Session)
Ichiro Sasada, Chair
Kyushu University, Kasuga, Japan

- EW-01. Torque Ripple Minimization of Interior Permanent Magnet Machines Using Harmonic Injection.** *G. Liu¹, Y. Zeng¹ and W. Zhao¹ I. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- EW-02. A Novel Axial Flux Stator and Rotor Dual Permanent Magnet Machine.** *Y. Wang¹, S. Niu¹ and W. Fu¹ I. Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

- EW-03. A High Power Factor Permanent-Magnet Fault-Tolerant Vernier Machine.** *W. Zhao¹, X. Zhu¹, J. Ji¹, J. Zhu¹ and J. Liu¹*
1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China
- EW-04. Characteristic Analysis and Experimental Verification of the Generating Performance of Permanent Magnet Linear Synchronous Machine based on a Three-Dimensional Analytical Method.** *M. Koo¹, J. Choi¹, J. Jeong¹ and J. Kim¹*
1. Chungnam National University, Daejeon, The Republic of Korea
- EW-05. Performance Comparison of an Outer-Rotor-Permanent-Magnet Flux-Switching Machine and an Outer-Rotor Surface-Mounted Permanent Magnet Machine.** *H. Zhang¹ and H. Wei¹*
1. School of Electrical Engineering, Southeast University, Nanjing, China
- EW-06. A New Dual Stator Linear Permanent-Magnet Vernier Machine with Reduced Copper Loss.** *F.F. Bian¹, W. Zhao¹ and J. Ji¹*
1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China
- EW-07. Back-EMF Waveform Optimization of Flux-Reversal Permanent Magnet Machines.** *X. Zhu¹ and H. Wei¹*
1. School of Electrical Engineering, Southeast University, Nanjing, China
- EW-08. Eddy Current Loss in Double-sided Cored Slotless Type Permanent Magnet Linear Synchronous Generator Using Analytical Method.** *G. Jang¹, M. Koo¹, S. Seo¹ and J. Choi¹*
1. Electrical Engineering, Chung Nam National University, Daejeon, The Republic of Korea
- EW-09. Effective method to reduce the stray voltage of the crane hook used to handle a heavy solid-fuel rocket.** *A. Ueda¹, K. Tajima¹, T. Nishida¹, M. Muto¹, I. Sasada² and J. Oshino²*
1. Japan Aerospace Exploration Agency (JAXA), Sengen, Japan; 2. Applied Science for Electronics and Materials, Kyushu University, Kasuga, Japan
- EW-10. Mathematical Model of Half-Magnet Type Bearingless Flux-Switching Permanent Magnet Motor.** *C. Zhao¹ and H. Zhu¹*
1. Jiangsu University, Zhenjiang, China
- EW-11. A comparison between one-way and two-way coupled analyses of electromagnetic machines considering magnetic and structural interactions.** *J. Nam¹, C. Kang¹, J. Song¹ and G. Jang¹*
1. Dept of Mechanical Convergence Engineering, Hanyang University, Seoul, The Republic of Korea
- EW-12. Comparative Analysis and Optimization of Dynamic Charging Coils for Roadway-Powered Electric Vehicles.** *B. Jia¹ and Z. Zhang¹*
1. School of Electrical Engineering and Automation, Tianjin University, Tianjin, China
- EW-13. Modeling and Analysis of a New HTS Electromagnetic Screw for Artificial Heart.** *Z. Ling¹, W. Zhao¹ and J. Ji¹*
1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China

EW-14. Quantitative Comparison of Embedded and Surface-mounted Magnetic Screws. *Z. Ling¹, W. Zhao¹ and J. Ji¹*
1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China

EW-15. Performance Evaluation of a Tubular Flux-modulated PM Linear Generator with Sandwiched Armature. *M. Ma¹*
1. School of Electrical Engineering and Automation, Hefei University of Technology, Hefei, China

THURSDAY
AFTERNOON
1:30

MARDI GRAS A-E

Session FA
SYMPOSIUM: SPINTRONICS WITH
SUPERCONDUCTIVITY

Hans Nembach, Chair
NIST, Boulder, CO

1:30

FA-01. Quasiparticle-Mediated Spin Hall Effect in a Superconductor. (Invited) *Y. Otani^{1,2}* *1. ISSP, University of Tokyo, Kashiwa, Japan; 2. CEMS, RIKEN, Wako, Japan*

2:06

FA-02. Superconducting Spin Switch with Internal Exchange Fields and Spin Polarized Current. (Invited) *J. Moodera^{1,2}*
1. Physics, MIT, Cambridge, MA; 2. Francis Bitter Magnet Lab and Plasma Science and Fusion Center, MIT, Cambridge, MA

2:42

FA-03. Cryogenic Orthogonal Spin-Transfer Memory Elements for Superconducting Electronics. (Invited) *V. Sluka¹, L. Rehm¹, D. Yohannes², J. Vivalda², R. Hunt², D. Amparo², I. Vernik², O. Mukhanov², G. Rowlands³, C.A. Ryan³, T.A. Ohki³ and A.D. Kent¹* *1. Department of Physics, New York University, New York, NY; 2. HYPRES Inc., Elmsford, NY; 3. Raytheon BBN Technologies, Cambridge, MA*

3:18

FA-04. Hybrid Spintronic-Superconducting Memory for Exaflop Computing. (Invited) *M. Schneider¹, B. Baek², W. Rippard¹, M. Pufall¹ and S.E. Russek¹* *1. National Institute of Standards and Technology, Boulder, CO; 2. Electromagnetics Div., National Institute of Standards and Technology, Boulder, CO*

3:54

FA-05. Cryogenic Operation of Three-Terminal Spin-Hall Effect Memory Elements. (Invited) *G. Rowlands¹, M. Nguyen^{2,1}, S.V. Aradhya², C.A. Ryan¹, D. Ralph², R. Buhrman² and T.A. Ohki¹* *1. Quantum Information Processing, BBN Technologies, Cambridge, MA; 2. Cornell University, Ithaca, NY*

Session FB
SPIN CURRENT AND RELATED EFFECTS II

Shinji Yuasa, Chair
National Institute of Advanced Industrial Science and Technology
(AIST), Tsukuba, Japan

1:30

- FB-01. Exchange-dominated pure spin current transport in Alq₃ molecules. (Invited) D. Wu¹** *1. Nanjing University, Nanjing, China*

2:06

- FB-02. Interfacial spin-orbit coupling between two dimensional materials and Thulium Iron Garnet. S. Redjai Sani¹,** A. Nourbakhsh², A. Devarakonda³, A. Zubair², S.A. Siddiqui², A. Quindeau¹, M. Baldo², M. Dresselhaus^{2,3}, T. Palacios², J. Checkelsky³ and C.A. Ross¹ *1. Material Science and Engineering, MIT - Massachusetts Institute of Technology, Cambridge, MA; 2. Electrical Engineering and Computer Science, MIT - Massachusetts Institute of Technology, Cambridge, MA; 3. Physics, MIT - Massachusetts Institute of Technology, Cambridge, MA*

2:18

- FB-03. Investigation of spin to charge conversion at Bi/Ag interface on yttrium iron garnet. M. Matsushima¹,** S. Dushenko¹, R. Ohshima¹, Y. Ando¹, T. Shinjo¹ and M. Shiraishi¹ *1. Kyoto Univ., Kyoto, Japan*

2:30

- FB-04. Driving a Pure Spin Current with Dynamic-Nuclear-Polarization Gradients. N. Harmon¹** and M.E. Flatte¹ *1. Physics, University of Iowa, Iowa City, IA*

2:42

- FB-05. Modulation of the spin currents in graphene by magnetic proximity effect of a ferromagnetic insulating material. S. Singh¹,** J. Katoch¹, T. Zhu¹, N. Harmon², M. Meng¹, J. Brangham¹, F. Yang¹, M.E. Flatte² and R. Kawakami¹ *1. Department of Physics, The Ohio State University, Columbus, OH; 2. Physics, Univ Iowa, Iowa City, IA*

2:54

- FB-06. Atomic hydrogen induced resonant scattering and magnetic moments in bilayer graphene. J. Katoch¹,** T. Zhu¹, D. Kochan², S. Singh¹, J. Fabian² and R. Kawakami¹ *1. Department of Physics, The Ohio State University, Columbus, OH; 2. University of Regensburg, Institute for Theoretical Physics, Regensburg, Germany*

- FB-07. Gate-Tunable Spin-Charge Conversion and a Role of Spin-Orbit Interaction in Graphene. (Invited)** *S. Dushenko*¹, H. Ago², K. Kawahara², T. Tsuda³, S. Kuwabata³, T. Takenobu⁴, T. Shinjo¹, Y. Ando¹ and M. Shiraishi¹ *1. Kyoto University, Kyoto, Japan; 2. Kyushu University, Kasuga, Japan; 3. Osaka University, Suita, Japan; 4. Nagoya University, Nagoya, Japan*

- FB-08. Spin accumulation and transport signals in CoFe/MgO/Si devices with confined structure of n⁺-Si layer.** *Y. Saito*¹, T. Inokuchi¹, M. Ishikawa¹, T. Ajay¹ and H. Sugiyama¹ *1. Corporate R&D Center, Toshiba Corporation, Kawasaki, Japan*

- FB-09. Hole Spin Transport in Epitaxial p-Ge(111) Layers.** *M. Kawano*¹, K. Santo¹, M. Ikawa¹, S. Sakai¹, S. Yamada¹, T. Kanashima¹ and K. Hamaya¹ *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan*

- FB-10. Electrical Gate Control of Spin/Valley Lifetime in Monolayer WS₂.** *Y. Luo*¹, M. Newburger¹, E.J. Bushong¹, K.M. McCreary², S. Fullerton-Shirey³, B. Jonker⁴ and R. Kawakami¹ *1. Physics, The Ohio State University, Columbus, OH; 2. Naval Research Laboratory, Washington, DC; 3. Department of Chemical and Petroleum Engineering, University of Pittsburgh, Pittsburgh, PA; 4. Naval Research Laboratory/SSD, Washington, DC*

- FB-11. Anomalous Tunnel Hall Effect from advanced k.p approach.** *H.T. Dang*¹, H. Jaffrès², B. Abid³, M. Benzaouia³, E. Erina³, T. Nguyen⁴ and H. Drouhin⁵ *1. Laboratoire des Solides Irradiés, Ecole Polytechnique, Palaiseau, France; 2. CNRS-Thales, Palaiseau, France; 3. Physics Department, Ecole Polytechnique, Palaiseau, France; 4. Institute of Physics, Vietnam Academy of Science and Technology, Hanoi, Vietnam; 5. Laboratoire des Solides Irradiés, Ecole Polytechnique, Palaiseau, France*

Session FC
ANTIFERROMAGNETIC SPINTRONICS

Aurelien Manchon, Chair
King Abdullah University of Science and Technology,
Thuwal, Saudi Arabia

1:30

- FC-01. Anomalous Hall effect in non-collinear antiferromagnets.** *A.K. Nayak^{1,2}, J. Fischer¹, Y. Sun¹, B. Yan¹, C. Felser¹ and S.S. Parkin²* *1. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany; 2. Max Planck Institute for Microstructure Physics, Halle (Saale), Germany*

1:42

- FC-02. Spin-orbit Torques with Antiferromagnetic Topological Insulators.** *S. Ghosh¹ and A. Manchon¹* *1. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

1:54

- FC-03. Spin diffusion and Hall effect in Antiferromagnets.** *A. Manchon¹ and H.B. Saidaoui¹* *1. Physical Sciences and Engineering, King Abdullah University of Science and Technology, Jeddah, Saudi Arabia*

2:06

- FC-04. Narrow-band THz electric-field emission from Mn_{3-x}Ga Heusler alloys.** *N. Awari^{1,2}, S. Kovalev², C. Fowley³, K. Rode⁴, R. Gallardo⁵, Y. Lau⁴, D. Betto⁴, N. Thiagarajah⁴, B. Green², O. Yildirim³, J. Lindner³, J. Fassbender³, M. Coey⁴, A.M. Deac³ and M. Gensch²* *1. University of Groningen, Groningen, Netherlands; 2. Institute for Radiation Physics, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 3. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 4. CRANN, AMBER and School of Physics, Trinity College Dublin, Dublin, Ireland; 5. Departamento de Física, Universidad Técnica Federico Santa María, Valparaíso, Chile*

2:18

- FC-05. Self-sustained Oscillations of a Biaxial Antiferromagnet Under a Spin-transfer Torque.** *I. Lisenkov^{1,2}, R. Khymyn¹, V. Tyberkevych¹ and A.N. Slavin¹* *1. Department of Physics, Oakland University, Auburn Hills, MI; 2. Institute of Radioengineering and Electronics of RAS, Moscow, Russian Federation*

2:30

- FC-06. Designing a Tunable Non-collinear Antiferromagnetic Resistive Memory in an Oxide Superlattice.** J. Hoffman^{1,2}, S.M. Wu¹, B.J. Kirby³ and A. Bhattacharya^{1,4} *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Physics, Harvard University, Boston, MA; 3. NCR, National Institute of Standards and Technology, Gaithersburg, MD; 4. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

2:42

- FC-07. Spin Transport through Antiferromagnetic NiO and Magnetoresistance in YIG/NiO/Pt Structures.** Y. Hung¹, C. Hahn¹, H. Chang², M. Wu², H. Ohldag³ and A.D. Kent¹ *1. Department of Physics, New York University, New York City, NY; 2. Department of Physics, Colorado State University, Fort Collins, CO; 3. SLAC National Accelerator Laboratory, Menlo Park, CA*

2:54

- FC-08. Antiferromagnetic Spin Current Rectifier.** R. Khymyn¹, V. Tyberkevych¹ and A.N. Slavin¹ *1. Department of Physics, Oakland University, Rochester, MI*

3:06

- FC-09. Effect of Interfacial Magnetic Moments on Spin Hall Magnetoresistance and Anisotropic Magnetoresistance in Antiferromagnetic Insulator/Normal Metal Heterostructures.** L. Lang¹, L. Ma¹, Z. Shi¹, X. Qiu¹ and S. Zhou¹ *1. School of Physics Science and Engineering, Tongji university, ShangHai, China*

3:18

- FC-10. Electric-field-induced antiferromagnetic resonance in antiferromagnetic insulators with spin-orbit coupling.** T. Chiba¹ and A. Sekine^{1,2} *1. Institute for Materials Research (IMR), Tohoku University, Sendai, Japan; 2. Department of Physics, University of Texas at Austin, Austin, TX*

3:30

- FC-11. Giant Current-Induced Switching Efficiency in Ferrimagnets near Compensation Point.** R. Mishra¹, X. Qiu¹ and H. Yang¹ *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

3:42

- FC-12. Spin Orbit Torque Efficiency in Compensated Ferrimagnetic Cobalt-Terbium Alloys.** J.T. Finley¹ and L. Liu¹ *1. EECS, MIT, Cambridge, MA*

3:54

- FC-13. Antiferromagnetic Domain Wall Motion Driven by Spin-Orbit Torques.** T. Shiino¹, S. Oh², P.M. Haney³, S. Lee², G. Go², B. Park¹ and K. Lee² *1. Korea Advanced Institute of Science and Technology (KAIST), Daejeon, The Republic of Korea; 2. Korea University, Seoul, The Republic of Korea; 3. National Institute of Standards and Technology, Gaithersburg, MD*

4:06

- FC-14. High-throughput screening for antiferromagnetic Heusler compounds using density functional theory.** J. Balluff¹, M. Meinert¹ and G. Reiss¹ *1. Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany*

4:18

- FC-15. Magnon-mediated spin currents and torques in chiral magnets.** A. Kovalev¹ and V. Zyuzin¹ *1. Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*

THURSDAY
AFTERNOON
1:30

LA GALERIES 3

Session FD
SINGLE-PHASE MULTIFERROIC AND
MAGNETOELECTRIC MATERIALS

Sara Majetich, Chair
Carnegie Mellon University, Pittsburgh, PA

1:30

- FD-01. Understanding the multiferroic behavior of LuFeO₃ and related materials. (Invited)** S.M. Disseler¹ *1. NIST Center for Neutron Research, Gaithersburg, MD*

2:06

- FD-02. Strain driven E-type commensurability in o-TbMnO₃ thin films under ambient pressure.** S. Mukherjee¹, K. Shimamoto², J.S. White¹, L. Chapon³, M. Kenzelmann⁴, C.W. Schneider² and C. Niedermayer¹ *1. Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institut, Villigen, Switzerland; 2. Energy and Environment Research Department, Paul Scherrer Institut, Villigen, Switzerland; 3. Institut Laue Langevin, Grenoble, France; 4. Laboratory for Scientific Development and Novel Materials, Paul Scherrer Institut, Villigen, Switzerland*

2:18

- FD-03. Evidence of Face-Centered-Tetragonal Distortion as the Origin of the Ferromagnetic Ground State in γ -Fe Nanoparticles Embedded in SrTiO₃.** V. Augustyns¹, H. Gunnlaugsson^{2,1}, K. Van Stiphout¹, T. Lima¹, M. Van Bael¹, K. Temst¹, A. Vantomme¹ and L. Pereira¹ *1. KU Leuven, Instituut voor Kern- en Stralingsfysica, Heverlee, Belgium; 2. Cern, PH Div, Geneve, Switzerland*

- FD-04. Electronic and magnetic properties of boundaries in magnetoelectric Cr_2O_3 thin films from STEM EELS and first principles calculations.** C. Sun¹, Z. Song¹, A. Rath¹, M. Street², W. Echtenkamp², C. Binek² and P. Voyles¹
1. Department of Materials Science and Engineering, University of Wisconsin-Madison, Madison, WI; 2. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE

- FD-05. Control of Magnetoelectric Switching Energy in Cr_2O_3 Films.** M. Al-Mahdawi¹, Y. Shiokawa¹, S. Pati¹, S. Ye¹, T. Nozaki¹ and M. Sahashi^{1,2}
1. Department of Electronic Engineering, Tohoku University, Sendai, Japan; 2. ImPACT Program, Japan Science and Technology Agency, Tokyo, Japan

- FD-06. Theory Of Phase Transitions In Triangular-lattice Multiferroic MnI_2 .** O.I. Utesov¹ and A.V. Syromyatnikov^{1,2}
1. Theory Division, Petersburg Nuclear Physics Institute NRC "Kurchatov Institute", St. Petersburg, Russian Federation; 2. Department of Physics, Saint Petersburg State University, St. Petersburg, Russian Federation

- FD-07. A comparative study of ultra-low-temperature thermal conductivity of multiferroic orthoferrites RFeO_3 ($\text{R} = \text{Gd}$ and Dy).** J. Zhao¹, Z. Zhao¹, J. Wu¹, H. Xu¹, X. Liu¹, X. Zhao² and X. Sun¹
1. Hefei National Laboratory for Physical Sciences at Microscale, University of Science and Technology of China, Hefei, China; 2. School of Physical Sciences, University of Science and Technology of China, Hefei, China

- FD-08. Magnetic, dielectric and magneto-dielectric properties of $\text{Li}_3\text{NiRuO}_5$.** S.K. Upadhyay¹, K.K. Iyer¹, P.L. Paulose¹ and E.V. Sampathkumaran¹
1. Department of Condensed Matter Physics and Material Science, Tata Institute of Fundamental Research, Mumbai, India, Mumbai, India

- FD-09. Multiferroelectricity of perovskite manganates.** D. Bogdan¹, K. Chapagain¹, O. Chmaissem¹, S. Kolesnik¹, S. Kamba² and V. Goian²
1. Physics, Northern Illinois University, DeKalb, IL; 2. Institute of Physics, Academy of Sciences of the Czech Republic, Prague, Czech Republic

- FD-10. Effect of the ionic size of the rare-earth dopant on the structural and magnetic properties of HoCrO_3 .** S. Yin¹, M.S. Seehra² and M. Jain¹
1. Physics, University of Connecticut, Storrs, CT; 2. Physics, West Virginia University, Morgantown, WV

3:54

- FD-11. E-type Magnetic Order and Large Magneto-dielectric Effect in $\text{Yb}_2\text{CoMnO}_6$.** J. Blasco¹, J. García-Muñoz², J. García¹, J. Stankiewicz¹, G. Subías¹, C. Ritter³ and J. Rodríguez-Velamazán^{3,1} *1. Instituto de Ciencia de Materiales de Aragón, CSIC-Universidad de Zaragoza, Zaragoza, Spain; 2. Institut de Ciència de Materials de Barcelona - CSIC, Bellaterra, Spain; 3. Institute Laue Langevin, Grenoble, France*

4:06

- FD-12. Electric Field Controlled Melting of Charge-Ordering in $\text{Pr}_{0.6}\text{Ca}_{0.4}\text{MnO}_3$ Single Crystals.** C.V. Tomy¹, H. Sharma¹, A. Tulapurkar², G. Balakrishnan³, M.R. Lees³ and D.M. Paul³ *1. Physics Department, Indian Institute of Technology Bombay, Mumbai, India; 2. Electrical Engineering Department, Indian Institute of Technology Bombay, Mumbai, India; 3. Physics Department, University of Warwick, Coventry CV4 7AL, United Kingdom*

4:18

- FD-13. Second order phonon anomalies near the magnetic phase transitions in BiFeO_3 thin films.** M.K. Singh¹, G. Singh¹, A. Kumar¹, B. Khan¹ and R.S. Katiyar² *1. Centre of Material Sciences, University of Allahabad, Allahabad, India; 2. Department of Physics and Institute of Functional Nano Materials, University of Puerto Rico, PR 00931-3343, USA, SanJuan, PR*

THURSDAY
AFTERNOON
1:30

LA GALERIES 4-5

Session FE
SPIN-ORBIT AND VOLTAGE CONTROLLED EFFECTS

Pedram Khalili, Chair
UCLA, Los Angeles, CA

1:30

- FE-01. Determining spin-orbit torques easily: new domain wall depinning analysis scheme in comparison to spin torque magnetometry.** K. Lee¹, T. Schulz¹, B. Krüger¹, R. Lo Conte^{1,2}, G. Vijay Karnad¹, K. Garcia-Hernandez³, L. Vila^{4,5}, B. Ocker⁶, D. Ravelosona³ and M. Kläui¹ *1. Physics, Johannes Gutenberg - University Mainz, Mainz, Germany; 2. Graduate School of Excellence "Materials Science in Mainz" (MAINZ), Mainz, Germany; 3. Institut d'Electronique Fondamentale, Orsay Cedex, France; 4. Université Grenoble Alpes, Grenoble, France; 5. CEA, Grenoble, France; 6. Singulus Technologies AG, Kahl am Main, Germany*

- FE-02. Reducing critical current density to switch perpendicular magnetization due to Spin Hall effect of Pt on $\text{Co}_x\text{Tb}_{1-x}$ based multilayers.** *J. Rojas-Sanchez*¹, *T. Pham*¹, *P. Vallobra*¹, *S. Je*^{2,3}, *T. Fache*¹, *M. Cyrille*⁴, *O. Boulle*², *G. Gaudin*², *G. Malinowski*¹, *M. Hehn*¹ and *S. Mangin*¹ *1. Institut Jean Lamour - Univ. Lorraine UMR7198 CNRS, 54506 Vandoeuvre les Nancy, France; 2. SPINTEC, CEA-INAC/CNRS/Univ. Grenoble Alpes, 38054 Grenoble, France; 3. Univ. Lorraine, 54506 Vandoeuvre lès Nancy, France; 4. CEA-LETI, 38054, 38054 Grenoble, France*

- FE-03. Significant Interfacial Contribution to the Spin-Orbit Torques in HM/FM Heterostructures with In-Plane Magnetization.** *A. Trifu*¹, *I. Miron*¹, *C. Avci*², *K. Garello*², *J. Nath*¹, *S. Auffret*¹, *O. Boulle*¹, *P. Gambardella*² and *G. Gaudin*¹ *1. Univ. Grenoble Alpes, INAC-SX / CEA, INAC-SX / CNRS, SX, SPINTEC, F-38000 Grenoble, France; 2. Department of Materials, ETH Zürich, Zürich, Switzerland*

- FE-04. Nanoscale Imaging of Magnetization Reversal Driven by Spin-Orbit Torque.** *I. Gilbert*¹, *P.J. Chen*², *D.B. Gopman*², *A.L. Balk*^{1,3}, *D.T. Pierce*¹, *M. Stiles*¹ and *J. Unguris*¹ *1. CNST, NIST, Gaithersburg, MD; 2. Materials Science & Engineering Division, National Institute of Standards and Technology, Gaithersburg, MD; 3. Maryland NanoCenter, University of Maryland, College Park, MD*

- FE-05. Temperature Dependence of Spin-Orbit Torques in W/CoFeB Bilayers.** *W. Skowronski*¹, *M. Cecot*¹, *J. Kanak*¹, *S. Zietek*¹, *T. Stobiecki*¹, *L. Yao*³, *S. van Dijken*³, *T. Nozaki*², *K. Yakushiji*² and *S. Yuasa*² *1. Department of Electronics, AGH University of Science and Technology, Krakow, Poland; 2. Spintronics Research Center, AIST, Tsukuba, Japan; 3. School of Science, Aalto University, Espoo, Finland*

- FE-06. Electric Field Control of Magnetic Domain Wall Motion in CoFeB/MgO Devices.** *W. Lin*¹, *N. Vernier*¹, *G. Agnus*¹, *K. Garcia*¹, *J. Langer*², *B. Ocker*², *E.E. Fullerton*³ and *D. Ravelosona*¹ *1. Institut d'Electronique Fondamentale, Université Paris-Sud - CNRS, Orsay, France; 2. Singulus Technology AG, Kahl am Main, Germany; 3. Center for Magnetic Recording Research, University of California San Diego, La Jolla, CA*

- FE-07. Voltage-induced spin-diode effect in magnetic tunnel junctions with in-plane and perpendicular effective anisotropy.** *M. Frankowski*¹, *J. Checinski*¹, *W. Skowronski*¹ and *T. Stobiecki*¹ *1. Department of Electronics, AGH University of Science and Technology, Krakow, Poland*

2:54

- FE-08. Detection of Voltage Excited Spin Wave by Pico-second Time-resolved Kerr Microscope.** *B. Rana*¹, *Y. Fukuma*^{1,2}, *K. Miura*³, *H. Takahashi*³ and *Y. Otani*^{1,4} *1. Center for Emergent Matter Science, RIKEN, Wako, Japan; 2. Frontier Research Academy for Young Researchers, Kyushu Institute of Technology, Kawazu, Japan; 3. Research and development group, Hitachi Ltd., Tokyo, Japan; 4. ISSP, University of Tokyo, Kashiwa, Japan*

3:06

- FE-09. Parametric Amplifier of Spin Waves Using Electric Field.** *Y. Chen*¹, *R.V. Verba*², *V. Tyberkevych*³, *A.N. Slavin*³ and *I. Krivorotov*¹ *1. Physics and Astronomy, University of California, Irvine, Irvine, CA; 2. Institute of Magnetism, Kyiv, Ukraine; 3. Department of Physics, Oakland University, Rochester, MI*

3:18

- FE-10. Electric field dependence of magnetic damping of Fe-layer: A first-principles study.** *Y. Miura*¹, *M. Tsujikawa*² and *M. Shirai*² *1. Electrical Engineering and Electronics, Kyoto Institute of Technology, Kyoto, Japan; 2. RIEC and CSRN, Tohoku University, Sendai, Japan*

3:30

- FE-11. Magnetoelectric tuning of the Inverse spin-Hall effect.** *J. Vargas*¹, *J. Gomez*¹, *L. Avilés-Félix*¹ and *A. Butera*¹ *1. Magnetic Resonance Laboratory, Conicet / Bariloche Atomic Center, Bariloche, Argentina*

3:42

- FE-12. The Effect of DC Bias on Spin-Transfer Torque Driven Ferromagnetic Resonance in Magnetic Tunnel Junctions.** *M.C. Williamson*¹, *H. Seinige*¹, *H. Almasi*², *X. Chao*³, *W. Wang*², *J. Wang*³ and *M. Tsoi*¹ *1. Physics Department, University of Texas at Austin, Austin, TX; 2. Physics, University of Arizona, Tucson, AZ; 3. University of Minnesota, Minneapolis, MN*

3:54

- FE-13. Patterns and Thresholds of Magnetoelectric Switching in Spin Logic Devices.** *D.E. Nikonov*¹, *S. Manipatruni*¹ and *I. Young*¹ *1. Intel, Hillsboro, OR*

4:06

- FE-14. Towards Pure Voltage Induced Switching in CoFeB-MgO Perpendicular Magnetic Tunnel Junctions.** *M. Bapna*¹, *S.K. Piotrowski*¹, *S. Oberdick*¹ and *S. Majetich*^{2,1} *1. Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Carnegie Mellon University, Pittsburgh, PA*

FE-15. Large Voltage-induced Modulation of Magnetic Anisotropy and Spin-orbit Torques in Hf/CoFeB/MgO Multilayer.

*F. Xue*¹, *N. Sato*², *S. Wang*² and *J. He*¹ *1. Department of Electrical Engineering, High Voltage Institution, Beijing, China; 2. Electrical Engineering, Stanford University, Stanford, CA*

THURSDAY
AFTERNOON
1:30

STUDIO 1-2

Session FF**MAGNETORESISTANCE II: GMR AND TMR**

Connie Li, Chair

Naval Research Laboratory, Washington, DC

1:30

FF-01. Tunneling across MgO barrier driven by double oxygen vacancies.

*E.N. Monteblanco Vences*¹, *B. Taudul*², *U. Halisdemir*², *D. Lacour*¹, *F. Schleicher*², *F. Montaigne*¹, *E. Beaurepaire*², *S. Boukari*², *M. Hehn*¹, *M. Alouani*² and *M. Bowen*² *1. Institut Jean Lamour, Université de Lorraine - CNRS, Vandoeuvre les Nancy, France; 2. Institut de physique et Chimie des Matériaux de Strasbourg, CNRS, Strasbourg, France*

1:42

FF-02. Tunneling Magnetoresistance with zero-moment half-metallic electrodes.

*K. Borisov*¹, *D. Betto*¹, *Y. Lau*¹, *C. Fowley*², *A. Titova*², *N. Thiyagarajah*¹, *G. Atcheson*¹, *J. Lindner*², *A.M. Deac*², *M. Coey*¹, *P.S. Stamenov*¹ and *K. Rode*¹ *1. Trinity College, Dublin, Dublin, Ireland; 2. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*

1:54

FF-03. Correlation between MOKE amplitude measured in full sheet films and tunnel magnetoresistance in subsequently patterned tunnel junctions.

*T.H. Nguyen*¹, *R.C. Sousa*¹, *S. Auffret*¹, *L. Vila*¹ and *B. Diény*¹ *1. SPINTEC, Univ. Grenoble Alpes / CEA / CNRS, Grenoble, France*

2:06

FF-04. Cation-ordered MgAl₂O₄ magnetic tunnel junctions with highly spin-polarized Co₂FeAl electrodes.

T. Scheike^{1,2}, *H. Sukegawa*¹, *K. Inomata*¹, *T. Ohkubo*¹, *K. Hono*^{1,2} and *S. Mitani*^{1,2} *1. Magnetic Materials Unit, NIMS, Tsukuba, Japan; 2. University of Tsukuba, Tsukuba, Japan*

- FF-05. Spin Caloritronic Properties of Heusler Compound MTJs: From an Efficient Model to Improved Devices.** *A. Boehnke*¹, T. Huebner¹, U. Martens², A. Niesen¹, C. Sterwerf¹, J. Ludwig¹, A. Thomas⁴, T. Kusche^{1,5}, C. Heiliger³, M. Münzenberg² and G. Reiss¹ *1. Physics Department, Bielefeld University, Bielefeld, Germany; 2. Institute of Physics, Ernst-Moritz-Arndt University, Greifswald, Germany; 3. I. Physikalisches Institut, Justus Liebig University, Giessen, Germany; 4. Institute for Metallic Materials, Leibniz Institute for Solid State and Materials Research Dresden (IFW Dresden), Dresden, Germany; 5. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands*

- FF-06. Epitaxial Fe/MgAl₂O₄/Fe(001) magnetic tunnel junctions prepared by a direct sputtering technique and Mg-Al insertion.** *M. Belmoubarik*¹, H. Sukegawa¹, T. Ohkubo¹, S. Mitani¹ and K. Hono¹ *1. National Institute for Materials Science, Japan, Tsukuba, Japan*

- FF-07. Tuneable magnetism via charge transfer and orbital hybridization in molecular interfaces. (Invited)** *O. Cespedes*¹, F. Al Ma'mari¹, T. Moorsom¹, S. Lee², T. Prokscha³, H. Luetkens³, M.D. Rogers¹, B. Hickey¹, D.A. Arena⁴, M. Valvidares⁵, G. Burnell¹, S. Langridge⁶ and C. Kinane⁶ *1. School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom; 2. School of Physics & Astronomy, University of St. Andrews, St. Andrews, United Kingdom; 3. Laboratory for Muon Spin Spectroscopy, Paul Scherrer Institut, Villigen, Switzerland; 4. Physics, University of South Florida, Tampa, FL; 5. BOREAS beamline, ALBA Synchrotron Light Facility, Barcelona, Spain; 6. Rutherford Appleton Laboratory, ISIS Neutron and Muon Source, Didcot, United Kingdom*

- FF-08. Room Temperature Spin Filtering in Metallic Ferromagnet-Graphene-Ferromagnet Junctions.** *E. Cobas*¹, O. van 't Erve¹ and B. Jonker¹ *1. Naval Research Laboratory, Washington, DC*

- FF-09. Modeling the negative magnetoresistance of Ferromagnet-Graphene-Ferromagnet junction.** *O. van 't Erve*¹, E. Cobas¹ and B. Jonker¹ *1. Naval Research Laboratory, Washington, DC*

- FF-10. Perpendicular magnetic anisotropy induced at MgO/Co₂FeSi and Co₂FeSi/MgO interfaces.** *S. Nakagawa*¹, K. Shinohara¹ and Y. Takamura¹ *1. School of Engineering, Tokyo Institute of Technology, Tokyo, Japan*

FF-11. Tunnel magnetoresistance of perpendicular magnetic tunnel junctions with ultra-thin strained MnGa electrode.

*K. Suzuki*¹, *R. Ranjbar*², *J. Okabayashi*³, *Y. Miura*⁴,
*A. Sugihara*⁵, *H. Tsuchiura*⁶ and *S. Mizukami*¹ *1. WPI-AIMR, Tohoku University, Sendai, Japan; 2. Applied Physics, WPI Advanced Institute for Materials Research Tohoku University, Sendai, Japan; 3. Research Center for Spectrochemistry, University of Tokyo, Tokyo, Japan; 4. Electrical Engineering and Electronics, Kyoto Institute of Technology, Kyoto, Japan; 5. Tohoku University, Sendai, Japan; 6. Department of Applied Physics, Tohoku University, Sendai, Japan*

4:06

FF-12. Measurement and Characterization of Nonlinearities in Magnetic Tunnel Junctions.

*E. Auerbach*¹, *H. Arthaber*²,
*C. Abert*¹, *N. Leder*² and *D. Suess*¹ *1. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 2. Institute of Electrodynamics, Microwave, and Circuit Engineering, Vienna University of Technology, Vienna, Austria*

4:18

FF-13. Influence of heavy metal layers on voltage controllable perpendicular magnetic tunnel junctions.

*H. Almasi*¹,
*C. Sun*³, *D. Reifsnyder Hickey*⁴, *X. Li*², *T. Newhouse-Illige*¹,
*Y. Xu*¹, *K. Price*¹, *C. Grezes*², *Q. Hu*⁵, *P. Khalili*^{2,5}, *K.L. Wang*²,
*K.A. Mkhoyan*⁴, *P. Voyles*³ and *W. Wang*¹ *1. Physics, University of Arizona, Tucson, AZ; 2. Electrical Engineering, University of California Los Angeles, Culver city, CA; 3. Materials Science and Engineering, University of Wisconsin, Madison, Madison, WI; 4. Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 5. Inston Inc., Los Angeles, CA*

Session FG
**RARE-EARTH-LEAN AND CE-SUBSTITUTED
COMPOUNDS**

Michael McGuire, Chair
Oak Ridge National Laboratory, Oak Ridge, TN

1:30

FG-01. Phase Stability and formation energy of NdFe₁₂(N) with Ti, V, Zr and Si substitutes- an alternative to NdFeB.

G. Hrkac^{1,2}, T.A. Ostler³, L. Saharan³, S. Westmoreland⁴, R. Chantrell⁵, R.F. Evans⁴, M. Winklhofer⁶, G. Zimanyi⁷, T. Schrefl⁸, J. Fischbacher⁹, M. Yano^{10,11}, T. Shoji^{10,11}, A. Manabe¹⁰, A. Kato¹⁰ and N. Sakuma^{10,11} 1. Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom; 2. Technical University of Vienna, Vienna, Austria; 3. College of Engineering, Mathematics and Physical Sciences, The University of Exeter, Exeter, United Kingdom; 4. Department of Physics, University of York, York, United Kingdom; 5. Physics, The University of York, York, United Kingdom; 6. University of Duisburg, Duisburg, Germany; 7. Physics, UC Davis, Davis, CA; 8. Danube University Krems, Wiener Neustadt, Austria; 9. Center for Integrated Sensor Systems, Danube University Krems, Wiener Neustadt, Austria; 10. Technology Research Association of Magnetic Materials for High-efficiency Motors - MagHEM, Higashifuji-Branch, Susono, Japan; 11. Advanced Material Engineering Div. Toyota Motor Corporation, Susono, Japan

1:42

FG-02. Metastable phase YFe₁₂ fabricated by a rapidly quenched method. *H. Suzuki¹* 1. Research & Development Group, Hitachi, Ltd., Hatoyama, Japan

1:54

FG-03. Self demagnetizing effects in NdFe₁₂ based magnets at high temperature. *J. Fischbacher¹, T. Schrefl¹, R. Chantrell², R.F. Evans⁶, S. Westmoreland², G. Hrkac⁵, M. Winklhofer⁸, G. Zimanyi⁴, A. Manabe⁷, N. Sakuma^{3,7}, T. Shoji^{3,7}, A. Kato^{3,7} and M. Yano^{3,7}* 1. Danube University Krems, Wiener Neustadt, Austria; 2. Physics, The University of York, York, United Kingdom; 3. Advanced Material Engineering Div., Toyota Motor Corporation, Susono-shi, Japan; 4. Physics, UC Davis, Davis, CA; 5. Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom; 6. Department of Physics, University of York, York, United Kingdom; 7. Higashifuji-Branch, Technology Research Association of Magnetic Materials for High-efficiency Motors (MagHEM), Mishuku, Japan; 8. Carl von Ossietzky Universität Oldenburg, Oldenburg, Germany

- FG-04. Mössbauer and neutron study of $\text{Zr}_{1-x}\text{Ce}_x\text{Fe}_{10}\text{Si}_2$ alloys for permanent magnet applications.** A. Martín-Cid¹, D. Salazar¹, J.M. Barandiaran^{1,3}, J.S. Garitaonandia^{1,3}, T. Hansen⁴ and G. Hadjipanayis² *1. BCMaterials, Derio, Spain; 2. Physics and Astronomy, University of Delaware, Newark, DE; 3. University of the Basque Country, Bilbao, Spain; 4. Institut Max von Laue-Paul Langevin, Grenoble, France*

- FG-05. Magnetic Performance and Microstructure of Die-upset Anisotropic $(\text{CeNd})_2\text{Fe}_{14}\text{B}$ Multiphase Magnets.** C. Jin¹, X. Tang¹, W. Yin¹, R. Chen¹ and A. Yan¹ *1. Ningbo Institute of Materials Technology & Engineering, CAS, Ningbo, China*

- FG-06. Coercivity enhancement through the synergies additions of Y and Ce for Nd-Ce-Fe-B sintered magnets.** X. Fan¹, S. Guo², K. Chen², R. Chen², D. Lee², C. You³ and A. Yan² *1. Xi'an University of Technology; Ningbo Institute of Material Technology and Engineering, Ningbo, China; 2. Ningbo Institute of Material Technology and Engineering, Ningbo, China; 3. Xi'an University of Technology, Xi'an, China*

- FG-07. Permanent Magnet Materials with Abundant Rare Earth Elements: $\text{La}_x\text{Ce}_{2-x}\text{Co}_{16}\text{Ti}$.** B.S. Conner¹, M. McGuire¹, S.K. Veedu², D. Parker¹ and B.C. Sales¹ *1. Oak Ridge National Laboratory, Oak Ridge, TN; 2. Materials Science & Technology, Oak Ridge National Laboratory, Oak Ridge, TN*

- FG-08. Coercivity enhancement of (Nd,Ce)-Fe-B sintered magnets by doping Nd-Fe additives.** K. Chen¹, S. Guo¹, X. Fan², G. Ding¹, L. Chen¹, R. Chen¹, D. Lee¹ and A. Yan¹ *1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences., Ningbo, China; 2. Xi'an University of Technology; Ningbo Institute of Material Technology and Engineering, Ningbo, China*

- FG-09. Tuning the magnetoelectric properties and microstructure of hot-pressed and die-upset $(\text{Nd,Ce})_2\text{Fe}_{14}\text{B}/\text{CaF}_2$ Composite magnets.** L. Zheng^{1,2}, F. Bai², R. Jiang^{1,2}, M. Zhu¹ and W. Li¹ *1. Central Iron & Steel Research Institute, Beijing, China; 2. College of Materials Science and Engineering, Hebei University of Engineering, Handan, China*

- FG-10. Magnetic and electric structures in Sm based ThMn_{12} phase observed by Mössbauer spectroscopy.** *M. Yano*^{1,2}, *Y. Kobayashi*³, *R. Masuda*³, *Y. Yoda*⁴, *S. Suzuki*⁵, *T. Kuno*⁵, *K. Urushibata*⁵, *K. Kobayashi*⁵, *N. Sakuma*^{1,2}, *A. Manabe*⁶ and *M. Seto*³ *1. Advanced Material Engineering Div., Toyota Motor Corporation, Susono, Japan; 2. Higashifuji-Branch, Technology Research Association of Magnetic Materials for High-Efficiency Motors, Susono, Japan; 3. Research Reactor Institute, Kyoto University, Sennan, Japan; 4. Japan Synchrotron Radiation Research Institute, Sayo, Japan; 5. Shizuoka Institute of Science and Technology, Fukuroi, Japan; 6. Higashifuji-Branch, Technology Research Association of Magnetic Materials for High-Efficiency Motors, Susono, Japan*

- FG-11. The Effect of Cerium Substitution in Nd-Fe-B Submicron Anisotropic Magnet Powders Obtained by Hydrogen Treatment.** *I. Poenaru*^{1,2}, *A. Lixandru*^{1,2}, *K. Gueth*¹, *R. Gauss*¹ and *O. Gutfleisch*^{2,1} *1. Fraunhofer ISC – Project Group Materials Recycling and Resource Strategies IWKS, Hanau, Germany; 2. Technische Universität Darmstadt, Darmstadt, Germany*

THURSDAY
AFTERNOON
1:30

STUDIO 7-8

Session FH
MAGNETIC SENSORS III
Maria Torija, Chair
NVE Corporation, Eden Prairie, MN

- FH-01. Magnetic functionalities for flexible interactive electronics. (Invited)** *D. Makarov*¹ *1. Intelligent materials and devices, Helmholtz-Zentrum Dresden-Rossendorf e.V., Dresden, Germany*

- FH-02. Nonlinear magnetoelectric effect in Metglas/PZT composite and its application for highly-sensitive DC magnetic field sensor.** *M. Li*¹, *H. Zhou*², *C. Dong*¹ and *N.X. Sun*¹ *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Mechanical Engineering, China Jiliang University, Hangzhou, China*

- FH-03. Graphene-based thin and flexible Hall sensors.** *U. Inkaya*¹, *Y. Uysalli*¹ and *A. Oral*² *1. Physics, Middle East Technical University, Ankara, Turkey; 2. Orta Dogu Teknik Universitesi, Ankara, Turkey*

- FH-04. Nanoparticle Detection Method Based on Non-Linear Magnetoimpedance Effect.** *J. Beato*^{1,3}, *J. Perez-de Landazabal*^{2,3} and *C. Gomez-Polo*^{2,3} *1. Physics, UPNA (universidad pública de Navarra), Pamplona, Spain;*
2. Universidad Publica de Navarra, Pamplona, Spain;
3. INAMAT, Pamplona, Spain

- FH-05. Development of Precise Magneto-Impedance Gradiometer for Magnetocardiograph.** *T. Uchiyama*¹ and *T. Takiya*¹
1. Electrical Engineering, Nagoya University, Nagoya, Japan

- FH-06. Absolute magnetic-field measurement using nanogranular in-gap magnetic sensor with second-harmonic and liquid-nitrogen-temperature operation.** *K. Tsukada*¹, *T. Yasugi*¹, *Y. Majima*¹, *K. Sakai*² and *T. Kiwa*¹ *1. Okayama University, Okayama, Japan;* *2. Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan*

- FH-07. Suppression of Magnetic Noise in MgO/CoFeB Based Sensors by Voltage Controlled Magnetic Anisotropy.** *P. Wisniowski*¹, *M. Dabek*¹, *T. Stobiecki*¹, *S. Cardoso*² and *P.P. Freitas*² *1. Department of Electronics, AGH University of Science and Technology, Krakow, Poland;* *2. INESC-MN and IN- Institute of Nanoscience and Nanotechnology, Lisbon, Portugal*

- FH-08. Low Noise Tunneling Magnetoresistive Magnetic Field Sensors.** *J.G. Deak*¹, *Z. Zhou*¹ and *W. Shen*² *1. R&D, MultiDimension Technology Co., Ltd, Zhangjiagang, China;*
2. Wafer Front End, MultiDimension Technology Co., Ltd, San Jose, CA

- FH-09. Magnetic Field Sensor Performance in Magnetic Tunnel Junctions with Amorphous CoFeSiB Electrode for Bio-magnetic Field Sensor Devices.** *D. Kato*¹, *M. Oogane*¹, *K. Fujiwara*¹, *Y. Arai*¹, *J. Jono*², *H. Naganuma*¹, *M. Tsuchida*² and *Y. Ando*¹ *1. Tohoku University, Sendai, Japan;*
2. Konicaminolta Inc., Hachioji, Japan

- FH-10. Effect of Metal Shielding on a Wireless Power Transfer System.** *J. Li*¹, *X. Huang*¹, *C. Chen*¹, *L. Tan*¹, *W. Wang*¹ and *J. Guo*¹ *1. School of Electrical Engineering, Southeast University, Nanjing, China*

- FH-11. Mathematical Modelling of Tri-axial Field Simulator Cage for Large Volume Applications.** *A.G. Modi*¹, *F. Kazi*¹ and *N. Singh*¹ *1. Department of Electrical Engineering, , Veermata Jijabai Techonlogical Institute, Mumbai, India*

Session FI
FUNDAMENTAL PROPERTIES: SPIN GLASSES AND
FRUSTRATION II

Maciej Misiorny, Chair
Chalmers University of Technology, Poznan, Poland

1:30

- FI-01. Artificial Magnets As Model Systems: From the Fragmentation of Magnetization to the 6-vertex Model.** *(Invited)* B. Canals¹, Y. Perrin¹, I. Chioar¹, V. Nguyen¹, D. Lacour², M. Hehn², F. Montaigne², A. Locatelli³, T. Mentès³, B. Santos³ and N. Rougemaille¹ *1. CNRS - Institut NEEL, Grenoble, France; 2. IJL UMR 7198 CNRS, Vandoeuvre lès Nancy, France; 3. ELETTRA Sincrotrone, Trieste, Italy*

2:06

- FI-02. Magnetic diffuse scattering in artificial kagome spin ice.** N. Leo^{1,2}, O. Sendetskyi^{1,2}, L. Anghinolfi^{1,2}, V. Scagnoli^{1,2}, G. Möller³, A. Alberca², J. Kohlbrecher², J. Lüning^{4,5}, U. Staub² and L. Heyderman^{1,2} *1. Department of Materials, ETH Zurich, Zurich, Switzerland; 2. Paul Scherrer Institute, Villigen, Switzerland; 3. University of Kent, Canterbury, United Kingdom; 4. UPMC Univ. Paris 06, Sorbonne Universités, Paris, France; 5. CNRS, Paris, France*

2:18

- FI-03. Extended Magnetic Charge Structures in Square Artificial Spin Ice.** S. Mishra¹, J.C. Lee^{1,2}, V. Bhat³, B.W. Farmer⁴, X. Shi¹, L.E. De Long³, S.D. Kevan^{1,2} and S. Roy¹ *1. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Materials Science, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Physics and Astronomy, University of Kentucky, Lexington, KY; 4. University of Kentucky, Lexington, KY*

2:30

- FI-04. Fluctuations of Single-domain Island Moments with Inter-island Interactions in Artificial Spin Ice.** Y. Lao¹, J. Sklenar¹, I. Gilbert^{1,2}, D. Gardeazabal¹, I. Carrasquillo¹, J.D. Watts^{3,4}, L. O'Brien^{3,5}, M. Manno³, C. Leighton³, A. Scholl⁶, G. Chern⁷, C. Nisoli⁸ and P. Schiffer¹ *1. Department of Physics and Frederick Seitz Materials Research Laboratory, University of Illinois at Urbana-Champaign, Urbana, IL; 2. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 3. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 4. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN; 5. Thin Film Magnetism Group, Department of Physics, Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 6. Lawrence Berkeley National Laboratory (LBNL), Berkeley, CA; 7. Department of Physics, University of Virginia, Charlottesville, VA; 8. Theoretical Division Division and Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM*

- FI-05. Magnetotransport in connected artificial spin ice networks - effects beyond the ice model.** *J. Sklenar*¹, *B.L. Le*¹, *J. Park*¹, *G. Chern*², *C. Nisoli*³, *J.D. Watts*⁵, *M. Manno*⁴, *D. Rench*⁶, *N. Samarth*⁶, *C. Leighton*⁴ and *P. Schiffer*¹ *1. Physics and Frederick Seitz Materials Research Laboratory, University of Illinois at Urbana-Champaign, Urbana, IL; 2. Physics, University of Virginia, Charlottesville, VA; 3. Theoretical Division, LANL, Los Alamos, NM; 4. Chemical Engineering and Material Science, University of Minnesota, Minneapolis, MN; 5. Physics, University of Minnesota, Minneapolis, MN; 6. Physics and Materials Research Institute, Pennsylvania State University, University Park, PA*

- FI-06. Vogel-Fulcher-type freezing in artificial spin ice observed via resonant soft X-ray photon correlation spectroscopy (XPCS).** *S. Morley*¹, *D. Alba Venero*², *J. Porro*², *S.T. Riley*³, *A. Stein*⁴, *P. Steadman*⁵, *R. Stamps*⁶, *S. Langridge*² and *C.H. Marrows*¹ *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. ISIS, Rutherford Appleton Laboratory, Didcot, United Kingdom; 3. School of Electrical and Electronic Engineering, University of Leeds, Leeds, United Kingdom; 4. CFN, Brookhaven National Laboratory, Upton, NY; 5. Diamond Light Source, Oxford, United Kingdom; 6. University of Glasgow, Glasgow, United Kingdom*

- FI-07. Glassy dynamics in ferromagnetic/antiferromagnet bilayers.** *T. Ma*¹, *X. Cheng*¹, *S. Boettcher*¹ and *S. Urazhdin*¹ *1. Physics, Emory University, Atlanta, GA*

- FI-08. Nanosecond Elastic Step Cooperative Response in Spin Crossover Compounds.** *C. Enachescu*¹, *L. Stoleriu*¹, *A. Stancu*¹ and *E. Collet*² *1. Department of Physics, Al. I. Cuza University, Iasi, Romania; 2. Institut de Physique de Rennes, Université de Rennes, Rennes, France*

- FI-09. Concepts of Ferrovalley Material and Anomalous Valley Hall Effect.** *W. Tong*¹ *1. East China Normal University, Shanghai, China*

- FI-10. Supercooled Spin Liquid Behavior In Pyrochlore Titanates.** *A. Eyvazov*¹, *A. Eyal*¹ and *S. Davis*^{1,2} *1. Department of Physics, Cornell University, Ithaca, NY; 2. Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory, Upton, NY*

- FI-11. Structure and Physical Properties of SrNiRu₅O₁₁ Single Crystals: A New R-Type Ferrite Based on Ordered Kagome Nets.** *L.E. De Long*¹, *L. Shlyk*² and *R. Niewa*² *1. Physics and Astronomy, University of Kentucky, Lexington, KY; 2. Institute for Inorganic Chemistry, University of Stuttgart, Stuttgart, Germany*

- FI-12. Yttrium Dilution in the Geometrically Frustrated Pyrochlore $\text{Gd}_2\text{Ti}_2\text{O}_7$.** *J.G. Ramon*¹, *R.S. Freitas*¹, *M. Moraes Leite*², *F. Maron Vichi*² and *J.S. Gardner*³
1. Institute of Physics, University of Sao Paulo, Sao Paulo, Brazil; 2. Institute of Chemistry, University of Sao Paulo, Sao Paulo, Brazil; 3. Neutron Group, NSRRC, Hsinchu, Taiwan

- FI-13. Magnetic properties of V and Nb clusters: spin-lattice relaxation and spin-impurity screening.** *A. Kirilyuk*¹, *A. Diaz Bachs*¹, *V. Chernyy*¹, *R. Logemann*¹ and *E. Muskens*¹
1. Institute for Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands

THURSDAY
 AFTERNOON
 2:30

GRAND BALLROOM

Session FP
ULTRAFAST SWITCHING AND DOMAIN WALL MOTION
(Poster Session)

Markus Münzenberg, Co-Chair
 Ernst-Moritz-Arndt University, Greifswald, Germany
Gregory Malinowski, Co-Chair
 Institut Jean Lamour, Vandoeuvre-lès-Nancy, France

- FP-01. Dynamics of an incomplete skyrmion state in confined helimagnetic nanostructures.** *M. Beg*¹, *M. Albert*¹, *M. Bisotti*¹, *D.I. Cortes*¹, *W. Wang*², *R. Carey*¹, *M. Vousden*¹, *O. Hovorka*¹ and *H. Fangohr*¹ *1. Faculty of Engineering and the Environment, University of Southampton, Southampton, United Kingdom; 2. School of Science, Ningbo University, Ningbo, China*
- FP-02. Photo-assisted magnetization reversal in a perpendicularly magnetized L1_0 FePt film with single ultrafast laser pulse.** *J. Shi*¹, *Z. Zhang*¹, *S. Zhou*², *H. Zhao*¹ and *L. Chen*¹ *1. Shanghai Ultra-precision Optical Engineering Research Center, and Key Laboratory of Micro and Nano Photonic Structures (Ministry of Education), Department of Optical Science and Engineering, Fudan University, Shanghai, China; 2. Shanghai Key Laboratory of Special Artificial Microstructure Materials and Technology and Pohl Institute of Solid State Physics and School of Physics Science and Engineering, Tongji University, Shanghai, China*
- FP-03. Periodic domain configurations in single crystal nickel nanowires.** *M.V. Lubarda*^{1,2}, *J. Kan*², *S. Manna*⁴, *K.T. Chan*², *V. Uhler*², *V. Lomakin*³ and *E.E. Fullerton*^{2,4} *1. Faculty of Polytechnics, University of Donja Gorica, Podgorica, Montenegro; 2. Center for Memory and Recording Research, University of California, San Diego, La Jolla, CA; 3. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA; 4. Nanoengineering, University of California San Diego, La Jolla, CA*

- FP-04. Cumulative Effect in Helicity-Dependent All-Optical Switching of TbCo Films.** *J. Chen¹, L. He¹, D.T. Valley², D.J. Flannigan², J. Wang¹ and L. Mo¹* 1. *Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*; 2. *Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*
- FP-05. Laser Induced Ultrafast Magnetization Reversal in TbCo Film.** *W. Cheng^{1,2}, X. Li¹, H. Wang², X. Cheng^{1,2} and X. Miao^{1,2}* 1. *School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China*; 2. *Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China*
- FP-06. Steady Motion of Skyrmions and Domains Walls under Spin-diffusive Torques.** *G. Elías^{1,2}, A. Manchon³ and N. Vidal-Silva¹* 1. *Physics, Universidad de Santiago, Santiago, Chile*; 2. *Physics, Cedenna, Santiago, Chile*; 3. *King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*
- FP-07. Atomistic simulation of heat assisted linear reversal mode in nano-dots with perpendicular anisotropy.** *Y. Wang¹, T. Tanaka¹ and K. Matsuyama¹* 1. *Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan*
- FP-08. Vortex Motion in Amorphous Ferrimagnetic Thin Film Elements.** *H. Oezelt¹, E. Kirk^{2,3}, P. Wohlhüter^{2,3}, E. Müller⁴, L. Heyderman^{2,3}, A. Kovacs¹ and T. Schrefl¹* 1. *Center for Integrated Sensor Systems, Danube University Krems, Wiener Neustadt, Austria*; 2. *Laboratory for Micro- and Nanotechnology, Paul Scherrer Institute, Villigen PSI, Switzerland*; 3. *Laboratory for Mesoscopic Systems, ETH Zurich, Zurich, Switzerland*; 4. *Laboratory of Biomolecular Research, Paul Scherrer Institute, Villigen PSI, Switzerland*
- FP-09. Ultrafast optical control of magnetization in yttrium iron garnet films.** *L. Shen¹, L. Zhou², J. Shi¹, Z. Zheng¹, H. Zhao¹, D. Wu² and L. Chen¹* 1. *Department of Optical Science and Engineering, Fudan University, Shanghai, China*; 2. *Department of Physics, Nanjing University, Nanjing, China*
- FP-10. Ultrafast Control of Magnetic Order in Magnetically Doped Topological Insulator Thin Films.** *Y. Ni¹, L. Luo^{2,3}, Z. Zhang⁴, C.I. Nlebedim³, J. Wang^{2,3} and D.C. Jiles¹* 1. *Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*; 2. *Department of Physics and Astronomy, Iowa State University, Ames, IA*; 3. *Ames Laboratory, U.S. Department of Energy, Ames, IA*; 4. *School of Materials Engineering, Purdue University, West Lafayette, IN*

