

General Information

SCOPE OF THE CONFERENCE

The 56th Magnetism and Magnetic Materials Conference is sponsored jointly by Physics Conferences Inc. and the Magnetics Society of the IEEE, in cooperation with the American Physical Society. Members of the international scientific and engineering communities interested in recent developments in fundamental and applied magnetism are invited to attend the Conference and contribute to its technical sessions. Sessions will include invited and contributed papers, oral and poster presentations, and invited symposia. This Conference provides an outstanding opportunity for worldwide participants to meet their colleagues and collaborators and discuss developments in all areas of magnetism research. In terms of the number of presentations, this will be the largest MMM in the history of the Conference, with over 1700 oral and poster presentations.

PHOENIX/SCOTTSDALE, ARIZONA

Scottsdale (www.ScottsdaleAz.gov) is a suburb north of Phoenix located in the beautiful Sonoran Desert and bordered by the McDowell Mountains. The McDowell Sonoran Preserve is the largest urban wilderness areas in the U.S. The city of Scottsdale, which is historic in its own right, offers approximately 100 art galleries and 85 restaurants.

TRANSPORTATION

Phoenix Sky Harbor International Airport (PHX) (www.ifly.com/phoenix-sky-harbor-international-airport) is served by a host of airlines offering direct and connecting flights to all parts of the world. To reach the JW Marriott Desert Ridge Resort & Spa, where all MMM 2011 sessions and activities will be held, there is a Shared Ride Van service available from "Super-Shuttle." The current one-way cost in a shared ride van holding a total of 7 passengers is \$22/person. To book your own ride from Sky Harbor (PHX) to the JW Marriott Desert Ridge, go to www.supershuttle.com. If several people are arriving in Phoenix together, you may want to use "Transtyle" town car service (www.transtyle.com) from the airport. If arranged in advance, this service will pick up 3 passengers for \$60 total or 5 passengers in an SUV for \$80 total and take you directly to the Marriott Desert Ridge. Transtyle also offers a return rate to the airport of \$22/person, leaving the hotel on the hour between 5:00 AM-5:00 PM (MUST be arranged at the Concierge Desk at least 24 hours in advance of your departure). Taxi fares to and from the airport and the resort average \$65-\$70 as of August 2011.

HOTEL

HELP KEEP YOUR CONFERENCE FEES DOWN: Costs for the MMM Conference meeting and exhibits space are minimized by meeting pre-established targets for room occupancy at the Conference hotel. Please support the Steering Committee and Advisory Committee in their attempt to keep your conference registration fees as low as possible by booking your room at the JW Marriott Desert Ridge for the 2011 MMM Conference **before the cutoff date of Monday, October 3rd.**

The JW Marriott Desert Ridge is located approximately 23 miles/30 minutes north of Phoenix Sky Harbor International Airport. It is a AAA 4-Diamond Award property. Within a short walk from the resort is a shopping center offering a group of food outlets, in addition to the multiple dining options at Desert Ridge, that are open throughout the day and evening. The special group rate for MMM 2011 participants at this world-class resort is \$189/single or double plus tax.

Each Conference participant is responsible for making his/her own hotel reservation and for paying all personal bills upon checkout. You may book your room by going directly to the reservations web site link for the MMM 2011 Conference at: https://resweb.passkey.com/Resweb.do?mode=welcoming_ei_new&eventID=3272117

For Telephone Reservations call: 1-506-474-2009 (from outside the U.S.) or 1-800-266-9432. Be sure to mention the MMM 2011 Conference if you call.

Making a hotel room reservation via the web site is the fastest way to book the room you want, and will provide you with an immediate confirmation. The link also provides a wealth of information about the property's many amenities and services, along with a map of how to travel from the airport to the resort. The hotel can serve all special needs, so please make any required special requests when you reserve your room. **Special amenities to note in this hotel are newly-reddecorated rooms, complimentary laundry service on the 4th Floor of two of the wings, and free internet service in the hotel's Lobby, Vista Lounge, and the Patio outside the lounge.**

Remember....your hotel room reservation must be received by the JW Marriott Desert Ridge no later than Monday, October 3rd, in order for you to receive the special MMM Conference rates.

ADDITIONAL ACTIVITIES AT THE HOTEL AND IN THE SCOTTSDALE AREA

The following activities and resources will be available for MMM participants and their spouses or accompanying family members during the conference.

Reception – A Welcome and Networking Reception will be held for MMM attendees on Sunday evening, October 30th, from 5:00 PM until 8:00 PM.

Golf Tournament – A golf outing is being organized for the afternoon of Sunday, October 30th. Greens fees (\$158.49 per player) will be the responsibility of each golfer. MMM golf event tee-off begins at 12:00 on Sunday, October 30th at Wildfire Golf Course (walking distance to Marriott). All golf fees must be paid/received in advance of Monday, October 3rd, which is the Advance Registration cutoff date. If you wish to pay the golf fees separately, please go to the Advance Registration website and click the option to register for GOLF ONLY. You may also pay for one or more guests to play. Please send any special requests for playing partners to Randall Victoria (victora@umn.edu). Also, an indication of skill level such as handicap index will aid the grouping of foursomes. Most golfers will wish to bring their own equipment owing to the high cost of club and shoe rental at the resort.

Child Care – There are several local childcare providers who can take care of children staying in hotel rooms for an hourly fee. The Desert Ridge also has a Family Escape Center with games, activities and excursion planning. <http://www.jwdesertridgeresort.com/Time-To-Play-19.html>

On-site Activities – The Resort offers bike rentals, walking tours, watercolor painting, tennis courts and lessons, golf, swimming pools (one of them a “Lazy River”) and a luxurious spa, among other activities.

<http://www.jwdesertridgeresort.com/Experience-Phoenix-Arizona-9.html>

Dining – There are several on-site restaurants, cafes and bars, as well as dining options nearby and in the historic city of Scottsdale itself.

<http://www.jwdesertridgeresort.com/Phoenix-Restaurants-7.html>

Excursions – The Resort offers many tours of sites around Scottsdale and throughout Arizona. You can also arrange our own travel and tourism in the beautiful State of Arizona. Some examples of excursions are the following:

Scottsdale/Phoenix Town, Art Gallery and Food Tours

Chocolate & Candy Factory

Wine Bottling Experience

Day Trip To Bisbee, a Victorian-era mining town

Grand Canyon Tour

Desert Botanical Garden

Heard Museum or Wrigley Mansion Tours

Hiking

Hot Air Balloon Rides

The Legend of the Bells....a tour of Cosanti

Arabian Horse Ranch

Musical Instrument Museum

Paint the Desert

Queen Creek Olive Mill Tour

Sedona, Rocks and Taliesin West Tours

Some of these excursions require advance planning and a minimum number of participants. If you wish to plan a trip only for yourself and one or two friends, more information about planning excursions will be available from the hotel's Concierge.

SPECIAL CONFERENCE EVENTS

Sunday Evening Opening Reception

On Sunday evening, while the Registration Desks are open in the same area for your convenience, there will be a Welcome and Networking Reception held from 5:00 PM until 8:00 PM in the lobby area and the garden outside the Saguaro Ballroom where the poster sessions and exhibits are held. Beer, wine, soft drinks, and hors d'oeuvres will be served, generously sponsored by the IEEE Magnetics Society. Participants will be surrounded by displays of interesting facts and mementoes from the MMM Conference's history. Plan to be there!

Special Evening Session: Tuesday

Rare earth elements have been featured in the news recently due to concerns over their global supply. A Special Session will be held on Tuesday November 1st at 7:00pm on the status of rare earth elements used in permanent magnets. Presentations will cover the distributions and economics of these elements, and their essential role in permanent magnets.

Women in Magnetism Networking Event: Monday

There will be a Women's Networking Reception with beverages and light hors d'oeuvres on Monday from 5.30 PM until 7.30 PM. All interested attendees (both men and women) are encouraged to participate. For questions, contact either Liesl Folks (Liesl.folks@hitachigst.com) or Julie Borchers (Julie.borchers@nist.gov). The 2011 MMM Conference is especially grateful to the IEEE Magnetics Society for their sponsorship of this special event.

NIST Reunion Reception: Monday

NIST employees, alumni, associates, collaborators and friends are invited to attend a reception on Monday from 5:00 until 6:30 p.m. For questions, contact either Bob Shull (shull@nist.gov) or Ron Goldfarb (ron.goldfarb@nist.gov).

Student Lunch with the Experts: Wednesday

Following the successful format of the American Physical Society Meetings, we will introduce a new MMM lunch event for students. Students will have a chance to meet "Experts" from industry, universities and national laboratories over lunch (provided by the Conference) on Wednesday November 2nd at 12:00 pm. In early October, the speakers and topics will be announced in an email that will be sent, along with a registration form just for this event, to paid student registrants. Interested students will have to complete the registration form and return it to wendyw@widerkehr.com. Attendance will be limited. This is an excellent opportunity to explore career opportunities or just find out more about life as a professional scientist or engineer.

Bierstubes and Coffee

Complimentary coffee service will be available on Monday through Thursday mornings inside the Grand Saguro Ballroom, with the Exhibits and Poster Sessions, from 7:45 AM – 10:15 AM.

On Monday through Wednesday evenings, the Bierstube will be held from 5:00 PM – 6:30 PM in this same location. On Monday and Tuesday evenings the Bierstubes will again be sponsored through the generosity of Williams Advanced Materials.

CONFERENCE REGISTRATION

All 2011 MMM Conference attendees, including invited speakers, must pay registration fees. You can register in advance at a reduced rate prior to Monday, October 3, 2011. You are encouraged to register via the secure web site at:

www.yesevents.com/mmm

If you prefer to send your payment by mail, you may also register by downloading, completely filling out, and mailing the Advance Registration Form posted on the MMM web site at: <http://www.magnetism.org/>. Payment in **U.S. dollars** must be made by MasterCard, Visa or American Express credit card or by personal or corporate check (**drawn on a U.S. bank only**). Checks are to be made payable to "2011 MMM Conference."

REMEMBER: All "Advance Registration" forms must be accompanied by FULL payment and must be received by October 3, 2011. Onsite registration during the Conference will be at the higher rates listed below. After October 3rd, only the higher registration fees will be accepted, and only at the Onsite Registration Desks at the Conference. **Mail-in forms not accompanied by payment or with incomplete or incorrect credit card information will be considered "late" and the higher rates will be collected onsite at the Conference.**

PLEASE NOTE: This MMM Conference begins on Sunday, October 30th, with a "Welcome and Networking Reception" being held beginning at 5:00 PM while the Registration Desks are also open for your convenience.

Registration Fees	Prior to October 3	After October 3
Full Registrant	\$475.00	\$575
Student	\$230.00	\$280
Unemployed Retiree	\$230.00	\$280

The registration fees do not include any full meals/meal service during the Conference week.

Registration Cancellation Policy: Cancellations of advance registrations must be submitted in writing and received no later than Monday, October 3, 2011. Refunds of the original payment, less a \$75 service fee, will be mailed to the original registrant following the Conference.

Substitutions: Attendee substitutions may be made at any time, both on the Registration website and at the onsite registration desk, for a registrant who cannot attend but has paid the registration fee in advance. Onsite substitutes must bring authorization in writing from the original registrant.

REGISTRATION HOURS

The Conference Registration Desks, located in the Grand Canyon Ballroom Foyer one level below the hotel's Lobby, will be open during the following hours:

Sunday, October 30th	5:00 PM – 8:00 PM
Monday, October 31st	7:00 AM – 4:30 PM
Tuesday, November 1st	7:00 AM – 4:30 PM
Wednesday, November 2nd	7:30 AM – 3:30 PM
Thursday, November 3rd	7:30 AM – 2:30 PM

Badge Policy: All attendees will be required to wear 2011 MMM Conference name badges to enter the Technical Sessions and Exhibits.

Recording Equipment Policy: The use of cameras, videotaping and/or recording devices in the technical sessions is strictly prohibited.

VISA REQUIREMENTS FOR ENTRY INTO THE USA:

The US has updated its visa policies to increase security, so it may take you 3 months or more to apply for and receive your visa. For details that apply specifically to your country please go **immediately** to your nearest US Consulate or Embassy. Review your visa status now to determine if you need a US visa or visa renewal and to find out how to schedule an interview appointment, pay fees, and other vital instructions. If you need a personal letter of invitation to attend the Conference, contact the Conference coordinators by email at: mmm2011@widerkehr.com. Please provide the following information: complete name, mailing address, and any other details that your country of residence requires for your visa application. Only an original copy (not faxed or email version) may be accepted with your visa application. **The Conference cannot contact or intervene with any U.S. Embassy or Consulate office abroad on your behalf so please begin your visa application process as soon as you determine that you want to attend the 56th MMM Conference.**

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

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

PUBLICATIONS

Conference proceedings will be published in a special issue of Journal of Applied Physics scheduled to appear in print in April 2012. All manuscripts must be submitted online before the September 23, 2011 deadline using the AIP web submission system PeerX-Press (PXP). Guidelines for manuscript preparation may be found at the submission site (<http://mmm.peerx-press.org>). Review standards will mirror those used for regular articles submitted to Journal of Applied Physics.

The Publications Room, where authors can check the status of their manuscripts, will be located in Desert Conference Office I on the Lobby Level of the hotel. The status of all papers can be found here and authors should check periodically on their individual papers if they have questions. This room will be open as follows:

Monday – Wednesday	9:00 AM – 5:00 PM
Thursday	9:00 AM – 12:00 Noon

SPEAKER PRACTICE ROOM

Speakers may use Desert Hospitality Suite #2442 on the Lobby Level of the hotel to practice their presentations and test their computer connections. Audiovisual equipment (LCD projector and screen) will be available for authors to use from Sunday at 1:00 PM until Thursday at 1:30 PM. Speakers are encouraged to use this facility to practice their presentation, either alone or with colleagues.

LCD PROJECTORS

Speakers are reminded that the Conference requires an all-electronic oral presentation format. Therefore, **only video LCD projectors** will be available for oral presentation materials. Authors are expected to bring their presentation on their own laptop computer, and have it powered on and ready to connect to the projector. **Only standard PC-style VGA connections to the LCD projector will be supplied, therefore you must supply any required adaptor to your computer. In particular, Mac OS users must make sure that they have the correct adaptor plug and that video “mirroring” is activated.**

In each session room, there will be a multi-port switchbox so that a speaker can connect his/her laptop during the question period of the previous speaker. **Each speaker will be solely 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 your computer. You are therefore **STRONGLY ENCOURAGED** to test your laptop connections and screen resolution settings with the projectors in the Speaker Practice Room or in the assigned room for your talk before start of the session. **There will be no technical support provided for the speaker-supplied equipment. To partially protect yourself against laptop failure, it is suggested that you also bring a copy of your presentation on a USB flash memory stick as a backup. However, session timing must be maintained and therefore no additional presentation time will be given in the event of technical difficulties.**

SESSION CHAIRS

Poster and Oral Session Chairs are expected to attend the Session Chair's Breakfast on the morning of the session which they are chairing. **If you are chairing an oral session, please be sure to bring your laptop computer to the Conference or arrange to borrow one during your session, as the Chair's laptop will be used for session timing.** Further details will be emailed to Session Chairs a few weeks before the conference.

POSTER SESSIONS

The Poster Sessions will be in the Saguaro Ballroom and **will be open from 8:00 AM–12:00 PM (morning poster sessions) and 1:00 PM–5:00 PM (afternoon poster session).** Authors should set up their materials at least 30 minutes before session start times. Poster presenters **MUST** be present at their poster for at least 30 minutes at the start and end of the Poster Session **(8:00 – 8:30 AM and 11:30 – 1200 PM for morning sessions and 1:00 - 1:30 PM and 4:30 – 5:00 PM for afternoon sessions).** Guidelines for preparation of Posters are found at: <http://www.magnetism.org/presentation.html>. **Authors are reminded to 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 may be discarded by Conference coordinators in order to prepare for the next session.**

EXHIBITS

An exhibition of Magnetism-related services, equipment, materials, and software will be held as a part of the Conference. The exhibits will be located adjacent to the poster sessions in the Saguaro Ballroom. Individuals and organizations who are interested in purchasing booth space should contact Wendy Walker, Exhibits Coordinator at Widerkehr & Associates, by e-mail at wendyw@widerkehr.com; or by Fax at 301-527-0994. The Exhibitor Prospectus and Application Form are now available on the MMM website at www.magnetism.org.

BEST STUDENT PRESENTATION AWARD

There will be a competition for the best student presentation at the 56th MMM Conference in Scottsdale, AZ to recognize and to encourage excellence in graduate studies in the field of magnetism. Conference attendees are encouraged to attend these talks, and support these young scientists. The finalists for this year are:

- Z. Budrikis, BC-03, “Diversity Opens Dynamical Pathways: Disorder & Energy Landscape Exploration in Artificial Spin Ice”
- Z. Wang, DB-01, “Amplification of Surface Spin Waves in Ferrite Thin Films via Interfacial Spin Scattering”
- L. Pereira, DF-13, “Lattice Location of Transition Metals in Dilute Magnetic Semiconductors”
- E. Folven, EE-08, “Competing Anisotropies in a Spin-Flop Coupled AFM/FM Heterostructure”

55th MMM Conference Best Student Presentation Winners

A. Dussaux

(Unité Mixte de Physique, CNRS/Thales, Palaiseau, France)
for his presentation: EC-09 “Large Locking Range and Fractional Synchronization in Vortex Based Spin Transfer Oscillators”

E. Evarts

(Physics Dept., Carnegie Mellon University, Pittsburgh, PA)
for his presentation: FC-13: “Spin Torque Switching of 26 nm Diameter Magnetic Tunnel Junction using a Conductive Atomic Force Microscope”

The student finalists for the 55th MMM Conference

Best Student Presentation were:

- E. Jaromirska, AC-07, “Geometry-Driven Current-Induced Vortex Excitations in Point Contact Devices”
- X. Cheng, EC-03, “Spin Torque Diode Detectors with Sensitivity Exceeding that of Schottky Diodes”

CONGRATULATIONS TO ALL!!!

BEST POSTER PRESENTATIONS

Eligibility: All posters will be eligible for nomination for this award provided that they meet the requirements and guidelines for MMM poster presentations and sessions, as described on the website. The poster presentations should consist of well-prepared visual materials about the work, posted on a designated board. It is required that an author be registered for the Conference and available in-person to present poster details and answer attendee questions during the designated session time. **In particular, they need to be present during the 1.5 hours at the start of the Poster Session (8:00 AM – 9:30 AM for morning sessions and 1:00 PM – 2:30 PM for afternoon sessions).** Since the award will be made at the session itself, it is recommended that the authors be present for the majority of the session. All posters should include a full contact mailing address in case the authors are not present when the award is made.

Award: The best-poster award consists of \$50 cash and an award certificate. The awards will be made in the last hour of each poster session. A ribbon will also be attached to the successful posters. Winning posters will be prominently displayed during the remainder of the conference.

Selection Process: Each Session Chair will nominate one poster from his or her session to be considered for the award. The Session Chairs will then be formed into two groups of four. Each group will then review four of the nominated posters to determine one of two winners. During each poster session time slot, two best poster awards will be awarded. Posters are ineligible if one of the Session chairs judging the posters is a coauthor. Selections will be based on the level of the research, quality of the poster materials, and clarity of the in-person presentation.

This is the list of the winners from the Atlanta, GA conference:

Best 55th MMM Conference Poster Presentation Winners

AP-04

Frequency Splitting of Resonance Modes in Non-Collinearly Arranged Rectangular Magnets

S. Jain¹, A.O. Adeyeye¹, and M. Kostylev²

1. *Electrical and Computer Engineering, National University of Singapore, Singapore*
2. *University of Western Australia, Crawley, WA, Australia*

AU-06

In-plane Magnetic Anisotropy in Fe/MgO/GaAs(001) System

J. Li, G. Chen, J. Zhu, J. Liang, and Y. Wu

Dept. of Physics, State Key Laboratory of Surface Physics, Fudan University, Shanghai, China

BQ-01

Impact of Post-Deposition Annealing on the Magnetic Entropy Change in Gd Thin Films

N.A. Bingham, H. Srikanth, and C.W. Miller

Dept. of Physics, University of South Florida, Tampa, FL

BU-11

A Novel Non-Liftoff Approach to Block Copolymer Patterning of Magnetic Metals

A. Baruth¹, M.D. Rodwogin², M.J. Erickson³, A. Shankar¹, M.A. Hillmyer², and C. Leighton¹

1. *Dept. of Chemical Engineering & Materials Science, University of Minnesota, Minneapolis, MN*
2. *Dept. of Chemistry, University of Minnesota, Minneapolis, MN*
3. *Dept. of Physics, University of Minnesota, Minneapolis, MN*

CS-02

Magnetic Domain Observation of Nd-Fe-B Magnets with Submicron-Sized Grains by High-Resolution Kerr Microscopy

M. Takezawa¹, N. Tani¹, Y. Nagashima¹, Y. Morimoto¹, J. Yamasaki¹, N. Nozawa², T. Nishiuchi² and S. Hirosawa²

1. *Dept. of Appl. Sci. for Integ. Syst. Engin., Kyushu Institute of Technology, Kitakyushu, Japan*
2. *Magnetic Materials Research Laboratory, NEOMAX Company, Hitachi Metals, Ltd., Osaka, Japan*

CT-01

Revealing the Magnetization Reversal of ECC Media by XMCD

H. Hou¹, J. Liao¹, C. Lai¹, H. Lin², and F. Chang²

1. *Dept. of Materials Science & Engineering, National Tsing Hua University, Hsinchu, Taiwan*
2. *National Synchrotron Radiation Research Center, Hsinchu, Taiwan*

DP-01

Comparisons Between STT-RAM Switching Distributions and the Thermal Activation Model

R. Heindl, W.H. Rippard, S. Russek, and M. Pufall

Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO

DV-04

Incorporating Magneto Resistance into MQCA Logic

A. Lyle, J. Harms, A. Klemm, and J. Wang

Dept. of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN

EP-04

Frequencies and Critical Currents for Spin-Transfer-Induced Motion of Coupled Vortices in Spin-Valve Nanopillars

A.V. Khvalkovskiy^{1,2}, N. Locatelli², J. Grollier², K.Y. Guslienko^{3,4}, K.A. Zvezdin^{1,5}, and V. Cros²

1. *A.M. Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russian Federation*
2. *Unite Mixte de Physique, CNRS/Thales and University Paris Sud 11, Palaiseau, France*
3. *Dpto. Fisica de Materiales, Universidad del Pais Vasco, San Sebastian, Spain*
4. *IKERBASQUE, The Basque Foundation for Science, Bilbao, Spain*
5. *Instituto P.M. s.r.l., Torino, Italy*

ET-12

Large Scale Fabrication of Magnetic Tunneling Junctions Based on Nanopillars and Nanorings by Nanosphere Lithography

W. Wang, X. Chen, S. Hageman, S. Huang, F.Q. Zhu, T. Chen, and C. Chien

Dept. of Physics and Chemistry, The Johns Hopkins University, Baltimore, MD

FP-03

Current-Driven Vortex Dynamics in Metallic Nanocontacts

G. Hrkcac¹, J. Dean¹, L. Saharan¹, M. Bashir¹, T. Schrefl¹, J. Kim², T. Devolder², and L. Lagae³

1. *Dept. of Engineering Materials, University of Sheffield, Sheffield, South Yorkshire, United Kingdom*
2. *Institut d'Electronique Fondamentale, Universite Paris-Sud, Paris, France*
3. *IMEC, Leuven, Belgium*

FT-14**Fe and Mn Orbital Moment Variation in (MnxFe1-x)3O4 Nanoparticles**

V. Pool^{1,5}, M. Klem², C. Jolley^{3,5}, E.A. Arenholz⁴, T. Douglas^{3,5},
and Y.U. Idzerda^{1,5}

1. Dept. of Physics, Montana State University, Bozeman, MT
2. Dept. of Chemistry, Montana Tech., Butte, MT
3. Dept. of Chemistry and Biochemistry,
Montana State University, Bozeman, MT
4. Advanced Light Source,
Lawrence Berkeley National Laboratory, Berkeley, CA
5. Center for Bio-inspired Nanomaterials,
Montana State University, Bozeman, MT

GS-09**Field Dependent Magnetic Anisotropy of Galfenol Thin Films**

D.A. Resnick¹, A. McClure², P. Rugheimer², and Y.U. Idzerda²

1. Dept. of Physics, Carroll University, Waukesha, WI
2. Dept. of Physics, Montana State University, Bozeman, MT

GT-10**Improvement of Perpendicular Exchange Bias in [Pd/Co]/FeMn Thin Films by Tailoring the Magnetoelastically-Induced Perpendicular Anisotropy**

L. Lin¹, N. Thiyagarajah¹, H. Joo¹, J. Heo², K. Lee², and S. Bae¹

1. Dept. of Electrical and Computer Engineering,
National University of Singapore, Singapore, Singapore
2. Dept. of Physics, Dankook University, Cheonan, Republic of Korea

STUDENT TRAVEL AWARDS

Travel grants are offered to a limited number of students who are presenting at the 56th MMM Conference. These students were chosen from among those who applied online (with advisor's endorsement), and the grants will be used to reimburse partial travel expenses of those students (receipts required). The program is for students who are presenting at the conference and have not previously received a Conference or Magnetism Society travel grant. Only one application per research group is accepted. Postdoctoral fellows and non-students are not eligible. If you are interested in applying for a travel grant to attend future magnetism conferences, go to www.magnetism.org two months prior to the conference dates.

FUTURE CONFERENCES**INTERMAG Conference**

May 7–11, 2012, Vancouver, B.C., Canada

2013 Joint MMM-Intermag Conference

January 14–18, 2013, Chicago, Illinois

57th Conference on Magnetism and Magnetic Materials

November 4–8, 2013, Denver, Colorado

58th Conference on Magnetism and Magnetic Materials

November 3–7, 2014, Honolulu, Hawaii

ADDITIONAL INFORMATION

If you would like to receive more information about the 57th MMM Conference, to be placed on the Conference Mailing List, or to update your mailing address, please contact Janis Bennett at: magnet@aip.org; Telephone: 516-576-2403; Fax: 516-576-2223. The latest information on the 2011 MMM Conference can be found on the Web at the Conference homepage at: <http://www.magnetism.org/>.

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Poster and
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CONFERENCE PROGRAM

Sun, Eve			CD Spin waves I	Grand Canyon 9-11
5-8 pm	Welcome and Networking Reception	Lobby	CE Nanoparticle characterization I	Grand Canyon 2-3
Monday			CF Heat assisted media and recording	Grand Canyon 4-5
8:30 am	AA Symposium on new development in spintronics based on Heusler compounds	Grand Canyon 6	CG Magnetocaloric properties I	Grand Canyon 12-13
	AB Spintronics: Organic semiconductors	Grand Canyon 7	CH Sensors I	Grand Canyon 1
	AC Magnetization dynamics and damping I	Grand Canyon 8	8:00 am CP Complex oxides: Superconductivity and magnetism	Saguaro Ballroom
	AD Multilayers and superlattices I	Grand Canyon 9-11	CQ Complex oxides: Manganites and cobaltites	Saguaro Ballroom
	AE Hard-magnetic nanostructures	Grand Canyon 2-3	CR Strongly correlated systems II	Saguaro Ballroom
	AF Magnetoresistive random access memory	Grand Canyon 4-5	CS Magnetization switching and dynamics	Saguaro Ballroom
	AG Complex oxides: Films, interfaces and bulk materials	Grand Canyon 12-13	CT Other magnetic materials II	Saguaro Ballroom
	AH Magneto-optics and MEMS I	Grand Canyon 1	CU Other magnetic materials III	Saguaro Ballroom
8:00 am	AP Nanoparticle synthesis I	Saguaro Ballroom	CV Borides I	Saguaro Ballroom
	AQ Amorphous alloys I	Saguaro Ballroom	CW Ordered alloys and borides	Saguaro Ballroom
	AR Strongly correlated systems I	Saguaro Ballroom	Tuesday	
	AS Magnetic recording readers and writers	Saguaro Ballroom	1:30 pm DA Symposium on perpendicular magnetic anisotropy for spintronics	Grand Canyon 6
	AT Advanced magnetic recording	Saguaro Ballroom	DB Spin waves II	Grand Canyon 7
	AU Magnetoelastic and magnetocaloric properties I	Saguaro Ballroom	DC Domain walls and vortices II	Grand Canyon 8
	AV Transformers, motors, inductors and levitation I	Saguaro Ballroom	DD Ordered alloys	Grand Canyon 9-11
	AW Domain walls and vortices I	Saguaro Ballroom	DE Heusler alloys	Grand Canyon 2-3
Monday			DF Ferromagnetic semiconductors II	Grand Canyon 4-5
1:30 pm	BA Symposium on spin and magneto Seebeck and Peltier effects	Grand Canyon 6	DG Magnetic microscopy I	Grand Canyon 12-13
	BB Spin transfer torque switching I	Grand Canyon 7	DH Magneto-elastic materials I	Grand Canyon 1
	BC Spin ice and frustrated systems	Grand Canyon 8	1:00 pm DP Hard-magnetic oxide and L10 nanostructures	Saguaro Ballroom
	BD Magnetic vortex dynamics	Grand Canyon 9-11	DQ Patterned and microwave media	Saguaro Ballroom
	BE Other magnetic materials I	Grand Canyon 2-3	DR Micromagnetic modeling I	Saguaro Ballroom
	BF Perpendicular recording media	Grand Canyon 4-5	DS Magnetization dynamics	Saguaro Ballroom
	BG Superconductivity and low dimensional magnetism	Grand Canyon 12-13	DT Critical phenomena and spin glasses	Saguaro Ballroom
	BH Ferrite materials and high frequency devices	Grand Canyon 1	DU Permanent-magnet motors and actuators	Saguaro Ballroom
1:00 pm.	BP Multilayers and superlattices II	Saguaro Ballroom	DV Sensors II	Saguaro Ballroom
	BQ Ferromagnetic semiconductors I	Saguaro Ballroom	DW Ferrite materials: Processing and properties	Saguaro Ballroom
	BR Spintronics: Organic materials	Saguaro Ballroom	Tues. Eve	
	BS Semiconductor spin injection and transport	Saguaro Ballroom	7:00 pm XA Rare earth elements: Global supply and magnetic applications	Grand Canyon 6
	BT Multiferroic materials I	Saguaro Ballroom	Wednesday	
	BU Magnetocaloric properties II	Saguaro Ballroom	8:30 am EA Symposium on progress in assisted write magnetic recording	Grand Canyon 6
	BV Permanent-magnet processing and applications	Saguaro Ballroom	EB Spin transfer torque oscillators I	Grand Canyon 7
	BW Exchange bias and Heusler alloys	Saguaro Ballroom	EC Materials measurements and microscopy	Grand Canyon 8
Tuesday			ED Ultrafast switching	Grand Canyon 9-11
8:30 am	CA Symposium on room temperature semiconductor spintronics	Grand Canyon 6	EE Patterned films I	Grand Canyon 2-3
	CB Amorphous alloys II	Grand Canyon 7	EF Ultra-thin films and surface effects I	Grand Canyon 4-5
	CC Magnetic tunnel junction I: MgO, other	Grand Canyon 8	EG Magnetic tunnel junction II: MgO	Grand Canyon 12-13
			EH Transformers, motors, inductors and levitation II	Grand Canyon 1
			8:00 am EP Nanomagnetic logic, magnetostrictive and magneto-optic devices	Saguaro Ballroom

	EQ	Spin waves	Saguaro Ballroom
	ER	Magnetic fluids and separations and biomagnetism	Saguaro Ballroom
	ES	Magnetic particles for hyperthermia, drug delivery and separation	Saguaro Ballroom
	ET	Anisotropic magnetic nanostructures	Saguaro Ballroom
	EU	Multiferroic materials II	Saguaro Ballroom
	EV	Metal spintronics: Seebeck, pumping and spin valves	Saguaro Ballroom
	EW	Semiconductor spin transport: Kondo and spin-orbit	Saguaro Ballroom

Wednesday

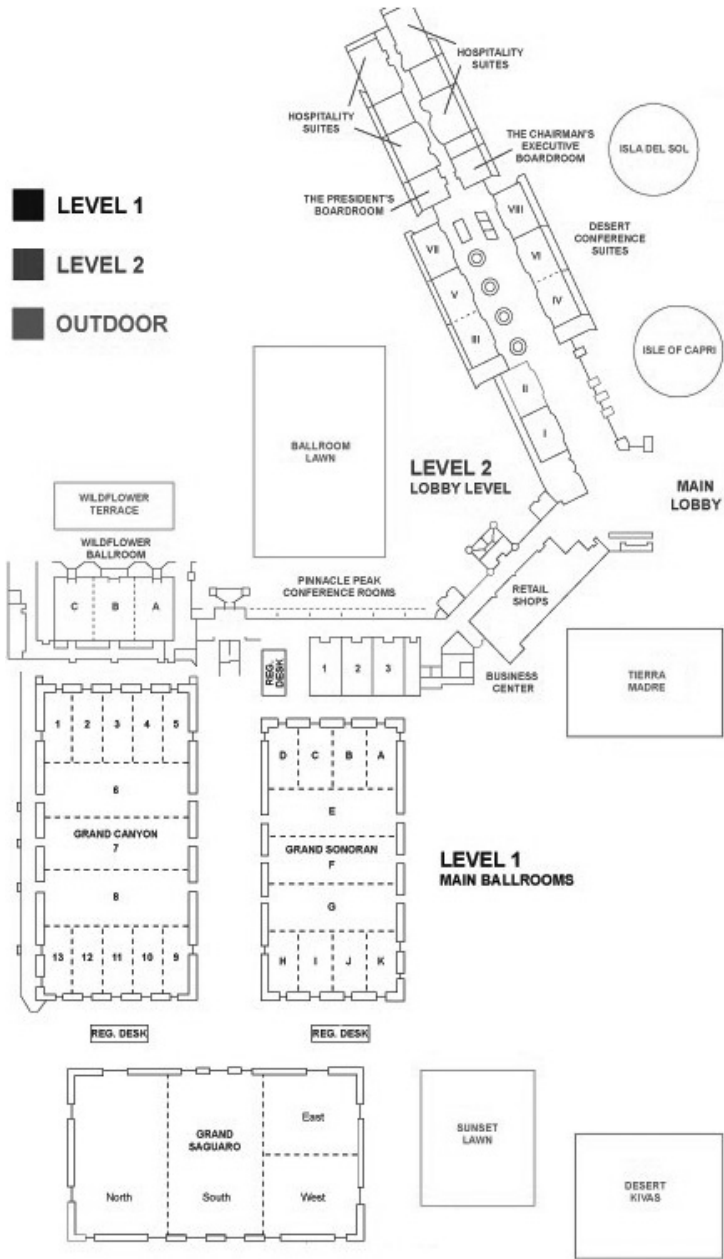
1:30 pm	FA	Symposium on advances in biomedical imaging	Grand Canyon 6
	FB	Spintronics: Seebeck, pumping, Hall and spin-valve	Grand Canyon 7
	FC	Spintronics effects	Grand Canyon 8
	FD	Magnetic dynamics II	Grand Canyon 9-11
	FE	Magneto-electronic materials I	Grand Canyon 2-3
	FF	Nanoparticle synthesis II	Grand Canyon 4-5
	FG	Patterned and microwave recording	Grand Canyon 12-13
	FH	Modeling	Grand Canyon 1
1:00 pm	FP	Magnetic tunnel junction III: MgO, other	Saguaro Ballroom
	FQ	MRAM and MgO magnetic tunnel junctions	Saguaro Ballroom
	FR	Magnetic microscopy II	Saguaro Ballroom
	FS	Materials measurements	Saguaro Ballroom
	FT	Ferrite materials and high frequency devices II	Saguaro Ballroom
	FU	Ultra-thin films and surface effects II	Saguaro Ballroom
	FV	Magnetocaloric properties III	Saguaro Ballroom
	FW	Domain wall devices I	Saguaro Ballroom

Thursday

8:30 am	GA	Symposium on spin pumping	Grand Canyon 6
	GB	Spintronics: Ge, GaAs, diamond	Grand Canyon 7
	GC	Spin transfer torque switching II	Grand Canyon 8
	GD	Novel memory and energy harvesting devices	Grand Canyon 9-11
	GE	Correlated systems	Grand Canyon 2-3
	GF	Exchange bias I	Grand Canyon 4-5
	GG	Borides II	Grand Canyon 12-13
	GH	Magnetic nanostructures and devices for biomedical applications	Grand Canyon 1
8:00 am	GP	Hysteresis and magnetic modeling	Saguaro Ballroom
	GQ	Ferromagnetic semiconductor oxides	Saguaro Ballroom
	GR	Rare-earth alloy nanostructures	Saguaro Ballroom
	GS	Spintronic effects and domain walls	Saguaro Ballroom
	GT	Magneto-electronic materials II	Saguaro Ballroom
	GU	Continuous recording media	Saguaro Ballroom
	GV	Crystalline alloys I	Saguaro Ballroom
	GW	Spin transfer torque oscillators II	Saguaro Ballroom

Thursday

1:30 pm	HA	Symposium on artificial spin ice: Discovering frustration and emergent monopoles with Nanomagnets	Grand Canyon 6
	HB	Spintronics: Si and graphene	Grand Canyon 7
	HC	Spin transfer torque oscillators III	Grand Canyon 8
	HD	Multiferroic materials III	Grand Canyon 9-11
	HE	Domain wall devices II	Grand Canyon 2-3
	HF	Exchange bias II	Grand Canyon 4-5
	HG	Applied permanent magnetism	Grand Canyon 12-13
	HH	Crystalline alloys II	Grand Canyon 1
1:00 pm	HP	Actuators, energy transfer and other applications	Saguaro Ballroom
	HQ	Patterned films II	Saguaro Ballroom
	HR	Spin transfer torque switching III	Saguaro Ballroom
	HS	Biomedical applications	Saguaro Ballroom
	HT	Nanoparticle characterization II	Saguaro Ballroom
	HU	Superconductivity	Saguaro Ballroom
	HV	Micromagnetic modeling II	Saguaro Ballroom
	HW	Transformers, motors, inductors and levitation III	Saguaro Ballroom
	HX	Magneto-optics and MEMS II	Saguaro Ballroom



SUNDAY
EVENING
5:00

LOBBY

Session ZA
SUNDAY EVENING OPENING RECEPTION
Caroline Ross, Chair

MONDAY
MORNING
8:30

GRAND CANYON 6

Session AA
**SYMPOSIUM ON NEW DEVELOPMENT IN
SPINTRONICS BASED ON HEUSLER
COMPOUNDS**
Claudia Felser, Co-Chair
Guenter Reiss, Co-Chair

8:30

AA-01. Application of magnetic Heusler alloys to CPP-GMR read sensors. (Invited) J. Childress¹. Hitachi San Jose Research Center, San Jose, CA

9:06

AA-02. Crystalline Formation of Polycrystalline Co-Based Full-Heusler Alloy Films Observed by HRTEM with *in-situ* Annealing. (Invited) A. Hirohata^{1,2}, L.R. Fleet³, M.J. Walsh³, J. Sagar³, G. Cheglakov¹, K. Yoshida⁴, V.K. Lazarov³, Y. Ohba⁵, E.D. Boyes^{1,3} and T. Nakayama³. 1. Department of Electronics, University of York, York, United Kingdom; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan; 3. Department of Physics, University of York, York, United Kingdom; 4. Japan Fine Ceramics Center, Nagoya, Japan; 5. Department of Electrical Engineering, Nagaoka University of Technology, Nagaoka, Japan

9:42

AA-03. Perpendicularly Magnetized Tetragonal Heusler-like Alloy Films for Spin Torque Applications. (Invited) S. Mizukami¹, T. Kubota¹, H. Naganuma², M. Oogane², Y. Ando² and T. Miyazaki¹. 1. WPI-Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Department of Applied Physics, Tohoku University, Sendai, Japan

10:18

AA-04. Heusler alloys boosting the performance of TMR-biosensors. (Invited) A. Hutten¹, C. Albon¹, A. Weddemann², A. Auge¹, P. Hedwig¹, J. Rogge¹, D. Akemeier¹ and N. Teichert¹. *Physics, Bielefeld University, Bielefeld, Germany; 2. RLE, LEES, MIT, Cambridge, MA*

10:54

AA-05. Tunable multifunctional topological insulators in ternary Heusler and related compounds. (Invited) S. Chadov¹, X. Qi³, J. Kübler², G.H. Fecher¹, C. Felser¹ and S. Zhang³. *1. Institut für Anorganische Chemie und Analytische Chemie, Johannes Gutenberg-Universität, Mainz, Germany; 2. Institut für Festkörperphysik, Technische Universität Darmstadt, Darmstadt, Germany; 3. Department of Physics, McCullough Building, Stanford University, Stanford, CA*

MONDAY
MORNING
8:30

GRAND CANYON 7

Session AB
SPINTRONICS: ORGANIC
SEMICONDUCTORS

Tamalika Banerjee, Chair

8:30

AB-01. Chiral organic molecules as spin filter. (Invited) R. Naaman¹, Z. Xie¹, T.Z. Markus¹, S.R. Cohen² and Z. Vager³. *1. Chemical Physics, Weizmann Institute, Rehovot, Israel; 2. Chemical Support, Weizmann Institute, Rehovot, Israel; 3. Department of Particle Physics and Astrophysics, Weizmann Institute, Rehovot, Israel*

9:06

AB-02. Multi-step tunneling in C₆₀-based spin valves. T. Tran¹, T. Le¹, J. Sanderink¹, W.G. van der Wiel¹ and M.P. de Jong¹. *MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

9:18

AB-03. Tunnel magnetoresistance in Self-Assembled Monolayers Based Tunnel Junctions. S. Tatay¹, M. Galbiati¹, C. Barraud¹, P. Seneor¹, R. Mattana¹, K. Bouzehouane¹, C. Deranlot¹, E. Jacquet¹, A. Fert¹ and F. Petroff¹. *Unité Mixte de Physique CNRS/Thales, Palaiseau, France*

9:30

AB-04. Observation of magnetoresistance effects at engineered ferromagnetic/organic-complex interfaces. A.M. Kamerbeek^{1,2}, K.V. Raman¹, A. Mukherjee⁴, S.K. Mandal⁴, M. Mü nzenberg³ and J.S. Moodera^{1,5}. *1. Francis Bitter Magnet Laboratory, Massachusetts Institute of Technology, Cambridge, MA; 2. Zernike Institute of Advanced Materials, University of Groningen, Groningen, Netherlands; 3. I. Physikalisches Institut, University of Göttingen, Göttingen, Germany; 4. Chemical Sciences, Indian Institute of Science Education and Research, Kolkata, India; 5. Physics Department, Massachusetts Institute of Technology, Cambridge, MA*

9:42

AB-05. A New Avenue towards Colossal Magnetoresistance in Organic Materials. (Invited) J. Shen^{1,2}. *1. Department of Physics, Fudan University, Shanghai, China; 2. Department of Physics and Astronomy, Teh University of Tennessee, Knoxville, TN*

10:18

AB-06. Orbital hybridization and oscillatory magnetic polarization of C₆₀/Fe(001) interfaces for spintronics. M. de Jong¹, L. Tran¹, J. Wong¹, W. van der Wiel¹, Y. Zhan² and M. Fahlman². *1. NanoElectronics Group, MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands; 2. Department of Physics, Chemistry, and Biology, Linköping University, Linköping, Sweden*

10:30

AB-07. Reduced spin injection efficiency in organic spin-valves with an interface layer of CuPc. F. Yue¹ and D. Wu¹. *National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, China*

10:42

AB-08. Coupled magnetic spin-valve and electric bi-stability in a single organic device. M. Prezioso¹, A. Riminucci¹, I. Bergenti¹, P. Graziosi¹, R. Rakshit¹ and D. Brunel¹. *ISMN, CNR, Bologna, Italy*

10:54

AB-09. Designing molecular spintronics devices in the coherent tunneling regime. (Invited) C. Herrmann¹, G.C. Solomon² and M.A. Ratner³. *1. Department of Chemistry, University of Hamburg, Hamburg, Germany; 2. Nano-Science Center and Department of Chemistry, University of Copenhagen, Copenhagen, Denmark; 3. Department of Chemistry, Northwestern University, Evanston, IL*

MONDAY
MORNING
8:30

GRAND CANYON 8

Session AC
MAGNETIZATION DYNAMICS AND
DAMPING I

Oleksandr Serha, Chair

8:30

AC-01. Frequency-selective control of FMR linewidth in magnetic multilayers. *S. Schäfer*¹, N. Pachauri¹, C. Mewes¹, T. Mewes¹, C. Kaiser², Q. Leng² and M. Pakala². *1. MINT Center, University of Alabama, Tuscaloosa, AL; 2. Western Digital, Fremont, CA*

8:42

AC-02. Damping phenomena in Co₉₀Fe₁₀/Ni multilayers and alloys. *J.M. Shaw*¹, H.T. Nembach¹ and T.J. Silva¹. *1. NIST, Boulder, CO*

8:54

AC-03. Observation of nonlinear bistability by use of ferromagnetic resonance in an array of patterned Permalloy stripes. *T. Silva*¹, H. Nembach¹ and J. Shaw¹. *1. Div. 687.03, NIST, Boulder, CO*

9:06

AC-04. Manipulating Spin Dynamics on the Single Atom Scale. *(Invited) S. Loth*¹, M. Etzkorn¹, C.P. Lutz¹, D.M. Eigler¹ and A.J. Heinrich¹. *1. IBM Research - Almaden, San Jose, CA*

9:42

AC-05. A Quantum-Mechanical Relaxation Model. *R. Skomski*¹, A. Kashyap² and D.J. Sellmyer¹. *1. Physics and Astronomy, Univ Nebraska, Lincoln, NE; 2. IIT, Jaipur, India*

9:54

AC-06. Shape dependent magnetization dynamics in single FePt nanomagnets. *R. Brandt*¹, C. Brombacher², D. Gilbert³, P. Krone², F. Ganss², T. Senn⁴, K. Liu³, M. Albrecht² and H. Schmidt¹. *1. School of Engineering, UC Santa Cruz, Santa Cruz, CA; 2. Institute of Physics, Chemnitz University of Technology, Chemnitz, Germany; 3. Physics, UC Davis, Davis, CA; 4. Institute of Nanometer Optics and Technology, Helmholtz Center Berlin for Materials and Energy, Berlin, Germany*

10:06

AC-07. Intrinsic damping due to electron-magnon interactions. *S. Zhang*¹ and S. Zhang¹. *1. Physics, University of Arizona, Tucson, AZ*

10:18

AC-08. Dynamical Modeling of Nanoparticle Fluctuations and FMR. *S.E. Russek*¹ and R.J. Usselman¹. *1. Natl Inst of Standards & Tech, Boulder, CO*

10:30

AC-09. Origins of Damping in Ultra-Thin Ferromagnetic Films. *L. Lu*¹, Z. Wang¹, G. Mead¹, M. Wu¹, C. Kaiser², Q. Leng² and M. Pakala². *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. Western Digital, Fremont, CA*

10:42

AC-10. Tilt and coherent precession of magnetization induced by picosecond acoustic pulses in ferromagnetic (Ga,Mn)As. *M. Bombeck*¹, A.S. Salasyuk^{1,2}, A.V. Scherbakov², D.R. Yakovlev^{1,2}, A.V. Akimov^{2,3}, X. Liu⁴, J.K. Furdyna⁴, V.F. Sapega², C. Brüggemann¹ and M. Bayer¹. *1. Experimentelle Physik II, TU Dortmund, Dortmund, NRW, Germany; 2. Ioffe Physical-Technical Institute, Russian Academy of Sciences, St.Petersburg, Russian Federation; 3. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom; 4. Department of Physics, University of Notre Dame, Notre Dame, IN*

10:54

AC-11. Model of spin transfer induced precessional switching in in-plane magnetized magnetic tunnel junctions with perpendicular polarizer. *B. Lacoste*¹, M. Marins de Castro¹, R.C. Sousa¹, L.D. Buda-Prejbeanu¹ and B. Dieny¹. *1. Spintec UMR 8191, CEA/CNRS/UJF/G-INP, Grenoble, France*

11:06

AC-12. Electrically detected ferromagnetic resonance measurements in Permalloy nanowires. *Z. Duan*¹, C.T. Boone¹, I.N. Krivorotov¹, N. Reckers², J. Lindner² and M. Farle². *1. University of California, Irvine, Irvine, CA; 2. Universität Duisburg-Essen, Duisburg, Germany*

11:18

AC-13. Anisotropy and damping in collective precessional dynamics in arrays of Ni₅₀Fe₂₀ nanoelements. *B. Rana*¹, D. Kumar¹, S. Barman¹, R. Mandal¹, S. Pal¹, S. Sugimoto³, Y. Fukuma², Y. Otani^{3,2} and *A. Barman*¹. *1. Department of Material Sciences, S. N. Bose National Centre for Basic Sciences, Kolkata, India; 2. Advanced Science Institute, RIKEN, Wako, Saitama, Japan; 3. Institute for Solid State Physics, University of Tokyo, Kashiwa, Chiba, Japan*

MONDAY
MORNING
8:30

GRAND CANYON 9-11

Session AD
MULTILAYERS AND SUPERLATTICES I

Guoxing Miao, Chair

8:30

AD-01. Soliton propagation through magnetic multilayers. *D.C. Petit¹, J. Lee¹, A. Fernandez-Pacheco¹, R. Mansell¹, R. Lavrijsen¹ and R.P. Cowburn¹. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom*

8:42

AD-02. Hall effect-induced acceleration of electromigration failures in spin valve multilayers under magnetic field. *D. Zeng¹, J. Jiang¹, K. Chung² and S. Bae¹. Electrical and Computer Engineering, Biomagnetics Laboratory, National University of Singapore, Singapore, 117576, Singapore; 2. Nuri Vista Co. Ltd., Gasan-dong, Geumcheon-gu., Seoul 153-786, Korea, Republic of*

8:54

AD-03. Graded anisotropy and Pd polarization in pressure-varied Co/Pd multilayers. *B.J. Kirby¹, P. Greene², M. Fitzsimmons³ and K. Liu². 1. Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Physics, University of California - Davis, Davis, CA; 3. LANSCE, Los Alamos National Laboratory, Los Alamos, NM*

9:06

AD-04. Imprinting perpendicular domains into NiFe. *Y. Fang¹, T.N. Anh Nguyen², R.K. Dumas¹, S.M. Mohseni² and J. Åkerman^{1,2}. 1. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 2. Materials Physics, Royal Institute of Technology (KTH), Stockholm, Sweden*

9:18

AD-05. Magnetostatically driven domain replication induced by temperature cycling. *S. Mohseni¹, R.K. Dumas² and J. Åkerman^{1,2}. 1. Materials Physics, Royal Institute of Technology (KTH), Stockholm, Sweden; 2. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

9:30

AD-06. [Co/Pd]-NiFe exchange springs with a highly tunable/uniform magnetization tilt angle. *A. Nguyen¹, N. Benatmane¹, V. Fallahi¹, Y. Fang¹, S. Mohseni¹, R. Dumas² and J. Åkerman^{1,2}. 1. Materials Physics, KTH Royal Institute of Technology, Stockholm, Sweden; 2. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

9:42

AD-07. Magnetization reversal and exchange-bias in hard/soft ferromagnetic bilayers with orthogonal anisotropies. *D. Navas^{1,2}, J. Torrejon³, F. Béron³, C. Redondo², F. Batallan⁴, B.P. Toperverg⁵, A. Devishili⁵, B. Sierra², F. Castañó², K.R. Pirota³ and C.A. Ross¹. 1. Materials Science and Engineering Department, MIT, Cambridge, MA; 2. Química-Física, Universidad del País Vasco (UPV), Leioa, País Vasco, Spain; 3. Inst. Fis. Gleb Wataghin, UNICAMP, Campinas, Sao Paulo, Brazil; 4. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Madrid, Spain; 5. Department of Physics, Ruhr-Universität Bochum, Bochum, Germany*

9:54

AD-08. Impact of MgO Deposition Conditions on the Texture of Adjacent CoFeB Layers using Ion Beam Assisted deposition. *R.A. Ferreira^{1,4}, S.C. Freitas^{1,2}, P.P. Freitas^{1,2}, R. Petrova^{3,4} and S. McVitie³. 1. Microsystems and Nanotechnologies, INESC-MN, Lisbon, Portugal; 2. Dep. Physics, IST, Lisbon, Portugal; 3. Department of Physics and Astronomy, Univ. Glasgow, Glasgow, United Kingdom; 4. International Iberian Nanotechnology Laboratory, INL, Braga, Portugal*

10:06

AD-09. Perpendicular magnetic anisotropy in CoFeSiB/Pd multilayers. *S. Kim¹, B. Chun¹, D. Kim¹ and Y.K. Kim¹. 1. Department of Materials Science and Engineering, Korea University, Seoul, Seoul, Korea, Republic of*

10:18

AD-10. Real-space observation of chiral magnetic order in metallic thin films at room temperature. (Invited) *Y. Wu¹. Physics department, Fudan university, Shanghai, China*