- FP-11. Quenching of the Resonant Magnetic Scattering by Ultra-Short Free-Electron Laser Pulses.** *L. Müller^{1,4}, M.H. Berntsen⁵, W. Roseker¹, A. Kobs¹, K. Bagschik⁶, J. Wagner⁶, R. Frömter³, M. Danailov⁷, F. Capotondi⁷, E. Pedersoli⁷, M. Manfreda⁷, M. Kiskinova⁷, H. Oepen² and G. Grübel¹* *1. FS-CXS, DESY, Hamburg, Germany; 2. Institute of Nanostructure and Solid State Physics, University of Hamburg, Hamburg, Germany; 3. Institut für Angewandte Physik, Universität Hamburg, Hamburg, Germany; 4. University Hamburg, Hamburg, Germany; 5. KTH, Stockholm, Sweden; 6. Institut für Nanostruktur- und Festkörperphysik, University Hamburg, Hamburg, Germany; 7. Elettra-Sincrotrone Trieste, Trieste, Italy*
- FP-12. Modeling of domain wall motion in multiferroic heterostructures.** *Z. Xiao¹, C. Liang², G. Carman² and R.N. Candler^{1,3}* *1. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Mechanical and Aerospace Engineering, University of California, Los Angeles, Los Angeles, CA; 3. California NanoSystems Institute, Los Angeles, CA*
- FP-13. Current-induced Domain Wall Motion Modulated by Magnetic Pinning in Zigzag Shaped Nanowires.** *X. Zhou¹, Z. Huang¹, W. Zhang¹, J. Yue¹, Q. Chen¹, Y. Yin¹, H. Yuan¹, Y. Zhai^{1,2} and S. Dong¹* *1. Department of Physics, Southeast University, Nanjing, China; 2. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, 210093, China*

THURSDAY
AFTERNOON
2:30

GRAND BALLROOM

Session FQ
MAGNETIZATION DYNAMICS III: SPIN PUMPING
AND OTHER EFFECTS
(Poster Session)

Yan Zhou, Chair
University of Hong Kong, Hong Kong

- FQ-01. Demagnetisation energy and magnetisation variation effects on the confined isolated skyrmion state dynamics.** *M. Beg¹, M. Albert¹, M. Bisotti¹, D.I. Cortes¹, W. Wang², R. Carey¹, M. Vousden¹, O. Hovorka¹ and H. Fangohr¹* *1. Faculty of Engineering and the Environment, University of Southampton, Southampton, United Kingdom; 2. School of Science, Ningbo University, Ningbo, China*
- FQ-02. Spin Transfer Torque Magnetization Reversal In Hard/Soft Composite Structures.** *M. Kuteifan¹, C.A. Lambert⁴, M.V. Lubarda³, S. Mangin² and V. Lomakin¹* *1. Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA; 2. Institut Jean Lamour, Université de Lorraine, Vandoeuvre-les-Nancy, France; 3. Faculty of Polytechnics, University of Donja Gorica, Podgorica, Montenegro; 4. University of California, Berkeley, CA*

- FQ-03. Rate-Dependent Extensions of the Parametric Magneto-Dynamic Model with Magnetic Hysteresis.** S. Steentjes¹, M. Petrun², G. Glehn¹, D. Dolinar² and K. Hameyer¹ *1. Institute of Electrical Machines, RWTH Aachen University, Aachen, Germany; 2. FERl, University of Maribor, Maribor, Slovenia*
- FQ-04. Large spin pumping effect in antisymmetric precession of Ni₇₉Fe₂₁/Ru/Ni₇₉Fe₂₁.** H. Yang¹, Y. Li¹ and W. Bailey¹ *1. Applied Physics and Applied Mathematics, Columbia University, New York, NY*
- FQ-05. Element specific magnetisation dynamics at NiFe/Cr interfaces.** D.M. Burn¹, R. Fan¹, D. Atkinson² and P. Steadman¹ *1. Diamond Light Source, Harwell, United Kingdom; 2. Durham University, Durham, United Kingdom*
- FQ-06. Dependence of spin dynamics on nitrogen site ordering in γ -Fe₄N thin films.** S. Isogami¹ *1. Fukushima National College of Technology, Iwaki, Japan*
- FQ-07. Voltage tuning spin wave resonance at ferromagnetic/ferroelectric interfaces.** M. Zhu¹, Z. Zhou¹, W. Ren¹, Z. Ye^{1,2} and M. Liu¹ *1. School of Electrical and Information Engineering, Xi'an Jiaotong University, Xi'an, China; 2. Department of Chemistry and 4D LABS, Simon Fraser University, Burnaby, BC, Canada*
- FQ-08. Manipulation of magnetization in GaMnAs layers by spin-orbit induced field.** S. Lee¹, S. Choi¹, S. Bac¹, A. Nasir¹, S. Lee¹, X. Liu² and J. Furdyna² *1. Physics, Korea University, Seoul, The Republic of Korea; 2. Physics, University of Notre Dame, Notre Dame, IN*
- FQ-09. Exchange-coupling Induced Anisotropy Modulation of Fe-CoO Films Triggered by Photo-induced Charge Transfer Effect.** Z. Zheng¹, H. Zhao¹, J. Shi¹, L. Shen², Y. Wu³ and T. Gu³ *1. Department of Optical Science and Engineering, Fudan University, Shanghai, China; 2. Fudan, Shanghai, China; 3. Physics Department, Fudan University, Shanghai, China*
- FQ-10. 1- Dimensional Fe_xCo_{1-x} nanowires; Ferromagnetic Resonance and Magnetization dynamics.** S. Aslam^{1,2}, M. Khanna² and B.K. Kuanr^{1,3} *1. Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, India; 2. Bhaskaracharya College of Applied Sciences, University of Delhi, New Delhi, India; 3. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO*
- FQ-11. Investigating Nanodevices Driven by the Spin Hall Effect with Nitrogen-Vacancy Centres in Diamond.** Z. Flansberry¹, A. Solyom¹, A. Bourassa^{1,2}, L. Childress¹ and J.C. Sankey¹ *1. Physics, McGill University, Montreal, QC, Canada; 2. University of Chicago, Chicago, IL*
- FQ-12. Field fluctuations due to thermally excited spin waves.** J. Liu¹, S. Yoon^{1,2} and B. McMichael¹ *1. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD; 2. Maryland Nanocenter, University of Maryland, College Park, MD*

- FQ-13. Ultra-high Frequency Vortex Resonance in a Ferromagnetic Disk with Nanoscale Dent.** *J. Ding*¹, *S. Lendinez*¹, *P.N. Lapa*^{1,2}, *T. Khaire*¹, *J.E. Pearson*¹, *A. Hoffmann*¹ and *V. Novosad*¹ *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Texas A&M University, College Station, TX*
- FQ-14. Measurement of Spin Pumping in Py/ α -W and Py/ β -W Heterostructures via Ferromagnetic Resonance.** *W. Cao*¹, *J. Liu*¹, *K. Barmak*¹ and *W. Bailey*¹ *1. Applied Physics and Applied Mathematics, Columbia University, New York, NY*
- FQ-15. Spin pumping in single crystalline Fe/Pt heterostructure by broadband ferromagnetic resonance measurement.** *Y. Huo*¹, *F. Zeng*¹, *C. Zhou*² and *Y. Wu*¹ *1. Physics, Fudan University, Shanghai, China; 2. Fudan University, Shanghai, China*

THURSDAY
AFTERNOON
2:30

GRAND BALLROOM

Session FR
EMERGENT AND NOVEL MAGNETIC ORDER IN
THIN FILMS II
(Poster Session)

Hendrik Ohldag, Chair
SLAC National Accelerator Laboratory, Menlo Park, CA

- FR-01. Effect of epitaxial strain on magnetic and transport behaviors in metamagnetic FeRh thin films.** *Y. Xie*¹, *Q. Zhan*¹, *T. Shang*¹, *H. Yang*¹, *B. Wang*¹ and *R. Li*¹ *1. Ningbo Institute of Industrial Technology, Chinese Academy of Sciences., Ningbo, China*
- FR-02. Effect of Tungsten Layer Thickness Variation on Interfacial Dzyaloshinskii-Moriya Interaction in W/CoFeB/SiO₂ Heterostructures.** *A.K. Chaurasiya*¹, *C. Banerjee*¹, *S. Choudhury*¹, *S. Sahoo*¹, *S. Saha*¹, *J. Sinha*¹ and *A. Barman*¹ *1. Condensed Matter Physics and Material Sciences, S N Bose National Centre For Basic Sciences, Kolkata, India*
- FR-03. Enhancement of Magnetic Circular Dichroism in Bi-layered ZnO-Bi:YIG Thin Films.** *S. Mito*¹, *Y. Shiotsu*¹, *J. Sasano*², *H. Takagi*² and *M. Inoue*² *1. National Institute of Technology, Tokyo college, Hachioji, Japan; 2. Toyohashi University of Technology, Toyohashi, Japan*
- FR-04. Interfacial Dzyaloshinskii-Moriya interaction and orbital magnetic moments of metallic multilayer films.** *K. Yamamoto*¹, *K. Nawa*¹, *A. Pradipto*^{1,2}, *T. Akiyama*¹, *T. Ito*¹, *T. Ono*² and *K. Nakamura*¹ *1. Physics Engineering, Mie University, Tsu City, Japan; 2. Institute for Chemical Research, Kyoto University, Uji, Japan*
- FR-05. Magnetic behavior of nickel ferrite films co-fired with hafnium oxide.** *W. Straka*¹ and *J. Schwartz*¹ *1. Materials Science and Engineering, NC State University, Raleigh, NC*

- FR-06. Magnetic phases of thin terbium films.** *F.H. Sales¹, A.S. Carriço² and A.L. Dantas³* 1. IFMA, São Luis, Brazil; 2. Department of Physics, Universidade Federal do Rio Grande do Norte, Natal, Brazil; 3. Department of Physics, University of State of Rio Grande do Norte, Natal, Brazil
- FR-07. Physical properties of ultrathin $\text{La}_{0.8}\text{Sr}_{0.2}\text{CoO}_3/\text{SrTiO}_3$: Nb heterojunctions.** *Y. Li¹, S. Peng¹, T. Mao¹, D. Wang¹ and K. Wu¹* 1. Faculty of Science, Wuhan University of Science and Technology, Wuhan, China
- FR-08. Reversible Hydrogenation Induced Spin-Reorientation Transition In $\text{Co}_{50}\text{Pd}_{50}$ Alloy Thin Films.** *P. Chang¹, Y. Chen¹, C. Hsu¹, V. Mudinepalli¹ and W. Lin¹* 1. Department of Physics, National Taiwan Normal University, Taipei, Taiwan
- FR-09. Spin-Vortex Resonance In Patterned Ferromagnetic/Superconducting Structures.** *S. Lendinez¹, J. Ding¹, P.N. Lapa^{1,2}, G. Karapetrov³, J.E. Pearson¹ and V. Novosad¹* 1. Materials Science Division, Argonne National Laboratory, Lemont, IL; 2. Texas A&M University, College Station, TX; 3. Drexel University, Philadelphia, PA
- FR-10. Strain effect on the magnetic and electronic transport properties of LaCoO_3 films.** *Y. Li¹, T. Mao¹, S. Peng¹, D. Wang¹, K. Wu¹ and J. Sun²* 1. Faculty of Science, Wuhan University of Science and Technology, Wuhan, China; 2. State key laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China
- FR-11. The Ferromagnetic Phase in MnAl/Ag Thin Films.** *K. Yang¹ and R.A. Lukaszew¹* 1. Department of Physics, College of William and Mary, Williamsburg, VA
- FR-12. Thermally Activated Magnetism in the Diffuse Interface between Ferromagnetic Metal and Antiferromagnetic Oxide.** *M. Jung¹, M. Im², B. Lee³, K. Lee⁴ and J. Hong^{1,5}* 1. Emerging Materials Science, Daegu Gyeongbuk Institute of Science and Technology, Daegu, The Republic of Korea; 2. CXRO, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Center for Core Research Facility, DGIST (Daegu Gyeongbuk Inst. of Sci. and Tech.), Daegu, The Republic of Korea; 4. School of Materials Science and Engineering, Ulsan National Institute of Science Technology, Ulsan, The Republic of Korea; 5. Research Center for Emerging Materials, DGIST (Daegu Gyeongbuk Inst. of Sci. and Tech.), Daegu, The Republic of Korea
- FR-13. The role of an interfacial FeCu alloy on the magnetism in nanostructured thin films of Fe in Cu.** *R.D. Desautels^{1,2}, C. Shueh³, K. Lin³, J.W. Freeland⁴ and J. van Lierop¹* 1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. Quantum Condensed Matter Division, Oak Ridge National Laboratory, Oak Ridge, TN; 3. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 4. Argonne National Laboratory, Argonne, IL

FR-14. Vortex-Antivortex coexistence in Nb based Superconductor/Ferromagnet heterostructures. *A.M. Cucolo^{1,2}, F. Bobba^{1,2}, C. Di Giorgio¹, D. D'Agostino¹, A. Scarfato¹, M. Iavarone³, S.A. Moore³, G. Karapetrov⁴, V. Novosad⁵ and V. Yefremenko⁵*
1. Department of Physics "E.R. Caianiello", University of Salerno, Salerno, Italy; 2. CNR-SPIN, Salerno, Italy; 3. Department of Physics, Temple University, Philadelphia, PA; 4. Department of Physics, Drexel University, Philadelphia, PA; 5. Materials Science Division, Argonne Nat Lab, Argonne, IL

FR-15. New Domain Wall Contrast in Ultrathin Magnetic Film Imaged by Spin Polarized Low Energy Electron Microscopy. *C. Zhou¹, G. Chen², J. Liang¹, A.K. Schmid² and Y. Wu¹*
1. Department of Physics, State Key Laboratory of Surface Physics, Fudan University, Shanghai, China; 2. NCEM, Lawrence Berkeley National Lab, Berkeley, CA

THURSDAY
 AFTERNOON
 2:30

GRAND BALLROOM

Session FS
SPIN INJECTION, SPIN TRANSFER TORQUE AND
SPIN-ORBIT INTERACTION
(Poster Session)

Shingo Tamaru, Chair
 National Institute of Advanced Industrial Science and Technology
 (AIST), Tsukuba, Japan

FS-01. Spin Polarization enhancement at the n-MnSb(0001)/GaAs(111) Interface. *C.E. Ouserigha¹, H. Wang¹, C. Burrows¹, T.P. Hase¹ and G. Bell¹*
1. Physics, University of Warwick, Coventry, United Kingdom

FS-02. Bias Dependence of Tunneling Spin Injection into Graphene. *T. Zhu¹, H. Wen³, S. Singh¹, J. Katoch¹, W. Amamou² and R. Kawakami¹*
1. Department of Physics, The Ohio State University, Columbus, OH; 2. Material Science and Engineering Program, University of California, Riverside, CA; 3. Department of Physics, Pennsylvania State University, University Park, PA

FS-03. Temperature dependence of spin-to-charge conversion in MoS₂ monolayer from spin pumping. *P. Bonnet¹, C. Cheng¹, M. Collet¹, B. Dlubak¹, P. Seneor¹, H. Kim², G. Han², Y. Lee², H. Yang² and A. Anane¹*
1. Unité Mixte de Physique CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, Plaiseau, France; 2. CINAP Institute for Basic Science; Department of Energy Science, Sungkyunkwan University, Suwon, The Republic of Korea

FS-04. A role of impurity- and phonon-induced momentum scattering to spin lifetime in degenerate Si. *S. Lee¹, N. Yamashita¹, S. Dushenko¹, Y. Ando¹, H. Koike² and M. Shiraishi¹*
1. Department of Electronic Science and Engineering, Kyoto University, Kyoto, Japan; 2. Technology HQ, TDK Corporation, Ichikawa, Japan

- FS-05. Field-angle and DC-bias Dependence of the Spin-torque Diode Effect in Giant-magnetoresistive Microstripe.** *X. Li¹, Y. Zhou², M. Chan³ and P. Pong¹* 1. *Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong;* 2. *Physics, University of Hong Kong, Hong Kong, Hong Kong;* 3. *Department of Electronic and Computer Engineering, Hong Kong University of Science and Technology, Hong Kong, Hong Kong*
- FS-06. Spin transfer torque switching in nano-pillars with SAF reference layer.** *M. Arora¹, C. Fowley², T. Mckinnon¹, E. Kowalska², V. Sluka³, A.M. Deac², B. Heinrich¹ and E. Girt¹* 1. *Department of Physics, Simon Fraser University, Burnaby, BC, Canada;* 2. *Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany;* 3. *Department of Physics, New York University, New York, NY*
- FS-07. All-Spin-Orbit Switching of Perpendicular Magnetization.** *M. Kazemi¹, G. Rowlands², S. Shi³, R. Buhrman³ and E. Friedman¹* 1. *Electrical Engineering, University of Rochester, Rochester, NY;* 2. *Quantum Information Processing, BBN Technologies, Cambridge, MA;* 3. *School of Applied and Engineering Physics, Cornell University, Ithaca, NY*
- FS-08. Intrinsic spin-orbit torque in a single domain nanomagnet.** *A. Kalitsov¹, S. Nikolaev², J. Velev³ and M. Chshiev²* 1. *MINT Center, University of Alabama, Tuscaloosa, AL;* 2. *UMR 8191 CEA/CNRS/UJF, SPINTEC, Grenoble, France;* 3. *University of Puerto Rico, San Juan, PR*
- FS-09. Electrical control over perpendicular magnetization switching driven by spin-orbit torques.** *X. Zhang¹, C. Wan¹, Z. Yuan¹, Q. Zhang¹, H. Wu¹, L. Huang¹, W. Kong¹, C. Fang¹, U. Khan¹ and X. Han¹* 1. *Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China*
- FS-10. Spin-Orbit Torque Control of Dipole Field-Localized Spin Wave Modes.** *C. Zhang¹, Y. Pu¹, S.A. Manuilov¹, E. Blomberg¹, S. White¹, V.P. Bhallamudi¹, W. Ruane¹, D.V. Pelekhov¹ and P. Hammel¹* 1. *Department of Physics, The Ohio State University, Columbus, OH*
- FS-11. Magneto-optic investigation of spin-orbit torque in MBE-grown heterostructures.** *D.J. O'Hara¹, Y. Luo², K. Jamison², A. Ahmed², W. Amamou¹, I.V. Pinchuk², M. Newburger², E.J. Bushong² and R. Kawakami^{2,1}* 1. *Materials Science and Engineering, University of California, Riverside, CA;* 2. *Physics, The Ohio State University, Columbus, OH*
- FS-12. Spectral Linewidth of Spin-Current Nano-Oscillators Driven by Nonlocal Spin Injection.** *S. Urazhdin¹, V.E. Demidov², B. Divinskiy² and S. Demokritov²* 1. *Physics, Emory University, Atlanta, GA;* 2. *Institute for Applied Physics, University of Muenster, Muenster, Germany*
- FS-13. Very high Q factor in elliptical shaped spin torque oscillators.** *B. Wang¹, H. Kubota¹, K. Yakushiji¹, A. Fukushima¹ and S. Yuasa¹* 1. *National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan*

FS-14. Measurements of the lifetime and generation time of magnetic droplet solitons. *J. Hang*¹, *C. Hahn*¹, *N. Statuto*², *F. Macia*^{2,3} and *A.D. Kent*¹ *1. Department of Physics, New York University, New York, NY; 2. Dept. of Condensed Matter Physics, University of Barcelona, Barcelona, Spain; 3. Institut de Ciencia de Materials de Barcelona, Bellaterra, Spain*

FS-15. Spin transfer torque mechanisms in three terminal spin-torque oscillators. *E. Jué*¹, *W. Rippard*¹, *M. Pufall*¹ and *E.R. Evarts*¹ *1. Spin Electronics Group, National Institute of Standards and Technology, Boulder, CO*

THURSDAY
AFTERNOON
2:30

GRAND BALLROOM

Session FT
MULTI-LAYER FILMS AND SUPERLATTICES II
(Poster Session)

Wen-Chin Lin, Chair
National Taiwan Normal University, Taipei, Taiwan

FT-01. Magnetic leverage effects in amorphous SmCo/CoAlZr heterostructures. *T.P. Hase*¹, *R. Procter*¹, *F. Magnus*^{2,3}, *G. Andersson*³, *C. Sanchez-Hanke*^{4,5} and *B. Hjörvarsson*³
1. Physics, University of Warwick, Coventry, United Kingdom; 2. Science Institute, University of Iceland, Reykjavik, Iceland; 3. Dept of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 4. NSLS, Brookhaven National Laboratory, Upton, NY; 5. DIAMOND Light Source, Didcot, United Kingdom

FT-02. Angular Dependence of Resonant Absorption in Coupled Magnetic Thin Films. *D.J. Adams*^{1,2}, *P. Poudyal*^{1,2}, *M.A. Khan*^{1,2} and *L. Spinu*^{1,2} *1. Physics, University of New Orleans, New Orleans, LA; 2. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA*

FT-03. [CoPd/Pd] and [Co/Pd] hybrid stacks for the memory layer of high density magnetic random access memory cells. *X. Dong*¹, *D. Oshima*¹, *T. Kato*¹, *Y. Sonobe*² and *S. Iwata*¹
1. Nagoya University, Nagoya, Japan; 2. Samsung R&D Institute Japan, Yokohama, Japan

FT-04. Synthetic antiferromagnets with vortices and antivortices in domain walls. *A. Ognev*¹, *A.S. Samardak*¹, *A.G. Kolesnikov*¹, *M.E. Stebliy*¹, *E. Pustovalov*¹, *V.S. Plotnikov*¹, *O. Tretiakov*^{1,2} and *L. Chebotkevich*¹ *1. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation; 2. Tohoku University, Sendai, Japan*

FT-05. Hybridization-Induced Large XMCD of Carbon in Pd-Fe-C₆₀ Composite Thin Films. *K. Hsu*¹, *H. Hsu*¹, *P. Chang*¹, *C. Hsu*¹ and *W. Lin*¹ *1. Department of Physics, National Taiwan Normal University, Taipei, Taiwan*

- FT-06. Co L-edge and Pd M-edge XMCD in perpendicular magnetic anisotropy system: Co/Pd multilayers.** *J. Okabayashi¹ and H. Munekata² 1. The University of Tokyo, Research Center for Spectrochemistry, Tokyo, Japan; 2. Tokyo Institute of Technology, Yokohama, Japan*
- FT-07. Effect of nanostructure layout on spin pumping phenomena in antiferromagnet/ nonmagnetic metal/ ferromagnet multilayered stacks.** *A. Kravets^{1,2}, D. Polishchuk^{1,2}, Y. Tykhonenko-Polishchuk¹, T. Polek¹, H. Gomonay^{3,4}, A. Tovstolytkin¹, A. Pogorily¹ and V. Korenivski² 1. Institute of Magnetism, National Academy of Sciences of Ukraine, Kyiv, Ukraine; 2. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden; 3. National Technical University of Ukraine "KPI", Kyiv, Ukraine; 4. Institut für Physik, Johannes Gutenberg Universität Mainz, Mainz, Germany*
- FT-08. Magnetic-control-electric and reversal behavior of multiferroic ZnO/NiFe/ZnO multilayer films.** *P. Chi¹, D. Wei¹, C. Yu² and Y. Yao³ 1. Institute of Manufacturing Technology and Department of Mechanical Engineering, National Taipei University of Technology, Taipei, Taiwan; 2. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 3. Institute of Physics, Academia Sinica, Taipei, Taiwan*
- FT-09. Enhanced Extraordinary Hall Effect of Co/Pd Multilayers Films Deposited on Nanodomes Substrate.** *J.C. Denardin¹, S. Michea¹, S. Vidal¹ and S. Oyarzun¹ 1. Physics, Universidad de Santiago, Santiago, Chile*
- FT-10. Ferromagnetic Resonance and Interlayer Exchange Coupling in Magnetic Multilayers with Compositional Gradients.** *D. Polishchuk^{1,2}, A. Kravets^{1,2}, Y. Tykhonenko-Polishchuk¹, A. Tovstolytkin¹ and V. Korenivski² 1. Institute of Magnetism, National Academy of Science of Ukraine, Kyiv, Ukraine; 2. Nanostructure Physics, Royal Institute of Technology, Stockholm, Sweden*

THURSDAY
AFTERNOON
2:30

GRAND BALLROOM

Session FU

DOMAIN WALL AND DOMAIN WALL DEVICES II (Poster Session)

Matthias Benjamin Jungfleisch, Chair
Argonne National Laboratory, Argonne, IL

- FU-01. Impact of Ta-Mo Seedlayer Alloying on the Interfacial Dzyaloshinskii-Moriya Interaction in FeCoB/MgO Thin Films.** *D. Lau¹, J. Pellegren¹, P. Rengasamy¹ and V.M. Sokalski¹ 1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

- FU-02. Control of magnetic domain wall motion on the nanoscale by using magnetic anisotropy contrast.** *D. Ravelosona*¹, L.H. Diez¹, G. Agnus¹, J. Adam¹, T. Devolder¹, S. Eimer¹, N. Vernier¹, A. Digiacomio¹, R. Mantovan², A. Lamperti³, G. Tallarina², M. Fanciulli², J. Langer⁴, B. Ocker⁴, L. Baldi⁵, M. Marianni⁵, S. Manna⁶ and E.E. Fullerton⁷ *1. CNRS, University of Paris Sud, University of Paris Saclay, Center for Nanoscience and Nanotechnology, Orsay, France; 2. CNR-IMM MDM Laboratory, Agrate Brianza (MB), Italy; 3. Laboratorio MDM, IMM-CNR, Agrate Brianza, Italy; 4. Singulus AG, Kahl, Germany; 5. Micron Semiconductor Italia, Agrate Brianza, Italy; 6. Nanoengineering, University of California San Diego, La Jolla, CA; 7. University of California San Diego, La Jolla, CA*
- FU-03. Domain walls as efficient spin current sources in lateral devices.** W. Savero Torres¹, G. Zahnd¹, V. Pham¹, P. Laczkowski¹, A. Marty¹, L. Vila¹ and J. Attane¹ *1. Spintec, CEA Grenoble, Grenoble, France*
- FU-04. Filamentary Ferromagnetic Domain Structure Imaged in Metamagnetic FeRh.** *R.C. Temple*¹, J. Massey¹, T. Moore¹ and C.H. Marrows¹ *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom*
- FU-05. Stochasticity of Domain-Wall Speed Driven by Current.** *Y. Nam*¹, M. Park¹, D. Kim¹, Y. Park^{1,2}, J. Kim¹, B. Min² and S. Choe¹ *1. Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea; 2. Center for Spintronics, Korea Institute of Science and Technology (KIST), Seoul, The Republic of Korea*
- FU-06. Micromagnetic Simulation of Domain Wall Propagation Along Meandering Magnetic Strip With Spatially Modulated Material Parameters.** *Z. Zhang*¹, T. Tanaka¹ and K. Matsuyama¹ *1. Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Japan*
- FU-07. Enhancement of Spin Orbit Torques in a Tb-Co Alloy Magnetic Wire by Controlling its Tb Composition.** *Y. Kurokawa*¹, A. Shibata¹ and A. Hiroyuki¹ *1. Information Storage Materials Laboratory, Toyota Technological Institute, Nagoya, Japan*
- FU-08. Intrinsic asymmetry in chiral domain-walls due to the Dzyaloshinskii-Moriya interaction.** *D. Kim*¹, D. Kim¹ and S. Choe¹ *1. Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea*
- FU-09. Tuning magnetodynamic properties in NiFe film with localized diffusion for domain wall devices.** *T. Jin*¹, M. Ranjbar¹, W. Law¹, W. Lew¹ and S.N. Piramanayagam¹ *1. School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*

- FU-10. Tailoring the Domain Wall Pinning Potential in CoFeB/MgO Films with Perpendicular Magnetic Anisotropy.** B. Sarma^{1,2}, Y. Liu³, X. Zhang³, N. Vernier³, M. Voto⁴, A. Magni⁵, S. Nasser^{1,2}, L. Lopez-Diaz⁴, J. Langer⁶, B. Ocker⁶, G. Durin^{5,1}, L.H. Diez³ and D. Ravelosona³ 1. *ISI Foundation, Turin, Italy*; 2. *Department of Applied Science and Technology, Politecnico di Torino, Corso Duca Degli Abruzzi 24, 10129, Turin, Italy*; 3. *Centre de Nanosciences et de Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, C2N – Orsay, 91405, Orsay cedex, France*; 4. *Departamento Fisica Aplicada, Universidad de Salamanca, plaza de los Caidos s/n E-38008, Salamanca, Spain*; 5. *Istituto Nazionale di Ricerca Metrologica, Torino, Italy*; 6. *Singulus Technologies AG, Kahl am Main 63796, Germany*
- FU-11. Stress Driven Domain Wall Motion in FeCo Nanowires.** S. Bhatti^{1,2}, T. Ikeda², S.N. Piramanayagam¹ and X. Liu² 1. *School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*; 2. *Department of Electrical and Computer Engineering, Shinshu University, Nagano, Japan*
- FU-12. Nanometric alternating magnetic field generator.** A. Espejo¹, F.S. Tejo¹, N.S. Vidal¹ and J. Escrig¹ 1. *Departamento de Física, Universidad de Santiago Chile, Santiago, Chile*
- FU-13. Electrical detection of magnetic domain walls by inverse and direct spin Hall effect.** V. Pham^{1,2}, L. Vila^{1,2}, G. Zahnd^{1,2}, A. Marty^{1,2}, W. Savero-Torres¹, P. Noël^{1,2}, F. Rortais^{1,2}, M. Jamet^{1,2}, C. Vergnaud^{1,2} and J. Attane^{1,2} 1. *SPINTEC, INAC, CEA-Grenoble, Grenoble, France*; 2. *Université Grenoble Alpes, Grenoble, France*
- FU-14. Current-Induced Domain Wall Motion of Pt/CoNi/Ta/FeCoB/MgO Exchange Coupled Nanowire.** M. Furuta¹, V. Sundar¹, Y. Liu² and J. Zhu^{1,3} 1. *Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*; 2. *Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*; 3. *Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*
- FU-15. Thermal conductivity of magnetic nanowire with controlled domain walls.** H. Huang¹, C. Li¹ and Z. Wei¹ 1. *Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan*

Session FV
MICROWAVE AND MAGNETOCALORIC MATERIALS
(Poster Session)

Zbigniew Celinski, Co-Chair
UCCS, Colorado Springs, CO
Radhika Barua, Co-Chair
Northeastern University, Quincy, MA

- FV-01. Design and evaluation of noise suppression sheet for GHz band utilizing surface magneto-elastic effect.** *T. Igarashi¹, K. Kondo¹ and S. Yoshida¹ 1. NEC Tokin Corporation, Sendai, Japan*
- FV-02. Magnetic and mechanical properties of iron-based α -Fe₂O₃/ nano-sized MgO-coated composites.** *L. Xiao¹, M. Li¹ and W. Cheng² 1. Xi'an University of Science and Technology, Xi'an, China; 2. Department of Basic Courses, Mechanics Research Center, Xi'an University of Science and Technology, Xi'an, China*
- FV-03. Synthesis of layer structured Fe₃O₄ nanodisk and microstructures dependent microwave absorption property.** *N. Song¹, S. Geng³, J. Zhou³, H. Yang² and Z. Cheng³ 1. Beijing University of Chemical Technology, Beijing, China; 2. Institute of Physics, Beijing, China; 3. Chinese Academy of Sciences, Beijing, China*
- FV-04. Hard/soft ferrite-based CoFe₂O₄/NiFe₂O₄ nanocapsules with enhanced exchange-coupling interaction and microwave absorption.** *C. Feng¹ and S. Or¹ 1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong*
- FV-05. Non-Spherical Magnetic Particle Orientation Inside Magnetic Composites in Thermoforming.** *K. Miura¹, H. Okubo¹ and H. Osada¹ 1. Faculty of Science and Engineering, Iwate University, Morioka, Japan*
- FV-06. Band-Notched UltrawideBand (UWB) Antenna Loaded with Ferrite.** *H. Wang¹, W. Zong¹, N.X. Sun², H. Lin² and S. Li^{1,3} 1. Qingdao University, Qingdao, China; 2. Northeastern University, Boston, MA; 3. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China*
- FV-07. Synthesis and characterization of Yttrium Iron Garnet (YIG) Nanoparticles - Microwave Material.** *V. Sharma¹, J. Saha², S. Patnaik² and B.K. Kuanr¹ 1. Special Centre for Nanoscience, Jawaharlal Nehru University, New Delhi, India; 2. School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India*

- FV-08. Enhanced microwave absorbing characteristics of flake-shaped ferritic stainless steel/reduced graphene oxide/epoxy composites.** R. Yang¹, C. Chen², W. Liang¹, L. Ho¹ and H. Liu³
1. Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 2. Ph.D. Program of Mechanical and Aeronautical Engineering, Feng Chia University, Taichung, Taiwan; 3. Department of Mechanical and Computer-Aided Engineering, Feng Chia University, Taichung, Taiwan
- FV-09. Study on magnetocaloric effect investigated by crystallographic and magnetic properties of $\text{Mn}_{1-x}\text{Fe}_x\text{As}$ ($x = 0.001, 0.003, 0.005$).** J. Lim¹, H. Cho¹ and C. Kim¹
1. Kookmin University, Seoul, The Republic of Korea
- FV-10. Large rotating magnetocaloric effect in ErAlO_3 single crystal.** X. Zhang¹, Y. Wu^{1,2}, Y. Ma^{1,2}, Q. Dong², Y. Ke¹ and Z. Cheng¹
1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Capital Normal University, Center for Condensed Matter & Beijing Key Laboratory of Metamaterials and Devices, Department of Physics, Beijing, China
- FV-11. Metamagnetism and Magnetocaloric effect in dielectric oxides $\text{R}_2\text{Cu}_2\text{O}_5$ ($\text{R} = \text{Y}$ and Er).** S. Ghorai¹, M. Sharannia¹, R. Nirmla¹, A.K. Nigam², S. Quezado³ and S.K. Malik³
1. Physics, Indian Institute of Technology Madras, Chennai, India; 2. DCMP&MS, Tata Institute of Fundamental Research, Mumbai, India; 3. Departamento de Física Teórica e Experimental, Universidade Federal do Rio Grande do Norte, Natal, Brazil
- FV-12. Magnetic Structures and “lattice-spin-charge” correlation in antiperovskite structured $\text{Mn}_3\text{XN}(\text{C})$ compounds.** C. Wang¹, Y. Sun¹, L. Wang¹, K. Shi¹, S. Deng¹ and Q. Huang²
1. Dept. of Physics, Beihang University, Beijing, China; 2. NIST Center for Neutron Research, Gaithersburg, MD

THURSDAY
 AFTERNOON
 2:30

GRAND BALLROOM

Session FW
POWER MACHINES II
(Poster Session)

Gino Hrkac, Chair
 University of Exeter, Exeter, United Kingdom

- FW-01. Research on a New Magnetic-Field-Modulated Brushless Double-Rotor Machine with Sinusoidal-Permeance Modulating Ring.** P. Zheng¹, J. Liu¹, J. Bai², Z. Song¹ and B. Zhao¹
1. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, China; 2. Harbin Institute of Technology, Harbin, China

- FW-02. Design and Performances Analysis of Less-Rare-Earth Interior Permanent Magnet Synchronous Machines Used for Electric Vehicles.** P. Zheng¹, W. Wang¹, J. Bai², L. Cheng² and J. Liu³ 1. *Institute of Electromagnetic and Electronic Technology, Harbin Institute of Technology, Harbin, China;* 2. *Harbin Institute of Technology, Harbin, China;* 3. *Electrical Engineering, Harbin Institute of Technology, Harbin, China*
- FW-03. Performance Analysis of a New Radial-Axial Flux Machine with SMC Cores and Ferrite Magnets.** C. Liu¹, Y. Wang¹, J. Zhu², Y. Guo² and G. Lei² 1. *College of Electrical Engineering, Hebei University of Technology, Tianjin, China;* 2. *University of Technology, Sydney, Sydney, NSW, Australia*
- FW-04. Optimization and Demagnetization Analysis of Combined-Pole V-Shape Interior Permanent-Magnet Synchronous Machine.** P. Zheng¹, C. Zhou¹ and J. Liu¹ 1. *Electrical Engineering, Harbin Institute of Technology, Harbin, China*
- FW-05. Design of Levitation and Guidance Control for Semi-high-speed Maglev train with Electromagnetic and Dynamic Coupling.** C. Ha¹, M. Kim², J. Jeong³, C. Kim¹ and J. Lim¹ 1. *Magnetic Levitation and Linear Drive, Korea Institute of Machinery & Materials, Daejeon, The Republic of Korea;* 2. *Mechatronics Engineering, Chungnam National University, Daejeon, The Republic of Korea;* 3. *Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea*
- FW-06. Design and Analysis of a Novel Cambered 2-DOF PM In-wheel Motor.** F. Chai¹, L. Gan¹, Y. Pei¹ and S. Cheng¹ 1. *School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*
- FW-07. Calculation of Electromagnetic Force of EMS Maglev Vehicle in Vertical Levitation.** X. Li^{1,2}, T. Chen¹, S. Cheng¹ and J. Tang¹ 1. *Central South University, Changsha, China;* 2. *University of California, Berkeley, CA*
- FW-08. Quantitative Comparison of Doubly-Salient PM Motor with Interior PM Motor for Electric Vehicle Applications.** J. Wang¹, J. Li², Z. Dai², Y. Li², M. Yao² and Y. Ma² 1. *School of Electrical Engineering, Wuhan University, Wuhan, China;* 2. *School of Mechanical and Electronic Engineering, Wuhan University of Technology, Wuhan, China*
- FW-09. Demagnetization Investigation of a Partitioned Rotor Flux Switching Permanent Magnet Motor.** D. Fan¹, L. Quan¹ and X. Zhu¹ 1. *School of electrical and information engineering, Jiangsu University, Zhenjiang, China*
- FW-10. A Tubular Hybrid Halbach/Axially-Magnetized Permanent-Magnet Linear Machine.** Y. Sui¹ and P. Zheng¹ 1. *School of Electrical Engineering and Automation, Harbin Institute of Technology, Harbin, China*
- FW-11. Design and Analysis of a New Flux-intensifying Permanent Magnet Brushless Motor with Multilayer Flux Barriers Considering Magnetic Saturation.** X. Zhu¹, S. Yang¹, Z. Xiang¹, D. Fan¹ and W. Wu¹ 1. *School of electrical and information engineering, Jiangsu University, Zhen Jiang, China*

- FW-12. Analytical Model for Loaded Magnetic Field and Electromagnetic Power of Ultra-high Speed PMSMs.** *W. Cheng*¹, *L. Huang*², *M. Li*¹, *L. Xiao*¹, *H. Lin*³, *Y. Sun*³ and *L. Yu*³ *1. Department of Basic Courses, Mechanics Research Center, Xi'an University of Science and Technology, Xi'an, China; 2. Suzhou SLAC Precision Equipment Co., Ltd, Suzhou, China; 3. State Key Laboratory for Strength and Vibration of Mechanical Structures, Xi'an Jiaotong University, Xi'an, China*
- FW-13. Transient Line Starting Analysis of the Ultra-high Speed PMSM.** *W. Cheng*¹, *W. Li*¹, *L. Xiao*¹, *M. Li*¹, *Y. Tian*³, *Y. Sun*² and *L. Yu*² *1. Department of Basic Courses, Mechanics Research Center, Xi'an University of Science and Technology, Xi'an, China; 2. State Key Laboratory for Strength and Vibration of Mechanical Structures, Xi'an Jiaotong University, Xi'an, China; 3. Institute of Engineering Thermophysics, Chinese Academy of Science, Beijing, China*
- FW-14. Asymmetric double-sided linear actuator with suppressed thrust ripple for syringe pump system.** *W. Li*¹, *K. Chau*¹ and *T. Ching*² *1. The University of Hong Kong, Hong Kong, Hong Kong; 2. University of Macau, Macao, China*
- FW-15. Torsional Stiffness Characteristics of Electric Machine Connected with Magnetic Couplings Based on Magnetic Torque Analysis.** *H. Shin*¹, *S. Cho*¹, *K. Jung*¹ and *J. Choi*¹ *1. Electrical engineering, Chungnam National University, Daejeon, The Republic of Korea*

FRIDAY
MORNING
8:30

MARDI GRAS A-E

Session GA SYMPOSIUM: ULTRALOW DAMPING

Gilles Gaudin, Chair
SPINTEC (CNRS/CEA), Grenoble, France

8:30

- GA-01. Co₂MnSi Half-Metal Magnetic Character Studied by Spin-Resolved PhotoEmission Spectroscopy and FerroMagnetic Resonance. (Invited)** *S. Andrieu*¹, *A. Négache*¹, *C. Guillemard*¹, *T. Hauet*¹, *S. Petit-Watelot*¹, *T. Devolder*², *A. Hallal*³, *M. Chshiev*³, *A.M. Bataille*⁴, *P. Le Fevre*⁵ and *F. Bertran*⁵ *1. Institut Jean Lamour (CNRS/Université de Lorraine), Vandoeuvre Les Nancy, France; 2. IEF, Orsay, France; 3. UMR 8191 CEA/CNRS/UJF, SPINTEC, Grenoble, France; 4. IRAMIS/LLB, CEA, Gif sur Yvette, France; 5. SOLEIL synchrotron, Saint Aubin, France*

9:06

- GA-02. Wavenumber-dependent Gilbert damping in metallic ferromagnets. (Invited)** *W. Bailey*¹ *1. Materials Science and Engineering, Department of Applied Physics and Applied Mathematics, Columbia University, New York, NY*

9:42

GA-03. Magnetic Damping: Domain Wall Dynamics Versus Local Ferromagnetic Resonance. (Invited) T. Weindler¹, J. Chauleau¹, H.G. Bauer¹, R. Islinger¹, B. Boehm¹ and C. Back¹ *1. Universität Regensburg, Regensburg, Germany*

10:18

GA-04. New insights into achieving ultra-low magnetic damping in metallic and half-metallic materials. (Invited) J. Shaw¹ *1. NIST, Boulder, CO*

10:54

GA-05. Chiral damping of magnetic domain walls. (Invited) I. Miron¹ *1. SPINTEC, CEA-INAC/CNRS/Univ. Grenoble Alpes, Grenoble, France*

FRIDAY
MORNING
8:30

MARDI GRAS F-H

Session GB
SPIN SEEBECK AND RELATED EFFECTS

Yunlong Jin, Chair
University of Nebraska, Lincoln, NE

8:30

GB-01. Wavelength Characteristics of the Photo-Spin-Voltaic Effect. D. Ellsworth¹, H. Chang¹, D. Qu², A.A. Jara³, R. Wu³, I. Krivorotov³, C. Chien² and M. Wu¹ *1. Physics, Colorado State University, Fort Collins, CO; 2. Physics and Astronomy, Johns Hopkins University, Baltimore, MD; 3. Physics and Astronomy, University of California, Irvine, Irvine, CA*

8:42

GB-02. Observation of Spin Seebeck Effect in nanometer thick YIG/Pt stripe. M. Collet¹, P. Bortolotti¹, M. Muñoz², V. Cros¹ and A. Anane¹ *1. Unité Mixte de Physique CNRS/Thales and Université Paris Sud, Palaiseau, France; 2. IMM-Instituto de Microelectronica de Madrid, Madrid, Spain*

8:54

GB-03. Thermal Imaging of Spin Peltier Effect. S. Daimon^{1,2}, R. Iguchi¹, T. Hioki¹, E. Saitoh^{1,3} and K. Uchida^{1,4} *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 3. ERATO, Spin Quantum Rectification Project, Japan Science and Technology Agency, Sendai, Japan; 4. PRESTO, Japan Science and Technology Agency, Sendai, Japan*

GB-04. Propagating Spin Wave Spectroscopy for Spin-orbitronics.

O. Gladii¹, M. Collet², K. Garcia-Hernandez², C. Cheng², S. Xavier⁴, P. Bortolotti², V. Cros², J. Kim³, A. Anane², Y. Henry¹ and M. Bailleul¹ 1. *Institut de physique et de chimie des materiaux de Strasbourg, Strasbourg, France;* 2. *Unité Mixte de Physique CNRS/Thales and Université Paris Sud, Palaiseau, France;* 3. *Centre for Nanoscience and Nanotechnology (C2N), CNRS, Univ. Paris-Sud, Université Paris-Saclay, Palaiseau, France;* 4. *Thales Research and Technology, Palaiseau, France*

GB-05. Spin Seebeck effect in compensated ferrimagnets across the compensation point.

J. Cramer^{1,2}, S. Geprägs³, A. Kehlberger¹, G. Jakob¹, S.T. Goennenwein³ and M. Kläui^{1,2} 1. *Institute of Physics, Johannes Gutenberg-Universität Mainz, Mainz, Germany;* 2. *Graduate School of Excellence Materials Science in Mainz, Mainz, Germany;* 3. *Walther-Meißner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany*

GB-06. Correlation of magnetic anisotropy and switching behavior of Y₃Fe₅O₁₂ with longitudinal spin Seebeck effect.

V. Kalappattil¹, R. Das¹, M. Phan¹ and H. Srikanth¹ 1. *Department of Physics, University of South Florida, Tampa, FL*

GB-07. Longitudinal spin Seebeck effect contribution in transverse spin Seebeck effect experiments in Pt/YIG and Pt/NFO.

D. Meier¹, D. Reinhardt¹, M. van Straaten¹, C. Klewe³, M. Althammer², M. Schreier², S.T. Goennenwein², A. Gupta⁴, M. Schmid⁵, C. Back⁵, J. Schmalhorst¹, T. Kuschel⁶ and G. Reiss¹ 1. *Department of Physics, Bielefeld University, Bielefeld, Germany;* 2. *Bayerische Akademie der Wissenschaften, Walther-Meissner-Institut, Garching, Germany;* 3. *Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA;* 4. *Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL;* 5. *Department of Physics, University of Regensburg, Regensburg, Germany;* 6. *Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands*

GB-08. Observation of a phonon anomaly in the spin Seebeck effect.

T. Kikkawa¹, K. Shen², B. Flebus³, R. Duine^{3,4}, K. Uchida^{5,6}, Z. Qiu^{7,8}, G.E. Bauer^{1,2} and E. Saitoh^{1,8} 1. *Institute for Materials Research and WPI-AIMR, Tohoku University, Sendai, Japan;* 2. *Kavli Institute of NanoScience, Delft University of Technology, Delft, Netherlands;* 3. *Institute for Theoretical Physics and Center for Extreme Matter and Emergent Phenomena, Utrecht University, Utrecht, Netherlands;* 4. *Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands;* 5. *Institute for Materials Research, Tohoku University, Sendai, Japan;* 6. *PRESTO, Japan Science and Technology Agency, Saitama, Japan;* 7. *WPI-AIMR, Tohoku University, Sendai, Japan;* 8. *Spin Quantum Rectification Project, ERATO, Japan Science and Technology Agency, Sendai, Japan*

10:06

- GB-09. Quantitative evaluation of the longitudinal spin Seebeck effect.** *A. Sola*¹, P. Bougiatioti², D. Meier², M. Kuepferling¹, V. Basso¹, M. Pasquale¹ and G. Reiss² *1. INRIM, Torino, Italy; 2. Bielefeld University, Bielefeld, Germany*

10:18

- GB-10. Study of spin thermoelectric generation in Fe₃O₄/Pt-based heterostructures.** *R. Ramos*^{1,2}, T. Niizeki¹, A. Anadón^{5,6}, I. Lucas^{5,6}, M.H. Aguirre^{5,7}, K. Uchida^{3,4}, L. Morellón^{5,6}, P.A. Algarabel^{6,8}, M. Ibarra^{5,6} and E. Saitoh^{3,9} *1. WPI-AIMR, Tohoku University, Sendai, Japan; 2. Spin Quantum Rectification Project, ERATO, Japan Science and Technology Agency, Sendai 980-8577, Japan; 3. Institute for Materials Research and Center for Spintronics Research Network, Tohoku University, Sendai 980-8577, Japan; 4. PRESTO, Japan Science and Technology Agency, Saitama 332-0012, Japan; 5. Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza 50018, Spain; 6. Departamento de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza 50009, Spain; 7. Laboratorio de Microscopias Avanzadas, Universidad de Zaragoza, Zaragoza 50018, Spain; 8. Instituto de Ciencia de Materiales de Aragón-CSIC, Universidad de Zaragoza, Zaragoza 50009, Spain; 9. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai 319-1195, Japan*

10:30

- GB-11. Enhanced Magnetic Properties and Spin-Seebeck Effect in Epitaxial Nickel Ferrite Thin Films Grown on Lattice-Matched Substrates.** *A.V. Singh*¹, *A. Rastogi*¹, B. Khodadadi^{1,2}, J. Beik Mohammadi¹, S. Keshavarz^{1,2}, T. Mewes¹, D. Singh Negi³, R. Dutta³, Z. Galazka⁴, R. Uecker⁴ and A. Gupta¹ *1. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL; 2. Physics and Astronomy, The University of Alabama, Tuscaloosa, AL; 3. International Centre for Materials Science, Chemistry and Physics of Materials Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India; 4. Leibniz Institute for Crystal Growth, Max-Born-Str. 2, 12489, Germany*

10:42

- GB-12. Breaking of Galilean invariance in the hydrodynamic formulation of ferromagnetic thin films.** *E. Iacocca*^{1,2}, T. Silva³ and M. Hoefer¹ *1. Applied Mathematics, University of Colorado, Boulder, Boulder, CO; 2. Physics, Chalmers University of Technology, Gothenburg, Sweden; 3. National Institute of Standards and Technology, Boulder, CO*

10:54

- GB-13. Noncollinear Magnetization Between Surface And Bulk Y₃Fe₅O₁₂.** *P. Wu*¹ and S. Huang¹ *1. Physics, National Taiwan University, Taipei, Taiwan*

11:06

- GB-14. Proximity Induced Ferromagnetism in Pt Using Magnetic Insulator CoFe₂O₄.** *I.V. Pinchuk*¹, W. Amamou², A. Goad³ and R. Kawakami¹ *1. Physics, The Ohio State University, Columbus, OH; 2. Physics and Astronomy, UC Riverside, Riverside, CA; 3. Baltimore University, Baltimore, MD*

- GB-15. Magnon scattering dominance in MoTe_2 crystals at low temperatures.** *D. Suri*¹, *S.P. Dash*² and *R.S. Patel*¹
 1. Department of Physics, BITS Pilani - K K Birla Goa Campus, Zuarinagar, India; 2. Microtechnology and Nanoscience, Chalmers University of Technology, Gothenburg, Sweden

FRIDAY
MORNING
8:30

LA GALERIES 1-2

Session GC

MAGNETIZATION DYNAMICS IV: SPIN TORQUE AND INTERFACIAL EFFECTS

Giovanni Finocchio, Chair
University of Messina, Messina, Italy

8:30

- GC-01. Spin-orbit torque induced magnetization dynamics in YIG/Pt bilayers. (Invited)** *G. de Loubens*¹, *V. Naletov*^{1,4}, *O. Klein*⁵, *P. Bortolotti*², *V. Cros*², *A. Anane*², *J. Ben Youssef*⁶, *M. Muñoz*⁷, *V.E. Demidov*³ and *S. Demokritov*³ 1. Service de Physique de l'Etat Condensé, CEA Saclay, Gif-sur-Yvette, France; 2. CNRS / THALES and Univ. Paris-XI, Plaiseau, France; 3. Institute for Applied Physics, University of Muenster, Muenster, Germany; 4. Institute of Physics, Kazan Federal University, Kazan, Russian Federation; 5. SPINTEC, CEA/CNRS and Univ. Grenoble Alpes, Grenoble, France; 6. LMB, Université de Bretagne Occidentale, Brest, France; 7. CNM, CSIC, Instituto de Microelectrónica de Madrid, Madrid, Spain

9:06

- GC-02. Effect of nonlinear damping on spin torque driven auto-oscillatory dynamics.** *J. Zhang*¹, *Y. Chen*², *A. Smith*¹ and *I. Krivorotov*² 1. Physics Department, University of California, Irvine, CA; 2. Physics and Astronomy, University of California, Irvine, CA

9:18

- GC-03. Chaotic magnetization dynamics excited by RF spin transfer torque in elliptical nanodots.** *E.A. Montoya*¹, *S. Perna*³, *M. d'Aquino*², *C. Serpico*³ and *I. Krivorotov*¹ 1. Physics and Astronomy, University of California, Irvine, Irvine, CA; 2. Dipartimento di Ingegneria, Università degli Studi di Napoli "Parthenope", Napoli, Italy; 3. DIETI, University of Naples Federico II, Naples, Italy

9:30

- GC-04. Magnetization dynamics under a strong spin-orbit torque in W/FeCoB/MgO layers.** *T. Moriyama*¹, *K. Kim*¹, *S.C. Baek*², *B. Park*², *S. Lee*³, *K. Lee*³ and *T. Ono*¹ 1. Kyoto University, Uji, Japan; 2. KAIST, Daejeon, The Republic of Korea; 3. Korea University, Seoul, The Republic of Korea

- GC-05. Probing the mechanism underlying NV diamond-based detection of ferromagnetic resonance excited at frequencies far from the NV resonance.** *V.P. Bhallamudi*¹, M. Page¹, F. Guo², C.M. Purser¹, J.G. Schulze¹, T. Nakatani³, C.S. Wolfe¹, J.R. Childress³, G.D. Fuchs² and P. Hammel¹ *1. Department of Physics, The Ohio State University, Columbus, OH; 2. School of Applied and Engineering Physics, Cornell University, Ithaca, NY; 3. San Jose Research Center, HGST, a Western Digital company, San Jose, CA*

- GC-06. Interfacial Dzyaloshinskii-Moriya interaction in Pt/CoFeB films.** *S. Tacchi*¹, R. Troncoso², M. Ahlberg³, G. Gubbiotti¹, M. Madami⁵, J. Akerman^{3,4} and P. Landeros² *1. CNR-Istituto Officina dei Materiali, Perugia, Italy; 2. Departamento de Física, Universidad Técnica Federico Santa María, Valparaíso, Chile; 3. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 4. Materials and Nano Physics, Royal Institute of Technology, Stockholm-Kista, Sweden; 5. Dipartimento di Fisica e Geologia, Università di Perugia, Perugia, Italy*

- GC-07. Phenomenological and Microscopic Theory of Chiral Damping.** *A. Manchon*¹, *C.A. Akosa*², I. Miron⁴ and G. Gaudin³ *1. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 2. Material Science and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 3. SPINTEC (CNRS/CEA) URA 2512, Grenoble, France; 4. CNRS INAC-SPINTEC, Grenoble, France*

- GC-08. Spin Pumping Damping and Magnetic Proximity Effect in Pd and Pt Spin-sink Layers.** *M. Caminale*^{1,2}, A. Ghosh¹, S. Auffret¹, U. Ebels¹, K.J. Ollefs⁵, F. Wilhelm⁴, A. Rogalev⁴ and W. Bailey^{3,2} *1. SPINTEC, Univ. Grenoble Alpes / CEA / CNRS, Grenoble, France; 2. Fondation Nanosciences, Grenoble, France; 3. Applied Physics, Columbia University, New York, NY; 4. ESRF, Grenoble, France; 5. Universität Duisburg-Essen, Duisburg, Germany*

- GC-09. Tuning the Phase-Locking of Spin-Torque Nano-Oscillators Through Their Mutual Magneto-Static Interaction.** *F. Abreu Araujo*¹ and J. Grollier¹ *1. Unité Mixte de Physique, CNRS/Thales, Paris, France*