10:54

AD-11. Dependence of perpendicular magnetic anisotropy on the buffer layer in CoFeB-MgO based structures. *S. Ahn¹, O. Berthold², A. Lamperti³, W. Lin¹ and D. Ravelosona¹. 1. Institut d'Electronique Fondamentale, Orsay, France; 2. Singulus technology AG, Kahl am Main, Germany; 3. Laboratorio MDM, CNR-IMM, Agrate Brianza, Italy*

11:06

AD-12. The concept and fabrication of Exchange Switchable Trilayer of FePtX/FeRh/FeCo with reduced switching field. *T. Zhou¹, K. Cher¹, Z. Yuan¹, J. Hu¹ and B. Liu¹. 1. Data Storage Institute, Singapore, Singapore*

11:18

AD-13. Non-collinear magnetic profile in (Rh/Fe_{1-x}Co_x)₂/Rh(001) bilayer probed by polarized soft x-ray resonant magnetic reflectivity. *M. Przybylski¹, J. Tonnerre², F. Yildiz¹, H. Tolentino² and J. Kirschner¹. 1. Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany; 2. Institut Néel, CNRS & Université J. Fourier, Grenoble, France*

MONDAY
MORNING
8:30

GRAND CANYON 2-3

Session AE
HARD-MAGNETIC NANOSTRUCTURES

Bala Balamurugan, Chair

8:30

AE-01. Fe₁₆N₂ Interstitial Compound - New Candidate for Permanent Magnetic Material with Rare Earth Element Free - (Invited) M. Takahashi^{1,2} and T. Ogawa¹. *Department of Electronic Engineering, Tohoku University, Sendai, Japan; 2. Center for Nanobioengineering and Spintronics, Chungnam National University, Daejeon, Korea, Republic of*

9:06

AE-02. Magnetism of Directly Ordered Sm-Co Nanoclusters. B. Balasubramanian¹, R. Skomski¹, B. Das¹, X. Li¹, S.R. Valloppilly¹, G.C. Hadjipanayis² and D.J. Sellmyer¹. *Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE*

9:18

AE-03. Aligned and Exchange-Coupled L10 (Fe,Co)Pt-Based Magnetic Films. Y. Liu¹, T.A. George¹, R. Skomski¹ and D.J. Sellmyer¹. *Physics and Astronomy and Nebraska Center for Materials and Nanoscience, Univ Nebraska-Lincoln, Lincoln, NE*

9:30

AE-04. Structural studies of Co-W clusters produced by Inert Gas Condensation. M.J. Kramer¹, Y. Zhang¹, F. Golkar², R.W. McCallum¹, R. Skomski², D.J. Sellmyer² and J.E. Shield². *1. Materials Sciences and Engineering, Ames Laboratory, Ames, IA; 2. Mechanical and Materials Engineering, University of Nebraska, Lincoln, NE*

9:42

AE-05. Anisotropic nanocrystalline MnBi with high coercivity. Y. Yang¹, X. Chen¹, X. Ma¹, Y. Yang¹, J. Yang¹, S. Guo², A. Yan², Q. Huang³, M. Wu⁴ and D. Chen⁴. *1. School of Physics, Peking University, Beijing, China; 2. Ningbo Institute of Materials Technology and Engineering, Ningbo, China; 3. National Institute of Standards and Technology, Gaithersburg, MD; 4. China Institute of Atomic Energy, Beijing, China*

9:54

AE-06. Hysteresis and Relaxation in Granular Permanent Magnets. R. Skomski¹, B. Balamurugan¹, T.A. George¹, M. Chipara², X. Wei¹, J.E. Shield³ and D.J. Sellmyer¹. *1. Physics and Astronomy, Univ Nebraska, Lincoln, NE; 2. Department of Physics and Geology, University of Texas-Pan American, Edinburg, TX; 3. Mechanical Engineering, University of Nebraska, Lincoln, NE*

10:06

AE-07. Separated Sm-Co hard nanoparticles by an optimization of mechanochemical processes. L. Zheng^{1,2}, B. Cui^{1,3}, W. Li¹ and G.C. Hadjipanayis¹. *1. Department of Physics and Astronomy, University of Delaware, Newark, DE; 2. School of Electromechanical Engineering, Hebei University of Engineering, Handan, Hebei, China; 3. Electron Energy Corporation, Landisville, PA*

10:18

AE-08. Effect of film thickness on magnetic properties and structure in Cr/SmCo/Cr films. N. Li¹, B. Li², C. Feng¹ and G. Yu¹. *1. Department of Materials Physics and Chemistry, University of Science and Technology Beijing, Beijing, China; 2. Department of Physics, Beijing Technology and Business University, Beijing, China*

10:30

AE-09. Magnetic properties of Sm₃Fe₁₇/Fe composite magnets produced by spark plasma sintering method. T. Saito¹ and H. Miyoshi¹. *1. Chiba Institute of Technology, Chiba, Japan*

10:42

AE-10. Huge thermal hysteresis loop in indium substituted ε-Fe₂O₃ nanomagnet. S. Ohkoshi^{1,2}, T. Yorinaga¹, S. Sakurai¹ and A. Namai^{1,2}. *1. Department of Chemistry, The University of Tokyo, Tokyo, Japan; 2. CREST, JST, Tokyo, Japan*

10:54

AE-11. Simulation studies of the coercive behaviour and the energy product for multilayers of FeCo and SmFeN. A. Belemuk¹ and S. Chui¹. *1. Department of Physics and Astronomy, Univ Delaware, Newark, DE*

11:06

AE-12. One-Step Fabrication of fct FePt Nanocubes and Rods by Cluster Beam Deposition. O. Akdogan¹, W. Li¹, G.C. Hadjipanayis¹, R. Skomski² and D.J. Sellmyer². *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Physics and Astronomy, University of Nebraska, Lincoln, NE*

11:18

AE-13. High temperature performance of Pr₁₀(Fe,Co,Ni)₈₄B₆ nanocomposite alloys. M. Daniil^{2,1}, L. Minter³ and M.A. Willard¹. *1. Naval Research Lab., Washington, DC; 2. Physics, George Washington University, Washington, DC; 3. Mechanical Engineering, Tennessee State University, Nashville, TN*

MONDAY
MORNING
8:30

GRAND CANYON 4-5

Session AF
MAGNETORESISTIVE RANDOM ACCESS MEMORY

Jason Janesky, Chair

8:30

AF-01. Investigation of perpendicular interface magnetic anisotropy in CoFeB films using seed and insertion layers. *D. Abraham¹ and D.C. Worledge¹. IBM-MagiC MRAM Alliance, IBM T.J. Watson Research Center, Yorktown Heights, NY*

8:42

AF-02. Statistical and Time Resolved Studies of Switching in Orthogonal Spin Transfer MRAMs. *D. Bedau¹, D. Backes¹, H. Liu¹, J. Langer², P. Manandhar³ and A.D. Kent¹. 1. New York University, New York, NY; 2. Singulus Technologies AG, Kahl am Main, Germany; 3. Spin Transfer Technologies, Boston, MA*

8:54

AF-03. Thermally assisted writing in magnetic tunnel junctions with perpendicular anisotropy. *S. Bandiera¹, R.C. Sousa¹, M. Marins de Castro Souza¹, C. Ducruet², C. Portemont², L. Vila³, S. Auffret¹, L. Prejbeanu² and B. Dieny¹. 1. SPINTEC, Grenoble, France; 2. Crocus Technology, Grenoble, France; 3. CEA/SP2M/NM, Grenoble, France*

9:06

AF-04. Spacer layers to improve the magneto-resistance in perpendicular magnetic tunnel junctions with Co/Pd reference layers. *G. Hu¹, T. Topuria², P.M. Rice², J. Jordan-Sweet³ and D. Worledge¹. 1. IBM-MagiC MRAM Alliance, IBM T.J. Watson Research Center, Yorktown Heights, NY; 2. IBM Almaden Research Center, San Jose, CA; 3. IBM T.J. Watson Research Center, Yorktown Heights, NY*

9:18

AF-05. Characterization of Interlayer Interactions in OST-MRAM Layer Stacks using Ferromagnetic Resonance. *D. Backes¹, D. Bedau¹, H. Liu¹, J. Langer² and A.D. Kent¹. 1. Physics, New York University, New York, NY; 2. Singulus Technologies AG, Kahl am Main, Germany*

9:30

AF-06. Design Considerations for Thermal-assistant STT-RAM through Joule Heating. *X. Bi¹, X. Wang² and H. Li¹. 1. Polytechnic Institute of New York University, Brooklyn, NY; 2. Seagate Technology, Bloomington, MN*

9:42

AF-07. Spin torque switching of sub 30-nm CoFeB/MgO MTJ pillars with perpendicular magnetic anisotropy. *M. Gajek¹, M.C. Gaidis¹, J. Nowak¹, G. Hu¹, J.Z. Sun¹, P.L. Trouilloud¹, D.D. Abraham¹, S. Brown¹, Y. Zhu¹, W.J. Gallagher¹ and D.C. Worledge¹. 1. IBM-MagiC MRAM Alliance, Yorktown Heights, NY*

9:54

AF-08. Numerical investigation of damping effects on single and dual-polarizer devices in scaling down perpendicular and in-plane STT-MRAM Cells. *K. Eason¹, K. Tan³ and R. Sbiaa². 1. Advanced Concepts Group, Data Storage Institute, Singapore, Singapore; 2. Spintronics, Media, and Interface Division, Data Storage Institute, Singapore, Singapore; 3. Mechatronics and Recordings Channel Division, Data Storage Institute, Singapore, Singapore*

10:06

AF-09. Enhanced Perpendicular Magnetic Anisotropy in thin CoFeB Films. *J.J. Kan¹, K. Lee², J.J. Sapan¹, S.H. Kang² and E.E. Fullerton¹. 1. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 2. Advanced Technology, Qualcomm Incorporated, San Diego, CA*

10:18

AF-10. Development of perpendicular-MgO-MTJs with RA-product below $3 \Omega\mu\text{m}^2$ prepared at room temperature. *K. Yakushiji¹, H. Kubota¹, A. Fukushima¹, S. Yuasa¹ and K. Ando¹. 1. Spintronics Research Center, AIST, Tsukuba, Japan*

10:30

AF-11. Towards Planar-Hall-effect magnetic random access memory with permalloy. *Y. Telepinsky¹, V. Mor¹, M. Schultz¹ and L. Klein¹. 1. Department of Physics, Bar-Ilan University, Ramat Gan, Israel*

10:42

AF-12. Spin Transfer Torque Switching Above Room-Temperature. *H. Zhao¹, P.k. Amiri², Y. Zhang¹, A. Lyle¹, Y. Chen³, G. Rowlands³, P. Upadhyaya², Z. Zeng⁴, J.A. Katine⁵, J. Langer⁶, K. Galatsis², H. Jiang⁴, I.N. Krivorotov³ and J. Wang¹. 1. Electrical Engineering, University of Minnesota, Minneapolis, MN; 2. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 3. Physics and Astronomy, University of California, Irvine, Irvine, CA; 4. Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA; 5. Hitachi Global Storage Technologies, San Jose, CA; 6. Singulus Technologies, Kahl/Main, Germany*

10:54

AF-13. Effects of CoFe Seed layer on Structural and Magneto-transport Properties of MTJs with Natural Oxidized MgO Barrier. *C. Yoshida¹, T. Ochiai¹ and T. Sugii¹. 1. Low-power Electronics Association & Project, Tsukuba, Ibaraki, Japan*

11:06

AF-14. MTJ Design Margin Exploration for Self-Reference Sensing Scheme. Z. Sun¹, X. Wan² and H. Li¹. *Electrical and Computer Engineering, Polytechnic Institute of New York University, Brooklyn, NY; 2. Seagate Technology, Bloomington, MN*

11:18

AF-15. Multiscale Micromagnetism of Co-Pd Multilayers. P. Manchanda^{1,2}, R. Skomski¹, P.K. Sahota^{1,2} and A. Kashyap². *Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Department of Physics, The LNM Institute of Information Technology, Jaipur, Rajasthan, India*

MONDAY
MORNING
8:30

GRAND CANYON 12-13

Session AG
COMPLEX OXIDES: FILMS, INTERFACES
AND BULK MATERIALS
Yayoi Takamura, Chair

8:30

AG-01. Interfacial ferromagnetism and exchange bias in CaRuO₃/CaMnO₃ superlattices. C. He¹, M. Gu², N.D. Browning^{2,3}, Y. Takamura², B.J. Kirby⁴, J.A. Borchers⁴, X. Zhai¹, V.V. Mehta^{1,5}, F.J. Wong^{1,5} and Y. Suzuki^{1,5}. *1. Materials Science and Engineering, University of California-Berkeley, Berkeley, CA; 2. Chemical Engineering and Materials Science, University of California-Davis, Davis, CA; 3. Condensed Matter and Materials Division, Physical and Life Sciences Directorate, Lawrence Livermore National Laboratory, Livermore, CA; 4. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 5. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA*

8:42

AG-02. Evidence for High Spin Ru⁴⁺ in SrRuO₃ Thin Films. A. Grutter^{1,2}, F. Wong¹, E. Arenholz³, A. Vailionis⁴ and Y. Suzuki^{1,2}. *1. Materials Science and Engineering, University of California, Berkeley, Berkeley, CA; 2. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Geballe Laboratory for Advanced Materials, Stanford University, Stanford, CA*

8:54

AG-03. Understanding Spin-Flop Coupling at Perovskite Oxide Interfaces. Y. Takamura¹, E. Folven², F. Yang¹, A. Scholl³, A.T. Young³, S.T. Retterer⁴, M.D. Biegalski⁴, H.M. Christen⁴, T. Tybell² and J.K. Grepstad². *1. Chemical Engineering and Materials Science, UC Davis, Davis, CA; 2. Department of Electronics and Telecommunications, Norwegian University of Science and Technology, Trondheim, Norway; 3. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 4. Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN*

9:06

AG-04. Potential of Fe-doped CoFe₂O₄ for Magnetic Layers in Multiferroic Heterostructures. J.A. Moyer¹, C.F. Vaz¹, D.A. Arena², M.J. Marshall¹, D. Kumah¹ and V.E. Henrich¹. *1. Applied Physics, Yale University, New Haven, CT; 2. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY*

9:18

AG-05. Modified magnetic structure in complex oxide magnetic tunnel junctions. S. te Velthuis¹, Y. Liu¹, M. Zhermenkov², M.R. Fitzsimmons², J.W. Freeland¹, Z. Sefrioui^{3,4}, C. Visani³, A. Barthélemy⁴ and J. Santamaria³. *1. Argonne National Laboratory, Argonne, IL; 2. Los Alamos National Laboratory, Los Alamos, NM; 3. Universidad Complutense de Madrid, Madrid, Spain; 4. Unité mixte de Physique CNRS/Thales, Palaiseau, France*

9:30

AG-06. Impact of nanostructuring on the magnetic and magnetocaloric properties of La_{0.25}Pr_{0.375}Ca_{0.375}MnO₃ P.J. Lampen¹, N.S. Bingham¹, M.H. Phan¹, H. Srikanth¹, C.L. Zhang², S.W. Cheong², T.H. Hoang³ and H.D. Chinh³. *1. Physics, University of South Florida, Tampa, FL; 2. Physics, Rutgers University, Piscataway, NJ; 3. Chemical Engineering, Hanoi University of Technology, Hanoi, Viet Nam*

9:42

AG-07. Uncovering Hidden Magnetic Phases in La_{0.7}Sr_{0.3}MnO₃ Thin Films: A Deeper Look with X-rays. (Invited) D. Arena¹, J. Lee², P. Yu⁴, R. Ramesh^{4,5}, T.S. Santos³ and C. Kao². *1. National Synchrotron Light Source, Brookhaven National Lab, Upton, NY; 2. Stanford Synchrotron Radiation Lightsource, SLAC, Menlo Park, CA; 3. Center for Nanoscale Materials, Argonne National Lab, Argonne, IL; 4. Dept. of Physics, Univ. of California, Berkeley, Berkeley, CA; 5. Materials Science Division, Lawrence Berkeley National Lab, Berkeley, CA*

10:18

AG-08. Valence transition in (Pr,Ca)CoO₃ cobaltites: Charge migration at the metal-insulator transition. *J. García-Muñoz*¹, C. Frontera¹, A. Barón-González¹, J. Padilla¹, J. Herrero¹, S. Valencia², R. Feyerherm², E. Dudzik², F. Radu², J. Blasco³, G. Subías³ and R. Abrudan⁴. *1. Instituto de Ciencia de Materiales de Barcelona.ICMAB-CSIC, E-08193 Bellaterra, Barcelona, Spain; 2. Helmholtz-Zentrum Berlin, BESSY, 12489 Berlin, Germany; 3. Instituto de Ciencias de Materiales de Aragón, CSIC-Univ. de Zaragoza, 50009 Zaragoza, Spain; 4. Institut für Experimentalphysik/Festkörperphysik, Ruhr-Universität Bochum, Germany*

10:30

AG-09. Multiphase transitions and complex phase diagram in mixed phase (La,Pr,Ca)MnO₃ manganites .N.S. Bingham¹, M.H. Phan¹, C.L. Zhang², S.W. Cheong² and *H. Srikanth*¹. *Department of Physics, University of South Florida, Tampa, FL; 2. Rutgers Center for Emergent Materials, Rutgers University, Piscataway, NJ*

10:42

AG-10. Simultaneous metal-insulator, ferrimagnetic and structural transitions at 295 K in YBaCo₂O_{5.5}. J. Padilla-Pantoja¹, C. Frontera¹, J. Herrero-Martin¹ and *J. Garcia-Muñoz*¹. *Institute of Materials Science of Barcelona (ICMAB-CSIC), Barcelona, Spain*

10:54

AG-11. Comparison of magnetic and thermoelectric properties of (Nd,Ca)BaCo₂O_{5.5} and (Nd,Ca)CoO₃ *S. Kolesnik*¹, B. Dabrowski^{1,2}, O. Chmaissem^{1,2}, K. Wojciechowski³ and K. Swierczek⁴. *1. Department of Physics, Northern Illinois University, DeKalb, IL; 2. Materials Science Division, Argonne National Laboratory, Argonne, IL; 3. Faculty of Materials Science and Ceramics, AGH-UST University of Science and Technology, Cracov, Poland; 4. Faculty of Energy and Fuels, AGH-UST University of Science and Technology, Cracov, Poland*

11:06

AG-12. Magnetic and calorimetric studies of magnetocaloric effect in La_{0.7-x}Pr_xCa_{0.3}MnO₃ V. Naik¹, S. Barik¹, A. Devi¹, A. Rebello¹ and *M. Ramanathan*¹. *Physics, National university of Singapore, Singapore, Singapore*

11:18

AG-13. Effect of deviation from stoichiometric composition on structural and magnetic properties of cobalt ferrite, Co_xFe_{3-x}O₄ (x = 0.2 to 1.0). *C.I. Nlebedim*¹, J.E. Snyder², A.J. Moses² and D.C. Jiles³. *1. Ames Laboratory, US Department of Energy, Iowa State University, Ames, IA; 2. Wolfson Centre for Magnetism, School of Engineering, Cardiff University, Cardiff, United Kingdom; 3. Electrical and Computer Engineering, Iowa State University, Ames, IA*

MONDAY
MORNING
8:30

GRAND CANYON 1

**Session AH
MAGNETO-OPTICS AND MEMS I**

Leszek Malkinski, Chair

8:30

AH-01. Magnetophotonic crystal comprising electro-optical layer for controlling helicity of light. *T. Goto*¹, A.V. Baryshev^{1,2} and M. Inoue¹. *1. Toyohashi University of Technology, Toyohashi 441-8580, Aichi, Japan; 2. Ioffe Physico-Technical Institute, St. Petersburg 194021, Russian Federation*

8:42

AH-02. Fano-shape longitudinal Kerr effect enhancement in 2D magnetoplasmonic crystals. *A. Chetvertukhin*¹, A. Baryshev², T. Dolgova¹, H. Uchida³, M. Inoue² and A. Fedyanin¹. *1. Faculty of Physics, Lomonosov Moscow State University, Moscow, Russian Federation; 2. Toyohashi University of Thechnology, Toyohashi, Japan; 3. Tohoku Institute of Technology, Sendai, Japan*

8:54

AH-03. Study of Crystallographically Amorphous Ferrimagnetic Alloys: Comparing a Localized Atomistic Spin Model with Experiments. *T.A. Ostler*¹, R. Evans¹, R.W. Chantrell¹, U. Atxitia², O. Chubykalo-Fesenko², I. Radu^{3,6}, R. Abrudan⁴, F. Radu³, A. Tsukamoto⁵, A. Itoh⁵, A. Kirilyuk⁶, T. Rasing⁶ and A. Kimel⁶. *1. Physics, University of York, York, North Yorkshire, United Kingdom; 2. Instituto de Ciencia de Materiales, Madrid, Cantoblanco, Spain; 3. Helmholtz-Zentrum Berlin für Materialien und Energie, BESSY II, Berlin, Germany; 4. Experimentalphysik IV, Ruhr-Universität Bochum, Bochum, Germany; 5. College of Science and Technology, Nihon University, Funabashi, Japan; 6. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands*

9:06

AH-04. Magnetic properties of liquid crystals tuned by magnetic nanoparticles. *J. Lim*¹, J. Wiley², L. Malkinski², A. Glushchenko², Z. Celinski¹ and Y. Garbovskiy¹. *1. Physics, UCCS, Colorado Springs, CO; 2. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA*

9:18

AH-05. Femtosecond dynamics of Faraday effect in thin magnetic films and magnetophotonic crystals. *M. Sharipova*¹, A. Zhdanov¹, A. Chetvertukhin¹, T. Shapaeva¹, A. Shaposhnikov², T. Dolgova¹ and A. Fedyanin¹. *1. physics, Lomonosov Moscow State University, Moscow, Russian Federation; 2. physics, Taurida National V. I. Vernadsky University, Simferopol, Ukraine*

9:30

AH-06. Surface modes induced magneto-optical Kerr effect enhancement in Fe films by coverage of two-dimensional array of polystyrene spheres. X. Zhang¹, L. Shi¹, J. Li², Y. Xia³, J. Zi¹ and S. Zhou^{1,4}. *1. Surface Physics State Laboratory and Department of Physics, Fudan University, Shanghai, Shanghai, China; 2. Department of Optical Science and Engineering, Fudan University, Shanghai, Shanghai, China; 3. Shandong Province Key Lab of Laser Polarization and Information, Qufu Normal University, Qufu, Shandong, China; 4. Physics Department, Tongji University, Shanghai, Shanghai, China*

9:42

AH-07. Magneto-Optical Materials and Devices for On-chip Nonreciprocal Photonic Applications. (Invited) L. Bi¹. *DMSE, MIT, Cambridge, MA*

10:18

AH-08. Magneto-plasmonics and magneto-transport in Au-Co nanocomposite films. K. Yang¹, C. Clavero¹, J. Skuza² and A. Lukaszew^{1,2}. *1. Department of Applied Science, College of William and Mary, Williamsburg, VA; 2. Department of Physics, College of William and Mary, Williamsburg, VA*

10:30

AH-09. Magnetoplasmonic nanostructures based on nickel opal slabs. A. Grunin¹, N. Sapoletova¹, K. Napolskii¹, A. Eliseev¹ and A. Fedyanin¹. *1. Lomonosov State University, Moscow, Russian Federation*

10:42

AH-10. Circularly Polarized Plasmon Modes in Spheroidal Nanoshells for Application in All-Optical Magnetic Recording. L. Hung¹, G. Lang¹, P. McAvoy¹, C. Kraft² and I. Mayergoyz³. *1. Electrical and Computer Engineering, University of Maryland, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD; 3. Electrical and Computer Engineering, UMLACS and AppEl Center, University of Maryland College Park, College Park, MD*

10:54

AH-11. Voltage-Controlled Magnetic Data Writing using Inverse Magnetostrictive Effect. M.T. Alam¹, D. Carlton¹, E. Techfeld¹, B. Lambson¹ and J. Bokor¹. *1. Electrical Engineering & Computer Sciences (EECS), University of California Berkeley, Berkeley, CA*

11:06

AH-12. Manipulations of Vibrating Micro Magnetic Particle Chains. Y. Li¹, S. Sheu¹, J. Pai¹ and C. Chen¹. *1. Mechanical Engineering, National Chiao Tung University, Hsinchu, Taiwan*

11:18

AH-13. Design and Test of Magnetostrictive Actuators for Nanometer Resolution and Fast Response Applications. T. Zhang¹, H. Zhang¹, J. Liu¹, J. Wang¹ and C. Jiang¹. *1. School of Materials Science and Engineering, Beihang University, Beijing, China*

MONDAY
MORNING
8:00

SAGUARO BALLROOM

**Session AP
NANOPARTICLE SYNTHESIS I
(Poster Session)**
Tianlong Wen, Chair

AP-01. Magnetic Field Assisted Polyol Synthesis of Cobalt Carbide Microwires. A.A. Farghaly¹, Z.J. Huba¹ and E.E. Carpenter¹. *1. Chemistry, Virginia Commonwealth University, Richmond, VA*

AP-02. Co-Ferrite Spinel and FeCo Alloy Core Shell Nanocomposites & Mesoporous Systems for Multifunctional Applications. K. Zhang¹ and A.K. Pradhan¹. *1. Center for Materials Research, Norfolk State University, Norfolk, VA*

AP-03. Gram scale synthesis of high magnetic moment Fe_{100-x}Cox alloy nanoparticles. C. Chinnasamy¹, J. Herr², R. Pai¹ and J. Liu¹. *1. Electron Energy Corporation, Landisville, PA; 2. Chemistry, PennState University, University Park, PA*

AP-04. Synthesis of Fe-Co nanoparticles with high saturation magnetization by low temperature post-annealing through the growth of particle from nanoparticles cluster. T. Ogawa¹, H. Takano¹, H. Kura¹ and M. Takahashi¹. *1. Department of Electronic Engineering, Graduated School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

AP-05. Large-scale synthesis of high moment FeCo nanoparticles using modified polyol synthesis. M. Zamanpour¹, V.G. Harris², L.H. Lewis¹, C. Vittoria² and Y. Chen². *1. Chemical Engineering, Northeastern University, Boston, MA; 2. Electrical and Computer Engineering, Northeastern University, Boston, MA*

AP-06. Carbon nanotube coated silicated soft magnetic carbonyl iron microspheres and their magnetorheology. Y. Liu¹ and H. Choi¹. *1. Department of Polymer Science and Engineering, Inha Univ, Incheon, Korea, Republic of*

AP-07. Magnetic stability of Fe-Silica core-shell nanoparticles prepared via hydrolysis. J. Zhang¹, A. Thurber² and A. Apunnoose². *1. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 2. Department of Physics, Boise State University, Boise, ID*

AP-08. Facile Synthesis of Superparamagnetic Iron Oxide/MCM-41 Hybrid Nanospheres for Targeted Drug Delivery. L. Yu¹ and H. Bi^{1,2}. *1. College of Chemistry and Chemical Engineering, Anhui University, Hefei, Anhui, China; 2. Department of Medicine, Columbia University, New York, NY*

AP-09. Magnetic Properties of Thiol Capped Gold Nanoparticles. S. Yoon¹, T. Lee², K. Han¹, B. Suh¹, Z. Jang², J. Kim³ and D. Jung³. *1. Physics, Catholic University of Korea, Bucheon, Gyunggido, Korea, Republic of; 2. Physics, Kookmin University, SEOUL, SEOUL, Korea, Republic of; 3. Chemistry, Sungkyunkwan University, Suwon, Gyunggido, Korea, Republic of*

AP-10. Concentration dependence of magnetic moment in Ce_{1-x}Fe_xO₂ G.L. Beausoleil¹, A. Thurber¹, A. Punnoose¹ and S. Singamaneni¹. *1. Physics, Boise State University, Boise, ID*

AP-11. Magnetic and optical properties of monosized Eu-doped ZnO nanocrystals from nanoemulsion. H. Yoon¹, J.H. Wu², J.H. Min¹, J. Lee¹ and Y.K. Kim¹. *1. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Korea, Republic of*

AP-12. Magnetic Properties and microstructures of defect free high crystalline NiO Nanoparticles and Nanorods. D. Chen¹, X. Wang¹, Y. Du¹, S. Ni² and X. Liao². *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. School of Aerospace, Mechanical & Mechatronic Engineering, The University of Sydney, Sydney, NSW, Australia*

AP-13. The effect of ball size on morphology and magnetic properties of anisotropic SmCo₅ nanoflakes prepared by surfactant-assisted ball milling. J. Nie¹, X. Han¹, J. Liu¹, W. Li^{1,2}, A. Yan¹ and J. Du¹. *1. Ningbo Institute of Material Technology & Engineering, CAS, Ningbo, China; 2. Division of Functional Materials, Central Iron and Steel Research Institute, Beijing, China*

AP-14. Efficiently Recyclable Magnetic Core-Shell Photocatalyst for Photocatalytic Oxidation of Chlorophenol in Water. K. Choi¹, S. Oh², J. Jung³ and J. Jung^{3,2}. *1. Material R&D Division, H & Global Co., Gwangmyeong, Gyeonggido, Korea, Republic of; 2. Gangneung Center, Korea Basic Science Institute, Gangneung, Gangwondo, Korea, Republic of; 3. Chemistry, Gangneung-Wonju National University, Gangneung, Gangwon do, Korea, Republic of*

AP-15. Preparation and magnetic behavior of self-assembled nanocrystalline CuFeS₂ chalcopyrite. C. Lin¹, Y. Siao², I. Lyubutin³, M. Chen⁴, T. Han⁵, G. Jhang¹, G. Chen¹, C. Wu¹ and X. Qi². *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University, Tainan, Taiwan; 2. Department of Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan; 3. Shubnikov Institute of Crystallography, Russian Academy of Sciences, Moscow, Russian Federation; 4. Department of Electro-optical Engineering, Southern Taiwan University, Tainan, Taiwan; 5. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

MONDAY
MORNING
8:00

SAGUARO BALLROOM

Session AQ
AMORPHOUS ALLOYS
(Poster Session)
Masato Ohnuma, Chair

AQ-01. Continuous Annealing Method for Producing a Flexible and Curved Soft Magnetic Amorphous Alloy Ribbon. B. Francoeur¹ and P. Couture¹. *1. IREQ, Hydro-Quebec, Varennes, QC, Canada*

AQ-02. Si addition effect on soft magnetic properties in FeBCCu alloy system. F. Xingdu^{1,2}, M. He¹, M. Aibin² and S. Baolong¹. *1. Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. College of Mechanics and Materials, Hohai University, Nanjing, Jiangsu, China*

AQ-03. Giant Magneto-Impedance in Co₆₃Fe₄B₂₂4Si₅6Nb₅ alloy ribbons. H. Sun^{1,2}, Q. Man¹, Y. Dong¹ and B. Shen¹. *1. Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, China; 2. College of Physics, Mathematics and Information engineering, Zhejiang Normal University, Jinhua, China*

AQ-04. Study on the soft magnetic properties and high frequency characteristics of Co-M (M=Ti, Zr, and Hf) thin films. H. Chang¹, Y. Huang², C. Hsieh², C. Shih², W. Chang² and D. Xue³. *1. Tunghai University, Taichung, Taiwan; 2. National Chung Cheng University, Chia-Yi, Taiwan; 3. Lanzhou University, Lanzhou, China*

AQ-05. Magnetism of BaB₆ thin films produced by pulsed laser deposition. K. Ackland¹, M. Venkatesan¹ and J.M. Coey¹. *1. School of Physics and CRANN, Trinity College, Dublin 2, Ireland*

AQ-06. Measurement of Volume Exchange in Soft FeCo Films of High Magnetization. C. Mathieu¹, H. Liu², K.S. Buchanan² and V.R. Inturi¹. *1. Seagate Technology, Bloomington, MN; 2. Physics, Colorado State University, Fort Collins, CO*

AQ-07. Tuning of Magnetization Dynamics in Sputtered CoFeB Thin Film by Gas Pressure. F. Xu^{1,2}, Q. Huang¹, Z. Liao¹, C. Ong³ and S. Li⁴. *1. Department of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, Jiangsu, China; 2. Laboratory of Solid State Microstructures, Nanjing University, Nanjing, China; 3. Department of Physics, National University of Singapore, Singapore 11754, Singapore; 4. Physics Department, Fujian Normal University, Fuzhou, China*

AQ-08. High stability of magnetic parameters in Fe 25 at.% Al nanocomposite. S. Jani¹, J. Nehra¹, S. Damodaran¹, L. Nambakkat¹ and V. Kanipphoth¹. *1. Physics, Mohanlal Sukhadia University, Udaipur, Rajasthan, India*

AQ-09. Development of a composite material with high magnetic permeability and low loss factor for high frequency application. D. Roy¹ and P. Kumar¹. *1. Department of Physics, Indian Institute of Science, Bangalore, India*

AQ-10. Magnetic behaviour of Ni_{0.4}Zn_{0.6}Co_{0.1}Fe_{1.9}O₄ spinel nanoferrite. A. Thakur¹, . Thakur² and J. Hsu¹. *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Physics, Himachal Pradesh University, Shima, India*

AQ-11. Effect of Cu and Nb additives on the μ_f -T curves in FeSiB alloys. Y. Jia¹, Z. Wang¹, R. Shi¹ and J. Wang¹. *1. tianjin university, Tianjin, tianjin, China*

AQ-12. Effect of P on soft magnetic properties of nanocrystalline Fe-Si-B-P-Cu alloys with high Bs. A. Urata¹, M. Yamaki¹, M. Takahashi¹, K. Okamoto¹, H. Matsumoto¹, S. Yoshida¹ and A. Makino². *1. NEC TOKIN Corporation, Sendai, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

AQ-13. Electrodeposition and Magnetic Properties of FeCo Alloy Films. D. Zhou^{1,2}, M. Zhou¹, M. Zhu¹, Z. Guo¹, X. Yang² and F. Li². *1. Division of Functional Materials, Central Iron & Steel Research Institute, Beijing, China; 2. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, Gansu, China*

AQ-14. The Effect of Distributed Exchange Parameters on Magnetocaloric Refrigeration Capacity in Amorphous and Nanocomposite Materials. N.J. Jones¹, H. Ucar¹, J.J. Ipus¹, M.E. McHenry¹ and D.E. Laughlin¹. *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

AQ-15. Room-temperature deposition of nanocrystalline ferrite thin films for photomagnetic functionality. U.S. Alaan¹, F.J. Wong¹, A.J. Grutter^{1,2}, J.M. Iwata¹, V.V. Mehta^{1,2}, J.L. Watts¹ and Y. Suzuki^{1,2}. *1. Department of Materials Science and Engineering, University of California, Berkeley, CA; 2. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA*

MONDAY
MORNING
8:00

SAGUARO BALLROOM

Session AR
STRONGLY CORRELATED SYSTEMS I
(Poster Session)

Michael Loewenhaupt, Chair

AR-01. Temperature dependent magnetic structure of lithium delithiated Li_xFeSO₄F (x=0, 1) by Mössbauer spectroscopy. I. Lee¹, S. Hyun¹, T. Kouh¹, I. Shim¹ and C. Kim¹. *1. Department of Physics, Kookmin University, Seoul, Korea, Republic of*

AR-02. The strong one-dimensional antiferromagnetism in a charge-transfer insulator: AgSO₄x. Zhang¹, T. Jia¹, T. Liu¹, Z. Zeng¹ and H. Lin². *1. Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, China; 2. Department of Physics and Institute of Theoretical Physics, The Chinese University of Hong Kong, Hong Kong, China*

AR-03. First-principles investigation of magnetic and elastic properties of Fe-Si. W. Yun¹, J. Lee¹, I. Kim¹, S. Hong² and J. Lee³. *1. Graduate Institute of Ferrous Technology, Pohang University of Science and Technology, Pohang 790-784, Korea, Republic of; 2. Department of Physics and Energy Harvest-Storage Research Center, University of Ulsan, Ulsan 680-749, Korea, Republic of; 3. Department of Physics, Inha University, Incheon 402-751, Korea, Republic of*

AR-04. Large positive magnetoresistance (~100%) at very low temperature (< 10 K) observed in Bi2Te3/C. Y. Zhang¹. *1. Institute of superconducting and electronic materials, Wollongong, NSW, Australia*

AR-05. Antiferromagnetism in the 2D Limit and Interface Superconductivity in Metal-Insulator La(2-x)Sr(x)CuO(4) Superlattices. A. Suter¹, E. Morenzoni¹, T. Prokscha¹, B.M. Wojek^{2,1}, H. Luetkens¹, A. Gozar³, G. Logvenov^{4,3} and I. Bozovic³. *1. Laboratory for Muon Spin Spectroscopy, Paul Scherrer Institut, Villigen PSI, Switzerland; 2. Physics Institute, University of Zurich, Zurich, Switzerland; 3. Brookhaven National Laboratory, Upton, NY; 4. Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany*

- AR-06. The correlation and hybridization effects between 4f and other electrons on the ARPES and hybridization gap in CeCoGe₂: DFT+DMFT study.** *H. Choi¹, J. Shim² and B. Min¹. Physics, POSTECH, Pohang, Korea, Republic of; 2. Chemistry, POSTECH, Pohang, Korea, Republic of*
- AR-07. Crossing point phenomena ($T^* = 2.7$ K) in Specific heat curves of Superconducting Ferromagnets RuSr₂Gd_{1.4}Ce_{0.6}Cu₂O_{10- δ}** *A. Kumar^{1,2}, R. Tandon² and V. Awana¹. Quantum Phenomena and Application, National Physical Laboratory, New Delhi, Delhi, India; 2. Physics and Astrophysics, University of Delhi, New Delhi, Delhi, India*
- AR-08. Withdrawn**
- AR-09. Interplay between Magnetism and Charge Transport in Antiperovskite Manganese Nitrides: Extremely Low Temperature Coefficient of Resistance due to Strong Magnetic Scattering.** *M. Hadano¹, A. Ozawa¹, K. Takenaka¹, N. Kaneko², T. Oe² and C. Urano². Department of Crystalline Materials Science, Nagoya University, Nagoya, Japan; 2. National Metrology Institute of Japan (NMIJ), National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*
- AR-10. Magnetic and rectifying properties in La_{0.8}Ca_{0.2}MnO₃/SrTiO₃/GaAs heterostructures.** *Z. Wu¹, L. Wang¹ and J. Gao¹. Physics, The University of Hong Kong, Hong Kong, Hong Kong*
- AR-11. Tuning Magnetic Phase Transition by A-site Quenched Disorder in Half-Doped Manganite Pr_{0.5}Ba_{0.5}MnO₃.** *D. Ling¹, P. Hsu¹ and C. Lee¹. Department of Physics, Tamkang University, Tamsui, Taiwan*
- AR-12. Structural and magnetic study of SmTAl single crystals (T=Pd and Ni).** *J. Prchal¹, M. Rusnak¹ and J. Pospisil¹. Department of Condensed Matter Physics, Charles University in Prague, Prague 2, Czech Republic*
- AR-13. Magnetism in CeIr(Si_xGe_{1-x})₃ compounds.** *J. Prokleska¹, J. Pospisil¹, M. Kratochvilova¹ and V. Sechovsky¹. Dept. of Condensed Matter Physics, Charles University, Prague, Czech Republic*
- AR-14. Relationships between crystal structure and magnetic properties in type-A hetero-epitaxial MnAs thin films.** *J. Song¹, Y. Cui² and J.B. Ketterson². Physics, Chungnam Natl Univ, Daejeon, Korea, Republic of; 2. Physics and Astronomy, Northwestern University, Evanston, IL*
- AR-15. Anomalous low temperature magnetic and magneto-transport properties in Ru deficient SrRuO₃** *C. Sow¹, D. Samal^{1,2} and P. Kumar¹. Department of Physics, Indian Institute of Science, Bangalore, Karnataka, India; 2. Presently at Faculty of Science and Technology and MESA+ Institute for Nanotechnology, University of Twente, 7500 AE Enschede, Netherlands*

MONDAY
MORNING
8:00

SAGUARO BALLROOM

Session AS
MAGNETIC RECORDING READERS AND WRITERS
(Poster Session)
Kaizhong Gao, Chair

- AS-01. Spin torque transfer effects in CPP differential dual spin valve.** *H. Meng¹ and G. Han¹. Data storage institute, Singapore, Singapore*
- AS-02. Enhancement of current-perpendicular-to-plane giant magnetoresistance by insertion Fe(001) layers at alternate monatomic [Fe/Co]_n superlattices /Ag interface.** *J. Jung¹, Y. Shiokawa¹, Z. Jin¹, M. Doi² and M. Sahashi¹. Electronic Engineering, Tohoku University, Sendai, Japan; 2. Electronic Engineering, Tohoku Gakuin University, Tagajyo, Japan*
- AS-03. Spin torque noise properties in exchange biased spin-valve and trilayer CPP-GMR devices using Co₂Fe(AI_{0.5}Si_{0.5}) Heusler alloy layers.** *T.M. Nakatani¹, M. Hayashi¹, T. Furubayashi¹ and K. Hono¹. National Institute for Materials Science, Tsukuba, Japan*
- AS-04. Initial Magnetic Damage in Tunneling Magnetoresistance Head due to Temperature Increase Caused by Electrostatic Discharge Models.** *C. Surawanitkun¹, A. Kaewrawang¹, T. Mewes², C.K. Mewes² and A. Siritaratiwat¹. KKU-Seagate Cooperation Research Laboratory, Department of Electrical Engineering, Khon Kaen University, Khon Kaen, Thailand; 2. Physics & Astronomy, University of Alabama, Tuscaloosa, AL*
- AS-05. Magnetic nanocontact MR with high MR ratio and low RA.** *H. Iwasaki¹, S. Hashimoto¹, H.N. Fuke¹, M. Takagishi¹ and M. Sahashi². Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan; 2. Department of Electronic Engineering, Tohoku University, Sendai, Japan*
- AS-06. Ferromagnetic resonance line widths of metastable Co single crystal thin films.** *M. Sakamoto¹, H. Ohashi¹, M. Ohtake², M. Futamoto² and N. Inaba¹. Department of Electrical Engineering, Yamagata University, Yonezawa, Japan; 2. Chuo University, Bunkyo, Tokyo, Japan*
- AS-07. Effect of interlayer coupling on the reversal process of the Differential Dual Spin Valves.** *C. Murapaka^{1,2}, C. Wang², G. Han² and W. Lew¹. Division of Physics and Applied Physics, Nanyang Technological University, Singapore, Singapore; 2. Data Storage Institute, A*STAR (Agency for Science, Technology and Research), Singapore, Singapore*

- AS-08. Effect of exchange stiffness of shield material on the sensitivity profile of read heads.** *Y. Suzuki*¹. *Electric and Electronic Engineering, Nihon University, Koriyama-shi, Fukushima-ken, Japan*
- AS-09. Thermal Response Characteristics and Model for Head/Disk Interaction in TMR Heads.** *P. Supnithi*¹, *P. Kovintavewat*² and *C. Pupaichitkul*³. *1. Faculty of Engineering and College of Data Storage Innovation, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand; 2. Data Storage Technology Research Unit, Faculty of Science and Technology, Nakhon Pathom Rajabhat University, Muang, Nakhon Pathom, Thailand; 3. Seagate Technology (Korat), Nakorn Ratchaseema, Thailand*
- AS-10. Measuring and Understanding Write Width and Off-Track as a function of Linear Density in Perpendicular Recording.** *J. Fernandez-de-Castro*¹, *G. Sandler*¹, *M. Hurben*¹, *P. Lu*¹ and *N. Curland*¹. *Seagate Technology, Bloomington, MN*
- AS-11. Time resolved scanning Kerr microscopy of the vector magnetization within thin film write head structures.** *P. Gangmei*¹, *P.S. Keatley*¹, *W. Yu*¹, *R.J. Hicken*¹, *M.A. Gubbins*², *P.J. Czoschke*³ and *R. Lopusnik*³. *1. Physics, University of Exeter, Exeter, Devon, United Kingdom; 2. Research & Development, Seagate Technology, 1 Disc Drive, Springtown Industrial Estate, Derry, Northern Ireland BT48 0BF, United Kingdom; 3. Recording Heads Operation, Seagate Technology, 7801 Computer Avenue South, Bloomington, MN*
- AS-12. Characterization method of magnetic properties in ion-beam-etched main pole using magnetoresistance measurements.** *Y. Ohsawa*^{1,2}, *K. Yamakawa*² and *H. Muraoka*². *1. CR&D center, Toshiba corp, Kawasaki, Japan; 2. RIEC, Tohoku Univ., Sendai, Japan*
- AS-13. Head Field Measurement by Anomalous Hall Effect of Recording Layer with Soft Under Layer.** *K. Yamakawa*^{1,2}, *Y. Ohsawa*^{1,3}, *T. Kiya*², *K. Ise*² and *H. Muraoka*¹. *1. RIEC, Tohoku University, Sendai, Japan; 2. Akita Industrial Technology Center, Akita, Japan; 3. R & D Center, Toshiba Corp., Kawasaki, Japan*
- AS-14. Write Field Asymmetry in Perpendicular Magnetic Recording.** *Z. Li*¹, *D. Bai*¹, *E. Lin*¹ and *S. Mao*¹. *Western Digital, Fremont, CA*
- AS-15. Structural and magnetic characterization of epitaxial Fe16N2 thin films with giant saturation magnetization.** *N. Ji*¹, *V. Lauter*², *L.F. Allard*², *C. Sanchez-Hanke*³, *H. Ambaye*², *E. Lara-Curzio*², *F. Groot*⁴ and *J. Wang*¹. *1. U of Minnesota, Minneapolis, MN; 2. Oak Ridge National Laboratory, Oak Ridge, TN; 3. Brookhaven National Laboratory, Upton, NY; 4. Utrecht University, Utrecht, Netherlands*

MONDAY
MORNING
8:00

SAGUARO BALLROOM

Session AT
ADVANCED MAGNETIC RECORDING
(Poster Session)
Simon Greaves, Chair

- AT-01. A new kind of Non-linear Distortion in Perpendicular Magnetic Recording Systems.** *M. Nichols*¹ and *N. Miladinovic*¹. *SISA, San Jose, CA*
- AT-02. Understanding and Improving a Micro-Track Test in Perpendicular Recording.** *J. Fernandez-de-Castro*¹, *G. Sandler*¹, *G. Le*¹ and *P. Krivosik*¹. *Seagate Technology, Bloomington, MN*
- AT-03. The Effects of Writer Widths and Shingling Percentages in Shingled Write Recording.** *P. Supnithi*¹ and *S. Chandrasekaran*². *1. Telecommunications Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand; 2. Western Digital, Bang Pa-in, Thailand*
- AT-04. Optimization and Design of Shingle Magnetic Recording Systems.** *K. Chan*¹, *R. Elidrissi Moulay*¹, *K. Teo*¹ and *Y. Kanai*². *1. MRC, Data Storage Institute, Singapore, Singapore; 2. Department of Information and Electronics Engineering, Niigata Institute of Technology, Kashiwazaki,, Japan*
- AT-05. Atomistic Simulation Method in Head-Disk Interface of Magnetic Data Storage System.** *R.L. Smith*¹, *P. Chung*¹ and *M.S. Jhon*^{1,2}. *1. Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Korea, Republic of*
- AT-06. Novel Head-disk Interface Design in Magnetic Data Storage.** *R.L. Smith*¹, *P. Chung*¹ and *M.S. Jhon*^{1,2}. *1. Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Korea, Republic of*
- AT-07. Novel Graphene Overcoat in Magnetic Data Storage Technology.** *S. Vemuri*¹, *R. Smith*¹, *Y. Jhon*², *P. Chung*¹ and *M.S. Jhon*^{1,2}. *1. Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Suwon, Korea, Republic of*
- AT-08. Multiscale Modeling in Head/Disk Interface of Magnetic Data Storage System.** *P. Chung*¹, *R. Smith*¹, *S. Vemuri*¹ and *M.S. Jhon*^{1,2}. *1. Chemical Engineering and Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon, Kyunggi, Korea, Republic of*

- AT-09. High Speed Magnetisation Reversal In Heat Assisted Recording On Continuous Media.** S. Greaves¹, H. Muraoka¹ and Y. Kanai². *RIEC, Tohoku University, Sendai, Japan; 2. IEE, Niigata Institute of Technology, Kashiwazaki, Japan*
- AT-10. Magnetic origin of further coercivity reduction in FePt/Fe ECC media by forming magnetic graded interface.** L. Huang^{1,2}, J. Hu² and J. Chen¹. *Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 2. Data storage Institute, Singapore, Singapore*
- AT-11. Granular L1₀ FePt:X (X = B, B-SiO₂ and C-SiO₂) (001) Thin Films for Heat Assisted Magnetic Recording.** S.D. Granz^{1,2}, K. Barmak^{2,3} and M.H. Kryder^{1,2}. *1. Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 3. Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*
- AT-12. A Study on Modeling of Writing Process and Two-Dimensional Neural Network Equalization for Two-Dimensional Magnetic Recording.** M. Yamashita¹, Y. Okamoto¹, Y. Nakamura¹, H. Osawa¹, K. Miura², S.J. Greaves², H. Aoi², Y. Kanai³ and H. Muraoka². *1. Graduate School of Science and Engineering, Ehime University, Matsuyama, Japan; 2. RIEC, Tohoku University, Sendai, Japan; 3. Niigata Institute of Technology, Kashiwazaki, Japan*
- AT-13. Microwave assisted magnetic recording simulation on ECC medium.** A. Kato¹, Y. Furomoto¹, T. Tanaka¹, A. Md Nor², Y. Kanai³ and K. Matsuyama¹. *1. Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Fukuoka, Japan; 2. Department of Physics, Malaya University, Kuala Lumpur, Malaysia; 3. Department of Information and Electronics Engineering, Niigata Institute of Technology, Kashiwazaki, Niigata, Japan*
- AT-14. Micromagnetic Studies on Exchange Coupled Composite Recording Media.** H. Xie¹, H. Li², Y. Wang¹, K. Zhang², Y. Wang², Z. Li¹, J. Bai¹, F. Wei¹ and D. Wei¹. *Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, Gansu, China; 2. Materials Science and Engineering, Tsinghua University, Beijing, China*
- AT-15. Demonstration of read-write on Co/Pd bit patterned media fabricated by direct deposition method.** N. Thiyagarajah¹, S. Leong², H. Duan³, M. Asbahi³, J. Yang³ and V. Ng¹. *1. Department of Electrical and Computer Engineering, National Univ Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore; 3. Institute of Materials Research and Engineering, Singapore, Singapore*

MONDAY
MORNING
8:00

SAGUARO BALLROOM

Session AU
MAGNETOELASTIC AND MAGNETOCALORIC
PROPERTIES I
(Poster Session)
José Arnaudas, Chair

- AU-01. Optimization of sputter deposition parameters for magnetostrictive Fe₆₂Co₁₉Ga₁₉/Si(100) films.** S. Jen¹ and T. Tsai^{1,2}. *1. Academia Sinica, Institute of Physics, Taipei, Taiwan; 2. Dept. of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan*
- AU-02. Giant Magnetostriction in Tetragonally-Distorted Antiperovskite Manganese Nitrides.** T. Shimizu¹, T. Shibayama¹, K. Asano¹ and K. Takenaka¹. *1. Department of Crystalline Materials Science, Nagoya university, Nagoya, Japan*
- AU-03. Effect of the Mn substitution for Fe on magnetic and magnetostrictive properties of SmFe₂ compound.** Y. Wang¹, W.J. Ren¹, Z.H. Wang¹, Y.Q. Zhang¹, J. Li¹ and Z.D. Zhang¹. *Shenyang national laboratory for materials science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*
- AU-04. Withdrawn**
- AU-05. Structural, magnetic and magnetoelastic effects in Sr(Ti_{1-x}Mx)O₃ (M=Fe, Co, or Cr) epitaxial thin films.** D. Kim¹, L. Bi¹, P. Jiang¹, G.F. Dionne¹ and C.A. Ross¹. *MIT, Cambridge, MA*
- AU-06. Effects of Ni addition on the magnetostriction and microstructures of Fe_{70-x}Pd₃₀Ni_x high-temperature ferromagnetic shape memory alloys.** Y. Lin¹, C. Lin² and J. Yang². *1. Department of Mold and Die Engineering, National Kaohsiung University of Applied Sciences, Kaohsiung, Taiwan; 2. Department of Mechanical and Automatic Engineering, National Kaohsiung First University of Science and Technology, Kaohsiung, Taiwan*
- AU-07. Effect of Orthogonal Fields on Magnetostrictive Power Harvesting.** A. Adly¹, D. Davino², A. Giustiniani³ and C. Visone². *1. Elect. Power & Machines Dept., Cairo University, Giza, Egypt; 2. Dept. of Engineering, University of Sannio, Benevento, Italy; 3. DIIIIE, University of Salerno, Fisciano, Italy*

AU-08. Magnetovolume effect in $\text{Ho}_2\text{Fe}_{17-x}\text{Mn}_x$ compounds. *J. Wang*^{1,2}, *A.J. Studer*¹, *S.J. Kennedy*², *R. Zeng*¹, *S.X. Dou*¹ and *S.J. Campbell*³. *1. Institute for Superconducting & Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. Bragg Institute, ANSTO, Sydney, NSW, Australia; 3. School of Physical, Environmental and Mathematical Sciences, The University of New South Wales, The Australian Defence Force Academy, Canberra, ACT, Australia*