- GC-10. Numerical study of the two-mode generation in nanocontact spin torque oscillators.** *O. Heinonen*^{1,2}, S. Zhang³ and E. Iacocca^{4,5} *1. Argonne National Laboratory, Lemont, IL; 2. Northwestern-Argonne Institute of Science and Engineering, Evanston, IL; 3. Physics and Astronomy, University of Missouri, Columbia, MO; 4. Applied Mathematics, University of Colorado at Boulder, Boulder, CO; 5. Department of Physics, Chalmers University of Technology, Gothenburg, Sweden*

- GC-11. Phase-locking of multiple magnetic droplets by a microwave magnetic field.** C. Wang¹, D. Xiao¹, Y. Zhou², J. Åkerman³ and Y. Liu¹ *1. Tongji University, Shanghai, China; 2. Physics, University of Hong Kong, Hong Kong, Hong Kong; 3. Univ Gothenburg, Göteborg, Sweden*

- GC-12. Highly efficient magnetization switching by spin-orbit torque in magnetic multi-layers.** P. Sethi^{1,2}, S. Krishna¹, S.H. Li¹, Y. Chen², S.H. Leong² and W. Lew¹ *1. Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore; 2. Data Storage Institute (A*STAR), Agency for Science, Technology and Research, Singapore, Singapore*

- GC-13. Interfacial spin-orbit torque in the NiFe/Pt bilayer.** S. Li^{1,2} and T. Zhu¹ *1. State Key Lab for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. College of Science, Guangdong Ocean University, Zhanjiang, China*

FRIDAY
MORNING
8:30

LA GALERIES 3

Session GD

LOW-DIMENSIONAL SYSTEMS, FERRITES AND GARNETS

Laurentiu Stoleriu, Co-Chair
Al. I. Cuza University, Iasi, Romania

Ivan Skorvanek, Co-Chair
Institute of Experimental Physics Slov. Acad. Sci., Kosice, Slovakia

- GD-01. Manifestation of Spin-Vibron Coupling in Transport Spectroscopy of Single Magnetic Molecules.** A. Kenawy¹, J. Splettstoesser¹ and M. Misiorny² *1. Department of Microtechnology and Nanoscience — MC2, Chalmers University of Technology, Göteborg, Sweden; 2. Faculty of Physics, Adam Mickiewicz University, Poznan, Poland*

- GD-02. Disentangling surface and bulk transport in topological insulator p-n junctions.** D. Backes¹, R. Mansell¹, M. Lanius², J. Kampmeier², G. Mussler², D. Ritchie¹, D. Gruetzmacher² and V. Narayan¹ *1. Department of Physics, University of Cambridge, Cambridge, United Kingdom; 2. Peter Gruenberg Institute (PGI-9), Forschungszentrum Juelich, Juelich, Germany*

8:54

- GD-03. XMCD Studies of 5d Transition Metal Complexes - Building Blocks for Molecular Magnets.** *A. Rogalev¹, K.S. Pedersen^{2,3}, F. Wilhelm¹ and R. Clérac^{2,3}* *1. ESRF, Grenoble, France; 2. CRPP, UPR 8641, University of Bordeaux, Pessac, France; 3. ICMCB, UPR 9048, CNRS, Pessac, France*

9:06

- GD-04. Portraying entanglement between molecular qubits with four-dimensional inelastic neutron scattering.** *E. Garlatti¹, T. Guidi², S. Ansbro³, P. Santini¹, G. Amoretti¹, J. Ollivier³, H. Mutka³, G. Timco⁴, I. Vitorica-Yrezabal⁴, G. Whitehead^{4,5}, R. Winpenny⁴ and S. Carretta¹* *1. Department of Physics and Earth Sciences, University of Parma, Parma, Italy; 2. ISIS Facility, Rutherford Appleton Laboratory, Didcot, United Kingdom; 3. Institut Laue-Langevin, Grenoble, France; 4. School of Chemistry, University of Manchester, Manchester, United Kingdom; 5. Department of Chemistry, University of Liverpool, Liverpool, United Kingdom*

9:18

- GD-05. Electro-Nuclear Atomic Clock Transitions in a Holmium Molecular Nanomagnet.** *D. Komijani¹, M. Shiddiq¹, Y. Duan², A. Gaita-Arino², E. Coronado² and S. Hill¹* *1. Florida State University and NHMFL, Tallahassee, FL; 2. Instituto de Ciencia Molecular (ICMol), University of Valencia, Valencia, Spain*

9:30

- GD-06. Withdrawn**

9:42

- GD-07. Charge density wave like phase transition in doped Na₂IrO₃.** *K. Mehlawat¹ and Y. Singh¹* *1. Physics, IISER Mohali, Mohali, India*

9:54

- GD-08. Magnetic and structural properties of nanometre thick sputtered Yttrium iron garnet films.** *A. Mitra¹, O. Cespedes¹, Q.M. Ramasse², C. Kinane³, S. Langridge³ and B. Hickey¹* *1. School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom; 2. superSTEM Dewsbury, Leeds, United Kingdom; 3. Rutherford Appleton Laboratory, Oxford, United Kingdom*

10:06

- GD-09. YIG Grown on SiO₂ Using Novel Two-Step Rapid Thermal Anneal for High Quality Phase Pure Thin Films.** *T.E. Gage¹, P. Dulal², D.J. Flannigan¹ and B. Stadler²* *1. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 2. Chemical Engineering & Materials Science/ Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

- GD-10. Next generation spinel ferrite thin films with low damping and large magnetostriction.** *B.A. Gray*^{1,2}, *S. Emori*^{3,4}, *H. Jeon*^{1,5}, *K. Mahalingam*^{1,2}, *U.S. Alaan*⁴, *M. Gray*⁴, *E. Arenholz*⁶, *Y. Suzuki*⁷, *A. Jander*⁸, *N.X. Sun*⁹ and *B.M. Howe*¹⁰ 1. *RXAN, AFRL, WPAFB, OH*; 2. *UES, Dayton, OH*; 3. *Applied Physics, Stanford University, Stanford, CA*; 4. *Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA*; 5. *Wright State University, Dayton, OH*; 6. *LBNL, Berkeley, CA*; 7. *Stanford University, Stanford, CA*; 8. *EECS, Oregon State University, Corvallis, OR*; 9. *Northeastern University, Boston, MA*; 10. *Materials and Manufacturing Directorate, Air Force Research Lab, Wright Patterson Air Force Base, OH*

- GD-11. Magnetoelastic Constants of Single-Crystal NiZnAl-Ferrite Thin Films Measured by Strain-Dependent Ferromagnetic Resonance Spectroscopy.** *K. Masood*¹, *P. Lenox*¹, *B.A. Gray*², *H. Jeon*², *B.M. Howe*², *A. Jander*¹ and *P. Dhagat*¹ 1. *EECS, Oregon State University, Corvallis, OR*; 2. *Materials and Manufacturing Directorate, Air Force Research Lab, Wright Patterson Air Force Base, OH*

- GD-12. Ferrite-coated Fe Soft Magnetic Composites: Reduced Core Loss and Coercivity at High Applied Frequencies.** *K.J. Sunday*¹ and *M. Taheri*¹ 1. *Materials Science and Engineering, Drexel University, Philadelphia, PA*

- GD-13. Anisotropy and Ferromagnetic Resonance Linewidth in Iron-deficient LiZn Ferrite.** *X. Jiang*¹, *W. Wang*¹, *Z. Yu*¹, *K. Sun*¹, *Z. Lan*¹, *X. Zhang*¹ and *V.G. Harris*² 1. *State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*; 2. *Department of Electrical and Computer Engineering, Northeastern University, Boston, MA*

- GD-14. Structural and Magnetic Properties of Nickel Zinc-based Ferrite Thick Films Created via Tape Casting for Wide-bandwidth Conformal Antennae.** *T. Kittel*¹, *G. Naderi*¹ and *J. Schwartz*² 1. *North Carolina State University, Raleigh, NC*; 2. *North Carolina State University, Raleigh, NC*

- GD-15. Correlations between site specific defects and damping in Fe₃O₄(111)/YZO thin films.** *C. Love*^{1,2}, *B. James*¹, *V. Lazarov*¹, *K. Matsuzaki*³, *T. Susaki*³, *S.S. Dhesi*², *G. van der Laan*² and *S.A. Cavill*^{1,2} 1. *Physics, University of York, York, United Kingdom*; 2. *Diamond Light Source, Didcot, United Kingdom*; 3. *Materials and Structures Laboratory, Tokyo Institute of Technology, Tokyo, Japan*

Session GE
**SPIN TRANSPORT IN SEMICONDUCTORS AND
ARTIFICIAL STRUCTURES**

Saroj Dash, Chair
Chalmers University of Technology, Gothenburg, Sweden

8:30

- GE-01. Spin-Lasers: Spintronics beyond Magnetoresistance.**
(Invited) I. Zutic¹ 1. University at Buffalo, Buffalo, NY

9:06

- GE-02. Spin Transport at Interfaces with Spin-Orbit Coupling.**
V. Amin^{1,2} and M. Stiles¹ 1. National Institute of Standards and Technology, Gaithersburg, MD; 2. Maryland NanoCenter, University of Maryland, College Park, MD

9:18

- GE-03. Room Temperature Spin Kondo Effect and Interdiffusion in Co/Cu Non-Local Spin Valves.** *J.D. Watts¹, L. O'Brien^{2,3}, J.S. Jeong³, K.A. Mkhoyan³, P.A. Crowell¹ and C. Leighton³ 1. Physics and Astronomy, University of Minnesota, Minneapolis, MN; 2. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 3. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

9:30

- GE-04. Position Dependence of Spin Scattering in Lateral Spin Valves.** *G. Stefanou¹, J. Batley¹, M. Rosamond², M. Ali¹, G. Burnell¹ and B. Hickey¹ 1. Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom*

9:42

- GE-05. Giant Magnetoresistance in excess of 10 % in metal based lateral spin valves.** *G. Zahnd¹, V. Pham¹, P. Laczkowski¹, W. Savero Torres¹, A. Marty¹, C. Beigne¹, L. Vila¹ and J. Attane¹ 1. Spintec, CEA Grenoble, Grenoble, France*

9:54

- GE-06. Anomalous Nernst Effects and Thermal Spin Injection in Metallic Nonlocal Spin Valves.** *A. Hojem¹, D. Wesenberg¹ and B. Zink¹ 1. University of Denver, Denver, CO*

10:06

- GE-07. Spin Accumulation up to 10 meV in Si Non-local Devices with MgO/Fe Tunnel Contacts.** *A.M. Spiesser¹, H. Saito¹, Y. Fujita², S. Yamada², K. Hamaya², S. Yuasa¹ and R. Jansen¹ 1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 2. Graduate School of Engineering Science, Osaka University, Osaka, Japan*

10:18

- GE-08. Pure spin currents in Ge heterostructures probed by inverse spin-Hall effect.** *F. Bottegoni*¹, *C. Zucchetti*¹, *J. Frigerio*¹, *M. Bollani*^{2,1}, *A. Farina*¹, *M. Finazzi*¹, *G. Isella*¹ and *F. Ciccacci*¹
1. Physics, Politecnico di Milano, Milano, Italy; 2. CNR-IFN, Milano, Italy

10:30

- GE-09. Short Spin Diffusion Length of n^+ -Ge at Low Temperatures.** *Y. Fujita*¹, *M. Yamada*¹, *S. Yamada*¹, *T. Kanashima*¹, *K. Sawano*² and *K. Hamaya*¹ *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Advanced Research Laboratories, Tokyo City University, Tokyo, Japan*

10:42

- GE-10. Spin Absorption Effect at Ferromagnetic Alloy/ n^+ -Ge Interfaces.** *M. Yamada*¹, *Y. Fujita*¹, *S. Yamada*¹, *T. Kanashima*¹, *K. Sawano*² and *K. Hamaya*¹ *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Advanced Research Laboratories, Tokyo City University, Setagaya, Japan*

10:54

- GE-11. Ultrafast and Gigantic Spin Injection in Semiconductors.** *M. Battiatto*¹ and *K. Held*¹ *1. Technical University Vienna, Vienna, Austria*

11:06

- GE-12. Spin transport in the persistent photoconductor $\text{Al}_{0.3}\text{Ga}_{0.7}\text{As:Si}$.** *J. Kim*¹, *K. Kountouriotis*¹, *T. Liu*¹, *J. Lu*², *X. Yu*², *J. Zhao*², *S. von Molnar*¹ and *P. Xiong*¹ *1. Florida State University, Tallahassee, FL; 2. Institute of Semiconductor, Beijing, China*

11:18

- GE-13. Highly Efficient Spin-Current Operation in a Cu Nano-Ring.** *B.A. Murphy*¹, *A.J. Vick*^{1,2}, *J. Kim*¹, *M. Samiepour*² and *A. Hirohata*² *1. Physics, University of York, York, United Kingdom; 2. Electronics, University of York, York, United Kingdom*

Session GF
HIGH FREQUENCY AND MICROWAVE DEVICES II

Peng Li, Chair
Colorado State University, Fort Collins, CO

8:30

- GF-01. Ultrahigh sensitivity spin-torque diode in the absence of external magnetic fields. (Invited)** Z. Zeng¹, B. Fang¹, M. Carpentieri², X. Hao³, H. Jiang³, J. Katine⁴, I. Krivorotov⁵, B. Ocker⁶, J. Langer⁶, K.L. Wang⁷, B. Zhang¹, B. Azzerboni⁸, P. Khalili⁷ and G. Finocchio⁸ *1. Key Laboratory of Nanodevices and Applications, Suzhou Institute of Nano-tech and Nanobionics, CAS, Suzhou, China; 2. Department of Electrical and Information Engineering, Polytechnic of Bari, Bari, Italy; 3. Department of Physics and Astronomy, University of California LA, Los Angeles, CA; 4. HGST Inc., San Jose, CA; 5. Department of Physics and Astronomy, University of California, Irvine, Irvine, CA; 6. Singulus AG, Kahl, Germany; 7. EE, UCLA, Los Angeles, CA; 8. Electronic Engineering, Industrial Chemistry and Engineering, University of Messina, Messina, Italy*

9:06

- GF-02. Vortex Spin-torque Oscillator Stabilized by Phase Locked Loop Using Integrated Circuits.** M. Kreissig¹, R. Lebrun², F. Protze¹, N. Joram¹, K.J. Merazzo³, J. Hem³, L. Vila³, R. Ferreira⁴, M. Cyrille⁵, F. Ellinger¹, V. Cros², U. Ebels³ and P. Bortolotti² *1. Chair for Circuit Design and Network Theory, Technische Universität Dresden, Dresden, Germany; 2. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 3. SPINTEC, Univ. Grenoble Alpes / CEA / CNRS, Grenoble, France; 4. International Iberian Nanotechnology Laboratory, Braga, Portugal; 5. CEA-LETI MINATEC-CAMPUS, Univ. Grenoble Alpes, Grenoble, France*

9:18

- GF-03. Spin transfer driven resonant expulsion of a magnetic vortex core for efficient rf detector.** S. Menshaway^{1,2}, A. Jenkins^{3,2}, P. Bortolotti², V. Cros², J. Kermorvant¹, U. Ebels⁴, M. Cyrille⁴, L. Vila⁴, K.J. Merazzo⁴, R. Ferreira³, P.P. Freitas³ and J. Costa³ *1. Thales Communications & Security, Gennevilliers, France; 2. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 3. International Iberian Nanotechnology Laboratory, Braga, Portugal; 4. Univ. Grenoble Alpes, CEA, CNRS, SPINTEC, Grenoble, France*

9:30

- GF-04. Controlling the Spectrum of a Magneto-Acoustic Oscillator.** A. Litvinenko¹, R. Khymyn², V. Tyberkevych², A.N. Slavin² and S. Grishin¹ *1. Saratov State University, Saratov, Russian Federation; 2. Department of Physics, Oakland University, Rochester, MI*

- GF-05. Frequency Domain Simulation on Surface Acoustic Wave Driven Ferromagnetic Resonance Device.** *X. Li¹, S. Keller² and C.S. Lynch³ 1. Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA; 2. TANMS, UCLA, Los Angeles, CA; 3. Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA*

- GF-06. Reconfigurable Integrated Self-Biased Ferrite Coupled Line Circulators.** *H. Lin¹ and N.X. Sun^{2,1} 1. ECE, Northeastern University, Boston, MA; 2. Northeastern University, Boston, MA*

- GF-07. Tunable RF Band-Pass Filters Based on NEMS Magnetoelectric Resonators.** *H. Lin¹, T. Nan¹, Y. Gao², H. Chen¹, X. Wang¹ and N.X. Sun² 1. ECE, Northeastern University, Boston, MA; 2. Northeastern University, Boston, MA*

- GF-08. On-chip ferrite-core inductor with highest inductance density for the X-band.** *R. Sai¹, N. Bhat², M. Yamaguchi¹ and S.A. Shivashankar² 1. Department of Electrical Engineering, Tohoku University, Sendai, Japan; 2. Centre for Nano Science and Engineering, Indian Institute of Science, Bengaluru, India*

- GF-09. Detection and estimation of magnetization induced resonances in unilateral NMR sensors.** *N. Prabhu Gaunkar¹, I. Bulu², M. Mina¹, Y. Song² and D.C. Jiles¹ 1. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA; 2. NMR Fluids Research Division, Schlumberger-Doll Research, Cambridge, MA*

- GF-10. Frequency response of laser-pulse-heated anomalous Nernst effect.** *S. Yoon^{1,2}, J. Liu¹ and B. McMichael¹ 1. Center for Nanoscale Science and Technology (CNST), National Institute of Standards and Technology (NIST), Gaithersburg, MD; 2. Maryland Nanocenter, University of Maryland, College Park, MD*

- GF-11. Enhanced wave absorbing properties for CoFe@C core-shell nanocomposites derived from Prussian blue nanocubes.** *X. Zeng¹, B. Yang¹, L. Zhu¹, H. Yang¹ and R. Yu¹ 1. Beihang University, Beijing, China*

- GF-12. Absorption properties of epsilon iron oxide nanomagnets in the Terahertz region.** *M. Yoshikiyo¹, A. Namai¹ and S. Ohkoshi¹ 1. The University of Tokyo, Tokyo, Japan*

GF-13. THz-TDS measurement of millimeter wave absorption properties on gallium substituted epsilon-iron oxide.

A. Namai¹, M. Yoshikiyo¹ and S. Ohkoshi¹ 1. The University of Tokyo, Tokyo, Japan

FRIDAY
MORNING
8:30

STUDIO 9-10

Session GG**PROCESSING AND MAGNETIC HARDENING OF RARE-EARTH-TRANSITION METAL COMPOUNDS**

Emma White, Chair
Ames Laboratory of USDOE, Ames, IA

8:30

GG-01. Preparation of submicron-sized $\text{Sm}_2\text{Fe}_{17}\text{N}_3$ powders with high coercivity by reduction-diffusion process. *S. Okada¹, K. Suzuki¹, E. Node¹, K. Takagi¹, K. Ozaki¹ and Y. Enokido² 1. Magnetic Powder Metallurgy Research Center, National Institute of Advanced Industrial Science and Technology, Nagoya, Japan; 2. Materials Development Center, Technology HQ, TDK Corporation, Narita, Japan*

8:42

GG-02. Domain wall pinning within sintered NdFeB magnets studied by Lorentz microscopy and electron holography. *A. Sugawara¹, T. Akashi¹, Y. Takahashi¹ and T. Tanigaki¹ 1. Center for Exploratory Research, Research and Development of Group, Hitachi Ltd., Hatoyama, Saitama, Japan*

8:54

GG-03. Analysis of Magnetization Reversal Mechanism in Nd-Fe-B magnets. *T. Yoshioka¹ and H. Tsuchiura¹ 1. Department of Applied Physics, Tohoku University, Sendai, Japan*

9:06

GG-04. Micromagnetic simulation for initial magnetization process of Nd-Fe-B hot-deformed nanocrystalline permanent magnet. *H. Tsukahara¹, K. Iwano¹, C. Mitsumata³, T. Ishikawa² and K. Ono¹ 1. IMSS, KEK, Tsukuba, Japan; 2. High Energy Accelerator Research Organization, Tsukuba, Japan; 3. NIMS, Tsukuba, Japan*

9:18

GG-05. Texture Formation Mechanism and the Constitutive Equation for Anisotropic Hot-deformed Rare-Earth Permanent Magnets. *M. Zhu¹ and W. Li¹ 1. Central Iron & Steel Research Institute, China., Beijing, China*

9:30

- GG-06. Controlling Microstructure of Rare Earth Permanent Magnet Materials Using High Magnetic Field.** *M. McGuire*¹, O. Rios¹, B.S. Conner¹, W.G. Carter¹, L. Zhou², B. Jensen², K. Sun², M. Huang², C.I. Nlebedim² and M.J. Kramer² *1. Oak Ridge National Laboratory, Oak Ridge, TN; 2. Ames Laboratory, Iowa State University, Ames, IA*

9:42

- GG-07. The High Squareness Sm-Co Magnet Having $H_{c_p}=10.6\text{kOe}$ at 150°C .** *H. Machida*¹, T. Fujiwara¹, R. Kamada², Y. Morimoto² and M. Takezawa² *1. NEC TOKIN Corporation, Sendai, Japan; 2. Faculty of Engineering, Kyusyu Institute of Technology, Kitakyushu, Japan*

9:54

- GG-08. Additive Manufacturing of High Performance NdFeB Bonded Magnets.** *L. Li*¹, A. Tirado¹, C.I. Nlebedim², O. Rios¹, B. Post¹, V. Kunc¹, R. Lowden¹, E. Lara-Curzio¹, R. Fredette³, J. Ormerod³, T.A. Lograsso² and M. Paranthaman¹ *1. Oak Ridge National Laboratory, Oak Ridge, TN; 2. Ames Laboratory, Ames, IA; 3. Magnet Applications, Inc., DuBois, PA*

10:06

- GG-09. Microstructure change of anisotropic d-HDDR Nd-Fe-B powder prepared with several hydrogen disproportionation conditions.** *M. Yamazaki*^{1,2}, T. Horikawa¹, C. Mishima², M. Matsuura¹, N. Tezuka¹ and S. Sugimoto¹ *1. Department of Materials Science, Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Aichi Steel Corporation, Tokai, Japan*

10:18

- GG-10. Magnetization reversal processes of isotropic permanent magnets with various inter-grain exchange interactions.** *H. Tsukahara*¹, K. Iwano¹, C. Mitsumata³, T. Ishikawa⁴ and K. Ono² *1. IMSS, KEK, Tsukuba, Japan; 2. KEK, Tsukuba, Japan; 3. NIMS, Tsukuba, Japan; 4. High Energy Accelerator Research Organization, Tsukuba, Japan*

10:30

- GG-11. Study in recycling of Nd-Fe-B sintered magnet wastes.** *Y. Ming*¹, W. Liu¹ and D. Zhang¹ *1. Beijing University of Technology, Beijing, China*

Session GH
MAGNETIC RECORDING II

Dieter Suess, Chair
Vienna University of Technology, Vienna, Austria

8:30

- GH-01. Dependence of SNR on free layer damping constant.** C. Kaiser¹, Y. Zheng¹, Z. Diao¹, D. Mauri¹, Y. Sun¹, Y. Ding¹ and M. Jiang¹ *1. Western Digital, Fremont, CA*

8:42

- GH-02. Realization of high quality epitaxial current-perpendicular-to-plane giant magnetoresistive pseudo spin-valves on Si(001) wafer using NiAl buffer layer.** J. Chen^{1,2}, J. Liu², Y. Sakuraba², H. Sukegawa², S. Li² and K. Hono^{2,1} *1. Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan; 2. Research Center for Magnetic and Spintronic Materials, National Institute for Material Science, Tsukuba-City, Japan*

8:54

- GH-03. Probe-based Spin Torque Transfer Device for Writing Hard Disks.** J. Hong¹, O. Lee³, S. Salahuddin¹ and J. Bokor² *1. UC Berkeley, Berkeley, CA; 2. EECS Department, University of California, Berkeley, CA; 3. Korea Institute of Science and Technology, Seoul, The Republic of Korea*

9:06

- GH-04. Experimental Determination of Reader Resolution using PRS Patterns and Application to Media Cluster Size Measurement.** B. Valcu¹, X. Wu¹, G. Albuquerque¹, C. Papusoi¹ and M. Desai¹ *1. Western Digital Company, San Jose, CA*

9:18

- GH-05. Magnetization Dynamics of Resonantly Interacting Spin-Torque Oscillator and Recording Media: Readout Method Using Magnetic Resonance.** T. Kanao¹, H. Suto¹, K. Kudo¹, T. Nagasawa¹, M. Yamagishi¹, K. Mizushima¹ and R. Sato¹ *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

9:30

- GH-06. Large Voltage Output In Current-Perpendicular-To-Plane Magnetoresistance Pseudo Spin-Valves Using Mg-Ti-O Spacer Material.** Y. Du^{1,2}, T. Nakatani¹, Y. Sakuraba¹, T. Furubayashi¹, Y. Takahashi¹, T. Sasaki¹ and K. Hono^{1,2} *1. National Institute for Materials Science, Tsukuba, Japan; 2. University of Tsukuba, Tsukuba, Japan*

9:42

- GH-07. HAMR capacity prediction and approaches to optimization.** Y. Jiao¹ and R.H. Victora¹ *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

GH-08. Surface Segregation of Pt in L1₀-FePt Nano-grains.

*H. Sepehri-Amin*¹, *H. Iwama*³, *G. Hrkac*², *T. Shima*³ and *K. Hono*¹ 1. *National Institute for Materials Science (NIMS), Tsukuba, Japan*; 2. *Engineering, Mathematics and Physical Sciences, University of Exeter, Exeter, United Kingdom*; 3. *Faculty of Engineering, Tohoku Gakuin University, Tagajo, Japan*

10:06

GH-09. MgO-C templated seed layer for L1₀-ordered FePt-X granular media. *V. Bollapragada*^{1,2}, *B. Zhu*^{3,2}, *D. Laughlin*^{3,2} and *J. Zhu*^{1,2} 1. *Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*; 2. *Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*; 3. *Materials Science & Engineering, Carnegie Mellon University, Pittsburgh, PA*

10:18

GH-10. Structural and magnetic properties of L1₀ FePt/MgO, W, Pt / L1₀ FePt trilayers. *G. Giannopoulos*¹, *A. Kaidatzis*¹, *V. Psycharis*¹, *D. Niarchos*¹, *J. Garcia-Martin*², *G. Varvaro*³, *A. Testa*³ and *G. Barucca*⁴ 1. *Institute of Nanoscience and Nanotechnology, NCSR Demokritos, Athens, Greece, Athens, Greece*; 2. *IMM-Instituto de Microelectronica de Madrid, CSIC, Tres Cantos, Spain*; 3. *ISM-CNR, Area della Ricerca RM1, P.B. 10-00015, Monterotondo Scalo, Roma, Italy, Rome, Italy*; 4. *Università Politecnica delle Marche, Dipartimento SIMAU, Via Brecce Bianche, Ancona 60131, Italy, Rome, Italy*

10:30

GH-11. High Density Shingled Recording Using Bit Patterned Media and HAMR. *A. Venugopal*¹, *A. Ghoreyshi*¹ and *R.H. Victora*¹ 1. *MINT, Electrical Engineering, University of Minnesota, Minneapolis, MN*

10:42

GH-12. Molecular Dynamics Simulation Study of Plasma Etching L1₀ FePt Recording Media in Embedded Mask Patterning Process. *J. Zhu*¹, *P. Quarterman*¹ and *J. Wang*² 1. *Electrical Engineering, University of Minnesota, Minneapolis, MN*; 2. *Electrical and Computer Engineering, School of Physics & Astronomy, Minneapolis, MN*

10:54

GH-13. Effects of Island Size and Position Fluctuation on Multitrack Reading Scheme in BPMP Systems. *C. Buajong*¹, *C. Warisarn*¹ and *P. Supnithi*² 1. *College of Advanced Manufacturing Innovation, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand*; 2. *Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand*

- GH-14. Utilization of Multiple Read Heads for TMR Prediction and Correction in Bit-Patterned Media Recording.** *W. Busyatras*¹, C. Warisarn¹, P. Supnithi², Y. Okamoto³, Y. Nakamura³, L.M. Myint⁴ and P. Kovintavewat⁵ 1. *College of Advanced Manufacturing Innovation, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand;* 2. *Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand;* 3. *Department of Electrical and Electronic Engineering and Computer Science, Ehime University, Mutsuyama, Japan;* 4. *School of Information Technology, Shinawatra University, Pathumthani, Thailand;* 5. *Data Storage Technology Research Center, Nakhon Pathom Rajabhat University, Nakhon Pathom, Thailand*

- GH-15. Reduced Complexity of Multi-track Joint 2-D Viterbi Detectors for Bit-Patterned Media Recording Channel.** L.M. Myint¹ and C. Warisarn² 1. *School of Information Technology, Shinawatra University, Pathumthani, Thailand;* 2. *College of Advanced Manufacturing Innovation, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand*

FRIDAY
MORNING
8:30

STUDIO 3-4

Session GI INDUCTORS AND TRANSFORMERS II

Xiujuan Jiang, Chair
Pacific Northwest National Lab, Richland, WA

8:30

- GI-01. Analysis and Modeling of Leakage Current Sensor under Pulsating Direct Current.** *K. Li*¹, Y. Dai¹, Y. Wang¹, F. Niu¹, S. Huang¹ and E. Li¹ 1. *Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, Tianjin, China*

8:42

- GI-02. An Easy Method for Vessel Detection and Coil Powering in All-Surface Inductive Heating Systems.** *V. Kilic*¹, E. Unal¹ and H. Demir^{1,2} 1. *Department of Electrical and Electronics Engineering, Department of Physics, UNAM-Institute of Materials Science and Nanotechnology, Bilkent University, Ankara, Turkey;* 2. *School of Electrical and Electronic Engineering, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore*

8:54

- GI-03. Inductance Optimization of Miniature Broadband Transformers with Racetrack Shaped Ferrite Cores for Ethernet Applications.** *D. Bowen*¹, C. krafft¹ and I. Mayergoyz² 1. *Laboratory for Physical Sciences, College Park, MD;* 2. *Electrical and Computer Engineering, University of Maryland College Park, College Park, MD*

9:06

- GI-04. Ferroresonance Modeling and Simulations by Using Extended Inverse Jiles-Atherton Hysteresis Theory.** *M. Zou¹*
1. School of Electrical Engineering, Chongqing University, Chongqing, China

9:18

- GI-05. Sensor transfer error compensation method for pulsating DC leakage current.** *K. Li¹, Y. Dai¹, F. Niu¹, Y. Wang¹, S. Huang¹ and E. Li¹* *1. Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, Tianjin, China*

9:30

- GI-06. A Novel NiZn ferrite Integrated Magnetic Solenoid Inductor with a High Quality Factor at 0.7 – 6 GHz.** *X. Wang¹, H. Chen¹, X. Shi², Y. Gao², H. Lin¹ and N.X. Sun^{3,2}* *1. ECE, Northeastern University, Boston, MA; 2. Winchester Technologies LLC, Winchester, MA; 3. Northeastern University, Boston, MA*

9:42

- GI-07. Significant Tuning of Inductance Values of Highly Scaled on-chip Inductors Incorporating Co-Zr-Ta-B Films Through Electric Current Biasing.** *H. Wu¹, M. Khdour¹ and H. Yu¹* *1. Arizona State University, Tempe, AZ*

9:54

- GI-08. An Analytical Model for Calculating the AC Resistance of Litz-Wire.** *X. Liu¹, T. Wang², Y. Wang³, I. Md. Rabiul⁴, Y. Guo⁵ and J. Zhu⁵* *1. Ji'nan Power Supply Company, Ji'nan, China; 2. Shandong Electric Power Transmission & Transformation Engineering Company, Ji'nan, China; 3. Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Tianjin, China; 4. The University of Queensland, Brisbane, QLD, Australia; 5. University of Technology Sydney, Sydney, NSW, Australia*

10:06

- GI-09. Voltage impulse induced non-volatile control of inductance in electrically tunable magnetoelectric inductors.** *B. Peng¹, C. Zhang¹, Y. Yan¹ and M. Liu¹* *1. Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education & International Center for Dielectric Research, Xi'an Jiaotong University, Xi'an, China*

10:18

- GI-10. Homogenization of Mixed Magnetic Material Cores.** *S. Saha¹ and N. Fernando¹* *1. School of Engineering, RMIT University, Melbourne, VIC, Australia*

10:30

- GI-11. Eddy Current Loss Evaluation of Magnetic Powder Core Based on Electric and Magnetic Networks.** *S. Konda¹, Y. Yoshida² and O. Ichinokura¹* *1. Tohoku University, Sendai, Japan; 2. Akita University, Akita, Japan*

Session GP
SINGLE-PHASE MULTIFERROICS AND
MAGNETOELECTRICS
(Poster Session)

Ralph Skomski, Co-Chair
University of Nebraska, Lincoln, NE

Arti Kashyap, Co-Chair
IIT Mandi, Himachal Pradesh, India

- GP-01. Growth and characterization of metal-organic frameworks**[(CH₃)₂NH₂]Mn(HCOO)₃ **single crystal.** S. Ji¹, Z. Zhang¹, S. Wang¹ and P. Li¹ *1. Department of Physics, Center for Optoelectronics Materials and Devices, Zhejiang Sci-Tech University, Hangzhou, China*
- GP-02. Enhanced ferromagnetism in BiFeO₃ powders by rapid combustion of graphite powders.** Q. Xu^{1,2}, C. Hu¹, J. Wang^{2,3} and J. Du^{2,3} *1. Department of Physics, Southeast University, Nanjing, China; 2. National Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China; 3. Department of Physics, Nanjing University, Nanjing, China*
- GP-03. The Magnetic Properties of Multiferroic BaCoF₄.** S. Zhou¹, C. Dai¹, Q. Xu¹ and J. Du² *1. Department of Physics, Southeast University, Nanjing, China; 2. Department of Physics, Nanjing University, Nanjing, China*
- GP-04. The Wasp-Waisted Hysteresis Loop and Exchange Bias in Multiferroic BaNiF₄.** S. Zhou¹, J. Wang², Q. Xu¹ and J. Du² *1. Department of Physics, Southeast University, Nanjing, China; 2. Department of Physics, Nanjing University, Nanjing, China*
- GP-05. Strain driven ferroic properties in the mixed-phase and rhombohedral-phase BiFeO₃ thin films.** F. Shao¹, J. Miao¹, K. Meng¹, Y. Wu¹, X. Xu¹, J.K. Chen¹ and Y. Jiang¹ *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China*
- GP-06. Dramatic Variation of the Multiferroic Properties in Sr Doped Ca_{1-x}Sr_xMn₇O₁₂.** P. Jain¹, J. Saha², L.C. Gupta³, S. Patnaik², A.K. Ganguli^{3,4} and R. Chatterjee¹ *1. Physics, Indian Institute of Technology, New Delhi, India; 2. School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India; 3. Chemistry, Indian Institute of Technology, New Delhi, India; 4. Institute of Nano Science and Technology, Habitat Centre, Mohali, India*
- GP-07. Studies on structural, optical and magnetic properties of multiferroic KBiFe₂O₅.** Z. Wang¹, M. Zhang¹, S. Lin¹, Y. Wang¹, Y. Pan¹, W. Liu¹ and H. Yan¹ *1. College of Material Science and Engineering, Beijing University of Technology, Beijing, China*

- GP-08. The annealing effects of multiferroic DyMn₂O₅ nanorods.** Y. Tung¹, C. Yang¹, Y. Chen², T. Hsu¹ and C. Kao¹
1. Department of Physics, Chung Yuan Christian University, Chung-Li, Taiwan; 2. Academia Sinica, New Taipei, Taiwan
- GP-09. Effect of size on multiferroic SmMn₂O₅ nanorods.** T. Hsu¹, C. Yang¹, C. Chu¹, T. Tsai¹, Y. Tong¹ and K. Lin² *1. Physics, Chung Yuan Christian University, Taoyuan City, Taiwan; 2. Department of Chem. Eng. and Mat. Sci., Yuan Ze University, Taoyuan, Taiwan*
- GP-10. Local bonds anomalies and dynamics in bismuth ferrite.** J. Lin¹, J.S. Gardner², C. Wang², G. Deng³, C. Wu² and J. Lin⁴
1. National Synchrotron Radiation Research Center (NSRRC), Hsinchu, Taiwan; 2. Neutron Group, NSRRC, Hsinchu, Taiwan; 3. ANSTO, Sydney, NSW, Australia; 4. CCMS, NTU, Taipei, Taiwan
- GP-11. Magnetic Properties of Sputtered and Pulsed Laser BiFeO₃ Thin Films Deposited Over Si Substrates.** G.A. Gomez¹, L. de Oliveira², A. Peyton-Madrigal³, D. Souza⁴, A. Mello¹, L.B. Steren⁵ and J. Sinnecker¹ *1. Departamento de Físicas Experimental de Baixas Energias, Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil; 2. Federal University of Rio de Janeiro, Rio de Janeiro, Brazil; 3. Havana University, La Habana, Cuba; 4. Fluminense Federal University of Rio de Janeiro, Rio de Janeiro, Brazil; 5. Centro Atómico Constituyentes, Buenos Aires, Argentina*
- GP-12. Effects of Zn-Ti substitution on the magnetoelectric coupling of Co₂Z hexaferrites at room temperature.** X. Wang¹, K. Song¹, H. Luo¹, F. Chen¹ and R. Gong¹ *1. School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China*
- GP-13. Microscopic evidence of magnetic and structure phase transition in multiferroic spinel FeV₂O₄.** B. Myoung¹, J. Lim¹, T. Kouh¹ and C. Kim¹ *1. Kookmin University, Seoul, The Republic of Korea*
- GP-14. Multiferroicity in orthorhombic epitaxial HoMnO₃ thin films.** T. Han¹ and Y. Liu¹ *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*
- GP-15. Ab-initio Study of Magnetoelectric ε-Fe₂O₃.** I. Ahamed¹, R. Choudhary¹, R. Skomski^{2,3} and A. Kashyap¹ *1. School of Basic Sciences (Physics), Indian Institute of Technology, Mandi, Mandi, India; 2. Department of Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE; 3. Nebraska Center for Materials and Nanoscience, University of Nebraska, Nebraska Lincoln, NE*
- GP-16. High-Temperature Magnetic Properties of Epsilon-Fe₂O₃.** M. Gich¹, J. Nogues^{2,3}, A. Roig¹, F. Fauth⁴ and J. Garcia-Muñoz¹ *1. Institut de Ciència de Materials de Barcelona -CSIC, Bellaterra, Spain; 2. ICN2- Institut Catala de Nanociencia i Nanotecnologia, Bellaterra, Spain; 3. Institut Català de Recerca i Estudis Avançats (ICREA), E-08010 Barcelona, Spain; 4. ALBA Synchrotron Light Facility, 08290 Cerdanyola del Vallès, Spain*

- GP-17. Systematic control of magnetoelectric coupling with cobalt substitution in M-type hexaferrite thin film.** *H. Izadkhah*^{1,2}, *S. Zare*^{1,2}, *S. Somu*³, *F. Lombardi*¹ and *C. Vittoria*^{1,2}
1. Electrical and Computer Engineering Department, Northeastern University, Boston, MA; 2. Microwave Material Laboratory, Boston, MA; 3. Kostas Micro and Nano Fabrication Facility, Northeastern University, Boston, MA

FRIDAY
 MORNING
 9:30

GRAND BALLROOM

Session GQ
ANISOTROPY EFFECTS IN THIN FILMS II
(Poster Session)

Roopali Kukreja, Chair
 University of California, Davis, CA

- GQ-01. Ferromagnetic Anisotropic Behavior in Room Temperature of Mn Doped β -Ga₂O₃ Epitaxial Thin Film.** *D. Guo*^{1,2}, *P. Li*^{1,2} and *W. Tang*² *1. Department of Physics, Center for Optoelectronics Materials and Devices, Zhejiang Sci-Tech University, Hangzhou, China; 2. Laboratory of Optoelectronics Materials, School of Science, Beijing University of Posts and Telecommunications, Beijing 100876, China*
- GQ-02. Tuning the magnetism of Ni₈₀Fe₂₀/La_{0.7}Sr_{0.3}MnO₃/SrTiO₃(001) thin films with low-energy Ar ion-beam bombardment on the LSMO surface.** *P. Manna*¹, *I. Bergenti*², *C. Lin*³, *P. Graziosi*², *A. Ruotolo*⁴, *J. van Lierop*¹, *K. Lin*³ and *V.A. Dediu*² *1. Physics & Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. ISMN-CNR, Bologna, Italy; 3. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan; 4. City University of Hong Kong, Kowloon, Hong Kong*
- GQ-03. TEM and XMCD studies of ultrathin CoFeB amorphous films on GaAs(100).** *Y. Yan*¹, *C. Lu*¹, *H. Tu*², *X. Lu*³, *W. Liu*¹, *J. Wang*¹, *I. Will*¹, *B. Kuerbanjiang*⁴, *V. Lazarov*³, *J. Wu*³, *J. Du*² and *Y. Xu*⁴ *1. Electronics, University of York, York, United Kingdom; 2. Physics, Nanjing University, Nanjing, China; 3. Physics, University of York, York, United Kingdom; 4. University of York, York, United Kingdom*
- GQ-04. Tuning perpendicular magnetic anisotropy in CoFeB-MgO ultra-thin films using light Ion Irradiation.** *S. Manna*¹, *L.H. Diez*⁴, *B. Ocker*², *J. Langer*², *E.E. Fullerton*³ and *D. Ravelosona*⁴ *1. Nanoengineering, University of California San Diego, La Jolla, CA; 2. Singulus AG, Kahl, Germany; 3. UC San Diego 0401, La Jolla, CA; 4. Centre de Nanosciences et de Nanotechnologies, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France*

- GQ-05. Tuning Perpendicular Magnetic Anisotropy At Permalloy/Cu Interfaces Through Interface Composition.** *M. Caminalé^{1,2}, A. Hallal¹, S. Auffret¹, U. Ebels³, M. Chshiev⁴ and W. Bailey^{5,2}* 1. SPINTEC, Univ. Grenoble Alpes / CEA / CNRS, Grenoble, France; 2. Fondation Nanosciences, Grenoble, France; 3. Univ. Grenoble Alpes, CEA, CNRS, SPINTEC, Daejeon, The Republic of Korea; 4. UMR 8191 CEA/CNRS/UJF, SPINTEC, Grenoble, France; 5. Applied Physics, Columbia Univeristy, New York, NY
- GQ-06. Enhancement of Perpendicular Anisotropy in BiFeO₃/CoPt Bilayer Structure.** *Y. Wang¹, H. An³, T. Harumoto¹, Y. Nakamura¹, K. Nakada⁴, S. Nakagawa² and J. Shi¹* 1. School of Materials and Chemical Engineering, Tokyo Institute of Technology, Tokyo, Japan; 2. Engineering School, Tokyo Institute of Technology, Tokyo, Japan; 3. Department of Applied Physics and Physico-Informatics, Keio University, Tokyo, Japan; 4. Technical Center, TDK Corporation, Tokyo, Japan
- GQ-07. Spin interaction induced in-plane magnetic anisotropy of soft magnetic FePt layer in FePt/NiO/FePt trilayer structure.** *T. Gao¹, T. Harumoto¹, Y. Nakamura¹ and J. Shi¹* 1. School of Materials and Chemical Technology, Tokyo Institute of Technology, Tokyo, Japan
- GQ-08. High post-annealing stability in perpendicularly magnetized stacks of FeZr/CoFeB/MgO.** *D. Son¹, J. An², S. Lim^{1,2} and S. Lee¹* 1. Department of Materials Science and Engineering, Korea University, Seoul 02841, The Republic of Korea; 2. Department of Semiconductor System Engineering, Korea University, Seoul 02841, The Republic of Korea
- GQ-09. Magnetic Properties in CoFeB/CoFeBV Hybrid Perpendicularly Magnetized Systems.** *D. Kim¹ and E.E. Fullerton¹* 1. Center for Memory and Recording Research, University of California San Diego, San Diego, CA
- GQ-10. Thickness and temperature driven spin reorientation transition analyzed by high-order energy terms in ultrathin cobalt films.** *Q. Yang¹, B. Peng¹, X. Wang², W. Ren¹, Z. Ye^{1,3}, N.X. Sun² and M. Liu¹* 1. School of Electrical and Information Engineering, Xian Jiaotong University, Xian, China; 2. ECE, Northeastern University, Boston, MA; 3. Department of Chemistry and 4D LABS, Simon Fraser University, Burnaby, BC, Canada
- GQ-11. The effect of annealing temperature on the magnetic anisotropy in Co ultrathin film on MgO(001) substrate.** *Y. Zhang¹, W. He¹, X. Zhang¹ and Z. Cheng¹* 1. Chinese Academy of Sciences, Beijing, China
- GQ-12. Origin of perpendicular magnetic anisotropy in epitaxial Pd/Co/Pd trilayers.** *A. Davydenko¹, A.G. Kozlov², M.E. Stebliy³, A. Ognev² and L. Chebotkevich²* 1. Far Eastern Federal University, Vladivostok, Russian Federation; 2. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation; 3. Thin Film Technology, FEFU, Vladivostok, Russian Federation

GQ-13. Interfacial Perpendicular Magnetic Anisotropy of Oxide/CoFeB/Ta Stack with a Ferroelectric as Oxide Layer.

W. Lin¹, H. Yoong¹, J. Xiao¹, R. Guo¹, H. Wang¹ and J. Chen¹

1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore

GQ-14. Tunable anisotropy field and millimeter wave loss of highly oriented scandium substituted barium hexaferrite thin films for millimeter wave applications.

D. Chen^{1,2}, Y. Li³, G. Wang¹ and H. Zhang⁴

1. College of Materials and Chemical Engineering, Hainan University, Haikou, China; 2. School of Microelectronics and Solid-State Electronics, University of Electronic Science and Technology of China, Chengdu, China; 3. State Key Lab of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 4. University of Electronic Science and Technology of China, Chengdu, China

GQ-15. Magnetic properties of composition modulated Mn_xGa epitaxial thin films.

Y. Takahashi¹, T. Shima¹ and M. Doi¹

1. Faculty of Engineering, Tohoku Gakuin University, Tagajo, Japan

FRIDAY
MORNING
9:30

GRAND BALLROOM

**Session GR
EXCHANGE BIAS I
(Poster Session)**

Denys Makarov, Chair
IFW Dresden, Dresden, Germany

GR-01. Crystal Structure Manipulation of the Exchange Bias in an Antiferromagnet Film.

W. Yuan¹, T. Su¹, Q. Song¹, W. Xing¹, Y. Chen¹, T. Wang¹, Z. Zhang², X. Ma², P. Gao², J. Shi³ and W. Han¹

1. International Center for Quantum Materials, Peking University, Beijing, China; 2. Electron Microscopy Laboratory, School of Physics, Peking University, Beijing, China; 3. Department of Physics and Astronomy, University of California Riverside, Riverside, CA

GR-02. Exchange bias of Ir-doped Fe₂O₃ inserted Cr₂O₃/Co thin film system.

S. Ye¹, S. Pati¹, Y. Shiokawa¹, M. Al-Mahdawi¹, T. Nozaki¹ and M. Sahashi^{1,2}

1. Department of Electronic Engineering, Tohoku University, Sendai, Japan; 2. ImPACT Program, Japan Science and Technology Agency, Tokyo, Japan

GR-03. Anomalous Zero-Field-Cooled Magnetization and Exchange Bias in Nanostructured (Mn,Zn,Fe)₃O₄ Films.

U.S. Alaani^{1,2}, G. Sreenivasulu³, K. Yu⁴, P. Shafer⁵, E. Arenholz⁵ and Y. Suzuki^{1,6}

1. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA; 2. Department of Materials Science and Engineering, Stanford University, Stanford, CA; 3. Department of Physics, Oakland University, Rochester, MI; 4. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 5. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 6. Department of Physics and Applied Physics, Stanford University, Stanford, CA

- GR-04. Magnetic Profile of the NiFe/IrMn/Co Exchange Biased Trilayer.** *V.P. Nascimento*¹, J. Tonnerre^{2,3}, F. Fetta^{2,3}, E. Mossang^{2,3}, E.C. Passamani¹, H.D. Leite¹, P. Ohresser⁴, A. Krohling¹ and R. Magalhães-Paniago⁵ *1. Física, Universidade Federal do Espírito Santo, Vitória, Brazil; 2. Institut Néel, CNRS, Grenoble, France; 3. Université Grenoble Alpes, Grenoble, France; 4. Synchrotron SOLEIL, Paris, France; 5. Física, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil*
- GR-05. High blocking temperature of perpendicular exchange bias in Al-doped Cr₂O₃/Co exchange coupled thin film system.** *T. Nozaki*¹, Y. Shiokawa¹, S. Pati¹, S. Ye¹, M. Al-Mahdawi¹ and M. Sahashi^{1,2} *1. Department of Electronic Engineering, Tohoku University, Sendai, Japan; 2. IMPACT Program, Japan Science and Technology Agency, Tokyo, Japan*
- GR-06. Uncompensated Magnetization in FeMn Measured with Polarized Neutron Reflectometry.** *I.V. Roshchin*^{1,2}, P.N. Lapa^{2,3}, A.G. Glavic^{4,5}, H. Ambaye⁵, V. Lauter⁵, T.M. Eggers⁶, C.W. Miller^{7,6} and K. Belashchenko⁸ *1. Department of Materials Science and Engineering, Texas A&M University, College Station, TX; 2. Department of Physics and Astronomy, Texas A&M University, College Station, TX; 3. Material Science, Argonne National Laboratory, College Station, TX; 4. Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institut, Villigen PSI, Switzerland; 5. Neutron Scattering Science Division, Oak Ridge National Laboratory, Oak Ridge, TN; 6. Department of Physics, University of South Florida, Tampa, FL; 7. Materials Science, Rochester Institute of Technology, Rochester, NY; 8. Department of Physics and Astronomy, University of Nebraska-Lincoln, Lincoln, NE*
- GR-07. Magnetic and transport properties of MnN/Co₃FeN epitaxial bilayers.** *T. Yoshida*¹, H. Ando¹, T. Hajiri¹ and H. Asano¹ *1. Crystalline Materials Science, Nagoya University, Nagoya, Japan*
- GR-08. Current induced modulation of Magnetic Anisotropy in Antiferromagnetic-Ferromagnetic-Heavy Metal structure.** *C. Engel*¹, S. Goolaup¹ and W. Lew¹ *1. Nanyang Technological University, Singapore, Singapore*
- GR-09. Magnetic Properties and Exchange Bias in MnN/Fe Bilayers.** *R. Yanes*¹, E. Simon², L. Szunyogh² and U. Nowak¹ *1. Physics Department, University of Konstanz, Konstanz, Germany; 2. Department of Theoretical Physics, Budapest University of Technology and Economics, Budapest, Hungary*
- GR-10. Magnetization Reversal in Ferromagnetic Wires patterned with Antiferromagnetic Gratings.** *S. Redjai Sani*¹, F. Liu¹ and C.A. Ross¹ *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA*

Session GS
EXCHANGE BIAS II
(Poster Session)

Fang-Yuh Lo, Chair
National Taiwan Normal University, Taipei, Taiwan

- GS-01. Exchange bias in spin-glass/ferromagnet (SG/FM) bilayers.** Y. Hu^{1,2}, X. Li¹, X. Chi¹, W. Rui³ and J. Du³ 1. College of Sciences, Northeastern University, Shenyang, China; 2. MOE Key Laboratory for Anisotropy and Texture of Materials, Northeastern University, Shenyang, China; 3. National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, China
- GS-02. Control of Exchange Anisotropy in AFM/FM Bilayers by Piezoelectric Strains.** H. Kim¹ and J. Hong^{1,2} 1. Emerging Materials Science, DGIST (Daegu Gyeongbuk Inst. of Sci. and Tech.), Daegu, The Republic of Korea; 2. Research Center for Emerging Materials, DGIST (Daegu Gyeongbuk Inst. of Sci. and Tech.), Daegu, The Republic of Korea
- GS-03. Perpendicular Exchange Bias in IrMn/Co-Pt Multilayers.** K. Elphick¹, G. Vallejo-Fernandez¹, T.J. Klemmer², J. Thiele² and K. O'Grady¹ 1. University of York, York, United Kingdom; 2. Seagate Media Research, Fremont, CA
- GS-04. Coercivity and Spin Freezing Effects in IrMn Based Exchange Bias Systems.** R.D. Carpenter¹, J. Gompertz², S.S. Hassan¹, M.W. Ormston¹, S.A. Cavill², G. Vallejo-Fernandez² and K. O'Grady² 1. Seagate Technology NI, Derry, United Kingdom; 2. University of York, York, United Kingdom
- GS-05. Antiferromagnetic Ru₂MnGe Heusler compound as a pinning layer for exchange bias devices.** J. Balluff¹, M. Meinert¹, J. Schmalhorst¹, E. Arenholz² and G. Reiss¹ 1. Center for Spinelectronic Materials and Devices, Bielefeld University, Bielefeld, Germany; 2. LBNL, Berkeley, CA
- GS-06. Brillouin Light Scattering study of the rotatable magnetic anisotropy in exchange biased bilayers of Ni₈₁Fe₁₉(10nm)/Ir₂₀Mn₈₀.** R. Rodriguez¹, F. Estrada^{2,3}, A. Oliveira⁴, O. Alves², A. Azevedo² and S.M. Rezende² 1. Instituto de Física, Pontificia Universidad Católica de Chile, Santiago, Chile; 2. Departamento de Física, Universidade Federal de Pernambuco, Recife, Brazil; 3. Biologia, Universidad Michoacana de San Nicolas de Hidalgo, Morelia, Mexico; 4. Departamento de Física, Universidade Federal de Rio Grande do Norte, Natal, Brazil
- GS-07. Ferromagnetic Resonance Study Of The Anisotropic Relaxation In IrMn/CoFe Exchange Bias System.** J. Beik Mohammadi¹, J.M. Jones¹, B. Khodadadi¹, T. Mewes¹, C.K. Mewes¹, C. Kaiser² and S. Paul¹ 1. Physics/MINT, The University of Alabama, Tuscaloosa, AL; 2. Western Digital, Fremont, CA

- GS-08. Magnetization reversal process of Co₃FeN/MnN exchange-coupled bilayers studied by magneto-optical Kerr effect.** T. Hajiri¹, T. Yoshida¹, S. Jaiswal², M. Filianina², B. Borie², H. Ando¹, H. Asano¹, H. Zabel² and M. Kläui² *1. Crystalline Materials Science, Nagoya University, Nagoya, Japan; 2. Institute of Physics, Johannes Gutenberg-Universität Mainz, Mainz, Germany*
- GS-09. Large exchange bias in Co₄₀Fe₄₀B₂₀/MnN bilayers for spintronic applications.** D. Zhang¹, K. Schliep², P. Quarterman¹, J. Liu¹, J. Chen¹ and J. Wang¹ *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*
- GS-10. Development of Exchange Bias in Bulk Nanocomposite FeMn.** I. McDonald¹, L.G. Marshall¹, D. Heiman² and L.H. Lewis¹ *1. Chemical Engineering, Northeastern University, Boston, MA; 2. Physics, Northeastern University, Boston, MA*
- GS-11. Modeling of GMI effect in exchange biased NiFe Ferromagnetic thin films.** C. Garcia¹, C.A. Ross³ and U. Kilic² *1. Physics, UTFSM-Universidad Técnica Federico Santa María, Valparaíso, Chile; 2. Electrical Engineering Department, Nebraska University at Lincoln, Lincoln, NE; 3. Materials Science, Massachusetts Institute of Technology, Cambridge, MA*

FRIDAY
MORNING
9:30

GRAND BALLROOM

Session GT MAGNONICS IV (Poster Session)

Sebastian Wintz, Chair
Paul Scherrer Institut, Villigen PSI, Switzerland

- GT-01. Design of a CMOS Integrated On-Chip Oscilloscope for Spin Wave Characterization.** E. Egel¹, C. Meier¹, G. Csaba² and S. Breitkreutz-v. Gamm¹ *1. Institute for Technical Electronics, Technische Universität München, Munich, Germany; 2. University of Notre Dame, Notre Dame, IN*
- GT-02. Propagation of collective spin wave in transversely magnetized bi-component nanowire array.** R. Silvani¹, S. Tacchi¹, M. Madami², G. Carlotti⁵, A. Adeyeye⁴ and G. Gubbiotti³ *1. CNR-Istituto Officina dei Materiali, Perugia, Italy; 2. Dipartimento di Fisica e Geologia, Università di Perugia, Perugia, Italy; 3. IOM-CNR, Perugia, Italy; 4. Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore; 5. Dipartimento di Fisica, University of Perugia, Perugia, Italy*
- GT-03. Standing spin wave resonant properties of spin-twist structure in exchange coupled composite films.** X. Ya¹, T. Tanaka¹ and K. Matsuyama¹ *1. Kyushu University, Fukuoka, Japan*