AU-09. Structure and bias exchange of $\text{Ni}_{50}\text{Mn}_{37}\text{Sn}_{13}$ ribbons. *Y. Yang*¹, *J. Wei*¹, *X. Ma*¹, *C. Wang*¹, *Y. Yang*¹ and *J. Yang*¹. *1. School of Physics, Peking university, Beijing, China*

AU-10. Dynamic Magnetoelastic Properties of Epoxy-Bonded $\text{Sm}_{0.88}\text{Nd}_{0.12}\text{Fe}_{1.93}$ Pseudo-1-3 Magnetostrictive Particulate Composites. *F. Yang*^{1,2}, *S. Or*¹, *W. Liu*², *X. Lv*² and *Z. Zhang*². *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China; 2. Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*

AU-11. Phase identification and magnetostrictive property of Fe-19at.% Ga single crystal. *X. Zhu*¹, *J. Liu*¹ and *C. Jiang*¹. *Materials science and engineering School, Beijing University of Aeronautics & Astronautics, Beijing, China*

AU-12. Direct measurement of magnetocaloric effect in Co-doped Mn-rich Ni_2MnGa alloys. *J. Kastil*¹, *J. Kamarad*², *S. Fabbri*³, *F. Albertini*³, *A. Paoluzi*³ and *Z. Arnold*². *1. Department of Condensed Matter Physics, Faculty of Mathematics and Physics, Charles University, Praha 2, Czech Republic; 2. Institute of Physics ASCR, Prague 8, Czech Republic; 3. IMEM CNR, Parma, Italy*

AU-13. Grain Interactions During the Phase Transition in Ni-Mn-Ga. *R.A. Booth*¹, *S.F. Li*¹, *R.M. Suter*¹ and *S.A. Majetich*¹. *1. Physics, Carnegie Mellon University, Pittsburgh, PA*

AU-14. A cheaper NiMnGa based Heusler alloy for magnetic refrigeration. *C. Salazar Mejia*¹, *A.M. Gomes*¹ and *L. de Oliveira*². *1. Instituto Fisica, Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 2. Instituto Fisica "Gleb Wataghin", Universidade Estadual de Campinas, Campinas, SP, Brazil*

AU-15. Refrigerant capacity of austenite in as-quenched and annealed $\text{Ni}_{51.1}\text{Mn}_{31.2}\text{In}_{17.7}$ melt spun ribbons. *J.L. Sanchez Llamazares*¹, *H. Flores-Zuñiga*¹, *C.F. Sanchez-Valdes*² and *C. Garcia*³. *1. División de Materiales Avanzados, Instituto Potosino de Investigación Científica y Tecnológica (IPICYT), San Luis Potosí, Mexico; 2. Institut de Ciència de Materials de Barcelona (C.S.I.C.), Bellaterra, Spain; 3. Physics, Bogazici University, Istanbul, Turkey*

MONDAY
MORNING
8:00

SAGUARO BALLROOM

Session AV
TRANSFORMERS, MOTORS, INDUCTORS
AND LEVITATION I
(Poster Session)
Steven Turner, Chair

AV-01. Magnetic Property Modeling of Silicon Steel Sheets Under DC-Biasing Magnetization. *Z. Zhao*¹, *F. Liu*¹, *P. Ren*², *Y. Wang*¹, *L. Zhao*¹, *D. Li*¹ and *W. Yan*¹. *1. Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Tianjin, China; 2. School of electronic, information and electrical engineering, Shanghai Jiao Tong University, Shanghai, China*

AV-02. Solution to the Problem of E-Cored Coil above a Layered Half-Space Using the Method of Truncated Region Eigenfunction Expansion. *F. Sakkaki*¹ and *H. Bayani*¹. *1. Physics, K.N.T. University of Technology, Tehran, Iran, Islamic Republic of*

AV-03. Electrostatically tunable inductor with improved operational frequency and quality factor. *J. Lou*¹, *Z. Su*¹, *M. Liu*², *M. Pasquale*³ and *N. Sun*¹. *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL; 3. Divisione Elettromagnetismo, INRIM, Torino, Italy*

AV-04. A study on the characteristic of motor according to using slot wedge in Induction motor. *D. Kim*¹, *S. Lee*¹, *J. Jung*¹ and *J. Hong*¹. *1. Hanyang University, Seoul, Korea, Republic of*

AV-05. Prediction of Iron Losses in Doubly Salient Permanent Magnet Machine with Rectangular Current Waveform. *J. Zhang*¹, *M. Cheng*¹ and *M. Wang*¹. *1. Southeast University, Nanjing, China*

AV-06. Harmonic Analysis and Design of an Advanced Permanent Magnet Vernier Machine. *J. Wang*¹, *J. Li*², *S. Ho*¹, *K. Chau*² and *W. Fu*¹. *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong; 2. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong*

AV-07. Improved Thrust Calculations of Active Magnetic Bearings considering Fringing Flux. *S. Jang*¹, *K. Kim*¹, *K. Ko*¹, *J. Choi*¹ and *S. Lee*². *1. Chungnam National University, Daejeon, Korea, Republic of; 2. Korea Institute of Industrial Technology Gwangju Reserch Center, Gwangju, Korea, Republic of*

AV-08. A Model of Linear Synchronous Motor Based on Distribution Theory. *M. Trapanese*¹. *1. Dipartimento di Ingegneria Elettrica, Elettronica e delle Telecomunicazioni, Università di Palermo, Palermo, Italy*

- AV-09. Design Verification of Electromagnet for Magnetic Levitation Systems through Static and Dynamic Analyses.** *J. Choi¹, H. Shin¹ and S. Jang¹*. *1. Chungnam National University, Dae-jeon, Korea, Republic of*
- AV-10. New Linear Fault-Tolerant Permanent-Magnet Motor for Levitation Applications.** *W. Zhao¹, M. Cheng², K. Chau³ and R. Cao²*. *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China; 2. School of Electrical Engineering, Southeast University, Nanjing, China; 3. Department of Electrical and Electronic Engineering, University of Hong Kong, Hong Kong, China*
- AV-11. Characteristic and Magnetic Field Analysis of a HTS Axial-Flux Coreless Induction Maglev Motor.** *Q. Wei¹, F. Yu¹, L. Guo¹, F. Jin¹ and L. Gang¹*. *1. Electrical Engineering, Beijing Jiaotong University, Beijing, Beijing, China*
- AV-12. Modeling and Analysis of a Magnetically Levitated Synchronous Permanent Magnet Planar Motor.** *B. Kou¹, L. Zhang¹ and L. Li¹*. *1. Harbin Institute of Technology, Harbin, China*
- AV-13. Stabilization of Input Impedance for Wireless Power Supply Circuit.** *T. Misawa¹, T. Sato², T. Takura¹, F. Sato¹ and H. Matsuki²*. *1. Graduate of engineering, Tohoku University, Sendai, Japan; 2. Graduate of biomedical engineering, Tohoku University, Sendai, Japan*
- AV-14. A New Dual Output Phase-shift Distribution Transformer-Input Harmonic Current Mitigating Performance.** *J. Guo¹, P. Jin² and S. Fang²*. *1. School of Automation Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing, China; 2. School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China*
- AV-15. Transient Analysis and Control of Bias Magnetic State in the Transformer of On-Line PWM Switching Full Bridge DC-DC Converter.** *J. Chen¹, Y. Guo², J. Zhu² and Z. Lin²*. *1. College of Electromechanical Engineering, Donghua University, Shanghai, China; 2. University of Technology Sydney, Sydney, NSW, Australia*

MONDAY
MORNING
8:00

SAGUARO BALLROOM

Session AW
DOMAIN WALLS AND VORTICES I
(Poster Session)
Hermann Stoll, Chair

- AW-01. Electrical detection of antivortex wall dynamics.** *M. Jamali¹, J. Kwon¹, K. Narayanapillai¹ and H. Yang¹*. *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*
- AW-02. Dimensional transition of current driven domain-wall dynamics.** *K. Kim^{1,2}, J. Lee^{1,3}, S. Yun¹, G. Gim¹, K. Shin³ and S. Choe¹*. *1. Department of Physics, Seoul National University, Seoul, Korea, Republic of; 2. Institute for Chemical Research, Kyoto University, Kyoto, Japan; 3. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, Republic of*
- AW-03. Dynamics of Interlayer Coupled Magnetic Vortex Pairs.** *S. Wintz¹, C. Bunce¹, M. Kö rner¹, T. Strache¹, J. Raabe², C. Quitmann², J. McCord³, A. Erbe¹ and J. Fassbender¹*. *1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Paul Scherrer Institut, Villigen, Switzerland; 3. Christian-Albrechts Universität zu Kiel, Kiel, Germany*
- AW-04. Domain Wall Motion and Interactions in Multi-Nanowire Systems.** *A. Kunz¹, R.D. McAuliffe¹, D.V. Olson¹ and K.F. Kimminau¹*. *1. Physics, Marquette University, Milwaukee, WI*
- AW-05. Stepwise behavior of gyrovecton in magnetic vortex dynamics under AC magnetic field.** *J. Shim¹, H. Piao^{1,2}, S. Lee¹, S. Oh¹, S. Yu¹, S. Han¹ and D. Kim¹*. *1. BK-21 Program and Department of Physics, Chungbuk National University, Cheongju, Korea, Republic of; 2. College of Science, Huaihai Institute of Technology, Lianyungang, China*
- AW-06. Magnetization switching via surface acoustic waves in Co stripes.** *B.B. Maranville¹, S. Adenwalla², D.K. Sam² and J.A. Borchers¹*. *1. NIST Center for Neutron Research, Natl Inst of Standards & Tech, Gaithersburg, MD; 2. Physics, University of Nebraska - Lincoln, Lincoln, NE*
- AW-07. Condition of the Ratchet Effect of a Magnetic Domain Wall Motion under an Asymmetric Potential Energy.** *H. Piao¹, H. Choi², D. Kim³ and C. You²*. *1. College of Science, Huaihai Institute of Technology, Lianyungang, China; 2. Physics, Inha University, Incheon, Korea, Republic of; 3. Physics, Chungbuk National University, Cheongju, Chungbuk, Korea, Republic of*

AW-08. Magnetic bubble nucleation and dynamics driven by spin-transfer torque. *G. Finocchio¹, A. Prattella¹, L. Torres², S. Komineas³, O. Ozatay⁴ and B. Azzerboni¹*. *1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. Universidad de Salamanca, Salamanca, Spain; 3. University of Crete, Heraklion, Greece; 4. Bogazici University, Instambul, Turkey*

AW-09. Generation of Domain Walls in Permalloy Nanowires by Local Magnetic Fields. *F. Stein¹, L. Bocklage¹, M. Martens¹, T. Matsuyama¹ and G. Meier¹*. *1. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany*

AW-10. Direct Imaging of Precessional Domain Wall Propagation in Ferromagnetic Rings Induced by Circular Magnetic Fields. *A. Bisig^{1,2}, M. Stärk^{1,3}, C. Moutafis^{1,3}, J. Rhensius^{3,4}, J. Heidler¹, M. Curcic², E. Amaladass², M. Noske², M. Weigand², T. Tyliczszak⁵, B. Van Waeyenberge⁶, L.J. Heyderman⁴, H. Stoll², G. Schütz² and M. Kläui^{1,7}*. *1. SwissFEL, Paul Scherrer Institut, Villigen PSI, Switzerland; 2. Moderne Magnetische Materialien, Max-Planck-Institut für Intelligente Systeme, Stuttgart, Germany; 3. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 4. Labor für Mikro- und Nanotechnologie, Paul Scherrer Institut, Villigen, Switzerland; 5. Advanced Light Source, LBNL, Berkeley, CA; 6. Department of Solid State Sciences, Ghent University, Ghent, Belgium; 7. Institut für Physik, Johannes Gutenberg-Universität Mainz, Mainz, Germany*

AW-11. Describing Spin Currents in Sharp Dynamical Magnetic Textures. *F. Dogan², N. Collier¹, V.M. Calo¹ and A. Manchon^{2,1}*. *1. Mathematical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 2. Physical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*

AW-12. Magnetic Switching Behaviors of Ferromagnetic Rolled-up Nanotubes. *J. Lee^{1,3}, D. Makarov², D. Suess¹, J. Fidler¹, O.G. Schmidt² and S. Kim³*. *1. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 2. Institute for Integrative Nanosciences, IFW Dresden, Dresden, Germany; 3. National Creative Research Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, Department of Materials Science and Engineering, Seoul National University, Seoul, Korea, Republic of*

AW-13. Domain wall motion in magnetically frustrated nanorings. *M.V. Lubarda¹, S. Li¹, R. Chang¹, E.E. Fullerton¹ and V. Lomakin¹*. *1. CMRR, UCSD, La Jolla, CA*

AW-14. Direct Observation of Stochastic Domain-Wall Behavior in Numerous Magnetic Nanowires. *K. He¹ and J. Cummings¹*. *1. Department of Materials Science and Engineering, University of Maryland, College Park, MD*

AW-15. Domain growth and dipolar bias in magnetic thin films strongly coupled to a periodic pinning potential. *R.L. Novak^{4,1}, P.J. Metaxas^{6,2}, S. Rohart¹, R. Weil¹, J. Jamet¹, A. Mougin¹, J. Ferre¹, R.L. Stamps^{5,6}, V. Baltz³ and B. Rodmacq³*. *1. Laboratoire de Physique des Solides, Université Paris-Sud/CNRS, UMR 8502, Orsay, France; 2. Unite Mixte de Recherche CNRS/Thales, UMR 137, Palaiseau, France; 3. SPINTEC, URA CNRS/CEA 2512, CEA-Grenoble, Grenoble, France; 4. Lab. de Physique de la Matière Condensée, Ecole Polytechnique/CNRS, UMR 7643, Palaiseau, France; 5. SUPA-School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 6. School of Physics, M013, University of Western Australia, Crawley, WA, Australia*

MONDAY
AFTERNOON
1:30

GRAND CANYON 6

**Session BA
SYMPOSIUM ON SPIN AND MAGNETO
SEEBECK AND Peltier EFFECTS**

Gerrit Bauer, Chair

1:30

BA-01. Spin current generation using heat and magnetic dynamics. *(Invited) E. Saitoh^{1,2}*. *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. JAEA, Tokai, Japan*

2:06

BA-02. Spin Seebeck effect due to spin excitations in ferromagnetic insulators. *(Invited) J. Xiao¹*. *1. Department of Physics, Fudan University, Shanghai, China*

2:42

BA-03. Magnons, Phonons, and Spin Seebeck Effect. *(Invited) S. Maekawa¹*. *1. Advanced Science Research Center, Japan Atomic Energy Agency, Ibaraki, Japan*

3:18

BA-04. Spin Seebeck and spin Peltier effects in nanoscale non-local spin valves. *(Invited) B. van Wees¹*. *1. Zernike Institute of Advanced Materials, Groningen, Groningen, Netherlands*

3:54

BA-05. Spin-Seebeck, phonon-drag and phonon transport in GaMnAs. *(Invited) J.P. Heremans¹*. *1. Dept. of Mechanical and Aeronautical Engineering, and Dept. of Physics, Ohio State University, Columbus, OH*

MONDAY
AFTERNOON
1:30

GRAND CANYON 7

Session BB
SPIN TRANSFER TORQUE SWITCHING I

Xiufeng Han, Chair

1:30

BB-01. Novel Ultra-Thin Dual MTJ for STT-RAM. *D. Apalkov¹, V. Nikitin¹, S. Watts¹, X. Tang¹, D. Lottis¹, A. Khvalkovskiy¹, K. Moon¹, R. Kawakami¹, E. Chen¹, A. Ong¹, A. Driskill-Smith¹ and M. Krounbi¹*. *Grandis Inc, Milpitas, CA*

1:42

BB-02. Error rates and stability in a novel ultra-thin dual MTJ for STT-RAM. *S.M. Watts¹, D. Apalkov¹, V. Nikitin¹, X. Tang¹, D. Lottis¹, A. Khvalkovskiy¹, K. Moon¹, E. Chen¹, A. Driskill-Smith¹ and M. Krounbi¹*. *Grandis, Inc., Milpitas, CA*

1:54

BB-03. Spin Transfer Torque Driven Switching Probability Study of Magnetic Tunnel Junctions by Single Shot Time Domain Analysis. *Y. Zhang¹, H. Zhao¹, A. Lyle¹, P. Crowell² and J. Wang¹*. *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Physics, University of Minnesota, Minneapolis, MN*

2:06

BB-04. Switching field distributions for nanopillar spin-valves with perpendicular anisotropy driven by spin-transfer and thermal fluctuations. *D.B. Gopman¹, D. Bedau¹, C.H. Lambert², S. Mangin², E.E. Fullerton³, J.A. Katine⁴ and A.D. Kent¹*. *1. Physics, New York University, New York, NY; 2. Physics, Institute Jean Lamour, UMR CNRS 7198, Nancy Université, Vandoeuvre, France; 3. CMRR, University of California at San Diego, La Jolla, CA; 4. San Jose Research Center, Hitachi-GST, San Jose, CA*

2:18

BB-05. Effect of Temperature and Spin Torque on Stoner-Wohlfarth Astroid of a Nanomagnet. *Y. Chen¹, J.A. Katine², J. Langer³, M. Lewis⁴, G.E. Rowlands¹, J. Zhu¹, P. Khalili Amiri⁴, K.L. Wang⁴ and I.N. Krivorotov¹*. *1. Department of Physics and Astronomy, University of California, Irvine, CA; 2. Hitachi Global Storage Technologies, San Jose, CA; 3. Singulus Technologies, Kahl am Main, Germany; 4. Department of Electrical Engineering, University of California, Los Angeles, CA*

2:30

BB-06. Perpendicular Magnetic Tunnel Junctions based on Thin CoFeB Free Layer and Co-based Multilayer SAF Pinned Layers. *A. Natarajathinam^{1,2}, R. Zhu^{1,4}, A. Singh^{1,4}, H. Su^{1,3}, P.B. Visscher^{1,3} and S. Gupta^{1,3}*. *1. Center for Materials for Information Technology (MINT), The University of Alabama, Tuscaloosa, AL; 2. Department of Electrical and Computer Engineering, The University of Alabama, Tuscaloosa, AL; 3. Department of Metallurgical and Materials Engineering, The University of Alabama, Tuscaloosa, AL; 4. Department of Physics, The University of Alabama, Tuscaloosa, AL*

2:42

BB-07. Dependence of spin-transfer switching characteristics in MTJs with synthetic free layers on the coupling strength. *M. Nishimura¹, M. Oogane¹, H. Naganuma¹, N. Inami¹, T. Morita² and Y. Ando¹*. *1. Department of Applied Physics, Tohoku University, Sendai, Japan; 2. ULVAC, Inc., Shizuoka, Japan*

2:54

BB-08. Theoretical study on dependence of thermal switching time of synthetic free layer on coupling field. *T. Taniguchi¹ and H. Imamura¹*. *1. Nanosystem Research Institute, AIST, Tsukuba, Ibaraki, Japan*

3:06

BB-09. Reduction of switching current density in perpendicular magnetic tunnel junctions by tuning the anisotropy direction of the CoFeB free layer. *M. Rahman¹, A. Lyle¹, P.K. Amiri², B. Glass¹, J. Harms¹, H. Zhao¹, Z. Zheng³, G. Rowlands³, Y.J. Chen⁴, H.W. Jiang³, J. Katine⁵, J. Langer⁶, I.N. Krivorotov⁴, K.L. Wang² and J. Wang¹*. *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Electrical Engineering, University of California, Los Angeles, CA; 3. Physics and Astronomy, University of California, Los Angeles, CA; 4. Physics and Astronomy, University of California, Irvine, CA; 5. HGST, San Jose, CA; 6. Singulus Technologies, Kahl am Main, Germany*

3:18

BB-10. Novel STT Device Design with Circuit Scheme to Enable All Metallic Logic Circuits. (Invited) *J. Zhu¹, D. Bromberg¹, D.H. Morris¹ and L. Pileggi¹*. *1. Electrical and Computer Engineering, Carnegie Mellon Univ, Pittsburgh, PA*

3:54

BB-11. Reducing soft write error and write current overdrive in STT-RAM. *E. Chen¹, D. Apalkov¹, S. Watts¹, X. Tang¹, A. Khvalkovskiy¹, K. Moon¹, D. Lottis¹, V. Nikitin¹, A. Driskill-Smith¹ and M. Krounbi¹*. *1. Grandis Inc, Milpitas, CA*

4:06

- BB-12. Reduction of switching current of current-perpendicular-to-plane giant magnetoresistance devices with perpendicular $Gd_{1-x}Fe_x$ free layer for light modulator application.** K. Aoshima¹, Y. Hashimoto¹, N. Funabashi¹, K. Machida¹, K. Kuga¹, H. Kikuchi¹, T. Ishibashi² and N. Shimidzu¹. *1. Science & Technology Research Laboratories, Japan Broadcasting Corp., Tokyo, Japan; 2. 2. Department of Materials Science and Technology, Nagaoka Institute of Technology, Nagaoka, Japan*

4:18

- BB-13. Decrease in intrinsic critical current density under magnetic field along hard in-plane axis of free layer in magnetic tunnel junctions with in-plane anisotropy.** K. Miura^{1,2}, R. Sugano^{1,5}, M. Ichimura^{1,5}, J. Hayakawa¹, S. Ikeda^{2,3}, H. Ohno^{2,3} and S. Maekawa^{4,5}. *1. Central Research Laboratory, Hitachi, Ltd., Kokubunji, Tokyo, Japan; 2. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Miyagi, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Miyagi, Japan; 4. Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibaraki, Japan; 5. JST, CREST, Chiyoda-ku, Tokyo, Japan*

MONDAY
AFTERNOON
1:30

GRAND CANYON 8

Session BC

SPIN ICE AND FRUSTRATED SYSTEMS

Robert Stamps, Chair

1:30

- BC-01. Spin Liquids and Magnetic Monopoles in Rare Earth Cubic Pyrochlores. (Invited)** J.W. Lynn¹, H. Kadowaki², H. Takatsu², T.J. Sato³ and Y. Tabata⁴. *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Department of Physics, Tokyo Metropolitan University, Tokyo 192-0397, Hachioji-shi, Japan; 3. Institute for Solid State Physics, University of Tokyo, Tokai, Ibaraki 319-1106, Japan; 4. Department of Materials Science and Engineering, Kyoto University, Kyoto 606-8501, Japan*

2:06

- BC-02. Magnetic induction and reversal studies of nanoscale artificial spin ice lattices.** C. Phatak¹, A. Petford-Long¹, M. Tanase^{1,4}, M. Pan³, O. Heinonen¹ and M. De Graef². *1. Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Carnegie Mellon University, Pittsburgh, PA; 3. Northwestern University, Evanston, IL; 4. National Institute of Standards and Technology, Gaithersburg, MD*

2:18

- BC-03. Diversity opens dynamical pathways: disorder and energy landscape exploration in artificial spin ice.** Z. Budrikis^{1,2}, P. Politi² and R. Stamps^{1,3}. *1. School of Physics, The University of Western Australia, Crawley, WA, Australia; 2. Istituto dei Sistemi Complessi CNR, Sesto Fiorentino (Florence), Italy; 3. SUPA, School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

2:30

- BC-04. Measuring Disorder in Artificial Kagome Ice.** S. Daunheimer¹, O. Petrova², O. Tchernyshyov² and J. Cumings¹. *1. Materials Science & Engineering, University of Maryland, College Park, MD; 2. Department of Physics & Astronomy, Johns Hopkins University, Baltimore, MD*

2:42

- BC-05. Magnetic Reversal of an Artificial Square Ice – Dipolar Correlation and Charge Ordering.** J.P. Morgan¹, A. Stein², S. Langridge³ and C.H. Marrows¹. *1. School of Physics and Astronomy, University of Leeds, Leeds, Yorkshire, United Kingdom; 2. Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY; 3. ISIS, STFC Rutherford Appleton Laboratory, Didcot, Oxfordshire, United Kingdom*

2:54

- BC-06. Going up and down the energy landscape of a frustrated mixed-spin oxide.** M. Charilaou¹, K.K. Sahu¹, J.F. Löfler¹ and A.U. Gehring¹. *1. ETH Zurich, Zurich, Switzerland*

3:06

- BC-07. Glassy magnetic behavior in Ni,Co:CuMn₂O₄ spinels.** J. McCloy¹, C. Leslie², T. Kaspar¹ and W. Jiang¹. *1. Pacific Northwest National Laboratory, Richland, WA; 2. University of Washington, Seattle, WA*

3:18

- BC-08. Low-Temperature Heat Transport of Spin Gapped Quantum Magnets.** X. Sun¹, X. Wang¹, W. Ke¹, L. Chen¹, C. Fan¹, Z. Zhao¹ and X. Zhao². *1. Hefei National Laboratory for Physical Sciences at the Microscale, University of Science and Technology of China, Hefei, Anhui, China; 2. School of Physical Sciences, University of Science and Technology of China, Hefei, Anhui, China*

3:30

- BC-09. Field-induced slow spin relaxation in monoclinic Nd₂Ti₂O₇.** H. Xing¹, G. Long², H. Guo¹, C. Feng¹, G. Cao¹, Z. Xu¹ and H. Zeng². *1. Department of Physics, Zhejiang University, Hangzhou, China; 2. Department of Physics, University at Buffalo, SUNY, Buffalo, NY*

3:42

BC-10. Berry Phase of A Randomly Fluctuating Magnetic Field.

*R. Skomski*¹. *Physics and Astronomy, Univ Nebraska, Lincoln, NE*

3:54

BC-11. Manipulation of spin interaction in FM/graphene/FM trilayer structures. *J. Hong*¹. *physics, Pukyong National Univ, Busan, Korea, Republic of*

4:06

BC-12. Metallic state in Eu₂Ru₂O₇ induced by hole creation or orbital overlap in the *t_{2g}* bands. *S. Muñoz Pérez*¹, *R. Cobas Acosta*¹, *S. Cadogan*¹, *J. Albino Oliveira de Aguiar*², *P. Bonville*³, *T. Puig*⁴ and *X. Obradors*⁴. *1. Department of Physics and Astronomy, University of Manitoba, Winnipeg, R3T 2N2, MB, Canada; 2. Departamento de Física, Universidade Federal de Pernambuco, Recife, Pernambuco, Brazil; 3. Service de Physique de l'Etat Condensé, CEA-CNRS, CE-Saclay, 91191 Gif-sur-Yvette, France; 4. Institut de Ciència dels Materials de Barcelona, CSIC, Campus de la UAB, Bellaterra 08193, Spain*

4:18

BC-13. Ferromagnetic Resonance in Micro- and Nano-sized Hexagonal Ferrite Powders at Millimeter Waves. *M.N. Afsar*¹, *K.A. Korolev*^{1,3} and *J.S. McCloy*². *1. Electrical and Computer Engineering, Tufts Univ, Medford, MA; 2. Glass and Materials Science Team, Pacific Northwest National Laboratory, Richland, WA; 3. Extremely High Frequency Medical and Technical Association, Moscow, Russian Federation*

MONDAY
AFTERNOON
1:30

GRAND CANYON 9-11

Session BD
MAGNETIC VORTEX DYNAMICS

Sang-Koog Kim, Chair

1:30

BD-01. Tunable negligible-loss energy transfer between dipolar-coupled magnetic disks by stimulated vortex gyration.

*H. Jung*¹, *K. Lee*¹, *D. Jeong*¹, *Y. Choi*¹, *Y. Yu*¹, *D. Han*¹, *A. Vogel*², *L. Bocklage*², *G. Meier*², *M. Im*³, *P. Fischer*³ and *S. Kim*¹. *1. Research Center for Spin Dynamics & Spin-Wave Devices, Nanospinics Laboratory, and Research Institute of Advanced Materials, Department of Materials Science and Engineering, Seoul Natl Univ, Seoul, Korea, Republic of; 2. Institut für Angewandte Physik und Zentrum für Mikrostrukturforschung, Universität Hamburg, Hamburg, Germany; 3. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA*

1:42

BD-02. Orbital trajectory characteristics of a current-driven magnetic vortex. *K.S. Buchanan*¹, *S.D. Pollard*², *L. Huang*², *D.A. Arena*³ and *Y. Zhu*². *1. Department of Physics, Colorado State University, Fort Collins, CO; 2. Department of Condensed Matter Physics, Brookhaven National Laboratory, Brookhaven, NY; 3. National Synchrotron Source, Brookhaven National Laboratory, Brookhaven, NY*

1:54

BD-03. Field- and current-induced domain-wall motion in permalloy nanowires with magnetic soft spots. *A. Vogel*¹, *S. Wintz*², *T. Gerhardt*¹, *L. Bocklage*¹, *T. Strache*², *M. Im*³, *P. Fischer*³, *J. Fassbender*², *J. McCord*² and *G. Meier*¹. *1. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 2. Institut für Ionenstrahlphysik und Materialforschung, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 3. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA*

2:06

BD-04. Magnetic vortex core reversal by excitation of spin waves.

(Invited) *H. Stoll*¹, *M. Kammerer*¹, *M. Weigand*¹, *M. Curcic*¹, *M. Noske*¹, *M. Sproll*¹, *A. Vansteenkiste*², *B. Van Waeyenberge*², *G. Woltersdorf*³, *C.H. Back*³ and *G. Schuetz*¹. *1. MPI for Intelligent Systems, (formerly MPI for Metals Research), Stuttgart, Germany; 2. Department of Solid State Sciences, Ghent University, Ghent, Belgium; 3. Department of Physics, Regensburg University, Regensburg, Germany*

2:42

BD-05. Thickness dependence of the gyrotropic mode of a single magnetic vortex. *T. Chen*¹, *M. Erickson*¹, *A. Galkiewicz*¹, *C. Leighton*² and *P. Crowell*¹. *1. School of Physics and Astronomy, University of Minnesota, Minneapolis, MN; 2. Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN*

3:18

BD-06. X-ray Imaging of Nonlinear Resonant Gyrotropic Magnetic Vortex Core Motion in Circular Permalloy Disks. *B.L. Mesler*¹, *K.S. Buchanan*², *M. Im*¹ and *P. Fischer*¹. *1. CXRO, LBNL, Berkeley, CA; 2. Dept of Physics, CSU, Fort Collins, CO*

3:30

BD-07. Evidence of vortex-antivortex pair nucleation in the pinned layer of nanocontact vortex oscillators. *R. M. Otxoa*^{1,2}, *S. Petit-Watlot*^{1,2}, *M. Manfrini*^{3,4}, *T. Devolder*^{1,2}, *J. Kim*^{1,2}, *A. Vansteenkiste*⁵, *B. Van de Wiele*⁶, *W. Van Roy*^{3,4} and *L. Lagae*^{3,4}. *1. Institut d'Electronique Fondamentale, Paris, France; 2. Université Paris-Sud, Paris, France; 3. imec, Leuven, Belgium; 4. Physics and Astronomy department, K.U. Leuven, Leuven, Belgium; 5. Department of Solid State Sciences, Ghent University, Ghent, Belgium; 6. Department of Electrical Energy, Systems and Automation, Ghent University, Ghent, Belgium*

3:42

- BD-08. All Electrical Operation of Vortex Core Memory Cell.** K. Nakano¹, D. Chiba^{1,2}, N. Ohshima³, S. Kasai⁴, T. Sato⁵, Y. Nakatani⁵, K. Sekiguchi¹, K. Kobayashi¹ and T. Ono¹. *Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan; 3. NEC Corporation, Sagami, Japan; 4. Magnetic Material Centre, National Institute for Materials Science, Tsukuba, Japan; 5. Department of Computer Science, University of Electro-Communications, Chofu, Japan*

3:54

- BD-09. Thermo-mechanical sensitivity calibration and magnetometry of permalloy disks via mechanical transduction of nano-paddle resonators.** J.E. Losby^{1,2}, J. Burgess^{1,2}, D.C. Fortin¹, Z. Diao^{1,2}, W.K. Hiebert² and M.R. Freeman^{1,2}. *Physics, University of Alberta, Edmonton, AB, Canada; 2. National Institute for Nanotechnology, Edmonton, AB, Canada*

4:06

- BD-10. Robust switching of swirls for coupled ferromagnetic nanobricks with the Landau structure.** A.S. Arrott¹. *Physics, Simon Fraser University, Burnaby, BC, Canada*

4:18

- BD-11. Switching rates in exchange-coupled media: moment landscapes.** P.B. Visscher¹ and R. Zhu¹. *Physics and MINT Center, University of Alabama, Tuscaloosa, AL*

MONDAY
AFTERNOON
1:30

GRAND CANYON 2-3

Session BE

OTHER MAGNETIC MATERIALS I

Parashu Kharel, Co-Chair
Mathew Kramer, Co-Chair

1:30

- BE-01. Novel Exchange Anisotropy in Nanostructured MnAl Alloys.** T. Sephehrifar¹, F. Jimenez-Villacorta¹, J.L. Marion¹, M. Daniil², M. Willard³ and L.H. Lewis¹. *1. Department of Chemical Engineering, Northeastern University, Boston, MA; 2. Department of Physics, George Washington University, Washington DC, DC; 3. Multifunctional Materials Branch, U.S. Naval Research Laboratory, Washington DC, DC*

1:42

- BE-02. Instability of ferromagnetic ground state in Lu₂Fe_{17-x}Mn_x** Z. Arnold¹, A.G. Kuchin² and J. Kamarad¹. *1. Magnetism and Superconductors, Institute of Physics AS CR, v.v.i., Prague, Czech Republic; 2. Institute of Metal Physics, Ekaterinburg, Russian Federation*

1:54

- BE-03. Mechanism of MnBi magnetic anisotropy: Role of higher order contributions.** O.N. Mryasov¹, J. Park², Y. Hong², S. Faleev¹ and G. Mankey¹. *1. Physics and MINT, University of Alabama, Tuscaloosa, AL; 2. ECE and MINT, University of Alabama, Tuscaloosa, AL*

2:06

- BE-04. Structural and electrical properties of half-Heusler LaPtBi thin films grown by 3-source magnetron co-sputtering.** T. Miyawaki¹, N. Sugimoto¹, N. Fukatani¹, T. Yoshihara¹, K. Ueda¹, N. Tanaka² and H. Asano¹. *1. Dept. of Crystalline Materials Science, Graduate School of Engineering, Nagoya University, Nagoya, Japan; 2. EcoTopia Institute, Nagoya University, Nagoya, Japan*

1:18

- BE-05. New magnetic configuration in paramagnetic phase of HoCo₂** C.M. Bonilla^{1,4}, C. Castan¹, I. Calvo^{1,2}, A.I. Figueroa¹, J. Herrero-Albillos³, J.A. Rodríguez-Velamazán^{1,2}, D. Schmitz³, E. Weschke³, D. Paudyal⁴, V.K. Pecharsky^{4,5}, K.A. Gschneidner Jr.^{4,5}, J. Bartolomé¹, F. Bartolomé¹ and L.M. García¹. *1. Departamento de física de la materia condensada, Universidad de Zaragoza, Zaragoza, Zaragoza, Spain; 2. Institute Laue Langevin, Grenoble, France; 3. Helmholtz-Zentrum Berlin, Berlin, Germany; 4. U.S. Department of Energy, Ames Laboratory, Ames, IA; 5. Department of Materials Science and Engineering, Iowa State University, Ames, IA*

2:30

- BE-06. High-field magnetization study of ErCo₂.** M. Guillot¹ and Y. Oner². *1. CNRS, IPG, Grenoble, France; 2. Istanbul Technical University, Istanbul, Turkey*

2:42

- BE-07. Irreversibility in the magnetically ordered state of Laves phase compounds Er_{1-x}Dy_xCo₂ (x = 0.25, 0.33).** R. Nirmala^{2,1}, D. Paudyal², Y. Mudryk², V.K. Pecharsky^{2,3}, K.A. Gschneidner Jr.^{2,3} and A.K. Nigam⁴. *1. Physics, Indian Institute of Technology Madras, Chennai, India; 2. The Ames Laboratory, U.S. Department of Energy, Iowa State University, Ames, IA; 3. Department of Materials Science and Engineering, Iowa State University, Ames, IA; 4. Tata Institute of Fundamental Research, Mumbai, India*

2:54

- BE-08. Synthesis and Electronic Structure of $\text{Fe}_{1-x}\text{In}_x$ Thin Films.** A. McClure¹, E. Arenholz² and Y.U. Idzerda¹. *1. Physics, Montana State University, Bozeman, MT; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*

3:06

- BE-09. Crystal Structure and Magnetic States in $\text{Dy}_5\text{Ni}_2\text{In}_4$** A. Provino^{1,2}, Y. Mudryk², D. Paudyal², P. Manfrinetti^{1,2}, V.K. Pecharsky^{2,3} and K.A. Gschneidner Jr.^{2,3} *1. Department of Chemistry, University of Genova, Genova, Italy; 2. The Ames Laboratory, U.S. Department of Energy, Iowa State University, Ames, IA; 3. Materials Science and Engineering Department, Iowa State university, Ames, IA*

3:18

- BE-10. Metamagnetization phase transition in Ni-Cu-Mn-Ga alloys.** P. Li¹, J. Wang¹, J. Liu¹, T. Zhang¹ and C. Jiang¹. *School of Materials Science and Engineering, Beihang University, Beijing, China*

3:30

- BE-11. A “How To” For Magnetic Carbon.** H. Ohldag¹, E. Arenholz², T. Tyliczszak², R. Hoehne³, D. Spemann³, P. Esquinazi³, M. Ungureneau³ and T. Butz¹. *1. Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Center, Menlo Park, CA; 2. Advanced Light Source, LBNL, Berkeley, CA; 3. Experimentalphysik, University Leipzig, Leipzig, Germany*

3:42

- BE-12. Inducing Magnetism in Graphene Nanomesh.** H. Yang¹, M. Chshiev¹, D.W. Boukhvalov², X. Waintal³ and S. Roche^{4,5}. *1. SPINTEC, UMR CEA/CNRS/UJF-Grenoble 1/Grenoble-INP, INAC, 38054, Grenoble, France; 2. School of Computational Sciences, Korea Institute for Advanced Study (KIAS), Hoegiro 87, Dongdaemun-Gu, 130-722, Seoul, Korea, Republic of; 3. SPSMS-INAC-CEA, INAC, 38054, Grenoble, France; 4. CIN2 (ICN-CSIC) and Universitat Autònoma de Barcelona, Catalan Institute of Nanotechnology, Campus UAB, 08193, Barcelona, Spain; 5. ICREA, Institució Catalana de Recerca i Estudis Avançats, 08070, Barcelona, Spain*

3:54

- BE-13. Magnetic characteristics of a new cubic defect spinel $\text{Li}_{0.5}\text{Mg}_{0.5}\text{MnO}_3$ for Li-ion batteries.** V. Singh¹, M.S. Seehra¹, A. Manivannan² and P.N. Kumta³. *1. Physics, West Virginia University, Morgantown, WV; 2. National Energy Technology Laboratories, Morgantown, WV; 3. University of Pittsburgh, Pittsburgh, PA*

4:06

- BE-14. Effect of substrate and chemical doping on the atomic structure and physical properties of thermoelectric $\text{Ca}_3\text{Co}_4\text{O}_9$ thin films.** D. Mazumdar¹, C. Boyraz¹, H. Dunya¹, M. Ozdemir¹, A. Gupta¹, Q. Qiao², A. Gulec², T. Paulauskas², R.F. Klie², S. Kolesnik³ and D. Dabrowski³. *1. MINT center, MINT Center University of Alabama, Tuscaloosa, AL; 2. Physics, University of Illinois, Chicago, IL; 3. Physics, Northern Illinois University, DeKalb, IL*

4:18

- BE-15. Structural, Magnetic, and Thermodynamic Properties of Three Metal-organic Frameworks $\text{M}(\text{N}_3)_2(\text{bpy})$, $\text{M} = \text{Ni, Co, Cu}$.** D.S. Danilovic³, Y. Hamida¹, C. Lin¹, T. Yuen¹, K. Li² and J. Li². *1. Physics, Temple University, Philadelphia, PA; 2. Chemistry and Chemical Biology, Rutgers University, Piscataway, NJ; 3. Physics, Pitt Community College, Greenville, NC*

MONDAY
AFTERNOON
1:30

GRAND CANYON 4-5

Session BF PERPENDICULAR RECORDING MEDIA

Xiaobin Zhu, Chair

1:30

- BF-01. High-performance Voronoi tessellation-based micromagnetic simulator and the analysis of granular media recording.** M.V. Lubarda¹, M.A. Escobar¹, R. Chang¹, S. Li¹, J. van Ek² and V. Lomakin¹. *1. CMRR, UCSD, La Jolla, CA; 2. Western Digital, Longmont, CO*

1:42

- BF-02. Recording performance and thermal stability in perpendicular media with enhancement of grain isolation as well as magnetic anisotropy field.** H. Jung¹, Y. Ikeda¹, G. Choe¹ and Z. Shi¹. *1. Media Development, Hitachi GST, San Jose, CA*

1:54

- BF-03. Effectiveness of Medium Noise Suppression in Segmented Media.** J. Zhu¹. *1. Data Storage Systems Center, Carnegie Mellon Univ, Pittsburgh, PA*

2:06

BF-04. Exchange stiffness in Co thin film alloys. *C. Eyrich*¹, W. Huttema¹, M. Arora¹, E. Montoya¹, C. Burrowes¹, E. Girt¹, B. Heinrich¹, O. Myrasov², M. From³ and O. Karis⁴. *1. Physics, Simon Fraser University, Burnaby, BC, Canada; 2. Physics, University of Alabama, Tuscaloosa, AL; 3. Physics, Western Washington University, Bellingham, WA; 4. Physics and Astronomy, Uppsala University, Uppsala, Sweden*

2:18

BF-05. Magnetic Reversal Mechanisms in Exchange Coupled Composite Media. *C. Morrison*¹, Y. Ikeda², K. Takano² and T. Thomson¹. *1. School of Computer Science, University of Manchester, Manchester, Lancashire, United Kingdom; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

2:30

BF-06. Angle dependence of the switching field of recording media at finite temperature. *L. Saharan*¹, C. Morrison², Y. Ikeda³, K. Takano³, J.J. Miles², T. Thomson², T. Schrefl⁴ and G. Hrkac¹. *1. Material science and Engineering, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; 2. School of Computer Science, University of Manchester, Manchester, Lancashire, United Kingdom; 3. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA; 4. St. Pölten University of Applied Sciences, St. Pölten, Austria*

2:42

BF-07. Directly probing magnetization reversal of segmented perpendicular media. (Invited) *C. Lai*¹, H. Hou¹, B.J. Kirby² and D. Suess³. *1. Department of Materials Science and Engineering, National Tsing Hua University, HsinChu, Taiwan; 2. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 3. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria*

3:18

BF-08. Influence of Magnetic Viscosity on the First Order Reversal Curves of Antiferromagnetically Coupled Perpendicular Recording Media. *S.N. Piramanayagam*¹ and M. Ranjbar¹. *A*STAR (Agency for Science, Technology and Research), Data Storage Institute, Singapore, Singapore*

3:30

BF-09. Effects of Grain Size on Short Time Switching Fields in Perpendicular Media. *S.H. Florez*¹, C. Boone¹, F. Zhu¹, K. Takano¹ and B.D. Terris¹. *Hitachi Global Storage Technologies, San Jose, CA*

3:42

BF-10. Rate-dependence of the intrinsic switching field distribution in perpendicular recording materials. *O. Hovorka*¹, J.L. Pressesky², G.A. Ju², A. Berger³ and R.W. Chantrell¹. *1. Department of Physics, York University, York, United Kingdom; 2. Seagate Technology, Fremont, CA; 3. Nanomagnetism Laboratory, CIC nanoGUNE Consolider, Donostia-San Sebastian, Spain*

3:54

BF-11. Modeling magnetic column intermediate layer of perpendicular magnetic recording. *Z. Li*¹, D. Bai¹, S. Li¹, F. Liu¹ and S. Mao¹. *1. Western Digital, Fremont, CA*

4:06

BF-12. Possible Impact of Stacking Faults on HCP Co-Based Perpendicular Magnetic Recording Media. *V.M. Sokalski*¹, D.E. Laughlin¹ and J. Zhu². *1. Material Science & Engineering, Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical & Computer Engineering, Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*

4:18

BF-13. Si/NiFe seedlayers for Ru intermediate layer in perpendicular magnetic recording tape media. *G. Saemma*¹, S. Takahashi¹, S. Matsunuma², T. Inoue² and S. Nakagawa¹. *1. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan; 2. Hitachi Maxell Energy, Osaka, Japan*

MONDAY
AFTERNOON
1:30

GRAND CANYON 12-13

Session BG
SUPERCONDUCTIVITY AND LOW
DIMENSIONAL MAGNETISM

Leyi Zhu, Chair

1:30

BG-01. Evolution of spin excitations into the superconducting state in FeTe_{1-x}Se_x (Invited) *M. Lumsden*¹. *Oak Ridge National Laboratory, Oak Ridge, TN*

2:06

BG-02. Neutron scattering studies of the magnetic phase diagram of superconductor parent compound Fe_{1+x}Te . E.E. Rodriguez¹, C. Stock^{1,3}, P. Zajdel⁴, K.L. Krycka¹, C.F. Majkrzak¹ and M.A. Green^{1,2}. *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Materials Science and Engineering, University of Maryland, College Park, MD; 3. Physics, University of Indiana, Bloomington, IN; 4. Physics of Crystals, Institute of Physics, University of Silesia, Katowice, Poland*

2:18

BG-03. Neutron spin resonance in iron superconductor $\text{FeTe}_{0.6}\text{Se}_{0.4}$ under pressure. K. Marty¹, M. Lumsden¹, A. Christianson¹, B. Sipos¹, Y. Uwatoko², A. Moreira Dos Santos¹, C. Tulk¹, J. Fernandez-Baca¹ and B. Sales¹. *1. ORNL, Oak Ridge, TN; 2. Institute for Solid State Physics, Tokyo, Japan*

2:30

BG-04. Chemical pressure and electron doping effects in SrPd_2Ge_2 single crystals. N. Sung¹, B.Y. Kang¹ and B.K. Cho^{1,2}. *1. School of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Gwangju, Korea, Republic of; 2. Department of Nanobio Materials and Electronics, Gwangju Institute of Science and Technology (GIST), Gwangju, Korea, Republic of*

2:42

BG-05. Triplet superconductivity in Josephson junctions with barriers of ferromagnetic Heusler alloys. (Invited) M.P. Weides¹, D. Sprungmann², H. Kohlstedt³, H. Zabel² and K. Westerholt¹. *1. National Institute of Standards and Technology, Boulder, CO; 2. Institut für Experimentalphysik/Festkörperphysik, Ruhr-Universität Bochum, Bochum, Germany; 3. Nanoelektronik, Technische Fakultät Kiel, Christian-Albrechts-Universität Kiel, Kiel, Germany*

3:18

BG-06. Exploring triplet superconductivity using an epitaxial exchange-spring ferromagnet/superconductor bilayer*. L.Y. Zhu¹, Y. Liu¹, J.E. Pearson¹, S. te Velthuis¹, S.D. Bader¹ and J.S. Jiang¹. *1. Materials Science Division, Argonne National Laboratory, Argonne, IL*

3:30

BG-07. Magnetic irreversibility and quantum tunneling of normal-superconductor interfaces in a type-I superconductor. S. Véléz¹, A. Garcí a-Santiago¹, R. Zarzuela¹, J. Hernandez¹, J. Tejada¹ and E. Chudnovsky². *1. Grup de Magnetisme, Department of Fundamental Physics, University of Barcelona, Barcelona, Spain; 2. Physics, Lehman College, The City University of New York, New York, NY*

3:42

BG-08. Novel 2D spin system and its interaction with conduction electrons. T. Gang¹, D.M. Yilmaz², D. Atac¹, E. Strambini¹, S.K. Bose¹, A.H. Velders³, M.P. de Jong¹, J. Huskens² and W.G. van der Wiel¹. *1. Group NanoElectronics (NE), MESA+ Institute for Nanotechnology, Enschede, Netherlands; 2. Molecular Nanofabrication Group, MESA+ Institute for Nanotechnology, Enschede, Netherlands; 3. Biomedical Chemistry Group, MESA+ Institute for Nanotechnology, Enschede, Netherlands*

3:54

BG-09. Topological Excitations in Nanomagnets. R. Skomski¹, Z. Li¹, R. Zhang¹, R.D. Kirby¹, A. Enders¹, E. Schubert² and D.J. Sellmyer¹. *1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Electrical Engineering, University of Nebraska, Lincoln, NE*

4:06

BG-10. Thermal Defects in Skyrmion Crystals. M. Ambrose¹ and R. Stamps². *1. School of Physics, University of Western Australia, Crawley, WA, Australia; 2. School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

4:18

BG-11. Enhancement of the Curie temperature in small particles of itinerant ferromagnets. L. Peters¹, M. Katsnelson¹ and A. Kirilyuk¹. *1. Institute of Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands*

MONDAY
AFTERNOON
1:30

GRAND CANYON 1

Session BH
FERRITE MATERIALS AND HIGH
FREQUENCY DEVICES

Mingzhong Wu, Chair

1:30

BH-01. Tuning the cation distribution and magnetic properties of single phase nanocrystalline $\text{Dy}_3\text{Fe}_5\text{O}_{12}$ garnet. M. Guillot¹, C. Chinnasamy², J. Grenèche³ and V. Harris². *1. Laboratoire National des Champs Magnétiques Intenses, Grenoble, France; 2. Electrical Engineering, Northeastern University, Boston, MA; 3. Lab Phys Etat Condense, Univ Maine, Le Mans, Cedex, France*

1:42

BH-02. Anisotropy Study of Garnet Films Grown Over Substrates Populated with Nanoparticles. G.S. Lang¹, C. Krafft² and I.D. Mayergoyz^{1,3}. *1. Electrical and Computer Engineering, University of Maryland, College Park, MD; 2. Laboratory for Physical Sciences, College Park, MD; 3. Center of Applied Electromagnetics, University of Maryland, College Park, MD*

1:54

BH-03. Growth and Characterization of BaAlxFe12-xO19 Thin Films. Z. Celinski¹, I. Harward¹, Y. Nie^{1,2}, A. Gardner¹ and L. Reisman¹. *1. Physics, UCCS, Colorado Springs, CO; 2. Department of Electronic Science and Technology, Huazhong University of Science and Technology, Wuhan, Hubei, China*

2:06

BH-04. Skin Effect Suppression for Cu/CoZrNb multilayered inductor. N. Sato¹, Y. Endo¹ and M. Yamaguchi¹. *1. Department of Electrical and Communication Engineering, Tohoku University, Sendai, Japan*

2:18

BH-05. Soft M-type Hexaferrite for VHF Miniature Antenna Applications. J. Lee¹, Y. Hong¹, W. Lee¹, G.S. Abo¹, J. Park¹, W. Seong², S. Park² and W. Ahn². *1. Department of Electrical and Computer Engineering and MINT Center, The University of Alabama, Tuscaloosa, AL; 2. Research and Development Center, E.M.W Co., Ltd., Seoul, Korea, Republic of*

2:30

BH-06. Spinel Ni_{0.7}Mn_{0.3-x}Co_xFe₂O₄ Ferrite for UHF Devices. J. Lee¹, Y. Hong¹, W. Lee¹, G.S. Abo¹, J. Park¹, W. Seong², S. Park² and W. Ahn². *1. Department of Electrical and Computer Engineering and MINT Center, The University of Alabama, Tuscaloosa, AL; 2. Research and Development Center, EMW Co., Ltd., Seoul, Korea, Republic of*

2:42

BH-07. Rotating Field Orientation of Co2Z Hexaferrite Compacts Produced via a Modified Aqueous Approach with a Single Sintering. A.P. Daigle¹, E. DuPre², J. Modest², A. Geiler¹, Y. Chen², C. Vittoria² and V.G. Harris^{1,2}. *1. Metamagnetics Inc., Sharon, MA; 2. Electrical and Computer Engineering, Northeastern University, Boston, MA*

2:54

BH-08. New CMOS Integration-Compatible Soft Magnetic Nanocomposite*. Q. Yao¹, L. Lu², M. Jantz², M. Wu² and Y. Qiang¹. *1. Physics, University of Idaho, Moscow, ID; 2. Physics, Colorado State University, Fort Collins, CO*

3:06

BH-09. Static and Dynamic Magnetic Properties of the Barium Hexaferrites Co2Z and Co2Y Prepared From Annealed Mixtures of Autocombustion Precursor Powders¹ T.F. Ekiert^{1,2}, D.W. Mirre^{1,3}, M.D. Alexander, Jr.¹, M.M. Doyle^{4,5}, B.G. Kelly⁴ and K.M. Unruh⁴. *1. Composites and Hybrids Branch, Air Force Research Laboratory, WPAFB, OH; 2. Universal Technology Corporation, Dayton, OH; 3. Southwestern Ohio Council for Higher Education, Dayton, OH; 4. Department of Physics and Astronomy, University of Delaware, Newark, DE; 5. Department of Physics, Drexel University, Philadelphia, PA*