- GT-04. The Boltzmann Equation for Magnon Transport with Three Magnons Scattering.** *T. Liu*¹, *J. Ren*¹, *Y. Liu*¹ and *J. Zhang*¹
1. School of Physics, Tongji University, Shanghai, China
- GT-05. Electric Field Manipulation of Spin Wave Propagation.** *S. Wang*^{1,2}, *X. Guan*^{1,2}, *X. Cheng*^{1,2}, *C. Lian*^{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, China; 2. Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology, Wuhan, China
- GT-06. Frequency- and Amplitude Modulation of Spin Wave Signals emitted from Topological Spin Textures.** *S. Wintz*^{1,2}, *S. Finizio*¹, *K. Schultheiss*², *V. Liersch*², *F. Kilibarda*², *T. Warnatz*², *A.K. Suszka*^{1,3}, *P. Warnicke*¹, *P. Wohlhüter*^{1,3}, *A. Erbe*², *J. Lindner*², *J. Fassbender*^{2,4} and *J. Raabe*¹ 1. Paul Scherrer Institut, Villigen PSI, Switzerland; 2. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 3. ETH Zürich, Zurich, Switzerland; 4. Technische Universität Dresden, Dresden, Germany
- GT-07. Tunable Spin Wave Dynamics In Two-Dimensional Quasi-Magnonic Crystals.** *S. Choudhury*¹, *S. Saha*¹, *Y. Otani*^{2,3} and *A. Barman*¹ 1. Condensed Matter Physics and Material Sciences, S N Bose National Centre For Basic Sciences, Kolkata, India; 2. ISSP, University of Tokyo, Kashiwa, Japan; 3. RIKEN-CEMS, Hirosawa, Japan
- GT-08. Towards Strain-Mediated Control of Spin Waves for Logic.** *A. Barra*¹ and *G. Carman*¹ 1. Mechanical Engineering, University of California, Los Angeles, Los Angeles, CA
- GT-09. High-efficiency control of spin-wave propagation in ultra-thin Yttrium Iron Garnet by the spin-orbit torque.** *M. Evelt*¹, *V.E. Demidov*¹, *S. Demokritov*¹, *J.L. Prieto*³, *M. Muñoz*⁵, *J. Youssef*⁶, *V. Naletov*⁷, *G. de Loubens*⁴, *O. Klein*⁸, *M. Collet*², *K. Garcia-Hernandez*², *P. Bortolotti*², *V. Cros*² and *A. Anane*²
1. University of Münster, Münster, Germany; 2. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 3. Física Aplicada, Universidad Politécnica de Madrid, Madrid, Spain; 4. Service de Physique de l'Etat Condensé, CEA Saclay, Gif-sur-Yvette, France; 5. Instituto de Microelectrónica de Madrid, Madrid, Spain; 6. Université de Bretagne Occidentale, Brest, France; 7. Kazan Federal University, Kazan, Russian Federation; 8. INAC-SPINTEC, Grenoble, France
- GT-10. Laser-pulse-induced spin-wave propagation modified by spin-orbit torques.** *D. Lee*¹, *S. Lee*¹, *G. Go*¹, *S. Mizukami*² and *K. Lee*¹ 1. Korea University, Seoul, The Republic of Korea; 2. WPI-AIMR, Tohoku University, Sendai, Japan
- GT-11. Spin Wave and Fluctuation Effect in Monoaxial Chiral Magnet.** *Y. Masaki*¹ and *R. Stamps*² 1. The University of Tokyo, Tokyo, Japan; 2. University of Glasgow, Glasgow, United Kingdom
- GT-12. Spin wave generator via oscillating vortex core in NiFe disk array.** *L. Chang*¹, *M. Kao*¹, *J. Liang*² and *S. Lee*¹ 1. Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Department of Physics, Fu Jen Catholic University, New Taipei, Taiwan

GT-13. Long-range propagation of magnetostatic surface spin waves in ordered FeRh epitaxial thin films. *T. Usami¹, I. Suzuki¹, M. Itoh¹ and T. Taniyama¹* *1. Laboratory for Materials and Structures, Tokyo Institute of Technology, Yokohama, Japan*

GT-14. Unidirectional short-wavelength spin wave propagation using one-dimensional nanogratings. *J. Chen¹, H. Chang², C. Liu³, T. Liu², T. Stücker¹, Z. He¹, W. Zhao¹, Z. Liao³, D. Yu³, M. Wu² and H. Yu¹* *1. Fert Beijing Research Institute, School of Electronic and Information Engineering, Beihang University, Beijing, China; 2. Department of Physics, Colorado State University, Fort Collins, CO; 3. State Key Laboratory for Mesoscopic Physics and Electron Microscopy Laboratory, School of Physics, Peking University, Beijing, China*

GT-15. Withdrawn

FRIDAY
MORNING
9:30

GRAND BALLROOM

Session GU
DMI AND SPIN-ORBIT TORQUES
(Poster Session)

Felix Buettner, Chair
Massachusetts Institute of Technology, Cambridge, MA

GU-01. Large enhancement of spin-orbit torques in MnGa/Ta films with inserting ferromagnetic layers. *K. Meng¹, J. Miao¹, X. Xu¹ and Y. Jiang¹* *1. School of Materials Science and Engineering, University of Science & Technology Beijing, Beijing, China*

GU-02. Initialization-free multilevel states driven by spin-orbit torque switching. *C. Yang¹, K. Huang¹, D. Wang¹, M. Tsai¹, H. Lin² and C. Lai¹* *1. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Physics, National Tsing Hua University, Hsinchu, Taiwan*

GU-03. Large interfacial spin-orbit torque in Fe|MgO|V tunnel junctions. *S. Miwa^{1,2}, J. Fujimoto³, P. Risius¹, M. Goto^{1,2} and Y. Suzuki^{1,2}* *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Center for Spintronics Research Network, Osaka University, Toyonaka, Japan; 3. Institute for Chemical Research, Kyoto University, Uji, Japan*

GU-04. Temperature Dependence Study of Spin Orbit Torque in Cu-Au Alloy. *Y. Wen¹, X. Zhang¹, A. Manchon¹, J. Xiao², P. Li¹ and Q. Zhang¹* *1. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 2. University of Delaware, Newark, DE*

- GU-05. Effect of the interlayer exchange torque on the domain wall dynamics in perpendicularly magnetized synthetic antiferromagnetic nanowires.** *S. Krishnia*¹, *P. Sethi*¹, *W. Gan*¹, *F.N. Kholid*¹, *I. Purnama*¹, *R. Maddu*¹, *T. Herng*², *J. Ding*² and *W. Lew*¹ *1. Division of Physics and Applied Physics, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, Singapore; 2. Materials Science & Engineering, National University of Singapore, Singapore, Singapore*
- GU-06. Doppler Shift Picture of the Dzyaloshinskii-Moriya Interaction.** *T. Kikuchi*¹, *T. Koretsune*^{1,2}, *R. Arita*¹ and *G. Tatara*¹ *1. Center for Emergent Matter Science, RIKEN, Saitama, Japan; 2. JST, PRESTO, Saitama, Japan*
- GU-07. Enhancement of Brillouin light scattering signal for Dzyaloshinskii-Moriya Interaction with anti-reflection layer.** *J. Jung*¹, *N. Kim*¹, *K. Park*¹, *H. Hwang*¹, *J. Kim*¹ and *C. You*¹ *1. Department of Emerging Materials Science, Daegu Gyeongbuk Institute of Science & Technology (DGIST), Daegu, The Republic of Korea*
- GU-08. Pt thickness dependence of interfacial Dzyaloshinskii-Moriya interaction energy and role of Cu insertion layer at the Pt/Co and Co/AlO_x interfaces.** *N. Kim*¹, *J. Jung*¹, *J. Cho*², *D. Han*³, *Y. Yin*³, *J. Kim*³, *H. Swagten*³, *K. Lee*⁴, *M. Jung*⁵ and *C. You*¹ *1. Emerging Materials Science, Daegu Gyeongbuk Institute of Science & Technology (DGIST), Daegu, The Republic of Korea; 2. Physics, Inha University, Incheon, The Republic of Korea; 3. Department of Applied Physics, Eindhoven University of Technology, Eindhoven, Netherlands; 4. Johannes Gutenberg University Mainz, Mainz, Germany; 5. Department of Physics, Sogang University, Seoul, The Republic of Korea*
- GU-09. Evaluation of the additive interfacial Dzyaloshinskii-Moriya interaction by field-driven domain-walls annihilation measurement in perpendicularly magnetized Pt/CoFeSiB/Ru thin films.** *A.S. Samardak*¹, *A.G. Kolesnikov*¹, *A. Ognev*¹, *L. Chebotkevich*¹, *A. Sadovnikov*³, *Y.J. Kim*², *I.H. Cha*² and *Y.K. Kim*² *1. School of Natural Sciences, Far Eastern Federal University, Vladivostok, Russian Federation; 2. Materials Science and Engineering, Korea University, Seoul, The Republic of Korea; 3. Nonlinear Physics, Saratov State University, Saratov, Russian Federation*
- GU-10. Empirical correlation between Dzyaloshinskii-Moriya interaction and electronegativity in Pt/Co/X trilayers.** *Y. Park*^{1,2}, *M. Park*¹, *D. Kim*¹ and *S. Choe*¹ *1. Physics and Astronomy, Seoul National University, Seoul, The Republic of Korea; 2. Center for Spintronics, Korea Institute of Science and Technology, Seoul, The Republic of Korea*
- GU-11. Effects of capping layer on formation and magnetic properties of MnBi thin films for spintronic applications.** *P. Quarterman*¹, *D. Zhang*², *K. Schliep*³, *Y. Lv*² and *J. Wang*² *1. Electrical Engineering, University of Minnesota, Saint Paul, MN; 2. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 3. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

GU-12. Phase Diagram of Isolated Skyrmions in a Ferromagnet.
F. Buettner¹ and G. Beach¹ 1. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA

FRIDAY
MORNING
9:30

GRAND BALLROOM

Session GV
VOLTAGE CONTROLLED MAGNETISM III
(Poster Session)

Ian Gilbert, Chair
NIST, Gaithersburg, MD

GV-01. Design of High Throughput and Low Power Perpendicularly Magnetized Magnetoelectric Junction (MEJ) based True Random Number Generator. *H. Lee¹, F. Ebrahimi², P. Khalili¹ and K.L. Wang¹ 1. UCLA, Los Angeles, CA; 2. Inston.Inc, Santa Monica, CA*

GV-02. Enhanced Tunability of Electrical and Magnetic Properties in (La,Sr)MnO₃ Thin Films via Field-assisted Oxygen Vacancy Modulation. *H. Wong¹, S. Ng¹, W. Cheng¹, X. Chen¹, C. Mak¹, J. Dai¹ and C. Leung¹ 1. Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong, China*

GV-03. A Source Line Sensing (SLS) Scheme in Magnetoelectric Random Access Memory (MeRAM) for Reducing Read Disturbance and Improving Sensing Margin. *H. Lee¹, C. Grezes¹, F. Ebrahimi², P. Gupta¹, P. Khalili² and K.L. Wang¹ 1. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 2. Inston Inc, Los Angeles, CA*

GV-04. A qualitative picture for voltage controlled magnetic anisotropy. *J. Zhang¹, P. Lukashev², S. Jaswal¹ and E.Y. Tsymbal¹ 1. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Department of Physics, University of Northern Iowa, Cedar Falls, IA*

GV-05. Exchange bias controlled by electric current: Interplay of Joule heating and the induced field. *K. Oda¹, T. Moriyama¹, M. Kawaguchi¹, M. Kamiya¹, K. Tanaka¹, K. Kim¹ and T. Ono¹ 1. Institute for Chemical Research, Kyoto University, Uji city, Japan*

GV-06. Inherent Voltage Control of the Spin Polarization Sign in Semiconducting Nb-doped SrTiO₃. *A.M. Kamerbeek¹, R. Ruiter¹ and T. Banerjee¹ 1. Physics of Nanodevices, Zernike Institute for Advanced Materials, Groningen, Netherlands*

- GV-07. Magnetoresistive Detection of Pinned Uncompensated Magnetization in Antiferromagnetic FeMn.** *P.N. Lapa*^{1,2}, I.V. Roshchin^{2,3}, J. Ding¹, J.E. Pearson¹, V. Novosad¹, S. Jiang¹ and A. Hoffmann¹ *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Department of Physics and Astronomy, Texas A&M University, College Station, TX; 3. Department of Material Science and Engineering, Texas A&M University, College Station, TX*
- GV-08. Micromagnetic Simulation of Electric-Field-Assisted Magnetization Switching in Perpendicular Magnetic Tunnel Junction.** *C. Yoshida*¹, H. Noshiro¹, Y. Yamazaki¹, T. Sugii¹, T. Tanaka², A. Furuya² and Y. Uehara² *1. Fujitsu Limited, Atsugi, Japan; 2. Fujitsu Limited, Kawasaki, Japan*
- GV-09. Strain Manipulation Of Antiferromagnetic Domains In Mn₂Au.** *A. Sapozhnik*^{1,2}, S. Finizio³, R. Abrudan⁴, M. Kläui¹, H. Elmers¹, H. Zabel¹ and M. Jourdan¹ *1. Institute of Physics, Johannes Gutenberg University, Mainz, Germany; 2. Graduate School Material Science in Mainz, Mainz, Germany; 3. SYN, Paul Scherrer Institut, Villigen PSI, Switzerland; 4. Helmholtz Zentrum Berlin für Materialien und Energie, Berlin, Germany*
- GV-10. Charge-induced spin torque and voltage-driven magnetization switching in Weyl semimetals.** *D. Kurebayashi*¹ and K. Nomura¹ *1. Institute for Materials Research, Tohoku University, Sendai, Japan*
- GV-11. Manipulation of Magnetism in Co/Fullerene C₆₀ Through Thermoelectric Stimuli.** *M.D. Rogers*¹, T. Moorsom¹, F. Al Ma'Mari¹, M. Ali¹, B. Hickey¹ and O. Cespedes¹ *1. School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom*
- GV-12. Synthesis of compensated ferrimagnetic Mn₂CrGa with Pt or Fe substitution for Cr.** *W. Zhang*¹, P.R. Kharel², S. Valloppilly¹, T. Chen³, R. Skomski⁴ and D.J. Sellmyer^{1,4} *1. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Physics, South Dakota State University, Brookings, SD; 3. Physics, Arizona State University, Tempe, AZ; 4. Physics and Astronomy, University of Nebraska, Lincoln, NE*
- GV-13. Spin dependent charge trapping in C60 studied via XAS.** *T. Moorsom*¹, M.D. Rogers¹, F. Al Ma'Mari¹, P. Gargiani², M. Valvidares², S. Lee³, G. Burnell¹ and O. Cespedes¹ *1. School of Physics & Astronomy, University of Leeds, Leeds, United Kingdom; 2. BOREAS beamline, ALBA Synchrotron Light Facility, Barcelona, Spain; 3. School of Physics and Astronomy, University of St. Andrews, St Andrews, United Kingdom*
- GV-14. Electric field effect on perpendicular magnetic anisotropy in Fe/MgO interfaces annealed at different temperatures.** *Q. Xiang*^{1,2}, H. Sukegawa¹, S. Kasai¹ and S. Mitani^{1,2} *1. National Institute for Materials Sciences, Tsukuba, Japan; 2. University of Tsukuba, Tsukuba, Japan*

Session GW
POWER AND CONTROL MAGNETICS IV
(Poster Session)

Seidikkurippu Piramanayagam, Chair
Nanyang Technological University, Singapore

- GW-01. Measuring Magnetic Properties of Non-Oriented Electrical Steel Sheets in Arbitrary Directions under Compressive Stress Normal to Their Surface.** *Y. Maeda¹, S. Urata¹, H. Nakai¹, Y. Takeuchi², S. Yanase² and Y. Okazaki²* *1. Toyota Central R&D Labs., Inc., Nagakute, Japan; 2. Gifu University, Gifu, Japan*
- GW-02. Loss Reduction of Vehicle Horn using Slinky-Laminated Pole and Armature.** *J. Sim¹, K. Jung¹, S. Hwang¹ and J. Hong¹* *1. Automotive Engineering, Hanyang University, Seoul, The Republic of Korea*
- GW-03. Improvement in Thrust Force Estimation of Solenoid Valve applying Minor Hysteresis Loop.** *M. Yoon¹, Y. Choi¹ and J. Hong¹* *1. Hanyang University, Seoul, The Republic of Korea*
- GW-04. New Approach of D - Q Equivalent Circuit of IPMSM Considering Reversed Magnetic Field at Inter-Turn Fault State.** *B. Kang¹ and J. Hur²* *1. Electrical Engineering, University of Ulsan, Ulsan, The Republic of Korea; 2. Electrical and Electronic Engineering, Incheon National University, Incheon, The Republic of Korea*
- GW-05. Dynamic Analysis Method of A Rotating Shaft with Magnetic Pattern.** *H. Hsiao¹, S. Shih¹ and J. Chang¹* *1. Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*
- GW-06. Torque Analysis and Measurement of Halbach Array Magnetic Spur Gear Based on 3-D Analytical Method.** *T. Bang¹, K. Shin¹, M. Koo¹, H. Cho² and J. Choi¹* *1. Dept. of Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea; 2. Dept. Electric, Electronic, and Communication Eng. Edu., Chungnam National Univ., Daejeon, The Republic of Korea*
- GW-07. Torque Characteristic Analysis and Measurements of Axial Flux Type Non-Contact Permanent Magnet Device with Halbach Array Based on 3D Analytical Method.** *G. Jang¹, M. Koo¹, C. Baek¹ and J. Choi¹* *1. Electrical Engineering, Chung Nam National University, Daejeon, The Republic of Korea*
- GW-08. Irreversible Demagnetization Characteristic Analysis according to Speed Change in Constant Torque Region of PM BLDC Motor.** *J. Park¹, H. Kim¹ and J. Hur²* *1. Ulsan University, Ulsan, The Republic of Korea; 2. Incheon International University, Incheon, The Republic of Korea*

GW-09. Irreversible Demagnetization Detection Method using Voltage Harmonic Characteristic in Off-line and On-line Systems of IPM-type BLDC Motor. *D. Kang*¹, *H. Kim*² and *J. Hur*³ *1. Electrical Engineering, University of Ulsan, Ulsan, The Republic of Korea; 2. University of Ulsan, Ulsan, The Republic of Korea; 3. Incheon National University, Incheon, The Republic of Korea*

FRIDAY
AFTERNOON
1:30

MARDI GRAS A-E

Session HA
SYMPOSIUM: ALL OPTICAL SWITCHING

Eric Fullerton, Chair
UC San Diego, La Jolla, CA

1:30

HA-01. Femtosecond Control of Electric Currents and Spins with Polarized Light in Magnets. (Invited) *A. Kimel*¹ *1. Radboud University, Nijmegen, Netherlands*

2:06

HA-02. Accumulative magnetic switching of ultra-high-density recording media by circularly polarized light. (Invited) *Y. Takahashi*¹, *R. Medapalli*², *S. Kasai*¹, *J. Wang*¹, *K. Ishioka*¹, *S. Wee*³, *O. Hellwig*³, *K. Hono*¹ and *E.E. Fullerton*² *1. NIMS, Tsukuba, Japan; 2. UC San Diego, La Jolla, CA; 3. Western Digital Company, San Jose, CA*

2:42

HA-03. Towards optimization of thermally induced magnetization switching. (Invited) *T.A. Ostler*¹, *U. Atxitia*², *C. Xu*³ and *O. Chubykalo-Fesenko*⁴ *1. Physique des Matériaux et Nanostructures, Université de Liège, Liège, Belgium; 2. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 3. Physics, The University of York, York, United Kingdom; 4. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain*

3:18

HA-04. Ultrafast All-Optical Switching of Magnetic Tunnel Junctions With Sub-Picosecond Infrared Laser Pulses. (Invited) *J. Chen*¹, *L. He*², *J. Wang*¹ and *L. Mo*² *1. Electrical and Computer Engineering, School of Physics & Astronomy, Minneapolis, MN; 2. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

3:54

HA-05. Heat Assisted Magnetic Recording - From The Research Lab To The Real World. (Invited) *J. Thiele*¹, *G. Ju*¹, *C. Rea*², *T. Rausch*³, *M. Seigler*² and *E.C. Gage*³ *1. Seagate Technology, Fremont, CA; 2. Seagate Technology, Bloomington, MN; 3. Seagate Technology, Shakopee, MN*

Session HB
SPIN CURRENT AND RELATED EFFECTS III

Tingyong Chen, Chair
Arizona State University, Tempe, AZ

1:30

- HB-01. Towards efficient spin orbit torque. (Invited) W. Han^{1,2}**
1. International Center for Quantum Materials, Peking University, Beijing, China; 2. Collaborative Innovation Center of Quantum Matter, Beijing, China

2:06

- HB-02. Thin Films Of Topological Kondo Insulator SmB₆: Strong Spin-orbit Torque Without Surface Conduction. Y. Li¹, Q. Ma², S. Huang¹ and C. Chien¹**
1. Department of Physics and Astronomy, Johns Hopkins Univeristy, Baltimore, MD; 2. Physics and Astronomy, Johns Hopkins University, Baltimore, MD

2:18

- HB-03. Scaling for the spin-electricity current conversion on surface state of topological Insulators. K. Yamamoto¹, Y. Shiomi^{1,2}, K. Segawa^{3,4}, Y. Ando^{3,5} and E. Saitoh^{2,6}**
1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Spin Quantum Rectification Project, ERATO, Japan Science and Technology Agency, Sendai, Japan; 3. Institute of Scientific and Industrial Research, Osaka University, Osaka, Japan; 4. Department of Physics, Kyoto Sangyo University, Kyoto, Japan; 5. Institute of Physics II, University of Cologne, Cologne, Germany; 6. WPI-AIMR, Tohoku University, Sendai, Japan

2:30

- HB-04. Direct comparison of current-induced spin polarization in topological insulators and InAs Rashba states. C.H. Li¹, O. van 't Erve¹, S. Rajput³, L. Li³ and B. Jonker²**
1. Naval Research Laboratory, Washington, DC; 2. Naval Research Laboratory/SSD, Washington, DC; 3. Physics, University of Wisconsin, Milwaukee, Milwaukee, WI

2:42

- HB-05. Experimental and theoretical study of phonon skew scattering in Platinum. G. Vijay Karnad¹, C. Gorini², K. Lee¹, U. Eckern³, R. Raimondi⁴, T. Schulz¹, R. Lo Conte^{1,5}, N. Kim⁶, D. Han⁷, J. Kim⁷, C. You⁶, H. Swagten⁷ and M. Kläui^{1,5}**
1. Institute of Physics, Johannes Gutenberg - University Mainz, Mainz, Germany; 2. University of Regensburg, Regensburg, Germany; 3. University of Augsburg, Augsburg, Germany; 4. Roma Tre University, Rome, Italy; 5. Graduate School of Excellence "Materials Science in Mainz" (MAINZ), Mainz, Germany; 6. Department of Physics, Inha University, Incheon, The Republic of Korea; 7. Eindhoven University of Technology, Eindhoven, Netherlands

- HB-06. Gigantically enhanced interface spin current transparency by Kondo effect in iron-doped copper.** *S. Yang*¹, *P. Xu*², *W. Zhang*³, *J. Jeong*¹, *Y. Ferrante*⁴ and *S.S. Parkin*⁵ *1. IBM Almaden Research Center, San Jose, CA; 2. MPI, Halle, Germany; 3. MSE, Stanford, Stanford, CA; 4. Spintronics and Magnetoelectronics, IBM Almaden Research Center, San Jose, CA; 5. Max Planck Institute for Microstructure Physics, Halle (Saale), Germany*

- HB-07. Impact of Magnetic Impurities on Spin Injection and Relaxation in Metallic Non-Local Spin Valves. (Invited)** *L. O'Brien*^{1,2}, *D. Spivak*¹, *J.D. Watts*¹, *M. Erickson*¹, *J.S. Jeong*¹, *K.A. Mkhoyan*¹, *K. Kim*³, *M. Stiles*³, *N. Krueger*¹, *T. Peterson*¹, *B.T. Bolon*⁴, *C.C. Geppert*¹, *H. Ambaye*⁵, *R. Goyette*⁵, *V. Lauter*⁵, *P. Crowell*¹ and *C. Leighton*¹ *1. University of Minnesota, Minneapolis, MN; 2. University of Cambridge, Cambridge, United Kingdom; 3. National Institute of Standards and Technology - Gaithersburg, Gaithersburg, MD; 4. Physics, Hamline University, Saint Paul, MN; 5. Oak Ridge National Lab, Oak Ridge, TN*

- HB-08. Large and tunable spin Hall angles in gold based alloys.** *J. Rojas-Sanchez*^{1,2}, *P. Laczkowski*², *Y. Fu*³, *P. Noël*³, *N. Reyren*², *C. Deranlot*², *S. Collin*², *A. Marty*³, *P. Warin*³, *J. Attane*³, *H. Jaffres*², *J. George*², *L. Vila*³ and *A. Fert*² *1. Institut Jean Lamour - Univ. Lorraine UMR7198 CNRS, 54506 Vandoeuvre les Nancy, France; 2. Unité Mixte de Physique, CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, 91767, Palaiseau, France; 3. SPINTEC, CEA-INAC/ CNRS/Univ. Grenoble Alpes, 38054 Grenoble, France*

- HB-09. Influence of dc-bias current on spin transfer torque ferromagnetic resonance in NiFe/Pt bilayer.** *S. Hirayama*^{1,2}, *S. Kasai*¹ and *S. Mitani*^{1,2} *1. National Institute for Materials Science, Tsukuba, Japan; 2. University of Tsukuba, Tsukuba, Japan*

- HB-10. Dynamics of the spin currents in acoustic and optical modes of ferromagnetic resonance in spin valve multilayers.** *A. Timopheev*¹, *Y.G. Pogorelov*², *S. Cardoso*³, *P.P. Freitas*³, *G.N. Kakazei*⁴ and *N. Sobolev*⁵ *1. INAC - Institute for Nanoscience and Cryogenics, SPINTEC Laboratory, CEA Grenoble, Grenoble, France; 2. Departamento de Fisica, Universidade do Porto, Porto, Portugal; 3. INESC-MN and IN-Institute of Nanoscience and Nanotechnology, Lisbon, Portugal; 4. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal; 5. Departamento de Física and I3N, Universidade de Aveiro, Aveiro, Portugal*

- HB-11. Dependence of spin-charge transduction efficiency on Py/Pt stacking order measured by VNA-FMR.** *A.J. Berger*¹, E. Edwards¹, H. Nembach¹, J. Shaw¹, A.D. Karenowska², M. Weiler³ and T. Silva¹ *1. Div. 687, NIST, Boulder, CO; 2. Physics, University of Oxford, Oxford, United Kingdom; 3. Walther-Meißner-Institut, Garching, Germany*

FRIDAY
AFTERNOON
1:30

LA GALERIES 1-2

Session HC SPIN TORQUE OSCILLATORS

Igor Zutic, Chair
University at Buffalo, Buffalo, NY

1:30

- HC-01. Stochastic spintronic devices for bio-inspired computing.** *(Invited)* *A. Mizrahi*^{1,2}, N. Locatelli², R. Lebrun³, A. Difini-Accioly², V. Cros⁴, A. Fukushima⁵, H. Kubota⁶, S. Yuasa⁷, J. Kim², D. Querlioz² and J. Grollier¹ *1. Unité Mixte CNRS/Thales, Bourg la Reine, France; 2. Institut d'Electronique Fondamentale, Université Paris-Saclay, Orsay, France; 3. UMR CNRS/THALES, Palaiseau, France; 4. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 5. AIST, Tsukuba, Japan; 6. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 7. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

2:06

- HC-02. Suppression of phase noise in spin torque oscillator stabilized by phase locked loop.** *(Invited)* *S. Tamaru*¹, H. Kubota¹, K. Yakushiji¹, S. Yuasa¹ and A. Fukushima¹ *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

2:42

- HC-03. Spin pumping driven auto-oscillator for phase-encoded logic.** *S. Rakheja*¹ and N. Kani² *1. Electrical and Computer Engineering, New York University, Brooklyn, NY; 2. Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA*

2:54

- HC-04. An Electrically Coupled Spin-Hall Oscillator Array for Pattern Matching Operation.** *K. Kudo*¹ and T. Morie² *1. Research and Development Center, Toshiba Corporation, Kawasaki, Japan; 2. Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, Kitakyushu, Japan*

- HC-05. Enhancing the mutual synchronization range of electrically coupled spin-torque oscillators by selecting the vortex excitation mode.** *M. Romera*¹, *P. Talatchian*¹, *R. Lebrun*¹, *K.J. Merazzo*^{2,3}, *P. Bortolotti*¹, *L. Vila*², *J. Costa*⁴, *R. Ferreira*⁴, *P.P. Freitas*⁴, *M. Cyrille*^{2,3}, *U. Ebels*², *V. Cros*¹ and *J. Grollier*¹
1. Unité Mixte de Physique CNRS Thales, Univ. Paris-Sud, Université Paris-Saclay, Palaiseau, France; 2. Univ. Grenoble Alpes, CEA, CNRS, SPINTEC, F-38000 Grenoble, France; 3. Univ. Grenoble Alpes, CEA-LETI MINATEC, F-38000 Grenoble, France; 4. International Iberian Nanotechnology Laboratory (INL), 4715-31, Braga, Portugal

- HC-06. Enhancement of emission power by electrical mutual synchronization of 4 nano-oscillators.** *S. Tsunegi*¹, *R. Lebrun*², *K. Yakushiji*¹, *A. Fukushima*¹, *V. Cros*², *S. Yuasa*¹ and *H. Kubota*¹
1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Palaiseau, France; 2. Unité Mixte de Physique CNRS/Thales, Palaiseau, France

- HC-07. Effect of the incoherent spin dynamics induced by thermal agitation on the emission power of a spin torque oscillator.** *H. Imamura*¹, *H. Arai*², *B. Wang*⁴ and *H. Kubota*³
1. Spintronics Research Center, AIST, Tsukuba, Japan; 2. National Institute of AIST, Tsukuba, Ibaraki, Japan; 3. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan; 4. National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan

- HC-08. Ultrafast Spectrum Analyzer Based on the Injection Locking of a Spin-Torque Nano-Oscillator.** *S. Louis*¹, *I. Lisenkov*^{2,3}, *V. Tyberkevych*², *J. Li*¹, *R. Khymyn*², *E. Bankowski*⁴, *T. Meitzler*⁴ and *A.N. Slavin*²
1. Electrical and Computer Engineering, Oakland University, Rochester, MI; 2. Department of Physics, Oakland University, Auburn Hills, MI; 3. Kotelnikov Institute of Radio-engineering and Electronics of RAS, Moscow, Russian Federation; 4. U.S. Army TARDEC, Warren, MI

- HC-09. Large-Angle Dynamics of Co-Mn-Ge Spin Transfer Nanocontact Oscillators.** *M. Pufall*¹, *J. Shaw*¹, *E. Edwards*¹ and *W. Rippard*¹
1. National Institute of Standards and Technology, Boulder, CO

- HC-10. Direct observation of mutually synchronized spin Hall nano-oscillators using micro-Brillouin Light Scattering.** *A.A. Awad*¹, *P. Dürrenfeld*¹, *A. Houshang*¹, *M. Dvornik*¹, *E. Iacocca*¹, *R.K. Dumas*¹ and *J. Akerman*^{2,1}
1. Physics department, University of Gothenburg, Gothenburg, Sweden; 2. Materials and Nano Physics, KTH Royal Institute of Technology, Kista, Sweden

- HC-11. Current-Induced Dynamics in Coupled $\text{Co}_2(\text{Fe,Mn})\text{Si}$ Magnetic Vortices.** *T. Yamamoto*¹, *T. Seki*^{1,2} and *K. Takanashi*¹
1. IMR, Tohoku Univ., Sendai, Japan; 2. JST-PRESTO, Saitama, Japan

FRIDAY
 AFTERNOON
 1:30

LA GALERIES 3

Session HD
MAGNETOELECTRONIC MATERIALS AND
TRANSPORT III

Weigang Wang, Co-Chair
 University of Arizona, Tucson, AZ
Chong Bi, Co-Chair
 University of Arizona, Tucson, AZ

1:30

- HD-01. Disentangling Interface and Bulk Contributions to the Anisotropic Magnetoresistance in Pt/Co/Pt Sandwiches.**
A. Philippi-Kobs^{1,2} and *H.P. Oepen*² *1. Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany; 2. Universität Hamburg, Hamburg, Germany*

1:42

- HD-02. Magnetism, Electron-transport and Spin Polarization of Epitaxial CoFeCrAl Films.** *Y. Jin*^{1,2}, *P.R. Kharel*^{3,2}, *S. Valloppilly*², *X. Li*², *D. Kim*⁴, *G. Zhao*⁴, *T. Chen*⁴, *R. Skomski*^{1,2} and *D.J. Sellmyer*^{1,2} *1. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, University of Nebraska Lincoln, Lincoln, NE; 3. Physics, South Dakota State University, Brookings, SD; 4. Physics, Arizona State University, Mesa, AZ*

1:54

- HD-03. Magnetic characterisation of MBE grown $\text{Cr}_x\text{Sb}_2\text{Te}_3$ Magnetic Topological Insulator through electrical transport.**
*A. Singh*¹, *V. Kamboj*¹, *L. McIntyre*², *T. Hesjedal*², *D. Ritchie*¹ and *C. Barnes*¹ *1. Physics, University of Cambridge, Cambridge, United Kingdom; 2. Physics, University of Oxford, Oxford, United Kingdom*

2:06

- HD-04. High field magnetotransport in thin films of the topological insulator Bi_2Se_3 .** *E. de Vries*¹, *M. Meijer*², *S. Pezzini*², *N. Koirala*³, *M. Salehi*⁴, *J. Moon*³, *S. Oh*³, *S. Wiedmann*² and *T. Banerjee*¹ *1. University of Groningen, Groningen, Netherlands; 2. High Field Magnet Laboratory, Radboud University, Nijmegen, Netherlands; 3. Department of Physics & Astronomy, Rutgers, State University of New Jersey, Piscataway, NJ; 4. Department of Materials Science and Engineering, Rutgers, State University of New Jersey, Piscataway, NJ*

HD-05. Nonadiabatic Berry Phase in Nanocrystalline Magnets.

R. Skomski¹ and D.J. Sellmyer¹ 1. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE

HD-06. Determination of spin polarization of half-Heusler NiMnSb by nonlocal spin valve measurement.

G. Qu^{1,2}, P. Cheng^{1,2}, Y. Sakuraba¹, S. Kasai¹, T. Furubayashi¹, T. Ohkubo¹ and K. Hono^{1,2} 1. Research Centre for Magnetic and Spintronic Materials, National Institute for Materials Science, Tsukuba, Japan; 2. Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Japan

HD-07. Nanometer Resolved Profiles Of Half-Metallic Full Heusler Alloy Thin Films Determined From Polarised Neutron Reflectometry.

S.E. Glover¹, T. Saerbeck², B. Kuerbanjiang³, Z. Nedelkoski³, D. Kepaptsoglou⁴, A. Ghasemi³, S. Yamada⁵, C. Burrows¹, Q.M. Ramasse⁴, P.J. Hasnip¹, K. Hamaya⁵, A. Hirohata⁶, V. Lazarov³, T.P. Hase¹ and G. Bell¹ 1. Physics, University of Warwick, Coventry, United Kingdom; 2. Institut Laue-Langevin, Grenoble, France; 3. Physics, University of York, York, United Kingdom; 4. SuperSTEM laboratory, SciTech Daresbury Campus, Daresbury, United Kingdom; 5. Department of Systems Innovation, Osaka University, Toyonaka, Japan; 6. Electronics, University of York, York, United Kingdom

HD-08. Atomic and Electronic Study of Co₂FeAl_{0.5}Si_{0.5}/Ge(111) Interface.

B. Kuerbanjiang¹, Z. Nedelkoski¹, D. Kepaptsoglou², A. Ghasemi¹, S.E. Glover³, S. Yamada⁴, A. Sanchez³, Q.M. Ramasse², T.P. Hase³, G. Bell³, K. Hamaya⁴, A. Hirohata¹ and V. Lazarov¹ 1. University of York, York, United Kingdom; 2. SuperSTEM Laboratory, Daresbury, United Kingdom; 3. Physics, University of Warwick, Coventry, United Kingdom; 4. Department of Systems Innovation, Osaka University, Toyonaka, Japan

HD-09. Computational Investigation of Heusler Alloys for Spintronic Applications.

J. Ma¹, K. Munira², Y. Xie¹, S. Keshavarz^{2,3}, A.W. Ghosh¹ and W. Butler^{2,3} 1. Department of Electrical and Computer Engineering, University of Virginia, Charlottesville, VA; 2. Center for Materials for Information Technology, University of Alabama, Tuscaloosa, AL; 3. Department of Physics and Astronomy, University of Alabama, Tuscaloosa, AL

HD-10. Determining the effects of epitaxy on low moment Heusler-type Mn₃Al thin films.

M.E. Jamer¹, Y. Wang², J. Borchers¹, B.J. Kirby¹, B. Barbiellini², A. Bansil² and D. Heiman² 1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Physics, Northeastern University, Boston, MA

- HD-11. Reduced Interface Spin Polarization By Antiferromagnetically Coupled Mn Segregated $\text{Co}_2\text{MnSi}/\text{GaAs}(001)$ Interface.** *A. Rath*¹, *C. Shivakumar*², *S. Patel*³, *K. Christie*⁴, *T. Peterson*⁴, *G. Stecklein*⁴, *P. Crowell*⁴, *C. Palmström*³, *W. Butler*² and *P. Voyles*¹ *1. Department of Materials Science and Engineering, University of Wisconsin-Madison, Madison, WI; 2. Department of Physics and Center for Materials and Information Technology, University of Alabama, Tuscaloosa, AL; 3. Department of Materials Science and Engineering, University of California-Santa Barbara, Santa Barbara, CA; 4. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN*

- HD-12. Magneto-transport properties of pseudo-single-crystal Mn_4N thin films.** *K. Kabara*¹, *M. Tsunoda*¹ and *S. Kokado*² *1. Department of Electronics Engineering, Tohoku University, Sendai, Japan; 2. Graduate School of Integrated Science and Technology, Shizuoka University, Hamamatsu, Japan*

- HD-13. Anomalous Hall effect in $L1_0$ -MnAl films with controllable orbital two-channel Kondo effect.** *L. Zhu*¹, *S. Nie*¹ and *J. Zhao*¹ *1. State Key Laboratory For Superlattices And Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China*

- HD-14. Highly sensitive flexible magnetic sensor based on anisotropic magnetoresistance effect.** *Z. Wang*¹, *X. Wang*¹, *M. Li*² and *N.X. Sun*² *1. ECE, Northeastern University, Boston, MA; 2. Northeastern University, Boston, MA*

- HD-15. High-Pressure Magnetotransport Measurements of the Semimetallic Ferromagnet EuB_6 .** *D.T. Simmons*¹, *L. Yu*¹, *S. von Molnar*¹, *P. Xiong*¹, *J. Zhu*², *C. Ren*² and *Z. Fisk*³ *1. Florida State University, Tallahassee, FL; 2. Institute of Physics Chinese Academy of Sciences, Beijing, China; 3. University of California, Irvine, CA*

Session HE
SPIN TRANSPORT IN TWO-DIMENSIONAL
MATERIALS

Ching-Tzu Chen, Chair
IBM Thomas J Watson Research Center, Yorktown Heights, NY

1:30

- HE-01. Spin transport in two-dimensional materials and van der Waals heterostructures. (Invited) S.P. Dash¹**
1. Microtechnology and Nanoscience, Chalmers University of Technology, Gothenburg, Sweden

2:06

- HE-02. Strong Interfacial Exchange Field in the Graphene/EuS Heterostructure. (Invited) C. Chen¹** *1. IBM TJ Watson Research Center, Yorktown Heights, NY*

2:42

- HE-03. A Two-Dimensional Spin Field-Effect Transistor.** W. Yan¹, O. Txoperena¹, H. Dery², F. Casanova¹ and L.E. Hueso¹ *1. CIC nanoGUNE, San Sebastian, Spain; 2. University of Rochester, Rochester, NY*

2:54

- HE-04. Giant Spin Accumulation in Graphene by Electrical Spin Injection through SrO Tunnel Barrier.** R. Kawakami¹, S. Singh¹, J. Katoch¹, T. Zhu¹, R. Wu², A. Ahmed¹, K.A. Mkhoyan² and P.A. Crowell³ *1. Department of Physics, The Ohio State University, Columbus, OH; 2. Department of Chemical Engineering & Materials Science, University of Minnesota, Minneapolis, MN; 3. Physics and Astronomy, University of Minnesota, Minneapolis, MN*

3:06

- HE-05. Spin Lifetimes Exceeding 12 ns in Graphene Nonlocal Spin Valve Devices.** M. Drögeler¹, C. Franzen¹, F. Volmer¹, T. Pohlmann¹, L. Banszerus¹, M. Wolter¹, K. Watanabe², T. Taniguchi², C. Stampfer^{1,3} and B. Beschoten¹ *1. 2nd Institute of Physics and JARA-FIT, RWTH Aachen University, Aachen, Germany; 2. National Institute for Materials Science, Tsukuba, Japan; 3. Peter Grünberg Institute (PGI-9), Forschungszentrum Jülich, Jülich, Germany*

3:18

- HE-06. Nanosecond Spin Relaxation Times in Single Layer Graphene Spin Valves with Hexagonal Boron Nitride Tunnel Barriers.** J. Xu¹, S. Singh¹, J. Katoch¹, C. Tan³, T. Zhu¹, W. Amamou², J. Hone³ and R. Kawakami^{1,2} *1. Physics, The Ohio State University, Columbus, OH; 2. Physics and Astronomy, UC Riverside, Riverside, CA; 3. Mechanical Engineering Department, Columbia University, New York, NY*

- HE-07. Spin Absorption In Graphene Lateral Spin Valves For Spin Transfer Torque Devices.** *W. Amamou*¹, *G. Stecklein*², *S. Turkyilmaz*³, *T. Zhu*⁴, *S. Singh*⁴, *J. Katoch*⁴, *S.J. Koester*², *P.A. Crowell*² and *R. Kawakami*⁴ *1. Physics and Astronomy, UC Riverside, Riverside, CA; 2. University of Minnesota, Minneapolis, MN; 3. Electrical Engineering, UC Riverside, Riverside, CA; 4. Physics, The Ohio State University, Columbus, OH*

- HE-08. Spin Signal Inversion in Ferromagnet/Hexagonal Boron Nitride-Graphene van der Waals Heterostructure Non-local Spin Valves.** *M. Kamalakar*^{1,2}, *A. Dankert*¹, *P. Kelly*³ and *S.P. Dash*¹ *1. Department of Microtechnology and Nanoscience, Chalmers University of Technology, Göteborg, Sweden; 2. Department of Physics and Astronomy, Uppsala University, UPPSALA, Sweden; 3. Faculty of Science and Technology and MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

- HE-09. Spin-Orbit Torques In Topological Insulator Ferromagnets.** *M. Ramezani Masir*¹, *N. Okuma*² and *A.H. MacDonald*³ *1. University of Texas at Austin, Austin, TX; 2. Physics, University of Tokyo, Tokyo, Japan; 3. Physics, University of Texas at Austin, Austin, TX*

- HE-10. Temperature dependence of ferromagnetic resonance spectra of Py deposited on $(\text{Bi}_{1-x}\text{Sb}_x)_2\text{Te}_3$.** *S. Gupta*¹, *S. Kanai*^{2,3}, *F. Matsukura*^{1,3} and *H. Ohno*^{2,3} *1. WPI-Advanced Institute for Materials Research (WPI-AIMR), Tohoku University, Sendai, Japan; 2. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 3. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan*

- HE-11. MOKE measurements of spin polarization in topological insulators.** *B. Jonker*¹, *O. van 't Erve*¹, *S. Rajput*², *L. Li*² and *C.H. Li*¹ *1. Materials Science & Technology Division, Naval Research Laboratory, Washington, DC; 2. Department of Physics, University of Wisconsin, Milwaukee, Milwaukee, WI*

Session HF
SOFT MAGNETIC MATERIALS IV

Hongbin Yu, Chair
Arizona State University, Tempe, AZ

1:30

- HF-01. Soft magnetic properties of rapidly-annealed nanocrystalline Fe-Nb-B alloys.** R.R. Parsons¹, B. Zang¹, K. Onodera², H. Kishimoto³, A. Kato³ and K. Suzuki¹ *1. Department of Materials Science and Engineering, Monash University, Clayton, VIC, Australia; 2. Toyota Motor Corporation, Toyota, Japan; 3. Toyota Motor Corporation, Susono, Japan*

1:42

- HF-02. Left-handed metacomposites containing carbon fibers and ferromagnetic microwires.** Y. Luo¹, F. Scarpa¹, F. Qin³, M. Ipatov², A. Zhukov² and H. Peng³ *1. ACCIS, University of Bristol, Bristol, United Kingdom; 2. Dpto. de Fisica de Materiales, Universidad del Pais Vasco, San Sebastian, Spain; 3. Institute for Composites Science Innovation, Zhejiang University, Hangzhou, China*

1:54

- HF-03. High frequency soft magnetic properties of (hcp-Co)-SiO₂ nano-granular films with high perpendicular magnetic anisotropy.** H. Aoki Kijima^{1,2}, H. Masumoto¹, K. Arai³ and M. Yamaguchi⁴ *1. Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Sendai, Japan; 2. Department of Electrical Engineering, Tohoku University, Sendai, Japan; 3. DENJIKEN, Sendai, Japan; 4. Graduate School of Engineering, National Institute for Materials Science, Sendai, Japan*

2:06

- HF-04. Effect of heating rate during primary crystallization on soft magnetic properties of melt-spun Fe-B alloys.** B. Zang¹, R.R. Parsons¹, K. Onodera², H. Kishimoto⁴, A. Kato⁴, A. Liu^{3,5} and K. Suzuki¹ *1. Department of Materials Science and Engineering, Monash University, Clayton, VIC, Australia; 2. Toyota Motor Corporation, Toyota, Japan; 3. Monash Centre for Electron Microscopy, Monash University, Clayton, VIC, Australia; 4. Toyota Motor Corporation, Susono, Japan; 5. School of Physics and Astronomy, Monash University, Clayton, VIC, Australia*

2:18

- HF-05. Effects of cold reduction on recrystallization and grain growth behavior of textures using in-situ heating EBSD in 3% Si non-oriented electrical steels.** H. Mun¹, Y. Koo¹ and S. Lee² *1. POSTECH, Pohang, The Republic of Korea; 2. POSCO, Pohang, The Republic of Korea*

- HF-06. Magnetic Properties and Crystallization Kinetics of $(\text{Fe}_x\text{Ni}_{1-x})_{80}\text{Nb}_4\text{Si}_2\text{B}_{14}$ Metal Amorphous Nanocomposites.**
N. Aronhime¹, E. Zoghlin¹, V. Keylin¹, X. Jin¹ and M.E. McHenry¹ 1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA

- HF-07. Soft Magnetic Properties and Damping Parameter of Fe-Al Alloy Thin Films.** *I. Kanada^{1,2}, A. Cruce^{1,3}, T. Mewes^{1,3}, S. Wu^{1,3}, C.K. Mewes^{1,3}, G. Mankey^{1,3} and T. Suzuki^{1,4}*
1. Center for Materials for Information Technology, The University of Alabama, Tuscaloosa, AL; 2. Materials Development Center, TDK Corporation, Narita, AL; 3. Department of Physics and Astronomy, The University of Alabama, Tuscaloosa, AL; 4. Departments of Electrical and Computer Engineering and Metallurgical and Materials Engineering, The University of Alabama, Tuscaloosa, AL

- HF-08. Influence of Temperature on Magnetic Property of Silicon Steel Lamination.** *J. Chen^{1,2}, D. Wang¹, X. Zheng³, Z. Chen¹, F. Birnkammer² and D. Gerling² 1. Naval University of Engineering, Wuhan, China; 2. University of Federal Defense Munich, Munich, Germany; 3. Huazhong University of Science and Technology, Wuhan, China*

- HF-09. The Effect of Ni Addition on Microstructure and Soft-magnetic Properties of FeCoZrBCu Nanocrystalline Alloys.**
B. Shen¹, X. Fan¹ and Y. Tang¹ 1. School of Materials Sciences and Engineering, Southeast University, Nanjing, China

- HF-10. Evolution of FINEMET powders microstructure and magnetic properties versus dry/wet milling conditions.**
L.C. Budeanu^{1,2}, L.C. Whitmore¹, G. Ababei¹, G. Stoian¹, H. Chiriac¹, M. Neagu² and N. Lupu¹ 1. National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. Faculty of Physics, Alexandru Ioan Cuza University, Iasi, Romania

- HF-11. Final thickness reduction and development of Goss texture in C- and Al-free Fe-3%Si-0.1%Mn-0.012%S electrical steel.** *N. Heo¹, E. Oh¹ and Y. Koo¹ 1. POSTECH, Pohang, Gyeongbuk, The Republic of Korea*

- HF-12. Probing the magnetic structure of $\text{Co}_2\text{Fe}_x\text{Mn}_{1-x}\text{Si}$ thin films.**
A. Hauser¹, J. Phillips¹, M. Pendharkar², S. Patel² and C. Palmström² 1. University of Alabama, Tuscaloosa, AL; 2. Materials, University of California-Santa Barbara, Santa Barbara, CA

- HF-13. Millimeter Wave Transmittance/Absorption Measurements on Micro/Nano Hexaferrites.** K. Korolev^{1,2}, S. Chen³, Y. Chen⁴, R. Barua¹, M. Afsar⁵ and V. Harris⁶ 1. *Northeastern University, Boston, MA*; 2. *Extremely High Frequency Medical and Technical Association, Moscow, Russian Federation*; 3. *Arent Fox LLP, Washington, DC*; 4. *Rogers Innovation Center, Burlington, MA*; 5. *Tufts University, Medford, MA*; 6. *Northeastern University, Boston, MA*

- HF-14. Mössbauer study and magnetic properties of MgFe_2O_4 crystallized from the glass system $\text{B}_2\text{O}_3/\text{K}_2\text{O}/\text{P}_2\text{O}_5/\text{MgO}/\text{Fe}_2\text{O}_3$.** S.M. El Shabrawy¹, C. Rüssel¹, C. Bocker¹, P. Schaaf³, M. Georgieva⁴, R. Harizanova^{2,1}, M. Miglierini⁵ and D. Tzankov⁴ 1. *Otto-Schott Institute for Materials Research, Jena, Germany*; 2. *Department of Physics, University of Chemical Technology and Metallurgy, Sofia, Bulgaria*; 3. *Ilmenau University of Technology, Ilmenau, Germany*; 4. *University of Sofia, St. Kl. Ohridski, Sofia, Bulgaria*; 5. *Department of Nuclear Reactors, Czech Technical University in Prague, Prague, Czech Republic*

- HF-15. Magnetic Properties Of Sintered CoFe_2O_4 Particulate Prepared Using Conventional and Ultrafast Microwave Furnaces.** K.R. Jimenez¹, C.P. Perdomo², A.J. Gualdi¹, P.C. de Camargo^{1,3}, D. Garcia¹, R.H. Kiminami² and A.J. de Oliveira¹ 1. *Physics Department, Federal University of São Carlos, São Carlos, Brazil*; 2. *Department of Materials Engineering, Federal University of São Carlos, São Carlos, Brazil*; 3. *Institute of Advanced and Strategic Studies, Federal University of São Carlos, São Carlos, Brazil*

FRIDAY
AFTERNOON
1:30

STUDIO 9-10

Session HG MAGNETO-ELASTIC, MAGNETO-OPTIC, AND MICROWAVE MATERIALS

Norman Wereley, Co-Chair
University of Maryland, College Park, MD
Ivan Lisenkov, Co-Chair
Oakland University, Auburn Hills, MI

- HG-01. Control Of The Magnetization Dynamics In Magnetostrictive Nanostructures Through The Magneto-Elastic Coupling Effect.** S. Finizio¹, E. Kirk¹, S. Wintz¹ and J. Raabe¹ 1. *Paul Scherrer Institut, Villigen PSI, Switzerland*

- HG-02. Magnetostriction Measurements on Large-grained FeCo Samples.** *N.J. Jones*¹, *D.L. Schlage*², *P.K. Lambert*³ and *T.A. Lograsso*² *1. Physical Metallurgy and Fire Protection, Naval Surface Warfare Center, Carderock Division, Bethesda, MD; 2. Materials Science and Engineering, Ames Laboratory, Ames, IA; 3. Materials Science and Engineering, Johns Hopkins University, Baltimore, MD*

- HG-03. Study of Heusler type 1D nanostructures fabricated by electrodeposition method.** *K. Javed*^{1,2}, *U. Khan*¹, *L. Wenjing*¹, *M. Irfan*¹, *S. Ali*¹ and *X. Han*¹ *1. Chinese Academy of Sciences, Institute of Physics, Beijing, China; 2. Physics, Forman Christian College (University), Lahore, Pakistan*

- HG-04. Withdrawn**

- HG-05. Giant magnetically induced reorientation of martensitic variants in magnetic shape memory Ni-Mn-Ga thin films by microstructure engineering.** *F. Albertini*¹, *S. Fabbri*^{1,2}, *F. Casoli*¹, *L. Nasi*¹, *P. Ranzieri*¹, *M. Campanini*¹, *C. Magen*³, *F. Celegato*⁴, *G. Barrera*⁴, *P. Tiberto*^{4,1}, *G. Varvaro*⁵ and *E. Villa*⁶ *1. IMEM-CNR, Parma, Italy; 2. MIST E-R, Bologna, Italy; 3. Instituto de Nanociencia de Aragón, Zaragoza, Spain; 4. INRIM, Torino, Italy; 5. ISM-CNR, Roma, Italy; 6. IENI-CNR, Lecco, Italy*

- HG-06. Withdrawn**

- HG-07. Withdrawn**

- HG-08. Dependence of Giant Strain Induced Anisotropy in Co-based Nanocomposites on Early Transition Metal Virtual Bound States (VBS) for Inductive Applications.** *V.G. DeGeorge*¹, *M.E. McHenry*¹, *A. Leary*², *V. Keylin*¹, *A. Devaraj*³ and *P. Ohodnicki*⁴ *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Carnegie Mellon University, Pittsburgh, PA; 3. Environmental Molecular Sciences Lab, Pacific Northwest National Laboratory, Richland, WA; 4. National Energy Technology Laboratory, Pittsburgh, PA*

- HG-09. Magnetic Properties of Ni Coated Fibers In A Polymer Matrix.** *Z. Celinski*¹, *R.E. Camley*¹, *S. Goldman*¹, *K. Livesey*¹, *T. Robinson*², *D. Meyers*² and *S. Maat*² *1. Physics, University of Colorado, Colorado Springs, Colorado Springs, CO; 2. YTC - America, Camarillo, CA*

- HG-10. A new microwave material for C to U Band Application; BaM/YIG Nano-composites.** V. Sharma¹, S. Kumari¹ and B.K. Kuanr^{1,2} *1. Special Centre for Nanoscience, Jawaharlal Nehru University, Delhi, India; 2. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO*

- HG-11. Soft Magnetic Multilayered Thin Films With Tunable Magnetic Properties For High Frequency Applications.** C. Falub¹, H. Rohrmann¹, M. Bless¹, J.H. Richter¹, M. Meduna^{2,3} and M. Padrun¹ *1. Evatec AG, Trübbach, Switzerland; 2. Department of Condensed Matter Physics, Masaryk University, Brno, Czech Republic; 3. CEITEC, Masaryk University, Brno, Czech Republic*

- HG-12. Characterization of Nanostructure Ferrite Material on Gallium Nitride on SiC Substrate for Millimeter Wave Integrated Circuit.** B. O'Keefe¹, T. Liang¹, M.N. Afsar¹ and V. Koomson¹ *1. Electrical and Computer Engineering, Tufts University, Somerville, MA*

- HG-13. Miniaturization of Magneto-optical Q-switched Laser Using Magnetic Garnet Films.** R. Morimoto¹, T. Goto^{1,2}, J.W. Pritchard³, H. Takagi¹, Y. Nakamura¹, P. Lim¹, M. Mina³, T. Taira⁴, H. Uchida¹ and M. Inoue¹ *1. Toyohashi University of Technology, Toyohashi, Japan; 2. JST PRESTO, Kawaguchi, Japan; 3. Iowa State University, Ames, IA; 4. Institute for Molecular Science, Okazaki, Japan*

- HG-14. Optical Polarization Rotation Induced by Spin-Orbit Coupling in Polarons.** B. Casals¹, R. Cicheler¹, P. García-Fernández², J. Junquera², D. Pesquera¹, M. Campoy-Quiles³, I.C. Infante¹, F. Sanchez¹, J. Fontcuberta¹ and G. Herranz¹ *1. Institut de Ciència de Materials de Barcelona ICMAB-CSIC, Bellaterra, Spain; 2. Departamento CITIMAC, Universidad de Cantabria, Santander, Spain; 3. Institut de Ciència de Materials de Barcelona ICMAB-CSIC, Barcelona, Spain*

- HG-15. Novel Faraday Rotation Terbium Iron Garnets (TIG) for Seedlayer-free Polarization-diverse Integrated Isolators.** P. Dulal¹, T.E. Gage², A. Block³, E. Cofell⁴, D. Hutchings⁵, B. Stadler^{3,1} and C. Zhang⁵ *1. Chemical Engineering & Materials Science/ Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN; 3. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 4. Scripps College, Claremont, CA; 5. School of Engineering, University of Glasgow, Glasgow, United Kingdom*

Session HH
ENERGY ASSISTED RECORDING II

Christoph Vogler, Chair
Vienna University of Technology, Vienna, Austria

1:30

- HH-01. New Composite Media for High Density Heat Assisted Magnetic Recording.** *Z. Liu¹ and R.H. Victora¹ 1. University of Minnesota, Minneapolis, MN*

1:42

- HH-02. Temperature variation in granular media during heat assisted magnetic recording.** *A. Ghoreyshi¹ and R.H. Victora¹ 1. Electrical Engineering, University of Minnesota, Minneapolis, MN*

1:54

- HH-03. Effects of ion-irradiation and annealing on $L1_0$ ordering in FePt-C/BN thin films.** *J.C. De Rojas¹, D. Ravelosona², J. Reiner³, O. Hellwig³ and K. Liu¹ 1. Physics Department, University of California, Davis, CA; 2. Institut d'Electronique Fondamentale, Orsay, France; 3. Western Digital Company, San Jose, CA*

2:06

- HH-04. Ru addition into $L1_0$ -FePt thin film to lower T_c for heat-assisted magnetic recording.** *T. Ono^{1,2}, H. Nakata^{1,2}, T. Moriya^{1,2}, N. Kikuchi³, S. Okamoto³, O. Kitakami³ 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*

2:18

- HH-05. Thermal Stability of HAMR Media Based on Exchange Bias.** *K. Elphick¹, G. Vallejo-Fernandez¹, T.J. Klemmer², J. Thiele² and K. O'Grady¹ 1. University of York, York, United Kingdom; 2. Seagate Media Research, Fremont, CA*

2:30

- HH-06. T_c controlled TbFe/GdFeCo hybrid thermo-magnetic structure for small switching field and high thermal stability.** *A. Tsukamoto¹, Y. Sonobe² and H. Yoshikawa³ 1. College of Science and Technology, Nihon University, Funabashi, Japan; 2. Samsung R&D Institute Japan, Yokohama, Japan; 3. Graduate School of Science and Technology, Nihon University, Funabashi, Japan*

- HH-07. Effect of CrB insertion on the (001) texture of MgO seed layer and magnetic properties of FePt-C HAMR media.** *J. Wang*¹, *Y. Takahashi*¹, *K. Yakushiji*², *H. Sepehri-Amin*¹, *H. Kubota*² and *K. Hono*¹ *1. Magnetic Materials Unit, NIMS, Tsukuba, Japan; 2. Spintronics Research Center, AIST, Tsukuba, Japan*

- HH-08. Effect of substrate surface roughness on the texture and magnetic property of FePt-C granular film.** *J. Wang*¹, *Y. Takahashi*¹, *H. Sepehri-Amin*¹ and *K. Hono*¹ *1. Magnetic Materials Unit, NIMS, Tsukuba, Japan*

- HH-09. Write-Position Shifts in Heat-Assisted Magnetic Recording.** *Z. Wang*¹, *J. Hohlfield*², *C. Rea*² and *R.H. Victora*^{1,3} *1. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN; 2. Seagate Technology, Bloomington, MN; 3. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

- HH-10. Write Field Design for Transition Curvature Straightening and SNR Enhancement in Heat Assisted Magnetic Recording.** *J. Zhu*¹ and *H. Li*¹ *1. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*

- HH-11. Switching-Field Reduction of a Perpendicular Magnetic Nanodot by Microwave Magnetic Field Emitted from a Spin-Torque Oscillator.** *H. Suto*¹, *T. Kanao*¹, *T. Nagasawa*¹, *K. Kudo*¹, *K. Mizushima*¹ and *R. Sato*¹ *1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

- HH-12. Reduction of Critical Current Density in Spin-Torque-Oscillator Device for Microwave Assisted Magnetic Recording.** *H. Sepehri-Amin*¹, *S. Bosu*¹, *Y. Sakuraba*¹, *M. Hayashi*¹, *T. Schrefl*², *C. Abert*³, *D. Suess*³ and *K. Hono*¹ *1. Research Center for Magnetic and Spintronic Materials, National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Center for Integrated Sensor Systems, Danube University Krems, St. Poelten, Austria; 3. Institute of Solid State Physics, Christian Doppler Laboratory for Advanced Magnetic Sensing and Materials, Vienna University of Technology, Vienna, Austria*

- HH-13. Microwave Assisted Magnetization Switching Behaviors in a Ferrimagnetic Amorphous Gd-Fe-Co Single Dot.** *Y. Lu*¹, *S. Okamoto*^{1,3}, *N. Kikuchi*^{1,3}, *B. Lao*¹, *Y. Kusanagi*¹, *O. Kitakami*^{1,3} and *T. Shimatsu*^{2,3} *1. IMRAM Tohoku University, Sendai, Japan; 2. FRIS Tohoku University, Sendai, Japan; 3. CSRN Tohoku University, Sendai, Japan*

4:06

- HH-14. Generation of high frequency large angle out of plane oscillation in mag-flip spin torque oscillator using in-plane magnetized Fe_2Co field generation layer and highly spin polarized $\text{FePt}/\text{Co}_2\text{FeGa}_{0.5}\text{Ge}_{0.5}$ perpendicular spin injection layer.** *S. Bosu*¹, *H. Sepehri-Amin*¹, *Y. Sakuraba*¹, *S. Kasai*¹, *M. Hayashi*¹ and *K. Hono*¹ *I. National Institute for Materials Science, Tsukuba, Japan*

4:18

- HH-15. Stability analysis of microwave-assisted magnetization reversal in exchange coupled nano magnets.** *T. Yamaji*¹ and *H. Imamura*¹ *I. Spintronics Research Center, AIST, Tsukuba, Japan*

FRIDAY
AFTERNOON
1:30

STUDIO 3-4

Session HI
POWER AND CONTROL MAGNETICS V
Jen-Yuan (James) Chang, Chair
National Tsing Hua University, Hsinchu, Taiwan

1:30

- HI-01. Magnetic Force-Assisted Nonlinear Three-Dimensional Wideband Energy Harvester Using Magnetostrictive/Piezoelectric Composite Transducers.** *Z. Lin*¹, *X. Li*¹, *J. Liu*¹ and *J. Yang*¹ *I. Optoelectronic Engineering, Chongqing University, Chongqing, China*

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- HI-02. Implications of Core Material on the Modulator Design in Magnetic Gears.** *N. Fernando*¹ and *S. Saha*¹ *I. School of Engineering, RMIT University, Melbourne, VIC, Australia*

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- HI-03. A Novel Fractional-Slot Concentrating-Windings Permanent Magnet Machine with Segmented Rotor.** *T. Sheng*¹, *S. Niu*¹, *X. Zhao*¹ and *W. Fu*¹ *I. Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*

2:06

- HI-04. Effect of Partial Saturation of Bonded Neo Magnet on the Automotive Accessory Motor.** *N.K. Sheth*¹ and *R. Angara*¹ *I. R&D, Magnequench Neo Powders Pte Ltd, Singapore, Singapore*

- HI-05. Design and Analysis of a Flux Switching Permanent Magnet Machine of 3D Flux Path with SMC Cores and Ferrite Magnets.** C. Liu¹, Y. Wang¹, J. Zhu², Y. Guo² and G. Lei²
1. College of Electrical Engineering, Hebei University of Technology, Tianjin, China; 2. University of Technology, Sydney, Sydney, NSW, Australia

- HI-06. Interior Rare-earth Free Permanent Magnet Synchronous Motor (IPMSM) for Electric Vehicles.** H. Won¹, Y. Hong¹, J. Park¹, W. Lee¹, M. Choi¹, S. Bae², C. Choi³ and G. Mankey⁴
1. Electrical and Computer Engineering and MINT Center, The University of Alabama, Tuscaloosa, AL; 2. Components & Materials R&D Center, LG Innotek, Ansan-si, The Republic of Korea; 3. Korea Institute of Materials Science, Changwon, The Republic of Korea; 4. Department of Physics & Astronomy and MINT Center, The University of Alabama, Tuscaloosa, AL

- HI-07. Experimental Verification and Analytical Calculation of Unbalanced Magnetic Force in Permanent Magnet Synchronous Motors.** K. Shin¹, J. Choi¹ and H. Cho²
1. Dept. of Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea; 2. Dept. Electric, Electronic, and Commucation Eng. Edu., Chungnam National Univ., Daejeon, The Republic of Korea

- HI-08. A Novel Flux-switching Permanent Magnet Machine with V-Shaped Magnets.** G. Zhao¹, H. Wei¹ and P. Su¹
1. Southeast University, Nanjing, China

- HI-09. Experimental validation of a distribution theory based analysis of the effect of manufacturing tolerances on Permanent Magnet Synchronous Machines.** M. Trapanese¹, V. Franzitta¹, D. Curto¹, D. Rao¹ and A. Viola¹
1. DEIM, Università di Palermo, Palermo, Italy

- HI-10. A theory of magnetic and thermal properties of thermomagnetic generator.** M. Trapanese¹, V. Franzitta¹, A. Viola¹, D. Curto¹ and D. Rao¹
1. DEIM, Università di Palermo, Palermo, Italy

- HI-11. Experimental Validation of a High-Speed Permanent-Magnet Motor for AC Compression Systems.** D. Gonzalez¹
1. Danfoss, Tallahassee, FL

- HI-12. Performance Comparison Between Rotor Flux-Switching and Stator Flux- Switching Machines Considering Irreversible Demagnetization.** P. Su¹ and H. Wei¹
1. Electric Engineering, Southeast University, Nanjing, China

- HI-13. Analytical Prediction for Electromagnetic Performance of Interior Permanent Magnet Synchronous Machines Based on Subdomain Model.** *K. Shin¹, H. Park¹, H. Cho² and J. Choi¹*
1. Dept. of Electrical Engineering, Chungnam National University, Daejeon, The Republic of Korea; 2. Dept. Electric, Electronic, and Commucation Eng. Edu., Chungnam National Univ., Daejeon, The Republic of Korea

- HI-14. Research on Fuzzy PI Control and Minimization of Torque Ripple of Switched Reluctance Motor.** *Q. Lu¹, H. Wei¹ and J. Qi¹*
1. School of Electrical Engineering, Southeast University, Nanjing, China

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Balinskiy, M. (AR-07)	25
Balinskiy, M. (AR-10)	26
Balinskiy, M. (AR-11)	26
Balk, A.L. (FE-04)	184
Balluff, J. (FC-14)	181
Balluff, J. (GS-05)	235
Bance, S. (CF-11)	82
Bandyopadhyay, S. (BF-10)	48
Banerjee, A. (BI-04)	53
Banerjee, C. (FR-02)	199
Banerjee, N. (BI-05)	53
Banerjee, S.K. (CF-13)	83
Banerjee, T. (DH-04)	123
Banerjee, T. (GV-06)	240
Banerjee, T. (HD-04)	248
Bang, T. (GW-06)	242
Bankowski, E. (HC-08)	247
Banniard, L. (DC-04)	111
Bansil, A. (HD-10)	249
Banszerus, L. (HE-05)	251
Bao, W. (AR-09)	26
Bao, Y. (EP-11)	163
Bapna, M. (FE-14)	185
Baraduc, C. (CC-11)	76
Barandiaran, J.M. (EG-10)	156
Barandiaran, J.M. (FG-04)	190
Barbic, M. (CQ-12)	94
Barbiellini, B. (HD-10)	249
Barclay, P. (DV-03)	138
Barker, J. (EA-04)	143
Barmak, K. (FQ-14)	199
Barman, A. (CB-09)	73
Barman, A. (CQ-04)	93
Barman, A. (FR-02)	199
Barman, A. (GT-07)	237
Barman, S. (CB-09)	73
Barman, S. (EH-06)	158
Barnas, J. (CR-07)	96
Barnes, C. (CH-10)	87
Barnes, C. (CH-15)	88
Barnes, C. (HD-03)	248
Barra, A. (GT-08)	237
Barrera, G. (AI-12)	20
Barrera, G. (BG-02)	49
Barrera, G. (HG-05)	256
Barrows, F. (DI-13)	126
Bartke, M. (EH-12)	159
Bartnik, A. (CH-07)	86
Bartolome, J. (DF-07)	119

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Barton, C.W. (AI-13)	21	Berganza, E. (AH-01)	16
Barua, R. (CG-06)	84	Berganza, E. (AH-04)	17
Barua, R. (HF-13)	255	Bergeard, N. (AB-01).	2
Barucca, G. (GH-10)	226	Bergeard, N. (AE-13).	11
Basaran, A.C. (AB-04).	3	Bergeard, N. (EC-09).	147
Bassirian, P. (AC-03).	5	Bergeard, N. (EC-12).	147
Basso, V. (GB-09)	213	Bergenti, I. (CH-12).	87
Bataille, A.M. (GA-01)	210	Bergenti, I. (GQ-02).	231
Batley, J. (GE-04)	219	Berger, A. (BE-07).	45
Battle, X. (AB-04)	3	Berger, A. (EU-11).	172
Battiato, M. (GE-11)	220	Berger, A.J. (HB-11)	246
Bauer, G.E. (BR-14).	60	Bernand-Mantel, A. (AV-07)	34
Bauer, G.E. (EA-04).	143	Bernand-Mantel, A. (EE-03)	151
Bauer, G.E. (GB-08)	212	Bernard, R. (CB-01).	72
Bauer, H.G. (GA-03)	211	Bernstein, G.H. (BE-12)	46
Bauer, M. (BS-13)	62	Berntsen, M.H. (EC-08).	147
Bayer, J. (BH-02).	51	Berntsen, M.H. (EC-10).	147
Bayer, M. (DB-11).	110	Berntsen, M.H. (ER-07).	166
Bea, H. (EE-03)	151	Berntsen, M.H. (FP-11)	197
Beach, G. (AC-03).	5	Béron, F. (BR-09).	60
Beach, G. (CC-03).	75	Béron, F. (DF-03).	118
Beach, G. (CC-08).	75	Berritta, M. (AE-08)	10
Beach, G. (CR-11).	96	Bertacco, R. (AG-09).	15
Beach, G. (DC-13).	113	Bertacco, R. (EC-04)	146
Beach, G. (GU-12).	240	Bertacco, R. (EE-02)	150
Beacham, R. (BD-04)	42	Bertran, F. (GA-01)	210
Beato, J. (FH-04)	192	Berweger, S. (EB-05).	144
Beaurepaire, E. (FF-01).	186	Berwin, B. (CT-09)	100
Becherer, M. (AR-14)	26	Besbas, J. (DI-05)	125
Bechstedt, F. (DE-11).	117	Beschoten, B. (HE-05).	251
Becker, J.J. (EC-11).	147	Bessière, P. (BC-09).	41
Becnel, A. (EP-02).	162	Besson, C. (BW-11).	70
Bedoya-Pinto, A. (DC-03).	111	Betto, D. (FC-04).	179
Beg, M. (CF-03).	81	Betto, D. (FF-02)	186
Beg, M. (FP-01).	195	Beutier, G. (DI-06).	125
Beg, M. (FQ-01)	197	Beyersdorff, B. (ER-07).	166
Beigne, C. (AE-12)	11	Bhagavatula, V. (AP-05)	22
Beigne, C. (GE-05)	219	Bhallamudi, V.P. (FS-10)	202
Beik Mohammadi, J. (AB-02)	2	Bhallamudi, V.P. (GC-05)	215
Beik Mohammadi, J. (AB-09)*	4	Bhargava, H. (AW-04).	35
Beik Mohammadi, J. (BS-06)	61	Bhat, N. (GF-08)	222
Beik Mohammadi, J. (CQ-03)	93	Bhat, V. (FI-03)	193
Beik Mohammadi, J. (DR-08)	131	Bhat, V.S. (EC-05).	146
Beik Mohammadi, J. (EH-12)	159	Bhatkar, H. (AC-10).	6
Beik Mohammadi, J. (GB-11)	213	Bhatkar, H. (AI-01)	19
Beik Mohammadi, J. (GS-07)	235	Bhatnagar, M.C. (DS-02).	133
Belabbes, A. (DE-11).	117	Bhattacharya, A. (AA-01)	1
Belanovsky, A. (EU-04).	171	Bhattacharya, A. (DB-01)	108
Belashchenko, K. (DD-08)	114	Bhattacharya, A. (FC-06).	180
Belashchenko, K. (DR-14).	132	Bhattacharya, D. (BC-06)	40
Belashchenko, K. (EF-13)	154	Bhattacharya, K. (BG-10)	50
Belashchenko, K. (GR-06).	234	Bhattacharya, K. (CT-07).	99
Belkhou, R. (AH-06)	17	Bhattacharyya, A. (ES-06).	168
Bell, G. (FS-01)	201	Bhatti, S. (AQ-04)	23
Bell, G. (HD-07)	249	Bhatti, S. (FU-11).	206
Bell, G. (HD-08)	249	Bhoi, B. (DS-09)	133
Bell, R.C. (AF-02).	12	Bhuktare, S. (CC-13)	76
Belmeguenai, M. (AC-01).	5	Bi, C. (BS-04)	61
Belmeguenai, M. (BC-02)	40	Bi, C. (EE-05)	151
Belmeguenai, M. (DE-13)	117	Bi, C. (EE-12)	152
Belmoubarik, M. (FF-06).	187	Bi, L. (AT-12).	30
Belotelov, V.I. (DB-11)	110	Bian, F.F. (EW-06).	175
Ben Dor, O. (CI-15)	90	Bian, Y. (BA-05)	37
Ben Youssef, J. (AB-10)	4	Bibes, M. (AB-10).	4
Ben Youssef, J. (GC-01)	214	Bibes, M. (BA-03)	37
Benecha, E. (ES-09).	168	Bidan, C. (BG-12)	51
Benfenati, F. (AG-09)	15	Biegler, L.T. (AQ-05).	23
Benitez, M. (BD-04)	42	Bihlmayer, G. (DE-11).	117
Benke, D. (BV-11).	68	Binek, C. (FD-04)	182
Benke, D. (EH-14).	159	Birnhammer, F. (HF-08)	254
Bennet, R. (CR-04)	95	Bisotti, M. (CF-04)	81
Bennett, L.H. (CV-15)	105	Bisotti, M. (FP-01).	195
Bennett, S. (BS-05)	61	Bisotti, M. (FQ-01).	197
Benzaouia, M. (FB-11)	178	Bito, M. (DT-10)	135
Beran, L. (AT-12).	30	Blamire, M. (BI-05)	53
Beran, L. (AT-14).	30	Blanco-López, M. (DW-15).	141
Beran, L. (AT-15).	30	Blanco-Roldán, C. (DV-06).	139

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Blanco, J. (DD-03)	113	Bortolotti, P. (GF-02)	221
Blasco, J. (CI-13)	90	Bortolotti, P. (GF-03)	221
Blasco, J. (FD-11)	183	Bortolotti, P. (GT-09)	237
Blázquez, J.S. (EH-01)	157	Bortolotti, P. (HC-05)	247
Blázquez, J.S. (EH-02)	157	Borza, F. (DT-11)	135
Bless, M. (HG-11)	257	Borza, F. (DU-07)	137
Blinov, M. (CV-06)	104	Bosch-Santos, B. (BU-08)	66
Block, A. (HG-15)	257	Bosch-Santos, B. (CS-07)	97
Blomberg, E. (FS-10)	202	Bose, A. (CC-13)	76
Blonski, P.S. (AD-12)	9	Boss, M.A. (DW-11)	141
Blügel, S. (CH-11)	87	Bosu, S. (HH-12)	259
Blügel, S. (CH-13)	87	Bosu, S. (HH-14)	260
Blügel, S. (DE-11)	117	Bottegoni, F. (GE-08)	220
Bo, O. (AQ-04)	23	Bouchenoire, L. (BE-09)	45
Bobba, F. (FR-14)	201	Bouchenoire, L. (CH-06)	86
Boche, S. (EU-09)	172	Bouchenoire, L. (ER-01)	165
Bochmann, S. (DD-01)	113	Bougiatioti, P. (CH-06)	86
Bochmann, S. (EQ-05)	164	Bougiatioti, P. (GB-09)	213
Bocker, C. (HF-14)	255	Boukari, S. (FF-01)	186
Bocklage, L. (BH-04)	51	Boulle, O. (AC-01)	5
Bocklage, L. (EA-03)	143	Boulle, O. (DA-02)	107
Bocklage, L. (EF-14)	154	Boulle, O. (DE-09)	116
Boeglin, C. (AB-01)	2	Boulle, O. (FE-02)	184
Boeglin, C. (EC-09)	147	Boulle, O. (FE-03)	184
Boeglin, C. (EC-12)	147	Bourassa, A. (FQ-11)	198
Boehm, B. (GA-03)	211	Boussekou, A. (AD-01)	7
Boehnke, A. (BS-03)	61	Bouzehouane, K. (AC-08)	6
Boehnke, A. (FF-05)	187	Bouzehouane, K. (CD-03)	77
Boettcher, S. (FI-07)	194	Boventer, I. (EB-12)	145
Boettger, R. (BS-02)	61	Bowen, D. (GI-03)	227
Boettger, R. (EI-10)	161	Bowen, M. (FF-01)	186
Bogach, A. (AW-01)	35	Bozzo, B. (CI-13)	90
Bogdan, D. (FD-09)	182	Bradley, R. (BF-04)	47
Bogdanov, A. (AC-06)	6	Brady, M. (BV-15)	69
Bohn, F. (BI-12)	54	Brajuskovic, V. (DI-13)	126
Bohorquez, A.C. (AG-04)	15	Bran, C. (AH-01)	16
Bokor, J. (AE-01)	9	Bran, C. (AH-04)	17
Bokor, J. (AE-02)	9	Bran, C. (AH-05)	17
Bokor, J. (AE-05)	10	Brandao, J. (BD-09)	43
Bokor, J. (AE-11)	11	Brandl, F. (CB-01)	72
Bokor, J. (EU-13)	172	Brangham, J. (BR-12)	60
Bokor, J. (GH-03)	225	Brangham, J. (FB-05)	177
Bollani, M. (GE-08)	220	Braun, H. (CS-03)	97
Bollapragada, V. (GH-09)	226	Braun, J. (EI-01)	159
Bollero, A. (BH-06)	52	Breitkreutz-v. Gamm, S. (AR-14)	26
Bolon, B.T. (HB-07)	245	Breitkreutz-v. Gamm, S. (BP-02)	55
Bondarenko, A. (EC-06)	146	Breitkreutz-v. Gamm, S. (EU-09)	172
Bonell, F. (DA-04)	108	Breitkreutz-v. Gamm, S. (GT-01)	236
Bonetti, S. (CH-05)	86	Breitwieser, R. (CI-03)	88
Bonetti, S. (EA-02)	142	Brinker, M. (CR-03)	95
Bonfim, M. (DD-02)	113	Brock, J.A. (AD-04)*	7
Bonfim, M. (DG-04)	120	Brooks, M. (CW-14)	107
Bonnet, P. (FS-03)	201	Broomhall, T.J. (BF-04)	47
Bono, D. (CC-08)	75	Broomhall, T.J. (CQ-06)	94
Bookman, L. (DB-07)	110	Brown, J. (DW-11)	141
Borchers, J. (BC-07)	41	Brown, S. (AF-01)	12
Borchers, J. (BE-01)	44	Brown, S. (CH-06)	86
Borchers, J. (BE-08)	45	Brucas, R. (CQ-15)	95
Borchers, J. (CU-08)	102	Brück, E. (EH-15)	159
Borchers, J. (DA-03)	108	Bruckner, F. (AQ-03)	23
Borchers, J. (DH-07)	123	Bruckner, F. (CF-02)	81
Borchers, J. (DH-10)	124	Bruckner, F. (CF-08)	82
Borchers, J. (EQ-02)	164	Bruckner, F. (DF-11)	119
Borchers, J. (HD-10)	249	Brunner, R. (EH-15)	159
Borders, W.A. (AA-05)	2	Buajong, C. (GH-13)	226
Borges, P. (EI-06)	160	Buchanan, K. (AC-05)	6
Borges, P. (ES-15)	169	Buchanan, K. (CB-08)	73
Borie, B. (GS-08)	236	Buchanan, K. (EB-10)	144
Borisov, K. (FF-02)	186	Bud'ko, S. (BT-13)	64
Borisov, P. (AA-01)	1	Buda-Prejbeanu, L.D. (AC-01)	5
Bortolotti, P. (AB-10)	4	Buda-Prejbeanu, L.D. (BF-02)	47
Bortolotti, P. (CB-01)	72	Budeanu, L.C. (HF-10)	254
Bortolotti, P. (CB-02)	72	Buettner, F. (AC-03)	5
Bortolotti, P. (CD-10)	78	Buettner, F. (GU-12)	240
Bortolotti, P. (GB-02)	211	Buhrman, R. (BB-12)	39
Bortolotti, P. (GB-04)	212	Buhrman, R. (BF-07)	48
Bortolotti, P. (GC-01)	214	Buhrman, R. (DE-01)	115

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Buhrman, R. (FA-05)	176
Buhrman, R. (FS-07)	202
Bui, C. (DC-03)	111
Bukin, N. (DI-06)	125
Bulu, I. (AS-11)	28
Bulu, I. (GF-09)	222
Bürgler, D.E. (CH-11)	87
Burgos Parra, E.O. (DI-06)	125
Burn, D.M. (BI-03)	53
Burn, D.M. (FQ-05)	198
Burnell, G. (BD-04)	42
Burnell, G. (CH-08)	86
Burnell, G. (CH-14)	87
Burnell, G. (ES-03)	167
Burnell, G. (FF-07)	187
Burnell, G. (GE-04)	219
Burnell, G. (GV-13)	241
Burrascano, P. (AQ-15)	24
Burrascano, P. (ET-02)	169
Burrows, C. (FS-01)	201
Burrows, C. (HD-07)	249
Bushong, E.J. (FB-10)	178
Bushong, E.J. (FS-11)	202
Busyatras, W. (GH-14)	227
Butera, A. (CR-06)	95
Butera, A. (FE-11)	185
Butler, W. (EF-05)	153
Butler, W. (HD-09)	249
Butler, W. (HD-11)	250
Bykova, I. (AC-03)	5
Bykova, I. (CD-12)	78
Bykova, I. (DV-04)	138

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Cabassi, R. (BU-09)	66
Cabreira Gomes, R. (BG-01)	49
Cabrera-Pasca, G. (BU-08)	66
Cabrera-Pasca, G. (CS-07)	97
Cabrera-Pasca, G. (CS-08)	98
Caciuc, V. (CH-11)	87
Cadogan, S. (BS-16)	63
Cai, J. (EU-14)	172
Cai, Y. (BB-05)	38
Cai, Y. (CP-08)	92
Cakir, A. (AD-05)	7
Cakir, A. (AD-06)	8
Cakir, Ö. (CV-09)	104
Cakir, S. (AS-13)	28
Calarco, R. (EE-02)	150
Calderón, F. (CI-03)	88
Calmels, L. (AB-12)	4
Calmels, L. (AU-15)	32
Camarero, J. (BH-06)	52
Camarero, J. (EF-10)	154
Caminale, M. (GC-08)	215
Caminale, M. (GQ-05)	232
Camley, R.E. (BG-07)	50
Camley, R.E. (CS-12)	98
Camley, R.E. (EB-02)	143
Camley, R.E. (HG-09)	256
Camosi, L. (DE-13)	117
Campanini, M. (HG-05)	256
Campoy-Quiles, M. (HG-14)	257
Canals, B. (FI-01)	193
Candler, R.N. (FP-12)	197
Canfield, P.C. (BT-13)	64
Cantoni, M. (EE-02)	150
Cao, M. (BW-03)	69
Cao, Q. (AT-06)	29
Cao, S. (DV-09)	139
Cao, W. (FQ-14)	199
Cao, Y. (AS-03)	27
Cao, Y. (EF-08)	153
Capotondi, F. (EC-08)	147
Capotondi, F. (FP-11)	197
Carbonari, A.W. (BU-08)	66

Carbonari, A.W. (CS-07)	97
Carbonari, A.W. (CS-08)	98
Cardelli, E. (BP-11)	56
Cardelli, E. (DT-01)	134
Cardelli, E. (DU-01)	136
Cardoso, S. (AS-05)	27
Cardoso, S. (FH-07)	192
Cardoso, S. (HB-10)	245
Caretta, L.M. (AC-03)	5
Caretta, L.M. (DC-13)	113
Carey, R. (FP-01)	195
Carey, R. (FQ-01)	197
Carlotti, G. (GT-02)	236
Carman, G. (BE-08)	45
Carman, G. (BF-10)	48
Carman, G. (CI-01)	88
Carman, G. (CQ-10)	94
Carman, G. (EB-08)	144
Carman, G. (FP-12)	197
Carman, G. (GT-08)	237
Carnicka, S. (AG-06)	15
Carpenter, R.D. (GS-04)	235
Carpentieri, M. (AQ-15)	24
Carpentieri, M. (BB-08)	39
Carpentieri, M. (ET-02)	169
Carpentieri, M. (GF-01)	221
Carrasquillo, I. (FI-04)	193
Carreon, H. (DV-11)	139
Carretero, C. (AB-10)	4
Carretta, S. (GD-04)	217
Carrey, J. (AD-01)	7
Carriço, A.S. (FR-06)	200
Carroll, R. (BH-08)	52
Carruth, J. (BH-03)	51
Carter, W.G. (GG-06)	224
Carva, K. (AE-14)	11
Carvalho Souza, F.E. (DP-09)	128
Casals, B. (DS-07)	133
Casals, B. (ED-08)	149
Casals, B. (HG-14)	257
Casanova, F. (BB-02)	38
Casanova, F. (DC-03)	111
Casanova, F. (HE-03)	251
Casiraghi, A. (ED-08)	149
Casoli, F. (HG-05)	256
Castro, T.D. (DR-07)	131
Cavalcante, F.H. (CS-07)	97
Cavill, S.A. (DD-07)	114
Cavill, S.A. (DI-06)	125
Cavill, S.A. (GD-15)	218
Cavill, S.A. (GS-04)	235
Cecot, M. (CR-07)	96
Cecot, M. (FE-05)	184
Celegato, F. (AI-12)	20
Celegato, F. (BG-02)	49
Celegato, F. (HG-05)	256
Celik, H. (CC-05)	75
Celinski, Z. (BG-07)	50
Celinski, Z. (CS-12)	98
Celinski, Z. (HG-09)	256
Cespedes, O. (CH-08)	86
Cespedes, O. (CU-08)	102
Cespedes, O. (ED-04)	148
Cespedes, O. (FF-07)	187
Cespedes, O. (GD-08)	217
Cespedes, O. (GV-11)	241
Cespedes, O. (GV-13)	241
Cha, I.H. (GU-09)	239
Cha, J. (CF-15)	83
Chadov, S. (EI-01)	159
Chadov, S. (EI-02)	160
Chai, F. (FW-06)	209
Chai, Y. (AV-08)	34
Chambers, J. (EP-01)	162
Chan, K.T. (FP-03)	195
Chan, L. (ET-03)	169
Chan, M. (FS-05)	202

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Chan, W. (ER-12)	167	Chen, H. (AR-12)	26
Chang, C. (BA-01)	36	Chen, H. (BU-14)	67
Chang, C. (DT-09)	135	Chen, H. (EG-07)	155
Chang, H. (BA-05)	37	Chen, H. (EG-08)	156
Chang, H. (DB-01)	108	Chen, H. (GF-07)	222
Chang, H. (FC-07)	180	Chen, H. (GI-06)	228
Chang, H. (GB-01)	211	Chen, J. (AU-05)	31
Chang, H. (GT-14)	238	Chen, J. (BB-10)	39
Chang, J. (BU-04)	65	Chen, J. (BQ-09)	58
Chang, J. (GW-05)	242	Chen, J. (CR-02)	95
Chang, J.P. (BE-08)	45	Chen, J. (CV-08)	104
Chang, L. (GT-12)	237	Chen, J. (EB-03)	143
Chang, P. (EE-04)	151	Chen, J. (EF-09)	154
Chang, P. (ER-05)	166	Chen, J. (FP-04)	196
Chang, P. (FR-08)	200	Chen, J. (GH-02)	225
Chang, P. (FT-05)	203	Chen, J. (GQ-13)	233
Chang, Q. (DP-02)	127	Chen, J. (GS-09)	236
Chang, R. (CF-06)	82	Chen, J. (GT-14)	238
Chang, S. (AU-12)	32	Chen, J. (HA-04)	243
Chang, S. (BF-03)	47	Chen, J. (HF-08)	254
Chang, S. (EE-04)	151	Chen, J.K. (GP-05)	229
Chang, Y. (ER-08)	166	Chen, K. (AA-03)	1
Chantrell, R. (AE-10)	11	Chen, K. (EG-03)	155
Chantrell, R. (CF-14)	83	Chen, K. (FG-06)	190
Chantrell, R. (FG-01)	189	Chen, K. (FG-08)	190
Chantrell, R. (FG-03)	189	Chen, L. (AS-01)	26
Chao, W. (DI-08)	126	Chen, L. (AS-08)	27
Chao, W. (DW-08)	140	Chen, L. (AV-01)	33
Chao, X. (AR-02)	25	Chen, L. (EG-03)	155
Chao, X. (EF-09)	154	Chen, L. (FG-08)	190
Chao, X. (FE-12)	185	Chen, L. (FP-02)	195
Chapagain, K. (FD-09)	182	Chen, L. (FP-09)	196
Chapon, L. (FD-02)	181	Chen, P. (BB-03)	38
Charlton, T. (BE-09)	45	Chen, P.J. (FE-04)	184
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Chase, T. (CH-05)	86	Chen, Q. (CQ-02)	93
Chateaux, J. (CT-07)	99	Chen, Q. (CR-01)	95
Chatterjee, J. (AI-08)	20	Chen, Q. (DW-08)	140
Chatterjee, R. (GP-06)	229	Chen, Q. (EV-01)	173
Chau, K. (FW-14)	210	Chen, Q. (EV-03)	173
Chaudret, B. (AD-01)	7	Chen, Q. (FP-13)	197
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Chaurasiya, A.K. (FR-02)	199	Chen, R. (FG-05)	190
Chaves-O'Flynn, G.D. (BF-09)	48	Chen, R. (FG-06)	190
Chaves, D. (AC-01)	5	Chen, R. (FG-08)	190
Chaves, D. (DD-02)	113	Chen, S. (BB-05)	38
Chavez, A. (BF-10)	48	Chen, S. (CP-10)	92
Chazal, H. (DS-01)	132	Chen, S. (HF-13)	255
Che, X. (BE-01)	44	Chen, S.W. (BR-15)	60
Cheaito, R. (AF-13)	14	Chen, T. (EF-07)	153
Chebotkevich, L. (FT-04)	203	Chen, T. (EF-12)	154
Chebotkevich, L. (GQ-12)	232	Chen, T. (FW-07)	209
Chebotkevich, L. (GU-09)	239	Chen, T. (GV-12)	241
Checinski, J. (FE-07)	184	Chen, T. (HD-02)	248
Checkelsky, J. (FB-02)	177	Chen, W. (AF-01)	12
Chee Kwan, G. (AD-02)	7	Chen, W. (BI-06)	54
Cheema, S. (CC-07)	75	Chen, X. (AH-03)	17
Chen, A.P. (BS-06)	61	Chen, X. (AW-09)	36
Chen, C. (BB-01)	38	Chen, X. (CI-05)	89
Chen, C. (CI-04)	89	Chen, X. (CS-02)	97
Chen, C. (EB-08)	144	Chen, X. (DF-05)	118
Chen, C. (FH-10)	192	Chen, X. (ED-05)	149
Chen, C. (FV-08)	208	Chen, X. (ES-01)	167
Chen, C. (HE-02)	251	Chen, X. (GV-02)	240
Chen, D. (BT-12)	64	Chen, Y. (BD-02)	42
Chen, D. (BW-14)	71	Chen, Y. (CC-05)	75
Chen, D. (CW-02)	105	Chen, Y. (FE-09)	185
Chen, D. (CW-03)	106	Chen, Y. (FR-08)	200
Chen, D. (CW-07)	106	Chen, Y. (GC-02)	214
Chen, D. (DS-04)	133	Chen, Y. (GC-12)	216
Chen, D. (GQ-14)	233	Chen, Y. (GP-08)	230
Chen, F. (AD-11)	8	Chen, Y. (GR-01)	233
Chen, F. (DS-14)	134	Chen, Y. (HF-13)	255
Chen, F. (GP-12)	230	Chen, Z. (CH-05)	86
Chen, G. (BD-13)	44	Chen, Z. (EA-02)	142
Chen, G. (BH-05)	52	Chen, Z. (HF-08)	254
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Cheng, L. (FW-02)	209	Cho, H. (GW-06)	242
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Cheng, P. (EF-03)	153	Cho, H. (HI-13)	262
Cheng, P. (HD-06)	249	Cho, J. (GU-08)	239
Cheng, R. (AH-09)	17	Cho, M. (AR-08)	26
Cheng, R. (DB-10)	110	Cho, S. (AR-08)	26
Cheng, S. (BI-03)	53	Cho, S. (FW-15)	210
Cheng, S. (FW-06)	209	Choe, S. (DV-05)	138
Cheng, S. (FW-07)	209	Choe, S. (ET-08)	170
Cheng, W. (FP-05)	196	Choe, S. (FU-05)	205
Cheng, W. (FV-02)	207	Choe, S. (FU-08)	205
Cheng, W. (FW-12)	210	Choe, S. (GU-10)	239
Cheng, W. (FW-13)	210	Choi, C. (DG-10)	121
Cheng, W. (GV-02)	240	Choi, C. (DG-13)	122
Cheng, X. (AC-05)	6	Choi, C. (HI-06)	261
Cheng, X. (BQ-01)	57	Choi, H. (AC-12)	7
Cheng, X. (CD-07)	77	Choi, H. (BS-09)	62
Cheng, X. (FI-07)	194	Choi, H. (DS-10)	134
Cheng, X. (FP-05)	196	Choi, H. (DT-02)	134
Cheng, X. (GT-05)	237	Choi, H. (DV-10)	139
Cheng, Y. (DE-02)	115	Choi, H. (DW-06)	140
Cheng, Z. (AI-10)	20	Choi, J. (CE-04)	79
Cheng, Z. (FV-03)	207	Choi, J. (CR-09)	96
Cheng, Z. (FV-10)	208	Choi, J. (DQ-03)	129
Cheng, Z. (GQ-11)	232	Choi, J. (DQ-04)	129
Chérif, S.M. (AC-01)	5	Choi, J. (DQ-05)	129
Chérif, S.M. (DE-13)	117	Choi, J. (DQ-11)	130
Chern, G. (CE-08)	80	Choi, J. (DQ-12)	130
Chern, G. (FI-04)	193	Choi, J. (DV-10)	139
Chern, G. (FI-05)	194	Choi, J. (DW-06)	140
Chernov, S. (EI-01)	159	Choi, J. (EV-08)	173
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Chiang, H. (AR-07)	25	Choi, J. (HI-13)	262
Chiang, H. (AR-10)	26	Choi, M. (DG-10)	121
Chiang, H. (AR-11)	26	Choi, M. (DG-13)	122
Chiba, D. (AI-14)	21	Choi, M. (HI-06)	261
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Chien, C. (GB-01)	211	Choi, Y. (ER-01)	165
Chien, C. (HB-02)	244	Choi, Y. (GW-03)	242
Chien, C.L. (AA-03)	1	Chopdekar, R.V. (CE-07)	80
Chien, C.L. (BA-05)	37	Chopdekar, R.V. (CE-09)	80
Chikaki, S. (AG-11)	16	Chopdekar, R.V. (DH-05)	123
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Chiriack, H. (BG-06)	50	Chrobak, D. (EG-06)	155
Chiriack, H. (BP-13)	56	Chshiev, M. (AC-01)	5
Chiriack, H. (CS-04)	97	Chshiev, M. (AF-04)	12
Chiriack, H. (DF-02)	118	Chshiev, M. (AU-13)	32
Chiriack, H. (DT-11)	135	Chshiev, M. (BB-11)	39
Chiriack, H. (DU-05)	136	Chshiev, M. (CC-11)	76
Chiriack, H. (DU-07)	137	Chshiev, M. (DA-02)	107
Chiriack, H. (DU-13)	137	Chshiev, M. (DE-13)	117
Chiriack, H. (DW-07)	140	Chshiev, M. (FS-08)	202
Chiriack, H. (HF-10)	254	Chshiev, M. (GA-01)	210
Chiu Lam, A. (AG-04)	15	Chshiev, M. (GQ-05)	232
Chiu, H. (ER-05)	166	Chu, C. (GP-09)	230
Chizhik, A. (DD-03)	113	Chu, H. (AQ-01)	23
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Ding, G. (FG-08)	190	Du, Y. (BQ-06)	57
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Ding, J. (AB-11)	4	Du, Y. (DP-15)	128
Ding, J. (BE-06)	45	Du, Y. (EV-13)	174
Ding, J. (CD-13)	78	Du, Y. (GH-06)	225
Ding, J. (CE-05)	79	Duan, M. (CW-13)	107
Ding, J. (DB-01)	108	Duan, N. (BP-04)	55
Ding, J. (DT-06)	135	Duan, N. (BP-05)	55
Ding, J. (ET-09)	170	Duan, N. (BP-09)	56
Ding, J. (FQ-13)	199	Duan, Y. (GD-05)	217
Ding, J. (FR-09)	200	Dubenko, I. (AT-01)	29
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Ding, J. (GV-07)	241	Dubenko, I. (CV-07)	104
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Doi, M. (ER-03)	166	Dupuis, V. (BG-10)	50
Doi, M. (GQ-15)	233	Dupuis, V. (CT-07)	99
Dolezal, P. (BI-10)	54	Duque, J.G. (AW-07)	35
Dolinar, D. (BP-12)	56	Duque, J.G. (BS-12)	62
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Domingo, N. (ET-09)	170	Durin, G. (DD-11)	115
Domingos, R.D. (BR-09)	60	Durin, G. (ET-06)	170
Dong, C. (DR-09)	131	Durin, G. (FU-10)	206
Dong, C. (DV-07)	139	Durr, H. (CH-05)	86
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Drube, W. (EI-02)	160		
Du, H. (BU-01)	65		
Du, H. (DD-04)	114		
Du, J. (BW-03)	69		
Du, J. (CI-04)	89		
Du, J. (DW-08)	140		
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Ebels, U. (CD-10)	78
Ebels, U. (GC-08)	215
Ebels, U. (GF-02)	221
Ebels, U. (GF-03)	221
Ebels, U. (GQ-05)	232
Ebels, U. (HC-05)	247
Ebert, H. (EI-01)	159
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Eckern, U. (HB-05)	244
Eckert, J.C. (BR-01)	59
Edwards, E. (BB-13)	39
Edwards, E. (HB-11)	246
Edwards, E. (HC-09)	247
Effenberger, F.B. (CS-08)	98
Egel, E. (GT-01)	236
Eggers, T.M. (AR-05)	25
Eggers, T.M. (DU-02)	136
Eggers, T.M. (GR-06)	234
Eimer, S. (ER-13)	167
Eimer, S. (FU-02)	205
Eisebitt, S. (EC-08)	147
Eizadi Sharifabad, M. (DW-02)	140
Eklund, A. (DB-07)	110
El Hadri, M. (AE-04)	10
El Hadri, M. (AE-12)	11
El Hadri, M. (AE-15)	11
El Hadri, M. (EC-09)	147
El Hage Chahine, J. (AG-01)	14
El Shabrawy, S.M. (HF-14)	255
ElBidweihi, H. (BP-11)	56
ElBidweihi, H. (CQ-12)	94
Elías, G. (FP-06)	196
Elkins, K. (BU-15)	67
Elkins, K. (DF-04)	118
Elkins, K. (DF-09)	119
Elkins, K. (DG-12)	121
Ellinger, F. (GF-02)	221
Elliott, E. (DW-11)	141
Ellsworth, D. (BA-05)	37
Ellsworth, D. (GB-01)	211
Elmers, H. (EF-01)	152
Elmers, H. (EI-01)	159
Elmers, H. (EI-02)	160
Elmers, H. (GV-09)	241
Elphick, K. (GS-03)	235
Elphick, K. (HH-05)	258
Elsukova, A. (BG-05)	49
Elyasi, M. (BH-10)	52
Emori, S. (AB-03)	3
Emori, S. (DC-11)	112
Emori, S. (DC-12)	113
Emori, S. (GD-10)	218
Enachescu, C. (FI-08)	194
Endoh, T. (AF-10)	13
Endoh, T. (ZA-02)	142
Ener, S. (DG-01)	120
Ener, S. (EH-14)	159
Engel, C. (GR-08)	234
Engmann, S. (BH-07)	52
Enokido, Y. (GG-01)	223
Ensinger, W. (AH-06)	17
Erb, D.J. (EF-14)	154
Erbe, A. (GT-06)	237
Erdevig, H. (AG-06)	15
Ergin, A. (CT-05)	99
Erickson, M. (HB-07)	245
Erina, E. (FB-11)	178
Ernst, B. (DG-06)	121
Esat, T. (CH-11)	87
Eschbach, M. (EI-04)	160
Escobar, R.A. (ER-09)	166
Escrig, J. (EQ-06)	164
Escrig, J. (EQ-15)	165
Escrig, J. (ET-10)	170
Escrig, J. (FU-12)	206
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Espejo, A. (ET-10)	170
Espejo, A. (FU-12)	206
Espinola, M. (DS-07)	133
Esser, B. (BR-12)	60
Estrada, F. (GS-06)	235
Estradé, S. (BG-04)	49
Evans, R.F. (CF-14)	83
Evans, R.F. (FG-01)	189

Evans, R.F. (FG-03)	189
Evarts, E.R. (AR-03)	25
Evarts, E.R. (DE-06)	116
Evarts, E.R. (FS-15)	203
Evelt, M. (CB-02)	72
Evelt, M. (GT-09)	237
Evers, M. (DB-08)	110
Ewing, D. (AS-09)	27
Exl, L. (CF-01)	81
Exl, L. (EG-09)	156
Eyal, A. (FI-10)	194
Eyvazov, A. (FI-10)	194
Ezekiel, I.P. (DR-02)	131

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Faba, A. (DT-01)	134
Faba, A. (DU-01)	136
Fabbrici, S. (BU-09)	66
Fabbrici, S. (HG-05)	256
Fabian, J. (FB-06)	177
Fache, T. (FE-02)	184
Fackler, S.W. (AD-03)	7
Fallarino, L. (BE-07)	45
Fallarino, L. (EU-11)	172
Fallon, K. (BD-12)	43
Falub, C. (HG-11)	257
Fan, D. (FW-09)	209
Fan, D. (FW-11)	209
Fan, F. (AH-07)	17
Fan, R. (BI-03)	53
Fan, R. (FQ-05)	198
Fan, X. (CP-15)	92
Fan, X. (CR-01)	95
Fan, X. (CR-04)	95
Fan, X. (DC-08)	112
Fan, X. (FG-06)	190
Fan, X. (FG-08)	190
Fan, X. (HF-09)	254
Fan, Y. (AC-02)	5
Fan, Y. (BA-04)	37
Fanciulli, M. (FU-02)	205
Fang, B. (GF-01)	221
Fang, C. (FS-09)	202
Fang, Y. (AT-06)	29
Fang, Y. (BU-14)	67
Fang, Z. (DQ-15)	130
Fangohr, H. (CF-03)	81
Fangohr, H. (CF-04)	81
Fangohr, H. (FP-01)	195
Fangohr, H. (FQ-01)	197
Fani Sani, F. (DV-03)	138
Farheen, A. (ED-03)	148
Farina, A. (GE-08)	220
Farle, M. (AD-06)	8
Farle, M. (AD-10)	8
Farle, M. (BG-05)	49
Farle, M. (CV-09)	104
Farmer, B.W. (FI-03)	193
Farrar, A.E. (CQ-03)	93
Fassbender, J. (BC-07)	41
Fassbender, J. (FC-04)	179
Fassbender, J. (GT-06)	237
Fauth, F. (GP-16)	230
Feiler, L. (CR-03)	95
Felser, C. (DG-06)	121
Felser, C. (EH-06)	158
Felser, C. (FC-01)	179
Feng, C. (FV-04)	207
Feng, X. (EV-06)	173
Fernandez Cunnado, J. (BH-06)	52
Fernandez Cunnado, J. (EF-10)	154
Fernandez-Pacheco, A. (BE-05)	45
Fernandez-Pacheco, A. (DF-13)	120
Fernandez-Roldan, J.A. (AH-01)	16
Fernandez-Scarioni, A. (AG-07)	15
Fernandez-Scarioni, A. (DI-09)	126

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Fernando, N. (GI-10)	228	Förster, J. (AC-03)	5
Fernando, N. (HI-02)	260	Förster, J. (CD-12)	78
Ferrante, Y. (HB-06)	245	Forte, N. (AG-09)	15
Ferrari, G. (AG-09)	15	Fowley, C. (FC-04)	179
Ferraz, I. (DR-07)	131	Fowley, C. (FF-02)	186
Ferreira, R. (CD-10)	78	Fowley, C. (FS-06)	202
Ferreira, R. (GF-02)	221	Fradin, F.Y. (DB-01)	108
Ferreira, R. (GF-03)	221	Fraile Rodriguez, A. (AH-05)	17
Ferreira, R. (HC-05)	247	Frajer, G. (DS-01)	132
Ferrer, S. (DV-06)	139	Franceschin, G. (CT-01)	99
Ferrero, R. (BG-02)	49	Franco Jr, A. (DR-07)	131
Fert, A. (AC-08)	6	Franco, A.F. (BP-03)	55
Fert, A. (BA-03)	37	Franco, V. (EH-01)	157
Fert, A. (CD-03)	77	Franco, V. (EH-02)	157
Fert, A. (DA-02)	107	Frankowski, M. (FE-07)	184
Fert, A. (EE-02)	150	Franzen, C. (HE-05)	251
Fert, A. (HB-08)	245	Franzitta, V. (HI-09)	261
Ferté, T. (AB-01)	2	Franzitta, V. (HI-10)	261
Ferte, T. (EC-09)	147	Fratzl, M. (BG-12)	51
Ferté, T. (EC-12)	147	Fredette, R. (GG-08)	224
Festersen, S. (BS-13)	62	Freeland, J.W. (FR-13)	200
Fettar, F. (GR-04)	234	Freeman, C.L. (CQ-09)	94
Fidler, J. (EG-02)	155	Freeman, M. (DV-03)	138
Figueroa, A.I. (CH-01)	85	Freeman, R. (EF-11)	154
Filianina, M. (GS-08)	236	Freercks, S. (ER-07)	166
Filimonov, Y. (AR-11)	26	Freimuth, F. (CH-13)	87
Finazzi, M. (GE-08)	220	Freimuth, F. (CR-14)	96
Finizio, S. (EC-01)	145	Freitas, P.P. (AS-05)	27
Finizio, S. (GT-06)	237	Freitas, P.P. (FH-07)	192
Finizio, S. (GV-09)	241	Freitas, P.P. (GF-03)	221
Finizio, S. (HG-01)	255	Freitas, P.P. (HB-10)	245
Finkel, P. (ED-11)	150	Freitas, P.P. (HC-05)	247
Finley, J.T. (FC-12)	180	Freitas, R.S. (BU-08)	66
Finocchio, G. (AQ-15)	24	Freitas, R.S. (CS-07)	97
Finocchio, G. (BB-08)	39	Freitas, R.S. (CS-08)	98
Finocchio, G. (ET-02)	169	Freitas, R.S. (FI-12)	195
Finocchio, G. (EU-08)	172	Fresard, R. (CI-06)	89
Finocchio, G. (GF-01)	221	Friedlein, J. (EC-03)	146
Firdous, T. (DV-03)	138	Friedman, B. (CT-09)	100
Fischbacher, J. (CF-01)	81	Friedman, E. (FS-07)	202
Fischbacher, J. (EG-09)	156	Friedrich, R. (CH-11)	87
Fischbacher, J. (FG-01)	189	Fries, M. (EH-14)	159
Fischbacher, J. (FG-03)	189	Frigerio, J. (GE-08)	220
Fischer, J. (FC-01)	179	Frömter, R. (AI-11)	20
Fischer, P. (BF-04)	47	Frömter, R. (CD-08)	77
Fischer, P. (CD-11)	78	Frömter, R. (EC-10)	147
Fischer, P. (DF-13)	120	Frömter, R. (ER-07)	166
Fischer, P. (DI-08)	126	Frömter, R. (FP-11)	197
Fischer, T. (CB-03)	73	Frost, W.J. (EF-04)	153
Fisher, B.L. (EH-08)	158	Fruchart, O. (AH-06)	17
Fisk, Z. (AU-04)	31	Fruchart, O. (CF-07)	82
Fisk, Z. (HD-15)	250	Fruchart, O. (DD-01)	113
Fita, I. (CU-02)	101	Fruchart, O. (DE-13)	117
Flajlsman, L. (CE-03)	79	Fruchart, O. (EQ-05)	164
Flajlsman, L. (DF-08)	119	Fu, J. (BT-01)	63
Flannigan, D.J. (FP-04)	196	Fu, S. (CF-05)	81
Flannigan, D.J. (GD-09)	217	Fu, S. (CF-06)	82
Flansberry, Z. (FQ-11)	198	Fu, W. (EW-02)	174
Flatau, A.B. (AT-03)	29	Fu, W. (HI-03)	260
Flatau, A.B. (AT-04)	29	Fu, Y. (BA-03)	37
Flatau, A.B. (AT-10)	30	Fu, Y. (BU-02)	65
Flatte, M.E. (DA-01)	107	Fu, Y. (CQ-01)	93
Flatte, M.E. (FB-04)	177	Fu, Y. (HB-08)	245
Flatte, M.E. (FB-05)	177	Fuchs, D. (BW-13)	71
Flebus, B. (GB-08)	212	Fuchs, G.D. (CD-06)	77
Flint, C. (DH-10)	124	Fuchs, G.D. (GC-05)	215
Flokstra, M.G. (ES-03)	167	Fuhrman, J. (BR-12)	60
Foerster, M. (AC-01)	5	Fujii, T. (AI-14)	21
Foerster, M. (DD-01)	113	Fujii, Y. (CC-13)	76
Foerster, M. (EC-01)	145	Fujimoto, J. (GU-03)	238
Folven, E. (CE-07)	80	Fujimura, Y. (CU-14)	103
Folven, E. (DF-06)	118	Fujioka, M. (DT-12)	136
Fontcuberta, J. (DC-03)	111	Fujisaki, K. (CW-05)	106
Fontcuberta, J. (DS-07)	133	Fujishiro, H. (BS-11)	62
Fontcuberta, J. (EC-01)	145	Fujita, Y. (GE-07)	219
Fontcuberta, J. (ED-08)	149	Fujita, Y. (GE-09)	220
Fontcuberta, J. (HG-14)	257	Fujita, Y. (GE-10)	220