3:18

BH-10. Excessive grain boundary conductivity of spin-spray deposited ferrite/non-magnetic multilayer. Y. Xing¹, O. Obi², N.X. Sun² and Y. Zhuang¹. *1. Electrical Engineering, Wright State University, Dayton, OH; 2. electrical engineering, Northeastern University, Boston, MA*

3:30

BH-11. A Magnetically-Tuned Microwave Phase Shifter Using YIG/GGG-GaAs Flip-Chip Structure. G. Qiu², Y. Zhu¹ and C.S. Tsai^{1,3}. *1. Dept. of EECS, University of California, Irvine, Irvine, CA; 2. Broadcom Corp., Irvine, CA; 3. The Institute of Photonics and Optoelectronics, National Taiwan University, Taipei, Taiwan*

3:42

BH-12. Tuning Limitations of the Voltage-Controlled Planar Microwave Ferrite Resonator*. G.F. Dionne¹ and D.E. Oates¹. *1. MIT Lincoln Laboratory, Lexington, MA*

3:54

BH-13. An Active Resonator Based on Magnetic Films for Near Field Microwave Microscopy. N. Qureshi¹, O. Kolokoltsev¹ and C. Ordoñez-Romero². *1. Centro de Ciencias Aplicadas y Desarrollo Tecnológico, Universidad Nacional Autónoma de México, Mexico, DF, Mexico; 2. Instituto de Física, Universidad Nacional Autónoma de México, Mexico, DF, Mexico*

4:06

BH-14. On-wafer microwave band stop filter using a high quality barium hexagonal ferrite thin film. I. Harward¹, J. Shaw², T. Hunter¹, A. Gardner¹ and Z. Celinski¹. *1. Physics, UCCS, Colorado Springs, CO; 2. Electromagnetics Division, NIST, Boulder, CO*

4:18

BH-15. Magneto-Electric Tuning of the Phase of Propagating Spin Waves. *K.L. Wong¹, M. Bao¹, S. Cherepov¹, J. Zhao¹, Y. Lin¹, M. Lewis¹, A. Bur², T. Wu², J. Zhu³, P.K. Amiri¹, I. Krivorotov³, G. Carman², A.G. Khitun⁴ and K.L. Wang¹*. *1. Electrical Engineering, UCLA, Los Angeles, CA; 2. Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA; 3. Physics and Astronomy, UCI, Irvine, CA; 4. Electrical Engineering, UCR, Riverside, CA*

MONDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session BP
MULTILAYERS AND SUPERLATTICES II
(Poster Session)
Young Kim, Chair

BP-01. Inhomogeneity and damping in CoFe/Pd multilayers.
J.M. Shaw¹, H.T. Nembach¹ and T.J. Silva¹. *NIST, Boulder, CO*

BP-02. The annealing effect of exchange-biased [Co/Pt] multilayer with perpendicular magnetic anisotropy. *J. Chen^{1,2}, J. Feng¹, X. Han², W. Zhan² and J.D. Coey¹*. *CRANN and School of Physics, Dublin, Ireland; 2. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

BP-03. Magnetization reversal and change of magnetic anisotropy in Co/Cu Multilayers Nanowires with crossed configuration.
N. Ahmad¹, C. Junyang¹, W. Shida¹ and H. Xiufeng¹. *Institute of Physics, Beijing, China*

BP-04. Manipulation of permeability spectrum in [ferromagnet/antiferromagnet]_N exchange-biased multilayered thin films for wideband microwave noise filter application. *L. Jin¹, H. Zhang¹, X. Tang¹, G. Lu¹ and Z. Zhong¹*. *University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

BP-05. Relaxation effects evidenced on first-order reversal curves in hard/soft magnetic multilayers. *A. Stancu¹, P. Postolache¹, L. Stoleriu¹, T. Bakas², N. Siadou³, M. Androustopoulos³ and I. Panagiotopoulos³*. *1. Faculty of Physics, "Alexandru Ioan Cuza" University of Iasi, Iasi, Romania; 2. Department of Physics, University of Ioannina, Ioannina, Greece; 3. Department of Materials Science and Engineering, University of Ioannina, Ioannina, Greece*

BP-06. Intrawire Magnetic Interactions in Electrodeposited Co/Cu and Co/Au Multilayer Nanowires. *T. Dastagir¹ and H. Yu¹*. *Arizona State University, Tempe, AZ*

BP-07. Effect of interfaces on the magnetic properties of SnO₂/Cu-Zn ferrite multilayers. *S. Saipriya¹, J. Kurian¹ and R. Singh¹*. *School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

BP-08. Effect of layer thickness (MgO and Ta) on perpendicular magnetic anisotropy of [Ta/Co₆₀Fe₂₀B₂₀/MgO]₅ multilayer films. *F. Yuan¹, J. Hsu¹, Y. Lin², P. Kuo² and J.K. Mei³*. *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Materials Science & Engineering, National Taiwan University, Taipei, Taiwan; 3. Department and Institute of Electrical Engineering, Minghsin University of Science and Technology, Hsin Chu, Taiwan*

BP-09. Perpendicular magnetic anisotropy in CoFe/Tb multilayers. *J. Feng¹, H. Kurt¹, M. Venkatesan¹ and M. Coey¹*. *CRANN and School of Physics, Trinity College, Dublin 2, Ireland*

BP-10. The strain, thickness and electric field effects on the magnetic anisotropy of the thin FeCo/MgO(001) films: A first principles study. *K. He¹, J. Chen¹ and Y. Feng²*. *1. Department of Materials Science & Engineering, National University of Singapore, Singapore, Singapore; 2. Department of Physics, National University of Singapore, Singapore, Singapore*

BP-11. Texture induced CoFe(110) phases study in multilayer [CoFe(x)/Os]_n films. *D. Chiang^{1,2}, Y. Yao³, D. Wei⁴, S. Chen³ and H. Lin²*. *1. Center of General Education, Ming Hsin Univ. of Sci. and Tech., Hsinchu, Taiwan; 2. Department of Materials Engineering, Tatung University, Taipei, Taiwan; 3. Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan; 4. Dept. of Mechanical Engn., National Taipei University of Technology, Taipei, Taiwan*

BP-12. Withdrawn

BP-13. Thermal stability of CoFeB/Pt multilayers with perpendicular magnetic anisotropy. *Y. Zhu¹, Z. Zhang¹, B. Ma¹ and Q. Jin¹*. *Department of Optical Science and Engineering, Fudan University, Shanghai, China*

BP-14. Curie temperatures of CoPt ultrathin continuous films. *W. Cai^{1,2}, J. Shi², Y. Nakamura², W. Liu¹ and R. Yu³*. *1. Department of Materials Science and Engineering, Tsinghua University, Beijing, China; 2. Department of Metallurgy and Ceramics Science, Tokyo Institute of Technology, Tokyo, Japan; 3. School of Materials Science and Engineering, Beihang University, Beijing, China*

BP-15. Magnetism of compositionally modulated Ti_{1-x}V_xO₂/TiO₂ multilayers. *D. Le Roy^{1,2}, S. Valloppilly², R. Skomski^{1,2}, S. Liou^{1,2} and D.J. Sellmyer^{1,2}*. *1. Physics and Astronomy, University of Nebraska, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, Lincoln, NE*

MONDAY SAGUARO BALLROOM
AFTERNOON
1:00

Session BQ
FERROMAGNETIC SEMICONDUCTORS I
(Poster Session)

Brian Kirby, Chair

BQ-01. Stability and Magnetoelectronic Properties of Indium Nitride Quantum Dots Doped With Co and Ni Atoms. L.A. Pozhar¹.
Department of Physics, University of Idaho, Moscow, ID

BQ-02. Magnetic Bipolarons in Quantum Dots. R. Oszwaldowski¹, I. Zutić¹ and A.G. Petukhov².
1. Physics, University at Buffalo, Buffalo, NY; 2. Physics, South Dakota School of Mines and Technology, Rapid City, SD

BQ-03. Exchange bias effect of Ge_{1-x}Mn_xTe with antiferromagnetic MnTe and MnO materials. S. Lim^{1,2}, H. Lu^{1,2}, J. Bi¹, T. Liew^{1,2} and K. Teo¹.
1. Electrical & Computer Engineering Department, National University of Singapore, Singapore, Singapore; 2. Data Storage Institute, Singapore, Singapore

BQ-04. Ferromagnetic Behavior in Ytterbium-doped and Ion Implanted GaN Semiconductor. R. Palai¹, J. Wu¹, H. Tanaka², J. Wang², W.M. Jadwisieniczak² and H. Huhtinen³.
1. Dept. of Physics, University of Puerto Rico, San Juan; 2. School of EECS, Ohio University, Athens, OH; 3. Department of Physics, University of Turku, Turku, Finland

BQ-05. Magnetic properties of Mn-implanted 6H-SiC single crystal. M. Al-Azri¹, M. El-zain¹, K. Bouziane¹, M. Chérif², Y. Roussigné², A. Declémy³, M. Drouet³ and L. Thomé⁴.
1. Physics, Sultan Qaboos University, Muscat, Oman; 2. LSPM (CNRS-UPR 34071), Université Paris 13, 93430 Villetaneuse, France; 3. PhyMat (CNRS UMR 6630), Université de Poitiers, Marie et Pierre Curie SP2MI, France; 4. CSNSM-Orsay, Université d'Orsay, F-91405 Orsay, France

BQ-06. Clustering and Magnetism of Nickel in situ Doped Amorphous AlN Thin Films. H. Tanaka¹, G. Chen², C. Wan², M.E. Kordesch², S. Kaya¹ and W.M. Jadwisieniczak¹.
1. EECS, Ohio University, Athens, OH; 2. Department of Physics and Astronomy, Ohio University, Athens, OH

BQ-07. Structural and compositional phase separation in ferromagnetic semiconductor (Zn,Cr)Te. H. Kobayashi¹, Y. Nishio¹, K. Ishikawa¹, K. Kanazawa¹, S. Kuroda¹, M. Mitome² and Y. Bando².
1. Institute of Materials Science, University of Tsukuba, Tsukuba, Japan; 2. International Center For Materials Nanoarchitectonics, National Institute for Materials Science, Tsukuba, Japan

BQ-08. Mn₅Ge₃ clustered in n-type ferromagnetic semiconductor (Mn,H):Ge. D. Duc Dung^{1,2}, W. Feng¹, Y. Hwang¹, D. Tuan¹ and S. Cho¹.
1. Department of Physics, University of Ulsan, Ulsan 680-749, Korea, Republic of; 2. Department of General Physics, Ha Noi University of Science and Technology, 1 Dai Co Viet road, Ha Noi, Viet Nam

BQ-09. Room-temperature Ferromagnetism in Homogeneous Cr-doped GaN. P. Suggisetti^{1,2}, T. Patil^{1,2}, R.R. Adari^{1,2}, D. Banerjee^{1,2}, T. Pramanik^{1,2}, D. Saha^{1,2} and S. Ganguly^{1,2}.
1. Electrical Engineering, Indian Institute of Technology Bombay, Mumbai, India; 2. Centre of Excellence in Nanoelectronics, Indian Institute of Technology Bombay, Mumbai, India

BQ-10. Layer by Layer investigation on the magneto-transport properties of ferromagnetic Ge:Mn prepared by pulsed laser annealing. D. Bürger¹, S. Zhou¹, M. Höwler¹, G. Kovacs¹, H. Reuther¹, W. Skorupa¹, M. Helm¹ and H. Schmidt¹.
1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany

BQ-11. Ferromagnetic InMnSb Multi-Phase Films Study by Aberration-Corrected Scanning Transmission Electron Microscopy. L. Lari^{1,2}, C. Feeser³, B.W. Wessels⁴ and V.K. Lazarov^{1,2}.
1. Department of Physics, University of York, York, United Kingdom; 2. The York JEOL Nanocentre, University of York, York, United Kingdom; 3. Department of Chemical Engineering, Northwestern University, Evanston, IL; 4. Department of Materials Science & Engineering and Materials Research Center, Northwestern University, Evanston, IL

BQ-12. Magnetic and Optical Properties of Rare Earth-Doped GaN Semiconducting Thin Films. R. Palai¹, K. Dasari¹, J. Wu¹, W.M. Jadwisieniczak² and H. Huhtinen³.
1. Dept. of Physics, University of Puerto Rico, San Juan; 2. School of EECS, Ohio University, Athens, OH; 3. Department of Physics, University of Turku, Turku, Finland

BQ-13. Giant magnetocaloric of half-metallic Ba_{0.08}Mn_{0.92}As epitaxial film grown on Al₂O₃(0001) substrate. D. Tuan¹, D. Duc Dung^{1,2}, W. Feng¹, D. Thiet¹, Y. Shin¹ and S. Cho¹.
1. Department of Physics, University of Ulsan, Ulsan 680-749, Korea, Republic of; 2. Department of General Physics, Ha Noi University of Science and Technology, 1 Dai Co Viet road, Ha Noi, Viet Nam

BQ-14. Kondo effect and carrier transportation in α -In₂O₃:Cr diluted magnetic oxide thin films. C. Lin¹, Y. Lee¹, C. Hsu¹, S. Sun² and H. Chou¹.
1. Physics, Natl Sun Yat-Sen University, Kaohsiung, Taiwan; 2. Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan

BQ-15. The origin of the ferromagnetic ordering of zinc vacancies in Sc-doped ZnO: bulk versus thin-films. M.B. Kanoun¹, S. Goumri-Said¹, U. Schwingenschlogl¹ and A. Manchon¹.
1. Physical Sciences and Engineering Division, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia

MONDAY SAGUARO BALLROOM
AFTERNOON
1:00

Session BR
SPINTRONICS: ORGANIC MATERIALS
(Poster Session)

Michel de Jong, Chair

BR-01. Spin-dependent transport properties of single-molecule magnet Mn₃. H. Hao¹, X. Zheng¹, Z. Zeng¹ and H. Lin². *Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, Anhui, China; 2. Department of Physics and Institute of Theoretical Physics, The Chinese University of Hong Kong, Hong Kong SAR, China*

BR-02. Magnetic fringe field control of electronic transport in an organic film. F. Wang², F. Macià¹, A.D. Kent¹, M. Wohlgenannt² and M.E. Flatté². *1. Physics and Astronomy, University of Iowa, IOWA, IA; 2. Physics, New York University, New York, NY*

BR-03. Spin-flip induced magnetoresistance in positionally disordered organic solids. N. Harmon¹ and M. Flatté¹. *Department of Physics and Astronomy and Optical Science and Technology Center, University of Iowa, Iowa City, IA*

BR-04. Depth of metal penetration at the organics/ferromagnet interface. H. Chang¹, C. Wang², M. Chiang², Y. Chan¹, C. Lee^{1,3}, P. Wang³, Y. Hsu^{1,4} and D. Wei¹. *1. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 2. Graduate Program for Science and Technology of Synchrotron Light Source, National Tsing Hua University, Hsinchu, Taiwan; 3. Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan; 4. Institute of Electro-Optical Science and Engineering, National Cheng Kung University, Tainan, Taiwan*

BR-05. Hybridization and exchange coupling at organic semiconductor/ferromagnetic heterojunctions. A. Pratt^{1,2}, X. Sun³, L. Dunne⁴, M. Kurahashi¹ and Y. Yamauchi¹. *1. National Institute for Materials Science, Tsukuba, Japan; 2. York Institute for Materials Research, University of York, York, United Kingdom; 3. University of Science and Technology of China, Anhui, Hefei, China; 4. Department of Physics, University of York, York, United Kingdom*

BR-06. Ab-initio understanding of the spin injection in organic molecular semiconductor systems. S. Goumri-Said¹, M. Kanoun¹, U. Schwingenschlogl¹ and A. Manchon¹. *Physical Sciences and Engineering Division, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia*

BR-07. Magnetic Specific Heat Studies of Two Ising Spin ½ Chain Systems M(N₃)₂(bpy). T. Yuen¹, Y. Hamida¹, D.S. Danilovic¹, K. Li² and J. Li². *1. Physics, Temple University, Philadelphia, PA; 2. Chemistry and Chemical Biology, Rutgers University, Piscataway, NJ*

BR-08. Large change of perpendicular magnetic anisotropy in Cobalt ultrathin film induced by varying capping layers. X. Zhang¹, S. Mizukami¹, T. Kubota¹, H. Naganuma², M. Oogane², Y. Ando² and T. Miyazaki¹. *1. WPI Advanced Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Japan*

BR-09. The half-metallic properties of the soft ferrimagnet [MnII(enH)(H₂O)] [CrIII(CN)₆]H₂O : A first principle study. N. Li^{1,2}, G. Zhong¹ and H. Lin^{1,3}. *1. Center for Photovoltaics and Solar Energy, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China; 2. School of Physics and Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology, Wuhan, Hubei, China; 3. Physics, The Chinese University of Hong Kong, Hong Kong, Hong Kong*

BR-10. Permalloy and Co₅₀Pd₅₀ as ferromagnetic contacts for TMR measurements in carbon nanotube-based devices. C. Morgan^{1,2}, K. Schmalbuch^{2,3}, C. Meyer^{1,2} and C.M. Schneider^{1,2}. *1. Peter Grünberg Institute 6, Forschungszentrum Jülich, Jülich, Germany; 2. JARA Jülich Aachen Research Alliance, Jülich, Germany; 3. II. Physikalisches Institut, RWTH Aachen University, Aachen, Germany*

BR-11. Spin-orbit force in graphene with Rashba spin-orbit coupling. C. Chen^{1,2}, Y. Su^{1,2} and C. Chang^{1,2}. *1. Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Center for Quantum Science and Engineering (CQSE), National Taiwan University, Taipei, Taiwan*

BR-12. Slow Magnetic Relaxation and Superexchange Interactions in Actinide-based Molecules. N. Magnani^{1,2}. *1. Lawrence Berkeley National Laboratory, Berkeley, CA; 2. Institute for Transuranium Elements, European Commission, Joint Research Centre, Karlsruhe, Germany*

BR-13. Spin transition pressure pulses investigation in the perspective of a modified dynamical model. R. Tanasa¹, A. Stancu¹, F. Varret², J. Linares², E. Codjovi² and J. Letard³. *1. Department of Physics, "Alexandru Ioan Cuza" University, Iasi, Romania; 2. Groupe d'Etude de la Matière Condensée, Université de Versailles CNRS-UMR8635, Versailles, France; 3. Institut de Chimie de la Matière Condensée de Bordeaux, Université Bordeaux I, UPR 9048 CNRS, Bordeaux, France*

BR-14. Tailoring and Understanding Metal/Organic Semiconductor Interfaces Using a Thin Oxide Layer. N. Lee¹, Y. Bae¹, T. Kim¹, H. Cho², C. Lee², L. Fleet³, A. Hirohata³ and E. Ito⁴. *1. Department of Physics, Ewha Womans University, Seoul, Korea, Republic of; 2. School of Electrical Engineering and Computer Science, Seoul National University, Seoul, Korea, Republic of; 3. Department of Electronics, The University of York, York, United Kingdom; 4. Flucto-Order Functions Research Team, RIKEN Advanced Science Institute, Wako, Japan*

BR-15. Local Electronic Structure of Complex Magnetic Nanostructures. *R. Skomski¹, P. Sahota^{2,1}, A. Enders¹, J. Rojas¹, A. Kashyap² and D.J. Sellmyer¹*. *Physics and Astronomy, Univ Nebraska, Lincoln, NE; 2. IIT, Jaipur, India*

MONDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session BS
SEMIONDCONDUCTOR SPIN INJECTION AND TRANSPORT
(Poster Session)
Hideki Saito, Chair

BS-01. Spin accumulation created electrically in an *n*-Ge channel using Schottky tunnel contacts. *Y. Baba¹, K. Kasahara¹, K. Masaki¹, Y. Ando¹, Y. Hoshi², K. Sawano², M. Miyao¹ and K. Hamaya^{1,3}*. *1. Department of Electronics, Kyushu University, Fukuoka, Japan; 2. Research Center for Silicon Nano-Science, Tokyo City University, Tokyo, Japan; 3. PRESTO, Japan Science and Technology Agency, Tokyo, Japan*

BS-02. Electrical creation of spin accumulation in a Si channel using a Schottky tunnel contact. *Y. Ando^{1,2}, Y. Maeda¹, K. Kasahara¹, Y. Baba¹, Y. Hoshi³, K. Sawano³, M. Miyao¹ and K. Hamaya^{1,4,1}*. *Electronics, Kyushu University, Fukuoka, Japan; 2. INAMORI Frontier Research Center, Kyushu University, Fukuoka, Japan; 3. Advanced Research Laboratories, Tokyo City University, Tokyo, Japan; 4. PRESTO, Japan Science and Technology Agency, Tokyo, Japan*

BS-03. Tunneling anisotropy in Si/Al₂O₃/ferromagnet devices. *S. Sharma^{1,2}, S.P. Dash³, H. Saito¹, S. Yuasa¹ and R. Jansen¹*. *Spintronics Research Centre, AIST, Tsukuba, Japan; 2. Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands; 3. Department of Microtechnology and Nanoscience, Chalmers University of Technology, Göteborg, Sweden*

BS-04. The effect of ferromagnetic Gd marker on the effective work function of Fe in contact with Al₂O₃/Si. *A.V. Zenkevich¹, Y.A. Matveyev¹, Y.Y. Lebedinskii¹, R. Mantovan², M. Fanciulli^{2,3}, S. Thiess⁴ and W.W. Drube⁴*. *1. NRNU, Moscow Engineering Physics Institute, Moscow, Russian Federation; 2. CNR-IMM MDM Laboratory, Agrate Brianza (MB), Italy; 3. Dipartimento di Scienza dei Materiali, Università di Milano Bicocca, Milano, Italy; 4. Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany*

BS-05. Spin transport calculation for the three-terminal device of zigzag graphene nano-ribbon. *H. Lee¹ and C. Chang^{1,2}*. *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Center for Quantum Science and Engineering (CQSE), National Taiwan University, Taipei, Taiwan*

BS-06. Magnetic Properties of Nanostructured-Co/Graphite interface studied by X-ray Magnetic Circular Dichroism. *P.J. Wong¹, M.P. de Jong¹, M.H. Siekman¹ and W.G. van der Wiel¹*. *NanoElectronics Group, MESA+ Institute for Nanotechnology, University of Twente, Enschede, Netherlands*

BS-07. Non-uniform current density and spin accumulation in a 1 μm thick n-GaAs channel. *B. Endres¹, M. Ciorga¹, R. Wagner¹, S. Ringer¹, M. Utz¹, D. Bougeard¹, C. Back¹ and G. Bayreuther^{1,2}*. *1. Universität Regensburg, Regensburg, Germany; 2. Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany*

BS-08. Schottky Barrier Distributions in Fe/GaAs Devices. *L.R. Fleet¹, K. Yoshida^{2,3}, H. Kobayashi⁴, Y. Ohno⁴ and A. Hirohata^{1,5}*. *1. Physics, The University of York, York, United Kingdom; 2. Nagoya University, Nagoya, Aichi, Japan; 3. Nanostructures Research Laboratory, JFCC, Nagoya, Aichi, Japan; 4. RIEC, Tohoku University, Sendai, Miyagi, Japan; 5. PRESTO, JST, Kawaguchi, Saitama, Japan*

BS-09. Effect of Drift on Spin Polarization in a Spin-LED. *D. Banerjee^{1,2}, T. Pramanik², R. Adari², T. Patil², P. Suggiseti², S. Ganguly² and D. Saha²*. *1. IITB-Monash Research Academy, CSE Building, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India; 2. Department of Electrical Engineering, Indian Institute of Technology Bombay, Mumbai, Maharashtra, India*

BS-10. Optically oriented electron spin transport across a Heusler alloy/GaAs quantum well interface. *Y. Shirahata¹, H. Muraoka¹, M. Itoh¹, Y.K. Takahashi², K. Hono², M. Yamaguchi³ and T. Taniyama¹*. *1. Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 2. Magnetic Materials Unit, National Institute for Materials Science, Tsukuba, Japan; 3. Department of Electronics, Nagoya University, Nagoya, Japan*

BS-11. Magnetism and transport properties of epitaxial Fe-Ga thin film on GaAs(001). *D. Duc Dung^{1,2}, D. Tuan¹, V. Son³, Y. Shin¹ and S. Cho¹*. *1. Department of Physics, University of Ulsan, Ulsan 680-749, Korea, Republic of; 2. Department of General Physics, Ha Noi University of Science and Technology, 1 Dai Co Viet road, Ha Noi, Viet Nam; 3. Centers for Nanobioengineering and Spintronics, Chungnam National University, Daejeon 350-746, Korea, Republic of*

BS-12. Complex Spin Detection Behaviour at the Epitaxial Fe/GaAs Interface Following Post-growth Annealing. *C. Shen¹, T. Trypiniotis¹ and C. Barnes¹*. *1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom*

BS-13. Magnetic field controlled threshold resistive switching in magnetic granular systems. *A.M. Sahadevan¹, A. Kalitsov¹, S.N. Jammalamadaka¹, K. Gopinadhan¹, C.S. Bhatia¹, G. Xiong¹ and H. Yang¹. Department of Electrical and Computer Engineering, NUSNNI-Nanocore, National Univ Singapore, Singapore, Singapore*

BS-14. Tunable positive magnetoresistance effect of Co-doped amorphous carbon films. *Y. Jiang¹, J. Gao¹ and Z. Wu¹. Physics, Hongkong University, Hong Kong, China*

BS-15. Frequency-dependence of magneto-conductance of Co doped amorphous carbon films. *H. Hsu¹, C. Ko¹, W. Liao¹, P. Chuang², C. Lee² and H. Su³. Department of Applied Physics, National Pingtung University of Education, Pingtung, Taiwan; 2. Department of Engineering and System Science, National Tsing-Hua University, HsinChu, Taiwan; 3. Industrial Application Office, National Synchrotron Radiation Research Center, Hsinchu, Taiwan*

MONDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session BT
MULTIFERROIC MATERIALS I
(Poster Session)

Claudia Felser, Chair

BT-01. Investigation of magnetic ordering in $\text{Bi}_4\text{Ti}_3\text{O}_{12-n}\text{BiFeO}_3$ solid solutions. *P.R. Srinivasan¹, S. Vitta² and V. Kalidhindi B. R.¹. Materials Research Centre, Indian Institute of Science Bangalore, Bangalore, Karnataka, India; 2. Department of Metallurgical engineering and Materials Science, Indian Institute of Bombay, Mumbai, Maharashtra, India*

BT-02. Structure and magnetism of $\text{BaTi}_{1-x}\text{Fe}_x\text{O}_3$ multiferroics. *V. Nguyen^{1,3}, H.M. Nguyen^{1,2}, P. Chuang², J. Zhang⁵, D. Tran¹, C. Hu^{2,4}, T. Chen^{2,4}, H. Yang⁵, D. Vu¹, C. Lee^{2,4} and V. Le¹. Vietnam Academy of Science and Technology, Hanoi, Viet Nam; 2. Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan; 3. Faculty of Physics, College of Science, Thai Nguyen University, Thai Nguyen, Viet Nam; 4. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 5. Department of Physics, National Sun Yat-Sen University, Kaohsiung, Taiwan*

BT-03. Conductivity across barriers as origin of high-temperature dielectric response in BaTiO_3 and (Ba,Ti) doped BiFeO_3 multiferroic ceramics. *T. Wang¹, C. Tu^{1,2} and K. Wu². Graduate Institute of Applied Science and Engineering, Fu Jen Catholic University, Taipei County, Taiwan; 2. Department of Physics, Fu Jen Catholic University, New Taipei City, Taiwan*

BT-04. Photovoltaic Phenomena in BiFeO_3 Multiferroic Ceramics. *. Jou¹, T. Wang², . Chen¹, . Yen¹, C. Tu² and Y. Yao². Department of Physics, Fu Jen Catholic University, Taipei, Taiwan; 2. Graduate Institute of Applied Science and Engineering, Fu Jen Catholic University, Taipei, Taiwan*

BT-05. Fabrication of highly ordered ferromagnetic BiFeO_3 nanotubes by AAO template method. *L. Oliveira¹ and K.R. Pirota¹. Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas, Campinas, Brazil*

BT-06. Sputter-prepared $\text{BiFeO}_3(001)$ films on $\text{L1}_0\text{FePt}(001)$ /glass substrates. *H.W. Chang¹, F.T. Yuan², C.W. Shih³, C.R. Wang¹, W.C. Chang³ and S.U. Jen⁴. Department of Physics, Tunghai University, Taichung, Taiwan; 2. Department of Physics, National Taiwan University, Taipei, Taiwan; 3. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 4. Institute of Physics, Academia Sinica, Taipei, Taiwan*

BT-07. Annealing temperature dependence of exchange bias in $\text{BiFeO}_3/\text{CoFe}$ bilayers. *T. Yu¹, H. Naganuma², W. Wang¹, X. Han² and Y. Ando¹. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

BT-08. Correlation of spin and structure in doped Bismuth ferrite nanoparticles. *J. Lin^{1,2}, T. Tite¹, Y. Tang¹, C. Lue², Y. Chang¹ and J. Lin¹. CCMS, NTU, Taipei, Taiwan; 2. Physics, NCKU, Tainan, Taiwan*

BT-09. Magnetoelectric effects in $\text{BiFeO}_3/\text{CoFe}_2\text{O}_4$ nano-composites. *N. Aimon¹, D. Kim¹, H. Choi¹ and C. Ross¹. MIT, Cambridge, MA*

BT-10. Strain relaxation in $\text{Bi}_0.9\text{Pb}_0.1\text{FeO}_3/\text{SrRuO}_3/\text{SrTiO}_3$ heterostructure. *M. Bohra¹, H. Chou¹, H.J. Yeh¹ and C.P. Wu¹. Physics, Natl Sun Yat-Sen University, Kaohsiung, Taiwan*

BT-11. Indication of Magnetoelectric Properties in $\text{BiFeO}_3/(00\text{l})\text{SrFe}_{12}\text{O}_{19}$ Bilayers. *Y. Yasukawa¹, X. Liu¹ and A. Morisako¹. Information Engineering, Shinshu University, Nagano, Nagano, Japan*

BT-12. Ferromagnetism in Multiferroic BiFeO_3 : Facts and Artifacts. *R. Palai¹ and H. Huhtinen². Dept. of Physics, University of Puerto Rico, San Juan; 2. Department of Physics, University of Turku, Turku, Finland*

BT-13. Structural transformation in Pb-doped $\text{BiFeO}_3(00\text{l})$ epitaxial thin films. *M. Bohra¹, C.P. Wu¹, Y.H. Yeah¹ and H. Chou¹. Department of Physics, National Sun Yat-Sen University, Kaohsiung, Kaohsiung, Taiwan*

BT-14. Multiferroic behaviour of disordered bismuth-substituted zinc ferrite. *S. Mito*¹, *H. Takagi*¹, *A.V. Baryshev*¹ and *M. Inoue*¹. *Toyohashi University of Technology, Toyohashi, Japan*

BT-15. Crystal structure and magnetic properties of La and Ba codoped $\text{Bi}_{0.8}\text{La}_{0.2-x}\text{Ba}_x\text{FeO}_3$ ($0 \leq x \leq 0.2$) multiferroics. *J. Ge*¹, *G. Cheng*¹, *J. Du*¹ and *X. Wu*¹. *Lab of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, Jiangsu, China*

MONDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session BU
MAGNETOCALORIC PROPERTIES II
(Poster Session)

Victorino Franco, Chair

BU-01. Magnetocaloric Effect in Gd/Fe Heterostructures. *C. Bauer*¹, *D.D. Belyea*¹, *P.B. Jayathilaka*¹ and *C.W. Miller*¹. *Applied Physics, University of South Florida, Tampa, FL*

BU-02. Improved magnetocaloric properties in partially Co-substituted $\text{Gd}_{65}\text{Fe}_{20-y}\text{Co}_y\text{Al}_{10}\text{X}_5$ ($X = \text{Si}, \text{B}$) melt-spun ribbons. *I. Skorvanek*¹, *J. Marcin*¹, *J. Kovac*¹, *Z. Sniadecki*² and *B. Idzikowski*². *1. Magnetism, Institute of Experimental Physics Slov. Acad. Sci., Kosice, Slovakia; 2. Institute of Molecular Physics, Poznan, Poland*

BU-03. Magnetocaloric powder composite from alloys of the series $\text{Gd}_{1-x}\text{Pr}_x\text{Ni}_2$ to be used in an Ericsson-cycle magnetic refrigerator. *A.M. Carvalho*¹, *A.G. Mendes*² and *A.A. Coelho*². *1. Materials Metrology, INMETRO, Duque de Caxias, RJ, Brazil; 2. Applied Physics, UNICAMP, Campinas, SP, Brazil*

BU-04. Large magnetocaloric effect and refrigerant capacity in Gd-Co-Ni metallic glasses. *X. Zhong*¹, *P. Tang*¹, *Z. Liu*¹, *D. Zeng*¹, *Z. Zheng*¹, *H. Yu*¹, *W. Qiu*¹ and *H. Zhang*². *1. School of Materials Science and Engineering, South China University of Technology, Guangzhou, China; 2. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

BU-05. The effect of Fe/Al-ratio on the thermal properties and magnetocaloric effect of $\text{Gd}_{55}\text{Fe}_x\text{Al}_{45-x}$ ($x=15-35$) glassy alloy ribbons. *F. Yuan*¹, *Q. Li*¹ and *B. Shen*¹. *1. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo 315201, Zhejiang, China*

BU-06. The magnetocaloric effect and critical behavior in amorphous $\text{Gd}_{60}\text{Co}_{40-x}\text{Mn}_x$. *Z. Zhigang*¹, *Z. Xichun*¹, *Y. Hongya*¹, *L. Zhongwu*¹ and *Z. Dechang*¹. *1. School of Materials Science & Engineering, South China University of Technology, Guangzhou, Guangdong, China*

BU-07. Withdrawn

BU-08. Large Cryogenic Magnetocaloric Effect in Superparamagnetic DyCuAl Nanoparticles at 1 T Magnetic Field. *X. Liu*^{1,2}, *Q. Zhang*², *J. Jiang*², *D. Geng*², *Z. Zhang*² and *S. Or*¹. *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China; 2. Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*

BU-09. Isothermal Entropy Changes in Nanocomposite $\text{Co:Ni}_{67.7}\text{Cu}_{32.3}$. *S.A. Michalski*¹, *R. Skomski*¹, *X. Li*¹, *D. Le Roy*¹, *T. Mukherjee*¹, *C. Binck*¹ and *D.J. Sellmyer*¹. *Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE*

BU-10. The magnetic and magnetocaloric properties of $\text{NdFe}_{12-x}\text{Mo}_x$ compounds. *Y. Xia*¹, *H. Du*¹, *J. Xu*¹ and *J. Yang*¹. *1. School of Physics, Peking University, Beijing, China*

BU-11. Magnetocaloric effect in $\text{SmCo}_2\text{-xFe}_x$ alloys. *L.A. Burrola*¹, *C. Grijalva*¹, *C. Santillán*¹ and *J.A. Matutes*¹. *1. Centro de Investigación en Materiales Avanzados, Chihuahua, Chihuahua, Mexico*

BU-12. Large refrigerant capacity of RGa ($\text{R}=\text{Tb}$ and Dy) compounds. *X. Zheng*¹, *J. Chen*¹, *J. Shen*², *Z. Xu*¹, *J. Wu*², *F. Hu*¹, *J. Sun*¹ and *B. Shen*¹. *1. State key laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China*

BU-13. Magnetic phase transition, magnetocaloric effect and magnetotransport in Tb_3Co . *B. Li*¹, *W.J. Ren*¹, *Y. Zhang*¹, *Z. Wang*¹, *J. Li*¹, *J. Yang*¹ and *Z. Zhang*¹. *1. Shenyang national laboratory for materials science, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*

BU-14. Anomalous magnetic ground state in PrSi evidenced by the magnetocaloric effect. *J.L. Snyman*¹ and *A.M. Strydom*¹. *Physics Department, University of Johannesburg, Johannesburg, Gauteng, South Africa*

BU-15. Neutron diffraction and magnetization studies on the effect of Cr disorder in Cr_{1-x}Te . *E.E. Rodriguez*¹, *V. Provenzano*², *O. Gourdon*³ and *R. Shull*². *1. NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Metallurgy, National Institute of Standards and Technology, Gaithersburg, MD; 3. Spallation Neutron Source, Oak Ridge National Laboratory, Oak Ridge, TN*

MONDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session BV
PERMANENT-MAGNET PROCESSING AND APPLICATIONS
(Poster Session)
Ming Yue, Chair

- BV-01. Precise Measurement of Magnetization Characteristics in High Pulsed Field.** Y. Nakahata^{1,2}, B.E. Borkowski^{1,2}, H. Shimoji^{1,2}, K. Yamada^{3,1}, T. Todaka² and M. Enokizono^{2,1}. *Regional Technological Collaboration Promotion Bureau, Oita Prefectural Organization for Industry Creation, Oita, Japan; 2. Oita University, Oita, Japan; 3. Saitama University, Saitama, Japan*
- BV-02. The study of permanent magnet vibration-to-electric generation for human vibration.** Z. Wang¹, B. Wang^{1,2}, N. Zhang¹, L. Wang¹, Q. Li¹ and W. Yan¹. *Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, Tianjin, China; 2. International Center for Materials Physics, Academia Sinic, Shenyang, Liaoning, China*
- BV-03. Characteristic analysis and comparison of axial flux machines according to magnetization pattern for 500W-class wind power generator application.** S. Jang¹, Y. Park¹, K. Ko¹ and J. Choi¹. *Electrical Engineering, Chungnam National University, Daejeon, Korea, Republic of*
- BV-04. Wide Aperture Permanent Magnet Solenoid.** B.W. Hoff¹, C.H. Chen², J.C. Horwath³, M.D. Haworth¹, P.J. Mardahl¹ and S.L. Heidger¹. *Directed Energy Directorate, Air Force Research Laboratory, Kirtland AFB, NM; 2. GE Global Research, Niskayuna, NY; 3. Propulsion Directorate, Air Force Research Laboratory, Wright-Patterson AFB, OH*
- BV-05. Improvement of the corrosion resistance of the Nd-Fe-B sintered magnets by Cu nanoparticles doping.** C. Sun¹, W. Liu¹, H. Sun¹, M. Yue¹, D. Zhang¹ and J. Zhang¹. *Beijing University of Technology, Beijing, China*
- BV-06. Effect of hydriding degree on the microstructure and magnetic properties of NdFeB magnets.** S. Guo^{1,2}, Y. Liu^{1,2}, B. Chen^{1,2}, C. Yan^{1,2}, D. Lee^{1,2} and A. Yan^{1,2,1}. *Key Laboratory of Magnetic materials and Devices, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Zhejiang province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

- BV-07. Corrosion protection of Nd-Fe-B sintered magnets by surface phosphate treatment.** L. Qiao¹, J. Zheng¹, W. Cai¹, S. Che¹ and L. Jiang¹. *College of Chemical Engineering and Materials Science, Zhejiang University of Technology, Hangzhou, China*
- BV-08. Rotor Losses Minimization Techniques using Combination of Double Different Layer Sleeve of High Speed PM Machines based on Electromagnetic Field Theory.** S. Jang¹, J. Ahn¹, K. Ko¹, S. Lee² and Y. Lee³. *Dept. of Electrical Engineering, Chungnam National University, Daejeon, Korea, Republic of; 2. Korea Institute of Industrial Technology Gwangju Research Center, Gwangju, Korea, Republic of; 3. Korea Institute of Science and Technology, Seoul, Korea, Republic of*
- BV-09. Design of Permanent Magnet Eddy Current Brakes for an Electromagnetic Launch System.** S. Zhou^{1,2}, H. Yu¹, M. Hu¹ and L. Huang¹. *Research Center for Motion Control of MOE, School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China; 2. School of Electrical Information and Automation, Qufu Normal University, Rizhao, Shandong, China*
- BV-10. Electromagnetic-thermal-mechanical coupled analysis of dual mechanical port machine for wind power application.** X. Sun¹, M. Cheng¹, S. Zhu¹ and J. Zhang¹. *School of Electrical Engineering, Southeast University, Nanjing, China*
- BV-11. Research on a Permanent Magnet Tubular Linear Generator.** H. Yu¹, B. Yuan¹, M. Hu¹, L. Huang¹ and S. Zhou¹. *Research Center for Motion Control of MOE, Southeast University, Nanjing, Jiangsu, China*
- BV-12. Magnet Eddy Current Loss Analysis of Interior Permanent Magnet Synchronous Motor for railway vehicles.** C. Park^{1,2}, H. Lee², B. Lee² and J. Lee³. *Electrical Engineering Department, Hanyang University, Seoul, Korea, Republic of; 2. Korea Railroad Research Institute, Uiwang-si, Gyeonggi-do, Korea, Republic of; 3. Division of Electrical & Biomedical Engineering, Hanyang University, Seoul, Korea, Republic of*
- BV-13. Core-loss reduction on the permanent magnet for a traction motor with concentrated winding.** C. Park¹ and H. Lee¹. *High-Speed Railroad System Research Team, Korea Railroad Research Institute, Uiwang, Korea, Republic of*
- BV-14. Field Weakening Capability Investigation of an Axial Flux PMSM with Radially Sliding Permanent Magnets Used for Electric Vehicles.** J. Zhao¹, P. Zheng², X. Liu¹ and C. Tong². *School of Automation, Beijing Institute of Technology, Beijing, China; 2. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, China*
- BV-15. Improved Analytical models for Predicting the Electromagnetic Field Distribution in Brushless Permanent-magnet Machines.** W. Yuanyuan¹, D. Zhiquan¹, W. Xiaolin¹, L. Xing¹ and M. Xiaohan¹. *Jiangsu Key Laboratory of New Energy Generation and Power Conversion, Nanjing, China*

MONDAY SAGUARO BALLROOM
AFTERNOON
1:00

Session BW
EXCHANGE BIAS AND HEUSLER ALLOYS
(Poster Session)

Chris Palmstrom, Co-Chair
Atsufumi Hirohata, Co-Chair

BW-01. Spin reorientation in Ni/NiO Core-shell Nanowires. Y. Huang¹ and C. Lai¹. *Materials Science and Engineering, National Tsing-Hua University, Hsinchu, Taiwan*

BW-02. Effect of the exchange bias angle on the magnetoimpedance response in multilayered (FeNi/IrMn)₂ films. C. Garcia^{1,2}, J.M. Florez^{2,3}, P. Vargas³ and C.A. Ross². *1. Physics, Bogazici University, Istanbul, Turkey; 2. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 3. Dpto de Fisica, Universidad Técnica Federico Santa María, Valparaíso, Chile*

BW-03. Underlayer controlled exchange bias in room-temperature deposited Ta/FeMn/NiFe thin films. F. Yuan¹, J. Hsu¹, P. Sharma³, C. Tsai² and Y. Lin². *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Institute of Materials Sciences and Engineering, National Taiwan University, Taipei, Taiwan; 3. School of Physics and materials Science, Thapar University, Patiala, India*

BW-04. Exchange bias in sputtered FM/BiFeO₃ (FM: Fe, Co, and NiFe) thin films. H.W. Chang¹, F.T. Yuan², C.W. Shih³, W.L. Li¹, C.R. Wang¹, W.C. Chang³ and S.U. Jen⁴. *1. Department of Physics, Tunghai University, Taichung, Taiwan; 2. Department of Physics, National Taiwan University, Taipei, Taiwan; 3. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 4. Institute of Physics, Academia Sinica, Taipei, Taiwan*

BW-05. Current-induced switching of exchange bias in nano-scaled magnetic tunnel junctions with SAF pinned layer. C. Chao¹, C. Kuo¹, L. Horng¹, M. Tsunoda², M. Takahashi² and J. Wu¹. *1. Physics, National Changhua University of Education, Changhua, Taiwan; 2. Department of Electronic Engineering, Tohoku University, Sendai, Japan*

BW-06. Antiferromagnetic exchange coupling in Fe₃O₄ / Fe (001) epitaxial films grown by a conventional sputtering technique. K. Miura¹, H. Yanagihara¹, M. Myoka¹ and E. Kita¹. *Inst. Appl. Phys., U. Tsukuba, Tsukuba, Japan*

BW-07. Spin transport in lateral spin-valve devices with single-crystalline Heusler compounds. N. Hashimoto¹, S. Oki¹, S. Yamada¹, Y. Maeda¹, T. Kimura^{2,3}, M. Miyao^{1,3} and K. Hamaya^{1,4}. *1. Department of Electronics, Kyushu University, Fukuoka, Japan; 2. INAMORI Frontier Research Center, Kyushu University, Fukuoka, Japan; 3. CREST, Japan Science and Technology Agency, Tokyo, Japan; 4. PRESTO, Japan Science and Technology Agency, Tokyo, Japan*

BW-08. Synthesis of half metallic nanowires in anodized alumina membrane by annealing. S. Min¹, J. Lim², L. Malkinski¹ and J.B. Wiley². *1. Advanced Materials Research Institute (AMRI), The University of New Orleans, New Orleans, LA; 2. Department of Chemistry, University of New Orleans, New Orleans, LA*

BW-09. Nucleation of magnetic nano domains in CMR-manganites. T. Koyama¹, Y. Togawa^{2,3}, K. Takayanagi², M. Kobayashi¹, K. Harada¹ and S. Mori^{1,3}. *1. Department of Materials Science, Osaka Prefecture University, Sakai, Osaka, Japan; 2. Nanoscience and Nanotechnology Research Center, Osaka Prefecture University, Sakai, Osaka, Japan; 3. CREST, Japan Science and Technology Corporation (JST), Tokyo, Osaka, Japan*

BW-10. Spin polarization ratio and exchange bias properties of (111) Fe₄N thin films. X. Li¹, M.S. Osofsky², K.L. Jensen² and J. Wang¹. *1. The Center for Micromagnetics and Information Technologies, Department of Electrical and computer engineering, University of Minnesota, Minneapolis, MN; 2. Naval Research Laboratory, Washington, DC*

BW-11. High Temperature Magnetic Behavior of Heusler Alloy Thin Films and Nanowires (Co₂XAl, X = Fe or Mn). K.R. Sapkota^{2,1}, P. Gyawali¹, I.L. Pegg^{2,1} and J. Philip^{2,1}. *1. Vitreous State Laboratory, Catholic University of America, Washington, DC; 2. Physics Department, Catholic University Of America, Washington, DC*

BW-12. Spin dependent transport at Fe₃O₄/graphene interface. Z. Liao^{1,2}, H. Wu¹ and I. Shvets¹. *1. Physics, Trinity College Dublin, Dublin, Ireland; 2. State Key Laboratory for Mesoscopic Physics, Department of Physics, Peking University, Beijing, Beijing, China*

BW-13. Study of Powder Magnetoresistance in Magnetite. R.J. Sáenz¹, C.R. Santillán¹ and J.A. Matutes¹. *1. Integración y diseño de Materiales Compuestos, Centro de Investigación en Materiales Avanzados, S.C., Chihuahua, Chihuahua, Mexico*

BW-14. Band structure calculations of Co₂FeGa_{1-x}Gex Heusler alloys. V. Sankar¹, O. Mryasov², A. Srinivasan³, S. Faleev², Y. Takahashi⁴ and K. Hono⁴. *1. University of Notre Dame, Midwest Institute for Nanoelectronics (MIND), South Bend, IN; 2. Materials for Information Center, University of Alabama, Tuscaloosa, AL; 3. Department of Physics, Indian Institute of Technology, Guwahati, Assam, India; 4. Magnetic Materials Center (MMC), National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan*

BW-15. Co₂MnZ (Z = Al, Ga) compounds: Structural, electronic, and magnetic properties. R.R. Mebsout¹. *Physics Departement, Modelling and Simulation in Materials Science Laboratory (LMSSM), Sidi Bel Abbes, Algeria*

TUESDAY
MORNING
8:30

GRAND CANYON 6

**Session CA
SYMPOSIUM ON ROOM TEMPERATURE
SEMICONDUCTOR SPINTRONICS**

Berry Jonker, Chair

8:30

CA-01. Graphene spintronics. (Invited) N. Tombros¹. *Physics of Nanodevices, Zernike Institute for Advanced Materials, Groningen, Netherlands*

9:06

CA-02. Single spin readout and control of nanopositioned defects in diamond. (Invited) J. Wrachtrup^{1,2}. *University of Stuttgart, Stuttgart, Germany; 2. 3rd Institute of Physics, Stuttgart University, Stuttgart, Germany*

9:42

CA-03. Electrical injection and detection of spin accumulation in Si at 500 K with magnetic metal/SiO₂ contacts. (Invited) C.H. Li¹. *Code 6361, Naval Research Laboratory, Washington, DC*

10:18

CA-04. Spin injection, detection and modulation in (Mn)Ge. (Invited) K. Wang¹, F. Xiu¹ and Y. Zhou¹. *Electrical Engineering, UCLA, Los Angeles, CA*

10:54

CA-05. Electric field control of Spin waves in BiFeO₃: towards magnonic analog and digital logic devices. (Invited) P. Rovillain¹, R. de Sousa², Y. Gallais¹, A. Sacuto¹, D. Colson³, A. Forget³, M. Bibes⁴, A. Barthélemy⁴ and M. Cazayous¹. *Laboratoire Matériaux et Phénomènes Quantiques Université Paris 7, Paris, France; 2. Department of Physics and Astronomy, University of Victoria, Victoria, BC, Canada; 3. Service de Physique de l'Etat Condensé, CEA Saclay, IRAMIS, SPEC (CNRS URA 2464), Gif sur Yvette, France; 4. Unité Mixte de Physique CNRS/Thales, Palaiseau, France*

TUESDAY
MORNING
8:30

GRAND CANYON 7

**Session CB
AMORPHOUS ALLOYS II**

Sybille Flohrer, Chair

8:30

CB-01. Changes in Structural and Magnetic Properties on Crystallization of Fe-rich FeSiBPCu Nano hetero-amorphous Alloys. A. Makino¹, M. Yokoyama¹, S. Kim¹ and P. Sharma¹. *Institute for Materials Research, IMR, Sendai, Miyagi, Japan*

8:42

CB-02. Domain structure and magnetization loss in a toroidal core based on an Fe-based amorphous alloy. D. Azuma^{1,2}, R. Hasegawa², S. Saito³ and M. Takahashi⁴. *Hitachi Metals, Ltd., Yasugi-shi, Shimane-ken, Japan; 2. R&D, Metglas, Inc, Conway, SC; 3. Electric engineering, Graduated school of engineering, Tohoku University, Sendai, Miyagi, Japan; 4. New industry creation hatchery center, Graduated school of engineering, Tohoku University, Sendai, Miyagi, Japan*

8:54

CB-03. Effect of P to B concentration ratio on soft magnetic properties in FeSiBPCu alloys. F. Kong¹, H. Men¹ and B. Shen¹. *Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

9:06

CB-04. Microstructure and Magnetic Anisotropy in Amorphous and Nanocrystalline Materials. (Invited) M. Ohnuma¹. *National Institute for Materials Science, Tsukuba, Japan*

9:42

CB-05. Secondary Crystallization in (Fe₆₅Co₃₅)_{79.5+x}B₁₃Nb_{4-x}Si₂Cu_{1.5} and (Fe₆₅Co₃₅)₈₃B₁₀Nb₄Si₂Cu₁ Nanocomposite Alloys. S.J. Kernion¹, V. Keylin², J. Huth² and M.E. McHenry¹. *Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Magnetics Technology Center, Division of Spang & Company, Pittsburgh, PA*

9:54

CB-06. In-situ Investigation of Phase Formation in Nanocrystalline (Co_{97.5}Fe_{2.5})₈₉Zr₇B₄ Alloy by High Temperature XRD. S.J. Kernion¹, P.R. Ohodnicki Jr.² and M.E. McHenry¹. *Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Chemistry and Surface Science Division, National Energy Technology Laboratory, Pittsburgh, PA*

10:06

- CB-07. High temperature properties of (Fe₈₁Co₁₉)₈₄Ta₉B₇ alloy for high frequency applications.** Z. Turgut^{1,2}, E. Michel^{1,3}, J.C. Horwath¹, L. Semiatin¹ and M.S. Lucas^{1,4}. *Air Force Research Laboratory, Wright Patterson Air Force Base, OH; 2. UES Inc., Dayton, OH; 3. Wright State University, Dayton, OH; 4. UTC Inc., Dayton, OH*

10:18

- CB-08. Soft magnetic properties of bulk FeCoMoPCBSi glassy core prepared by copper mold casting.** M. Zhang¹, F. Kong¹, C. Chang¹ and B. Shen¹. *Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology & Engineering, Chinese Academy of Sciences, Ningbo 315201, China*

10:30

- CB-09. Influence of Nb Content on Nanocrystallization and High Temperature Magnetic Properties of FeCo Based High Induction Alloys.** R.K. Roy¹, S.J. Kernion², S. Shen² and M.E. McHenry². *1. Material Science and Technology Division, National Metallurgical Laboratory, Jamshedpur, Jharkhand, India; 2. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

10:42

- CB-10. Microstructure and magnetic properties of nanostructured FeCo alloys prepared by severe plastic deformation.** N. Poudyal¹, C. Rong¹, Y. Zhang², D. Wang¹, M.J. Kramer² and J. Liu¹. *1. Physics, University of Texas at Arlington, Arlington, TX; 2. Materials Science and Engineering, Ames Laboratory, Iowa State University, Ames, IA*

10:54

- CB-11. Nanoheteromicrostructure and soft magnetic properties of Co and Ni substituted FeSiBCuP nanocrystalline alloys.** N. Lupu^{1,2}, S. Corodeanu¹, Y. Zhang², A. Makino² and H. Chiriac¹. *1. Magnetic Materials and Devices, National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. Institute for Materials Research, Tohoku University, Sendai, Japan*

11:06

- CB-12. Vector magnetic properties of Fe-based amorphous sheets under alternating flux condition.** S. Ueno¹, T. Todaka¹ and M. Enokizono¹. *1. Faculty of Engineering, Oita University, Oita, Japan*

11:18

- CB-13. Analysis of heating effects (magnetic hyperthermia) in FeCrSiBCuNb nanocrystalline wires.** C. Gomez-Polo¹, S. Larumbe¹, J. Pérez-Landazábal¹ and J. Pastor¹. *1. Universidad Publica de Navarra, Pamplona, Spain*

TUESDAY
MORNING
8:30

GRAND CANYON 8

**Session CC
MAGNETIC TUNNEL JUNCTION I: MgO,
OTHER**

Dimitri Houssammedine, Chair

8:30

- CC-01. Elucidation of transport behavior in bcc-FeCo/MgO(001)/FeCo magnetic tunnel junction by spin-resolved photoemission. (Invited)** S. Andrieu¹, F. Bonell¹, T. Hauet¹, F. Montaigne¹, F. Bertran², P. Lefevre², A. Taleb² and L. Calmels³. *1. Nancy University / CNRS, Insitut Jean Lamour, Vandoeuvre, France; 2. CASSIOPEE, SOLEIL synchrotron, Saclay, France; 3. CEMES, Toulouse, France*

9:06

- CC-02. Enhancement of perpendicular magnetic anisotropy in FeB free layers using a thin MgO cap layer.** H. Kubota¹, S. Ishibashi², T. Saruya¹, T. Nozaki¹, A. Fukushima¹, K. Yakushiji¹, K. Ando¹, Y. Suzuki^{2,1} and S. Yuasa¹. *1. National Institute of Advance Industrial Science and Technology (AIST), Tsukuba, Japan; 2. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan*

9:18

- CC-03. Co-tunneling, Kondo Effect and Impurity-Caused Spin-Flips in CoPt Discontinuous Magnetic Tunnel Junctions.** D. Ciudad^{1,2}, Z.C. Wen³, A.T. Hindmarch¹, E. Negusse⁴, D.A. Arena⁴, X.F. Han³ and C.H. Marrows¹. *1. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 2. Francis Bitter Magnet Lab, Massachusetts Institute of Technology (MIT), Cambridge, MA; 3. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Science, Beijing, China; 4. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY*

9:30

- CC-04. Spin Related Quantum Well Effect in Fully Epitaxial Cr/ultrathin-Fe/MgO/Fe Magnetic Tunnel Junctions.** P. Sheng¹, T. Nozaki¹ and Y. Suzuki¹. *1. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan*

9:42

- CC-05. Ab-initio justification of correlation between perpendicular magnetic anisotropy and Bloch states spin filtering in MgO-based tunnel junctions.** H. Yang¹, M. Chshiev¹ and B. Dieny¹. *1. SPINTEC, UMR CEA/CNRS/UJF-Grenoble 1/Grenoble-INP, INAC, 38054, Grenoble, France*

9:54

CC-06. Tunnel Magnetoresistance in Magnetic Tunnel Junctions with Low Energy $Mg_{1-x}Zn_xO$ Barriers. *Y. Kurosaki¹, M. Yamada¹, D. Sato¹, A. Nishide¹, H. Yamamoto¹ and J. Hayakawa¹. Central Research Laboratory, Hitachi Ltd., Tokyo, Japan*

10:06

CC-07. Effect of crystalline structures on perpendicular anisotropy of CoFeB in MgO based magnetic tunnel junction. *T. Ochiai¹, Y. Lee¹, C. Yoshida¹, K. Tsunoda¹, M. Aoki¹ and T. Sugii¹. Ultra-Low Voltage Device Project, Low-power Electronics Association & Project(LEAP), Tsukuba-shi, Ibaraki-ken, Japan*

10:18

CC-08. Composition dependence of tunnel magnetoresistance effect using high-perpendicular magnetic anisotropy Mn-Ga ordered alloys. *T. Kubota¹, M. Araidai¹, S. Mizukami¹, X. Zhang¹, H. Naganuma², M. Oogane², Y. Ando², M. Tsukada¹ and T. Miyazaki¹. WPI Advanced Institute for Materials Research, Tohoku university, Sendai, Miyagi, Japan; 2. Graduate School of Engineering, Tohoku University, Sendai, Japan*

10:30

CC-09. Finite tunnel magnetoresistance at the compensation point of $Sm_{1-x}Gd_xAl_2$, A ferromagnetic electrode with zero magnetization. *K. Dumesnil¹, M. Da Silva¹, C. Dufour¹, M. Hehn¹, D. Pierre¹, D. Lacour¹, F. Montaigne¹, G. Lengaigne¹ and S. Robert¹. Institut Jean Lamour, Vandoeuvre les Nancy, France*

10:42

CC-10. Room-temperature magnetoresistance in CoFeB/polycrystalline SrTiO₃/CoFeB magnetic tunnel junctions deposited by ion beam sputtering. *E. Hassen¹, B. Viala¹, M. Cyrille¹, M. Cartier¹, O. Redon¹ and P. Lima². CEA-Léti, Minatec Campus, 17 rue des Martyrs, 38054 Grenoble, France; 2. SPTS, Process Technology Systems, Newport, NP18 2TA, United Kingdom*

10:54

CC-11. Interfacial oxidation effects on the inverse tunneling magnetoresistance and abnormal bias dependence of Fe₄N/Fe₃O₄/AlO_x/Fe junctions. *H. Xiang¹, F. Shi¹, M.S. Rzechowski², P.M. Voyles¹ and Y. Chang¹. Materials Science, University of Wisconsin Madison, Madison, WI; 2. Department of Physics, University of Wisconsin Madison, Madison, WI*

11:06

CC-12. Shot noise studies of individual and series arrays of magnetic tunnel junctions. *R. Stearrett¹, A. Gokce¹, X. Kou¹, J.Q. Xiao¹, E.R. Nowak¹ and C. Nordman². Physics and Astronomy, University of Delaware, Newark, DE; 2. Nonvolatile Electronics, Eden Prairie, MN*

11:18

CC-13. Spin filter functionality in magnetic oxides on silicon: Electronic structure and spin transport. *M. Müller¹, C. Caspers¹, H. Doganay¹, A.X. Gray², A.M. Kaiser^{1,2}, M. Luysberg¹, A. Gloskovskii³, W. Drube⁴, C.S. Fadley² and C.M. Schneider¹. 1. Peter Grünberg Institute, Research Center Jülich, Jülich, Germany; 2. Department of Physics, University of California Davis, Davis, CA; 3. Analytic and Anorganic Chemistry, Johannes Gutenberg University, Mainz, Germany; 4. DESY Photon Science, DESY, Hamburg, Germany*

TUESDAY
MORNING
8:30

GRAND CANYON 9-11

Session CD
SPIN WAVES I
Steve Russek, Chair

8:30

CD-01. Breaking the diffraction limit dynamically: Optical observation of single nanomagnet dynamics in dense arrays. *(Invited) Z. Liu¹, R. Brandt¹, Y. Yahagi¹, B. Hansen², B.D. Harteneck³, J. Bokor³, A.R. Hawkins² and H. Schmidt¹. School of Engineering, UC Santa Cruz, Santa Cruz, CA; 2. ECEn, Brigham Young University, Provo, UT; 3. Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA*

9:06

CD-02. Vortex dynamics and core reversal by spin waves in metallic double point contact nanopillars. *G. Hrkac¹, L. Saharan¹, J. Kim³, T. Devolder³, C. Chappert³, M. Manfrini² and T. Schrefl¹. Department of Engineering Materials, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; 2. IMEC, Leuven, Belgium; 3. University of Applied Science, St Poelten, Austria; 4. Institut d'Electronique Fondamentale, Université Paris-Sud, Paris, France*

9:18

CD-03. Vortex mode dispersion relations in a 2-D array of interacting disks. *F. Montoncello¹ and L. Giovannini¹. Department of Physics-CNISM, University of Ferrara, Ferrara, Italy*

9:30

CD-04. Topological and uniform applied field induced magnonic band gaps in zigzag shaped magnonic waveguides. *M. Dvornik¹ and V.V. Kruglyak¹. School of Physics, University of Exeter, Exeter, Devon, United Kingdom*

9:42

- CD-05. Hot Spin-Wave Resonators and Scatterers.** *C.L. Ordóñez-Romero*¹, *O. Kolokoltsev*² and *N. Qureshi*². *1. Solid State Department, IFUNAM, Mexico City, Distrito Federal, Mexico; 2. Centro de Ciencias Aplicadas y Desarrollo Tecnológico, Universidad Nacional Autónoma de México, México City, Distrito Federal, México*

9:54

- CD-06. Increasing efficiency of microwave to propagating spin wave conversion at nanoscale.** *E. Ahmad*¹, *Y. Au*¹, *O. Dmytriiev*¹, *T. Davison*¹ and *V.V. Kruglyak*¹. *School of Physics, University of Exeter, Exeter, United Kingdom*

10:06

- CD-07. Static and dynamic properties of cobalt nanocylinders.** *Y. Roussigne*¹, *S. Cherif*¹, *K. Bouziane*², *A. Stashkevich*¹, *M. Vasquez Villalabeitia*³, *M. Britel*⁴ and *M. Cherkaoui*⁵. *1. LSPM (CNRS-UPR 3407), Université Paris 13, 99 avenue Jean-Baptiste Clément, 93430, Villetaneuse, France; 2. UIR, Technopolis Rabat-Shore, Rocade Rabat-Salé, 11100 Sala el Jadida, Rabat, Morocco; 3. ICMM, CSIC, Campus de Cantoblanco, 28049, Madrid, Spain; 4. LTI-National School of Applied Sciences, Tangier, Morocco; 5. Georgia Institute of Technology, 225 North Avenue NW, GA 30332, Atlanta, GA*

10:18

- CD-08. Frequency tuning of ultrafast magnetization oscillations by varying the iron content of FePt alloys.** *R. Brandt*¹, *F. Ganss*², *T. Senn*³, *M. Albrecht*² and *H. Schmidt*¹. *1. School of Engineering, UC Santa Cruz, Santa Cruz, CA; 2. Institute of Physics, Chemnitz University of Technology, Chemnitz, Germany; 3. Institute of Nanometer Optics and Technology, Helmholtz Center Berlin for Materials and Energy, Berlin, Germany*

10:30

- CD-09. Photo-Magnonics in Spin-Wave Meta Materials.** *B. Lenk*¹, *F. Garbs*¹, *J. Panke*¹, *H. Ulrichs*² and *M. Mü nzenberg*¹. *1. Institute of Physics, Georg-August-University of Göttingen, Göttingen, Germany; 2. Institute for Applied Physics, University of Münster, Münster, Gabon*

10:42

- CD-10. Spatial Coherence and Vortices in Magnon Bose-Einstein Condensate.** *P. Nowik-Boltyk*¹, *O. Dzyapko*¹, *V.E. Demidov*¹, *S.O. Demokritov*¹ and *N.G. Berloff*². *1. Institute for Applied Physics, University of Muenster, Muenster, Germany; 2. Department of Applied Mathematics and Theoretical Physics, University of Cambridge, Cambridge, United Kingdom*

10:54

- CD-11. Observation of spin wave cooling effect.** *(Invited) T. An*^{1,2}, *K. Uchida*^{1,2}, *K. Harii*^{1,2}, *Y. Kajiwara*^{1,2}, *K. Yamaguchi*^{1,2} and *E. Saitoh*^{1,2}. *1. The Institute for Materials Research, Tohoku University, Sendai, Japan; 2. CREST, Japan Science and Technology Agency, Tokyo, Japan*

TUESDAY
MORNING
8:30

GRAND CANYON 2-3

Session CE

NANOPARTICLE CHARACTERIZATION I

Andrew Pratt, Chair

8:30

- CE-01. Room-temperature tunnel magnetoresistance in self-assembled chemically-prepared nanoparticles superlattices.** *J. Dugay*¹, *R. Tan*¹, *A. Meffre*¹, *T. Blon*¹, *L. Lacroix*¹, *J. Carrey*¹, *P.F. Fazzini*¹, *S. Lachaize*¹, *B. Chaudret*¹ and *M. Respaud*¹. *LPCNO, Toulouse, France*

8:42

- CE-02. Effective Energy Barrier Distribution for Mixed Oxide Magnetic Nanoparticles: Isolated Particles and Periodic 3-dimensional Arrays.** *M. Okuda*¹, *J. Eloi*¹, *A. Sarua*¹ and *W. Schwarzacher*¹. *H H Wills Physics Lab, University of Bristol, Bristol, United Kingdom*

8:54

- CE-03. Mossbauer and X-ray Spectromicroscopy Studies of Hematite (α -Fe₂O₃) Nanocubes.** *J. Jalli*¹, *Y. Hong*¹, *C. Kim*², *C. Kim*², *J. Park*¹, *J. Lee*¹, *G.S. Abo*¹, *A. Romero-Herreros*³ and *A.F. Rodriguez*³. *1. Department of Electrical and Computer Engineering and MINT Center, The University of Alabama, Tuscaloosa, AL; 2. Department of Nano and Electronic Physics, Kookmin University, Seoul, Korea, Republic of; 3. Departament de Física Fonamental and Institut de Nanociència i, Universitat de Barcelona, Barcelona, Spain*

9:06

- CE-04. Optical and Electrical Investigation of Bismuth Telluride Nanoplates.** *M. Eginligil*¹, *W. Zhang*², *V. Truong*¹, *A. Kalitsov*¹, *X. Lu*² and *H. Yang*¹. *1. Department of Electrical and Computer Engineering, NUSNNI-Nanocore, National University of Singapore, Singapore, Singapore; 2. Department of Chemical and Biomolecular Engineering, National University of Singapore, Singapore, Singapore*

9:18

- CE-05. Evidence for Highly Suppressed Magnetostructural Transition Temperature in Nanostructured FeRh.** *R. Barua*¹, F. Jimenez-Villacorta¹, H. Jiang³, J.E. Shield³, D. Heiman² and L.H. Lewis¹. *Department of Chemical Engineering, Northeastern University, Boston, MA; 2. Department of Physics, Northeastern University, Boston, MA; 3. Department of Mechanical Engineering, University of Nebraska, Lincoln, NE*

9:30

- CE-06. Magnetic anisotropy in Nanomagnets.** *F. Moro*¹, J. van Slageren², J. McMaster¹, R. de Miguel³, C.G. Moreno³, A. Lostao³, F. Luis³, S. Tang¹, E. Lester¹, T. Stamatatos⁴, A. Tasiopoulos⁵, G. Christou⁶, Y. Krupskaya⁷, V. Kataev⁷, D. Sells⁸, F. Tuna⁸, E. McInnes⁸, D.P. Mills¹, W. Lewis¹, A.J. Blake¹, S.T. Liddle¹, M.G. Lopez¹, A. La Torre¹, C.G. Garcia⁹ and A.N. Khlobystov¹. *1. University of Nottingham, Nottingham, United Kingdom; 2. University of Stuttgart, Stuttgart, Germany; 3. University of Zaragoza, Zaragoza, Spain; 4. University of Patras, Patras, Greece; 5. University of Cyprus, Nicosia, Greece; 6. University of Florida, Gainesville, FL; 7. IFW, Dresden, Germany; 8. University of Manchester, Manchester, United Kingdom; 9. University of Valencia, Valencia, Spain*

9:42

- CE-07. Manipulation of magnetic domain walls in nanowires and nanoparticles. (Invited)** *E.Y. Vedmedenko*¹. *IAP, University of Hamburg, Hamburg, Germany*

10:18

- CE-08. Nano-particle Magnetism with a Dispersion of Particle Sizes.** *M. El-Hilo*¹ and R.W. Chantrell². *1. Physics, University of Bahrain, Sakhir, Bahrain; 2. Physics, University of York, York, United Kingdom*

10:30

- CE-09. Size and surface effects on the magnetic properties of NiO nanoparticles.** *M.P. Proenca*^{1,2}, C.T. Sousa¹, A.M. Pereira¹, P.B. Tavares³, J. Ventura¹, M. Vazquez² and J.P. Araujo¹. *1. Dep. Física e Astronomia, IFIMUP and IN - Institute of Nanoscience and Nanotechnology, Porto, Portugal; 2. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain; 3. Dep. Química, CQ-VR, Univ. Trás-os-Montes e Alto Douro, Vila Real, Portugal*

10:42

- CE-10. Superferromagnetism: magnetic order from structural disorder.** *Y.G. Pogorelov*¹, G.N. Kakazei^{1,2}, N.I. Nurgazizov³ and H.G. Silva⁴. *1. IFIMUP/IN, Physics Department, University of Porto, Porto, Portugal; 2. Institute of Magnetism, National Academy of Sciences of Ukraine, Kiev, Kiev, Ukraine; 3. Physics and Surface Chemistry Laboratory, Kazan Physico-Technical Institute, Kazan, Kazan, Russian Federation; 4. Centro de Geofísica, University of Évora, Évora, Alentejo, Portugal*

TUESDAY
MORNING
8:30

GRAND CANYON 4-5

Session CF
HEAT ASSISTED MEDIA AND RECORDING
Christopher Morrison, Chair

8:30

- CF-01. FePt graded media obtained by ion irradiation.** *F. Albertini*¹, A. di Bona², P. Luches², S. D'Addato^{2,3}, G. Gazzadi², F. Casoli¹, P. Lupo¹ and S. Valeri^{2,3}. *1. IMEM-CNR, Parma, Italy; 2. CNR - Istituto di Nanoscienze, Centro di ricerca S3, Modena, Italy; 3. Dipartimento di Fisica, Università di Modena e Reggio Emilia, Modena, Italy*

8:42

- CF-02. Columnar grain growth of L10-FePt thin films.** *E. Yang*^{1,2}, H. Ho^{2,3}, D.E. Laughlin^{2,3} 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 and Engineering, Carnegie Mellon University, Pittsburgh, PA*

8:54

- CF-03. Investigation of lattice dynamics and nanoscale thermal transport in FePt/Ag heat assisted magnetic recording (HAMR) media films using psec time-resolved x-ray diffraction.** *D. Xu*^{1,2}, C. Sun¹, D.L. Brew¹, S. Han³, J. Chen², S.M. Heald¹ and G. Chow². *1. Advanced Photon Source, Argonne Nat'l Lab, Argonne, IL; 2. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 3. Department of Physics Education, Chonbuk National University, Jeonju, Korea, Republic of*

9:06

- CF-04. Fine control of nanogranular microstructure of FePtAg-C films for perpendicular magnetic recording.** *P. Alagarsamy*^{1,2}, Y.K. Takahashi¹ and K. Hono¹. *1. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Ibaraki, Japan; 2. Department of Physics, Indian Institute of Technology Guwahati, Guwahati, Assam, India*

9:18

- CF-05. High density temperature assisted recording on granular FePtAgC media.** *O. Mosendz*¹, S. Pisana¹, J. Reiner¹, B. Stype¹ and D. Weller¹. *1. Hitachi San Jose Research Center, San Jose, CA*

9:30

- CF-06. The Impact of Deposition Temperature on the A1 to L1₀ Transformation in FePt Films.** *B. Wang*¹ and K. Barmak¹. *1. Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

9:42

CF-07. The Ultimate Limit of Magnetic Recording. (Invited)

*H. Richter*¹, *A. Lyberatos*², *U. Nowak*³, *R.F. Evans*⁴ and *R.W. Chantrell*⁴. *1. Research, HitachiGST, San Jose, CA; 2. Materials Science, University of Crete, Heraklion, Greece; 3. Physics, University Konstanz, Konstanz, Germany; 4. Physics, University of York, York, United Kingdom*

10:18

CF-08. Inversion of the induced anisotropy gradient in FePtCu films.

*R.K. Dumas*¹, *B.J. Kirby*², *Y. Fang*³, *C. Zha*³, *V. Bonanni*³, *J. Nogué*^{s3,4} and *J. Åkerman*^{1,3}. *1. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 2. Center for Neutron Research, NIST, Gaithersburg, MD; 3. Materials Physics, Royal Institute of Technology (KTH), Stockholm-Kista, Sweden; 4. ICREA and CIN2(ICN-CSIC), Universitat Autònoma de Barcelona, Bellaterra (Barcelona), Spain*

10:30

CF-09. Design of recording system for heat assisted magnetic recording. *V. Lomakin*¹, *Q. Ding*¹, *M.A. Escobar*¹, *M.V. Lubarda*¹, *Y. Fainman*¹, *E.E. Fullerton*¹, *S. Li*¹ and *R. Chang*¹. *1. Center for Magnetic Recording Research, Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA*

10:42

CF-10. New Computational Approach for Heat Assisted Magnetic Recording. *P. Huang*¹ and *R.H. Victora*¹. *1. Electrical and Computer Engineering Department, University of Minnesota, Minneapolis, MN*

10:54

CF-11. Application of the Grain Flipping Probability (GFP) model to Heat Assisted Magnetic Recording simulations. *S. Shafiee*¹, *K. Chan*¹, *M. Elidrissi*¹, *K. Eason*¹, *R. Radhakrishnan*¹ and *Y. Guan*². *1. Data Storage Institute, A*STAR, Singapore, Singapore; 2. Nanyang Technological University, Singapore, Singapore*

11:06

CF-12. Application of Landau-Lifshitz-Bloch dynamics to grain switching in HAMR. *T. McDaniel*¹. *1. Model_Physics, Volcano, CA*

11:18

CF-13. Critical peak temperature and minimum reversal field in heat assisted magnetic recording (HAMR). *S. Mukherjee*¹. *1. Carnegie Mellon University, Pittsburgh, PA*

TUESDAY
MORNING
8:30

GRAND CANYON 12-13

Session CG
MAGNETOCALORIC PROPERTIES I

Ivan Skorvanek, Chair

8:30

CG-01. From first-order magneto-elastic to magneto-structural transition in (Mn,Fe)_{1.95}P_{0.50}Si_{0.50} compounds. *H. Nguyen*¹, *L. Zhang*¹, *Z. Ou*¹ and *E. Brück*¹. *1. Fundamental Aspects of Materials and Energy, Faculty of Applied Sciences, Delft University of Technology, Delft, Netherlands*

8:42

CG-02. Self-Similarity in (dM/dT)_H Curves for Magnetocaloric Materials with Ferro-to-Paramagnetic Phase Transitions. *Y. Jin*¹, *S. Gu*¹, *L.H. Bennett*¹, *E. Della Torre*¹, *V. Provenzano*² and *Q. Zhao*¹. *1. Electrical and Computer Engineering, George Washington University, District of Columbia, DC; 2. National Institute of Standards and Technology, Gaithersburg, MD*

8:54

CG-03. Gd₅Ge₂(Si,Sn)₂: giant isothermal variation of the entropy and small adiabatic variation of the temperature. *A.M. Carvalho*¹, *M.E. Soffner*², *A.M. Mansanares*², *A.A. Coelho*², *J.G. Tedesco*², *M.M. Pires*², *S. Gama*³ and *A.O. Guimaraes*⁴. *1. Materials Metrology, INMETRO, Duque de Caxias, Brazil; 2. Applied Physics, UNICAMP, Campinas, SP, Brazil; 3. UNIFESP, Diadema, SP, Brazil; 4. UENF, Campos dos Goytacazes, RJ, Brazil*

9:06

CG-04. Magnetocaloric materials with first-order transition: a comprehensive study of thermal and magnetic hystereses. (Invited) *K.P. Skokov*¹, *J.D. Moore*¹, *J. Liu*¹, *V.V. Khovaylo*¹, *K.H. Müller*¹ and *O. Gutfleisch*¹. *1. Institute for Metallic Materials, Leibniz Institute for Solid State and Materials Research, Dresden, Germany*

9:42

CG-05. Table-like magnetocaloric effect and enhanced refrigerant capacity in clathrate-based composite materials. *A. Chaturvedi*¹, *S. Stefanoski*¹, *M.H. Phan*¹, *G.S. Nolas*¹ and *H. Srikanth*¹. *1. Department of Physics, University of South Florida, Tampa, FL*

9:54

- CG-06. Enhancement of the magnetocaloric effect in composites: Experimental validation.** S.C. Paticopoulos¹, R. Caballero-Flores¹, V. Franco¹, J.S. Blázquez¹, A. Conde¹, K.E. Knippling² and M.A. Willard². *1. Condensed Matter Physics, Sevilla University, Sevilla, Spain; 2. Multifunctional Materials Branch, U.S. Naval Research Laboratory, Washington, DC*

10:06

- CG-07. Magnetocaloric effect in thin film La(0.56)Sr(0.44)MnO₃ alloy and superlattice structures.** D.D. Belyea¹, T.S. Santos² and C.W. Miller¹. *1. Physics, University of South Florida, Tampa, FL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

10:18

- CG-08. Magnetic properties of Y_{0.9}Gd_{0.1}Fe₂D_{4.2} compound under continuous magnetic field up to 31 tesla.** V. Paul Boncour¹, M. Guillo² and T. Mazet³. *1. CNRS- Paris XII University, Thiais, France; 2. CNRS- Joseph Fourier Univ University, Grenoble, France; 3. Nancy University, Nancy, France*

10:30

- CG-09. Direct calorimetric measurements of isothermal entropy change on single crystal W-type BaCo_xZn_{2-x}Fe₁₆O₂₇ hexaferrites at the spin reorientation transition.** M. LoBue¹, F. Mazaleyra¹, V. Loyau¹, A. Pasko¹, V. Basso², C.P. Sasso² and M. Küpferling². *1. SATIE, ENS de Cachan, CNRS, Cachan, France; 2. INRiM, Torino, Italy*

10:42

- CG-10. Magnetocaloric Effect of NiFeCoCrPdx High Entropy Alloys.** D.D. Belyea¹, C.A. Bauer¹, M. Lucas², E. Michel^{2,3}, J. Horwath^{2,4} and C.W. Miller¹. *1. Physics, University of South Florida, Tampa, FL; 2. Air Force Research Laboratory, Wright-Patterson AFB, OH; 3. UTC Inc., Dayton, OH; 4. Wright State University, Dayton, OH*

10:54

- CG-11. Influence of Ni and Mn Additions on Magnetocaloric Response in γ -(Fe_{70-x}Ni_{30+x})_{89-y}Mn_yZr₂B₄ alloys.** J.J. Ipus¹ and M.M. McHenry¹. *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

11:06

- CG-12. Spin and Lattice Contributions to the Isothermal Entropy Change.** T. Mukherjee¹, R. Skomski¹, S. Michalski¹, D.J. Sellmyer¹ and C. Binck¹. *1. Physics and Astronomy, University of Nebraska, Lincoln, Lincoln, NE*

11:18

- CG-13. Energy conversion efficiency analysis using thermomagnetic properties of ferromagnetic materials.** C. Hsu¹, S.M. Sandoval¹, K.P. Wetzlar¹ and G.P. Carman¹. *1. Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA*

TUESDAY
MORNING
8:30

GRAND CANYON 1

Session CH SENSORS I

Ranko Heindl, Chair

8:30

- CH-01. Enabling highly accurate magnetoelastic resonance sensors by substantially reducing the influence of external magnetic fields by an anti-symmetric bias-field.** B. Bergmair^{1,2}, T. Huber^{1,2}, F. Bruckner², C. Vogler² and D. Suess². *1. Institute of Analysis and Scientific Computing, Vienna University of Technology, Vienna, Austria; 2. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria*

8:42

- CH-02. Reducing the effect of 1/f noise in MgO magnetic tunnel junctions.** H. Duan¹, A. Gupta¹, H. Tseng², Y. Li² and R.B. van Dover¹. *1. Materials Science and Engineering, Cornell University, Ithaca, NY; 2. School of Applied and Engineering Physics, Cornell University, Ithaca, NY*

8:54

- CH-03. The Effect of Interfacial Stresses on the out-of-plane anisotropy of continuous CoCrPt Thin Films.** N.J. Jones¹, C.L. Ondeck⁴, V. Sokalski¹, M.E. McHenry^{1,3} and D.E. Laughlin^{1,2}. *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA; 3. Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA; 4. Biomedical Engineering, Duke University, Durham, NC*

9:06

- CH-04. Submicron Size Epitaxial Graphene Devices for Magnetosensing Applications.** V. Panchal¹, O. Kazakova¹, A. Tzalenchuk¹, K. Cedergren², S. Kubatkin² and R. Yakimova³. *1. NPL, Teddington, Middlesex, United Kingdom; 2. CTH, Göteborg, Sweden; 3. Linköping University, Linköping, Sweden*

9:18

- CH-05. Array of 12 Coils to Measure the Position, Alignment, and Sensitivity of Magnetic Sensors over Temperature.** *H. Husstedt¹, U. Ausserlechner² and M. Kaltenbacher¹*. 1. *Applied Mechatronics, Alps-Adriatic University Klagenfurt, Klagenfurt, Austria*; 2. *Sense and Control, Infineon Technologies Austria AG, Villach, Austria*

9:30

CH-06. Withdrawn

9:42

- CH-07. Steel Stress Monitoring Sensors Based on Elasto-Magnetic Effect and Using Magneto-Electric Laminated Composites.** *Y. Duan¹, R. Zhang¹, Y. Zhao¹, S. Or² and K. Fan³*. 1. *College of Civil Engineering and Architecture, Zhejiang University, Hangzhou, Zhejiang, China*; 2. *Department of Electrical Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong*; 3. *School of Information Engineering, Wuyi University, Jiangmen, Guangdong, China*

9:54

- CH-08. Biosensing Based on Magnetically Induced Motion of Superparamagnetic Beads.** *S. Gessesse¹, I. Giouroudi² and J. Kosel¹*. 1. *Division of Physical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*; 2. *Institute of Sensor and Actuator Systems, Vienna University of Technology, Vienna, Austria*

10:06

- CH-09. Integration of Thin Film Giant Magneto Impedance Sensor and Surface Acoustic Wave Transponder.** *N. M. H. Salem¹, B. Li¹, I. Giouroudi² and J. Kosel¹*. 1. *Physical Science and Engineering Division, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*; 2. *Institute of Sensor and Actuator Systems, Vienna University of Technology, Vienna, Austria*

10:18

- CH-10. Planar Hall effect sensors with shape-induced effective single domain behavior.** *V. Mor¹, O. Sinwani¹, M. Schultz¹, A. Grosz², E. Paperno² and L. Klein¹*. 1. *Department of Physics, Nanomagnetism Research Center, Institute of Nanotechnology and Advanced Materials, Bar-Ilan University, Ramat Gan, Israel*; 2. *Electrical & Computer Engineering Department, Ben-Gurion University of the Negev, Beer Sheva, Israel*

10:30

- CH-11. Thermally assisted switching on intermediate timescales in magnetic tunnel junctions.** *L. Breth^{1,2}, D. Suess², R. Heer¹, T. Dimopoulos¹ and H. Brückl¹*. 1. *Health and Environment, Austrian Institute of Technology, Vienna, Austria*; 2. *Solid State Physics, Vienna University of Technology, Vienna, Austria*

10:42

- CH-12. Planar Hall effect sensors with patterned voltage leads and improved resolution.** *V. Mor¹, M. Schultz¹, A. Grosz², E. Paperno² and L. Klein¹*. 1. *Department of Physics, Nanomagnetism Research Center, Institute of Nanotechnology and Advanced Materials, Bar-Ilan University, Ramat Gan, Israel*; 2. *Electrical & Computer Engineering Department, Ben-Gurion University of the Negev, Beer Sheva, Israel*

10:54

- CH-13. A study on the sensitivity of a spin valve with a Conetic-based free layer.** *J. Son¹, S. Kim¹, S. Lee¹, J. Ko¹ and J. Hong¹*. *Materials Science and Engineering, Yonsei university, Seoul, Korea, Republic of*

11:06

- CH-14. Modelling and optimization of submicron Hall sensors for the detection of superparamagnetic beads.** *A. Manzin¹, V. Nabaei^{2,1} and O. Kazakova³*. 1. *Istituto Nazionale di Ricerca Metrologica (INRIM), Torino, Italy*; 2. *Dipartimento di Ingegneria Elettrica, Politecnico di Torino, Torino, Italy*; 3. *National Physical Laboratory, Teddington, United Kingdom*

11:18

- CH-15. Design and testing of piezoelectric energy harvester for powering wireless sensors of electric line monitoring system.** *J. Qiu¹, Y. Wen¹, P. Li¹ and J. Yang¹*. 1. *ChongQing University, ChongQing, China*

TUESDAY
MORNING
8:00

SAGUARO BALLROOM

Session CP
COMPLEX OXIDES: SUPERCONDUCTIVITY
AND MAGNETISM
(Poster Session)

Suzanne te Velthuis, Chair

- CP-01. Critical magnetic fields in the rutheno-cuprate Ru(1-x)NbxSr2Eu1.4Ce0.6Cu2O10.** *M.E. Botello¹, O.E. Ayala-Valenzuela², M. Jaime² and J. Matutes-Aquino¹*. 1. *CIMAV, Chihuahua, Mexico*; 2. *NHMFL, Los Alamos National Laboratory, Los Alamos, NM*

- CP-02. Thickness dependence of critical current density in GdBCO thin films with BaSnO₃ addition.** *D.H. Tran¹, W.B. Putri¹, C. Wie¹, B. Kang¹, N. Lee², W. Kang², D. Kim³ and W. Seong^{4,1}. Department of Physics, Chungbuk National University, Cheongju, Chungbuk, Korea, Republic of; 2. Department of Physics, Sungkyunkwan University, Suwon, Korea, Republic of; 3. Department of Physics, Yeongnam University, Gyeongsan, Korea, Republic of; 4. Convergence Technology Laboratory, Korea Institute of Science and Technology, Seoul, Korea, Republic of*
- CP-03. The scaling analysis on effective activation energy $U_{eff}(T,B,J)$ in HgBa₂CaCu₃O_{8-δ}.** *B. Lv¹, R. Xie¹, H. Shao¹ and X. Wu^{1,1}. Physics, National Lab of Solid State Microstructures, Department of Physics, Nanjing University, Nanjing, Jiangsu, China*
- CP-04. Dynamically induced Fermi arcs and pockets: A model for the pseudogap in underdoped cuprates.** *H. Choi¹ and S. Hong¹. Physics, SKKU, Suwon, Korea, Republic of*
- CP-05. A study on the extensive nano-twinning obtained in YBa₂Cu₃O_{7-δ} Superconductors fabricated by Preform Optimized Infiltration Growth Process.** *D.N. Kumar¹, M.P. Swarup Raju¹ and S. Vummethala^{1,1}. School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*
- CP-06. Temperature-dependent Raman scattering of double perovskite Ba₂FeReO₆ and Sr₂CrReO₆.** *A.F. Garcia-Flores¹, U.F. Kaneko¹, E. Granado¹ and J. Gopalakrishnan^{2,3,1}. Instituto de Física "Gleb Wataghin," Universidade Estadual de Campinas, Campinas, SP, Brazil; 2. Center for Superconductivity Research, University of Maryland, Maryland, MD; 3. Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore, India*
- CP-07. Structural and magnetic phase transition of mixed olivines Li_xFe_{1-y}Ni_yPO₄ by lithium deintercalation.** *I. Lee¹, C. Kim¹, S. Kim¹ and C. Kim^{1,1}. Department of Physics, Kookmin University, Seoul, Korea, Republic of*
- CP-08. Photo carrier induced effects on the magnetic ground state of La(2)CuO(4).** *A. Suter¹, E. Morenzoni¹, T. Prokscha¹, Z. Salman¹, B.M. Wojek^{2,1}, E. Stimp^{2,1}, S. Das³, C. Bernhard³, G. Logvenov^{4,5}, A. Gozar⁴ and I. Bozovic^{4,1}. Laboratory for Muon Spin Spectroscopy, Paul Scherrer Institut, Villigen PSI, Switzerland; 2. Physik-Institut, Universität Zürich, Zürich, Switzerland; 3. Physics Department, University of Fribourg, Fribourg, Switzerland; 4. Brookhaven National Laboratory, Upton, NY; 5. Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany*
- CP-09. Structural, magnetic, and specific heat investigations on polycrystalline MnCr₂O₄.** *Z. Yang¹. Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, China*
- CP-10. Effect of oxygen off-stoichiometry on magnetic and magnetotransport in under-doped LCMO nanomanganites.** *Y. Bitla¹ and S.N. Kaul¹. School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

- CP-11. Ziz-zag Interface and Strain-influenced Ferromagnetism in Epitaxial Mn₃O₄/La_{0.7}Sr_{0.3}MnO₃ Thin Films grown on MgO (100) and SrTiO₃ (100) substrates.** *D. Mukherjee¹, R. Hyde¹, N. Bingham¹, M. Phan¹, H. Srikanth¹, P. Mukherjee¹ and S. Witanachchi¹. Department of Physics and Center for Integrated Functional Materials (CIFM), University of South Florida, Tampa, FL*
- CP-12. Structure and properties of epitaxial perovskite Pb(Zr_{0.52}Ti_{0.48})O₃/La_{0.7}Sr_{0.3}MnO₃ heterostructures.** *C. Zou^{1,2}, Y. Chen¹, B. Peng¹, W. Zhang¹ and R. Li^{2,1}. University of Electronic Science and Technology of China, Chengdu, China; 2. Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*
- CP-13. Size effect on the structural, magnetic and magnetotransport properties of electron doped manganite La_{0.15}Ca_{0.85}MnO₃R.** *Thomas², G. Das², R. Mondal², R.N. Mahato¹, R. Nirmala², A.V. Morozkin³, J. Lamsal⁴, W.B. Yelon^{4,5}, A.K. Nigam⁶ and S.K. Malik¹. International Institute of Physics (IIP)-UFRN, Natal, Brazil; 2. Indian Institute of Technology Madras, Chennai, India; 3. Chemistry, Moscow Lomonosov State University, Moscow, Russian Federation; 4. University of Missouri-Columbia, Columbia, MO; 5. Missouri University of Science and Technology, Rolla, MO; 6. Tata Institute of Fundamental Research, Mumbai, India*
- CP-14. Impact of Fe doping on radiofrequency magnetotransport in La_{0.7}Sr_{0.3}Mn_{1-x}Fe_xMnO₃S.** *Barik¹ and M. Ramanathan¹. Physics, National university of Singapore, Singapore, Singapore*
- CP-15. Magnetic properties of 1D-Ising chain CoV₂O₆.** *B. Kim¹, B. Kim¹, K. Kim¹, H. Choi¹, S. Park¹, Y. Jung¹ and B. Min^{1,1}. Physics, Pohang University of Science and Technology, Pohang, Korea, Republic of*

TUESDAY
MORNING
8:00

SAGUARO BALLROOM

Session CQ
COMPLEX OXIDES: MANGANITES AND COBALTITES
(Poster Session)

Sami El-Khatib, Chair

- CQ-01. control of magnetic and transport properties in Nd_{0.45}Sr_{0.55}MnO₃ films through epitaxial strain.** *Y. Zhang¹, H. Meng¹, X. Wang¹, Y. Zhu¹ and Z. Zhang^{1,1}. Institute of metal research, Shenyang, China*

CQ-02. Nanometer size effects on magnetic order in $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$ ($x = 0.5$ and 0.6) manganites, probed by ferromagnetic resonance. A.I. Shames¹, E. Rozenberg¹, E. Sominski² and A. Gedanken². *1. Physics, Ben Gurion University of the Negev, Be'er-Sheva, Israel; 2. Department of Chemistry and Center for Advanced Materials and Nanotechnology, Bar-Ilan University, Ramat-Gan, Israel*

CQ-03. Electron resonance and magnetic response of low-doped $\text{La}_{0.88}\text{Ca}_{0.12}\text{MnO}_3$ and $\text{La}_{0.9}\text{Sr}_{0.1}\text{MnO}_3$ manganite single crystals. E. Rozenberg¹, A.I. Shames¹, M.I. Tsindlekht², I. Felner² and Y.M. Mukovskii³. *1. Physics, BGU of the Negev, Beer-Sheva, Israel; 2. Racach Institute of Physics, Hebrew University, Jerusalem, Israel; 3. Physics, Moscow Steel and Alloys Institute, Moscow, Russian Federation*

CQ-04. Magnetic tunability and photovoltaic response in $\text{La}_{0.8}\text{Hf}_{0.2}\text{MnO}_3/\text{Nb-SrTiO}_3$ heteroepitaxial junctions. Z. Wu¹, L. Wang¹ and J. Gao¹. *1. Physics, The University of Hong Kong, Hong Kong, Hong Kong*

CQ-05. Electron spin resonance and magnetization studies on $\text{Bi}_{0.5}\text{Ca}_{0.5}\text{Mn}_{0.95}\text{TM}_{0.05}\text{O}_3$ (TM = Cr, Fe, Co and Ni). D. Vijayan¹, J. Kurian¹ and R. Singh¹. *1. School of Physics, University of Hyderabad, Hyderabad, Andhra Pradesh, India*

CQ-06. Phase coexistence and magnetocaloric effect in $\text{Sm}_{1-x}\text{Sr}_x\text{MnO}_3$ ($x = 0.42, 0.44, 0.46$) manganites. N.S. Bingham¹, T.L. Phan², M.H. Phan¹, S.C. Yu² and H. Srikanth¹. *1. Department of Physics, University of South Florida, Tampa, FL; 2. Department of Physics, Chungbuk National University, Cheongju, Korea, Republic of*

CQ-07. The magnetic field-induced positive magnetoresistance effect in buffer layer modified manganite-based heterojunctions. W. Gao¹, W. Lü¹, A. Wei¹, J. Sun¹, J. Wang¹, F. Hu¹, J. Shen² and B. Shen¹. *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Science, Beijing, Beijing, China; 2. Technical Institute of Physics and Chemistry, Chinese Academy of Science, Beijing, Beijing, China*

CQ-08. Large magnetocaloric effect for magnetic refrigeration from 210 to ~275 K in $\text{La}_{0.7}\text{Ca}_{0.3}\text{Mn}_{1-x}\text{Co}_x\text{O}_3$ Y. Zhang¹, T. Phan¹, P. Zhang¹ and S. Yu¹. *1. Department of Physics, Chungbuk National University, Cheongju, Chungbuk, Korea, Republic of*

CQ-09. Strain effect caused by substrates on phase separation and transport properties in $\text{Pr}_{0.7}(\text{Ca}_{0.8}\text{Sr}_{0.2})_{0.3}\text{MnO}_3$ thin films. Y. Zhao¹, J. Wang¹, F. Hu¹, L. Chen¹, J. Sun¹ and B. Shen¹. *1. State Key Laboratory of Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

CQ-10. Double Exchange Interaction between Mn^{3+} and Ru^{4+} ions in $\text{La}_{1-x}\text{Sr}_x\text{Mn}_{1-x}\text{Ru}_x\text{O}_3$. Y. Ying^{1,2}, J. Zheng¹, L. Qiao¹, S. Che¹, L. Jiang¹, L. Pi², L. Ling² and Y. Zhang². *1. College of Chemical Engineering and Materials Science, Zhejiang University of Technology, Hangzhou, China; 2. High Magnetic Field Laboratory, University of Science and Technology of China, Hefei, China*

CQ-11. Hall effect in $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$ ($x=0.23, 0.3$). Y.M. Mukovskii¹, I.I. Lobanova¹, M.A. Anisimov², S.V. Demishev², N.E. Sluchanko², N.A. Kozlovskaya¹ and V.V. Glushkov². *1. Theoretical Physics and Quantum Technologies, National Science and Technology University (MISIS), Moscow, Russian Federation; 2. A.M. Prokhorov General Physics Institute of RAS, Moscow, Russian Federation*

CQ-12. Influences of leakage currents on the transport properties and photoelectric effects in $\text{Pr}_{0.7}\text{Sr}_{0.3}\text{MnO}_3/\text{Nb:SrTiO}_3$ heterojunctions. J. Wang¹, Z. Wu¹ and J. Gao¹. *1. Department of Physics, The University of Hong Kong, Hong Kong, Hong Kong, China*

CQ-13. Structural, transport, magnetic properties and band structure calculations of Nd doped two dimensional compound Sr_2CoO_4 Q. Yao¹, H. Kimura¹, X. Wang², K. Konstantinov² and H. Zhao¹. *1. Multifunctional Materials Group, Optical and Electronic Materials Unit, National Institute for Materials Science, Tsukuba, Ibaraki 305-0047, Japan; 2. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong 2500, NSW, Australia*

CQ-14. Structure and properties of novel cobaltates $\text{Ln}_{0.30}\text{CoO}_2$ (Ln=La, Pr, and Nd). K. Knizek¹, Z. Jirak¹, J. Hejtmanek¹, M. Marysko¹ and J. Bursik². *1. Institute of Physics ASCR, 162 00 Prague 6, Czech Republic; 2. Institute of Inorganic Chemistry ASCR, 250 68 Rez near Prague, Czech Republic*

CQ-15. Magnetic and Magnetotransport Properties of Misfit Cobaltate $\text{Ca}_3\text{Co}_{3.93}\text{O}_{9+\delta}$ J. Hejtmanek¹, K. Knízek¹, M. Maryško¹, Z. Jiráček¹, D. Sedmidubský², O. Jankovský², . Huber², B. Lenoir³ and P. Masschelein³. *1. Magnetism and Superconductors, Institute of Physics of the ASCR, v.v.i, Cukrovarnická 10, 162 00 Praha 6, Prague, Czech Republic; 2. Inorganic Chemistry, Institute of Chemical Technology Prague, Technická 5, 166 28 Prague 6, Prague, Czech Republic; 3. CP2S, Institut Jean Lamour, UMR 7198, CNRS–Nancy Université–UPVM, Ecole Nationale Supérieure des Mines de Nancy, Parc de Saurupt, 54042 Nancy Cedex, Nancy, France*

TUESDAY
MORNING
8:00

SAGUARO BALLROOM

Session CR
STRONGLY CORRELATED SYSTEMS II
(Poster Session)
Takao Mori, Chair

CR-01. Magnetic transitions in erbium at high pressures.

S.A. Thomas¹, G.M. Tsou¹, L.E. Wenger¹, Y.K. Vohra¹ and S.T. Weir². *Physics, University of Alabama at Birmingham, Birmingham, AL; 2. Lawrence Livermore National Laboratory, Livermore, CA*

CR-02. Electric-currents-induced reemergent metal-insulator transition, step-like resistance jump and negative differential resistance in Nd_{0.7}Sr_{0.3}MnO₃ thin films.

J. Wang¹, Z. Wu¹ and J. Gao¹. *Department of Physics, The University of Hong Kong, Hong Kong, Hong Kong, China*

CR-03. FMR study of Ni nanowire arrays with tailored strength of interaction.

A. Srivastava^{1,2}, J. Vargas¹, J. Hee^{1,3}, J.B. Wiley^{1,3} and S. Leonard^{1,2}. *Advanced Material Research Institute, University of New Orleans, New Orleans, LA; 2. Physics Department, University of New Orleans, New Orleans, LA; 3. Chemistry Department, University of New Orleans, New Orleans, LA*

CR-04. Influence of ferroelectric poling induced strain on magnetic and electric properties in tetravalent cation-doped

La_{0.9}Hf_{0.1}MnO₃ films. Z. Wu¹, L. Wang¹, E. Guo¹ and J. Gao¹. *Physics, The University of Hong Kong, Hong Kong, Hong Kong*

CR-05. Effects of High Pressures on Magnetism in ErCo₂. M. Mišek¹, J. Prokleška¹, V. Sechovský¹, A.F. Kusmartseva², K.V. Kamenev² and J. Kamarád³. *DCMP, Charles University in Prague, Prague, Czech Republic; 2. CSEC, The University of Edinburgh, Edinburgh, United Kingdom; 3. Institute of Physics ASCR, Prague, Czech Republic*

CR-06. Magnetic and charge ordering properties of Bi_{0.6-x}(RE)_xCa_{0.4}MnO₃ (0.0 ≤ x ≤ 0.6) perovskite manganites.

K. Yadav¹, M.P. Singh³, H.K. Singh², F.S. Razavi³ and G.D. Varma¹. *Physics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India; 2. National Physical Laboratory, New Delhi, India; 3. Physics, Brock University, St Catharines, ON, Canada*

CR-07. A Theoretical Derivation of Analytic Free Surface Expression for the Magnetic Liquid's Conical Meniscus Phenomenon.

H. Choi¹. *School of Electrical Engineering, Kyungpook national university, Sangju, Korea, Republic of*

CR-08. Neutron scattering measurements in RbMnF₃: a test of spin-wave theories at low temperatures and critical behavior near T_N.

N. Bykovetz¹, A. Hoser², J. Klein³, c. Lin¹ and M. Seehra⁴. *1. Department of Physics, Temple University, Philadelphia, PA; 2. Institute for Complex Magnetic Materials, Helmholtz-Zentrum Berlin (HZB), Berlin, Germany; 3. Department of Physics and Astronomy, University of Pennsylvania, Philadelphia, PA; 4. Department of Physics, West Virginia University, Morgantown, WV*

CR-09. The crystal growth and evolution of magnetism and superconductivity in Pd-doped CeRhIn₅ and Ce₂RhIn₈

M. Kratochvilova¹, K. Uhlirova^{1,2}, J. Prokleška¹, M. Mísek^{1,3}, A. Rudajevova¹ and V. Sechovský¹. *1. Department of Condensed Matter Physics, Charles University, Faculty of Mathematics and Physics, Praha, Czech Republic; 2. Magnetic and Superconducting Materials, Leiden Institute of Physics, Leiden, Netherlands; 3. Institute of Physics, Academy of Sciences of the Czech Republic, Praha, Czech Republic*

CR-10. Magnetostochastic resonance under colored noise condition.

M. Trapanese¹. *Dipartimento di Ingegneria Elettrica, Elettronica e delle Telecomunicazioni, Università di Palermo, Palermo, Italy*

CR-11. The valence electronic structure of multiferroic BiFeO₃ from high energy X-ray photo-electron spectroscopy and first principles theory.

R. Knut¹, S. Faleev², D. Mazumdar², O.N. Mryasov², A. Gupta² and O. Karis¹. *1. Physics and Astronomy, Uppsala, Uppsala, Sweden; 2. MINT center, MINT Center University of Alabama, Tuscaloosa, AL*

CR-12. Random magnet with competing anisotropies in Fe_xNi_{1-x}F₂ alloys.

F.A. Perez¹, T.A. Johnson¹ and D. Lederman¹. *Physics, West Virginia University, Morgantown, WV*

CR-13. Chiral Spin Liquid Phase in Weakly-Coupled Helimagnetic Spin Chains.

F. Cinti², A. Cuccoli^{1,3} and A. Rettori^{1,3}. *1. Department of Physics and Astronomy, University of Firenze, Sesto Fiorentino, AR, Italy; 2. Max Planck Institute for the Physics of Complex Systems, Dresden, Germany; 3. Unita' di Firenze, CNISM-Consorzio Nazionale Interuniversitario Fisica della Materia, Firenze, Italy*

CR-14. Exchange Anisotropy Tuning in Cluster Glass AgMn Alloys.

F. Jimenez-Villacorta¹, T. Sepelchik¹, J.L. Marion¹ and L.H. Lewis¹. *Department of Chemical Engineering, Northeastern University, Boston, MA*

CR-15. c-axis anisotropic transport study of layered manganite based on micro-fabricated devices.