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Fujiwara, K. (AS-13)	28
Fujiwara, K. (DU-10)	137
Fujiwara, K. (FH-09)	192
Fujiwara, T. (GG-07)	224
Fukami, S. (AA-05)	2
Fukami, S. (AF-11)	13
Fukami, S. (BD-01)	42
Fukami, S. (DI-11)	126
Fukuma, Y. (DC-02)	111
Fukuma, Y. (FE-08)	185
Fukunaga, H. (BV-08)	68
Fukunaga, H. (DT-04)	135
Fukushima, A. (AI-15)	21
Fukushima, A. (BH-11)	52
Fukushima, A. (CC-10)	76
Fukushima, A. (DD-13)	115
Fukushima, A. (DV-13)	139
Fukushima, A. (EE-11)	152
Fukushima, A. (FS-13)	202
Fukushima, A. (HC-01)	246
Fukushima, A. (HC-02)	246
Fukushima, A. (HC-06)	247
Fukushima, K. (BU-05)	66
Fullerton-Shirey, S. (FB-10)	178
Fullerton, E.E. (AE-15)	11
Fullerton, E.E. (BI-02)	53
Fullerton, E.E. (BR-01)	59
Fullerton, E.E. (BS-13)	62
Fullerton, E.E. (CD-05)	77
Fullerton, E.E. (CF-12)	83
Fullerton, E.E. (CH-05)	86
Fullerton, E.E. (DD-09)	114
Fullerton, E.E. (DE-15)	117
Fullerton, E.E. (DI-14)	127
Fullerton, E.E. (FE-06)	184
Fullerton, E.E. (FP-03)	195
Fullerton, E.E. (FU-02)	205
Fullerton, E.E. (GQ-04)	231
Fullerton, E.E. (GQ-09)	232
Fullerton, E.E. (HA-02)	243
Funk, A. (BH-01)	51
Furdyna, J. (BQ-14)	58
Furdyna, J. (ES-08)	168
Furdyna, J. (ES-12)	168
Furdyna, J. (FQ-08)	198
Furnemont, A. (AF-07)	13
Furnemont, A. (BE-02)	44
Furnemont, A. (BF-06)	47
Furubayashi, T. (GH-06)	225
Furubayashi, T. (HD-06)	249
Furukawa, S. (AF-03)	12
Furukawa, S. (CC-10)	76
Furuta, M. (EU-05)	171
Furuta, M. (FU-14)	206
Furuta, T. (EE-09)	151
Furuya, A. (GV-08)	241
Futamoto, M. (AI-09)	20

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Gabay, A. (BU-09)	66
Gabay, A. (DG-08)	121
Gabureac, M. (DC-01)	111
Gage, E.C. (HA-05)	243
Gage, T.E. (GD-09)	217
Gage, T.E. (HG-15)	257
Gaire, B. (AH-09)	17
Gaita-Arino, A. (GD-05)	217
Galazka, Z. (GB-11)	213
Galindo-Gonzales, C. (CT-01)	99
Galkina, E. (DD-06)	114
Gallagher, J. (AI-04)	19
Gallagher, J. (BR-12)	60
Gallardo, R. (FC-04)	179
Gambardella, P. (DC-01)	111
Gambardella, P. (FE-03)	184
Gan, H. (AF-06)	13
Gan, L. (FW-06)	209
Gan, P. (AU-07)	32
Gan, W. (BD-02)	42
Gan, W. (ET-14)	170
Gan, W. (GU-05)	239
Gandha, K.H. (BU-15)	67
Gandha, K.H. (DF-04)	118
Gandha, K.H. (DF-09)	119
Ganesan, K. (CA-02)	71
Ganguli, A.K. (GP-06)	229
Gangwar, A. (CD-12)	78
Ganshina, E. (AT-01)	29
Gantz, S. (CT-01)	99
Gao, J. (AV-04)	33
Gao, J. (AV-09)	34
Gao, J. (BW-06)	70
Gao, J. (BW-07)	70
Gao, J. (EH-08)	158
Gao, M. (EU-14)	172
Gao, P. (GR-01)	233
Gao, T. (AD-03)	7
Gao, T. (GQ-07)	232
Gao, X. (CU-05)	101
Gao, Y. (AR-12)	26
Gao, Y. (CI-05)	89
Gao, Y. (DR-09)	131
Gao, Y. (DV-07)	139
Gao, Y. (ED-05)	149
Gao, Y. (ER-02)	165
Gao, Y. (GF-07)	222
Gao, Y. (GI-06)	228
Garaio, E. (BG-03)	49
Garandel, T. (AU-15)	32
Garcia-Fernandez, M. (DV-12)	139
García-Fernández, P. (HG-14)	257
Garcia-Hernandez, K. (AC-08)	6
Garcia-Hernandez, K. (CD-03)	77
Garcia-Hernandez, K. (CD-04)	77
Garcia-Hernandez, K. (FE-01)	183
Garcia-Hernandez, K. (GB-04)	212
Garcia-Hernandez, K. (GT-09)	237
Garcia-Martin, A. (CE-01)	79
Garcia-Martin, J. (CE-06)	80
Garcia-Martin, J. (GH-10)	226
Garcia-Muñoz, J. (CI-13)	90
Garcia-Muñoz, J. (FD-11)	183
Garcia-Muñoz, J. (GP-16)	230
Garcia, C. (BP-03)	55
Garcia, C. (GS-11)	236
Garcia, D. (HF-15)	255
Garcia, F.A. (AW-07)	35
García, J. (BG-03)	49
García, J. (FD-11)	183
García, J.A. (DW-15)	141
Garcia, K. (FE-06)	184
Gardeazabal, D. (FI-04)	193
Gardner, J.S. (FI-12)	195
Gardner, J.S. (GP-10)	230
Garello, K. (DC-01)	111
Garello, K. (FE-03)	184
Gargiani, P. (CH-08)	86
Gargiani, P. (GV-13)	241
Garitaonandia, J.S. (EG-10)	156
Garitaonandia, J.S. (FG-04)	190
Garlatti, E. (GD-04)	217
Garlow, J.A. (AC-09)	6
Garraud, N. (AG-03)	14
Garraud, N. (AG-04)	15
Garwood, M. (BG-08)	50
Gatel, C. (AH-01)	16
Gatel, C. (AH-04)	17
Gaudin, G. (AC-01)	5
Gaudin, G. (DE-09)	116
Gaudin, G. (FE-02)	184
Gaudin, G. (FE-03)	184
Gaudin, G. (GC-07)	215
Gaudisson, T. (CS-01)	97

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Gaur, N. (BR-04)	59	Givord, D. (EE-03)	151
Gauss, R. (FG-11)	191	Gizhevskii, B.A. (CU-03)	101
Gautam, N. (EP-07)	162	Gladii, O. (CB-02)	72
Gautier, J. (EC-08)	147	Gladii, O. (GB-04)	212
Gawronski, P. (EB-04)	144	Glavic, A.G. (GR-06)	234
Gayles, J. (CH-13)	87	Glehn, G. (BP-12)	56
Ge, H. (AV-03)	33	Glehn, G. (FQ-03)	198
Ge, H. (DR-15)	132	Gloskovskii, A. (EI-02)	160
Ge, H. (DT-05)	135	Gloss, J. (CE-03)	79
Ge, W. (CW-11)	106	Glover, S.E. (HD-07)	249
Gebara, P. (CV-02)	103	Glover, S.E. (HD-08)	249
Geerts, W.J. (DV-14)	139	Glownia, J.M. (BS-13)	62
Geerts, W.J. (EI-06)	160	Go, G. (CC-01)	74
Gehlmann, M. (EI-04)	160	Go, G. (FC-13)	181
Geilhufe, J. (EC-08)	147	Go, G. (GT-10)	237
Geng, J. (CG-01)	83	Goad, A. (GB-14)	213
Geng, R. (BQ-15)	58	Godinho, M. (BQ-02)	57
Geng, S. (FV-03)	207	Goennenwein, S.T. (CP-02)	91
Gensch, M. (EA-02)	142	Goennenwein, S.T. (GB-05)	212
Gensch, M. (FC-04)	179	Goennenwein, S.T. (GB-07)	212
George, J. (BA-03)	37	Goering, E.J. (DV-04)	138
George, J. (DC-10)	112	Goering, E.J. (EB-04)	144
George, J. (EE-02)	150	Goian, V. (FD-09)	182
George, J. (HB-08)	245	Goldman, S. (HG-09)	256
George, T.F. (AE-03)	9	Golz, T. (EC-10)	147
Georgieva, M. (HF-14)	255	Gomes da Silva, F. (BG-01)	49
Geppert, C.C. (HB-07)	245	Gomes da Silva, F. (DR-05)	131
Geprägs, S. (CP-02)	91	Gómez Eslava, G. (DG-04)	120
Geprägs, S. (DS-07)	133	Gomez-Perez, J.M. (DC-03)	111
Geprägs, S. (GB-05)	212	Gomez-Polo, C. (FH-04)	192
Gerber, T. (BW-11)	70	Gomez, G.A. (GP-11)	230
Gerber, T. (EI-04)	160	Gomez, J. (CR-06)	95
Gercsi, Z. (EH-14)	159	Gomez, J. (FE-11)	185
Gerling, D. (HF-08)	254	Gomide, G.S. (BG-01)	49
Gervasoni, G. (AG-09)	15	Gomide, G.S. (DR-05)	131
Geshev, J. (DS-07)	133	Gomonay, H. (FT-07)	204
Ghahremani, M. (CV-15)	105	Gompertz, J. (GS-04)	235
Ghasemi, A. (CH-01)*	85	Goncalves, F. (CB-10)	74
Ghasemi, A. (HD-07)	249	Gong, R. (GP-12)	230
Ghasemi, A. (HD-08)	249	Gong, Y. (BQ-05)	57
Ghemes, A. (DF-02)	118	Gong, Y. (CV-05)	104
Ghemes, C. (DU-13)	137	Gonzalez, C.A. (BP-03)	55
Ghimire, M. (BT-06)	64	Gonzalez, D. (HI-11)	261
Ghimire, M. (CU-07)	102	Goodson, K.E. (AF-13)	14
Ghimire, M. (DS-08)	133	Goolaup, S. (GR-08)	234
Ghorai, S. (FV-11)	208	Goossens, A. (DH-04)	123
Ghorbani Zavareh, M. (CV-09)	104	Gopman, D.B. (AF-06)	13
Ghoreyshi, A. (GH-11)	226	Gopman, D.B. (ED-11)	150
Ghoreyshi, A. (HH-02)	258	Gopman, D.B. (FE-04)	184
Ghosh, A. (DC-01)	111	Goraus, J. (CV-11)	104
Ghosh, A. (GC-08)	215	Gorchon, J. (AE-01)	9
Ghosh, A.W. (HD-09)	249	Gorchon, J. (AE-02)	9
Ghosh, S. (FC-02)	179	Gorchon, J. (AE-05)	10
Ghumen, S. (DF-01)	118	Gorchon, J. (AE-11)	11
Giannopoulos, G. (CG-03)	84	Gorgoi, M. (BW-11)	70
Giannopoulos, G. (GH-10)	226	Gorini, C. (HB-05)	244
Gich, M. (GP-16)	230	Gorlitz, D. (ET-10)	170
Gifford, J. (EF-12)	154	Gorodetsky, G. (CU-02)	101
Gilbert, D.A. (BC-07)	41	Gorshenkov, M. (AW-01)	35
Gilbert, D.A. (BE-01)	44	Gospodaric, P. (EI-04)	160
Gilbert, D.A. (CG-04)	84	Gossweiler, C. (EH-15)	159
Gilbert, D.A. (DA-03)	108	Goto, M. (DA-04)	108
Gilbert, D.A. (DH-02)	122	Goto, M. (DE-07)	116
Gilbert, D.A. (DH-07)	123	Goto, M. (EE-09)	151
Gilbert, D.A. (DH-08)	123	Goto, M. (GU-03)	238
Gilbert, I. (BC-07)	41	Goto, T. (DB-03)	109
Gilbert, I. (CE-08)	80	Goto, T. (DF-10)	119
Gilbert, I. (FE-04)	184	Goto, T. (HG-13)	257
Gilbert, I. (FI-04)	193	Gottschall, T. (CV-09)	104
Gilbert, S. (CU-12)	102	Gottschall, T. (EH-02)	157
Gillemot, F. (BP-07)	56	Gottschall, T. (EH-14)	159
Giordano, A. (BB-08)	39	Gowtham, P. (CI-02)	88
Giordano, A. (EU-08)	172	Gowtham, P. (EB-09)	144
Giouroudi, I. (BG-11)	50	Goya, G. (BG-01)	49
Girt, E. (CQ-05)	93	Goyette, R. (HB-07)	245
Girt, E. (FS-06)	202	Gradhand, M. (BB-02)	38
Givord, D. (DG-04)	120	Gräfe, J. (BH-02)	51

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Gräfe, J. (EB-04)	144
Granado, E. (AW-07)	35
Granados, X. (ED-08)	149
Granovsky, A. (AT-01)	29
Granovsky, A. (CV-06)	104
Granovsky, A.B. (DB-03)	109
Gray, B.A. (AB-03)	3
Gray, B.A. (DC-12)	113
Gray, B.A. (GD-10)	218
Gray, B.A. (GD-11)	218
Gray, M. (GD-10)	218
Gray, M.T. (AB-03)	3
Gray, M.T. (DC-12)	113
Gray, M.T. (DH-10)	124
Graziosi, P. (CH-12)	87
Graziosi, P. (GQ-02)	231
Greaves, S. (AP-03)	22
Greaves, S. (AQ-07)	23
Greaves, S. (AQ-08)	24
Green, B. (EA-02)	142
Green, B. (FC-04)	179
Greenberg, N. (ET-07)	170
Greer, S.M. (AU-08)	32
Grenèche, J. (CS-01)	97
Grepstad, J.K. (CE-07)	80
Grepstad, J.K. (DF-06)	118
Greser, J. (DC-07)	112
Greving, D. (ER-01)	165
Grey, P. (AU-01)	31
Grey, P. (CU-12)	102
Grezes, C. (AF-05)	12
Grezes, C. (EE-07)	151
Grezes, C. (FF-13)	188
Grezes, C. (GV-03)	240
Grigoras, M. (DF-02)	118
Grigoras, M. (DT-11)	135
Grimaldi, E. (DV-13)	139
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Grocke, G. (AH-03)	17
Grocke, G. (CI-05)	89
Grocke, G. (CS-02)	97
Grocke, G. (DF-05)	118
Grocke, G. (ED-05)	149
Groenefeld, M. (DF-11)	119
Groeseneken, G. (EU-15)	172
Grollier, J. (BC-09)	41
Grollier, J. (BH-11)	52
Grollier, J. (CD-10)	78
Grollier, J. (DD-10)	114
Grollier, J. (DV-13)	139
Grollier, J. (GC-09)	215
Grollier, J. (HC-01)	246
Grollier, J. (HC-05)	247
Grollier, J. (ZA-03)	142
Gross, I. (BC-02)	40
Gross, R. (DS-07)	133
Grübel, G. (EC-08)	147
Grübel, G. (EC-10)	147
Grübel, G. (ER-07)	166
Grübel, G. (FP-11)	197
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Grundler, D. (EC-05)	146
Grutter, A. (BE-01)	44
Grutter, A. (BE-08)	45
Grutter, A. (DA-03)	108
Grutter, A. (DH-02)	122
Grutter, A. (DH-07)	123
Grutter, A. (DH-08)	123
Grutter, A. (DH-10)	124
Grutter, A. (EQ-02)	164
Gschneidner, K.A. (BI-09)	54
Gu, B. (EI-11)	161
Gu, M. (DH-11)	124

Gu, T. (FQ-09)	198
Gu, X. (CU-05)	101
Gualdi, A.J. (HF-15)	255
Guan, X. (BQ-01)	57
Guan, X. (GT-05)	237
Gubbiotti, G. (BB-08)	39
Gubbiotti, G. (CB-10)	74
Gubbiotti, G. (GC-06)	215
Gubbiotti, G. (GT-02)	236
Guerra-Nunez, C. (BR-09)	60
Gueth, K. (FG-11)	191
Guidi, T. (GD-04)	217
Guillemard, C. (GA-01)	210
Guimaraes, M.H. (DE-01)	115
Gungordu, U. (DD-12)	115
Gunnlaugsson, H. (FD-03)	181
Guo, D. (GQ-01)	231
Guo, E. (CP-02)	91
Guo, F. (GC-05)	215
Guo, J. (FH-10)	192
Guo, R. (GQ-13)	233
Guo, S. (BU-01)	65
Guo, S. (EG-03)	155
Guo, S. (FG-06)	190
Guo, S. (FG-08)	190
Guo, Y. (BP-04)	55
Guo, Y. (BP-05)	55
Guo, Y. (FW-03)	209
Guo, Y. (GI-08)	228
Guo, Y. (HI-05)	261
Gupta, A. (DR-08)	131
Gupta, A. (EF-05)	153
Gupta, A. (GB-07)	212
Gupta, A. (GB-11)	213
Gupta, L.C. (GP-06)	229
Gupta, P. (GV-03)	240
Gupta, S. (BS-06)	61
Gupta, S. (BW-02)	69
Gupta, S. (DC-02)	111
Gupta, S. (EF-05)	153
Gupta, S. (HE-10)	252
Gusev, V. (AE-13)	11
Gusliencko, K. (BE-11)	46
Gusliencko, K. (CD-13)	78
Gutfleisch, O. (BV-11)	68
Gutfleisch, O. (CV-09)	104
Gutfleisch, O. (DG-01)	120
Gutfleisch, O. (EH-02)	157
Gutfleisch, O. (EH-14)	159
Gutfleisch, O. (FG-11)	191
Gutierrez, D. (AR-07)	25
Gutierrez, D. (AR-10)	26
Gutierrez, D. (AR-11)	26
Gutt, C. (EC-08)	147
Gutt, C. (EC-10)	147

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Ha, C. (FW-05)	209
Hackett, T. (AU-14)	32
Hadimani, R. (BW-02)	69
Hadimani, R. (DW-14)	141
Hadimani, R.L. (AG-12)	16
Hadimani, R.L. (DW-13)	141
Hadjikhani, A. (EU-13)	172
Hadjipanayis, G. (AH-15)	18
Hadjipanayis, G. (BT-02)	63
Hadjipanayis, G. (BU-09)	66
Hadjipanayis, G. (CG-05)	84
Hadjipanayis, G. (CG-06)	84
Hadjipanayis, G. (CS-14)	98
Hadjipanayis, G. (DG-08)	121
Hadjipanayis, G. (EG-10)	156
Hadjipanayis, G. (FG-04)	190
Hadorn, J.P. (AI-07)	20
Hahn, C. (AF-12)	14
Hahn, C. (FC-07)	180

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Hahn, C. (FS-14)	203	Harumoto, T. (GQ-07)	232
Hahn, E. (DS-11)	134	Hase, T.P. (BE-09)	45
Hahn, H. (DH-06)	123	Hase, T.P. (ER-01)	165
Hai, X. (EH-10)	158	Hase, T.P. (FS-01)	201
Hajiri, T. (BR-03)	59	Hase, T.P. (FT-01)	203
Hajiri, T. (GR-07)	234	Hase, T.P. (HD-07)	249
Hajiri, T. (GS-08)	236	Hase, T.P. (HD-08)	249
Haldar, A. (BF-05)	47	Hasegawa, T. (DG-02)	120
Halisdemir, U. (FF-01)	186	Hashi, S. (DU-03)	136
Hall, L. (CA-02)	71	Hashimoto, A. (DI-07)	125
Hallal, A. (AU-13)	32	Hashimoto, S. (BE-03)	44
Hallal, A. (DA-02)	107	Hashmi, M. (AD-07)	8
Hallal, A. (GA-01)	210	Haskel, D. (ER-01)	165
Hallal, A. (GQ-05)	232	Hasnip, P.J. (CH-01)	85
Hallsteinsen, I. (DH-08)	123	Hasnip, P.J. (HD-07)	249
Haltz, E. (BD-03)	42	Hassan, S.S. (GS-04)	235
Hämäläinen, S.J. (ED-08)	149	Hauet, T. (GA-01)	210
Hamaya, K. (BQ-11)	58	Haug, M. (CW-14)	107
Hamaya, K. (CU-09)	102	Hauri, C. (AE-14)	11
Hamaya, K. (FB-09)	178	Hauri, C. (EA-05)	143
Hamaya, K. (GE-07)	219	Hauser, A. (HF-12)	254
Hamaya, K. (GE-09)	220	Hayashi, M. (HH-12)	259
Hamaya, K. (GE-10)	220	Hayashi, M. (HH-14)	260
Hamaya, K. (HD-07)	249	Hayward, T.J. (BF-04)	47
Hamaya, K. (HD-08)	249	Hayward, T.J. (CQ-06)	94
Hamayun, A. (ES-13)	168	He, C. (DH-10)	124
Hameyer, K. (BP-12)	56	He, J. (FE-15)	186
Hameyer, K. (FQ-03)	198	He, L. (EU-14)	172
Hammel, P. (FS-10)	202	He, L. (FP-04)	196
Hammel, P. (GC-05)	215	He, L. (HA-04)	243
Hammelev, N.M. (BG-07)	50	He, Q. (BA-04)	37
Hamrle, J. (EI-02)	160	He, Q. (BE-01)	44
Han, D. (DE-14)	117	He, W. (AI-10)	20
Han, D. (GU-08)	239	He, W. (GQ-11)	232
Han, D. (HB-05)	244	He, Y. (AR-12)	26
Han, G. (BU-15)	67	He, Z. (GT-14)	238
Han, G. (FS-03)	201	Heald, S.M. (EH-08)	158
Han, H. (CD-11)	78	Hebler, B. (BU-16)	67
Han, J. (AW-09)	36	Hehn, M. (AB-01)	2
Han, J. (ES-01)	167	Hehn, M. (AE-04)	10
Han, L. (CW-02)	105	Hehn, M. (AE-12)	11
Han, L. (CW-03)	106	Hehn, M. (AE-15)	11
Han, T. (DR-04)	131	Hehn, M. (EC-09)	147
Han, T. (GP-14)	230	Hehn, M. (EC-12)	147
Han, W. (AB-13)	4	Hehn, M. (FE-02)	184
Han, W. (GR-01)	233	Hehn, M. (FF-01)	186
Han, W. (HB-01)	244	Hehn, M. (FI-01)	193
Han, X. (AV-10)	34	Heiliger, C. (FF-05)	187
Han, X. (CR-15)	96	Heiman, D. (CH-02)	85
Han, X. (CS-15)	98	Heiman, D. (GS-10)	236
Han, X. (DF-01)	118	Heiman, D. (HD-10)	249
Han, X. (EQ-03)	164	Heimbach, F. (CB-01)	72
Han, X. (FS-09)	202	Heimbach, F. (EC-05)	146
Han, X. (HG-03)	256	Heinonen, O. (CD-07)	77
Han, Y. (DT-06)	135	Heinonen, O. (GC-10)	215
Haney, P.M. (FC-13)	181	Heinrich, B. (CQ-05)	93
Hang, J. (FS-14)	203	Heinrich, B. (FS-06)	202
Hankiewicz, J.H. (BG-07)	50	Heitmann, T. (BI-06)	54
Hansen, T. (FG-04)	190	Hejtmanek, J. (BQ-12)	58
Hanyu, T. (EU-12)	172	Helal, A.S. (AG-01)	14
Hänze, M. (CD-09)	77	Held, K. (GE-11)	220
Hao, J. (AD-11)	8	Helenius, P. (CE-11)	80
Hao, X. (AF-06)	13	Hellwig, O. (BU-16)	67
Hao, X. (GF-01)	221	Hellwig, O. (CF-10)	82
Harabech, M. (DW-03)	140	Hellwig, O. (HA-02)	243
Haripriya, G. (CI-11)	90	Hellwig, O. (HH-03)	258
Harizanova, R. (HF-14)	255	Helm, M. (BS-02)	61
Harmon, N. (FB-04)	177	Helm, M. (EI-09)	161
Harmon, N. (FB-05)	177	Helm, M. (EI-10)	161
Harms, J. (AF-01)	12	Helmich, L. (CV-03)	103
Harris, V. (CG-06)	84	Helmich, L. (EH-03)	157
Harris, V. (HF-13)	255	Helmich, L. (EH-12)	159
Harris, V.G. (GD-13)	218	Hem, J. (GF-02)	221
Harstad, S. (BW-02)	69	Hemadi, M. (AG-01)	14
Hartzell, C. (EP-04)	162	Hennen, T. (DE-15)	117
Harumoto, T. (AV-11)	34	Henry, Y. (CB-02)	72
Harumoto, T. (GQ-06)	232	Henry, Y. (GB-04)	212

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Henschke, A. (CB-04)	73	Hjörvarsson, B. (FT-01)	203
Hentschel, H. (BS-02)	61	Hlenschi, C. (DU-07)	137
Heo, N. (DT-13)	136	Hloskovsky, A. (EF-01)	152
Heo, N. (HF-11)	254	Ho, C. (CP-03)	91
Herea, D. (BG-06)	50	Ho, C. (ET-14)	170
Herfort, J. (EQ-08)	164	Ho, K. (BT-09)	64
Herling, F. (ED-04)	148	Ho, L. (FV-08)	208
Hermenau, J. (EC-03)	146	Ho, P. (AC-04)	5
Hernández Ferras, J. (EC-01)	145	Ho, S.L. (CW-06)	106
Hernández-Mínguez, A. (EC-01)	145	Hodges, M. (BF-04)	47
Hernández, J. (ET-09)	170	Hoeche, T. (DG-06)	121
Hernandez, M. (EU-01)	171	Hoefer, M. (DB-04)	109
Herng, T. (GU-05)	239	Hoefer, M. (DB-07)	110
Herran, J. (AU-01)	31	Hoefer, M. (GB-12)	213
Herran, J. (BQ-08)	58	Hoffman, J. (FC-06)	180
Herranz, G. (DS-07)	133	Hoffmann, A. (AA-01)	1
Herranz, G. (ED-08)	149	Hoffmann, A. (AC-05)	6
Herranz, G. (HG-14)	257	Hoffmann, A. (BE-06)	45
Herrero-Martin, J. (CI-13)	90	Hoffmann, A. (CD-07)	77
Hesjedal, T. (CH-01)	85	Hoffmann, A. (CE-05)	79
Hesjedal, T. (HD-03)	248	Hoffmann, A. (DB-01)	108
Hess, V. (CH-11)	87	Hoffmann, A. (FQ-13)	199
Heussner, F. (CB-07)	73	Hoffmann, A. (GV-07)	241
Heyderman, L. (FI-02)	193	Hoffmann, M. (EA-02)	142
Heyderman, L. (FP-08)	196	Hoffmann, T. (BT-15)	65
Hibino, Y. (EE-08)	151	Hofmann, S. (CH-10)	87
Hicken, R.J. (DI-06)	125	Hohlfeld, J. (HH-09)	259
Hickey, B. (CH-08)	86	Hojem, A. (CR-04)	95
Hickey, B. (DC-04)	111	Hojem, A. (GE-06)	219
Hickey, B. (ED-04)	148	Hollmack, K. (EC-12)	147
Hickey, B. (FF-07)	187	Hollenberg, L. (CA-02)	71
Hickey, B. (GD-08)	217	Holloway, K. (AG-12)	16
Hickey, B. (GE-04)	219	Holmgren, E. (EC-06)	146
Hickey, B. (GV-11)	241	Honda, N. (AP-10)	22
Hierro-Rodriguez, A. (BE-11)	46	Honda, S. (BD-10)	43
Hierro-Rodriguez, A. (CD-13)	78	Honda, S. (BQ-11)	58
Hierro-Rodriguez, A. (DV-06)	139	Hone, J. (HE-06)	251
Hill, P. (CV-07)	104	Hong, B. (AV-03)	33
Hill, S. (AU-07)	32	Hong, B. (DR-15)	132
Hill, S. (AU-08)	32	Hong, J. (CD-11)	78
Hill, S. (GD-05)	217	Hong, J. (CF-15)	83
Hillebrands, B. (CB-03)	73	Hong, J. (DI-08)	126
Hillebrands, B. (CB-07)	73	Hong, J. (EU-13)	172
Hillebrands, B. (DB-02)	109	Hong, J. (FR-12)	200
Hillebrands, B. (DB-13)	111	Hong, J. (GH-03)	225
Hillebrands, B. (DC-06)	112	Hong, J. (GS-02)	235
Hillebrands, B. (DC-07)	112	Hong, J. (GW-02)	242
Hillion, A. (AE-13)	11	Hong, J. (GW-03)	242
Hillion, A. (EC-09)	147	Hong, K. (DQ-04)	129
Hilse, M. (EQ-08)	164	Hong, R. (AH-13)	18
Hinata, S. (AP-06)	22	Hong, S. (AU-10)	32
Hinata, S. (AP-07)	22	Hong, Y. (DG-10)	121
Hinata, S. (AP-10)	22	Hong, Y. (DG-13)	122
Hindmarch, A. (BE-09)	45	Hong, Y. (ET-04)	169
Hinzke, D. (AE-08)	10	Hong, Y. (HI-06)	261
Hioki, K. (BV-09)	68	Honjo, H. (AF-10)	13
Hioki, T. (GB-03)	211	Hono, K. (AI-07)	20
Hirai, T. (EE-08)	151	Hono, K. (BV-09)	68
Hirano, M. (DR-13)	132	Hono, K. (DA-04)	108
Hiraoka, K. (CV-12)	105	Hono, K. (EF-03)	153
Hiraoka, K. (DT-12)	136	Hono, K. (EG-09)	156
Hirayama, S. (HB-09)	245	Hono, K. (FF-04)	186
Hirohata, A. (BQ-07)	58	Hono, K. (FF-06)	187
Hirohata, A. (DI-11)	126	Hono, K. (GH-02)	225
Hirohata, A. (EF-04)	153	Hono, K. (GH-06)	225
Hirohata, A. (GE-13)	220	Hono, K. (GH-08)	226
Hirohata, A. (HD-07)	249	Hono, K. (HA-02)	243
Hirohata, A. (HD-08)	249	Hono, K. (HD-06)	249
Hiroyuki, A. (BD-10)	43	Hono, K. (HH-07)	259
Hiroyuki, A. (BD-11)	43	Hono, K. (HH-08)	259
Hiroyuki, A. (BE-10)	46	Hono, K. (HH-12)	259
Hiroyuki, A. (EU-03)	171	Hono, K. (HH-14)	260
Hiroyuki, A. (FU-07)	205	Honikawa, T. (GG-09)	224
Hjörvarsson, B. (CE-10)	80	Horita, T. (BV-03)	67
Hjörvarsson, B. (CE-11)	80	Horky, M. (CE-03)	79
Hjörvarsson, B. (CQ-15)	95	Horng, L. (ES-04)	167
Hjörvarsson, B. (ER-01)	165	Horng, L. (ET-03)	169

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Horng, L. (ET-04)	169	Huang, W. (AT-08)	30
Horvath, A. (BP-07)	56	Huang, W. (BP-08)	56
Horvath, M. (BP-07)	56	Huang, W. (DQ-02)	129
Horwath, J. (BV-12)	68	Huang, X. (FH-10)	192
Horwath, J. (DG-14)	122	Huang, Y. (BC-03)	40
Hou, Z. (BQ-06)	57	Huang, Y. (BC-10)	41
Houshang, A. (BB-09)	39	Huang, Y. (CW-15)	107
Houshang, A. (HC-10)	247	Huang, Y. (ET-12)	170
Hovorka, O. (FP-01)	195	Huang, Z. (CQ-01)	93
Hovorka, O. (FQ-01)	197	Huang, Z. (CQ-02)	93
Howe, B. (AB-03)	3	Huang, Z. (FP-13)	197
Howe, B.M. (CI-05)	89	Huangfu, Y. (AR-13)	26
Howe, B.M. (DC-12)	113	Huber, C. (CF-02)	81
Howe, B.M. (ED-05)	149	Huber, C. (DF-11)	119
Howe, B.M. (GD-10)	218	Hudl, M. (EA-02)	142
Howe, B.M. (GD-11)	218	Huebner, T. (BS-03)	61
Hrabec, A. (BC-02)	40	Huebner, T. (FF-05)	187
Hrabec, A. (DE-10)	116	Hueso, L.E. (BB-02)	38
Hrkac, G. (AI-13)	21	Hueso, L.E. (DC-03)	111
Hrkac, G. (FG-01)	189	Hueso, L.E. (HE-03)	251
Hrkac, G. (FG-03)	189	Huetten, A. (CV-03)	103
Hrkac, G. (GH-08)	226	Huetten, A. (EH-03)	157
Hsiao, C. (BU-04)	65	Huetten, A. (EH-04)	157
Hsiao, H. (GW-05)	242	Huetten, A. (EH-12)	159
Hsieh, M. (CW-15)	107	Hügli, R.V. (CS-03)	97
Hsu, C. (CW-15)	107	Huh, Y. (CU-12)	102
Hsu, C. (ER-05)	166	Hui, Z. (BU-01)	65
Hsu, C. (FR-08)	200	Huminiuc, T. (BQ-07)	58
Hsu, C. (FT-05)	203	Hung, Y. (FC-07)	180
Hsu, H. (FT-05)	203	Hunt, R. (FA-03)	176
Hsu, K. (FT-05)	203	Huo, Y. (FQ-15)	199
Hsu, T. (GP-08)	230	Huq, A. (CG-08)	84
Hsu, T. (GP-09)	230	Hur, J. (DP-04)	127
Hsu, W. (AB-07)	3	Hur, J. (GW-04)	242
Hsu, Y. (DI-04)	125	Hur, J. (GW-08)	242
Hu, C. (GP-02)	229	Hur, J. (GW-09)	243
Hu, F. (AR-04)	25	Hutchings, D. (HG-15)	257
Hu, F. (BE-15)	46	Hutchison, W.D. (BS-16)	63
Hu, F. (BW-09)	70	Hwang, H. (GU-07)	239
Hu, F. (CV-01)	103	Hwang, S. (GW-02)	242
Hu, F. (CV-04)	103		
Hu, G. (AF-01)	12		
Hu, J. (AF-02)	12		
Hu, J. (BA-05)	37		
Hu, J. (BD-06)	43		
Hu, L. (BR-05)	59		
Hu, Q. (AT-06)	29		
Hu, Q. (FF-13)	188		
Hu, X. (BP-08)	56		
Hu, Y. (AT-06)	29		
Hu, Y. (GS-01)	235		
Hu, Z. (DP-02)	127		
Huai, Y. (AF-06)	13		
Huang, C. (AG-10)	16		
Huang, D. (EU-14)	172		
Huang, H. (AG-10)	16		
Huang, H. (CS-05)	97		
Huang, H. (DW-08)	140		
Huang, H. (ER-10)	166		
Huang, H. (FU-15)	206		
Huang, K. (GU-02)	238		
Huang, L. (AC-04)	5		
Huang, L. (FS-09)	202		
Huang, L. (FW-12)	210		
Huang, L.H. (BW-10)	70		
Huang, M. (GG-06)	224		
Huang, Q. (FV-12)	208		
Huang, S. (BC-08)	41		
Huang, S. (CC-09)	75		
Huang, S. (GB-13)	213		
Huang, S. (GI-01)	227		
Huang, S. (GI-05)	228		
Huang, S. (HB-02)	244		
Huang, T. (BQ-01)	57		
Huang, T. (ES-11)	168		
Huang, T. (GT-05)	237		
Huang, W. (AT-02)	29		

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Iacocca, E. (DB-07)	110
Iacocca, E. (GB-12)	213
Iacocca, E. (GC-10)	215
Iacocca, E. (HC-10)	247
Iavarone, M. (FR-14)	201
Ibarra-Gaytán, P. (CV-13)	105
Ibarra, M. (GB-10)	213
Ibrahim, F. (AU-13)	32
Ibrahim, F. (DA-02)	107
Ichinokura, O. (GI-11)	228
Idzerda, Y.U. (AC-10)	6
Idzerda, Y.U. (AI-01)	19
Igarashi, T. (FV-01)	207
Ignacio-de Leon, P. (CS-02)	97
Iguchi, R. (GB-03)	211
Iihama, S. (DB-12)	110
Ikari, T. (BT-03)	63
Ikawa, M. (FB-09)	178
Ikeda, S. (AF-10)	13
Ikeda, T. (FU-11)	206
Ikhtiar, I. (EF-03)	153
Ilkovic, S. (EH-11)	158
Im, M. (BF-04)	47
Im, M. (CD-11)	78
Im, M. (DF-13)	120
Im, M. (DI-08)	126
Im, M. (FR-12)	200
Imamura, H. (AF-08)	13
Imamura, H. (AQ-11)	24
Imamura, H. (AR-01)	25
Imamura, H. (EI-05)	160
Imamura, H. (HC-07)	247
Imamura, H. (HH-15)	260
Imaoka, N. (BV-14)	69

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Ina, Y. (EF-02)	153
Inaba, N. (AI-09)	20
Inada, M. (AW-08)	36
Inami, N. (DG-02)	120
Infante, I.C. (HG-14)	257
Ingram, D.C. (AI-04)	19
Inkaya, U. (FH-03)	191
Inokuchi, T. (FB-08)	178
Inomata, K. (FF-04)	186
Inoue, A. (DT-06)	135
Inoue, J. (CR-05)	95
Inoue, M. (DB-03)	109
Inoue, M. (DF-10)	119
Inoue, M. (EQ-09)	164
Inoue, M. (FR-03)	199
Inoue, M. (HG-13)	257
Inyang, O. (BE-09)	45
Ionescu, A. (CH-10)	87
Ionescu, A. (CH-15)	88
Ionin, A. (DH-07)	123
Ipatov, M. (DD-03)	113
Ipatov, M. (HF-02)	253
Iqbal, J. (DF-01)	118
Iqbal, M. (EQ-10)	165
Irfan, M. (CS-15)	98
Irfan, M. (EQ-03)	164
Irfan, M. (HG-03)	256
Iriyama, T. (BV-14)	69
Isasa, M. (BB-02)	38
Isasa, M. (DC-03)	111
Isella, G. (GE-08)	220
Ishibashi, T. (AT-15)	30
Ishibashi, T. (BT-03)	63
Ishibashi, T. (DI-03)	125
Ishigami, R. (CU-10)	102
Ishikawa, M. (FB-08)	178
Ishikawa, T. (GG-04)	223
Ishikawa, T. (GG-10)	224
Ishio, S. (DG-02)	120
Ishioka, K. (HA-02)	243
Ishiyama, K. (DU-03)	136
Islinger, R. (GA-03)	211
Isnard, O. (BI-11)	54
Isnard, O. (DS-01)	132
Isogami, S. (EU-07)	172
Isogami, S. (FQ-06)	198
Isshiki, R. (AG-02)	14
Itagaki, R. (AQ-08)	24
Ito, K. (AF-10)	13
Ito, T. (AI-05)	19
Ito, T. (CR-08)	96
Ito, T. (FR-04)	199
Itoh, H. (BQ-11)	58
Itoh, M. (AV-02)	33
Itoh, M. (DG-09)	121
Itoh, M. (GT-13)	238
Iunin, Y.L. (ED-11)	150
Ivanov, B. (BE-11)	46
Ivanov, B. (DD-06)	114
Ivanov, B. (EC-06)	146
Ivanov, I. (AH-02)	16
Iwama, H. (BV-07)	68
Iwama, H. (ER-03)	166
Iwama, H. (GH-08)	226
Iwano, K. (GG-04)	223
Iwano, K. (GG-10)	224
Iwasa, Y. (EE-01)	150
Iwasaka, M. (AT-11)	30
Iwasaka, M. (CT-06)	99
Iwasaka, M. (CT-11)	100
Iwasaka, M. (CT-12)	100
Iwasaka, M. (CT-13)	100
Iwasaka, M. (CT-14)	100
Iwasaka, M. (EP-13)	163
Iwasaki, Y. (AD-03)	7
Iwase, A. (CU-10)	102
Iwase, A. (CU-14)	103

Iwata, S. (AP-09)	22
Iwata, S. (CC-07)	75
Iwata, S. (CP-13)	92
Iwata, S. (CQ-08)	94
Iwata, S. (FT-03)	203
Iyer, K.K. (FD-08)	182
Izadkhah, H. (GP-17)	231

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Jäckl, M. (DB-11)	110
Jackson, E. (DI-11)	126
Jacques, V. (BC-02)	40
Jacques, V. (CA-01)	71
Jacquet, E. (AB-10)	4
Jaffrès, H. (BA-03)	37
Jaffrès, H. (DC-10)	112
Jaffrès, H. (FB-11)	178
Jaffrès, H. (HB-08)	245
Jain, M. (FD-10)	182
Jain, P. (GP-06)	229
Jain, S. (CC-13)	76
Jaiswal, S. (BC-11)	41
Jaiswal, S. (GS-08)	236
Jakob, G. (BC-11)	41
Jakob, G. (CP-02)	91
Jakob, G. (GB-05)	212
Jakubowski, M. (CH-07)	86
Jalil, M.B. (BR-13)	60
Jalil, M.B. (BS-08)	62
Jalil, M.B. (CP-01)	91
Jalil, M.B. (CP-03)	91
Jalil, M.B. (ET-14)	170
Jalink, J. (AH-10)	18
Jamali, A. (BP-11)	56
Jamali, M. (AR-02)	25
Jamali, M. (BA-02)	37
Jamali, M. (EF-09)	154
Jamer, M.E. (BE-08)	45
Jamer, M.E. (HD-10)	249
James, B. (GD-15)	218
Jamet, M. (BA-03)	37
Jamet, M. (CR-10)	96
Jamet, M. (FU-13)	206
Jamet, S. (CF-07)	82
Jamison, K. (FS-11)	202
Jana, S. (EC-13)	148
Janantha, P.A. (DB-04)	109
Jander, A. (GD-10)	218
Jander, A. (GD-11)	218
Jang, B. (AG-13)	16
Jang, B. (CT-02)	99
Jang, G. (AG-13)	16
Jang, G. (CT-02)	99
Jang, G. (DQ-11)	130
Jang, G. (EW-08)	175
Jang, G. (EW-11)	175
Jang, G. (GW-07)	242
Jang, M. (DS-15)	134
Jang, S. (EV-08)	173
Jansen, R. (GE-07)	219
Japaridze, D. (ED-04)	148
Jara, A.A. (BA-05)	37
Jara, A.A. (GB-01)	211
Jaswal, S. (GV-04)	240
Javed, K. (CS-15)	98
Javed, K. (EQ-03)	164
Javed, K. (HG-03)	256
Je, S. (FE-02)	184
Jekal, S. (AU-10)	32
Jenichen, B. (EQ-08)	164
Jenkins, A. (GF-03)	221
Jensen, B. (GG-06)	224
Jeon, C. (CP-14)	92
Jeon, H. (AB-03)	3
Jeon, H. (DC-12)	113
Jeon, H. (GD-10)	218

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Kan, I. (AQ-10)	24	Kassen, A. (CG-10)	84
Kan, J. (FP-03)	195	Kassen, A. (CG-12)	85
Kanada, I. (HF-07)	254	Kaštil, J. (BS-10)	62
Kanahara, D. (AB-06)	3	Katase, T. (DH-03)	122
Kanai, S. (AF-11)	13	Katine, J. (GF-01)	221
Kanai, S. (HE-10)	252	Katiyar, R.S. (DH-12)	124
Kanai, Y. (AP-04)	22	Katiyar, R.S. (FD-13)	183
Kanai, Y. (AQ-07)	23	Katmis, F. (CH-02)	85
Kanai, Y. (AQ-08)	24	Kato, A. (FG-01)	189
Kanai, Y. (AQ-09)	24	Kato, A. (FG-03)	189
Kanak, J. (CR-07)	96	Kato, A. (HF-01)	253
Kanak, J. (FE-05)	184	Kato, A. (HF-04)	253
Kanao, T. (GH-05)	225	Kato, D. (AS-13)	28
Kanao, T. (HH-11)	259	Kato, D. (FH-09)	192
Kanashima, T. (BQ-11)	58	Kato, T. (AP-09)	22
Kanashima, T. (CU-09)	102	Kato, T. (CC-07)	75
Kanashima, T. (FB-09)	178	Kato, T. (CP-13)	92
Kanashima, T. (GE-09)	220	Kato, T. (CQ-08)	94
Kanashima, T. (GE-10)	220	Kato, T. (FT-03)	203
Kanazawa, N. (DB-03)	109	Katoch, J. (FB-05)	177
Kane, A.M. (CE-09)	80	Katoch, J. (FB-06)	177
Kane, S. (DR-03)	131	Katoch, J. (FS-02)	201
Kaneko, M. (AG-11)	16	Katoch, J. (HE-04)	251
Kaneko, M. (CT-05)	99	Katoch, J. (HE-06)	251
Kaneko, U.F. (AW-07)	35	Katoch, J. (HE-07)	252
Kanemura, T. (AA-05)	2	Kaur, D. (CI-07)	89
Kang, B. (GW-04)	242	Kaushik, V. (EQ-04)	164
Kang, C. (EW-11)	175	Kawaguchi, M. (GV-05)	240
Kang, D. (GW-09)	243	Kawaguchi, T. (EQ-09)	164
Kang, K. (DC-09)	112	Kawahara, K. (FB-07)	178
Kang, S. (EP-12)	163	Kawai, T. (DH-13)	124
Kang, W. (BC-03)	40	Kawakami, R. (AC-11)	6
Kang, W. (BC-10)	41	Kawakami, R. (FB-05)	177
Kang, W. (ET-12)	170	Kawakami, R. (FB-06)	177
Kani, N. (AB-05)	3	Kawakami, R. (FB-10)	178
Kani, N. (HC-03)	246	Kawakami, R. (FS-02)	201
Kannan, H. (CC-05)	75	Kawakami, R. (FS-11)	202
Kano, H. (CQ-08)	94	Kawakami, R. (GB-14)	213
Kanzyuba, V. (ES-12)	168	Kawakami, R. (HE-04)	251
Kao, C. (GP-08)	230	Kawakami, R. (HE-06)	251
Kao, M. (GT-12)	237	Kawakami, R. (HE-07)	252
Kapaklis, V. (CE-01)	79	Kawana, M. (DV-02)	138
Kapaklis, V. (CE-10)	80	Kawano, M. (FB-09)	178
Kapaklis, V. (CE-11)	80	Kawashima, T. (EQ-09)	164
Kapaklis, V. (CQ-15)	95	Kazakova, O. (AG-07)	15
Kapaklis, V. (ER-01)	165	Kazakova, O. (BD-08)	43
Kar, G.S. (AF-07)	13	Kazakova, O. (DI-09)	126
Kar, G.S. (BE-02)	44	Kazemi, M. (FS-07)	202
Kar, G.S. (BF-06)	47	Kazi, F. (FH-11)	192
Karapetrov, G. (FR-09)	200	Ke, L. (BH-10)	52
Karapetrov, G. (FR-14)	201	Ke, L. (BT-09)	64
Karapetrova, E. (DG-14)	122	Ke, L. (BT-15)	65
Kardasz, B. (AF-12)	14	Ke, L. (CG-11)	85
Kardasz, B. (EU-11)	172	Ke, S. (EE-06)	151
Karenowska, A.D. (CB-11)	74	Ke, Y. (FV-10)	208
Karenowska, A.D. (EB-13)	145	Keenan, K.E. (AG-06)	15
Karenowska, A.D. (HB-11)	246	Kehagias, T. (DC-06)	112
Karfaridis, D. (DC-07)	112	Kehlberger, A. (CP-02)	91
Karis, O. (EC-13)	148	Kehlberger, A. (GB-05)	212
Karns, D. (AQ-02)	23	Keller, S. (DC-06)	112
Karo, H. (CT-08)	100	Keller, S. (DC-07)	112
Karpenkov, D.Y. (DG-01)	120	Keller, S. (GF-05)	222
Karwacki, L. (CR-07)	96	Kelly, P. (HE-08)	252
Kasahara, Y. (EE-01)	150	Kenawy, A. (GD-01)	216
Kasai, S. (EF-03)	153	Kent, A.D. (AF-12)	14
Kasai, S. (GV-14)	241	Kent, A.D. (BF-09)	48
Kasai, S. (HA-02)	243	Kent, A.D. (CH-05)	86
Kasai, S. (HB-09)	245	Kent, A.D. (EU-11)	172
Kasai, S. (HD-06)	249	Kent, A.D. (FA-03)	176
Kasai, S. (HH-14)	260	Kent, A.D. (FC-07)	180
Kashiwagi, A. (AT-11)	30	Kent, A.D. (FS-14)	203
Kashiwagi, H. (AT-11)	30	Kenzelmann, M. (FD-02)	181
Kashiwagi, H. (EP-13)	163	Kepaptsoglou, D. (CH-01)	85
Kashyap, A. (AU-03)	31	Kepaptsoglou, D. (EI-07)	160
Kashyap, A. (AU-09)	32	Kepaptsoglou, D. (HD-07)	249
Kashyap, A. (GP-15)	230	Kepaptsoglou, D. (HD-08)	249
Kasiviswanathan, S. (AW-03)	35	Keppens, V. (BI-08)	54

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Kermorvant, J. (GF-03)	221	Kilic, U. (GS-11)	236
Keshavarz, S. (EF-05)	153	Kilic, V. (GI-02)	227
Keshavarz, S. (GB-11)	213	Kim, C. (BS-09)	62
Keshavarz, S. (HD-09)	249	Kim, C. (DS-10)	134
Keskinbora, K. (EB-04)	144	Kim, C. (DS-11)	134
Ketterson, J.B. (DB-01)	108	Kim, C. (DW-06)	140
Kevan, S.D. (FI-03)	193	Kim, C. (FV-09)	208
Keylin, V. (CU-11)	102	Kim, C. (FW-05)	209
Keylin, V. (EP-14)	163	Kim, C. (GP-13)	230
Keylin, V. (HF-06)	254	Kim, D. (CP-14)	92
Keylin, V. (HG-08)	256	Kim, D. (DD-09)	114
Khaire, T. (CE-05)	79	Kim, D. (DW-12)	141
Khaire, T. (FQ-13)	199	Kim, D. (EF-12)	154
Khalili, P. (AC-02)	5	Kim, D. (EG-13)	156
Khalili, P. (CE-02)	79	Kim, D. (EP-03)	162
Khalili, P. (DE-03)	115	Kim, D. (EQ-14)	165
Khalili, P. (EE-07)	151	Kim, D. (ET-08)	170
Khalili, P. (FF-13)	188	Kim, D. (FU-05)	205
Khalili, P. (GF-01)	221	Kim, D. (FU-08)	205
Khalili, P. (GV-01)	240	Kim, D. (GQ-09)	232
Khalili, P. (GV-03)	240	Kim, D. (GU-10)	239
Khalsa, G. (BH-11)	52	Kim, D. (HD-02)	248
Khan, B. (BI-13)	55	Kim, H. (FS-03)	201
Khan, B. (DH-12)	124	Kim, H. (GS-02)	235
Khan, B. (FD-13)	183	Kim, H. (GW-08)	242
Khan, M. (AD-07)	8	Kim, H. (GW-09)	243
Khan, M.A. (FT-02)	203	Kim, J. (AH-09)	17
Khan, M.U. (AD-04)	7	Kim, J. (BC-09)	41
Khan, M.U. (BU-10)	66	Kim, J. (BD-05)	42
Khan, M.U. (ES-05)	168	Kim, J. (CD-04)	77
Khan, N. (CI-10)	89	Kim, J. (CT-02)	99
Khan, S. (DF-01)	118	Kim, J. (DE-14)	117
Khan, S. (EI-08)	160	Kim, J. (DQ-04)	129
Khan, T. (ES-13)	168	Kim, J. (DQ-05)	129
Khan, U. (EQ-03)	164	Kim, J. (DV-05)	138
Khan, U. (EQ-10)	165	Kim, J. (EB-02)	143
Khan, U. (FS-09)	202	Kim, J. (EE-06)	151
Khan, U. (HG-03)	256	Kim, J. (EI-03)	160
Khanal, S. (CB-06)	73	Kim, J. (EW-04)	175
Khanna, M. (FQ-10)	198	Kim, J. (FU-05)	205
Kharel, P.R. (BQ-08)	58	Kim, J. (GB-04)	212
Kharel, P.R. (CU-12)	102	Kim, J. (GE-12)	220
Kharel, P.R. (GV-12)	241	Kim, J. (GE-13)	220
Kharel, P.R. (HD-02)	248	Kim, J. (GU-07)	239
Khdour, M. (GI-07)	228	Kim, J. (GU-08)	239
Khitun, A. (AR-07)	25	Kim, J. (HB-05)	244
Khitun, A. (AR-10)	26	Kim, J. (HC-01)	246
Khitun, A. (AR-11)	26	Kim, K. (CC-01)	74
Khizroev, S. (EU-13)	172	Kim, K. (EG-13)	156
Khmelevskiy, S. (AE-09)	10	Kim, K. (EV-08)	173
Khodadadi, B. (AB-02)	2	Kim, K. (GC-04)	214
Khodadadi, B. (GB-11)	213	Kim, K. (GV-05)	240
Khodadadi, B. (GS-07)	235	Kim, K. (HB-07)	245
Kholid, F.N. (BD-02)	42	Kim, M. (DU-15)	137
Kholid, F.N. (GU-05)	239	Kim, M. (FW-05)	209
Khovaylo, V. (AW-01)	35	Kim, N. (DE-14)	117
Khurshid, H. (CT-09)	100	Kim, N. (GU-07)	239
Khvalkovskiy, A.V. (EU-04)	171	Kim, N. (GU-08)	239
Khymyn, R. (DD-06)	114	Kim, N. (HB-05)	244
Khymyn, R. (FC-05)	179	Kim, S. (AC-02)	5
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Kirby, B.J. (CU-08)	102	Kobayashi, S. (CS-09)	98
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Laczkowski, P. (CR-10)	96	Lapa, P.N. (GR-06)	234
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Langer, J. (FU-02)	205	Le Roy, D. (CT-07)	99
Langer, J. (FU-10)	206	Le, B.L. (CE-08)	80
Langer, J. (GF-01)	221	Le, B.L. (FI-05)	194
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Langridge, S. (CH-14)	87	Lebrun, R. (DV-13)	139
Langridge, S. (CH-15)	88	Lebrun, R. (GF-02)	221
Langridge, S. (CU-08)	102	Lebrun, R. (HC-01)	246
Langridge, S. (ES-03)	167	Lebrun, R. (HC-05)	247
Langridge, S. (FF-07)	187	Lebrun, R. (HC-06)	247
Langridge, S. (FI-06)	194	LeClair, P.R. (EF-05)	153
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Lee, H. (DG-13)	122	Leighton, C. (FI-04)	193
Lee, H. (ES-12)	168	Leighton, C. (FI-05)	194
Lee, H. (GV-01)	240	Leighton, C. (GE-03)	219
Lee, H. (GV-03)	240	Leighton, C. (HB-07)	245
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Lee, J. (BA-02)	37	Lejeune, B. (CG-06)	84
Lee, J. (BE-05)	45	Lejman, M. (CH-04)	86
Lee, J. (BV-16)	69	Lemesh, I. (AC-03)	5
Lee, J. (CC-06)	75	Lemke, H. (BS-13)	62
Lee, J. (CR-09)	96	Lendinez, S. (CE-05)	79
Lee, J. (DI-09)	126	Lendinez, S. (EC-01)	145
Lee, J. (DQ-07)	129	Lendinez, S. (ET-09)	170
Lee, J. (EG-13)	156	Lendinez, S. (FQ-13)	199
Lee, J.C. (BC-08)	41	Lendinez, S. (FR-09)	200
Lee, J.C. (FI-03)	193	Lenox, P. (GD-11)	218
Lee, K. (CC-01)	74	Lenz, K. (BC-07)	41
Lee, K. (CD-11)	78	Leo, N. (FI-02)	193
Lee, K. (CP-14)	92	Leong, S.H. (BD-02)	42
Lee, K. (CW-12)	107	Leong, S.H. (GC-12)	216
Lee, K. (DE-14)	117	Leonov, A. (AC-06)	6
Lee, K. (DI-08)	126	Lepadatu, S. (BD-04)	42
Lee, K. (DQ-05)	129	Lesne, E. (BA-03)	37
Lee, K. (DS-15)	134	Lesseux, G.G. (AU-04)	31
Lee, K. (EP-12)	163	Lesseux, G.G. (AU-11)	32
Lee, K. (FC-13)	181	Leufke, P.M. (DH-06)	123
Lee, K. (FE-01)	183	Leung, C. (GV-02)	240
Lee, K. (FR-12)	200	Levartowski de Araujo, C. (BF-02)	47
Lee, K. (GC-04)	214	Lew, W. (BD-02)	42
Lee, K. (GT-10)	237	Lew, W. (ET-14)	170
Lee, K. (GU-08)	239	Lew, W. (FU-09)	205
Lee, K. (HB-05)	244	Lew, W. (GC-12)	216
Lee, M.S. (CE-07)	80	Lew, W. (GR-08)	234
Lee, M.S. (CE-09)	80	Lew, W. (GU-05)	239
Lee, N. (DC-09)	112	Lewis, L. (BT-02)	63
Lee, N. (DV-01)	138	Lewis, L. (BT-05)	64
Lee, O. (GH-03)	225	Lewis, L. (CG-06)	84
Lee, S. (BQ-14)	58	Lewis, L.H. (GS-10)	236
Lee, S. (CD-11)	78	Li, B. (EF-12)	154
Lee, S. (CF-15)	83	Li, C. (CI-04)	89
Lee, S. (DQ-05)	129	Li, C. (CS-05)	97
Lee, S. (DQ-07)	129	Li, C. (CU-15)	103
Lee, S. (DQ-14)	130	Li, C. (DG-12)	121
Lee, S. (DT-02)	134	Li, C. (ER-10)	166
Lee, S. (EP-03)	162	Li, C. (FU-15)	206
Lee, S. (ES-03)	167	Li, C.H. (HB-04)	244
Lee, S. (ES-11)	168	Li, C.H. (HE-11)	252
Lee, S. (ES-12)	168	Li, E. (GI-01)	227
Lee, S. (FC-13)	181	Li, E. (GI-05)	228
Lee, S. (FF-07)	187	Li, G. (AE-10)	11
Lee, S. (FQ-08)	198	Li, H. (CR-02)	95
Lee, S. (FS-04)	201	Li, H. (EF-07)	153
Lee, S. (GC-04)	214	Li, H. (EF-09)	154
Lee, S. (GQ-08)	232	Li, H. (EG-12)	156
Lee, S. (GT-10)	237	Li, H. (HH-10)	259
Lee, S. (GT-12)	237	Li, J. (AQ-14)	24
Lee, S. (GV-13)	241	Li, J. (AV-03)	33
Lee, S. (HF-05)	253	Li, J. (BR-02)	59
Lee, T. (AD-13)	9	Li, J. (BT-07)	64
Lee, T. (CI-01)	88	Li, J. (CW-09)	106
Lee, W. (AG-13)	16	Li, J. (DQ-15)	130
Lee, W. (CT-02)	99	Li, J. (DR-15)	132
Lee, W. (DG-10)	121	Li, J. (DT-05)	135
Lee, W. (DG-13)	122	Li, J. (FH-10)	192
Lee, W. (HI-06)	261	Li, J. (FW-08)	209
Lee, Y. (EU-13)	172	Li, J. (HC-08)	247
Lee, Y. (FS-03)	201	Li, K. (EC-08)	147
Lees, M.R. (FD-12)	183	Li, K. (GI-01)	227
Legrand, W. (AC-08)	6	Li, K. (GI-05)	228
Legrand, W. (CC-06)	75	Li, L. (BI-08)	54
Legrand, W. (CD-03)	77	Li, L. (CV-14)	105