A.A. Omrani^{1,2}, A. Kis² and H.M. Rønnow¹. *1. Physics, EPFL, Lausanne, Vaud, Switzerland; 2. Microtechnique, EPFL, Lausanne, Vaud, Switzerland*

TUESDAY
MORNING
8:00

SAGUARO BALLROOM

Session CS
MAGNETIZATION SWITCHING AND
DYNAMICS
(Poster Session)
Andrei Kirilyuk, Chair

CS-01. Magneto-optical Four Wave Mixing in Garnet Thin Films. M. Barthelemy¹, M. Vmir¹, M. Sanches Piaia¹, M. Albrecht¹ and J. Bigot¹. *Institut de Physique et Chimie des Matériaux, CNRS-Université de Strasbourg, Strasbourg, France*

CS-02. Deflagration in Magnetism. J. Tejada¹, S. Velez¹, J. Hernandez¹, F. Macia¹ and A. Hernandez-Minguez¹. *Department of Fundamental Physics, University of Barcelona, Barcelona, Spain*

CS-03. Dependence of the damping parameter on Ga concentration in Fe_{1-x}Ga_x thin films. M.L. Schneider¹, P.S. Burns¹, A. McClure² and Y.U. Idzerda². *1. Physics and Astronomy, University Montana, Missoula, MT; 2. Physics, Montana State University, Bozeman, MT*

CS-04. Random Magnetization Dynamics at Elevated Temperatures. I.D. Mayergoyz¹, G. Bertotti², C. Serpico³, Z. Liu⁴ and A. Lee⁴. *1. Department of Electrical and Computer Engineering, UMIACS and AppEl Center, University of Maryland College Park, College Park, MD; 2. INRiM, Torino, Italy; 3. Dipartimento di Ingegneria Elettrica, Università di Napoli Federico II, Napoli, Italy; 4. Department of Electrical and Computer Engineering, University of Maryland College Park, College Park, MD*

CS-05. Spin-torque diode measurements of MgO-based magnetic tunnel junctions with asymmetric electrodes. R. Matsumoto¹, A. Chanthbouala¹, J. Grollier¹, V. Cros¹, A. Fert¹, A. Fukushima² and S. Yuasa². *1. Unité Mixte de Physique CNRS-Thales, Palaiseau, France; 2. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

CS-06. Non-thermal excitation and control of magnetization in Fe/GaAs film by ultrafast laser pulses. Y. Gong^{1,3}, A.R. Kutayiah¹, X.H. Zhang², J.H. Zhao² and Y.H. Ren¹. *1. Physics and Astronomy, Hunter College of the City University of New York, New York, NY; 2. State Key Laboratory for Superlattices and Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China; 3. Physics and Astronomy, The Graduate Center of the City University of New York, New York, NY*

CS-07. Mechanism analysis of ultrafast magnetic switching. J. Li¹, B. Xu¹, J. Zhang¹ and K. Ye¹. *1. Data Storage Institute, (A-STAR) Agency for Science, Technology and Research, Singapore, Singapore*

CS-08. Static and Dynamic Magnetic properties of epitaxial Fe_{1.7}Ge thin films grown on Ge(111). M. Belmeguenai¹, D. Berling², S. Cherif¹ and P. Moch¹. *1. LSPM (CNRS-UPR 3407), Université Paris 13, 99 avenue Jean-Baptiste Clément, 93430, Villetaneuse, France; 2. ISMM, (CNRS-LRC 7228), 4 rue des frères Lumière, Université de Haute-Alsace, 68093, Mulhouse, France*

CS-09. Tunable magnetization relaxation in spin valves. X. Wang¹ and A. Manchon¹. *1. KAUST, Thuwal, Saudi Arabia*

CS-10. Magnetization reversal in the hundred-nanometer-scaled permalloy hollow cylinders array. Y. Huang¹, C. Kou², J. Shyu², L. Horng², C. Lee³ and J. Wu². *1. Graduate Institute of photonics, National Changhua University of Education, Changhua, Taiwan; 2. Department of Physics, National Changhua University of Education, Changhua, Taiwan; 3. Graduate School of Materials Science, National Yunlin University of Science and Technology, Douliou, Taiwan*

CS-11. Magnetization switching behavior of Co/Pt multilayer dot by in-plane nanoseconds pulse field. Y. Suyama¹, N. Kikuchi¹, S. Okamoto¹ and O. Kitakami¹. *1. IMRAM, tohoku university, Sendai, Japan*

CS-12. Critical slowing down in laser induced demagnetization of Gd. M. Sultan^{1,2}, A. Melnikov^{2,3} and U. Bovensiepen¹. *1. Faculty of Physics, University of Duisburg Essen, Duisburg, Germany; 2. Institute of Experimental Physics, Freie University, Berlin, Germany; 3. Fritz-Haber-Institut der Max-Planck Gesellschaft, Berlin, Germany*

CS-13. Insights on all-optical magnetization switching by tailoring optical excitation parameters. M. Cinchetti¹, S. Alebrand¹, D. Steil¹, A. Hassdenteufel¹ and M. Aeschlimann¹. *1. Department of Physics and Research Center OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany*

CS-14. Radial-spin-wave-mode-assisted vortex-core magnetization reversals. M. Yoo¹, J. Lee² and S. Kim¹. *1. National Creative Research Initiative Center for Spin Dynamics & Spin-Wave Devices and Nanospinics Laboratory, and Research Institute of Advanced Materials, Department of Materials Science and Eng., Seoul Natl Univ, Seoul, Korea, Republic of; 2. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria*

CS-15. Ferromagnetic resonance in exchange biased ferromagnetic/compensated antiferromagnetic bilayers. A.L. Dantas¹, L.L. Oliveira^{1,2}, M.L. Silva³ and A.S. Carriço². *1. Departamento de Física, Universidade do Estado do Rio Grande do Norte, Mossoro, RN, Brazil; 2. Departamento de Física, Universidade Federal do Rio Grande do Norte, Natal, RN, Brazil; 3. Campus Simões Filho, Instituto Federal de Educação, Ciência e Tecnologia da Bahia, Pitanguihas Simões Filho, BA, Brazil*

TUESDAY
MORNING
8:00

SAGUARO BALLROOM

Session CT
OTHER MAGNETIC MATERIALS II
(Poster Session)

Oleg Mryasov, Co-Chair
Felix Jimenez Villacorta, Co-Chair

- CT-01. Ultrahard Magnets.** P.K. Sahota^{2,1}, Y. Liu¹, R. Skomski¹, P. Manchanda^{2,1}, R. Zhang¹, G.C. Hadjipanayis³, A. Kashyap² and D.J. Sellmyer¹. *1. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Department of Physics, The LNM Institute of Information Technology, Jaipur, Rajasthan, India; 3. Department of Physics, University of Delaware, Newark, DE*
- CT-02. Effects of doped nanometer particle on magnetic properties and microstructure of 2:17-type Sm(CobalCu_{0.09}Fe_{0.09}Zr_{0.03})_{7.69} magnet.** J. Huang¹, D. Zhang^{1,2}, M. Yue¹, W. Liu¹, J. Zhang¹ and Y. Qiang². *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China; 2. Physics Department, University of Idaho, Moscow, ID*
- CT-03. Structures and magnetic properties of Sm₅Fe₁₇ melt-spun ribbons.** T. Saito¹, H. Miyoshi¹ and D. Nishio-Hamane². *1. Chiba Institute of Technology, Chiba, Japan; 2. The University of Tokyo, Kashiwa, Japan*
- CT-04. Magnetic properties and crystal structure of melt spun Sm(Co, M), (M=Al and Si) ribbons.** C. Hsieh¹, C. Shih¹, Z. Liu¹, W. Chang¹, H. Chang² and A. Sun³. *1. National Chung Cheng University, Chia-Yi, Taiwan; 2. Tunghai University, Taichung, Taiwan; 3. Yuan Ze University, Taoyuan, Taiwan*
- CT-05. Fabrication of anisotropic SmCo₅-FeNi and SmCo₅-CoFe hard-soft nanocomposites by electroless plating.** M. Lamichhane¹, S.R. Mishra¹, N.V. Vuong² and J.P. Liu². *1. Physics, The University of Memphis, Memphis, TN; 2. Physics, University of Texas, Arlington, TX*
- CT-06. Magnetic anomalies in single crystalline Tb₅Si₃.** K.K. Iyer¹, K. Mukherjee¹, P.L. Paulose¹, E.V. Sampathkumar¹, Y. Xu² and W. Löser³. *1. DCMPMS, Tata Institute of Fundamental Research, Mumbai, India; 2. State Key Laboratory of Solidification Processing, Northwestern Polytechnical University, Shaanxi, China; 3. IFW Dresden, Leibniz-Institut für Festkörper- und Werkstoffforschung, Dresden, Germany*

- CT-07. Complex magnetism in the intermetallic compound Tb₂Mn₃Si₂: A high magnetic field study.** N.M. Xia², Z.W. Ouyang², J. Chen², S.S. Sheng², Y.Y. Wu², Z.C. Xia², L. Li², G.H. Rao³, A.V. Morozkin⁴, R. Nirmala¹ and S.K. Malik⁵. *1. Physics, Indian Institute of Technology Madras, Chennai, India; 2. Wuhan National High Magnetic Field Center, Huazhong University of Science and Technology, Wuhan, China; 3. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 4. Chemistry, Moscow Lomonosov State University, Moscow, Russian Federation; 5. Departamento de Física Teórica e Experimental, Natal-RN, Brazil*
- CT-08. Body center tetragonal iron compounds with perpendicular crystalline anisotropy.** N. Ji¹ and J. Wang¹. *1. U of Minnesota, Minneapolis, MN*
- CT-09. Structure and magnetic properties of melt-spun Nd(Fe,Mo)₁₂ ribbons and their nitrides.** J. Han¹, Z. Lin¹, M. Xing¹, Y. Yang¹, J. Yang¹, Q. Xu¹ and Y. Yang¹. *1. Peking University, Beijing, China*
- CT-10. Effects of Nitrogen Deficiency on Magnetostructural Properties of Antiperovskite Manganese Nitrides.** D. Kasugai¹, A. Ozawa¹, T. Inagaki¹ and K. Takenaka¹. *1. Department of Crystalline Materials Science, Nagoya University, Nagoya, Japan*
- CT-11. Magnetic anisotropy of diluted Fe and FeCo alloys with 5d atoms.** L. Ke¹, V. Antropov¹ and M. van Schilfgaarde². *1. Ames Laboratory, Ames, IA; 2. Arizona state university, Tempe, AZ*
- CT-12. Structures and Magnetic Properties of Fe_{x}Co_{1-x} and W doped Fe_{x}Co_{1-x} Alloys.** M. Nguyen^{1,2}, X. Zhao^{1,2}, M. Ji^{1,2}, C. Wang^{1,2} and K. Ho^{1,2}. *1. Ames Laboratory, Ames, IA; 2. Physics, Iowa State University, Ames, IA*
- CT-13. Combinatorial search of rare-earth-free permanent magnets: magnetic and microstructural properties of Fe-Co-W thin films.** T. Gao¹, I. Takeuchi¹, Y. Wu², M.J. Kramer², I.E. Anderson², B. McCallum², K.W. Dennis², K. Wang³ and L. Benderksy³. *1. University of Maryland, College Park, MD; 2. Ames Laboratory, Iowa State University, Ames, IA; 3. National Institute of Standards and Technology, Gaithersburg, MD*
- CT-14. Structural Properties and Magnetic Phase Transition in HoNi₂Mn (⁵⁷Fe).** J. Wang^{1,2}, S.J. Campbell³, M. Hofmann⁴, M. Hoelzel^{4,5}, R. Zeng¹, S.X. Dou¹ and S.J. Kennedy². *1. Institute for Superconducting & Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. Bragg Institute, ANSTO, Sydney, NSW, Australia; 3. School of Physical, Environmental and Mathematical Sciences, UNSW@ADFA, Canberra, ACT, Australia; 4. Technische Universität München, FRM II, München, Germany; 5. Fachbereich Materialwissenschaften, Technische Universität Darmstadt, Darmstadt, Germany*

CT-15. Magnetic and Magnetocaloric Properties of the New Rare Earth - Transition Metal Intermetallic Compound $Gd_3Co_{29}Ge_4B_{10}$ *M.P. Hill¹, I. Dubenko², T. Samanta² and N. Ali²*. *1. Physics & Engineering Physics, Southeast Missouri State University, Cape Girardeau, MO; 2. Physics, Southern Illinois University-Carbondale, Carbondale, IL*

TUESDAY
MORNING
8:00

SAGUARO BALLROOM

Session CU
OTHER MAGNETIC MATERIALS III
(Poster Session)

Margaret Hill, Co-Chair
Hendrik Ohldag, Co-Chair

CU-01. Activation Volumes in Epitaxial Co_2FeSi Thin films. *J. Sagar¹, H. Sukegawa², A. Hirohata^{3,4}, S. Mitani² and K. O'Grady¹*. *1. Physics, The University of York, York, North Yorkshire, United Kingdom; 2. Magnetic Materials Centre, National Institute for Materials Science (NIMS), Tsukuba, Ibaraki, Japan; 3. Electronics, The University of York, York, North Yorkshire, United Kingdom; 4. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan*

CU-02. Structural, magnetic and electron transport properties of $MnBi:Fe$ thin films. *P.R. Kharel^{1,2}, V.R. Shah¹, X.Z. Li¹, R. Skomski^{1,2} and D.J. Sellmyer^{1,2}*. *1. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Department of Physics and Astronomy, University of Nebraska, Lincoln, NE*

CU-03. Structure and magnetic properties of $MnxBi_{100-x}$ (x=48, 50, 55, 60) compounds. *W. Geng¹, D. Zhang^{1,2}, M. Yue¹, W. Liu¹, J. Zhang¹ and Y. Qiang²*. *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, Beijing, China; 2. Physics Department, University of Idaho, Moscow, ID*

CU-04. Preparation and magnetic properties of high purity low temperature phase $MnBi$. *Y. Yang¹, X. Ma¹, X. Chen¹, R. Wu¹, J. Wei¹, G. Lian¹, Y. Zhang¹, Y. Yang¹ and J. Yang¹*. *1. Peking University, School of Physics, Beijing, China*

CU-05. Spin reorientation transition and hard magnetic properties of $MnBi$ intermetallic compound. *K. Suzuki¹, X. Wu¹, T. Shoji² and A. Kato³*. *1. Department of Materials Engineering, Monash University, Clayton, VIC, Australia; 2. Metallic & Inorganic Material Engineering Div., Toyota Motor Corporation, Toyota, Aichi, Japan; 3. Advanced Material Engineering Div., Toyota Motor Corporation, Susono, Shizuoka, Japan*

CU-06. Theoretical investigation on the magnetic phase stability of Fe-doped Bi tellurides. *M. Kim¹ and J. Song²*. *1. Division of Energy System Research, Ajou University, Suwan, Korea, Republic of; 2. Department of Physics and Astronomy, Northwestern University, Evanston, IL*

CU-07. Thermoelectric efficiency of topological insulators in a magnetic field. *O. Tretiakov¹, A. Abanov¹ and J. Sinova¹*. *1. Texas A&M Univ, College Station, TX*

CU-08. High Field (14Tesla) Magneto Transport and Heat Capacity of $Sm/PrFeAsO$ and $FeTe$. *R.S. Meena^{1,2}, S.K. Singh¹, A. Kumar¹, R. Jha¹, K.V. Rao² and V.S. Awana¹*. *1. Quantum Phenomena and Applications, National Physical Laboratory, Delhi, New Delhi, India; 2. Department of Physics, University of Rajasthan, Jaipur, Rajasthan, India*

CU-09. Synthesis, structure, and magnetic analysis of the cubic defect spinel $ZnMnO_3$ *M.S. Seehra¹, J.D. Rall¹, S. Thota² and J. Kumar³*. *1. Department of Physics, West Virginia University, Morgantown, WV; 2. Indian Institute of Technology, Guwahati, India; 3. Indian Institute of Technology, Kanpur, India*

CU-10. Field-induced Magnetic Transition in Cobalt-Ferrite. *M. Kriegisch¹, W. Ren², R. Sato-Turtelli¹ and R. Groessinger¹*. *1. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 2. Shenyang National Laboratory for Materials Science, Magnetism and Magnetic Materials Division, Shenyang, China*

CU-11. Mg doping induces changes in magnetization and band gap of $Zn_{98-x}Co_{02}Mg_xO$ nanoparticles. *A.L. LaJoie¹, A. Thurber¹, J. Chess¹, D. Tenne¹ and A. Punnoose¹*. *1. Physics, Boise State University, Boise, ID*

CU-12. Impacts of electron correlation in anion p-orbitals on electronic structure and magnetism of nitrogen or carbon doped zinc oxide. *Y. Zhang¹, H. Liu² and X. Zuo¹*. *1. College of Information Technical Science, Nankai University, Tianjin, China; 2. Office of International Academic Exchanges, Nankai University, Tianjin, China*

CU-13. Study on rare-earth doped type-I germanium clathrates. *X. Zhu¹, N. Chen¹, L. Liu² and Y. Li³*. *1. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China; 2. Department of Physics, University of Science and Technology Beijing, Beijing, China; 3. Department of Engineering Science and Materials, University of Puerto Rico at Mayaguez, Mayaguez*

CU-14. First Principles Study of the Magnetic Properties of BN Graphene Nanoribbon. *J. Rufinus¹*. *1. Science Division, Widener University, Chester, PA*

CU-15. Magnetic properties of ferromagnetic carbon materials.

*T. Saito*¹, *S. Yoshii*² and *D. Nishio-Hamane*³. *1. Chiba Institute of Technology, Chiba, Japan; 2. Institute for Materials Research, Tohoku University, Sendai, Japan; 3. Institute for Solid State Physics, Tokyo University, Kashiwa, Japan*

TUESDAY
MORNING
8:00

SAGUARO BALLROOM

**Session CV
BORIDES I**

(Poster Session)

Oliver Gutfleisch, Co-Chair
Mathew Willard, Co-Chair

CV-01. The partitioning of Dy and Tb in NdFeB magnet: a first-principles study.

*X. Liu*¹ and *Z. Altounian*¹. *physics department, McGill University, Montreal, QC, Canada*

CV-02. Enhancing the perpendicular anisotropy of NdDyFeB films by Dy diffusion process.

*W. Gong*¹, *W. Liu*¹, *S. Guo*¹, *Z. Wang*¹, *Y. Zhang*¹, *J. Feng*¹, *W. Cui*¹ and *Z. Zhang*¹. *1. Shenyang National Laboratory for Materials Science and International Centre for Materials Physics, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, Liaoning, China*

CV-03. Effect of sintering conditions on the magnetic and microstructural properties of Nd-Fe-B sintered magnets doped with DyF₃ powders.

*S. Park*¹, *T. Kim*¹, *S. Lee*¹, *S. Namkung*² and *T. Jang*². *1. Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Hybrid Engineering, Sunmoon university, Asan, Korea, Republic of*

CV-04. Magnetic properties of Dy-diffused Nd-Fe-B powder prepared by crystallization from amorphous state.

*H. Fukunaga*¹, *I. Yamamoto*¹, *M. Nakano*¹ and *T. Yanai*¹. *1. Graduate School of Engineering, Nagasaki University, Nagasaki 852-8521, Japan*

CV-05. Magnetic properties and microstructure of Nd-Fe-B sintered magnets with DyH₂ addition.

Y. Liu^{1,2}, *S. Guo*^{1,2}, *X. Liu*^{1,2}, *D. Lee*^{1,2} and *A. Yan*^{1,2}. *1. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

CV-06. Recycling sintered Nd-Fe-B magnets using hydrogen processing.

*K. Güth*¹, *L. Schultz*¹ and *O. Gutfleisch*¹. *1. IFW Dresden, Dresden, Saxony, Germany*

CV-07. Microstructural evaluation for Dy-free Nd-Fe-B sintered magnets with high coercivity.

*R. Goto*¹, *M. Matsuura*², *S. Sugimoto*^{1,2}, *N. Tezuka*¹, *Y. Une*³ and *M. Sagawa*³. *1. New Industry Creation Hatchery Center (NICHe), Tohoku university, Sendai, Japan; 2. Department of Materials Science, Graduate School of Engineering, Tohoku University, Sendai, Japan; 3. Intermetallics Co., Ltd., Kyoto, Japan*

CV-08. Design and Fabrication of high coercivity sintered permanent magnets without heavy rare earth additions.

B. Chen^{1,2}, *X. Liu*^{1,2}, *S. Guo*^{1,2}, *C. Yan*^{1,2}, *R. Chen*^{1,2}, *Y. Liu*^{1,2}, *D. Lee*^{1,2} and *A. Yan*^{1,2}. *1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

CV-09. Effect of Co addition on the magnetic properties and microstructure of Nd₉₅Fe_{bal}Nb_{2.5}Zr_{0.5}Co_xB₁₅ (X=0, 10, 20) bulk magnets.

Z. Liu^{1,2}, *W.C. Lin*¹, *C.W. Shih*¹, *C.C. Hsieh*¹, *H.W. Chang*⁴, *W.C. Chang*¹ and *A.R. Yan*^{2,3}. *1. Department of Physics, National Chung Cheng University, ChiaYi, Taiwan; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, China; 3. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, China; 4. Department of Physics, Tunghai University, Taichung, Taiwan*

CV-10. Diffusion of Nd-rich phases in the spark plasma sintered and hot deformed nanocrystalline NdFeB magnets.

*Y. Huang*¹, *Z. Liu*¹, *X. Zhong*¹, *H. Yu*¹, *X. Gao*¹, *J. Zhu*² and *D. Zeng*¹. *1. School of Materials Science and Engineering, South China University of Technology, Guangzhou, Guangdong, China; 2. State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, Beijing, China*

CV-11. Investigation of easy axis orientation of Nd-Fe-B melt-spun ribbons produced by hot rolling and influence of Ti-C addition.

*Y. Nakanishi*¹, *M. Takezawa*¹, *Y. Morimoto*¹, *J. Yamasaki*¹ and *M. Yagi*². *1. Department of Applied Science for Integrated System Engineering, Faculty of Engineering, Kyushu Institute of Technology, Kitakyushu, Japan; 2. Sojo University, Kumamoto, Japan*

CV-12. Magnetic domain observation of Nd-Cu diffusion Nd-Fe-B sub-micron grain sized magnet by Kerr effect microscopy.

*M. Takezawa*¹, *Y. Nagashima*¹, *Y. Kimura*¹, *Y. Morimoto*¹, *J. Yamasaki*¹, *N. Nozawa*², *T. Nishiuchi*² and *S. Hirotsawa*². *1. Kyushu Institute of Technology, Kitakyushu, Japan; 2. Hitachi Metals, Ltd, Osaka, Japan*

CV-13. Effects of Ga Addition on Structural and Magnetic Properties of Nd-Fe-B-Ti-C Nanocomposite Magnets. Q. Wu^{1,2}, T. Yu³, S. Guo¹, X. Feng¹, M. Pan², P. Zhang², B. Han³, H. Ge² and A. Yan¹. *1. Ningbo Institute of Material Technology&Engineering Chinese Academy of Sciences, Ningbo, China; 2. College of Materials Science and Engineering, China Jiliang University, Hangzhou, Zhejiang province, China; 3. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

CV-14. Effects of magnetic solidification on rod-shaped Nd-Fe-Ti-Zr-Cr-C-B magnets with various diameters. C. Wang^{1,2}, W. Lin¹, C. Hsieh¹, W. Chang¹, H. Chang³ and A. Sun⁴. *1. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. College of Materials Science and Engineering, Fuzhou University, Fuzhou, Fujian, China; 3. Department of Physics, Tunghai University, Taichung, Taiwan; 4. Department of Chemical Engineering and Materials Science, Yuan Ze University, Chung-Li, Taiwan*

CV-15. Coercivity enhancement in HDDR-processed Nd-Fe-B magnet by Zn-diffusion doping treatment combined with hot press. T. Nishiuchi¹, N. Nozawa¹, S. Hirotsawa¹, H. Sepheri-Amin², T. Ohkubo² and K. Hono². *1. Magnetic Materials Research Laboratory, Hitachi Metals, Ltd., Osaka, Japan; 2. Magnetic Materials Unit, National Institute for Materials Science, Tsukuba, Japan*

TUESDAY
MORNING
8:00

SAGUARO BALLROOM

Session CW
ORDERED ALLOYS AND BORIDES
(Poster Session)

Thomas Woodcock, Co-Chair
Nora Dempsey, Co-Chair

CW-01. Effect of strained state on the magnetic properties of (001)-oriented L10-FePt films on different substrate. A. Zhang^{1,2}, Z. Chen¹, J. Ge¹, M. Yang¹, W. Zou¹, J. Du¹, X. Wu¹, S. Zhang³ and S. Zhou³. *1. National Laboratory of Solid State Microstructures & Department of Physics, Nanjing University, Nanjing, China; 2. College of Science, Hohai University, Nanjing, China; 3. Department of Physics and Surface Physics Laboratory (National Key Laboratory), Fudan University, Shanghai, China*

CW-02. Promotion of perpendicular anisotropy for L10-FePt by rapid thermal processing. L. Wang¹ and C. Lai¹. *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

CW-03. Reducing the Switching Field of L10-FePt by Graded Order Parameter. Z. Lu¹, J. Guo¹, S. Kang², R. Xiong³, G.J. Mankey⁴ and W.H. Butler⁴. *1. School of Materials and Metallurgy, Wuhan University of Science and Technology, Wuhan, Hubei, China; 2. School of Physics, Shandong University, Jinan, Shandong, China; 3. School of Physics and Technology, Wuhan University, Wuhan, Hubei, China; 4. Department of Physics, University of Alabama, Tuscaloosa, AL*

CW-04. Magnetic properties and microstructure of perpendicular FePt (B-Ag) granular films. J. Tsai¹, J. Huang¹, L. Chen¹ and C. Lin¹. *1. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

CW-05. Effect of intrinsic tensile stress on (001) orientation of single-layered FePt thin films on glass substrates. S. Hsiao¹, S. Liu², S. Chen², F. Yuan³ and H. Lee¹. *1. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 2. Materials science and engineering, Feng Chia University, Taichung, Taiwan; 3. Institute of Applied Physics and Center for Nanostorage, National Taiwan University, Taipei, Taiwan*

CW-06. Effect of oxygen stoichiometry on microstructural and magnetic properties of FePt/TaO_x bilayer. G. Li¹, C. Leung², Y. Chen³, K. Lin³ and P. Pong¹. *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong; 2. Department of Applied Physics, Hong Kong Polytechnic University, Hong Kong, Hong Kong; 3. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

CW-07. Enhancement in coercivity of PLD-fabricated Fe-Pt thick film magnets by reducing droplets. M. Nakano¹, D. Urakawa¹, T. Yanai¹ and H. Fukunaga¹. *1. Graduate school of Engineering, Nagasaki University, Nagasaki 852-8521, Japan*

CW-08. Effect of laser wavelength and magnetic field on phase structure and magnetic properties of pulse-laser-deposited FePt films. H.W. Chang¹, C.R. Wang¹, C.W. Yuan¹, C.W. Shih², F.T. Yuan³ and W.C. Chang². *1. Department of Physics, Tunghai University, Taichung, Taiwan; 2. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan; 3. Department of Physics, National Taiwan University, Taipei, Taiwan*

CW-09. Stabilization of perpendicular magnetic anisotropy L1₁ CoPtCu thin film on glass substrate by Pt(111) underlayer. C. Huang¹, L. Li¹, A. Sun¹, F. Yuan² and J. Hsu². *1. Department of Chemical Engineering and Materials Science, Yuan-Ze university, Taoyuan, Taiwan; 2. Department of Physics, National Taiwan University, Taipei, Taiwan*

CW-10. Effect of high temperature annealing on ion-irradiation

induced magnetization in FeRh thin films. *A. Tohki*¹, S. Kosugi¹, K. Aikoh¹, K. Kume², T. Batchuluun², R. Ishigami², T. Matsui³ and A. Iwase¹. *1. Department of Materials Science, Osaka Prefecture University, Sakai-shi, Japan; 2. The Wakasa Wan Energy Research Center, Tsuruga, Fukui, Japan; 3. Research Organization of the 21st Century, Osaka Prefecture University, Sakai, Osaka, Japan*

CW-11. Origins of Axial Gradient Performance of Hot Deformed Nd-Fe-B Ring Magnets.

W. Yin^{1,2}, R. Chen^{1,2}, X. Tang^{1,2}, M. Lin^{1,2}, D. Lee^{1,2} and A. Yan^{1,2}. *1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China*

CW-12. Improvement in magnetic properties of Nd-Fe-B/ α -Fe multilayered thick film magnets prepared by PLD method.

*H. Fukunaga*¹, *T. Kamikawatoko*¹, M. Nakano¹, T. Yanai¹ and F. Yamashita². *1. Nagasaki University, Nagasaki 852-8521, Japan; 2. Rotary Component Technology Development Division, Minebea Ltd., Shizuoka 437-1193, Japan*

CW-13. Structural and Magnetic Properties of SmCo_{4-x}Fe_xB.

E.S. Krage^{1,2}, B. Das¹, B. Balasubramanian¹, X. Li¹, R. Skomski¹, Y. Huh^{1,2} and D.J. Sellmyer¹. *1. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. Physics, South Dakota State University, Brookings, SD*

CW-14. Coercivity enhancement in anisotropic

Pr_{12.5}Fe_{80.8}B_{6.2}Nb_{0.2}Ga_{0.3} powders. *Z. Lin*¹, J. Han¹, S. Liu¹, M. Xing¹, J. Yang¹, Y. Zhang¹ and Y. Yang¹. *School of Physics, Peking University, Beijing, China*

CW-15. Microstructural study of PrFeB-based sintered magnets with alloying elements by transmission electron

microscopy. *T. Mendes*¹, A. Pé rigo², C.R. Afonso³, S.C. Silva¹ and H. Takiishi¹. *1. Nuclear and Energy Research Institute - IPEN, São Paulo, Brazil; 2. Technological Research Institute - IPT, São Paulo, Brazil; 3. National Laboratory of Synchrotron Light - LNLS, São Paulo, Brazil*

TUESDAY
AFTERNOON
1:30

GRAND CANYON 6

Session DA
SYMPOSIUM ON PERPENDICULAR
MAGNETIC ANISOTROPY FOR SPINTRONICS

Eric Fullerton, Chair

1:30

DA-01. Tunnel Magnetoresistance and Spin Torque Switching in MgO-based Magnetic Tunnel Junctions with a Co/Ni Multilayer Electrode. (Invited) *T. Moriyama*¹, T.J. Gudmundsen¹, P.Y. Huang¹, L. Liu¹, D.A. Muller¹, D.C. Ralph¹ and R.A. Buhrman¹. *Physics, Cornell Univ, Ithaca, NY*

2:06

DA-02. Spin-transfer pulse switching in all perpendicular spin-valve nanopillars*. (Invited) *H. Liu*¹, D. Bedau¹, J.Z. Sun², J.A. Katine³, E.E. Fullerton⁴, S. Mangin⁵ and A.D. Kent¹. *1. Physics, New York University, New York, NY; 2. IBM T. J. Watson Research Center, Yorktown Heights, NY; 3. San Jose Research Center, Hitachi-GST, San Jose, CA; 4. CMRR, University of California, San Diego, La Jolla, CA; 5. Nancy-Université, Vandoeuvre Cedex, France*

2:42

DA-03. Sub-volume thermal excitation and optimal perpendicular magnetic anisotropy for spin-torque switched magnetic tunnel junctions in memory. (Invited) *J. Sun*¹, R.P. Robertazzi¹, J. Nowak¹, P.L. Trouilloud¹, G. Hu¹, D.W. Abraham¹, M.C. Gaidis¹, S.L. Brown¹, E.J. O'Sullivan¹, W.J. Gallagher¹ and D.C. Worledge¹. *IBM-MagIC MRAM Alliance, IBM T. J. Watson Research Center, Yorktown Heights, NY*

3:18

DA-04. Toward ultra low power spintronics nanodevices with perpendicular anisotropy. (Invited) *D. Ravelosona*¹, N. Lei¹, N. Nguyen¹, S. Ahn¹, W. Lin¹, G. Agnus¹, S. Eimer¹, N. Vernier¹, W. Zhao¹, J. Kim¹, T. Devolder¹, J. Klein¹, P. Lecoeur¹ and C. Chappert¹. *Institut d'Electronique Fondamentale, UMR CNRS8622, Orsay, France*

3:54

DA-05. Spin-Orbit torques in ferromagnetic thin films. (Invited) *M. Miron*^{1,2}, K. Garello², G. Gaudin¹, P. Zermatten¹, M.V. Costache², S. Auffret¹, S. Bandiera¹, B. Rodmacq¹, A. Schuh¹ and P. Gambardella². *1. SPINTEC, Grenoble, France; 2. Catalan Institute of Nanotechnology, Barcelona, Spain*

TUESDAY
AFTERNOON
1:30

GRAND CANYON 7

Session DB
SPIN WAVES II
Andrei Slavin, Chair

1:30

DB-01. Amplification of Surface Spin Waves in Ferrite Thin Films through Interfacial Spin Scattering. Z. Wang¹, Y. Sun¹, M. Wu¹, V. Tiberkevich² and A. Slavin^{2,1}. *Department of Physics, Colorado State University, Fort Collins, CO; 2. Department of Physics, Oakland University, Rochester, MI*

1:42

DB-02. Identification and selection rules of the spin-wave eigenmodes in a normally magnetized nano-pillar. V.V. Naletov^{1,2}, G. de Loubens¹, O. Klein¹, J. Grollier³, N. Locatelli³ and V. Cros^{3,1}. *Service de Physique de l'État Condensé, CEA Saclay, 91191 Gif-Sur-Yvette, France; 2. Physics Department, Kazan Federal University, 420008 Kazan, Russian Federation; 3. Unité Mixte de Physique CNRS/Thales and Université Paris Sud 11, 91767 Palaiseau, France*

1:54

DB-03. Electric-field-induced spin wave generation using multiferroic magnetoelectric cells. S. Cherepov¹, P. Khalili Amiri¹, J.G. Alzate¹, K. Wong¹, M. Lewis¹, P. Upadhyaya¹, J. Nath¹, M. Bao¹, J.L. Hockel², A. Bur², T. Wu², G.P. Carman², A. Khitun¹ and K.L. Wang^{1,1}. *Electrical Engineering, UCLA, Los Angeles, CA; 2. Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA*

2:06

DB-04. Nonlinear Amplification and Mixing of Spin Waves: Experiment and Theory. (Invited) R. Camley¹, Y. Khivintsev^{1,2}, J. Marsh¹, V. Zagorodni^{1,3}, I. Harward¹, P. Krivosik¹, J. Lovejoy¹ and Z. Celinski^{1,1}. *University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Saratov Branch of Kotel'nikov IRE RAS, Saratov, Russian Federation; 3. Taras Shevchenko Nation University of Kyiv, Kyiv, Ukraine*

2:42

DB-05. Collective vortex-gyration modes in magnonic crystals. D. Han¹ and S. Kim^{1,1}. *National Creative Research Initiative Center for Spin Dynamics and Spin-Wave Devices, Nanospinics Laboratory, and Research Institute of Advanced Materials, Department of Materials Science and Eng., Seoul Natl Univ, Seoul, Korea, Republic of*

2:54

DB-06. Nanoscale spin wave localization using ferromagnetic resonance force microscopy. H. Chia^{1,2}, L.M. Belova³ and R.D. McMichael^{1,1}. *Center for Nanoscale Science and Technology, NIST, Gaithersburg, MD; 2. Maryland Nanocenter, University of Maryland, College Park, MD; 3. Department of Materials Science and Engineering, Royal Institute of Technology, Stockholm, Sweden*

3:06

DB-07. Amplification of Spin Waves by the Spin Seebeck Effect. E.P. Hernandez¹, A. Azevedo¹ and S.M. Rezende^{1,1}. *Departamento de Física, Universidade Federal de Pernambuco, Recife, PE, Brazil*

3:18

DB-08. Excitation of short-wavelength spin waves in tapered magnonic waveguides. V.E. Demidov¹, M.P. Kostylev², K. Rott³, J. Muenchenberger³, G. Reiss³ and S.O. Demokritov^{1,1}. *Institute for Applied Physics, University of Muenster, Muenster, Germany; 2. University of Western Australia, Crawley, WA, Australia; 3. Bielefeld University, Bielefeld, Germany*

3:30

DB-09. Collective spin wave modes in a two-dimensional array of magnetic nano-dots. R.V. Verba¹, G.A. Melkov¹, V.S. Tiberkevich² and A.N. Slavin^{2,1}. *Faculty of Radiophysics, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 2. Department of Physics, Oakland University, Rochester, MI*

3:42

DB-10. Controlled enhancement of spin-current emission by three-magnon splitting. H. Kurebayashi¹, O. Dzyapko², V.E. Demidov², D. Fang¹, A.J. Ferguson¹ and S.O. Demokritov^{2,1}. *University of Cambridge, Cambridge, United Kingdom; 2. University of Muenster, Muenster, Germany*

3:54

DB-11. Magneto-acoustic pulses in Nickel films generated with a femtosecond laser excitation. J. Kim¹, M. Vomir¹ and J. Bigot^{1,1}. *Institut de Physique et Chimie des Matériaux de Strasbourg, CNRS - Université de Strasbourg, Strasbourg, France*

4:06

DB-12. Measurements of spin-wave mode linewidth in individual nanomagnets of varying size. H.T. Nembach¹, J.M. Shaw¹ and T.J. Silva^{1,1}. *Electromagnetics Division, National Institute of Standards and Technology, Boulder, CO*

4:18

- DB-13. Electrical detection of spin wave quantization in ferromagnetic nanowires.** *M. Jamali¹, J. Kwon¹, A. M. Sahadevan¹, S. Mukherjee¹ and H. Yang¹*. *Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

TUESDAY
AFTERNOON
1:30

GRAND CANYON 8

Session DC

DOMAIN WALLS AND VORTICES II

Kyung-Jin Lee, Chair

1:30

- DC-01. Domain wall dynamics in an artificial multiferroic under non-uniform stress.** *M.T. Bryan¹, J. Dean¹ and D.A. Allwood¹*. *Materials Science and Engineering, University of Sheffield, Sheffield, South Yorkshire, United Kingdom*

1:42

- DC-02. Probing the Non-Adiabaticity of the Spin-Torque via Direct Imaging of Current Induced Vortex Domain Wall Excitations.** *A. Bisig^{1,2}, J. Rhensius^{3,4}, C. Moutafis^{1,3}, J. Heidler¹, G. Killiani³, T. Tyliczszak⁶, L.J. Heyderman⁴, B. Van Waeyenberge⁵, H. Stoll², G. Schütz² and M. Kläui^{1,7}*. *1. SwissFEL, Paul Scherrer Institut, Villigen, Switzerland; 2. Moderne Magnetische Materialien, Max-Planck-Institut für Intelligente Systeme, Stuttgart, Germany; 3. Fachbereich Physik, Universität Konstanz, Konstanz, Germany; 4. Labor für Mikro- und Nanotechnologie, Paul Scherrer Institut, Villigen, Switzerland; 5. Department of Solid State Sciences, Ghent University, Ghent, Belgium; 6. Advanced Light Source, LBNL, Berkeley, CA; 7. Institut für Physik, Johannes Gutenberg-Universität Mainz, Mainz, Germany*

1:54

- DC-03. Role of Spin Diffusion on Current-driven Domain Wall Motion.** *A. Manchon¹ and K. Lee²*. *1. Materials Science and Eng., KAUST, Thuwal, Saudi Arabia; 2. Materials Science and Eng., Korea University, Seoul, Korea, Republic of*

2:06

- DC-04. Coupling parameters and selection rules for spin-transfer induced dynamics of two coupled vortices.** *N. Locatelli¹, A. Khvalkovskiy², P. Bortolotti¹, G. Avanesyan³, J. Grollier¹, V. Cros¹, K. Zvezdin³, V. Naletov⁴, G. De Loubens⁴, O. Klein⁴ and A. Fert¹*. *1. Unité Mixte CNRS/Thales/Univ. Paris Sud, Palaiseau, France; 2. Grandis, Inc., Milpitas, CA; 3. A. M. Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russian Federation; 4. Service de Physique de l'Etat Condensé, CEA Saclay, Gif-sur-Yvette, France*

2:18

- DC-05. Reliable energy-efficient information recording by tailored orthogonal pulse currents in vortex-core cross-point architecture.** *Y. Yu¹, K. Lee¹, H. Jung¹, Y. Choi¹, J. Lee¹, M. Yoo¹, D. Han¹, M. Im², P. Fischer² and S. Kim¹*. *1. Research Center for Spin Dynamics & Spin-Wave Devices, Nanospinics Laboratory, and Research Institute of Advanced Materials, Department of Materials Science and Engineering, Seoul Natl Univ, Seoul, Korea, Republic of; 2. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA*

2:30

- DC-06. Joule heating effect as additional source of domain wall motion in NiFe nanostrips.** *J. Torrejon¹, J. Curiale^{1,2}, G. Malinowski¹, A. Thiaville¹, D. Lacour³, F. Montaigne³ and M. Hehn³*. *1. Laboratoire de Physique des Solides, (Univ Paris Sud, CNRS), Orsay (Paris), France; 2. Laboratoire de Photonique et Nanostructures, CNRS, Marcoussis, France; 3. Institut Jean Lamour, Univ Nancy I, Vandoeuvre-lès-Nancy, France*

2:42

- DC-07. Vortex dynamics in interacting ferromagnetic structures.** *(Invited) A. Vogel¹*. *Institute of Applied Physics, University of Hamburg, Hamburg, Germany*

3:18

- DC-08. Domain Wall Motion by the Magnonic Spin Seebeck Effect.** *D. Hinzke¹, U. Ritzmann¹ and U. Nowak¹*. *University of Konstanz, Konstanz, Germany*

3:30

- DC-09. Highly Efficient Spin-Torque-Assisted Domain Wall Depinning in $L1_0FePt$.** *K. Huang¹, T. Koyama², K. Ueda², D. Chiba², T. Ono² and C. Lai¹*. *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan*

3:42

- DC-10. Toward ultrafast current assisted domain wall motion.** *E. Mure¹, J.H. Franken¹, S.J. Schellekens¹, H.J. Swagten¹ and B. Koopmans¹*. *Applied Physics, TUE, Eindhoven, Netherlands*

3:54

- DC-11. Roles of field and current in thermally activated domain wall motion in submicron-wide magnetic strips with perpendicular magnetic anisotropy.** *S. Emori¹ and G.S. Beach¹*. *Materials Science and Engineering, MIT, Cambridge, MA*

4:06

- DC-12. Manipulation of domain walls using a spin-polarized scanning tunneling tip.** *R. Wieser¹, T. Stapelfeldt¹, E.Y. Vedmedenko¹ and R. Wiesendanger¹*. *University of Hamburg, Hamburg, Germany*

4:18

- DC-13. Field Frequency Tuning of the Velocity of Geometrically Confined Domain Walls.** *M. Negoita¹, T.J. Hayward¹ and D.A. Allwood¹. Department of Material Science and Engineering, University of Sheffield, Sheffield, United Kingdom*

TUESDAY
AFTERNOON
1:30

GRAND CANYON 9-11

Session DD
ORDERED ALLOYS
Chih-Huang Lai, Co-Chair
Kazuhiro Hono, Co-Chair

1:30

- DD-01. Magnetic Anisotropy in FePt - Effect of Chemical Disorder and Lattice Distortion.** *C.J. Aas¹, L. Szunyogh² and R.W. Chantrell¹. Dept of Physics, University of York, York, United Kingdom; 2. Dept of Theoretical Physics, Budapest University of Technology and Economics, Budapest, Hungary*

1:42

- DD-02. Electronic structure and magnetic anisotropy in FePt alloys out of L1₀ ordering.** *Y. Kota¹ and A. Sakuma¹. Department of Applied Physics, Tohoku University, Sendai, Japan*

1:54

- DD-03. Tailoring Magnetocrystalline Anisotropy of FePt by applied strain: first principles calculation.** *P. Lukashev^{1,3} and R.F. Sabirianov^{2,3}. Physics and Astronomy, University of Nebraska - Lincoln, Lincoln, NE; 2. Physics, University of Nebraska at Omaha, Omaha, NE; 3. Nebraska Center for Materials and Nanoscience, University of Nebraska - Lincoln, Lincoln, NE*

2:06

- DD-04. Magnetic anisotropy and order parameters for L1₀ type FePt polycrystalline films with (001) preferred grain orientation.** *D. Inoue^{1,2}, T. Shimatsu¹, Y. Inaba^{1,2}, H. Aoi¹, S. Okamoto³ and O. Kitakami³. RIEC, Tohoku University, Sendai, Japan; 2. Fuji Electric Co., Ltd., Matsumoto, Japan; 3. IMRAM, Tohoku University, Sendai, Japan*

2:18

- DD-05. L1₀ ordered phase formation in FePt, FePd, CoPt, and CoPd alloy thin films epitaxially grown on MgO(001) single-crystal substrates.** *M. Ohtake¹, S. Ouchi¹, F. Kirino² and M. Futamoto¹. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Graduate School of Fine Arts, Tokyo National University of Fine Arts and Music, Tokyo, Japan*

2:30

- DD-06. Granular L1₀ FePt-SiN_x-C nanocomposite films with large coercivity and small isolated grains for perpendicular recording application.** *K. Dong¹, H. Li¹, Y. Peng², G. Ju², G. Chow¹ and J. Chen¹. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 2. Seagate Technology, Fremont, CA*

2:42

- DD-07. Addition of Au to reduce ordering temperature of very thin Fe/Pt bi-layered films on MgO underlayer.** *M. Tanaka¹, K. Murata¹ and S. Nakagawa¹. Dept. of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan*

2:54

- DD-08. Accelerating phase transformation of L1₀ FePt by pre-formation of AgPt meta-stable phase.** *W. Wen¹ and C. Lai¹. MSE, National Tsing Hua University, Taiwan, Hsin-chu, Taiwan*

3:06

- DD-09. Magnetic reversal characteristics of L1₀-FePt dots.** *J. Liao¹, J. Hsiao¹, D. Gilbert², Y. Huang¹, H. Hou¹, L. Wang¹, I. Liu¹, K. Liu² and C. Lai¹. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Physics Department, University of California, Davis, CA*

3:18

DD-10. Withdrawn

3:30

- DD-11. Core-Shell type L10-FePt/Al-FePt and L10-FePt/Co exchange spring nanocomposites.** *D.G. Niarchos¹, T. Speliotis¹, G. Gainopoulos¹ and G. Hadjipanayis². Institute of Materials Science, NCSR Demokritos, Aghia Paraskevi, Attikis, ATTIKIS, Greece; 2. Physics and Astronomy, University of Delaware, NEWARK, DE*

3:42

- DD-12. Crystallographic study of high K_u metastable Co₅₀Pt₅₀ ordered structure.** *F. Yuan¹, J. Hsu¹, Y. Lin², S.N. Hsiao³ and C.S. Ku³. Physics, National Taiwan University, Taipei, Taiwan; 2. Materials Science & Engineering, National Tawian University, Taipei, Taiwan; 3. National Synchrotron Radiation, Hsin-Chu, Taiwan*

3:54

- DD-13. Fabrication of L1₀-MnAl perpendicularly magnetized thin films for perpendicular magnetic tunnel junctions.** *M. Hosoda¹, M. Oogane¹, M. Kubota¹, T. Kubota², H. Saruyama¹, S. Iihama¹, S. Mizukami², H. Naganuma¹ and Y. Ando¹. Department of Applied Physics, Tohoku Univ., Sendai, Miyagi, Japan; 2. WPI-AIMR, Tohoku Univ., Sendai, Miyagi, Japan*

4:06

- DD-14. Thickness-Dependent Magnetic Anisotropy in Ferromagnetic L1₀ MnAl Thin Films.** *Y. Cui¹, W. Yin², J. Lu² and S.A. Wolf^{1,2}.
Department of Physics, University of Virginia, Charlottesville, VA; 2. Department of Materials Science and Engineering, University of Virginia, Charlottesville, VA*

4:18

- DD-15. Ab initio study on magnetic anisotropy of L10-ordered alloy FeNi.** *S. Ozaki¹, Y. Kuwahara¹, M. Tsujikawa², Y. Miura^{1,2}, K. Abe^{1,2} and M. Shirai^{1,2}.
1. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 2. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan*

TUESDAY
AFTERNOON
1:30

GRAND CANYON 2-3

Session DE HEUSLER ALLOYS

Paul Crowell, Chair

1:30

- DE-01. Spin-dependent transport properties of fully epitaxial magnetic tunnel junctions of CoFe/MgO/CoFe ultrathin layer/Co₂MnSi.** *H. Liu¹, T. Taira¹, Y. Honda¹, K. Matsuda¹, T. Uemura¹, Y. Miura² and M. Shirai².
1. Division of Electronics for Informatics, Hokkaido Univ., Sapporo, Japan; 2. Research Institute of Electrical Communication, Tohoku Univ., Sendai, Japan*

1:42

- DE-02. Large Current-Perpendicular-to-Plane Giant Magnetoresistance Effect Using Half Metallic Co₂Fe_{0.4}Mn_{0.6}Si Heusler Alloy.** *M. Oogane¹, J. Sato¹, H. Naganuma¹ and Y. Ando¹.
1. Tohoku Univ., Sendai, Japan*

1:54

- DE-03. CPP-GMR using Co₂Mn(Ga_{0.25}Ge_{0.75}) Heusler alloy.** *N. Hase¹, B. Varaprasad², Y.K. Takahashi² and K. Hono^{2,1}.
1. University of Tsukuba, Tsukuba, Ibaraki, Japan; 2. National Institute for Materials Science, Tsukuba, Ibaraki, Japan*

2:06

- DE-04. Fabrication of epitaxial magnetic tunnel junctions with a Co₂MnSi thin film and a MgO barrier on Ge(001) substrates via a MgO interlayer.** *G. Li¹, T. Taira¹, H. Liu¹, K. Matsuda¹, T. Uemura¹ and M. Yamamoto¹.
1. Division of Electronics for Informatics, Hokkaido University, Sapporo, Japan*

2:18

- DE-05. Spincaloritronic effects in Heusler compound Co₂MnSi thin films.** *S. Bosu¹, Y. Sakuraba¹, K. Uchida¹, K. Saito¹, E. Saitoh¹ and K. Takanashi¹.
1. Institute for Materials Research, Tohoku University, Sendai, Japan*

2:30

- DE-06. Anisotropic magnetoresistance in Heusler compounds epitaxial films: A fingerprint of half-metallcity/non-half-metallicity.** *F. Yang¹, Y. Sakuraba¹ and K. Takanashi¹.
1. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

2:42

- DE-07. Magnetodynamics in Co_{1-x}Fe_xS₂: A view from magnetic resonance.** *B. Kaster¹, M. Pechan¹, M. Manno², A. Baruth² and C. Leighton².
1. Physics, Miami University, Oxford, OH; 2. Materials Science, University of Minnesota, Minneapolis, MN*

2:54

- DE-08. Exchange stiffness and magnetic anisotropy of Cu₂MnAl thin films grown onto sapphire and MgO substrates.** *M. Belmeguenai¹, S. Cherif¹, K. Westerholt² and P. Moch¹.
1. LSPM (CNRS-UPR 3407), Université Paris 13, 99 avenue Jean-Baptiste Clément, 93430, Villetaneuse, France; 2. Experimentalphysik/Festkörperphysik, Ruhr-Universität Bochum, 44780, Bochum, Germany*

3:06

- DE-09. Epitaxial Co₂FeSi Heusler alloy films on GaAs substrates with different substrate orientation.** *J. Herfort¹, B. Jenichen¹, T. Hentschel¹ and A. Trampert¹.
1. Paul-Drude-Institute, Berlin, Germany*

3:18

- DE-10. Atomic resolution structural study of the Heusler electrodes in Co₂(Fe,Mn)Si/Ag/Co₂(Fe,Mn)Si Spin Valves.** *V.K. Lazarov¹, L. Lari¹, J. Sato², J. Sizeland¹, P.J. Hasnip¹, M. Oogane², A. Hirohata³ and Y. Ando².
1. Physics, University of York, York, United Kingdom; 2. Applied Physics, Tohoku University, Sendai, Japan; 3. Electronics, University of York, York, United Kingdom*

3:30

- DE-11. Withdrawn**

3:42

- DE-12. Proximity effects of antiphase boundaries.** *S.R. Gopala Pillai¹, . Wu¹ and I.V. Shvets¹.
1. Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN), Trinity College, University of Dublin, Dublin, Dublin, Ireland*

3:54

- DE-13. Enhanced Coercivity of Half-metallic $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ Enhanced by Both Ru Doping and Anisotropic Epitaxial Strain.** K. Shigematsu¹, A. Chikamatsu¹, Y. Hirose^{1,2}, T. Fukumura¹ and T. Hasegawa^{1,2}. *Chemistry, The University of Tokyo, Tokyo, Japan; 2. Kanagawa Academy of Science and Technology (KAST), Kawasaki, Japan*

4:06

- DE-14. Structural and magnetic properties of Mn_2TiSn Alloy.** Y. Huh^{1,3}, P. Kharel^{2,3}, V.R. Shah³, R. Skomski^{2,3}, E.S. Krage^{1,3} and D.J. Sellmyer^{2,3}. *1. Physics, South Dakota State University, Brookings, SD; 2. Physics and Astronomy, University of Nebraska, Lincoln, NE; 3. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE*

4:18

- DE-15. CVD synthesis of polycrystalline Fe_3O_4 thin films by using the cyclohexadiene iron tricarbonyl liquid precursor.** R. Mantovan¹, S. Vangelista¹, S. Cocco¹, A. Lamperti¹ and O. Salicio¹. *CNR-IMM MDM Laboratory, Agrate Brianza (MB), Italy*

TUESDAY
AFTERNOON
1:30

GRAND CANYON 4-5

Session DF

FERROMAGNETIC SEMICONDUCTORS II

Xinyu Liu, Chair

1:30

- DF-01. Giant anomalous Hall effect in diluted magnetic topological insulator with carrier independent ferromagnetic order.** (Invited) K. He¹, C. Chang^{1,2}, J. Zhang², Z. Zhang², M. Liu², K. Li¹, X. Feng^{1,2}, L. Wang¹, X. Chen², X. Dai¹, Z. Fang¹, X. Qi³, S. Zhang³, Y. Wang², X. Ma¹ and Q. Xue^{2,1}. *1. State Key Laboratory for Surface Physics, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. State Key Laboratory for Low-Dimensional Quantum Physics, Department of Physics, Tsinghua University, Beijing, China; 3. Department of Physics, Stanford University, Stanford, CA*