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Li, L. (DE-03)	115	Lian, C. (GT-05)	237
Li, L. (GG-08)	224	Liang, C. (CQ-10)	94
Li, L. (HB-04)	244	Liang, C. (EB-08)	144
Li, L. (HE-11)	252	Liang, C. (FP-12)	197
Li, M. (AT-12)	30	Liang, F. (CV-01)	103
Li, M. (BU-06)	66	Liang, F. (CV-04)	103
Li, M. (DE-03)	115	Liang, G. (BR-13)	60
Li, M. (DV-07)	139	Liang, J. (AR-06)	25
Li, M. (EG-14)	156	Liang, J. (AU-12)	32
Li, M. (FH-02)	191	Liang, J. (FR-15)	201
Li, M. (FV-02)	207	Liang, J. (GT-12)	237
Li, M. (FW-12)	210	Liang, T. (HG-12)	257
Li, M. (FW-13)	210	Liang, W. (FV-08)	208
Li, M. (HD-14)	250	Liang, X. (DR-09)	131
Li, P. (AS-10)	28	Liao, Z. (GT-14)	238
Li, P. (BA-05)	37	Lidig, C. (EF-01)	152
Li, P. (DP-02)	127	Liermann, H. (EH-06)	158
Li, P. (GP-01)	229	Liersch, V. (GT-06)	237
Li, P. (GQ-01)	231	Lim, J. (DS-11)	134
Li, P. (GU-04)	238	Lim, J. (FV-09)	208
Li, R. (BR-08)	60	Lim, J. (FW-05)	209
Li, R. (BU-03)	65	Lim, J. (GP-13)	230
Li, R. (BV-05)	68	Lim, P. (DF-10)	119
Li, R. (BV-06)	68	Lim, P. (HG-13)	257
Li, R. (FR-01)	199	Lim, S. (CE-04)	79
Li, S. (AT-09)	30	Lim, S. (GQ-08)	232
Li, S. (ER-06)	166	Lima, T. (FD-03)	181
Li, S. (FV-06)	207	Lin, C. (ET-04)	169
Li, S. (GC-13)	216	Lin, C. (GQ-02)	231
Li, S. (GH-02)	225	Lin, H. (AR-09)	26
Li, S.H. (GC-12)	216	Lin, H. (AT-09)	30
Li, W. (BU-14)	67	Lin, H. (AU-06)	31
Li, W. (BV-10)	68	Lin, H. (AW-09)	36
Li, W. (CR-04)	95	Lin, H. (CP-10)	92
Li, W. (EG-04)	155	Lin, H. (ER-06)	166
Li, W. (FG-09)	190	Lin, H. (ES-01)	167
Li, W. (FW-13)	210	Lin, H. (FV-06)	207
Li, W. (FW-14)	210	Lin, H. (FW-12)	210
Li, W. (GG-05)	223	Lin, H. (GF-06)	222
Li, X. (AC-02)	5	Lin, H. (GF-07)	222
Li, X. (CQ-10)	94	Lin, H. (GI-06)	228
Li, X. (EE-07)	151	Lin, H. (GU-02)	238
Li, X. (EF-07)	153	Lin, J. (BI-03)	53
Li, X. (ES-08)	168	Lin, J. (BW-08)	70
Li, X. (ES-12)	168	Lin, J. (GP-10)	230
Li, X. (FF-13)	188	Lin, K. (ER-08)	166
Li, X. (FP-05)	196	Lin, K. (FR-13)	200
Li, X. (FS-05)	202	Lin, K. (GP-09)	230
Li, X. (FW-07)	209	Lin, K. (GQ-02)	231
Li, X. (GF-05)	222	Lin, L. (ES-11)	168
Li, X. (GS-01)	235	Lin, S. (CD-01)	76
Li, X. (HD-02)	248	Lin, S. (GP-07)	229
Li, X. (HI-01)	260	Lin, T. (AF-07)	13
Li, Y. (AT-02)	29	Lin, T. (BE-02)	44
Li, Y. (AT-08)	30	Lin, T. (BF-06)	47
Li, Y. (BP-10)	56	Lin, W. (AA-03)	1
Li, Y. (BV-01)	67	Lin, W. (EE-04)	151
Li, Y. (BV-02)	67	Lin, W. (ER-05)	166
Li, Y. (BW-01)	69	Lin, W. (FE-06)	184
Li, Y. (BW-14)	71	Lin, W. (FR-08)	200
Li, Y. (CB-10)	74	Lin, W. (FT-05)	203
Li, Y. (CP-01)	91	Lin, W. (GQ-13)	233
Li, Y. (CV-01)	103	Lin, Y. (AU-12)	32
Li, Y. (CW-02)	105	Lin, Z. (DP-08)	128
Li, Y. (CW-03)	106	Lin, Z. (HI-01)	260
Li, Y. (CW-09)	106	Lindemuth, J. (DR-10)	132
Li, Y. (DD-10)	114	Linder, J. (BI-05)	53
Li, Y. (DS-04)	133	Lindner, J. (FC-04)	179
Li, Y. (DS-14)	134	Lindner, J. (FF-02)	186
Li, Y. (EG-12)	156	Lindner, J. (GT-06)	237
Li, Y. (FQ-04)	198	Linfield, E. (BF-04)	47
Li, Y. (FR-07)	200	Linfield, E. (CB-10)	74
Li, Y. (FR-10)	200	Ling, H. (AE-10)	11
Li, Y. (FW-08)	209	Ling, Z. (CT-04)	99
Li, Y. (GQ-14)	233	Ling, Z. (EW-13)	175
Li, Y. (HB-02)	244	Ling, Z. (EW-14)	176
Li, Z. (BV-02)	67	Lion, C. (AG-01)	14

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Liou, S. (AS-09)	27	Liu, P. (DF-09)	119
Liou, S. (DW-11)	141	Liu, P. (DG-12)	121
Lisenkov, I. (DB-05)	109	Liu, P.F. (BR-06)	59
Lisenkov, I. (FC-05)	179	Liu, Q. (AS-03)	27
Lisenkov, I. (HC-08)	247	Liu, Q. (AV-05)	33
Lisfi, A. (BT-04)	63	Liu, Q. (DI-03)	125
Litvinenko, A. (GF-04)	221	Liu, T. (EQ-07)	164
Litvinov, D. (AD-13)	9	Liu, T. (GE-12)	220
Litvinov, D. (ER-11)	166	Liu, T. (GT-04)	237
Litzius, K. (AC-03)	5	Liu, T. (GT-14)	238
Litzius, K. (BC-11)	41	Liu, W. (AD-09)	8
Liu, A. (HF-04)	253	Liu, W. (BI-03)	53
Liu, B. (AE-10)	11	Liu, W. (BQ-09)	58
Liu, B. (DH-09)	123	Liu, W. (BS-07)	61
Liu, B. (EU-14)	172	Liu, W. (BT-07)	64
Liu, C. (DP-11)	128	Liu, W. (BU-12)	66
Liu, C. (DP-12)	128	Liu, W. (BU-13)	66
Liu, C. (FW-03)	209	Liu, W. (BV-13)	68
Liu, C. (GT-14)	238	Liu, W. (CC-08)	75
Liu, C. (HI-05)	261	Liu, W. (CV-08)	104
Liu, D. (BU-03)	65	Liu, W. (CW-13)	107
Liu, D. (BU-07)	66	Liu, W. (DS-14)	134
Liu, D. (BV-06)	68	Liu, W. (EG-11)	156
Liu, D. (CU-15)	103	Liu, W. (EG-12)	156
Liu, D. (EH-05)	157	Liu, W. (GG-11)	224
Liu, E. (AF-07)	13	Liu, W. (GP-07)	229
Liu, E. (AR-04)	25	Liu, W. (GQ-03)	231
Liu, E. (BE-02)	44	Liu, X. (AW-06)	35
Liu, E. (BF-06)	47	Liu, X. (BQ-14)	58
Liu, E. (BQ-05)	57	Liu, X. (BT-16)	65
Liu, E. (BQ-06)	57	Liu, X. (BW-04)	70
Liu, E. (BQ-09)	58	Liu, X. (CD-13)	78
Liu, E. (CQ-02)	93	Liu, X. (CU-04)	101
Liu, E. (CV-08)	104	Liu, X. (DP-02)	127
Liu, F. (GR-10)	234	Liu, X. (EH-05)	157
Liu, G. (BR-08)	60	Liu, X. (ER-06)	166
Liu, G. (EV-01)	173	Liu, X. (ES-08)	168
Liu, G. (EV-03)	173	Liu, X. (ES-12)	168
Liu, G. (EW-01)	174	Liu, X. (FD-07)	182
Liu, H. (AS-02)	27	Liu, X. (FQ-08)	198
Liu, H. (FV-08)	208	Liu, X. (FU-11)	206
Liu, J. (BI-09)	54	Liu, X. (GI-08)	228
Liu, J. (BT-08)	64	Liu, Y. (AH-03)	17
Liu, J. (CG-09)	84	Liu, Y. (AS-09)	27
Liu, J. (CV-05)	104	Liu, Y. (AV-07)	34
Liu, J. (DG-11)	121	Liu, Y. (BE-01)	44
Liu, J. (DS-14)	134	Liu, Y. (BE-15)	46
Liu, J. (DU-02)	136	Liu, Y. (BH-03)	51
Liu, J. (EH-07)	158	Liu, Y. (BV-02)	67
Liu, J. (EV-12)	174	Liu, Y. (BW-09)	70
Liu, J. (EW-03)	175	Liu, Y. (CG-08)	84
Liu, J. (FQ-12)	198	Liu, Y. (DI-05)	125
Liu, J. (FQ-14)	199	Liu, Y. (DT-09)	135
Liu, J. (FW-01)	208	Liu, Y. (FU-10)	206
Liu, J. (FW-02)	209	Liu, Y. (FU-14)	206
Liu, J. (GF-10)	222	Liu, Y. (GC-11)	216
Liu, J. (GH-02)	225	Liu, Y. (GP-14)	230
Liu, J. (GS-09)	236	Liu, Y. (GT-04)	237
Liu, J. (HI-01)	260	Liu, Z. (BU-06)	66
Liu, K. (BC-07)	41	Liu, Z. (EG-14)	156
Liu, K. (CG-04)	84	Liu, Z. (HH-01)	258
Liu, K. (DH-07)	123	Livesey, K. (CS-12)	98
Liu, K. (DQ-15)	130	Livesey, K. (HG-09)	256
Liu, K. (HH-03)	258	Lixandru, A. (FG-11)	191
Liu, L. (BU-06)	66	Llandro, J. (AF-11)	13
Liu, L. (EG-14)	156	Llandro, J. (CH-10)	87
Liu, L. (FC-12)	180	Lo Conte, R. (DE-14)	117
Liu, M. (ED-02)	148	Lo Conte, R. (FE-01)	183
Liu, M. (ED-06)	149	Lo Conte, R. (HB-05)	244
Liu, M. (EE-10)	152	Lo, S. (EE-04)	151
Liu, M. (FQ-07)	198	Locatelli, A. (AC-01)	5
Liu, M. (GI-09)	228	Locatelli, A. (AH-06)	17
Liu, M. (GQ-10)	232	Locatelli, A. (DD-01)	113
Liu, P. (BT-12)	64	Locatelli, A. (FI-01)	193
Liu, P. (BU-15)	67	Locatelli, N. (CD-10)	78
Liu, P. (DF-04)	118	Locatelli, N. (HC-01)	246
		Loewe, K. (BV-11)	68

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Lofink, F. (AI-11)	20
Logemann, R. (FI-13)	195
Lograsso, T.A. (GG-08)	224
Lograsso, T.A. (HG-02)	256
Loh, J. (AD-02)	7
Lokendra, K. (BU-02)	65
Lomakin, V. (AE-07)	10
Lomakin, V. (BF-09)	48
Lomakin, V. (CD-05)	77
Lomakin, V. (CF-05)	81
Lomakin, V. (CF-06)	82
Lomakin, V. (CF-12)	83
Lomakin, V. (EU-04)	171
Lomakin, V. (FP-03)	195
Lomakin, V. (FQ-02)	197
Lombardi, E. (ES-09)	168
Lombardi, F. (GP-17)	231
Lömker, P. (BW-11)	70
Lömker, P. (EI-04)	160
Long, M. (DQ-15)	130
Long, Y. (DT-09)	135
Lopatin, S. (AH-02)	16
López González, D. (ED-08)	149
Lopez-Diaz, L. (EC-02)	145
Lopez-Diaz, L. (FU-10)	206
Lopez-Noda, R. (CI-03)	88
Lopez-Ruiz, R. (DF-07)	119
Lopez, J. (ET-10)	170
Lora-Serrano, R. (BS-12)	62
Losby, J. (DV-03)	138
Losno, R. (AG-01)	14
Lou, G. (DI-03)	125
Lou, P. (CP-07)	91
Louidi, S. (DT-03)	135
Louis, S. (HC-08)	247
Lovas, K. (EP-11)	163
Love, C. (GD-15)	218
Love, D.M. (CH-10)	87
Lowden, R. (GG-08)	224
Lozenko, A. (BQ-02)	57
Lu, C. (DI-04)	125
Lu, C. (GQ-03)	231
Lu, F. (AH-13)	18
Lu, J. (BS-07)	61
Lu, J. (BU-03)	65
Lu, J. (GE-12)	220
Lu, K. (DI-04)	125
Lu, L. (BA-05)	37
Lu, M. (AG-05)	15
Lu, Q. (BQ-09)	58
Lu, Q. (BT-07)	64
Lu, Q. (BT-16)	65
Lu, Q. (BU-12)	66
Lu, Q. (BU-13)	66
Lu, Q. (CU-15)	103
Lu, Q. (CV-08)	104
Lu, Q. (EG-12)	156
Lu, Q. (EV-15)	174
Lu, Q. (HI-14)	262
Lu, W. (CU-13)	102
Lu, X. (AE-10)	11
Lu, X. (AQ-13)	24
Lu, X. (GQ-03)	231
Lu, Y. (HH-13)	259
Lubarda, M.V. (CD-05)	77
Lubarda, M.V. (CF-12)	83
Lubarda, M.V. (FP-03)	195
Lubarda, M.V. (FQ-02)	197
Lucas, I. (GB-10)	213
Lucas, M.S. (DG-14)	122
Ludwig, J. (BQ-04)	57
Ludwig, J. (FF-05)	187
Luetkens, H. (FF-07)	187
Luis de Oliveira Paula, F. (BG-01)	49
Luis de Oliveira Paula, F. (DR-05)	131
Luis-Martinez, R. (ET-01)	169
Luis, F. (DF-07)	119

Lukashev, P. (AU-01)	31
Lukashev, P. (BQ-08)	58
Lukashev, P. (CU-12)	102
Lukashev, P. (GV-04)	240
Lukaszew, R.A. (FR-11)	200
Lukins, R.E. (BH-09)	52
Lumsden, M. (BI-04)	53
Lüning, J. (EC-08)	147
Lüning, J. (FI-02)	193
Luo, H. (GP-12)	230
Luo, J. (EV-07)	173
Luo, J. (EV-10)	174
Luo, L. (FP-10)	196
Luo, S. (AR-06)	25
Luo, Y. (DP-11)	128
Luo, Y. (DP-12)	128
Luo, Y. (FB-10)	178
Luo, Y. (FS-11)	202
Luo, Y. (HF-02)	253
Lupu, N. (BG-06)	50
Lupu, N. (BP-13)	56
Lupu, N. (CS-04)	97
Lupu, N. (DF-02)	118
Lupu, N. (DU-05)	136
Lupu, N. (DU-07)	137
Lupu, N. (DU-13)	137
Lupu, N. (HF-10)	254
Lv, Y. (BA-02)	37
Lv, Y. (CR-13)	96
Lv, Y. (EF-09)	154
Lv, Y. (GU-11)	239
Lynch, C.S. (GF-05)	222

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Ma, B. (AP-01)	21
Ma, B. (AQ-01)	23
Ma, B. (BT-08)	64
Ma, B. (CG-09)	84
Ma, C. (BW-03)	69
Ma, J. (HD-09)	249
Ma, L. (CP-15)	92
Ma, L. (DC-08)	112
Ma, L. (FC-09)	180
Ma, M. (EW-15)	176
Ma, Q. (BV-02)	67
Ma, Q. (HB-02)	244
Ma, S. (CU-13)	102
Ma, T. (FI-07)	194
Ma, X. (GR-01)	233
Ma, Y. (BW-03)	69
Ma, Y. (FV-10)	208
Ma, Y. (FW-08)	209
Ma, Y. (ZA-02)	142
Ma, Z. (BG-05)	49
Maan, J.C. (EC-11)	147
Maat, N. (EG-05)	155
Maat, S. (CS-12)	98
Maat, S. (HG-09)	256
Maccariello, D. (AC-08)	6
Maccariello, D. (CD-03)	77
MacDonald, A.H. (BA-01)	36
MacDonald, A.H. (HE-09)	252
Machida, H. (GG-07)	224
Machida, K. (AT-15)	30
Macià, F. (EC-01)	145
Macia, F. (FS-14)	203
MacNeill, D. (DE-01)	115
Madami, M. (EC-04)	146
Madami, M. (GC-06)	215
Madami, M. (GT-02)	236
Maddu, R. (GU-05)	239
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Maeder, X. (BR-09)	60
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Maenhoudt, W. (DW-03)	140	Manjanna, J. (CS-09)	98
Magalhães-Paniago, R. (GR-04)	234	Mankey, G. (DG-09)	121
Magén, C. (BQ-02)	57	Mankey, G. (DG-13)	122
Magén, C. (DF-13)	120	Mankey, G. (EF-05)	153
Magen, C. (HG-05)	256	Mankey, G. (HF-07)	254
Magni, A. (FU-10)	206	Mankey, G. (HI-06)	261
Magnus, F. (FT-01)	203	Mann, M. (CC-03)	75
Magnussen, O.M. (BS-13)	62	Mann, M. (CC-08)	75
Mahalingam, K. (GD-10)	218	Mann, M. (CR-11)	96
Mahendiran, R. (BW-15)	71	Mann, M. (DC-13)	113
Mahendiran, R. (CU-01)	101	Manna, P. (EP-10)	163
Mahendra, D. (BA-02)	37	Manna, P. (GQ-02)	231
Mahendra, D. (CR-02)	95	Manna, S. (BI-02)	53
Mahendru, D. (BE-05)	45	Manna, S. (DD-09)	114
Mahfouzi, F. (BA-02)	37	Manna, S. (FP-03)	195
Majetich, S. (AH-07)	17	Manna, S. (FU-02)	205
Majetich, S. (ED-01)	148	Manna, S. (GQ-04)	231
Majetich, S. (FE-14)	185	Manno, M. (AB-02)	2
Majid, A. (DF-01)	118	Manno, M. (CE-08)	80
Majima, Y. (FH-06)	192	Manno, M. (FI-04)	193
Majumdar, A. (DH-04)	123	Manno, M. (FI-05)	194
Mak, C. (GV-02)	240	Mansell, R. (AG-07)	15
Makarov, D. (FH-01)	191	Mansell, R. (BD-08)	43
Makino, A. (DT-08)	135	Mansell, R. (BE-05)	45
Makino, A. (DT-10)	135	Mansell, R. (GD-02)	216
Maldonado-Camargo, L. (AG-08)	15	Mantovan, R. (FU-02)	205
Maletinsky, P. (CA-04)	72	Manuilov, S.A. (FS-10)	202
Malik, R. (EC-13)	148	Manzin, A. (BG-02)	49
Malik, S.K. (FV-11)	208	Manzoor, S. (ES-13)	168
Malinowski, G. (AB-01)	2	Mao, T. (BW-01)	69
Malinowski, G. (AE-04)	10	Mao, T. (FR-07)	200
Malinowski, G. (AE-12)	11	Mao, T. (FR-10)	200
Malinowski, G. (AE-13)	11	Maqableh, M. (CC-12)	76
Malinowski, G. (AE-15)	11	Maranville, B.B. (BC-07)	41
Malinowski, G. (EC-08)	147	Maranville, B.B. (DA-03)	108
Malinowski, G. (EC-09)	147	Maranville, B.B. (DH-07)	123
Malinowski, G. (EC-12)	147	Marbey, J.J. (AU-07)	32
Malinowski, G. (FE-02)	184	Marchack, N. (AF-01)	12
Maltby, N. (AD-09)	8	Marcin, J. (AR-05)	25
Mamin, J. (CA-03)	72	Marcin, J. (CV-02)	103
Mammeri, F. (CT-01)	99	Marcin, J. (ED-07)	149
Manabe, A. (FG-01)	189	Marianni, M. (FU-02)	205
Manabe, A. (FG-03)	189	Marie, X. (AU-15)	32
Manabe, A. (FG-10)	191	Markandeyulu, G. (AI-06)	19
Manchanda, P. (AH-15)	18	Markovich, V. (CU-02)	101
Manchon, A. (BB-11)	39	Maron Vichi, F. (FI-12)	195
Manchon, A. (BC-04)	40	Maroutian, T. (ER-13)	167
Manchon, A. (BD-11)	43	Marrows, C.H. (BD-04)	42
Manchon, A. (CC-04)	75	Marrows, C.H. (BD-12)	43
Manchon, A. (CF-08)	82	Marrows, C.H. (CB-10)	74
Manchon, A. (DE-11)	117	Marrows, C.H. (CH-13)	87
Manchon, A. (FC-02)	179	Marrows, C.H. (DE-10)	116
Manchon, A. (FC-03)	179	Marrows, C.H. (FI-06)	194
Manchon, A. (FP-06)	196	Marrows, C.H. (FU-04)	205
Manchon, A. (GC-07)	215	Marshall, L. (BT-05)	64
Manchon, A. (GU-04)	238	Marshall, L.G. (GS-10)	236
Mandal, P. (CI-10)	89	Marsili, R. (DU-01)	136
Mandal, P. (CQ-07)	94	Martens, K.M. (EU-15)	172
Mandru, A.O. (AI-04)	19	Martens, R. (EF-05)	153
Mandrus, D. (BI-08)	54	Martens, U. (BS-03)	61
Manfreda, M. (FP-11)	197	Martens, U. (FF-05)	187
Manfrinetti, P. (AD-08)	8	Martin-Cid, A. (EG-10)	156
Manfrini, M. (BP-01)	55	Martin-Cid, A. (FG-04)	190
Manfrini, M. (CB-03)	73	Martin, C. (CU-02)	101
Manfrini, M. (EB-06)	144	Martin, J. (DV-06)	139
Mangin, S. (AE-04)	10	Martin, J. (ER-04)	166
Mangin, S. (AE-12)	11	Martin, M. (CH-10)	87
Mangin, S. (AE-15)	11	Martínez-García, J.C. (DW-15)	141
Mangin, S. (BF-09)	48	Martinez, E. (DD-05)	114
Mangin, S. (CF-12)	83	Martinez, E. (DD-11)	115
Mangin, S. (EC-09)	147	Martinez, E. (DE-14)	117
Mangin, S. (FE-02)	184	Martinez, E. (ET-01)	169
Mangin, S. (FQ-02)	197	Martinez, E. (EU-01)	171
Maniçoba, G.C. (DP-09)	128	Martinez, G. (EF-15)	154
Manipatruni, S. (BF-03)	47	Martinez, J.C. (ET-14)	170
Manipatruni, S. (BF-11)	48	Martirosyan, K. (AD-13)	9

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Marty, A. (BA-03)	37	McGrouther, D. (BD-12)	43
Marty, A. (BB-07)	38	McGuire, M. (FG-07)	190
Marty, A. (CR-10)	96	McGuire, M. (GG-06)	224
Marty, A. (FU-03)	205	McHenry, M.E. (CU-11)	102
Marty, A. (FU-13)	206	McHenry, M.E. (DR-10)	132
Marty, A. (GE-05)	219	McHenry, M.E. (EP-14)	163
Marty, A. (HB-08)	245	McHenry, M.E. (HF-06)	254
Marysko, M. (CU-06)	101	McHenry, M.E. (HG-08)	256
Masaki, Y. (GT-11)	237	Mcintyre, L. (HD-03)	248
Maschek, M. (EH-15)	159	McKay, J. (AU-08)	32
Masood, K. (GD-11)	218	McKenna, K.P. (EI-07)	160
Massey, J. (BD-12)	43	Mckinnon, T. (FS-06)	202
Massey, J. (FU-04)	205	McMichael, B. (AF-06)	13
Masters, M. (BT-13)	64	McMichael, B. (FQ-12)	198
Masuda, K. (EF-03)	153	McMichael, B. (GF-10)	222
Masuda, R. (FG-10)	191	McMorran, B.J. (CD-05)	77
Masumoto, H. (BR-07)	59	McMorran, B.J. (DI-14)	127
Masumoto, H. (EF-08)	153	McVitie, S. (AC-06)	6
Masumoto, H. (HF-03)	253	McVitie, S. (BD-04)	42
Mates, J. (DW-11)	141	McVitie, S. (BD-12)	43
Mathieu, R. (CE-10)	80	McVitie, S. (CB-10)	74
Matos, I.T. (CS-08)	98	Md. Rabiul, I. (GI-08)	228
Matsuda, K. (DA-04)	108	Meckenstock, R. (AD-06)	8
Matsuda, K. (EE-09)	151	Meckenstock, R. (CV-09)	104
Matsui, T. (CU-10)	102	Meckenstock, R. (EH-03)	157
Matsui, T. (CU-14)	103	Medapalli, R. (DD-09)	114
Matsukura, F. (AF-11)	13	Medapalli, R. (HA-02)	243
Matsukura, F. (BD-01)	42	Medjanik, K. (EI-01)	159
Matsukura, F. (HE-10)	252	Meduna, M. (HG-11)	257
Matsumoto, K. (CV-12)	105	Medwal, R. (DC-02)	111
Matsumoto, K. (DT-12)	136	Meguro, A. (BT-03)	63
Matsumoto, M. (CQ-13)	94	Mehlawat, K. (GD-07)	217
Matsumoto, R. (AF-08)	13	Mehmood, W. (ES-13)	168
Matsumoto, R. (AR-01)	25	Mehofer, E. (CF-01)	81
Matsumoto, Y. (BE-04)	45	Mehta, A. (AD-03)	7
Matsumura, T. (CC-07)	75	Mehta, V.V. (CF-10)	82
Matsumura, T. (CP-13)	92	Mei, L. (AG-05)	15
Matsunaga, Y. (AG-02)	14	Meier, C. (GT-01)	236
Matsuo, A. (AW-08)	36	Meier, D. (BQ-04)	57
Matsushima, M. (FB-03)	177	Meier, D. (CH-06)	86
Matsushita, M. (BR-03)	59	Meier, D. (CR-12)	96
Matsushita, N. (BF-08)	48	Meier, D. (GB-07)	212
Matsushita, N. (DP-01)	127	Meier, D. (GB-09)	213
Matsuura, M. (GG-09)	224	Meier, G. (BH-04)	51
Matsuyama, K. (AQ-09)	24	Meier, G. (CD-09)	77
Matsuyama, K. (AQ-12)	24	Meier, G. (CR-03)	95
Matsuyama, K. (FP-07)	196	Meier, G. (DI-08)	126
Matsuyama, K. (FU-06)	205	Meier, J. (AH-01)	16
Matsuyama, K. (GT-03)	236	Meijer, M. (HD-04)	248
Matsuzaki, K. (EI-07)	160	Meinert, M. (FC-14)	181
Matsuzaki, K. (GD-15)	218	Meinert, M. (GS-05)	235
Mattersdorfer, C. (EU-09)	172	Meitzler, T. (HC-08)	247
Matthes, F. (CH-11)	87	Mekkaoui, S. (BG-10)	50
Maurel, L. (BQ-02)	57	Mekkaoui, S. (CT-07)	99
Mauri, D. (GH-01)	225	Melander, E. (CE-01)	79
May, S. (DH-02)	122	Mello, A. (GP-11)	230
Mayer, C. (EH-10)	158	Menarini, M. (AE-07)	10
Mayergoyz, I. (GI-03)	227	Menarini, M. (CF-05)	81
Mayoral, A. (AG-01)	14	Mendonça, E.C. (BS-12)	62
Mazaleyrat, F. (DR-03)	131	Meneses, C. (DR-06)	131
Mazario, E. (AG-01)	14	Meng, K. (AV-05)	33
Maziewski, A. (CH-07)	86	Meng, K. (BR-06)	59
Mazraati, H. (BB-09)	39	Meng, K. (BR-12)	60
Mazumdar, D. (CV-06)	104	Meng, K. (CP-05)	91
Mazumdar, D. (CV-07)	104	Meng, K. (CP-08)	92
Mazumdar, D. (DW-04)	140	Meng, K. (GP-05)	229
McCloy, J. (DI-10)	126	Meng, K. (GU-01)	238
McCoey, J. (CA-02)	71	Meng, M. (FB-05)	177
McComb, D. (BR-12)	60	Meng, Y. (BT-12)	64
McCord, J. (AE-08)	10	Menguy, N. (CS-01)	97
McCreary, K.M. (FB-10)	178	Menshaw, S. (GF-03)	221
McDonald, I. (BT-05)	64	Mentes, T. (AC-01)	5
McDonald, I. (CG-06)	84	Mentes, T. (AH-06)	17
McDonald, I. (GS-10)	236	Mentes, T. (DD-01)	113
McFadzean, S. (AC-06)	6	Mentes, T. (FI-01)	193
McGrouther, D. (AC-06)	6	Meo, A. (CF-14)	83
McGrouther, D. (BD-04)	42	Merazzo, K.J. (CD-10)	78

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Merazzo, K.J. (GF-02)	221	Mishra, S. (FI-03)	193
Merazzo, K.J. (GF-03)	221	Mishra, S.R. (BT-06)	64
Merazzo, K.J. (HC-05)	247	Mishra, S.R. (CU-07)	102
Mercer, T. (DW-02)	140	Mishra, S.R. (DS-08)	133
Mertens, S. (AF-07)	13	Mišina, M. (EG-01)	155
Mertens, S. (BE-02)	44	Misiorny, M. (GD-01)	216
Mertens, S. (BF-06)	47	Mitani, S. (AI-07)	20
Mewes, C.K. (AB-02)	2	Mitani, S. (EF-03)	153
Mewes, C.K. (AB-09)	4	Mitani, S. (FF-04)	186
Mewes, C.K. (CQ-03)	93	Mitani, S. (FF-06)	187
Mewes, C.K. (EH-12)	159	Mitani, S. (GV-14)	241
Mewes, C.K. (GS-07)	235	Mitani, S. (HB-09)	245
Mewes, C.K. (HF-07)	254	Mito, S. (EQ-09)	164
Mewes, T. (AB-02)	2	Mito, S. (FR-03)	199
Mewes, T. (AB-09)	4	Mitra, A. (GD-08)	217
Mewes, T. (BS-06)	61	Mitsumata, C. (CQ-13)	94
Mewes, T. (CQ-03)	93	Mitsumata, C. (GG-04)	223
Mewes, T. (DR-08)	131	Mitsumata, C. (GG-10)	224
Mewes, T. (EH-12)	159	Mitsuoka, T. (DP-01)	127
Mewes, T. (GB-11)	213	Miura, D. (CP-11)	92
Mewes, T. (GS-07)	235	Miura, K. (FE-08)	185
Mewes, T. (HF-07)	254	Miura, K. (FV-05)	207
Meyer, J. (AH-10)	18	Miura, S. (AF-10)	13
Meyers, D. (HG-09)	256	Miura, Y. (BE-04)	45
Mi, W. (BQ-13)	58	Miura, Y. (EF-03)	153
Mi, W. (BW-12)	70	Miura, Y. (FE-10)	185
Miao, B. (CP-09)	92	Miura, Y. (FF-11)	188
Miao, G. (DE-02)	115	Miwa, K. (EE-08)	151
Miao, J. (AV-05)	33	Miwa, S. (CC-13)	76
Miao, J. (BR-06)	59	Miwa, S. (DA-04)	108
Miao, J. (CP-05)	91	Miwa, S. (DE-07)	116
Miao, J. (CP-08)	92	Miwa, S. (EE-09)	151
Miao, J. (GP-05)	229	Miwa, S. (EU-15)	172
Miao, J. (GU-01)	238	Miwa, S. (GU-03)	238
Miao, M. (EE-06)	151	Miyakaze, R. (EE-09)	151
Miao, X. (BQ-01)	57	Miyamoto, Y. (DV-02)	138
Miao, X. (FP-05)	196	Miyata, H. (AS-06)	27
Miao, X. (GT-05)	237	Mizrahi, A. (HC-01)	246
Mibu, K. (BD-10)	43	Mizukami, S. (AI-03)	19
Michea, S. (FT-09)	204	Mizukami, S. (DB-12)	110
Michel, A. (DC-09)	112	Mizukami, S. (FF-11)	188
Miglierini, M. (HF-14)	255	Mizukami, S. (GT-10)	237
Migliorini, A. (EF-10)	154	Mizukawa, Y. (CT-13)	100
Miguel, J. (BD-04)	42	Mizukawa, Y. (CT-14)	100
Mihalceanu, L. (DC-07)	112	Mizukawa, Y. (EP-13)	163
Miki, H. (BR-07)	59	Mizushima, K. (GH-05)	225
Miller, C.W. (AB-02)	2	Mizushima, K. (HH-11)	259
Miller, C.W. (GR-06)	234	Mkhoyan, K.A. (BA-02)	37
Miller, D. (EP-10)	163	Mkhoyan, K.A. (FF-13)	188
Miltat, J. (CD-02)	76	Mkhoyan, K.A. (GE-03)	219
Min, B. (CC-01)	74	Mkhoyan, K.A. (HB-07)	245
Min, B. (ET-08)	170	Mkhoyan, K.A. (HE-04)	251
Min, B. (FU-05)	205	Mlynczak, E. (EI-04)	160
Mina, M. (AS-11)	28	Mo, L. (FP-04)	196
Mina, M. (GF-09)	222	Mo, L. (HA-04)	243
Mina, M. (HG-13)	257	Modi, A. (BR-04)	59
Minar, J. (EI-01)	159	Modi, A.G. (FH-11)	192
Ming, Y. (BQ-09)	58	Moehle, A. (CD-06)	77
Ming, Y. (BT-16)	65	Moessner, R. (BI-04)	53
Ming, Y. (BU-13)	66	Mogilyansky, D. (CU-02)	101
Ming, Y. (BV-13)	68	Mohapatra, J. (BU-15)	67
Ming, Y. (EH-05)	157	Mohapatra, J. (DF-04)	118
Ming, Y. (GG-11)	224	Mohapatra, J. (DF-09)	119
Mino, J. (EF-15)	154	Mohseni, S.M. (DB-07)	110
Miraglia, S. (EH-10)	158	Mokrousov, Y. (CH-13)	87
Miranda, R. (BH-06)	52	Molina-Luna, L. (BV-11)	68
Miron, I. (AC-01)	5	Molinari, A. (DH-06)	123
Miron, I. (DE-09)	116	Möller, G. (FI-02)	193
Miron, I. (FE-03)	184	Möller, J. (CD-09)	77
Miron, I. (GA-05)	211	Molnar, G. (AD-01)	7
Miron, I. (GC-07)	215	Mongolov, B. (AR-07)	25
Míšek, M. (BS-10)	62	Monsivais, G. (CB-05)	73
Mishima, C. (GG-09)	224	Montaigne, F. (AE-04)	10
Mishra, R. (BE-10)	46	Montaigne, F. (FF-01)	186
Mishra, R. (CC-06)	75	Montaigne, F. (FI-01)	193
Mishra, R. (CH-03)	85	Monteblanco Vines, E.N. (FF-01)	186
Mishra, R. (FC-11)	180	Montfrooij, W. (BI-06)	54

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Montoya, S.A. (CD-05)	77
Montoya, S.A. (DD-09)	114
Montoya, S.A. (DE-15)	117
Montoya, S.A. (DI-14)	127
Mooder, J. (BA-01)	36
Mooder, J. (CH-02)	85
Mooder, J. (FA-02)	176
Moon, E. (DH-02)	122
Moon, J. (DI-05)	125
Moon, J. (HD-04)	248
Moore, S.A. (FR-14)	201
Moore, T. (BD-04)	42
Moore, T. (FU-04)	205
Moorsom, T. (CH-08)	86
Moorsom, T. (ED-04)	148
Moorsom, T. (FF-07)	187
Moorsom, T. (GV-11)	241
Moorsom, T. (GV-13)	241
Moraes Leite, M. (FI-12)	195
Morais, P. (DR-07)	131
Morales, R. (BP-03)	55
Moreau-Luchaire, C. (AC-08)	6
Moreau-Luchaire, C. (CD-03)	77
Moreau-Luchaire, C. (CD-04)	77
Moreau, M. (DH-08)	123
Moreau, P. (BG-12)	51
Moreland, J. (DW-11)	141
Morellón, L. (GB-10)	213
Moreno-Ramirez, L.M. (EH-01)	157
Moreno, R. (AE-06)	10
Moretti, D. (AG-09)	15
Moretti, S. (DD-05)	114
Moretti, S. (EU-01)	171
Mori, S. (DP-01)	127
Morie, T. (HC-04)	246
Morimoto, R. (HG-13)	257
Morimoto, Y. (AS-06)	27
Morimoto, Y. (BU-05)	66
Morimoto, Y. (GG-07)	224
Morini, M. (CQ-11)	94
Morise, H. (BE-03)	44
Moriya, T. (HH-04)	258
Moriyama, T. (GC-04)	214
Moriyama, T. (GV-05)	240
Morley, S. (CB-10)	74
Morley, S. (FI-06)	194
Morris, R.G. (CB-11)	74
Morris, R.G. (EB-13)	145
Mosey, A. (AH-09)	17
Moshkalev, S. (BR-09)	60
Mossang, E. (GR-04)	234
Mostovshchikova, E.V. (CU-03)	101
Mougin, A. (BD-03)	42
Mougin, A. (EE-13)	152
Mouillon, A. (DE-09)	116
Moyano, A. (DW-15)	141
Moyo, T. (DR-02)	131
Mu, S. (EI-08)	160
Mudinepalli, V. (FR-08)	200
Mudring, A. (EP-08)	162
Mudryk, Y. (BI-09)	54
Mudryk, Y. (CV-10)	104
Mueller, C. (AE-08)	10
Mueller, D.N. (BW-11)	70
Mueller, P. (AG-08)	15
Mukaiyama, K. (EF-03)	153
Mukhanov, O. (FA-03)	176
Mukherjee, S. (FD-02)	181
Müller, C. (DB-08)	110
Müller, E. (FP-08)	196
Müller, L. (EC-08)	147
Müller, L. (EC-10)	147
Müller, L. (ER-07)	166
Müller, L. (FP-11)	197
Müller, M. (BW-11)	70

Müller, M. (EI-04)	160
Mun, H. (HF-05)	253
Munekata, H. (FT-06)	204
Munira, K. (AF-09)	13
Munira, K. (HD-09)	249
Muñoz, M. (EF-10)	154
Muñoz, M. (GB-02)	211
Muñoz, M. (GC-01)	214
Muñoz, M. (GT-09)	237
Münzenberg, M. (AE-08)	10
Münzenberg, M. (BS-03)	61
Münzenberg, M. (FF-05)	187
Muraguchi, M. (AF-10)	13
Murakami, T. (CS-09)	98
Muraoka, H. (AP-03)	22
Muraoka, H. (AP-04)	22
Muraoka, H. (AQ-07)	23
Muraoka, H. (AQ-08)	24
Murphy, B.A. (GE-13)	220
Murphy, B.M. (BS-13)	62
Murray, P. (DH-07)	123
Murthy, S. (AF-01)	12
Musembi, R.J. (AU-09)	32
Muskens, E. (FI-13)	195
Mussler, G. (GD-02)	216
Muthui, Z.W. (AU-09)	32
Mutka, H. (GD-04)	217
Muto, M. (EW-09)	175
Mwabwira, J.M. (AU-09)	32
Myint, L.M. (GH-14)	227
Myint, L.M. (GH-15)	227
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N'Diaye, A.T. (AC-10)	6
N'Diaye, A.T. (AD-03)	7
N'Diaye, A.T. (AI-01)	19
N'Diaye, A.T. (BD-13)	44
N'Diaye, A.T. (BE-01)	44
N'Diaye, A.T. (DH-07)	123
N'Diaye, A.T. (DH-08)	123
N'Diaye, A.T. (EI-13)	161
Na, S. (AT-03)	29
Na, S. (AT-04)	29
Na, S. (AT-10)	30
Naaman, R. (CI-15)	90
Nachbaur, V. (EG-05)	155
Naderi, G. (GD-14)	218
Nacem, M. (AD-07)	8
Nacemi, A. (AB-05)	3
Nacemi, A. (BF-03)	47
Nacemi, A. (BP-01)	55
Nagahama, T. (DH-13)	124
Nagakubo, Y. (DI-03)	125
Nagalakshmi, R. (EH-11)	158
Nagamine, A. (ES-07)	168
Naganuma, H. (FH-09)	192
Naganuma, Y. (BF-08)	48
Nagaoka, K. (CS-09)	98
Nagasawa, T. (GH-05)	225
Nagasawa, T. (HH-11)	259
Naghibolashrafi, N. (EF-05)	153
Nagler, S.E. (BI-04)	53
Nairan, A. (EQ-03)	164
Nairan, A. (EQ-10)	165
Naito, T. (BS-11)	62
Nakada, K. (AV-11)	34
Nakada, K. (GQ-06)	232
Nakagawa, H. (CT-15)	100
Nakagawa, S. (AV-11)	34
Nakagawa, S. (BF-08)	48
Nakagawa, S. (FF-10)	187
Nakagawa, S. (GQ-06)	232
Nakai, H. (GW-01)	242
Nakamura, K. (AF-03)	12
Nakamura, K. (AI-05)	19

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Nakamura, K. (CC-10)	76	Nedelkoski, Z. (HD-07)	249
Nakamura, K. (CR-08)	96	Nedelkoski, Z. (HD-08)	249
Nakamura, K. (DF-10)	119	Neeb, M. (AH-10)	18
Nakamura, K. (FR-04)	199	Neggache, A. (GA-01)	210
Nakamura, M. (AI-09)	20	Negulescu, B. (BP-14)	56
Nakamura, S. (BE-03)	44	Nekrashevich, I. (AD-13)	9
Nakamura, T. (DA-04)	108	Nekrashevich, I. (ER-11)	166
Nakamura, Y. (AG-02)	14	Nelson, S. (BS-13)	62
Nakamura, Y. (AP-04)	22	Nemati, Z. (BG-03)	49
Nakamura, Y. (AV-11)	34	Nemati, Z. (CS-11)	98
Nakamura, Y. (DB-03)	109	Nembach, H. (BB-13)	39
Nakamura, Y. (DF-10)	119	Nembach, H. (DE-06)	116
Nakamura, Y. (GH-14)	227	Nembach, H. (HB-11)	246
Nakamura, Y. (GQ-06)	232	Neupane, D. (CU-07)	102
Nakamura, Y. (GQ-07)	232	Neupane, D. (DS-08)	133
Nakamura, Y. (HG-13)	257	Nevdacha, V. (BQ-02)	57
Nakane, R. (BE-14)	46	Newburger, M. (FB-10)	178
Nakano, M. (BV-08)	68	Newburger, M. (FS-11)	202
Nakano, M. (DT-04)	135	Newhouse-Illige, T. (BS-04)	61
Nakano, Y. (BU-05)	66	Newhouse-Illige, T. (EE-05)	151
Nakashima, Y. (DW-11)	141	Newhouse-Illige, T. (FF-13)	188
Nakata, H. (HH-04)	258	Ng, S. (GV-02)	240
Nakatani, T. (GC-05)	215	Nguyen, M. (FA-05)	176
Nakatani, T. (GH-06)	225	Nguyen, T. (BQ-15)	58
Nakatani, Y. (ET-05)	169	Nguyen, T. (FB-11)	178
Nakayama, S. (DI-02)	125	Nguyen, T.H. (AF-04)	12
Naletov, V. (GC-01)	214	Nguyen, T.H. (FF-03)	186
Naletov, V. (GT-09)	237	Nguyen, T.T. (CT-01)	99
Nam Hai, P. (EE-01)	150	Nguyen, V. (CR-10)	96
Nam Hai, P. (EF-06)	153	Nguyen, V. (FI-01)	193
Nam Hai, P. (ES-07)	168	Ni, H. (AV-04)	33
Nam, J. (AG-13)	16	Ni, Y. (FP-10)	196
Nam, J. (CT-02)	99	Niarchos, D. (CE-06)	80
Nam, J. (EW-11)	175	Niarchos, D. (CG-03)	84
Nam, Y. (CE-04)	79	Niarchos, D. (GH-10)	226
Nam, Y. (FU-05)	205	Nicolis, S. (BP-15)	56
Namai, A. (GF-12)	222	Nicolis, S. (CF-09)	82
Namai, A. (GF-13)	223	Nie, S. (HD-13)	250
Namaz, T. (AI-14)	21	Nie, Y. (DS-14)	134
Nambakkat, L. (AW-04)	35	Niedermayer, C. (FD-02)	181
Nan, J. (BD-06)	43	Niedner-Schatteburg, G. (AH-10)	18
Nan, T. (EE-10)	152	Niensch, K. (ET-10)	170
Nan, T. (GF-07)	222	Niesen, A. (BQ-04)	57
Nandan, B. (DS-02)	133	Niesen, A. (FF-05)	187
Narayan, J. (ED-09)	149	Nieves, P. (AE-08)	10
Narayan, V. (GD-02)	216	Niewa, R. (FI-11)	194
Narayanan, H. (ES-10)	168	Nigam, A.K. (AW-03)	35
Nascimento, N.M. (CS-08)	98	Nigam, A.K. (FV-11)	208
Nascimento, V.P. (GR-04)	234	Niimi, Y. (BB-02)	38
Nasi, L. (HG-05)	256	Niizeki, T. (CR-05)	95
Nasir, A. (BQ-14)	58	Niizeki, T. (GB-10)	213
Nasir, A. (ES-12)	168	Nikolaev, S. (BB-11)	39
Nasir, A. (FQ-08)	198	Nikolaev, S. (FS-08)	202
Nasseri, S. (DD-11)	115	Nikolic, B. (BA-02)	37
Nasseri, S. (ET-06)	170	Nikonov, D.E. (BF-03)	47
Nasseri, S. (FU-10)	206	Nikonov, D.E. (BF-11)	48
Nassif, V. (EH-10)	158	Nikonov, D.E. (FE-13)	185
Nasuno, T. (AF-10)	13	Nirina, R. (EG-06)	155
Natarajarathinam1, A. (BS-06)	61	Nirmala, R. (CI-12)	90
Natekar, N.A. (AB-07)	3	Nirmala, R. (FV-11)	208
Nath, J. (FE-03)	184	Nishida, T. (EW-09)	175
Nath, R. (AW-11)	36	Nishimura, K. (BF-06)	47
Naumov, S.V. (CU-03)	101	Nisoli, C. (CE-08)	80
Navabi, A. (CE-02)	79	Nisoli, C. (FI-04)	193
Navas, D. (BE-11)	46	Nisoli, C. (FI-05)	194
Navas, D. (CD-13)	78	Nitta, J. (CC-03)	75
Navau, C. (BG-04)	49	Nitta, K. (BS-11)	62
Nawa, K. (AI-05)	19	Niu, F. (GI-01)	227
Nawa, K. (CR-08)	96	Niu, F. (GI-05)	228
Nawa, K. (FR-04)	199	Niu, S. (EW-02)	174
Nawaoka, K. (DE-07)	116	Niu, S. (HI-03)	260
Nayak, A.K. (DG-06)	121	Niu, W. (BW-05)	70
Nayak, A.K. (FC-01)	179	Niwa, M. (AF-10)	13
Naydenov, G. (CH-01)	85	Nlebedim, C.I. (AS-11)	28
Ndiaye, P.B. (BC-04)	40	Nlebedim, C.I. (CG-01)	83
Neagu, M. (HF-10)	254	Nlebedim, C.I. (EP-08)	162
Nedelkoski, Z. (EI-07)	160	Nlebedim, C.I. (FP-10)	196

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Nlebedim, C.I. (GG-06)	224
Nlebedim, C.I. (GG-08)	224
Node, E. (GG-01)	223
Noël, P. (BA-03)	37
Noël, P. (BB-07)	38
Noël, P. (CR-10)	96
Noël, P. (FU-13)	206
Noël, P. (HB-08)	245
Noguchi, Y. (AF-10)	13
Nogués, J. (BG-04)	49
Nogues, J. (GP-16)	230
Noh, M.D. (DU-15)	137
Nomura, K. (CI-09)	89
Nomura, K. (GV-10)	241
Nordblad, P. (CE-10)	80
Nordeen, P. (BE-08)	45
Nordeen, P. (BF-10)	48
Noshiro, H. (GV-08)	241
Noske, M. (CD-12)	78
Noske, M. (EB-04)	144
Nourbakhsh, A. (FB-02)	177
Novák, P. (EG-01)	155
Novak, S. (AG-01)	14
Novikov, A. (AT-01)	29
Novosad, V. (AW-01)	35
Novosad, V. (BE-06)	45
Novosad, V. (CE-05)	79
Novosad, V. (DB-01)	108
Novosad, V. (ET-09)	170
Novosad, V. (FQ-13)	199
Novosad, V. (FR-09)	200
Novosad, V. (FR-14)	201
Novosad, V. (GV-07)	241
Nowak, J.J. (AF-01)	12
Nowak, U. (AE-08)	10
Nowak, U. (AE-09)	10
Nowak, U. (AE-14)	11
Nowak, U. (DB-08)	110
Nowak, U. (GR-09)	234
Nowik-Boltyk, P. (DB-05)	109
Nozaki, S. (BV-04)	67
Nozaki, T. (AI-15)	21
Nozaki, T. (BS-14)	62
Nozaki, T. (DA-04)	108
Nozaki, T. (DE-07)	116
Nozaki, T. (EE-09)	151
Nozaki, T. (EE-11)	152
Nozaki, T. (FD-05)	182
Nozaki, T. (FE-05)	184
Nozaki, T. (GR-02)	233
Nozaki, T. (GR-05)	234
Nozaki, Y. (AQ-10)	24
Nozaki, Y. (AQ-12)	24
Nozaki, Y. (DI-02)	125
Nussle, T. (BP-15)	56

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O'Brien, L. (FI-04)	193
O'Brien, L. (GE-03)	219
O'Brien, L. (HB-07)	245
O'Grady, K. (BQ-07)	58
O'Grady, K. (GS-03)	235
O'Grady, K. (GS-04)	235
O'Grady, K. (HH-05)	258
O'Hara, D.J. (FS-11)	202
O'Keefe, B. (HG-12)	257
O'Sullivan, E. (AF-01)	12
Oakley, R. (AU-08)	32
Oberdick, S. (FE-14)	185
Obinata, A. (EE-08)	151
Ocker, B. (AV-07)	34
Ocker, B. (BC-11)	41
Ocker, B. (BS-05)	61
Ocker, B. (FE-01)	183
Ocker, B. (FE-06)	184
Ocker, B. (FU-02)	205

Ocker, B. (FU-10)	206
Ocker, B. (GF-01)	221
Ocker, B. (GQ-04)	231
Oda, K. (GV-05)	240
Oda, S. (DW-09)	140
Odkhuu, D. (CI-08)	89
Oe, S. (DU-04)	136
Oepen, H. (CD-08)	77
Oepen, H. (EC-10)	147
Oepen, H. (ER-07)	166
Oepen, H. (FP-11)	197
Oepen, H.P. (AI-11)	20
Oepen, H.P. (HD-01)	248
Oezelt, H. (CF-11)	82
Oezelt, H. (FP-08)	196
Ognev, A. (FT-04)	203
Ognev, A. (GQ-12)	232
Ognev, A. (GU-09)	239
Ogrin, F.Y. (DI-06)	125
Oguchi, T. (AI-05)	19
Oh, E. (DT-13)	136
Oh, E. (HF-11)	254
Oh, J. (BF-07)	48
Oh, S. (DI-05)	125
Oh, S. (FC-13)	181
Oh, S. (HD-04)	248
Oh, Y. (CC-01)	74
Ohashi, K. (AG-11)	16
Ohki, T.A. (FA-03)	176
Ohki, T.A. (FA-05)	176
Ohkochi, T. (AI-02)	19
Ohkoshi, S. (BT-14)	64
Ohkoshi, S. (GF-12)	222
Ohkoshi, S. (GF-13)	223
Ohkubo, T. (AI-07)	20
Ohkubo, T. (BV-09)	68
Ohkubo, T. (DA-04)	108
Ohkubo, T. (EF-03)	153
Ohkubo, T. (EG-09)	156
Ohkubo, T. (FF-04)	186
Ohkubo, T. (FF-06)	187
Ohkubo, T. (HD-06)	249
Ohldag, H. (CH-05)	86
Ohldag, H. (FC-07)	180
Ohno, H. (AA-05)	2
Ohno, H. (AF-10)	13
Ohno, H. (AF-11)	13
Ohno, H. (BD-01)	42
Ohno, H. (DI-11)	126
Ohno, H. (HE-10)	252
Ohnoutek, L. (AT-14)	30
Ohnuma, S. (BR-07)	59
Ohnuma, S. (EF-08)	153
Ohodnicki, P. (DR-10)	132
Ohodnicki, P. (EP-14)	163
Ohodnicki, P. (HG-08)	256
Ohresser, P. (GR-04)	234
Ohshima, N. (AF-11)	13
Ohshima, R. (FB-03)	177
Ohta, H. (DH-03)	122
Ohtake, M. (AI-09)	20
Ohtsubo, Y. (BA-03)	37
Ohtsuka, S. (CT-11)	100
Ohtsuka, S. (CT-13)	100
Ohtsuka, S. (CT-14)	100
Ohtsuka, S. (EP-13)	163
Ohya, Y. (DR-13)	132
Okabayashi, J. (AI-03)	19
Okabayashi, J. (CP-12)	92
Okabayashi, J. (FF-11)	188
Okabayashi, J. (FT-06)	204
Okabe, S. (AS-07)	27
Okada, S. (GG-01)	223
Okamoto, S. (AB-06)	3
Okamoto, S. (BE-04)	45
Okamoto, S. (BV-09)	68
Okamoto, S. (DB-10)	110