2:06

- DF-02. Electric Field Controlled Ferromagnetism in High Curie Temperature $\text{Mn}_{0.05}\text{Ge}_{0.95}$ Quantum Dots.** F. Xiu¹. *Electrical Engineering, Iowa State University, Ames, IA*

2:18

- DF-03. (In,Fe)As: A new Fe-based n-type electron-induced ferromagnetic semiconductor.** P. Nam Hai¹, L. Duc Anh¹ and M. Tanaka¹. *Department of Electrical Engineering and Information Systems, The University of Tokyo, Tokyo, Japan*

2:30

- DF-04. Rare-Earth Nitrides: Intrinsic Ferromagnetic Semiconductors.** J. Trodahl¹, B. Ruck¹, F. Natali¹, N. Plank¹ and C. Meyer². *1. Victoria University, Wellington, New Zealand; 2. Neel Institute, Grenoble, France*

2:42

- DF-05. Ns-scale magnetization reversal in (Ga,Mn)As using electrical field gating.** P. Balestrieri¹, T. Devolder¹, J. Kim¹, D. Ravelosona¹, V. Novak², J. Wunderlich³ and T. Jungwirth². *1. Université paris-Sud, ORSAY Cedex, France; 2. Institute of Physics, Praha, Czech Republic; 3. Hitachi Cambridge Laboratory, Cambridge, United Kingdom*

2:54

- DF-06. Enhancing the Curie Temperature of Ferromagnetic Semiconductor (Ga,Mn)As to 200 K via Nanostructure Engineering.** L. Chen¹, X. Yang¹, F. Yang¹, J. Zhao¹, J. Misuraca², P. Xiong² and S. von Molnár². *1. State Key Laboratory For Superlattices And Microstructures, Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China; 2. Department of Physics, Florida State University, Tallahassee, FL*

3:06

- DF-07. MBE growth and magnetic properties of (Ga,Mn)As/GaAs nanowires.** J. Sadowski^{1,2}, A. Siusys², P. Dziawa², A. Reszka², B.J. Kowalski², P. Dłuzewski² and T. Story². *1. MAX-Lab, Lund University, Lund, Sweden; 2. Institute of Physics, Polish Academy of Sciences, Warszawa, Poland*

3:18

- DF-08. Origin of uniaxial magnetic anisotropy in (Ga,Mn)As.** M. Birowska¹, C. Sliwa², K. Milowska¹, J.A. Majewski¹ and T. Dietl^{1,2}. *1. Institute of Theoretical Physics, University of Warsaw, Warsaw, Poland; 2. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland*

3:30

- DF-09. Anisotropy variations in Mn-graded GaMnAs.** J. Leiner¹, B.J. Kirby², K. Tivakornsasithorn¹, X. Liu¹, J.K. Furdyna¹ and M. Dobrowolska¹. *1. University of Notre Dame, Notre Dame, IN; 2. National Institute of Standards & Technology, Gaithersburg, MD*

3:42

DF-10. Magnetism of dilute Mn in GaN: from paramagnetism to ferromagnetism. *T. Devillers*¹, *W. Stefanowicz*², *B. Faina*¹, *A. Navarro-Quezada*¹, *T. Li*¹, *A. Grois*¹, *M. Rovezzi*^{1,4}, *F. d'Acapito*⁴, *D. Sztenkiel*², *R. Jakiela*², *A. Meingast*⁵, *G. Kothleitner*⁵, *M. Sawicki*², *T. Dietl*^{2,3} and *A. Bonanni*¹. *Institute for semiconductor and solid state physics, Johannes Kepler University, Linz, Austria; 2. Institute of Physics, Polish Academy of Sciences, Warszawa, Poland; 3. Institute of Theoretical Physics, University of Warsaw, Warszawa, Poland; 4. Italian Collaborating Research Group, BM08 "GILDA" - ESRF, Grenoble, France; 5. Institute for Electron Microscopy – FELMI, Graz University of Technology, Graz, Austria*

3:54

DF-11. Intrinsic ferromagnetism in (In,Fe)As and its dependence on Fe concentration. *L.D. Anh*¹, *P.N. Hai*¹ and *T. Masaaki*¹. *Department of Electrical Engineering and Information Systems, The university of Tokyo, Tokyo, Japan*

4:06

DF-12. Room temperature ferromagnetism in transparent conducting Fe-doped In₂O₃ films. *M. Osofsky*¹, *H. Kim*¹, *M.M. Miller*¹, *S.B. Qadri*¹, *R. Auyeung*¹ and *A. Pique*¹. *code 6364, Naval Research Laboratory/SSD, Washington, DC*

4:18

DF-13. Lattice location of transition metals in dilute magnetic semiconductors. *L.M. Pereira*^{1,2}, *U. Wahl*³, *A. Vantomme*¹ and *J.P. Araujo*². *1. Instituut voor Kern- en Stralingsfysica and INPAC, Katholieke Universiteit Leuven, Leuven, Belgium; 2. IFIMUP and IN-Institute of Nanoscience and Nanotechnology, University of Porto, Porto, Portugal; 3. Instituto Tecnológico e Nuclear, UFA, Lisbon, Portugal*

TUESDAY
AFTERNOON
1:30

GRAND CANYON 12-13

**Session DG
MAGNETIC MICROSCOPY I**

Benjamin McMorran, Chair

1:30

DG-01. Three-dimensional imaging of magnetic domains. (Invited) *R. Schäfer*¹, *C. Grünzweig*², *I. Manke*³, *N. Kardjilov*³, *A. Hilger*³, *S. Shin*⁴ and *B.C. De Cooman*⁴. *1. Institute for Metallic Materials, Leibniz Institute for Solid State and Materials Research (IFW) Dresden, Dresden, Germany; 2. Paul Scherrer Institut, CH-Villigen-PSI 5232, Switzerland; 3. Institute of Applied Materials, Helmholtz Centre Berlin for Materials and Energy (HZB), Berlin 14109, Germany; 4. Materials Design Laboratory, Graduate Institute of Ferrous Technology Pohang University of Science and Technology, Pohang, Korea, Republic of*

2:06

DG-02. Scanned Magnetic Perturbation Imaging. *V.P. Bhallamudi*^{1,2}, *A.J. Berger*¹, *D.E. Labanowski*², *D. Stroud*¹ and *P. Hammel*¹. *1. Physics, The Ohio State University, Columbus, OH; 2. Electrical and Computer Engineering, The Ohio State University, Columbus, OH*

2:18

DG-03. First-Principles study of magnetic exchange interactions in scanning probe microscopy. *C. Lazo*¹ and *S. Heinze*¹. *Institute of Theoretical Physics and Astrophysics, University of Kiel, Kiel, Germany*

2:30

DG-04. Vector analysis of static magnetic field by adjusting measuring axis for Near-field magnetic force microscopy. *H. Saito*¹, *Z. Li*², *R. Ito*¹, *G. Egawa*¹ and *S. Yoshimura*¹. *1. Graduate School of Engineering and Resource Science, Akita University, Akita, Akita, Japan; 2. Venture Business Laboratory, Akita University, Akita, Akita, Japan*

2:42

DG-05. Influence of magnetic film composition of Fe_xB_{100-x} coated tip on the spatial resolution of magnetic force microscopy. *M. Ohtake*¹, *K. Soneta*¹ and *M. Futamoto*¹. *Faculty of Science and Engineering, Chuo University, Tokyo, Japan*

2:54

DG-06. Engineering the ferromagnetic domain size for optimized imaging of the pinned uncompensated spins in exchange-biased samples by magnetic force microscopy. *S. Ozer¹, N.R. Joshi³, T.V. Ashworth², P.G. Sticker³, S. Romer³, M.A. Marioni³ and H.J. Hug^{1,3}*. *1. Physics, Basel University, Basel, Switzerland; 2. NanoScan Ltd., CH-8600 Dubendorf, Switzerland; 3. Empa, Swiss Federal Laboratories for Material Science and Technology, CH-8600 Dubendorf, Switzerland*

3:06

DG-07. Characteristics of MFM Magnetics on High Moment PMR Writers with High Coercivity Probes. *F. Liu¹, S. Li¹, D. Bai¹, J. Wang¹, Z. Li¹, D. Han¹, T. Pan¹ and S. Mao¹*. *Western Digital Corporation, Fremont, CA*

3:18

DG-08. Single-atom magnet feature of thulium adatoms on W (110). *J.L. Diez-Ferrer¹, D. Coffey^{2,3}, M. Ciria^{2,3} and J.I. Arnaudas^{1,3}*. *1. Laboratorio de Microscopías Avanzadas, Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza, Spain; 2. Instituto de Ciencia de Materiales de Aragón, CSIC - Universidad de Zaragoza, Zaragoza, Spain; 3. Dept. Física Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain*

3:30

DG-09. Magneto-optical Kerr effect with radially-polarized light. *R. Dost¹, B. Paul², D.A. Allwood¹ and I.G. Hughes²*. *1. Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 2. Physics, Durham University, Durham, United Kingdom*

3:42

DG-10. Unique characterization possibilities in the UHV-STXM MAXYMUS using the new surface sensitive TEY-measurement mode and a rotatable magnetic field up to 0.4T. *D. Nolle¹, M. Weigand¹, E. Goering¹ and G. Schütz¹*. *MPI for Intelligent Systems, Stuttgart, Germany*

3:54

DG-11. Electron Beams with Orbital Angular Momentum and Their Application to Magnetic Imaging. (Invited) *B. McMoran^{1,2}, A. Agrawal^{1,3}, H. Lezec¹, J.J. McClelland¹ and J. Unguris¹*. *Center for Nanoscale Science and Technology, NIST, Gaithersburg, MD; 2. Department of Physics, University of Oregon, Eugene, OR; 3. Maryland NanoCenter, University of Maryland, College Park, MD*

TUESDAY
AFTERNOON
1:30

GRAND CANYON 1

**Session DH
MAGNETO-ELASTIC MATERIALS I**

Miguel Ciria, Chair

1:30

DH-01. Investigation of the Magnetic and Magnetoelastic Properties of Zn Doped Cobalt Ferrite. *D. Das¹, N. Somaiah¹, T.V. Jayaraman² and P.A. Joy³*. *1. School of Engineering Sciences and Technology, University of Hyderabad, Hyderabad, AP, India; 2. Department of Mechanical and Materials Engineering, University of Nebraska, Lincoln, NE; 3. Materials Chemistry Division, National Chemical Laboratory, Pune, Maharashtra, India*

1:42

DH-02. Strain-mediated magnetization rotation in exchange biased antiferromagnetic/ferromagnetic/piezoelectric composites. *G. Lebedev^{1,2}, B. Viala¹, T. Lafont², D. Zakharov^{1,2}, O. Cugat² and J. Delamare²*. *1. CEA, LETI, MINATEC Campus, Grenoble, France; 2. G2Elab, Grenoble Electrical Engineering Lab, CNRS-UJF-INPG, St Martin d'Hères, France*

1:54

DH-03. Observation of large magnetostriction in annealed and quenched Co_{1-x}Fe_x thin films. *D.D. Hunter¹, W. Osborn², K. Wang², R. Suchoski¹, L. Bendersky², S.E. Lofland³, M. Wuttig¹ and I. Takeuchi¹*. *1. Materials Science and Engineering, University of Maryland, College Park, MD; 2. Materials Measurement Laboratory, National Institute of Standards and Technology, Gaithersburg, MD; 3. Department of Physics and Astronomy, Rowan University, Glassboro, NJ*

2:06

DH-04. Temperature dependence of magnetoelastic properties of Fe_{100-x}Si_x (5<x<20). *G. Petculescu¹, P.K. Lambert², A.E. Clark³, K.B. Hathaway⁴, Q. Xing⁵, T.A. Lograsso⁵, J.B. Restorff⁶ and M. Wun-Fogle⁶*. *1. Physics, Univ Louisiana Lafayette, Lafayette, LA; 2. University of Maryland, College Park, MD; 3. Clark Associates, Adelphi, MD; 4. G. J. Associates, Annapolis, MD; 5. Division of Materials Sciences and Engineering, Ames Laboratory, Ames, IA; 6. Carderock Division, Naval Surface Warfare Center, W. Bethesda, MD*

2:18

DH-05. Behavior of Magnetic Field Annealed Galfenol Steel. *M.D. Brooks¹, E. Summers¹, M. Wun-Fogle² and J. Restorff²*. *1. Materials Science, ETREMA Products, Inc., Ames, IA; 2. Naval Surface Warfare Center, Bethesda, MD*

2:30

DH-06. Structure and magnetostriction of quenched Fe_{1-x}Ga_x (x = 0.15-0.30) alloys. X. Zhu¹, J. Liu¹ and C. Jiang¹. *Materials science and engineering School, Beihang University, Beijing, China*

2:42

DH-07. Temperature dependence of magnetization and magnetostriction in Fe₈₁Ga₁₉ alloy. J. Liu¹ and C. Jiang¹. *School of Materials Science and Engineering, Beihang University, Beijing, China*

2:54

DH-08. Structural and Magnetic Characterization of Electrodeposited Magnetostrictive Fe_{1-x}Ga_x/Cu Multilayered Nanowires. K. Reddy¹, J. Park³, S. Na³, M. Maqableh², A. Flatau³ and B. Stadler^{1,2}. *1. Chemical Engineering and Materials Science, University of Minnesota - Twin Cities, Minneapolis, MN; 2. Electrical and Computer Engineering, University of Minnesota - Twin Cities, Minneapolis, MN; 3. Aerospace Engineering, University of Maryland, College Park, MD*

3:06

DH-09. The compositional dependence of surface magnetization processes in Fe-Ga magnetostrictive nanowires. N. Lupu¹, A. Pintea¹, M. Lostun^{1,2} and H. Chiriac¹. *Magnetic Materials and Devices, National Institute of Research and Development for Technical Physics, Iasi, Romania; 2. Faculty of Physics, "Alexandru Ioan Cuza" University, Iasi, Romania*

3:18

DH-10. Magnetic domain manipulation in magnetostrictive Fe₇₀Ga₃₀ thin films via direct application of strain fields observed with Lorentz Microscopy. P. Alexander¹ and J. Cumings¹. *Materials Science & Engineering, University of Maryland, College Park, MD*

3:30

DH-11. The compressive stress effect on the magnetostriction and magnetization for Sm-Dy-Fe composites. B. Wang¹, Z. Wang¹, Y. Hao², L. Weng¹, W. Huang¹ and W. Yan¹. *Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, Tianjin, China; 2. Department of Physics, College of Science, Tianjin University of Science & Technology, Tianjin, China*

3:42

DH-12. Anomalous lattice softening of Ni-Mn-Ga austenite due to magneto-elastic coupling. O. Heczko¹, H. Seiner², J. Kopecek¹, P. Sedlak² and M. Landa². *1. Institute of Physics ASCR, Prague, Czech Republic; 2. Institute of Thermomechanics ASCR, Prague, Czech Republic*

3:54

DH-13. Co- and In- doped NiMnGa multifunctional alloys: giant effects under high pressure and high magnetic field. S. Fabbri¹, J. Kamarad², Z. Arnold², F. Casoli¹, A. Paoluzi¹, L. Righi³, D. Serrate⁴, P. Algarabel⁴, M. Doerr⁵, E. van Elferen⁶ and F. Albertini¹. *1. IMEM-CNR, Parma, Italy; 2. Institute of Physics, AS CR, Prague, Czech Republic; 3. University of Parma, Chemistry dep., Parma, Italy; 4. University of Zaragoza, Inst. de Ciencia de Materiales de Aragon, Zaragoza, Spain; 5. Tech University of Dresden, Inst. Festkorperphys, Dresden, Germany; 6. Radboud University of Nijmegen, High Field Magnet Lab, Nijmegen, Netherlands*

4:06

DH-14. In situ tailoring of magnetization configuration in ferromagnetic films under external stress. W. Karboul Trojet¹, D. Faurie¹, Y. Roussigné¹ and S. Cherif¹. *Laboratoire des sciences et procédés des matériaux LSPM, Villetaneuse, France*

4:18

DH-15. Model and experimental research on magneto-thermo-mechanical characterization of Terfenol-D. L. Wang¹, B. Wang^{1,2}, Z. Wang¹, L. Weng¹, W. Huang¹ and W. Yan¹. *Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, Tianjin 300130, China; 2. International Center for Materials Physics, the Academy of Sciences, Shenyang 110015, China*

TUESDAY

SAGUARO BALLROOM

AFTERNOON

1:00

Session DP
HARD-MAGNETIC OXIDE AND L₁₀
NANOSTRUCTURES
(Poster Session)

Damien Le Roy, Chair

DP-01. Microstructures and magnetic properties of L₁₀ FePt films deposited onto NaCl-type films. S. Chen¹, T. Sun² and P. Kuo³. *1. Department of Materials Engineering and Center for Thin Film Technologies and Applications, Ming Chi University of Technology, Taipei, Taiwan; 2. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 3. Institute of Materials Science and Engineering, National Taiwan University, Taipei, Taiwan*

DP-02. Effects of phase distribution and grain size on the effective anisotropy and coercivity of Nanocomposite PtCo Permanent Alloy. T. Liu¹, W. Li¹, W. Sun¹ and Z. Guo¹. *Division of Functional Material, Central Iron & Steel Research Institute, Beijing, China*

DP-03. Formation mechanism and magnetic properties of cubic and cuboctahedron FePt Nanoparticles. B. Baoru^{1,2}, L. JingJing^{1,2}, H. Xianghua^{1,2}, J. Ping^{1,3} and D. Juan^{1,2,1}. *Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, Zhejiang, China; 3. Department of Physics, University of Texas at Arlington, Arlington, TX*

DP-04. Magnetic domain observation of FePt/MgO/FePt trilayer circular dots. H. Iwama¹, S. Matsumoto¹, S. Wakamatsu¹, K. Sugawara¹, K. Sato¹, M. Doi¹ and T. Shima¹. *Tohoku Gakuin University, Tagajo, Japan*

DP-05. Magnetization processes in micron-scale (CoFe/Pt)n multilayers with perpendicular anisotropy: First-order reversal curves measured by extraordinary Hall effect. Z. Diao^{1,2}, N. Decorde^{1,2}, P. Stamenov^{1,2}, K. Rode^{1,2}, G. Feng^{1,2} and J. Coey^{1,2,1}. *Physics, Trinity College Dublin, Dublin, Ireland; 2. CRANN, Trinity College Dublin, Dublin, Ireland*

DP-06. Ultrathin M-type Strontium ferrite hexagonal platelets synthesized via CTAB-assisted chemical co-precipitation technique. D.Y. Chen¹, Y.Y. Meng¹, D.C. Zeng¹, Z.W. Liu¹, X.C. Zhong¹, H.Y. Yu¹ and W.Q. Qiu¹. *South China University of Technology, Guangzhou, China*

DP-07. Particle Size Dependent Structural and Magnetic Properties of CoCrFeO₄ Nanoparticles. S.E. Shirsath¹, V.S. Shinde², R.H. Kadam³, A. Ghasemi⁴ and A. Morisako^{5,1}. *Department of Physics, Vivekanand College, Aurangabad, Maharashtra, India; 2. Department of Chemistry, Shree Shivaji College, Omerga, Osmanabad, Maharashtra, India; 3. Materials Research Laboratory, Srikrishna Mahavidyalaya Gunjoti, Gunjoti, Omerga, Osmanabad, Maharashtra, India; 4. Materials Engineering Department, Malek Ashtar University of Technology, Shahin Shahr, Iran, Islamic Republic of; 5. Spin Device Technology Centre, Faculty of Engineering, Shinshu University, Nagano, Japan*

DP-08. The comparison between magnetic and reflection loss characteristics of substituted strontium ferrite and nanocomposites of ferrite/carbon nanotubes. A. Ghasemi¹, X. Liu¹ and A. Morisako¹. *Shinshu University, Nagano, Japan*

DP-09. Tailoring the exchange spring behaviour for the hard soft ferrite nanocomposite SrFe₁₂O₁₉/CoFe₂O₄. D. Roy¹, K.V. Sreenivasulu¹ and P. Kumar¹. *Department of Physics, Indian Institute of Science, Bangalore, India*

DP-10. Size effects on magnetic properties of nanocrystalline Sr₂CuCo₂Fe₂₄O₄₁ prepared by Co-precipitation method. P. Kuruva¹, K. Sadhana¹ and S. Srinath¹. *School of Physics, University of Hyderabad, Hyderabad, India*

DP-11. Screen-printing of ferrite magnetic nanoparticles produced by carbon combustion synthesis of oxides. C. Dannangoda¹, E. Galstyan², D. Litvinov³ and K. Martirosyan¹. *Physics, University of Texas at Brownsville, Brownsville, TX; 2. Texas Center for Superconductivity, University of Houston, Houston, TX; 3. Department of Electrical and Computer Engineering, University of Houston, Houston, TX*

DP-12. Synthesis, Characterization and Functionalization of CoFe₂O₄ Nanoparticles with Piper hispidinervium C. DC oil. T.M. Silva¹, J.L. Lopez Aguilar¹, R. Paniago² and H.D. Pfannes². *Centro de Ciências Biológicas e da Natureza - CCBN, Universidade Federal do Acre - UFAC, Rio Branco, Acre, Brazil; 2. Departamento de Física, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil*

DP-13. Structure and Magnetoelectronic Properties of Nickel and Cobalt Oxide Nanopolymers. L.A. Pozhar¹. *Department of Physics, University of Idaho, Moscow, ID*

DP-14. Controlled Synthesis of Superparamagnetic Iron-Oxide Nanoparticles by Phase Transformation. M.A. Laurenzi III¹ and E.E. Carpenter². *Physics, Catholic University, Washington DC, DC; 2. Chemistry, Virginia Commonwealth university, Richmond, VA*

DP-15. High temperature magnetic properties of Co_{1-x}Mg_xFe₂O₄ nanoparticles prepared by forced hydrolysis method. A. Franco Jr¹ and F.C. e Silva^{1,2,1}. *Instituto de Física, Universidade Federal de Goiás, Goiânia, Goiás, Brazil; 2. Instituto de Química, Universidade Federal de Goiás, Goiânia, Goiás, Brazil*

TUESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session DQ PATTERNED AND MICROWAVE MEDIA (Poster Session)

S. N. (Prem) Piramanayagam, Chair

DQ-01. Fabrication and magnetic properties of CoPt (101) films for bit patterned media with inclined anisotropy toward recording density of 5 Tbit/in². K. Shintaku¹, S. Chiba¹, T. Kiya¹ and K. Yamakawa¹. *Akita Industrial Technology Center, Akita, Akita, Japan*

DQ-02. Fabrication of [001] L₁₀-FePtRh ferro-antiferromagnetic pattern by flat-patterning method. T. Hasegawa¹, T. Tomioka¹, Y. Kondo², H. Yamane¹ and S. Ishio². *Department of Materials Science and Engineering, Akita University, Akita City, Japan; 2. Akita Industrial Technology Center (AIT), Akita, Japan*

- DQ-03. Control of Magnetic Properties of MnBiCu Thin Films by Kr⁺ Ion Irradiation.** *Q. Xu¹, R. Kanbara¹, T. Kato¹, S. Iwata¹ and S. Tsunashima²*. *Department of Quantum Engineering, Nagoya University, Nagoya, Japan; 2. Department of Research, Nagoya Industrial Science Research Institute, Nagoya, Japan*
- DQ-04. Fabrication of exchange-coupled Fe/FePt dots by anodized aluminum oxide template.** *J. Hsiao¹, Y. Huang¹, L. Wang¹, J. Liao¹ and C. Lai¹*. *Materials Science and Engineering, National Tsing-Hua University, Hsinchu, Taiwan*
- DQ-05. Time Dependent Estimation of the Switching Field Distribution of Bit Patterned Media with 17- and 35-nm Pitch CoPt Dots.** *A. Kikitsu¹, Y. Isowaki¹, T. Maeda¹ and Y. Kamata¹*. *Storage Materials & Devices Laboratory, Toshiba Corp., Corporate R&D Center, Kawasaki, Kanagawa, Japan*
- DQ-06. Switching properties of exchange coupled magnetic dot arrays for next-generation bit patterned media.** *Y. Kondo¹, T. Kiya¹, T. Hasegawa², S. Ishio², J. Ariake¹ and N. Honda³*. *Akita Industrial Technology Center, Akita, Japan; 2. Faculty of Engineering and Resource Science, Akita University, Akita, Japan; 3. Faculty of Engineering, Tohoku Institute of Technology, Sendai, Japan*
- DQ-07. Reduction of Switching Field Distribution in Bit-Patterned Media.** *M. Ranjbar^{1,2}, S.N. Piramanayagam¹, S. Wong¹, R. Sbiaa¹ and T. Chong^{1,2}*. *Data Storage Institute, (A*STAR) Agency for Science, Technology and Research, Singapore, Singapore; 2. Electrical and computer engineering Department, National University of Singapore, Singapore, Singapore*
- DQ-08. Switching Field Distribution Analysis on L1₀-FePt ECC Bit Patterned Media.** *H. Wang¹, W. Li^{2,3}, T. Rahman¹, H. Zhao¹, J. Ding², Y. Chen³ and J. Wang¹*. *Electrical and Computer Engineering, Large Lakes Observatory, Minneapolis, MN; 2. Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 3. Data Storage Institute, A*STAR, Singapore, Singapore*
- DQ-09. Angular dependence and temperature effect on switching field distribution of Co/Pd based bit patterned media.** *W. Li^{1,2}, X. Huang¹, J. Shi² and J. Ding¹*. *material science and engineering, National Univ Singapore, Singapore, Singapore; 2. Data Storage Institute, Agency for Science, Technology and Research (A*STAR), Singapore, Singapore*
- DQ-10. Scanning magnetoresistance microscope investigation of site specific reversal of graded bit patterned media.** *L.V. Chang¹, P. Ruchhoeft¹, S. Khizroev² and D. Litvinov¹*. *Electrical and Computer Engineering, University of Houston, Houston, TX; 2. Electrical and Computer Engineering, Florida International University, Miami, FL*
- DQ-11. A Two-Dimensional Coding for Patterned Media Recording.** *G. Kim¹ and J. Lee¹*. *Soongsil Univ., Seoul, Korea, Republic of*

- DQ-12. Unequal Error Correction Strategy for Multi-track Processing in Bit Patterned Media Systems.** *P. Supnithi¹ and L.M. Myint²*. *Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand; 2. School of Management Technology, Shinawatra University, Bangkok, Pathumthani, Thailand*
- DQ-13. Computational analysis of microwave assisted magnetization reversal for exchange coupled composite grain.** *Y. Furomoto¹, A. Kato¹, T. Tanaka¹, A. Md Nor² and K. Matsuyama¹*. *Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Fukuoka, Japan; 2. Department of Physics, Malaya University, Kuala Lumpur, Malaysia*
- DQ-14. Reduction in switching fields by thermal activation in microwave assisted magnetization reversal.** *T. Tanaka¹, Y. Furomoto¹, A. Kato¹, A. Md Nor² and K. Matsuyama¹*. *Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Fukuoka, Japan; 2. Department of Physics, Malaya University, Kuala Lumpur, Malaysia*
- DQ-15. Ferromagnetic resonance properties of granular Co-Cr-Pt films measured using micro-fabricated coplanar waveguides.** *T. Kobayashi¹, N. Ishida¹ and Y. Nozaki^{1,2}*. *Dept. of Physics, Keio University, Yokohama, Japan; 2. JST, CREST, Tokyo, Japan*

TUESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session DR
MICROMAGNETIC MODELING I
(Poster Session)
Xi Chen, Chair

- DR-01. Multipole expansion technique for the magnetostatic field computation in patterned magnetic films.** *A. Manzin¹ and O. Bottauscio¹*. *Istituto Nazionale di Ricerca Metrologica (INRIM), Torino, Italy*
- DR-02. Model study for spinlogic devices combining micromagnetic simulations with spin transport.** *A. Tuggle^{1,2} and C. Mewes^{1,2}*. *Center for Materials for Information Technology (MINT), University of Alabama, Tuscaloosa, AL; 2. Department of Physics and Astronomy, University of Alabama, Tuscaloosa, AL*
- DR-03. Effects of notch shape on the magnetic domain wall motion in nanowires with in-plane or perpendicular magnetic anisotropy.** *S. Noh¹, Y. Miyamoto², M. Okuda², N. Hayashi² and Y.K. Kim¹*. *Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Imaging & Storage Devices Research Division, NHK Science and Technology Research Laboratories, Tokyo, Japan*

- DR-04. Effect of Enhanced Damping Caused by Spin-Motive Force on Vortex Dynamics.** *J. Moon*¹ and *K. Lee*¹. *Dept. of Mat. Sci. & Eng., Korea University, Seoul, Korea, Republic of*
- DR-05. Magnetization dynamics of a ferromagnetic quantum dot under spin bias.** *Z. Siu*^{1,3}, *M. Jali*^{2,1} and *S. Tan*³. *1. NUS Graduate School for Integrative Sciences and Engineering, National Univ Singapore, Singapore, Singapore; 2. Electronic and Computer Engineering, National University of Singapore, Singapore, Singapore; 3. Data Storage Institute, Singapore, Singapore*
- DR-06. Revisit of Magnetization Reversal With Spin Transfer Torque in the Finite Temperature.** *X. Cheng*¹. *Electrical & Computer Engineering, National University of Singapore, Singapore, Singapore*
- DR-07. Modeling of pulsed laser heating in magnetic nanowires.** *I. Astefanoaei*¹, *I. Dumitru*¹ and *A. Stancu*¹. *Department of Physics, Alexandru Ioan Cuza University, Iasi, Romania*
- DR-08. Temperature effects in perpendicular spin transfer torque magnetic random access memory.** *D. Cimpoesu*¹ and *A. Stancu*¹. *Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*
- DR-09. Tailoring vortex core in confined magnetic nanostructures.** *A.L. Dantas*¹, *T.S. Moura*², *F.F. Oliveira*², *G.G. Rebouças*³ and *A.S. Carriç*^{o2}. *1. Departamento de Física, Universidade do Estado do Rio Grande do Norte, Mossoró, RN, Brazil; 2. Departamento de Física, Universidade Federal do Rio Grande do Norte, Natal, RN, Brazil; 3. Departamento de Física, Universidade Federal Rural do Semi-Árido, Angicos, RN, Brazil*
- DR-10. Magnetic configuration of nanodots with perpendicular anisotropy.** *E.R. Novais*¹, *P. Landeros*², *A.G. Barbosa*³, *M.D. Martins*³, *F. Garcia*⁴ and *A.P. Guimaraes*¹. *1. CBPF, Rio de Janeiro, RJ, Brazil; 2. Physics Department, UTFSM, Valparaiso, Chile; 3. CDTN, Belo Horizonte, Brazil; 4. LNLS, Campinas, Brazil*
- DR-11. Spin Transfer torques in Antiferromagnets.** *H.B. Saidaoui*¹, *X. Wang*¹ and *A. Manchon*¹. *Physical Sciences, King Abdullah University Of Sciences and Technology, Thuwal, Saudi Arabia*
- DR-12. Simulation of a Spin Field Effect Transistor based on magnetic impurity doped ZnO.** *R. Ramachandran Thankalekshmi*¹ and *A.C. Rastogi*¹. *Electrical and Computer Engineering, State University of New York, Binghamton University, Binghamton, NY*
- DR-13. Ultrafast magnetization switching driven by current pulses in a spin-valve with in-plane and out-of-plane dual polarizers.** *Z. Hou*¹, *Z. Song*¹, *J. Zhang*¹ and *Y. Liu*¹. *Department of Physics, Tongji University, Shanghai, China*

- DR-14. Kinetic Equation Description of Spin Relaxation in Wurtzite Structure.** *F. Dogan*¹ and *A. Manchon*¹. *Material Science, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia*
- DR-15. Magnetostatic interactions between nanowires and nanotubes.** *J. Escrig*¹, *A. Pereira*¹ and *D. Altbir*¹. *Departamento de Física, Universidad de Santiago de Chile, Santiago, Chile*

TUESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session DS
MAGNETIZATION DYNAMICS
(Poster Session)
Markus Muenzenberg, Chair

- DS-01. Ferromagnetic Resonance and Gilbert Damping Behaviors of Co₈₀Fe₁₀B₁₀ Thin Films in the Microwave Range.** *D. Hung*^{1,2}, *Y. Chiu*², *F. Ahad*^{2,3} and *S. Lee*². *1. Department of Information and Telecommunications Engineering, Ming Chuan University, Taipei, Taiwan; 2. Institute of Physics and Nano Science and Technology Program, TIGP, Academia Sinica, Taipei, Taiwan; 3. Department of Engineering and System Science, NTHU, Hsinchu, Taiwan*
- DS-02. Micromagnetic analysis of the magnetization dynamics in Cobalt nanorings driven by the Oersted field.** *E. Martinez*¹. *Física Aplicada, Universidad de Salamanca, Salamanca, Salamanca, Spain*
- DS-03. Microscopic Dipole-Exchange Theory for Magnonic Crystals: Application to Ferromagnetic Films with Patterned Surfaces.** *H.T. Nguyen*¹ and *M.G. Cottam*¹. *Department of Physics and Astronomy, University of Western Ontario, London, ON, Canada*
- DS-04. Fractal basin boundaries in magnetization relaxations of nanomagnets subject to weak AC excitations.** *C. Serpico*¹, *D.P. Ansalone*², *M. d'Aquino*³, *G. Bertotti*² and *I.D. Mayergoyz*⁴. *1. Dip. di Ingegneria Elettrica, Univ. of Naples Federico II, Napoli, Italy; 2. INRIM, Turin, Italy; 3. Dip. per le Tecnologie, Univ. of Naples Parthenope, Naples, Italy; 4. Electrical and Computer Engineering, Univ. of Maryland College Park, College Park, MD*
- DS-05. Temperature dependence of the dynamics of a synthetic antiferromagnet. Frequency and time domain investigation.** *D. Cimpoesu*¹ and *A. Stancu*¹. *Physics, Alexandru Ioan Cuza University of Iasi, Iasi, Romania*

DS-06. Broadband Ferromagnetic Resonance Spectroscopy of Permalloy Triangular Nanorings. *J. Ding*¹, *M.P. Kostylev*³ and *A.O. Adeyeye*^{1,2}. *1. Department of Electrical and Computer Engineering, National Univ Singapore, Singapore, Singapore; 2. Advanced Materials for Micro- and Nano- Systems, Singapore-MIT Alliance, Singapore, Singapore; 3. School of Physics, University of Western Australia, Crawley, WA, Australia*

DS-07. Dynamic hysteresis in single domain particles. *G.T. Landi*¹ and *A.D. Santos*¹. *1. Departamento de Física dos Materiais e Mecânica, Instituto de Física da Universidade de São Paulo, São Paulo, SP, Brazil*

DS-08. Magnetization dynamics of curved permalloy nanowires. *L. Bocklage*¹, *S. Motl-Ziegler*¹, *J. Topp*¹, *T. Matsuyama*¹ and *G. Meier*¹. *1. University of Hamburg, Hamburg, Hamburg, Germany*

DS-09. Spin diode effect in spin ice elements. *C. Hu*^{1,2} and *R.L. Stamps*^{1,2}. *1. School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 2. School of Physics, University of Western Australia, Perth, WA, Australia*

DS-10. Spin wave modulation via interference for magnonic logic circuits. *S.S. Mukherjee*¹, *J. Kwon*¹, *M. Jamali*¹, *M. Hayashi*² and *H. Yang*¹. *1. ECE, National University of Singapore, Singapore, Singapore; 2. National Institute of Materials Science, Tsukuba, Japan*

DS-11. Binary data coding with domain wall for spin wave based logic devices. *K. Nagai*¹, *Y. Cao*¹, *T. Tanaka*¹ and *K. Matsuyama*¹. *1. Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Fukuoka, Japan*

DS-12. Spin-wave propagation in a two-dimensional magnonic crystal consisting of a rhombic antidot array with circular holes. *G. Gubbiotti*^{1,2}, *S. Tacchi*², *M. Madami*², *G. Carlotti*², *A. Adeyeye*³, *B. Botters*⁴, *S. Neusser*⁴, *D. Grundler*⁴, *J. Klos*⁵, *M. Sokolovsky*⁵ and *M. Krawczyk*⁵. *1. Dipartimento di Fisica, CNR-IOM, Perugia, Italy; 2. Dipartimento di Fisica, Università di Perugia, CNISM, Unità di Perugia, Perugia, Italy; 3. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 4. Lehrstuhl für Physik funktionaler Schichtsysteme, Physik Department, Technische Universität München, München, Germany; 5. Faculty of Physics, Adam Mickiewicz University, Poznan, Poland*

DS-13. Resonant frequency multiplication in microscopic magnetic dots. *R. Gieniusz*¹, *V. Bessonov*¹, *A. Maziewski*¹, *V.E. Demidov*², *H. Ulrichs*², *S.O. Demokritov*² and *S. Urazhdin*³. *1. University of Bialystok, Bialystok, Poland; 2. University of Muenster, Muenster, Germany; 3. Emory University, Atlanta, GA*

DS-14. Microscopic theory on the Gilbert damping in the inhomogeneous spin dynamics. *N. Umetsu*¹, *D. Miura*¹ and *A. Sakuma*¹. *1. Tohoku university, Sendai, Japan*

DS-15. Field and frequency modulations of the FMR behavior of Co nanowire arrays. *M. Pasquale*¹, *C.P. Sasso*¹, *E.S. Olivetti*¹ and *M. Coisson*¹. *1. Elettromagnetismo, INRIM, Torino, Italy*

TUESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session DT
CRITICAL PHENOMENA AND SPIN GLASSES
(Poster Session)
Jeffrey Lynn, Chair

DT-01. Spin-reorientation in the antiferromagnetic ordering of $\text{LiFe}_{1-x}\text{Mn}_x\text{PO}_4$ investigated with Mössbauer spectroscopy. *W. Kwon*¹, *I. Lee*¹, *C. Rhee*¹ and *C. Kim*¹. *1. Department of Physics, Kookmin University, Seoul, Korea, Republic of*

DT-02. The spin reorientation transition and melting of stripe domains. *M. Ambrose*¹ and *R. Stamps*². *1. School of Physics, University of Western Australia, Crawley, WA, Australia; 2. University of Glasgow, Glasgow, United Kingdom*

DT-03. The scaling hysteresis behavior of double perovskite $\text{Ba}_{1.8}\text{La}_{0.2}\text{FeMoO}_6$ pellet around the Curie temperature. *Y. Zhang*¹, *D. Kim*¹ and *S. Yu*¹. *1. Department of Physics, Chungbuk National University, Cheongju, Chungbuk, Korea, Republic of*

DT-04. Properties of NaZn13-type $\text{LaFe}_{13-x}\text{Six}$ ($x=1.4, 1.5$) compound with the first-order phase transition. *Q. Dong*^{1,2}, *H. Zhang*², *J. Shen*^{2,3}, *J. Chen*², *J. Sun*² and *B. Shen*². *1. Department of Physics, Capital Normal University, Beijing, China; 2. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 3. Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China*

DT-05. Electron-spin-resonance study of Y-doped $\text{Nd}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ ceramics. *L.T. Phan*¹, *P. Zhang*¹, *S.C. Yu*¹, *N.V. Khieni*² and *N.X. Phuc*². *1. Chungbuk National University, Cheongju, Korea, Republic of; 2. Vietnam Academy of Science and Technology, Hanoi, Viet Nam*

DT-06. Dipolar ordering of two-dimensional spin ensemble. *A.V. Panov*¹. *52-311, Nekrasovskaya st., Vladivostok, Russian Federation*

DT-07. When is disorder important in artificial spin ice? Z. Budrikis^{1,2}, J. Morgan³, J. Akerman^{3,4}, A. Stein⁵, R. Stamps^{1,6}, P. Politi², S. Langridge⁷ and C. Marrows³. *1. School of Physics, The University of Western Australia, Crawley, WA, Australia; 2. Istituto dei Sistemi Complessi CNR, Florence, Italy; 3. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 4. Instituto de Sistemas Optoelectrónicos y Microtecnología, Madrid, Spain; 5. Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY; 6. SUPA, School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom; 7. ISIS, Rutherford Appleton Laboratory, Chilton, United Kingdom*

DT-08. Role of dipolar interaction in modulating the step-like magnetization of Ca₃Co₂O₆. Y. Xie¹, L. Lin¹, Z. Yan¹, K. Wang¹ and J. Liu¹. *Department of Physics, Nanjing University, Nanjing, Jiangsu, China*

DT-09. Field dependence of the transverse spin glass phase transition: Quantitative agreement between Monte Carlo simulations and experiments. D. Ryan¹, A.D. Beath¹, J.M. Cadogan² and J. van Lierop². *1. Physics, McGill University, Montreal, QC, Canada; 2. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada*

DT-10. Spin Scattering Based Magnetoresistance in Sr_{2-x}La_xFeCoO₆ (x=1.0,1.25,1.5,2.0) Spin Glass. R. Pradheesh¹, H.S. Nair², R. Nirmala¹, V. Sankaranarayanan¹ and K. Sethupathi¹. *Department of Physics, Indian Institute of Technology Madras, Chennai, Tamil Nadu, India; 2. Jilich Center for Neutron Sciences, Forschungszentrum, Garching, Germany*

DT-11. Memory effects in spin glasses: Spontaneous restoration of the original spin configuration rather than preservation in a frozen state. H. Mamiya¹ and S. Nimori¹. *National Institute for Materials Science, Tsukuba, Japan*

DT-12. Tuning the magnetic ground state in Li_xNi_(2-x)O₂. C. Sow¹ and P. Kumar¹. *Department of Physics, Indian Institute of Science, Bangalore, Karnataka, India*

DT-13. Spin Liquid Behaviour and Large Magnetocaloric Effect in Restacked Single Molecular Layers 2D Honeycomb Lattice MnPS₃ Nanoparticles. R. Zeng¹. *University of Wollongong, Wollongong, NSW, Australia*

DT-14. Glassy ferromagnetism and phase separation in Pr_{0.5}Ca_{0.5}CoO₃. M. Marysko¹, Z. Jirak¹, J. Hejtmánek¹ and K. Knížek¹. *magnetic materials and superconductors, Institute of Physics, Praha, Czech Republic*

DT-15. Frustrated anisotropic antiferromagnets with single-ion anisotropy. A.S. Pires¹. *Physics, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil*

TUESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session DU
PERMANENT-MAGNET MOTORS AND
ACTUATORS
(Poster Session)
Christina Chen, Chair

DU-01. Investigation of a 7-Pole/6-Slot Halbach-Magnetized PM Linear Alternator Used for Free-Piston Stirling Engine. P. Zheng¹, C. Tong¹, L. Li¹, B. Yu¹ and Q. Zhao¹. *Department of Electrical Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China*

DU-02. Optimum design criteria for maximum torque density & minimum torque ripple of flux switching motor using response surface methodology. J. Lee¹, M. Jun¹ and H. Kim¹. *Electrical Engineering, Hanbat National University, Daejeon, Dukmyung-Dong Yuseong-Gu, Korea, Republic of*

DU-03. A new H-module linear actuator for medical equipment applications. X. Liu^{1,2}, Y. Ye¹ and K. Lu². *1. College of electrical engineering, Zhejiang University, Hangzhou, China; 2. Department of Energy Technology, Aalborg University, Aalborg, Denmark*

DU-04. Right Triangle Distribution and Combined Optimization of Maximum Cogging Torque in Few Slots Permanent Magnet Machines. P. Jin¹, S. Fang¹ and H. Lin¹. *School of Electrical Engineering, Southeast University, Nanjing, China*

DU-05. Development of a Miniature Fan Motor. C. Wang¹, Y. Yao², K. Liang¹, C. Huang¹ and Y. Chang¹. *1. Green Energy and Environment Research Laboratories, Industrial Technology Research Institute, Hsinchu, Taiwan; 2. Institute of Physics, Academia Sinica, Taipei, Taiwan*

DU-06. A Novel Dual-Channel Flux-Switching Permanent Magnet Motor for Hybrid Electric Vehicles. W. Hua¹, Y. Zhang¹ and M. Cheng¹. *School of Electrical Engineering, Southeast University, Nanjing, China*

DU-07. Sensor-less pseudo-sinusoidal drive for a permanent-magnet brushless ac motor. T. Chern¹, L. Liu¹, P. Pan¹, T. Huang¹, D. Tsay² and J. Kuang². *1. Department of Electrical Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan; 2. Department of Mechanical and Electro-Mechanical Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan*

DU-08. Design and Analysis of New Fault-tolerant Permanent-Magnet Motors for Four-Wheel-Driving Electric Vehicles. G. Liu¹, W. Gong¹, Q. Chen¹ and W. Zhao¹. *School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*

- DU-09. Characteristic Analysis & Optimum Design of Permanent Magnet Assisted Synchronous Reluctance Motor for High power.** J. Lee¹, B. Lee¹ and M. Jun¹. *Electrical Engineering, Hanbat National University, Daejeon, Korea, Republic of*
- DU-10. Reactance Parameter Calculation and its Application of Permanent Magnet Synchronous Motor Verified by Experiment.** J. Zhang¹, Y. Luo¹ and H. Li¹. *North China Electric Power University, Beijing, China*
- DU-11. Torque Calculation of High Speed Permanent Magnet Motor Using Power Factor Angle and Analytical Magnetic Field Computation.** J. Choi¹, S. Lee² and S. Jang¹. *1. Chungnam National University, Dae-jeon, Korea, Republic of; 2. KITECH, Gwangju, Korea, Republic of*
- DU-12. Development of a highly efficient BLDC motor utilizing both radial and axial air gap.** K. Kang¹, G. Jang¹ and S. Sung¹. *Dept. of Mechanical Engineering, PREM Lab., Hanyang University, Seoul, Korea, Republic of*
- DU-13. Research on the Performances and Parameters of Interior Permanent Magnet Synchronous Machines Used for Electric Vehicles.** J. Zhao¹, X. Liu¹, Y. Li¹ and P. Zheng². *1. School of Automation, Beijing Institute of Technology, Beijing, China; 2. Department of Electrical Engineering, Harbin Institute of Technology, Harbin, China*
- DU-14. Electromagnetic Design Analysis and Performance Improvement of AFPM Generator for Small Wind Turbine.** T. Jung¹. *Electrical Engineering, Kyungnam University, Changwong, Kyungnam, Korea, Republic of*
- DU-15. Topology selection and design optimization of magnetostrictive inertial actuator.** M. Noh¹ and Y. Park¹. *1. Mechatronics Engineering, Chungnam National University, Daejeon, Korea, Republic of*

TUESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session DV
SENSORS II
(Poster Session)
Faxian Xiu, Chair

- DV-01. Carbon nanotube-based gas sensors using the magnetoimpedance effect.** A. Chaturvedi¹, N. Laurita¹, K. Stojak¹, M. Phan¹, P. Mukherjee¹ and H. Srikanth¹. *Department of Physics, University of South Florida, Tampa, FL*

- DV-02. The magnetostrictive material effects on magnetic field sensitivity for magnetoelectric sensor.** L. Chen¹, P. Li¹, Y. Wen¹ and J. Qiu¹. *College of Optoelectronic Engineering, Chongqing University, Chongqing, China*
- DV-03. Enhancement of Signal-to-Noise Ratio for Novel PZT/FeNi Magnetostrictive Tube Sensors using Modulation Sensing Technique.** S.M. Gillette¹, Y. Chen¹, A.L. Geiler^{1,2}, L. Jiang³, H. Hao³, C. Vittoria¹ and V.G. Harris^{1,2}. *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Metamagnetics Inc., Sharon, MA; 3. Baotou Research Institute of Rare Earths, Baotou, Inner Mongolia, China*
- DV-04. Microfabrication of magnetostrictive sensor beams based on NiFe film doped with B and Mo for biomedical applications.** A.H. Alfadhel¹, C. Liang¹, J. Kosel¹ and Y. Gianchandani². *1. Division of Physical Sciences and Engineering, King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia; 2. Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI*
- DV-05. Control of Inplane-Uniaxial Anisotropy of FeSiB Magnetostrictive Thin Film Using a Thermal Expansion Coefficient.** J. Shin¹, Y. Suwa¹, S. Kim¹, S. Hashi¹ and K. Ishiyama¹. *Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*
- DV-06. A novel permalloy zig-zag structure based magnetic biosensor.** T. Ger¹ and Z. Wei¹. *Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*
- DV-07. Liver cancer immunoassay with magnetic nanoparticles and MgO-based magnetic tunnel junction sensors.** Z. Lei¹, L. Li¹, G. Li¹, C. Leung², J. Shi³, C. Wong^{4,5}, C. Mak¹, D. Chan¹, N. Chan⁶, C. Leung¹, P. Lai¹ and P. Pong¹. *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, China; 2. Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong, Hong Kong; 3. Department of Physics, Hong Kong Baptist University, Hong Kong, Hong Kong; 4. Department of Pathology, The University of Hong Kong, Hong Kong, Hong Kong; 5. State Key Laboratory for Liver Research, The University of Hong Kong, Hong Kong, Hong Kong; 6. Department of Surgery, University of Cambridge, Cambridge, United Kingdom*
- DV-08. A new resolver of thin axial design having two phase output.** I. Sasada¹ and K. Tanaka¹. *Applied Science for Electronics and Materials, Kasuga, Japan*
- DV-09. Determining Depth Dependence of Mechanical Properties from Micromagnetic Emissions.** L. Mierczak¹, Y. Melikhov¹, O. Kypris² and D.C. Jiles². *1. School of Engineering, Wolfson Centre for Magnetism, Cardiff University, Cardiff, United Kingdom; 2. Department of Electrical and Computer Engineering, Iowa State University, Ames, IA*

DV-10. A low-frequency AC current sensor with μ -metal/magnetoelectric laminate composites by exploiting the flux concentration effect. A. Yang^{1,2}, P. Li^{1,2}, Y. Wen^{1,2}, J. Zhang^{1,2}, C. Lu^{1,2} and W. He^{1,2}. *1. The Key Laboratory for Optoelectronic Technology & Systems, Chongqing, China; 2. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*

DV-11. Structural Improvement of GMR sensor, consisting of in-plane sensing layer and out-of-plane reference layer. S. Yoon¹, Y. Jang¹, S. Lee¹ and B. Cho¹. *1. Material Science and Engineering, GIST, Gwangju, Korea, Republic of*

DV-12. GMI effect of thin magnetic wires at elevated frequencies. M. Ipatov¹, A.P. Zhukov^{1,2} and V. Zhukova¹. *1. Phys. Mater., UPV/EHU, San Sebastián, Spain; 2. IKERBASQUE, Basque Foundation for Science, Bilbao, Spain*

DV-13. High frequency magneto-optic magnetometry using AlN/Fe/AlN sandwiches. E. Liskova¹, S. Visnovsky¹, I. Harward², Z. Celinski², J. Pistora³, M. Lesnak³, O. Zivotsky³ and R. Lopusnik⁴. *1. Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic; 2. Center for Magnetism and Magnetic Nanostructures, University of Colorado at Colorado Springs, Colorado Springs, CO; 3. Institute of Physics, VŠB - Technical University of Ostrava, Ostrava, Czech Republic; 4. Seagate Technology, Bloomington, MN*

DV-14. Noise correlation in fundamental mode orthogonal fluxgate. M. Butta¹ and I. Sasada¹. *1. Kyushu University, Fukuoka, Japan*

DV-15. Stress-Depth Profiling for Non-Destructive Testing using Magnetic Barkhausen Noise Signals. O. Kypriš¹, L. Mierczak², C.I. Nlebedim³ and D.C. Jiles¹. *1. Electrical & Computer Engineering, Iowa State University, Ames, IA; 2. Wolfson Centre for Magnetism, School of Engineering, Cardiff University, Cardiff, United Kingdom; 3. Ames Laboratory, US Department of Energy, Ames, IA*

TUESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session DW
FERRITE MATERIALS: PROCESSING AND PROPERTIES

(Poster Session)

Yajie Chen, Chair

DW-01. Tailoring the microstructure of NiZn ferrite for power field use. H. Su¹, X. Tang¹, H. Zhang¹, Y. Xie¹ and Z. Zhong¹. *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

DW-02. High Frequency Characteristics of FeCoAlO Thin Films Fabricated with Asymmetric Target at Different Ar Gas Flow Rates. F. Zheng¹, F. Luo¹, Y. Lou¹, J. Bai¹, D. Wei², X. Liu³ and F. Wei¹. *1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, Gansu, China; 2. Lab of Advanced Materials, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China; 3. Department of Information Engineering, Shinshu University, Nagano, Japan*

DW-03. Grain growth kinetics and magnetic property of MnZn ferrites with V₂O₅/CuO additives. K. Sun¹, Z. Yu¹, Y. Liu¹, X. Jiang¹, Z. Lan¹ and M. Han¹. *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

DW-04. The cation distribution and electrical hopping in Fe_{3-x}Co_xO₄ (x(1.65) ferrite films on MgO substrate grown by molecular beam epitaxy. D. Lee¹, C. Cheng² and G. Chern². *1. Electrical Engineering, Da-Yeh University, Chunghua, Taiwan; 2. Physics, National Chung Cheng University, Chia-Yi, Taiwan*

DW-05. The magnetic Curie temperature and exchange coupling between cations in tetragonal spinel oxide Mn_{2.5}M_{0.5}O₄ (M=Co, Ni, Mn, Cr, and Mg) films. K. Kuo¹, C. Cheng¹, Y. Liu¹ and G. Chern¹. *1. Taiwan SPIN Research Center and Department of Physics, National Chung Cheng University, Chiayi 62102, Taiwan*