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Panduranga, M.K. (CI-01)	88	Paulose, P.L. (FD-08)	182
Pané, S. (BG-04)	49	Pavelka, M. (AT-15)	30
Pané, S. (DF-12)	119	Pearson, J.E. (AA-01)	1
Pani, M. (AD-08)	8	Pearson, J.E. (AC-05)	6
Papaioannou, E. (CE-01)	79	Pearson, J.E. (AW-01)	35
Papaioannou, E. (DC-06)	112	Pearson, J.E. (BE-06)	45
Papaioannou, E. (DC-07)	112	Pearson, J.E. (CD-07)	77
Papp, A. (EC-04)	146	Pearson, J.E. (CE-05)	79
Pappas, S.D. (CE-10)	80	Pearson, J.E. (DB-01)	108
Papusoí, C. (GH-04)	225	Pearson, J.E. (FQ-13)	199
Paranthaman, M. (GG-08)	224	Pearson, J.E. (FR-09)	200
Pardo, A. (ES-12)	168	Pearson, J.E. (GV-07)	241
Pardo, J.A. (BQ-02)	57	Pecharsky, V.K. (AU-14)	32
Park, A. (CD-06)	77	Pecharsky, V.K. (BI-09)	54
Park, B. (CC-01)	74	Pecharsky, V.K. (BW-02)	69
Park, B. (CP-14)	92	Pecharsky, V.K. (CV-10)	104
Park, B. (CR-09)	96	Pedersen, K.S. (GD-03)	217
Park, B. (DV-05)	138	Pedersoli, E. (EC-08)	147
Park, B. (FC-13)	181	Pedersoli, E. (FP-11)	197
Park, B. (GC-04)	214	Pedrosa, F. (BH-06)	52
Park, E. (CC-01)	74	Peeters, M. (BD-05)	42
Park, E. (DC-09)	112	Pei, R. (DP-07)	128
Park, H. (EV-08)	173	Pei, Y. (FW-06)	209
Park, H. (HI-13)	262	Peiró, F. (BG-04)	49
Park, J. (AF-01)	12	Pelekhov, D.V. (FS-10)	202
Park, J. (AT-10)	30	Pellegren, J. (FU-01)	204
Park, J. (CE-08)	80	Pellegren, J.P. (EU-05)	171
Park, J. (DE-01)	115	Pellegrin, E. (CI-13)	90
Park, J. (DG-10)	121	Pellicer, E. (BG-04)	49
Park, J. (DG-13)	122	Pellicer, E. (DF-12)	119
Park, J. (FI-05)	194	Pendharkar, M. (HF-12)	254
Park, J. (GW-08)	242	Peng, B. (ED-06)	149
Park, J. (HI-06)	261	Peng, B. (EE-10)	152
Park, K. (GU-07)	239	Peng, B. (GI-09)	228
Park, M. (ET-08)	170	Peng, B. (GQ-10)	232
Park, M. (FU-05)	205	Peng, H. (EH-13)	159
Park, M. (GU-10)	239	Peng, H. (HF-02)	253
Park, Y. (AR-08)	26	Peng, J. (CU-05)	101
Park, Y. (DU-15)	137	Peng, L. (DI-15)	127
Park, Y. (ET-08)	170	Peng, R. (AD-11)	8
Park, Y. (FU-05)	205	Peng, S. (AF-05)	12
Park, Y. (GU-10)	239	Peng, S. (BW-01)	69
Parker, D. (BT-13)	64	Peng, S. (FR-07)	200
Parker, D. (FG-07)	190	Peng, S. (FR-10)	200
Parkin, S.S. (AB-13)	4	Peng, X. (AV-03)	33
Parkin, S.S. (EA-02)	142	Peng, X. (DR-15)	132
Parkin, S.S. (FC-01)	179	Peng, X. (DT-05)	135
Parkin, S.S. (HB-06)	245	Pentcheva, R. (EI-04)	160
Parks, B. (AH-07)	17	Pepper, R. (CF-03)	81
Parpiiev, T. (AE-13)	11	Perdomo, C.P. (HF-15)	255
Parsons, R.R. (HF-01)	253	Peredkov, S. (AH-10)	18
Parsons, R.R. (HF-04)	253	Pereira, A. (EQ-06)	164
Pasquale, M. (GB-09)	213	Pereira, A. (EQ-15)	165
Passamani, E.C. (GR-04)	234	Pereira, L. (FD-03)	181
Passos Guimarães, A. (ET-15)	171	Pereira, L.F. (CS-07)	97
Patel, R.S. (GB-15)	214	Pereiro, E. (DV-06)	139
Patel, S. (HD-11)	250	Pérez Alcázar, G.A. (BT-05)	64
Patel, S. (HF-12)	254	Perez del Real, R. (AH-05)	17
Patel, S.K. (BR-01)	59	Perez del Real, R. (CE-06)	80
Patel, S.K. (BS-13)	62	Perez-de Landazabal, J. (FH-04)	192
Pathak, A. (AU-14)	32	Perez, F. (BT-06)	64
Pathak, A. (CV-10)	104	Perez, R. (AH-01)	16
Pathak, R. (AU-03)	31	Perichon, P. (DS-01)	132
Pathak, R. (AU-09)	32	Perna, P. (BH-06)	52
Pathak, S. (CF-15)	83	Perna, S. (GC-03)	214
Pathak, S. (EQ-04)	164	Perrin, A. (CU-11)	102
Pati, S. (BS-14)	62	Perrin, Y. (FI-01)	193
Pati, S. (FD-05)	182	Perrissin, N. (AI-08)	20
Pati, S. (GR-02)	233	Perruchot, C. (AG-01)	14
Pati, S. (GR-05)	234	Perumal, A. (CQ-07)	94
Patnaik, S. (FV-07)	207	Perzynski, R. (BG-01)	49
Patnaik, S. (GP-06)	229	Perzynski, R. (DR-05)	131
Patte, R. (CI-06)	89	Pesquera, D. (HG-14)	257
Paudyal, D. (AU-14)	32	Peters, L. (AH-10)	18
Paudyal, D. (BI-09)	54	Petersen, J.E. (EI-06)	160
Paul, D.M. (FD-12)	183	Peterson, T. (HB-07)	245
Paul, S. (GS-07)	235	Peterson, T. (HD-11)	250

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Petford-Long, A. (AC-05)	6	Plozner, E. (BP-02)	55
Petford-Long, A. (AH-03)	17	Plucinski, L. (EI-04)	160
Petford-Long, A. (DI-13)	126	Podyalovskiy, D. (BQ-02)	57
Petit-Watelot, S. (AE-04)	10	Poenaru, I. (FG-11)	191
Petit-Watelot, S. (BF-09)	48	Pogorelov, Y.G. (HB-10)	245
Petit-Watelot, S. (GA-01)	210	Pogorily, A. (BQ-02)	57
Petit, D.C. (BE-05)	45	Pogorily, A. (FT-07)	204
Petr, M. (AD-12)	9	Pogoryelov, Y. (EC-13)	148
Petroff, F. (DF-07)	119	Pohlmann, T. (HE-05)	251
Petrou, A. (DE-02)	115	Pokharel, S. (BT-04)	63
Petrou, S. (CA-02)	71	Pokrovsky, V. (BI-07)	54
Petrovic, A. (AC-04)	5	Polek, T. (FT-07)	204
Petrovic, T. (CW-14)	107	Polewczyk, V. (AE-13)	11
Petrun, M. (BP-12)	56	Polishchuk, D. (FT-07)	204
Petrun, M. (FQ-03)	198	Polishchuk, D. (FT-10)	204
Petti, D. (AG-09)	15	Pollard, S. (AC-09)	6
Petti, D. (EC-04)	146	Pollard, S. (DE-12)	117
Peyton-Madrigal, A. (GP-11)	230	Pompei, M. (DT-01)	134
Pezeril, T. (AE-13)	11	Pompei, M. (DU-01)	136
Pezzini, S. (HD-04)	248	Ponce, A. (EQ-02)	164
Pfau, B. (EC-08)	147	Pong, P. (FS-05)	202
Pfeiffer, A. (CR-12)	96	ponton, A. (CT-01)	99
Pfirmsmann, M. (EB-12)	145	Porcher, F. (EH-10)	158
Phakphisut, W. (AP-02)	22	Porod, W. (BE-12)	46
Pham, T. (DC-09)	112	Porod, W. (EC-04)	146
Pham, T. (DD-02)	113	Porro, J. (FI-06)	194
Pham, T. (FE-02)	184	Porter, N.A. (CH-13)	87
Pham, V. (BA-03)	37	Post, B. (GG-08)	224
Pham, V. (BB-07)	38	Poudyal, N. (BU-15)	67
Pham, V. (CR-10)	96	Poudyal, N. (DF-04)	118
Pham, V. (FU-03)	205	Poudyal, N. (DF-09)	119
Pham, V. (FU-13)	206	Poudyal, P. (FT-02)	203
Pham, V. (GE-05)	219	Prabhu Gaunkar, N. (AS-11)	28
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Ross, C.A. (DB-03)	109
Ross, C.A. (DC-13)	113
Ross, C.A. (EQ-07)	164
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Sales, T.S. (CS-07).	97	Sbiaa, R. (ET-13)	170
Salikhov, R. (AD-10).	8	Scagnoli, V. (FI-02)	193
Salman, Z. (CH-15)	88	Scarfato, A. (FR-14).	201
Salmon, L. (AD-01).	7	Scarpa, F. (HF-02)	253
Salvador, M. (DW-15)	141	Schaaf, P. (HF-14)	255
Samajdar, I. (DS-09)	133	Schabes, M. (CF-11)	82
Samant, M. (EA-02).	142	Schad, R. (DG-09).	121
Samanta, T. (CV-06).	104	Schaefer, R. (BH-01)	51
Samanta, T. (CV-07).	104	Schaefer, R. (DI-01).	124
Samantaray, B. (CQ-07).	94	Schäfer, R. (BW-13).	71
Samardak, A.S. (FT-04).	203	Schäfer, S. (AH-06)	17
Samardak, A.S. (GU-09)	239	Scheibel, F. (AD-06)	8
Samarth, N. (BA-02)	37	Scheibel, F. (CV-09).	104
Samarth, N. (CE-08)	80	Scheibel, F. (EH-03).	157
Samarth, N. (EQ-07)	164	Scheibel, F. (EH-06).	158
Samarth, N. (FI-05)	194	Scheike, T. (FF-04)	186
Samiepour, M. (GE-13)	220	Schiffer, P. (CE-08)	80
Samolyuk, G. (EI-08).	160	Schiffer, P. (FI-04)	193
Sampaio, J. (BC-02).	40	Schiffer, P. (FI-05)	194
Sampaio, J. (BD-03)	42	Schlage, K. (BH-04)	51
Sampaio, J. (DD-02)	113	Schlage, K. (EF-14)	154
Sampathkumaran, E.V. (FD-08).	182	Schlagel, D.L. (HG-02)	256
Sampietro, M. (AG-09)	15	Schleicher, B. (EH-12).	159
Sanchez Costa, J. (AD-01).	7	Schleicher, F. (FF-01)	186
Sanchez Llamazares, J.L. (CV-13).	105	Schleitzer, S. (EC-08)	147
Sanchez-Hanke, C. (FT-01)	203	Schleitzer, S. (EC-10)	147
Sanchez-Tejerina, L. (EU-01)	171	Schleitzer, S. (ER-07)	166
Sanchez-Valdes, C. (CV-13)	105	Schliep, K. (EF-09)	154
Sánchez, A. (BG-04)	49	Schliep, K. (GS-09)	236
Sanchez, A. (HD-08)	249	Schliep, K. (GU-11).	239
Sanchez, F. (DC-03).	111	Schlottmann, P. (AU-04)	31
Sanchez, F. (HG-14).	257	Schmalhorst, J. (BQ-04)	57
Sankaranarayanan, V. (CI-11)	90	Schmalhorst, J. (BS-03).	61
Sankey, J.C. (FQ-11)	198	Schmalhorst, J. (CH-06)	86
Santhosh, P. (CI-12)	90	Schmalhorst, J. (CR-12).	96
Santini, P. (GD-04).	217	Schmalhorst, J. (GB-07)	212
Santo, K. (FB-09).	178	Schmalhorst, J. (GS-05).	235
Santos, B. (FI-01).	193	Schmid, A.K. (BD-13)	44
Santos, P. (EC-01)	145	Schmid, A.K. (FR-15)	201
Santos, T. (AE-08)	10	Schmid, M. (CE-03).	79
Sanz-Hernández, D. (DF-13)	120	Schmid, M. (GB-07)	212
Sapozhnik, A. (GV-09).	241	Schmitt-Landsiedel, D. (AR-14)	26
Sarma, B. (FU-10)	206	Schmitt-Landsiedel, D. (BP-02)	55
Sarveena, (DR-06)	131	Schmool, D. (ER-08)	166
Sasada, I. (AS-07)	27	Schneider, A. (EB-12)	145
Sasada, I. (CT-08)	100	Schneider, C.M. (CH-11).	87
Sasada, I. (DU-11)	137	Schneider, C.M. (EI-04).	160
Sasada, I. (EW-09).	175	Schneider, C.W. (FD-02)	181
Sasaki, T. (GH-06).	225	Schneider, M. (BI-01)	53
Sasaki, Y. (BT-11)	64	Schneider, M. (FA-04).	176
Sasaki, Y. (DB-12).	110	Schneider, R. (BW-13).	71
Sasano, J. (EQ-09)	164	Schoenhense, J.G. (EF-01).	152
Sasano, J. (FR-03)	199	Schoenhense, J.G. (EI-01)	159
Satchell, N. (CH-14)	87	Schoenlein, R. (BC-08)	41
Satchell, N. (ES-03)	167	Scholl, A. (CE-07)	80
Sato, H. (AF-10)	13	Scholl, A. (CE-08)	80
Sato, H. (AF-11).	13	Scholl, A. (CE-09)	80
Sato, H. (BD-01)	42	Scholl, A. (FI-04).	193
Sato, N. (AF-13)	14	Scholten, R. (CA-02)	71
Sato, N. (FE-15).	186	Schott, M. (EE-03).	151
Sato, R. (GH-05)	225	Schrefl, T. (CF-01).	81
Sato, R. (HH-11)	259	Schrefl, T. (CF-11).	82
Sato, S. (AF-10).	13	Schrefl, T. (EG-09).	156
Sato, T. (CS-09)	98	Schrefl, T. (FG-01).	189
Sato, T. (DP-01)	127	Schrefl, T. (FG-03).	189
Savero Torres, W. (FU-03).	205	Schrefl, T. (FP-08)	196
Savero Torres, W. (GE-05).	219	Schrefl, T. (HH-12)	259
Savero-Torres, W. (BB-07)	38	Schreiber, D. (DI-10)	126
Savero-Torres, W. (CR-10)	96	Schreier, M. (GB-07)	212
Savero-Torres, W. (FU-13).	206	Schubert, J. (BW-11)	70
Savliwala, S. (AH-14)	18	Schuetz, G.A. (AC-03).	5
Savochkin, I. (DB-11)	110	Schuetz, G.A. (BH-02).	51
Sawano, K. (GE-09).	220	Schuetz, G.A. (CD-12).	78
Sawano, K. (GE-10).	220	Schuetz, G.A. (DV-04).	138
Sawicki, M. (EI-09)	161	Schuetz, G.A. (EB-04).	144
Sawicki, M. (EI-10)	161	Schuller, I.K. (AB-04)	3

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Schuller, I.K. (ZA-01)	142	Sethi, P. (BD-02)	42
Schulte, B. (CD-09)	77	Sethi, P. (GC-12)	216
Schultheiss, H. (CB-04)	73	Sethi, P. (GU-05)	239
Schultheiss, K. (CB-04)	73	Sethupathi, K. (CI-11)	90
Schultheiss, K. (GT-06)	237	Seto, M. (FG-10)	191
Schulz, T. (DE-14)	117	Setyawan, A.D. (DT-10)	135
Schulz, T. (FE-01)	183	Shafer, P. (BD-13)	44
Schulz, T. (HB-05)	244	Shafer, P. (BE-01)	44
Schulze, J.G. (GC-05)	215	Shafer, P. (CH-06)	86
Schumacher, H.W. (AG-07)	15	Shafer, P. (EI-13)	161
Schumacher, H.W. (BD-08)	43	Shafer, P. (GR-03)	233
Schumacher, H.W. (DI-09)	126	Shah, I. (CV-05)	104
Schumm, R. (ET-07)	170	Shah, S.A. (AD-07)	8
Schuschnigg, S. (DF-11)	119	Shah, S.A. (DF-01)	118
Schwartz, J. (DS-03)	133	Shah, T. (BW-02)	69
Schwartz, J. (ER-12)	167	Shalaby, M. (AE-14)	11
Schwartz, J. (FR-05)	199	Sham, L.J. (AE-07)	10
Schwartz, J. (GD-14)	218	Shang, D. (AV-08)	34
Schweizer, M.R. (DC-07)	112	Shang, R. (BU-03)	65
Scolfaro, L. (EI-06)	160	Shang, R. (BU-07)	66
Scolfaro, L. (ES-15)	169	Shang, R. (BV-05)	68
Scrace, T. (DE-02)	115	Shang, R. (BV-06)	68
Sebastian, T. (CB-04)	73	Shang, T. (FR-01)	199
Sechovsky, V. (BI-10)	54	Shanigaram, M. (DR-01)	130
Sechovsky, V. (BS-10)	62	Shao, F. (GP-05)	229
Seehra, M.S. (FD-10)	182	Shao, Q. (DE-03)	115
Segawa, K. (HB-03)	244	Shao, Z. (BU-01)	65
Seifert, T. (EA-01)	142	Sharannia, M. (CI-12)	90
Seigler, M. (HA-05)	243	Sharannia, M. (FV-11)	208
Seinige, H. (FE-12)	185	Sharma, H. (FD-12)	183
Seino, T. (BF-06)	47	Sharma, P. (DT-08)	135
Seki, S. (AA-02)	1	Sharma, P.P. (AG-09)	15
Seki, S. (BC-08)	41	Sharma, S.K. (CS-01)	97
Seki, T. (AQ-11)	24	Sharma, S.K. (DR-06)	131
Seki, T. (CQ-04)	93	Sharma, V. (FV-07)	207
Seki, T. (HC-11)	248	Sharma, V. (HG-10)	257
Sekiguchi, K. (DB-03)	109	Sharmin, S. (CR-05)	95
Sekine, A. (FC-10)	180	Shatruck, M. (AU-08)	32
Sekino, M. (AG-11)	16	Shaw, G. (BG-12)	51
Sekino, M. (CT-05)	99	Shaw, J. (BB-13)	39
Sekino, M. (DW-12)	141	Shaw, J. (DE-06)	116
Selle, S. (DG-06)	121	Shaw, J. (GA-04)	211
Sellmyer, D.J. (AH-08)	17	Shaw, J. (HB-11)	246
Sellmyer, D.J. (AH-15)	18	Shaw, J. (HC-09)	247
Sellmyer, D.J. (AU-03)	31	Shen, B. (BE-15)	46
Sellmyer, D.J. (BQ-08)	58	Shen, B. (BU-03)	65
Sellmyer, D.J. (BU-10)	66	Shen, B. (BU-07)	66
Sellmyer, D.J. (CG-08)	84	Shen, B. (BV-01)	67
Sellmyer, D.J. (CG-11)	85	Shen, B. (BV-05)	68
Sellmyer, D.J. (CS-14)	98	Shen, B. (BV-06)	68
Sellmyer, D.J. (CU-12)	102	Shen, B. (BW-09)	70
Sellmyer, D.J. (GV-12)	241	Shen, B. (CV-01)	103
Sellmyer, D.J. (HD-02)	248	Shen, B. (CV-04)	103
Sellmyer, D.J. (HD-05)	249	Shen, B. (HF-09)	254
Semboshi, S. (CU-14)	103	Shen, F. (CV-01)	103
Semiatiin, L. (BV-12)	68	Shen, H.X. (DU-02)	136
Sen, T. (DW-02)	140	Shen, J. (AV-08)	34
Sendetskyi, O. (FI-02)	193	Shen, K. (GB-08)	212
Seneor, P. (FS-03)	201	Shen, L. (FP-09)	196
Sentker, K. (CR-03)	95	Shen, L. (FQ-09)	198
Seo, S. (DQ-11)	130	Shen, S. (AV-08)	34
Seo, S. (DQ-12)	130	Shen, W. (FH-08)	192
Seo, S. (EW-08)	175	Shen, Y. (BB-06)	38
Sepehri-Amin, H. (BV-09)	68	Shen, Y. (BV-12)	68
Sepehri-Amin, H. (EG-09)	156	Sheng, T. (HI-03)	260
Sepehri-Amin, H. (GH-08)	226	Sheng, X.D. (AS-02)	27
Sepehri-Amin, H. (HH-07)	259	Sheng, X.D. (AS-03)	27
Sepehri-Amin, H. (HH-08)	259	Sheng, X.D. (BR-15)	60
Sepehri-Amin, H. (HH-12)	259	Sheng, X.D. (CP-15)	92
Sepehri-Amin, H. (HH-14)	260	Sheng, X.D. (DC-08)	112
Sepulveda, A.E. (EB-08)	144	Shengelaya, A. (ED-04)	148
Serga, A.A. (CB-07)	73	Shepherd, N. (CR-12)	96
Serpico, C. (DD-11)	115	Sher, M. (EA-02)	142
Serpico, C. (GC-03)	214	Sherman, S.G. (EP-05)	162
Serrano-Ramón, L. (DF-13)	120	Sherwood, J. (EP-11)	163
Serrano, R.L. (AW-07)	35	Sherwood, M. (CA-03)	72
Servant, F. (DS-01)	132	Sheth, N.K. (HI-04)	260

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Shi, J. (AB-13)	4	Shueh, C. (FR-13)	200
Shi, J. (AV-11)	34	Shukla, A. (CC-13)	76
Shi, J. (BA-01)	36	Shukla, D. (DR-06)	131
Shi, J. (FP-02)	195	Shukla, N. (EU-15)	172
Shi, J. (FP-09)	196	Shull, R. (BS-06)	61
Shi, J. (FQ-09)	198	Shull, R. (ED-11)	150
Shi, J. (GQ-06)	232	Si, M. (AS-02)	27
Shi, J. (GQ-07)	232	Sichelschmidt, J. (AW-07)	35
Shi, J. (GR-01)	233	Siddiqui, S.A. (FB-02)	177
Shi, K. (DP-15)	128	Sikola, T. (CE-03)	79
Shi, K. (FV-12)	208	Sikola, T. (DF-08)	119
Shi, S. (BB-12)	39	Silva, J. (DR-07)	131
Shi, S. (CH-03)	85	Silva, L.S. (BS-12)	62
Shi, S. (DE-04)	116	Silva, P.V. (DP-09)	128
Shi, S. (FS-07)	202	Silva, T. (GB-12)	213
Shi, W. (AD-11)	8	Silva, T. (HB-11)	246
Shi, X. (FI-03)	193	Silvani, R. (GT-02)	236
Shi, X. (GI-06)	228	Silwal, P. (BH-07)	52
Shi, Y. (BG-13)	51	Sim, J. (GW-02)	242
Shi, Y. (DE-03)	115	Simek, P. (AD-12)	9
Shi, Z. (BB-04)	38	Simmons, D.T. (HD-15)	250
Shi, Z. (FC-09)	180	Simon, E. (GR-09)	234
Shibata, A. (FU-07)	205	Simpson, D.A. (CA-02)	71
Shibata, R. (EU-03)	171	Simsek, E. (CG-10)	84
Shiddiq, M. (GD-05)	217	Sinclair, J. (BQ-07)	58
Shih, S. (GW-05)	242	Sing, H.B. (CC-13)	76
Shiino, T. (FC-13)	181	Singamaneni, S. (ED-09)	149
Shikoh, E. (CP-06)	91	Singer, A. (BS-13)	62
Shim, I. (DS-11)	134	Singh Negi, D. (GB-11)	213
Shim, J. (EP-03)	162	Singh, A. (HD-03)	248
Shima, T. (BV-07)	68	Singh, A.K. (CQ-07)	94
Shima, T. (ER-03)	166	Singh, A.V. (DR-08)	131
Shima, T. (GH-08)	226	Singh, A.V. (GB-11)	213
Shima, T. (GQ-15)	233	Singh, G. (BI-13)	55
Shimada, T. (BE-03)	44	Singh, G. (DH-12)	124
Shimada, T. (DH-13)	124	Singh, G. (FD-13)	183
Shimamoto, K. (FD-02)	181	Singh, K. (CI-07)	89
Shimatsu, T. (AB-06)	3	Singh, M. (CI-11)	90
Shimatsu, T. (HH-04)	258	Singh, M. (DR-06)	131
Shimatsu, T. (HH-13)	259	Singh, M.K. (BI-13)	55
Shimizu, D. (BV-08)	68	Singh, M.K. (DH-12)	124
Shimizu, Y. (DT-10)	135	Singh, M.K. (FD-13)	183
Shimose, K. (EE-09)	151	Singh, N. (FH-11)	192
Shin, H. (FW-15)	210	Singh, R. (CI-12)	90
Shin, K. (DQ-03)	129	Singh, R. (ED-03)	148
Shin, K. (EV-08)	173	Singh, R. (EP-07)	162
Shin, K. (GW-06)	242	Singh, S. (EH-06)	158
Shin, K. (HI-07)	261	Singh, S. (FB-05)	177
Shin, K. (HI-13)	262	Singh, S. (FB-06)	177
Shindo, Y. (CW-05)	106	Singh, S. (FS-02)	201
Shinjo, T. (FB-03)	177	Singh, S. (HE-04)	251
Shinjo, T. (FB-07)	178	Singh, S. (HE-06)	251
Shinohara, K. (FF-10)	187	Singh, S. (HE-07)	252
Shiokawa, Y. (BS-14)	62	Singh, V. (EQ-04)	164
Shiokawa, Y. (FD-05)	182	Singh, Y. (GD-07)	217
Shiokawa, Y. (GR-02)	233	Sinha, A. (CI-11)	90
Shiokawa, Y. (GR-05)	234	Sinha, J. (CQ-04)	93
Shiomi, Y. (HB-03)	244	Sinha, J. (FR-02)	199
Shiotsu, Y. (FR-03)	199	Sinnecker, E.H. (ER-09)	166
Shiozawa, M. (AG-11)	16	Sinnecker, J. (ER-09)	166
Shirai, M. (DA-04)	108	Sinnecker, J. (GP-11)	230
Shirai, M. (FE-10)	185	Sinova, J. (CH-13)	87
Shiraishi, M. (FB-03)	177	Siores, E. (BW-02)	69
Shiraishi, M. (FB-07)	178	Siracusano, G. (AQ-15)	24
Shiraishi, M. (FS-04)	201	Siracusano, G. (BB-08)	39
Shiu, D. (ET-03)	169	Sirotti, F. (AB-01)	2
Shiu, D. (ET-04)	169	Situ, G. (AP-01)	21
Shivakumar, C. (HD-11)	250	Situ, G. (AQ-01)	23
Shivashankar, S.A. (GF-08)	222	Siu, Z. (BR-13)	60
Shlyk, L. (FI-11)	194	Siu, Z. (BS-08)	62
Shoji, T. (FG-01)	189	Siu, Z. (CP-01)	91
Shoji, T. (FG-03)	189	Siu, Z. (ET-14)	170
Shore, D. (BG-08)	50	Sizeland, J. (AE-10)	11
Shore, D. (DF-02)	118	Sklenar, J. (CE-08)	80
Shoup, J. (CU-08)	102	Sklenar, J. (DB-01)	108
Shousha, M. (CW-14)	107	Sklenar, J. (FI-04)	193
Shpyrko, O.G. (BS-13)	62	Sklenar, J. (FI-05)	194

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Skokov, K.P. (BV-11)	68	Song, Q. (AB-13)	4
Skokov, K.P. (DG-01)	120	Song, Q. (GR-01)	233
Skokov, K.P. (EH-02)	157	Song, W. (AQ-05)	23
Skokov, K.P. (EH-14)	159	Song, W. (AQ-06)	23
Skomski, R. (AH-15)	18	Song, Y. (AS-11)	28
Skomski, R. (AU-03)	31	Song, Y. (BQ-13)	58
Skomski, R. (AU-09)	32	Song, Y. (CU-13)	102
Skomski, R. (BT-15)	65	Song, Y. (GF-09)	222
Skomski, R. (CG-11)	85	Song, Z. (EV-14)	174
Skomski, R. (CS-14)	98	Song, Z. (FD-04)	182
Skomski, R. (GP-15)	230	Song, Z. (FW-01)	208
Skomski, R. (GV-12)	241	Sonntag, A. (EC-03)	146
Skomski, R. (HD-02)	248	Sonobe, Y. (BF-08)	48
Skomski, R. (HD-05)	249	Sonobe, Y. (CQ-08)	94
Skorvanek, I. (AR-05)	25	Sonobe, Y. (FT-03)	203
Skorvanek, I. (CV-02)	103	Sonobe, Y. (HH-06)	258
Skorvanek, I. (ED-07)	149	Sopon, T. (AP-02)	22
Skourski, Y. (CV-09)	104	Sorée, B. (BP-01)	55
Skowronski, W. (CR-07)	96	Sorrentino, A. (DV-06)	139
Skowronski, W. (FE-05)	184	Sort, J. (BG-04)	49
Skowronski, W. (FE-07)	184	Sort, J. (DF-12)	119
Skumryev, V. (ED-08)	149	Soucaille, R. (AV-07)	34
Slastikov, V. (CQ-11)	94	Soumah, L. (AB-10)	4
Slavin, A.N. (AR-07)	25	Soumyanarayanan, A. (AC-04)	5
Slavin, A.N. (BB-08)	39	Sousa, R.C. (AF-04)	12
Slavin, A.N. (DB-02)	109	Sousa, R.C. (AI-08)	20
Slavin, A.N. (DB-05)	109	Sousa, R.C. (CC-11)	76
Slavin, A.N. (DB-06)	109	Sousa, R.C. (FF-03)	186
Slavin, A.N. (DD-06)	114	Souza, D. (GP-11)	230
Slavin, A.N. (FC-05)	179	Souza, J.C. (AU-11)	32
Slavin, A.N. (FC-08)	180	Sparks, P.D. (BR-01)	59
Slavin, A.N. (FE-09)	185	Spasova, M. (BG-05)	49
Slavin, A.N. (GF-04)	221	Spencer, C.S. (CH-13)	87
Slavin, A.N. (HC-08)	247	Spießner, A.M. (GE-07)	219
Slawinska, J. (EE-02)	150	Spinu, L. (CB-06)	73
Sloetjes, S. (DF-06)	118	Spinu, L. (FT-02)	203
Sluka, V. (EU-11)	172	Spivak, D. (HB-07)	245
Sluka, V. (FA-03)	176	Spletstoeser, J. (GD-01)	216
Sluka, V. (FS-06)	202	Spoddig, D. (AD-06)	8
Smalley, M. (BS-05)	61	Sreenivasulu, G. (GR-03)	233
Smith, A. (BB-10)	39	Sreevatsan, S. (AG-08)	15
Smith, A. (GC-02)	214	Srikanth, H. (AR-05)	25
Smith, A.R. (AI-04)	19	Srikanth, H. (BG-03)	49
Smith, D. (EF-12)	154	Srikanth, H. (BI-08)	54
Snoeck, E. (AH-04)	17	Srikanth, H. (CS-06)	97
Snoek, E. (AH-01)	16	Srikanth, H. (CS-11)	98
Snow, R.J. (AC-10)	6	Srikanth, H. (DU-02)	136
Snow, R.J. (AI-01)	19	Srikanth, H. (GB-06)	212
Snyder, C. (BH-07)	52	Srinivas, V. (AW-03)	35
Sobierajski, R. (CH-07)	86	Srinivas, V. (DR-01)	130
Sobolev, N. (HB-10)	245	Srivathsava, S. (CP-14)	92
Söderström, J. (EC-13)	148	Stadler, B. (BG-08)	50
Sofer, Z. (AD-12)	9	Stadler, B. (CC-12)	76
Soin, N. (BW-02)	69	Stadler, B. (DF-02)	118
Sokalski, V.M. (AC-07)	6	Stadler, B. (EQ-02)	164
Sokalski, V.M. (EU-05)	171	Stadler, B. (GD-09)	217
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Sokolov, A. (AT-01)	29	Stadler, S. (AT-01)	29
Sokolov, A. (AU-01)	31	Stadler, S. (BU-10)	66
Sola, A. (GB-09)	213	Stadler, S. (CV-06)	104
Soldatov, I.V. (DI-01)	124	Stadler, S. (CV-07)	104
Solignac, A. (AA-04)	2	Stadler, S. (DW-04)	140
Solyom, A. (FQ-11)	198	Staeck, P. (CD-08)	77
Solzi, M. (CV-09)	104	Stahl, C. (BH-02)	51
Soma, R. (CU-10)	102	Stahl, C. (DV-04)	138
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Son, J. (CC-06)	75	Stamps, R. (EB-02)	143
Sondezi, B.M. (BS-15)	63	Stamps, R. (FI-06)	194
Song, J. (AW-06)	35	Stamps, R. (GT-11)	237
Song, J. (EG-03)	155	Stancu, A. (BP-14)	56
Song, J. (EW-11)	175	Stancu, A. (CQ-14)	94
Song, K. (BU-14)	67	Stancu, A. (DW-07)	140
Song, K. (GP-12)	230	Stancu, A. (EC-07)	146
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Stasinopoulos, I. (EC-05)	146	Suess, D. (FF-12)	188
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Statuto, N. (FS-14)	203	Sugawara, A. (ER-03)	166
Staub, U. (FI-02)	193	Sugawara, A. (GG-02)	223
Steadman, P. (BI-03)	53	Sugihara, A. (DB-12)	110
Steadman, P. (FI-06)	194	Sugihara, A. (FF-11)	188
Steadman, P. (FQ-05)	198	Sugii, T. (GV-08)	241
Stebliy, M.E. (FT-04)	203	Sugimoto, S. (BD-04)	42
Stebliy, M.E. (GQ-12)	232	Sugimoto, S. (GG-09)	224
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Stecklein, G. (HE-07)	252	Sugiyama, T. (BQ-07)	58
Steenjtes, S. (BP-12)	56	Sui, Y. (AS-15)	28
Steenjtes, S. (FQ-03)	198	Sui, Y. (FW-10)	209
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Stefanuik, R. (EC-13)	148	Sukegawa, H. (FF-04)	186
Stein, A. (CE-10)	80	Sukegawa, H. (FF-06)	187
Stein, A. (CE-11)	80	Sukegawa, H. (GH-02)	225
Stein, A. (FI-06)	194	Sukegawa, H. (GV-14)	241
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Stiles, M. (HB-07)	245	Sun, J. (BU-03)	65
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Stobiecki, T. (CR-07)	96	Sun, J. (BV-01)	67
Stobiecki, T. (FE-05)	184	Sun, J. (BV-05)	68
Stobiecki, T. (FE-07)	184	Sun, J. (BV-06)	68
Stobiecki, T. (FH-07)	192	Sun, J. (BW-01)	69
Stocks, G.M. (EI-08)	160	Sun, J. (BW-09)	70
Stohr, J. (CH-05)	86	Sun, J. (CV-04)	103
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Stoian, G. (HF-10)	254	Sun, J. (DU-02)	136
Stojak Repa, K. (BQ-15)	58	Sun, J. (FR-10)	200
Stojak Repa, K. (CS-06)	97	Sun, K. (GD-13)	218
Stojanovic, N. (EC-10)	147	Sun, K. (GG-06)	224
Stoleriu, L. (BP-14)	56	Sun, L. (AR-06)	25
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Stoleriu, L. (FI-08)	194	Sun, L. (CP-09)	92
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Stückler, T. (GT-14)	238	Sun, N.X. (FV-06)	207
Studer, D. (EH-15)	159	Sun, N.X. (GD-10)	218
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Su, P. (HI-08)	261	Sun, S. (ES-11)	168
Su, P. (HI-12)	261	Sun, W. (BF-10)	48
Su, S. (EG-11)	156	Sun, W. (BU-14)	67
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Wells, J. (BD-08)	43	Wongtrairat, W. (AP-02)	22
Wen, H. (FS-02)	201	Woo, T. (DW-12)	141
Wen, M. (EP-01)	162	Worledge, D. (AF-01)	12
Wen, X. (DG-05)	120	Wosnitza, J. (CV-09)	104
Wen, Y. (AS-10)	28	Wrachtrup, J. (CA-05)	72
Wen, Y. (DP-02)	127	Wroczynskyj, Y. (EP-10)	163
Wen, Y. (GU-04)	238	Wrona, J. (AS-05)	27
Wen, Z. (CI-04)	89	Wrona, J. (BS-05)	61
Wen, Z. (EF-02)	153	Wrona, J. (CR-07)	96
Weng, L. (BP-08)	56	Wu, A. (AH-07)	17
Wenjing, L. (CS-15)	98	Wu, C. (CS-05)	97
Wenjing, L. (DF-01)	118	Wu, C. (GP-10)	230
Wenjing, L. (EQ-03)	164	Wu, C.P. (DR-12)	132
Wenjing, L. (HG-03)	256	Wu, D. (CP-09)	92
Wereley, N.M. (EP-01)	162	Wu, D. (EE-07)	151
Wereley, N.M. (EP-02)	162	Wu, D. (FB-01)	177
Wereley, N.M. (EP-04)	162	Wu, D. (FP-09)	196
Wereley, N.M. (EP-05)	162	Wu, G. (BQ-06)	57
Wereley, N.M. (EP-06)	162	Wu, H. (CR-15)	96
Wesenberg, D. (CR-04)	95	Wu, H. (EV-13)	174
Wesenberg, D. (GE-06)	219	Wu, H. (FS-09)	202
Westerman, A.L. (DC-04)	111	Wu, H. (GI-07)	228
Westmoreland, S. (FG-01)	189	Wu, J. (AE-10)	11
Westmoreland, S. (FG-03)	189	Wu, J. (AW-06)	35
Wheeler, M.C. (BD-04)	42	Wu, J. (CR-01)	95
Wheeler, R. (BV-12)	68	Wu, J. (CU-04)	101
White, E. (CG-12)	85	Wu, J. (ER-08)	166
White, E.M. (CG-10)	84	Wu, J. (ET-03)	169
White, J.S. (FD-02)	181	Wu, J. (ET-04)	169
White, S. (FS-10)	202	Wu, J. (EU-06)	171
Whitehead, G. (GD-04)	217	Wu, J. (EU-14)	172
Whitmore, L.C. (HF-10)	254	Wu, J. (FD-07)	182
Whitie, R.M. (AF-13)	14	Wu, J. (GQ-03)	231
Wiedmann, S. (HD-04)	248	Wu, K. (BV-01)	67
Wiedwald, U. (AD-10)	8	Wu, K. (BW-01)	69
Wiedwald, U. (BG-05)	49	Wu, K. (CS-10)	98
Wiese, K. (BI-12)	54	Wu, K. (FR-07)	200
Wiesendanger, R. (DE-08)	116	Wu, K. (FR-10)	200
Wiesendanger, R. (EC-03)	146	Wu, M. (BA-05)	37
Wilhelm, F. (GC-08)	215	Wu, M. (DB-01)	108
Wilhelm, F. (GD-03)	217	Wu, M. (DB-04)	109
Wilk, B. (CH-04)	86	Wu, M. (DV-03)	138
Will, I. (GQ-03)	231	Wu, M. (EQ-07)	164
Wille, H. (BH-04)	51	Wu, M. (FC-07)	180
Wille, H. (EF-14)	154	Wu, M. (GB-01)	211
Williamson, M.C. (FE-12)	185	Wu, M. (GT-14)	238
Wilson, R. (AE-01)	9	Wu, N. (DV-03)	138
Wilson, R. (AE-02)	9	Wu, P. (GB-13)	213
Wilson, R. (AE-11)	11	Wu, Q. (BQ-09)	58
Wimmer, S. (EI-08)	160	Wu, Q. (BU-12)	66
Wingert, J.C. (BS-13)	62	Wu, Q. (CV-08)	104
Winklhofer, M. (FG-01)	189	Wu, Q. (DG-12)	121
Winklhofer, M. (FG-03)	189	Wu, R. (BA-05)	37
Winpenny, R. (GD-04)	217	Wu, R. (GB-01)	211
Wintz, S. (GT-06)	237	Wu, R. (HE-04)	251
Wintz, S. (HG-01)	255	Wu, S. (HF-07)	254
Wisniewski, A. (CU-02)	101	Wu, S.M. (AA-01)	1
Wisniowski, P. (AS-05)	27	Wu, S.M. (DB-01)	108
Wisniowski, P. (FH-07)	192	Wu, S.M. (FC-06)	180
Witt, J.D. (CH-08)	86	Wu, T. (ES-04)	167
Witt, J.D. (CH-14)	87	Wu, T. (EU-06)	171
Witt, J.D. (ES-03)	167	Wu, W. (BR-05)	59
Wodniok, M. (CV-03)	103	Wu, W. (EV-15)	174
Woffinden, C. (CH-09)	87	Wu, W. (FW-11)	209
Wohlhüter, P. (FP-08)	196	Wu, X. (BW-08)	70
Wohlhüter, P. (GT-06)	237	Wu, X. (CU-05)	101
Wolf, G. (AF-12)	14	Wu, X. (DH-11)	124
Wolfe, C.S. (GC-05)	215	Wu, X. (GH-04)	225
Wolff, K. (BW-13)	71	Wu, Y. (AB-11)	4
Wollschläger, J. (CH-06)	86	Wu, Y. (AR-06)	25
Wolter, M. (HE-05)	251	Wu, Y. (AV-05)	33
Woltersdorf, G. (CD-12)	78	Wu, Y. (BD-13)	44
Won, H. (DG-10)	121	Wu, Y. (BH-10)	52
Won, H. (DG-13)	122	Wu, Y. (BR-02)	59
Won, H. (HI-06)	261	Wu, Y. (BR-06)	59

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Wu, Y. (FQ-09).....	198
Wu, Y. (FQ-15).....	199
Wu, Y. (FR-15).....	201
Wu, Y. (FV-10).....	208
Wu, Y. (GP-05).....	229
Wuttig, M. (BT-04).....	63
Wymann, D. (EH-15).....	159
Wynn, A.P. (CQ-09).....	94
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Xi, H. (AG-05).....	15
Xia, H. (EB-03).....	143
Xia, J. (ET-12).....	170
Xia, Y. (BT-01).....	63
Xiang, Q. (GV-14).....	241
Xiang, Z. (CU-13).....	102
Xiang, Z. (EV-15).....	174
Xiang, Z. (FW-11).....	209
Xiao, D. (DB-10).....	110
Xiao, D. (GC-11).....	216
Xiao, J. (BA-05).....	37
Xiao, J. (BS-07).....	61
Xiao, J. (CC-05).....	75
Xiao, J. (CR-01).....	95
Xiao, J. (GQ-13).....	233
Xiao, J. (GU-04).....	238
Xiao, L. (FV-02).....	207
Xiao, L. (FW-12).....	210
Xiao, L. (FW-13).....	210
Xiao, X. (BR-02).....	59
Xiao, Z. (FP-12).....	197
Xie, Q. (DH-11).....	124
Xie, Y. (CW-02).....	105
Xie, Y. (CW-03).....	106
Xie, Y. (FR-01).....	199
Xie, Y. (HD-09).....	249
Xie, Z. (DT-07).....	135
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Xing, W. (GR-01).....	233
Xing, Z. (ES-02).....	167
Xiong, J. (BU-03).....	65
Xiong, J. (BU-07).....	66
Xiong, J. (BV-05).....	68
Xiong, J. (BV-06).....	68
Xiong, P. (BR-05).....	59
Xiong, P. (GE-12).....	220
Xiong, P. (HD-15).....	250
Xu, C. (BS-02).....	61
Xu, C. (CV-14).....	105
Xu, C. (EI-10).....	161
Xu, C. (HA-03).....	243
Xu, F. (AR-04).....	25
Xu, F. (BQ-05).....	57
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Xu, H. (DG-12).....	121
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Xu, K. (DI-10).....	126
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Xu, M. (EE-05).....	151
Xu, M. (EE-12).....	152
Xu, P. (CU-11).....	102
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Xu, W. (BP-09).....	56
Xu, X. (AH-08).....	17
Xu, X. (AS-10).....	28
Xu, X. (AV-05).....	33
Xu, X. (BR-06).....	59
Xu, X. (BU-12).....	66
Xu, X. (CG-08).....	84
Xu, X. (CP-05).....	91
Xu, X. (CP-08).....	92
Xu, X. (GP-05).....	229
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Xu, Y. (AE-10).....	11
Xu, Y. (AQ-13).....	24
Xu, Y. (BA-01).....	36
Xu, Y. (BI-03).....	53
Xu, Y. (BS-04).....	61
Xu, Y. (BS-07).....	61
Xu, Y. (BW-05).....	70
Xu, Y. (CC-08).....	75
Xu, Y. (DT-07).....	135
Xu, Y. (EE-12).....	152
Xu, Y. (ER-10).....	166
Xu, Y. (EU-14).....	172
Xu, Y. (FF-13).....	188
Xu, Y. (GQ-03).....	231
Xu, Z. (AR-04).....	25
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Yamada, S. (GE-07).....	219
Yamada, S. (GE-09).....	220
Yamada, S. (GE-10).....	220
Yamada, S. (HD-07).....	249
Yamada, S. (HD-08).....	249
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Yamaguchi, M. (GF-08).....	222
Yamaguchi, M. (HF-03).....	253
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Yamamoto, K. (HB-03)	244	Yang, J. (BT-01)	63
Yamamoto, R. (AS-06)	27	Yang, J. (BU-01)	65
Yamamoto, T. (HC-11)	248	Yang, J. (DP-08)	128
Yamamoto, Y. (AW-08)	36	Yang, J. (HI-01)	260
Yamanouchi, M. (BD-01)	42	Yang, K. (FR-11)	200
Yamanouchi, M. (DH-03)	122	Yang, K.S. (ES-11)	168
Yamasaki, K. (CU-09)	102	Yang, Q. (AG-05)	15
Yamashita, A. (BV-08)	68	Yang, Q. (AT-13)	30
Yamashita, N. (FS-04)	201	Yang, Q. (BP-10)	56
Yamauchi, Y. (BE-13)	46	Yang, Q. (CW-04)	106
Yamauchi, Y. (CH-12)	87	Yang, Q. (CW-09)	106
Yamazaki, M. (GG-09)	224	Yang, Q. (DS-12)	134
Yamazaki, Y. (GV-08)	241	Yang, Q. (ED-06)	149
Yan, A. (BU-06)	66	Yang, Q. (EE-10)	152
Yan, A. (EG-03)	155	Yang, Q. (GQ-10)	232
Yan, A. (EG-14)	156	Yang, R. (AT-09)	30
Yan, A. (FG-05)	190	Yang, R. (ER-06)	166
Yan, A. (FG-06)	190	Yang, R. (FV-08)	208
Yan, A. (FG-08)	190	Yang, S. (AB-13)	4
Yan, B. (AT-05)	29	Yang, S. (EA-02)	142
Yan, B. (FC-01)	179	Yang, S. (FW-11)	209
Yan, H. (GP-07)	229	Yang, S. (HB-06)	245
Yan, M. (EB-03)	143	Yang, W. (BT-01)	63
Yan, R. (CW-04)	106	Yang, W. (BU-01)	65
Yan, R. (CW-13)	107	Yang, X. (AR-12)	26
Yan, W. (DC-03)	111	Yang, X. (AS-08)	27
Yan, W. (HE-03)	251	Yang, X. (AS-14)	28
Yan, Y. (AQ-13)	24	Yang, X. (CU-05)	101
Yan, Y. (GI-09)	228	Yang, Y. (AB-11)	4
Yan, Y. (GQ-03)	231	Yang, Y. (AE-01)	9
Yanagihara, H. (BT-03)	63	Yang, Y. (AE-02)	9
Yanagihara, H. (BT-11)	64	Yang, Y. (AE-05)	10
Yanagihara, H. (CQ-13)	94	Yang, Y. (AE-11)	11
Yanagihara, H. (CR-05)	95	Yang, Y. (AS-09)	27
Yanai, T. (BV-08)	68	Yang, Y. (AV-03)	33
Yanai, T. (DT-04)	135	Yang, Y. (BU-01)	65
Yanase, S. (DR-13)	132	Yang, Y. (DR-15)	132
Yanase, S. (GW-01)	242	Yang, Z. (AB-11)	4
Yanase, T. (DH-13)	124	Yang, Z. (AS-02)	27
Yanes, R. (GR-09)	234	Yang, Z.L. (BR-15)	60
Yang, B. (AV-10)	34	Yanguas-Gil, A. (ED-05)	149
Yang, B. (DS-06)	133	Yano, M. (FG-01)	189
Yang, B. (GF-11)	222	Yano, M. (FG-03)	189
Yang, C. (BV-16)	69	Yano, M. (FG-10)	191
Yang, C. (CC-01)	74	Yanping, F. (BU-06)	66
Yang, C. (GP-08)	230	Yanping, F. (EG-14)	156
Yang, C. (GP-09)	230	Yao, A. (CW-05)	106
Yang, C. (GU-02)	238	Yao, L. (FE-05)	184
Yang, D. (AR-06)	25	Yao, M. (DQ-15)	130
Yang, D. (AS-02)	27	Yao, M. (FW-08)	209
Yang, D. (AS-03)	27	Yao, Y. (EG-08)	156
Yang, D. (BR-15)	60	Yao, Y. (FT-08)	204
Yang, E. (AU-07)	32	Yao, Z. (CQ-02)	93
Yang, F. (AI-04)	19	Yasin, S. (AW-03)	35
Yang, F. (BR-12)	60	Yasugi, T. (FH-06)	192
Yang, F. (FB-05)	177	Yasuhira, M. (AF-10)	13
Yang, H. (AC-01)	5	Yasui, A. (AI-02)	19
Yang, H. (AC-09)	6	Yazdani, M. (CE-02)	79
Yang, H. (AF-05)	12	Ye, F. (BH-03)	51
Yang, H. (AU-13)	32	Ye, S. (BS-14)	62
Yang, H. (BB-04)	38	Ye, S. (FD-05)	182
Yang, H. (BD-11)	43	Ye, S. (GR-02)	233
Yang, H. (BE-10)	46	Ye, S. (GR-05)	234
Yang, H. (BH-10)	52	Ye, Z. (ED-02)	148
Yang, H. (CC-06)	75	Ye, Z. (ED-06)	149
Yang, H. (CH-03)	85	Ye, Z. (EE-10)	152
Yang, H. (DA-02)	107	Ye, Z. (EG-07)	155
Yang, H. (DE-04)	116	Ye, Z. (FQ-07)	198
Yang, H. (DE-12)	117	Ye, Z. (GQ-10)	232
Yang, H. (DE-13)	117	Yefremenko, V. (FR-14)	201
Yang, H. (DI-05)	125	Yen, C. (DR-04)	131
Yang, H. (FC-11)	180	Yesilyurt, C. (BR-13)	60
Yang, H. (FQ-04)	198	Yesilyurt, C. (BS-08)	62
Yang, H. (FR-01)	199	Yesudas, D. (BD-04)	42
Yang, H. (FS-03)	201	Yildirim, O. (FC-04)	179
Yang, H. (FV-03)	207	Yin, L. (BW-12)	70

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Yin, S. (FD-10)	182	Yu, L. (BR-05)	59
Yin, W. (FG-05)	190	Yu, L. (FW-12)	210
Yin, X. (AS-09)	27	Yu, L. (FW-13)	210
Yin, X. (DW-11)	141	Yu, L. (HD-15)	250
Yin, Y. (CQ-01)	93	Yu, M. (EP-01)	162
Yin, Y. (DW-08)	140	Yu, N. (BU-14)	67
Yin, Y. (EB-11)	145	Yu, Q. (EH-07)	158
Yin, Y. (FP-13)	197	Yu, R. (GF-11)	222
Yin, Y. (GU-08)	239	Yu, S. (DU-14)	137
Yin, Z. (EV-12)	174	Yu, X. (CI-14)	90
Yochelis, S. (CI-15)	90	Yu, X. (GE-12)	220
Yoda, Y. (FG-10)	191	Yu, Z. (GD-13)	218
Yohannes, D. (FA-03)	176	Yuan, H. (CQ-01)	93
Yomogita, T. (AB-06)	3	Yuan, H. (CQ-02)	93
Yomogita, T. (BV-09)	68	Yuan, H. (DW-08)	140
Yoo, B. (AT-07)	30	Yuan, H. (FP-13)	197
Yoo, E. (DU-15)	137	Yuan, W. (AB-13)	4
Yoo, M. (CD-04)	77	Yuan, W. (GR-01)	233
Yoo, T. (BQ-14)	58	Yuan, Y. (BS-02)	61
Yoo, T. (ES-08)	168	Yuan, Y. (CV-14)	105
Yoon, J. (BG-09)	50	Yuan, Y. (EI-09)	161
Yoon, J. (CC-06)	75	Yuan, Y. (EI-10)	161
Yoon, M. (GW-03)	242	Yuan, Z. (CR-15)	96
Yoon, S. (DS-10)	134	Yuan, Z. (FS-09)	202
Yoon, S. (DW-06)	140	Yuasa, H. (CP-04)	91
Yoon, S. (FQ-12)	198	Yuasa, H. (DC-05)	112
Yoon, S. (GF-10)	222	Yuasa, S. (AF-08)	13
Yoong, H. (GQ-13)	233	Yuasa, S. (AI-15)	21
Yoshida, A. (CI-09)	89	Yuasa, S. (AR-01)	25
Yoshida, C. (GV-08)	241	Yuasa, S. (BH-11)	52
Yoshida, K. (AQ-08)	24	Yuasa, S. (CC-10)	76
Yoshida, K. (DT-10)	135	Yuasa, S. (DD-13)	115
Yoshida, M. (ES-07)	168	Yuasa, S. (DE-07)	116
Yoshida, S. (FV-01)	207	Yuasa, S. (DV-13)	139
Yoshida, T. (GR-07)	234	Yuasa, S. (EE-09)	151
Yoshida, T. (GS-08)	236	Yuasa, S. (EE-11)	152
Yoshida, Y. (GI-11)	228	Yuasa, S. (FE-05)	184
Yoshihara, Y. (AW-08)	36	Yuasa, S. (FS-13)	202
Yoshikawa, H. (HH-06)	258	Yuasa, S. (GE-07)	219
Yoshikawa, N. (CW-05)	106	Yuasa, S. (HC-01)	246
Yoshikiyo, M. (GF-12)	222	Yuasa, S. (HC-02)	246
Yoshikiyo, M. (GF-13)	223	Yuasa, S. (HC-06)	247
Yoshioka, T. (EG-01)	155	Yue, J. (CQ-01)	93
Yoshioka, T. (GG-03)	223	Yue, J. (CQ-02)	93
Yoshitake, T. (CW-05)	106	Yue, J. (DW-08)	140
You, B. (DW-08)	140	Yue, J. (FP-13)	197
You, C. (DE-14)	117	Yue, M. (BT-07)	64
You, C. (FG-06)	190	Yue, M. (BU-12)	66
You, C. (GU-07)	239	Yue, M. (CU-15)	103
You, C. (GU-08)	239	Yue, M. (CV-08)	104
You, C. (HB-05)	244	Yue, M. (DG-12)	121
You, X. (EH-15)	159	Yue, M. (EG-11)	156
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Zhang, H. (BQ-09)	58	Zhang, X. (BV-02)	67
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Zhou, Z. (ED-02)	148	Zhu, Y. (AC-09)	6
Zhou, Z. (ED-05)	149	Zhu, Y. (AD-11)	8
Zhou, Z. (ED-06)	149	Zhu, Y. (AF-01)	12
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Zhu, J. (FW-03)	209	Zink, B. (GE-06)	219
Zhu, J. (GH-09)	226	Ziolkowski, G. (EG-06)	155
Zhu, J. (GH-12)	226	Zivieri, R. (BB-08)	39
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Zhu, J. (HD-15)	250	Zografos, O. (BP-01)	55
Zhu, J. (HH-10)	259	Zong, S. (DT-09)	135
Zhu, J. (HI-05)	261	Zong, W. (FV-06)	207
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NOVEMBER 6-10, 2017

62ND CONFERENCE ON MAGNETISM AND MAGNETIC MATERIALS

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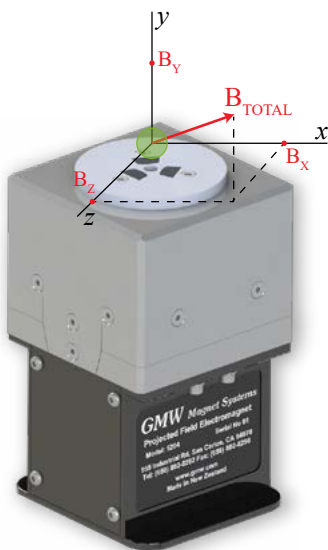
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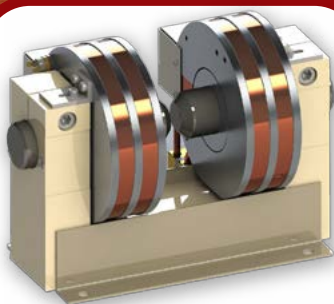
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5mm pole, 2mm gap >3.6T

Peak Field, B
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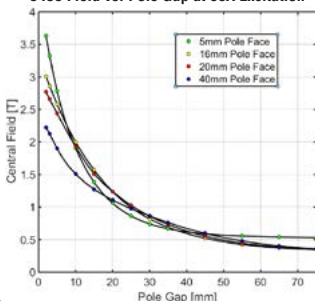
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