DW-06. Study of NiZn ferrite copper substitution synthesized by hydrothermal method & sintered by Spark Plasma Sintering. K. Zehani¹, M. Hosni², A. Brosseau³, A. Megriche², V. Loyau¹, M. Lobue¹, E. Labouré⁴, A. Mgaidi² and F. Mazaleyra¹. *1. EEA, SATIE Laboratory, Cachan, France; 2. Chemistry, Faculty of Sciences, Tunisia, Tunisia; 3. Physics, PPSM Laboratory, Cachan, France; 4. EEA, LGEP Laboratory, Orsay, France*

DW-07. Enhanced Microwave Absorption Properties of Bowl-Like Fe₃O₄ Hollow Spheres@Reduced Graphene Oxide Composites. H. Xu¹ and H. Bi^{1,2}. *1. College of Chemistry and Chemical Engineering, Anhui University, Hefei, Anhui, China; 2. Department of Medicine, Columbia University, New York, NY*

DW-08. Investigation of magnetic properties of non-magnetic ion (Al, Ga, In) doped Ba₂Mg_{0.5}Co_{1.5}Fe₁₂O₂₂. J. Lim¹, C. Kim¹, B. Lee² and C. Kim¹. *1. Departments of Physics, Kookmin University, Seoul, Korea, Republic of; 2. Department of Physics, Hankuk University of Foreign Studies, Yongin, Kyungki, Korea, Republic of*

DW-09. Polyol synthesis and characterization of nickel and cobalt mixed metal ferrite nanomaterials for biomedical applications. C. Warren¹, M.D. Shultz^{2,4}, F. Corwin³ and E.E. Carpenter¹. *1. Chemistry, Virginia Commonwealth University, Richmond, VA; 2. Biochemistry and Molecular Biology, Virginia Commonwealth University, Richmond, VA; 3. Radiology, Virginia Commonwealth University, Richmond, VA; 4. Chemistry, Virginia Tech, Blacksburg, VA*

DW-10. RF Heating Characteristics of (NixCo1-x)zZnFe2O4 Ferrite Nanoparticles. Z. Jagoo¹, E. Rebrov³, Z. Turgut² and G. Kozlowski¹. *1. Physics, Wright State University, Dayton, OH; 2. AFRL, Wright Patterson AFB, Dayton, OH; 3. Chemical Engineering, Queen's University, Belfast, United Kingdom*

DW-11. Electromagnetic and Microwave absorbing Properties of Mn-doped Fe3O4 Nanoparticles. R. Yang¹, C. Chang², W. Liang¹, M. Wu² and C. Lin³. *1. Department of Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 2. Institute of Physics, Academia Sinica, Nankang, Taiwan; 3. Department of Materials Science and Engineering, Feng Chia University, Taichung, Taiwan*

DW-12. Prominent Narrow Bandwidth Microwave Absorption Property of Fe₃O₄ Nanotubes Embedded in Periodic AAO Membrane. J. Sun¹ and H. Bi^{1,2}. *1. College of Chemistry and Chemical Engineering, Anhui University, Hefei, China; 2. Department of Medicine, Columbia University, New York, NY*

DW-13. Fabrication and Magnetic Properties of YIG Nanotubes. X. Chen¹, X. Fan¹ and J.Q. Xiao¹. *1. Physics and Astronomy, University of Delaware, Newark, DE*

DW-14. Withdrawn

DW-15. Evolution of crystallographic texture and magnetic properties of polycrystalline barium ferrite thick films with Bi2O3 additive. D. Chen¹, Y. Liu¹ and Y. Li¹. *1. State Key Laboratory of Electronic Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

TUESDAY
EVENING
7:00

GRAND CANYON 6

Session XA

RARE EARTH ELEMENTS: GLOBAL SUPPLY AND MAGNETIC APPLICATIONS

Ludwig Schultz, Chair

7:00

XA-01. Rare Earths: From the ground to Gadgets. (Invited) S. Lam¹. *Byron Capital Markets Ltd., Toronto, ON, Canada*

7:36

XA-02. Rare earth elements and permanent magnets. (Invited) P. Dent¹. *1. Electron Energy Corp, Landisville, PA*

WEDNESDAY
MORNING
8:30

GRAND CANYON 6

Session EA

SYMPOSIUM ON PROGRESS IN ASSISTED WRITE MAGNETIC RECORDING

Barry Stipe, Chair

8:30

EA-01. FePtAg-C media for heat assisted magnetic recording. (Invited) O. Mosendz¹, S. Pisana¹, J. Reiner¹, T. Santos¹, B.C. Stipe¹ and D. Weller¹. *1. Hitachi San Jose Research Center, San Jose, CA*

9:06

EA-02. Fabrication and characterization of energy assisted recording media. (Invited) A. Ajan¹, A. Chernyshov¹, H. Yuan¹, C. Papusoi¹, D. Treves¹, S. Malhotra¹, R. Acharya¹, T. Yamashita¹ and G. Bertero¹. *1. Western Digital Inc., San Jose, CA*

9:42

EA-03. Thermal and Magnetic Considerations in Setting the Separation between Pole Tip and Near Field Transducer for HAMR Heads. (Invited) S.P. Powell¹, M.J. Chabalko¹, Y. Kong¹, Y. Luo¹, T.E. Schlesinger¹ and J.A. Bain¹. *1. ECE, Carnegie Mellon, Pittsburgh, PA*

10:18

EA-04. Thermal issues and their effects on heat assisted magnetic recording system. (Invited) B. Xu¹, Z. Liu¹, C. Chia¹, R. Ji¹, Y. Toh¹, J. Hu¹, J. Li¹, J. Zhang¹ and K. Ye¹. *1. Data Storage Institute, Agency for Science, Technology and Research (A-STAR), Singapore, Singapore*

10:54

EA-05. Thermally Assisted Writing on Granular and Bit Patterned Media. (Invited) B. Stipe¹, J. Katine¹, O. Hellwig¹, G. Zeltzer¹, O. Mosendz¹, S. Pisana¹, J. Reiner¹ and D. Weller¹. *1. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

WEDNESDAY
MORNING
8:30

GRAND CANYON 7

Session EB

SPIN TRANSFER TORQUE OSCILLATORS I

Tom Silva, Chair

8:30

EB-01. Spin-torque-driven microwave emission in nano-oscillators with magnetic perpendicular anisotropy. Z. Zeng¹, H. Jiang¹, P. Khalili Amiri², K. Wang², I. Krivorotov³, J. Wang⁴, J. Katine⁵, Y. Huai⁶ and J. Langer⁷. *1. Department of Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA; 2. Department of Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 3. Department of Physics and Astronomy, University of California, Irvine, Irvine, CA; 4. Department of Electrical and Computer Engineering, University of Minnesota, Minnesota, MN; 5. Hitachi Global Storage Technologies, San Jose, CA; 6. Avalanche Technology, Fremont, CA; 7. Singulus Technologies, Kahl am Main, Germany*

8:42

EB-02. Phase locking of gyrotropic oscillations and periodic core reversal in nanocontact vortex oscillators. S. Petit-Watelot¹, J. Kim¹, A. Ruotolo^{2,3}, R.M. Otxoa¹, A. Dussaux³, J. Grollier³, K. Bouzehouane³, A. Vansteenkiste⁴, B. Van de Wiele⁵, T. Devolder¹ and V. Cros³. *1. Institut d'Electronique Fondamentale, CNRS / Univ. Paris-Sud, Orsay, France; 2. Department of Physics and Material Science, City University of Hong Kong, Kowloon, Hong Kong; 3. Unite Mixte de CNRS/Thales and Univ. Paris-Sud, Palaiseau, France; 4. Department of Solid State Sciences, Ghent University, Ghent, Belgium; 5. Department of Electrical Energy, Systems and Automation, Ghent University, Ghent, Belgium*

8:54

EB-03. Parametric oscillator based on non-linear vortex dynamics in low resistance magnetic tunnel junctions. S. Martin¹, N. de Mestier¹, C. Thirion², C. Hoarau², Y. Conraux³, C. Baraduc¹ and B. Dieny¹. *1. Spintec, UMR-8191, CEA-INAC/CNRS/UJF-Grenoble1/Grenoble-INP, Grenoble, France; 2. Institut Néel, CNRS and Université Joseph Fourier, Grenoble, France; 3. Crocus-Technology, Grenoble, France*

9:06

EB-04. Spin torque nano-oscillators driven by microwave fields. (Invited) S. Urazhdin¹, P. Tabor¹, V. Tiberkevich² and A. Slavin². *1. Physics, Emory University, Atlanta, GA; 2. Physics, Oakland University, Rochester, MI*

9:42

EB-05. Temperature dependence of spin-transfer induced vortex dynamics in magnetic tunnel junctions. P. Bortolotti¹, A. Dussaux¹, J. Grollier¹, V. Cros¹, A. Fert¹, A. Fukushima², M. Konoto², H. Kubota², K. Yakushiji², S. Yuasa² and K. Ando². *1. Unité Mixte de Physique CNRS/Thales (UMR137), Palaiseau, France; 2. Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

9:54

EB-06. Intrinsic frequency doubling in an MgO based spin torque oscillator. P.K. Muduli¹, O. Heinonen^{2,3} and J. Åkerman^{1,4}. *1. Physics Department, University of Gothenburg, Gothenburg, Sweden; 2. Materials Science Division, Argonne National Laboratory, Lemont, IL; 3. Department of Physics and Astronomy, Northwestern University, Evanston, IL; 4. Materials Physics, Royal Institute of Technology, Stockholm-KISTA, Sweden*

10:06

EB-07. Time Domain Measurements of Stochastic Spin-Torque Oscillator Dynamics. G.E. Rowlands¹, P. Khalili Amiri², J.A. Katine³, J. Langer⁴, K.L. Wang² and I.N. Krivorotov¹. *1. Physics and Astronomy, University of California, Irvine, Irvine, CA; 2. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 3. Hitachi Global Storage Technologies, San Jose, CA; 4. Singulus Technologies, Kahl am Main, Germany*

10:18

EB-08. Spin-torque diode spectrum of ferromagnetically coupled (FeB/CoFe)/Ru/(CoFe/FeB) synthetic free layer. B. Do¹, T. Taniguchi¹, H. Kubota¹, T. Yozozu¹, H. Imamura¹, K. Yakushiji¹, A. Fukushima¹, S. Yuasa¹ and K. Ando¹. *1. Central 2, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki 305-8568, Japan*

10:30

EB-09. Measurement of the spin torque from a nonlocal spin current in a 3-terminal device. L. Xue¹, C. Wang¹, Y. Cui¹, L. Liu¹, R.A. Buhrman¹ and D.C. Ralph¹. *1. Cornell Univ, Ithaca, NY*

10:42

EB-10. Oscillatory spin wave influence on threshold currents in STNO pairs. S. Redjai Sani¹, S. Mohseni¹, A. Eklund¹, J. Persson^{1,3} and J. Åkerman^{1,2}. *1. Materials Physics, Royal Institute of Technology, Stockholm, Sweden; 2. Department of Physics, University of Gothenburg, Gothenburg, Sweden; 3. NanOsc AB, Kista, Sweden*

10:54

- EB-11. Propagation of spin-torque excited spin waves revealed by micro-focused Brillouin light scattering.** *M. Madami*¹, S. Bonetti², G. Consolo^{3,4}, S. Tacchi¹, G. Carlotti^{1,5}, G. Gubbiotti^{1,6}, F.B. Mancoff⁷, M.A. Yar⁸ and J. Akerman^{2,9}. *1. Dipartimento di Fisica, Università di Perugia, CNISM, Unità di Perugia, Perugia, Perugia, Italy; 2. Material Physics, Royal Institute of Technology, Kista, Stockholm, Sweden; 3. Dipartimento di Scienze per l'Ingegneria e l'Architettura, Università di Messina, Messina, Messina, Italy; 4. Dipartimento di Fisica, Università di Ferrara, CNISM, Unità di Ferrara, Ferrara, Ferrara, Italy; 5. Centro S3, CNR-Istituto di Nanoscienze, Modena, Modena, Italy; 6. Dipartimento di Fisica, Università di Perugia, Istituto Officina dei Materiali del CNR (CNR-IOM), Unità di Perugia, Perugia, Perugia, Italy; 7. Everspin Technologies, Inc., Chandler, AZ; 8. Functional Materials Div., Materials Physics, Royal Institute of Technology, Kista, Stockholm, Sweden; 9. Department of Physics, University of Gothenburg, Gothenburg, Gothenburg, Sweden*

11:06

- EB-12. High-Frequency Spin-Wave Mode in a Nanocontact Spin-Torque Oscillator without External Magnetic Field.** *H. Morise*¹, T. Kondo¹ and S. Nakamura¹. *1. Corp. R&D Ctr., Toshiba Corp., Kawasaki, Japan*

11:18

- EB-13. Spin-torque driven excitation of propagating spin wave modes in one-dimensional magnetic waveguides.** *G. Consolo*¹, L. Lopez-Diaz², B. Azzarboni³, A. Slavin⁴ and *V. Tyberkevych*⁴. *1. Department of Sciences for Engineering and Architecture, University of Messina, Messina, Italy; 2. Department of Applied Physics, University of Salamanca, Salamanca, Spain; 3. Department of Matter Physics and Electronic Engineering, University of Messina, Messina, Italy; 4. Department of Physics, Oakland University, Rochester, MI*

WEDNESDAY
MORNING
8:30

GRAND CANYON 8

Session EC
MATERIALS MEASUREMENTS AND
MICROSCOPY

Mitch Wallis, Chair

8:30

- EC-01. Magnetometry of buried Layers by means of Hard X-ray Photoelectron Spectroscopy.** *A. Gloskovskii*¹, G. Stryganyuk¹, G. Fecher¹, C. Felser¹, S. Thiess², H. Schulz-Ritter² and W. Drube². *1. Uni-Mainz, Mainz, Germany; 2. HASYLAB/DESY, Hamburg, Germany*

8:42

- EC-02. 1s_{2p} RIXS-MCD: a sensitive probe of 3d magnetic moments using hard x-ray photons.** *M. Sikora*¹, A. Juhin², G. Simón³, L. Góra¹, C. Kapusta¹, L. Morellón³, M. Ibarra³ and P. Glatzel⁴. *1. AGH University of Science and Technology, 30-059 Krakow, Poland; 2. Institut de Minéralogie et de Physique des Milieux Condensés, Université Pierre et Marie Curie, 75015 Paris, France; 3. Instituto de Nanociencia de Aragón (INA), Universidad de Zaragoza-CSIC, Zaragoza 50009, Spain; 4. European Synchrotron Radiation Facility, 38043 Grenoble, France*

8:54

- EC-03. Spin-dependent synchrotron x-ray excitations studied by scanning tunneling microscopy.** *V. Rose*¹, T. Chien¹ and J.W. Freeland¹. *1. Advanced Photon Source, Argonne Nat Lab, Argonne, IL*

9:06

- EC-04. Monopole-like probes for Magnetic Force Microscopy.** *T. Muehl*¹, J. Koerner¹, A. Leonhardt¹ and B. Buechner¹. *1. IFW Dresden, Dresden, Germany*

9:18

- EC-05. Design of High Sensitivity Fiber Fabry-Perot Interferometer for Low Temperature Magnetic Force Microscope (LT-MFM).** *O. Karci*^{1,2}, M. Dede¹ and A. Oral³. *1. R&D, NanoMagnetics Instruments Ltd., Oxford, United Kingdom; 2. Nanotechnology and Nanomedicine, Hacettepe University, Ankara, Turkey; 3. Faculty of Engineering and Natural Sciences, Sabanci University, Istanbul, Turkey*

9:30

- EC-06. MOKE investigation of the inter- and intra-wire magnetostatic interaction in arrays of electrodeposited nanowires.** *M. Lostun*¹, H. Chiriac¹, *N. Lupu*¹ and T. Óvári¹. *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

9:42

- EC-07. Spatially-resolved neutron-diffraction imaging of vortex lattices.** *X. Wang*², H.A. Hanson², *B.B. Maranville*¹, T. Gnäupel-Herold¹, C.F. Majkrzak¹ and X.S. Ling². *1. NIST Center for Neutron Research, Natl Inst of Standards & Tech, Gaithersburg, MD; 2. Physics, Brown Univ., Providence, RI*

9:54

- EC-08. A Vector Magnetometer for Three-Dimensional Characterization of Magnetic Thin-Films.** *J. Kallwies*¹, A. Sutor¹ and R. Lerch¹. *1. Chair of Sensor Technology, Erlangen, Germany*

10:06

EC-09. Improved Method for Characterizing Magnetostriction of Thin Films. R. Townsend¹, Y. Melikhov¹, C. Hill², W.R. Hendren², R.M. Bowman² and J.E. Snyder¹. *1. Wolfson Centre for Magnetism, Cardiff University, Cardiff, United Kingdom; 2. Centre for Nanostructured Media, Queen's University of Belfast, Belfast, United Kingdom*

10:18

EC-10. Effect of Packing Fraction on Ferromagnetic Resonance in NiFe₂O₄ Nanocomposites. H. Song¹, S. Mulley¹, N. Coussens², P. Dhagat¹, A. Jander¹ and A. Yokochi². *1. School of Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR; 2. School of Chemical, Biological and Environmental Engineering, Oregon State University, Corvallis, OR*

10:30

EC-11. Domain wall propagation in micrometric wires: limits of single DW regime. V. Zhukova¹, J.M. Blanco², V. Rodionova¹, M. Ipatov¹ and A. Zhukov^{1,3}. *1. Materials Physics, University of the Basque Country, San Sebastian, Spain; 2. Fisica Aplicada, University of the Basque Country, San Sebastian, Spain; 3. IKERBASQUE, Basque Foundation for Science, San Sebastian, Spain*

10:42

EC-12. A Novel Method for Characterizing Magnetic Viscosity of Ultra-soft Magnets. F. Béron¹, G. Soares¹, L.S. de Oliveira¹, M. Knobel¹ and K.R. Pirota¹. *1. LMBT/DFMC/IFGW, Universidade Estadual de Campinas, Campinas, São Paulo, Brazil*

10:54

EC-13. Measurement of Vector Magnetic Property and 2D Magnetostriction of Non-oriented Electrical Steel Sheet under Stress Condition. Y. Kai¹, Y. Tsuchida², T. Todaka² and M. Enokizono². *1. Oita Prefectural Organization for Industry Creation and Oita University, Oita, Japan; 2. Oita University, Oita, Japan*

11:06

EC-14. Loss characterization of Mo-doped FeNi flake for DC/DC converter and MHz frequency applications. Y. Zhou¹, X. Kou¹, M. Mu², P.E. Parsons¹, B.M. McLaughlin³, H. Zhu³, A. Ji², F.C. Lee² and J.Q. Xiao¹. *1. Department of Physics and Astronomy, University of Delaware, Newark, DE; 2. Center for Power Electronics System, Virginia Polytechnic and State University, Blacksburg, VA; 3. Spectrum Magnetism LLC, Wilmington, DE*

11:18

EC-15. Rf-Mössbauer study of magnetic properties of amorphous Fe_{80-x}Co_xZr₇Si₁₃ alloys. M. Kopcewicz¹, A. Grabias¹ and J. Latuch². *1. Institute of Electronic Materials Technology, Warsaw, Poland; 2. Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland*

WEDNESDAY
MORNING
8:30

GRAND CANYON 9-11

Session ED
ULTRAFAST SWITCHING
Ezekiel Johnston-Halperin, Chair

8:30

ED-01. Spatially resolved ultrafast magnetization dynamics tracked via resonant magnetic scattering at the free-electron laser FLASH. L. Müller¹, C. Gutt¹, S. Schaffert², B. Pfau², J. Geihufe^{2,3}, F. Büttner², S. Flewett², J. Mohanty², S. Eisebitt², A. Kobs⁷, M. Hille⁷, D. Stickler⁷, R. Frömter⁷, H.P. Oepen⁷, B. Vodungbo⁴, R. Hawaldar⁴, K. Li⁵, J. Lüning⁵, W. Schlotter⁶ and G. Grübel¹. *1. DESY, Hamburg, Germany; 2. TU Berlin, Berlin, Germany; 3. Helmholtz Zentrum Berlin, Berlin, Germany; 4. Laboratoire d'Optique Appliquée, Palaiseau, France; 5. University Pierre et Marie Curie, Paris, France; 6. SLAC, Menlo Park, CA; 7. TU Hamburg, Hamburg, Germany*

8:42

ED-02. Ultrafast magnetism seen by time and spin resolved photoemission at FLASH. A. Fognini¹, T. Michlmayr¹, Y. Acremann¹, U. Ramsperger¹, A. Vaterlaus¹, C. Stamm², M. Beye², A. Eschenlohr², A. Föhlisch², F. Sorgenfrei³, M. Dell'Angela³, W. Wurth³, N. Gerasimova⁴, H. Redlin⁴, S. de Jong⁵, R. Kukreja⁵, J. Stöhr⁵, H. Dürr⁴ and J. Raabe⁶. *1. Laboratory for Solid State Physics, ETH Zurich, Zurich, Switzerland; 2. Helmholtz Zentrum Berlin, Berlin, Germany; 3. Universität Hamburg, Hamburg, Germany; 4. DESY, Hamburg, Germany; 5. SLAC, Stanford, CA; 6. Paul Scherrer Institute, Villigen, Switzerland*

8:54

- ED-03. Ultrafast heating as a Sufficient Stimulus for Magnetisation Reversal.** *T.A. Ostler¹, J. Barker¹, R. Evans¹, R.W. Chantrell¹, U. Atxitia², O. Chubykalo-Fesenko², S. El Moussaoui³, L. Guyader³, E. Mengotti³, F. Nolting³, L.J. Heyderman³, A. Tsukamoto⁵, A. Itoh⁵, D. Afansiev⁶, B. Ivanov⁶, A.M. Kalashnikova⁴, K. Vahaplar⁷, J. Mentink⁷, A. Kirilyuk⁷, T. Rasing⁷ and A. Kimel¹*. *1. Physics, University of York, York, North Yorkshire, United Kingdom; 2. Instituto de Ciencia de Materiales, Madrid, Cantoblanco, Spain; 3. Paul Scherrer Institut, PSI-Villigen, Switzerland; 4. Ioffe Physical Technical Institute, Russian Academy of Sciences, St. Petersburg, Russian Federation; 5. College of Science and Technology, Nihon University, Funabashi, Japan; 6. Institute of Magnetism, Kiev, Ukraine; 7. Institute for Molecules and Materials, Radboud University, Nijmegen, Netherlands*

9:06

- ED-04. Stochastic spin model (LLB) and superdiffusive spin currents's role in the ultrafast demagnetization.** *J. Walowski¹, A. Mann¹, M.G. Muenzenberg¹, U. Atxitia², O. Chubykalo-Fesenko², M. Battachio³, K. Carva³ and P. Oppeneer³*. *1. Phys. Institut, Goerg-August-University Göttingen, Göttingen, Germany; 2. Instituto de Ciencia de Materiale, CSIC, Madrid, Spain; 3. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden*

9:18

- ED-05. Novel Scenario for Ultrafast Laser-Induced Spin Control in Antiferromagnets.** *J.A. de Jong¹, I. Razdolski¹, A.M. Kalashnikova², R.V. Pisarev², A.M. Balbashov³, A.V. Kimel¹, A. Kirilyuk¹ and T. Rasing¹*. *1. Radboud University Nijmegen, Institute for Molecules and Materials, Nijmegen, Netherlands; 2. Ioffe Physical-Technical Institute, Russian Academy of Sciences, St. Petersburg, Russian Federation; 3. Moscow Power Engineering Institute, Moscow, Russian Federation*

9:30

- ED-06. Switching of Antiferromagnets and Ferrimagnets driven by ultrashort THz pulses.** *S. Wienholdt¹, D. Hinzke¹ and U. Nowak¹*. *1. University of Konstanz, Konstanz, Germany*

9:42

- ED-07. Ultrafast magnetization dynamics in a system with tunable angular momentum. (Invited)** *A. Kirilyuk¹*. *Institute of Molecules and Materials, Radboud University Nijmegen, Nijmegen, Netherlands*

10:18

- ED-08. Coherent ultrafast magneto-optics.** *H. Vonesch¹ and J. Bigot¹*. *1. IPCMS-DON, Université de Strasbourg-CNRS, Strasbourg, France*

10:30

- ED-09. Ultrafast Demagnetization in Nickel.** *B.Y. Mueller¹, M. Cinchetti¹, T. Roth¹, M. Aeschlimann¹ and B. Rethfeld¹*. *Department of Physics, Technical University Kaiserslautern, Kaiserslautern, Germany*

10:42

- ED-10. Electron-phonon scattering dynamics in ferromagnetic metals and its influence on ultrafast demagnetization processes.** *H. Schneider¹ and S. Essert¹*. *1. Physics Department, University of Kaiserslautern, Kaiserslautern, Germany*

10:54

- ED-11. Revealing the significance of heating in the all-optical switching process.** *S. Alebrand¹, D. Steil¹, A. Hassdenteufel¹, M. Cinchetti¹ and M. Aeschlimann¹*. *1. Department of Physics and Research Center OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany*

11:06

- ED-12. Manipulating femtosecond magnetization in ferromagnets and molecular magnets through laser chirp.** *G. Zhang¹, G. Lefkidis², W. Hübner² and Y. Bai³*. *1. Department of Physics, Indiana State University, Terre Haute, IN; 2. Department of Physics, University of Kaiserslautern and Research Center OPTIMAS, Kaiserslautern, Germany; 3. Center for Instruction, Research and Technology, Indiana State University, Terre Haute, IN*

11:18

- ED-13. Theory of laser induced ultrafast magnetization dynamics.** *Q. Li¹, A. Manchon², L. Xu¹ and S. Zhang¹*. *1. Tucson, AZ; 2. School of Physical Science and Engineering, KAUST, Saudi Arabia, Saudi Arabia*

WEDNESDAY
MORNING
8:30

GRAND CANYON 2-3

Session EE
PATTERNED FILMS I
Shika Jain, Chair

8:30

- EE-01. Circular arrangement of nanomagnets for logic device.** *S. Yoon^{1,2}, Y. Jang¹, C. Nam¹, J. Currivan¹, B. Cho² and C.A. Ross¹*. *1. Department of Materials Science and Engineering, MIT, Cambridge, MA; 2. Material Science and Engineering, GIST, Gwangju, Korea, Republic of*

8:42

- EE-02. Controlling domain walls by non topographic pinning features in a permalloy nanowire structure.** M.A. Basith¹, S. McVitie¹ and D. McGrouther¹. *Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

8:54

- EE-03. Comparison of Bit-Patterned Media Fabricated by Methods of Direct Deposition and Ion-Milling of Cobalt/Palladium Multilayers.** T. Huang¹, Y. Chen¹, N. Thiagarajah², H. Duan³, S. Leong¹, J. Yang³ and V. Ng². *1. Data Storage Institute, Singapore, Singapore; 2. Department of Electrical and Computer Engineering, National Univ Singapore, Singapore, Singapore; 3. Institute of Materials Reseseach and Engineering, Singapore, Singapore*

9:06

- EE-04. Thickness-dependent magnetization reversal behavior of lithographic IrMn/Fe ring structures.** Y. Hou¹ and K.M. Krishnan¹. *Department of Materials Science, University of Washington, Seattle, WA*

9:18

- EE-05. Brillouin light Scattering measurements of spin wave dispersions in a hexagonal array of interacting saturated disks.** F. Montoncello¹, S. Tacchi², L. Giovannini¹, M. Madami², G. Gubbiotti^{2,3}, G. Carlotti², E. Sirotkin⁴, A. Ahmad⁴, F.Y. Ogrin⁴ and V.V. Kruglyak⁴. *1. Department of Physics-CNISM, University of Ferrara, Ferrara, Italy; 2. Department of Physics-CNISM, University of Perugia, Perugia, Italy; 3. Istituto Officina dei Materiali del CNR (CNR-IOM), Unità di Perugia, c/o Dipartimento di Fisica, Perugia, Italy; 4. School of Physics, University of Exeter, Exeter, United Kingdom*

9:30

- EE-06. Fast switching of a ground state in a two-dimensional array of magnetic nano-dots coupled by dipolar interaction.** R.V. Verba¹, G.A. Melkov¹, K.Y. Guslienko^{2,3}, V.S. Tiberkevich⁴ and A.N. Slavin⁴. *1. Faculty of Radiophysics, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; 2. Departamento de Fisica de Materiales, Universidad del Pais Vasco, San Sebastian, Spain; 3. IKERBASQUE, The Basque Foundation for Science, Bilbao, Spain; 4. Department of Physics, Oakland University, Rochester, MI*

9:42

- EE-07. Magnetic nanodot arrays prepared by nanoparticles etch masks.** T. Wen¹, E.R. Evarts¹, R.A. Booth¹, S.D. Granz², M.H. Kryder², J.A. Bain² and S.A. Majetich¹. *1. Department of Physics, Carnegie Mellon University, Pittsburgh, PA; 2. Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA*

9:54

- EE-08. Competing anisotropies in spin-flop coupled AFM/FM nanostructures.** E. Folven¹, A. Scholl², A. Young², S.T. Retterer³, J.E. Boschker¹, T. Tybell¹, Y. Takamura⁴ and J.K. Grepstad¹. *1. Department of Electronics and Telecommunications, NTNU, Trondheim, Norway; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Center for Nanophase Materials Science, Oak Ridge National Laboratories, Oak Ridge, TN; 4. Department of Chemical Engineering and Materials Science, University of California-Davis, Davis, CA*

10:06

- EE-09. Low temperature magnetization reversal in patterned nano-islands of SrRuO₃.** L. Landau¹, J.W. Reiner² and L. Klein¹. *1. Department of Physics, Nano-magnetism Research Center, Institute of Nanotechnology and Advanced Materials, Bar-Ilan University, Ramat-Gan, Israel; 2. Department of Applied Physics, Yale University, New Haven, CT*

10:18

- EE-10. Magnetization relaxation in circular magnetic dots near vortex state nucleation.** G.N. Kakazei^{1,2}, M. Ilyn³, O. Chubykalo-Fesenko⁴, J.M. Gonzalez³, A.A. Serga⁵, A.V. Chumak⁵, B. Hillebrands⁵ and K.Y. Guslienko^{3,6}. *1. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal; 2. Institute of Magnetism NAS of Ukraine, Kiev, Ukraine; 3. Dpto. Fisica de Materiales, Universidad del Pais Vasco, San Sebastian, Spain; 4. Instituto de Ciencia de Materiales de Madrid, Madrid, Spain; 5. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 6. IKERBASQUE, The Basque Foundation for Science, Bilbao, Spain*

10:30

- EE-11. Sidewall effects on magnetic anisotropy of CoFeB nanomagnet.** K. Shen¹, S. Yang¹, C. Yen¹, K. Kuo¹, S. Huang¹, Wang¹, Y. Wang¹ and T. Ku¹. *1. Electronics and Optoelectronics Research Laboratories(EOL), Industrial Technology Research Institute(ITRI), Hsinchu, Taiwan*

10:42

- EE-12. Magnetically-controlled electrodeposition of metal lines.** P. Dunne¹, R. Soucaille¹ and M. Coey¹. *1. School of Physics and CRANN, Trinity College Dublin, Dublin 2, Ireland*

10:54

- EE-13. Effect of dipolar interactions in the magnetization reversal of arrays of closely-spaced ferromagnetic nanoislands.** J. Porro¹, M. Grimsditch^{1,3}, V. Metlushko⁴, R. Ilic³, A. Berger¹ and P. Vavassori^{1,2}. *1. Nanomagnetism Group, CIC nanoGUNE Consolider, Donostia-San Sebastian, Spain; 2. IKERBASQUE, Basque Foundation for Science, Bilbao, Spain; 3. Materials Science Division, Argonne National Laboratory, Argonne, IL; 4. Department of Electrical and Computer Engineering, University of Illinois at Chicago, Chicago, IL; 5. Cornell Nanofabrication Facility, Cornell University, Ithaca, NY*

11:06

- EE-14. Insights into the role of magnetoelastic anisotropy in the magnetization reorientation of magnetic nanowires.** *D.C. Leitão¹, J. Ventura², C.T. Sousa², A.M. Pereira², J.B. Sousa², M. Vazquez³ and J.P. Araujo²*. *1. INESC-MN and IN, Lisboa, Portugal; 2. IFIMUP and IN, Porto, Portugal; 3. ICMM -CSIC, Madrid, Spain*

11:18

- EE-15. Magnetization splitting in Landau and diamond domain structures: Dependences on exchange interaction, anisotropy and size.** *K. Xie¹, P. Zhang¹, W. Lin², X. Zhang¹ and H. Sang¹*. *1. National Laboratory of Solid State Microstructures, School of Physics, Nanjing University, Nanjing, China; 2. Institut d'Electronique Fondamentale, Université Paris-Sud, Orsay, France*

WEDNESDAY
MORNING
8:30

GRAND CANYON 4-5

Session EF

ULTRA-THIN FILMS AND SURFACE EFFECTS I

Xiaoyong Liu, Chair

8:30

- EF-01. Conical spin-spiral state in an ultra-thin film driven by higher-order spin interactions.** *S. Schröder¹, Y. Yoshida^{2,3}, P. Ferriani¹, D. Serrate^{2,4}, K. von Bergmann², A. Kubetzka², R. Wiesendanger² and S. Heinze¹*. *1. Institute of Theoretical Physics and Astrophysics, University of Kiel, Kiel, Germany; 2. Institute of Applied Physics, University of Hamburg, Hamburg, Germany; 3. Institute of Solid State Physics, University of Tokyo, Tokyo, Japan; 4. Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Saragossa, Spain*

8:42

- EF-02. Surface sensitive determination of energy-level alignment at organic semiconductor/ferromagnetic interfaces.** *A. Pratt^{1,2}, X. Sun³, L. Dunne⁴, M. Kurahashi¹ and Y. Yamauchi¹*. *1. National Institute for Materials Science, Tsukuba, Japan; 2. York Institute for Materials Research, University of York, York, United Kingdom; 3. University of Science and Technology of China, Anhui, Hefei, China; 4. Department of Physics, University of York, York, United Kingdom*

8:54

- EF-03. Modification of magnetic moment and spin orbit coupling in NiFe/Au bilayers induced by Ga⁺ ion irradiation.** *D.M. Burn¹, E. Arac¹, T.P. Hase² and D. Atkinson¹*. *1. Department of Physics, Durham University, Durham, United Kingdom; 2. Department of Physics, Warwick University, Warwick, United Kingdom*

9:06

- EF-04. Electric field induced modification of the electronic structure and magnetic properties at the surface of Ni/Co(111) multilayers.** *L. Calmels¹, F. Gimbert¹, B. Warot¹, V. Serin¹, S. Andrieu², T. Hauet² and S. Mangin¹*. *1. CEMES-CNRS, Toulouse, France; 2. Institut Jean Lamour, Nancy, France*

9:18

- EF-05. Co/Ni(111) epitaxial layers with Perpendicular Magnetic Anisotropy : a good candidate for spin transfer analysis.** *M. Gottwald¹, T. Hauet¹, S. Mangin¹, S. Andrieu¹, E. Fullerton², E. Snoeck³, F. Bertran⁴, P. Lefevre⁴, A. Taleb⁴ and A. Kent⁵*. *1. Nancy University / CNRS, Institut Jean Lamour, Vandoeuvre, France; 2. Center for Magnetic Recording Research, UCSD, La Jolla, CA; 3. CEMES, CNRS, Toulouse, France; 4. SOLEIL synchrotron, Saclay, France; 5. New York University, New York, WA*

9:30

- EF-06. Strain-Induced Magnetic Anisotropy and Magnetoresistance of Co(*t_{co}*)/Cu Multilayers.** *C. Rizal¹, B.R. Karki² and Y. Ueda³*. *1. Electrical and Computer Engineering, University of British Columbia, Vancouver, BC, Canada; 2. Physics, Texas Tech University, Lubbock, TX; 3. Electrical and Electronic Engineering, Muroran Institute of Technology, Muroran, Hokkaido, Japan*

9:42

- EF-07. Quantum Well States and Oscillatory Magnetic Anisotropy in Ferromagnetic Thin Films. (Invited)** *M. Przybylski¹, M. Dabrowski¹, U. Bauer¹, M. Cinal², F. Yildiz¹, J. Li¹, Y. Wu¹ and J. Kirschner¹*. *1. Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany; 2. Institute of Physical Chemistry of the Polish Academy of Sciences, Warsaw, Poland*

10:18

- EF-08. Electric-field induced change of magnetic anisotropy in CoFeB/oxide stacks.** *K. Kita^{1,2}, D.W. Abraham¹, M.J. Gajek¹ and D.C. Worledge¹*. *1. IBM T. J. Watson Research Center, Yorktown Heights, NY; 2. Department of Materials Engineering, The University of Tokyo, Tokyo, Japan*

10:30

EF-09. Domain patterns in demagnetized CoFeB/MgO structures with perpendicular anisotropy. *M. Yamanouchi¹, A. Jander^{2,3}, P. Dhagat^{2,3}, S. Ikeda^{1,3}, F. Matsukura^{1,3} and H. Ohno^{1,3}*. *1. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan; 2. School of Electrical Engineering and Computer Science, Oregon State University, Corvallis, OR; 3. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

10:42

EF-10. Tuning the Magnetostructural Transition in FeRh with Film Thickness. *M. Loving¹, M.A. de Vries², S. Langridge³, C.H. Marrows² and L.H. Lewis¹*. *1. Chemical Engineering, Northeastern University, Boston, MA; 2. Physics, University of Leeds, Leeds, United Kingdom; 3. ISIS, Rutherford Appleton Laboratory, Harwell Science and Innovation Campus, Oxon, United Kingdom*

10:54

EF-11. Direct observation of the room temperature magnetic phase separation in (Pd-doped) FeRh. *M. de Vries², J.S. Claydon², R. Fan¹, C. Kinane¹, F. Maccherozzi³, M. Loving⁴, L.H. Lewis⁴, D.A. Arena⁵, C. Marrows² and S. Langridge¹*. *1. Rutherford Appleton Laboratory, ISIS, Didcot, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 3. Diamond Light Source, Harwell Science and Innovation Campus, Oxon, United Kingdom; 4. Department of Chemical Engineering, Northeastern University, Boston, MA; 5. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY*

11:06

EF-12. Coercivity Change in an FePt Thin Layer by Voltage Application. *T. Seki¹, M. Kohda², J. Nitta² and K. Takanashi¹*. *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Graduate School of Engineering, Tohoku University, Sendai, Japan*

11:18

EF-13. Growth and Magnetic Properties of Ultrathin Single Crystal Fe₃O₄ Film on InAs(100). *Z. Huang^{1,2}, Y. Zhai¹, Y. Xu², J. Wu³, S.M. Thompson³ and S.N. Holmes⁴*. *1. Physics Department, Southeast University, Nanjing, 211189, China; 2. Department of Electronics, University of York, York, YO10 5DD, United Kingdom; 3. Department of Physics, University of York, York, YO10 5DD, United Kingdom; 4. Toshiba Research Europe Ltd, Cambridge Research Laboratory, Cambridge, CB4 0GZ, United Kingdom*

WEDNESDAY
MORNING
8:30

GRAND CANYON 12-13

Session EG
MAGNETIC TUNNEL JUNCTION II: MgO
Renu Whig, Chair

8:30

EG-01. Magneto Seebeck Effect in Magnetic Tunnel Junctions. *M. Walter¹, J. Walowski¹, V. Zbarsky¹, A. Zeghuzi¹, J.C. Leutenantsmeyer¹, M. Marahrens¹, M. Mü nzenberg¹, M. Schä fers², D. Ebke², G. Reiss², A. Thomas², P. Peretzki³, M. Seibt³, J.S. Moodera⁴, M. Czerner⁵, M. Bachmann⁵ and C. Heiliger⁵*. *1. I. Physikalisches Institut, Georg-August-Universität Göttingen, Göttingen, Germany; 2. Department of Physics, Universität Bielefeld, Bielefeld, Germany; 3. IV. Physikalisches Institut, Georg-August-Universität Göttingen, Göttingen, Germany; 4. Massachusetts Institute of Technology, Cambridge, MA; 5. I. Physikalisches Institut, Justus-Liebig-Universität Giessen, Giessen, Germany*

8:42

EG-02. Antiferromagnetic coupling versus (100)Fe interfacial resonant state in Fe/MgO/Fe junctions. *A. Duluard¹, C. Bellouard¹, C. Tiusan¹, B. Negulescu², D. Lacour¹, M. Hehn¹ and F. Montaigne¹*. *1. Institut Jean Lamour - UMR CNRS 7198, Vandoeuvre-Les-Nancy, France; 2. LEMA, UMR 6157 CNRS-CEA, Tours, France*

8:54

EG-03. Identification of Interface Exchange Bias in Fe/MgO(001) by Magnetic Second-Harmonic Generation. *Y. Fan², K. Smith², G. Luepke², A. Hanbicki¹, C.H. Li¹, H.B. Zhao³ and B.T. Jonker¹*. *1. Materials Science & Technology, Naval Research Laboratory, Washington, DC; 2. Department of Applied Science, College of William & Mary, Williamsburg, VA; 3. Department of Optical Science and Engineering, Fudan University, Shanghai, China*

9:06

EG-04. Asymmetry of in-plane spin-transfer torque in MgO MTJs with symmetric electrodes. *Y. Li¹, H. Tseng¹, P. Huang¹, J. Read^{1,2}, D. Ralph¹ and R. Buhrman¹*. *1. Cornell University, Ithaca, NY; 2. Hitachi Global Storage Technologies, San Jose, CA*

9:18

EG-05. Resonant tunneling through electronic trapping states in thin MgO magnetic junctions. *J.M. Teixeira*¹, *J. Ventura*¹, *M.P. Fernández-García*¹, *J.P. Araujo*¹, *J.B. Sousa*¹, *P. Wisniowski*^{2,3}, *S. Cardoso*³ and *P.P. Freitas*³. *1. Physics, IFIMUP and IN-Institute of Nanoscience and Nanotechnology, Faculdade de Ciências da Universidade do Porto, Porto, Portugal; 2. Electronics, AGH University of Science and Technology, Krakow, Poland; 3. INESC-MN and IN-Institute of Nanoscience and Nanotechnology, Lisboa, Portugal*

9:30

EG-06. X-ray and polarized neutron reflectivity study of CoFeB/MgO and CoFe/MgO multilayer thin films. *K. Kim*¹, *I. Shin*², *H. Choi*³, *B. Min*², *C. You*³, *J. Lee*¹, *S. Park*⁴ and *M.R. Fitzsimmons*⁵. *1. Neutron Science Division, Korea Atomic Energy Research Institute, Daejeon, Korea, Republic of; 2. Korea Institute of Science and Technology, Seoul, Korea, Republic of; 3. Department of Physics, Inha University, Incheon, Korea, Republic of; 4. Department of Physics, Pusan National University, Pusan, Korea, Republic of; 5. Los Alamos National Laboratory, Los Alamos, NM*

9:42

EG-07. Voltage induced magnetization dynamics in an ultrathin FeCo layer. (Invited) *T. Nozaki*^{1,2}, *Y. Shiota*³, *S. Murakami*^{3,4}, *F. Bonell*³, *T. Shinjo*³ and *Y. Suzuki*^{3,4}. *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan; 2. PRESTO, JST, Kawaguchi, Saitama, Japan; 3. Graduate School of Engineering Science, Osaka Univ., Toyonaka, Osaka, Japan; 4. CREST, JST, Kawaguchi, Saitama, Japan*

10:18

EG-08. Ferroelectric control of magnetic anisotropy. *A. Mardana*¹, *S. Ducharme*¹ and *S. Adenwalla*¹. *1. Department of Physics and Astronomy and the Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE*

10:30

EG-09. Electrical Control of Magnetic Anisotropy in Ultrathin Fe Films. *U. Bauer*¹, *M. Przybylski*², *J. Kirschner*² and *G.S. Beach*¹. *1. Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA; 2. Max-Planck-Institut für Mikrostrukturphysik, Halle, Germany*

10:42

EG-10. Ferromagnetic Resonance Excited by Spin Torque and Voltage-Controlled Magnetic Anisotropy in CoFeB/MgO/CoFeB Magnetic Tunnel Junctions. *J. Zhu*¹, *J.A. Katine*², *J. Langer*³, *G.E. Rowlands*¹, *Z. Duan*¹, *J. Alzate*⁴, *P. Upadhyaya*⁴, *P. Amiri*⁴, *K. Wang*⁴ and *I.N. Krivorotov*¹. *1. Department of Physics and Astronomy, University of California, Irvine, CA; 2. Hitachi Global Storage Technologies, San Jose, CA; 3. Singulus Technologies, 63796 Kahl am Main, Germany; 4. Department of Electrical Engineering, University of California, Los Angeles, CA*

10:54

EG-11. Voltage-Induced Switching of CoFeB-MgO Magnetic Tunnel Junctions. *J.G. Alzate*¹, *P. Khalili Amiri*¹, *S. Cherepov*¹, *J. Zhu*², *P. Upadhyaya*¹, *M. Lewis*¹, *I.N. Krivorotov*², *J. Katine*³, *J. Langer*⁴, *K. Galatsis*¹ and *K.L. Wang*¹. *1. Electrical Engineering, University of California, Los Angeles (UCLA), Los Angeles, CA; 2. Physics and Astronomy, University of California, Irvine, Irvine, CA; 3. Hitachi Global Storage Technologies, San Jose, CA; 4. Singulus Technologies, Kahl am Main, Germany*

11:06

EG-12. Voltage control of the magnetic anisotropy of FePd ultrathin films in epitaxial magnetic tunnel junctions. *F. Bonell*¹, *S. Murakami*^{1,2}, *Y. Shiota*^{1,2}, *T. Nozaki*^{1,2}, *T. Shinjo*¹ and *Y. Suzuki*^{1,2}. *1. Division of Material Science, Graduate School of Engineering Science, Osaka, Japan; 2. CREST, JST, Kawaguchi, Saitama, Japan*

11:18

EG-13. Characterization of spin-transistor using half-metallic Co₂MnSi electrodes. *Y. Ohdaira*¹, *M. Oogane*¹, *H. Naganuma*¹ and *Y. Ando*¹. *1. School of engineering, Tohoku university, Sendai, Miyagi, Japan*

WEDNESDAY

GRAND CANYON 1

MORNING

8:30

Session EH

TRANSFORMERS, MOTORS, INDUCTORS AND LEVITATION II

Don Gardner, Chair

8:30

EH-01. Integrated On-chip Inductors With Electroplated Magnetic Yokes. (Invited) *N. Wang*¹, *E.J. O'Sullivan*¹, *P. Herget*², *L.T. Romankiw*¹, *B.C. Webb*¹, *R. Fontana*², *E.A. Duch*¹, *E.A. Joseph*¹, *S.L. Brown*¹, *G. Decad*² and *W.J. Gallagher*¹. *1. IBM T. J. Watson Research Center, Yorktown Heights, NY; 2. IBM Almaden Research Center, San Jose, CA*

9:06

EH-02. Analysis of mid-range electric power transfer based on an equivalent circuit model. *I. Sasada*¹. *Applied Science for Electronics and Materials., Kasuga, Japan*

9:18

EH-03. Tuning the Permeability of Permalloy Films for On-chip Inductor Applications. *T. Dastagir*¹, *W. Xu*¹, *S. Sinha*¹, *H. Wu*¹, *Y. Cao*¹ and *H. Yu*¹. *Arizona State University, Tempe, AZ*

9:30

EH-04. Optimised design of Astatic coils for biasing Atomic Resonance Magnetometers. *S. Turner*¹ and *S. Harmon*¹. *Magnetic Materials, NPL, Teddington, United Kingdom*

9:42

EH-05. A Novel Loss-Compensation MESFET Active Inductor. *Y. Lai*¹ and *C. Zheng*¹. *Department of Mechatronics Engineering, National Changhua University of Education, Changhua, Taiwan*

9:54

EH-06. Calculation of Eddy Currents in Magnetically Nonlinear Anisotropic Conductors. *P. McAvoy*¹, *C. Serpico*² and *I. Mayergoyz*³. *1. Department of Electrical and Computer Engineering, University of Maryland College Park, College Park, MD; 2. Dipartimento di Ingegneria Elettrica, Università di Napoli Federico II, Napoli, Italy; 3. Department of Electrical and Computer Engineering, UMLACS and AppEl Center, University of Maryland College Park, College Park, MD*

10:06

EH-07. Stable levitation region of a magnet over a superconducting torus in a complete Meissner state. *E. Diez-Jimenez*¹, *J. Perez-Diaz*¹ and *J. Herrero-de-Vicente*¹. *Ingeniería Mecánica, Universidad Carlos III de Madrid, Leganés, Madrid, Spain*

10:18

EH-08. A design of mini actuator for compact camera without using permanent magnet. *C. Tsai*¹ and *D. Liaw*¹. *Electrical and Control Engineering, National Chiao Tung University, Hsinchu, Taiwan*

10:30

EH-09. Effect of magnetosriction and sound level on power transformer of silicon steel core with step-lap joint. *Y. Chang*¹, *C. Hsu*^{1,2}, *H. Chu*², *C. Chang*¹, *W. Chan*¹, *C. Lee*³, *C. Yao*^{2,3} and *Y. He*^{2,3}. *1. Electrical Engineering, Chang Gung University, Tao-Yuan, Taiwan; 2. Electrical Engineering, Fortune Electric Company Ltd., Tao-Yuan, Taiwan; 3. Electrical Engineering, Chung Yuan Christian University, Tao-Yuan, Taiwan*

10:42

EH-10. Effect of harmonic of magnetic characteristic on power transformer. *Y. Chang*¹, *C. Hsu*^{1,2}, *H. Chu*², *C. Chang*¹, *W. Chan*¹, *C. Lee*³, *Y. He*^{2,3} and *C. Yao*^{2,3}. *1. Electrical Engineering, Chang Gung University, Tao-Yuan, Taiwan; 2. Electrical Engineering, Fortune Electrical Company Ltd., Tao-Yuan, Taiwan; 3. Electrical Engineering, Chung Yung Christian University, Tao-Yuan, Taiwan*

10:54

EH-11. Modeling and Simulation of High Voltage and Frequency Transformer. *F.O. Quintaes*^{1,3}, *A.O. Salazar*¹, *J.D. Amado*¹, *J.P. Dubut*², *J.R. Silva*³, *G.C. Barbosa*³ and *R.P. Filho*¹. *1. DCA, UFRN, Natal, RN, Brazil; 2. INPE, Natal, RN, Brazil; 3. IFRN, Natal, RN, Brazil*

11:06

EH-12. High performance separate-shell magnetic shield with built-in shaking coil and active compensation. *I. Sasada*¹, *M. Nishimura*¹, *T. Takeda*², *M. Shimada*³, *J. Kim*⁴ and *Y. Lee*⁴. *1. Applied Science for Electronics and Materials., Kasuga, Japan; 2. Nippon Steel Composite Co.,Ltd, Tokyo, Japan; 3. Nippon Steel Materials Co, Ltd, Himeji, Japan; 4. Korea Research Institute of Standard and Science, Daejeon, Korea, Republic of*

11:18

EH-13. Effects of magnetomechanical vibrations and bending stresses on three-phase three-leg transformer with Amorphous Cores. *Y. Chang*¹, *C. Hsu*^{1,2}, *H. Chu*², *C. Chang*¹, *W. Chan*¹, *C. Lee*³, *C. Yao*^{2,3} and *Y. He*^{2,3}. *1. Electrical Engineering, Chang Gung University, Tao-Yuan, Taiwan; 2. Electrical Engineering, Fortune Electric Company Ltd., Chung Lin, Taiwan; 3. Electrical Engineering, Chung Yung Christian University, Tao-Yuan, Taiwan*

WEDNESDAY
MORNING
8:00

SAGUARO BALLROOM

**Session EP
NANOMAGNETIC LOGIC,
MAGNETOSTRICTIVE AND MAGNETO-OPTIC
DEVICES**

(Poster Session)

Thomas Crawford, Chair

EP-01. Programmable logic system for Magnetic Cellular Automata. *D.K. Karunaratne*¹ and *S. Bhanja*¹. *Electrical Engineering, University of South Florida, Tampa, FL*

EP-02. Nanomagnetic Engineering of the Properties of Domain Wall Atom Traps. *T.J. Hayward¹, A.D. West², K.J. Weatherill², T. Schrefl³, I.G. Hughes² and D.A. Allwood¹*. *Department of Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 2. Atomic and Molecular Physics Group, University of Durham, Durham, United Kingdom; 3. St Pölten University of Applied Sciences, St Pölten, Austria*

EP-03. Boolean Logic Implementation using Coupled Spin Valves. *S. Rajaram¹ and S. Bhanja¹*. *Electrical Engineering, University of South FL, Tampa, FL*

EP-04. Optimal Design of Linear Vibrators Used in Touch Screen Mobile phones. *P. Sun¹, J. Kwon² and S. Hwang¹*. *School of Mechanical Engineering, Pusan National University, Busan, Busan, Korea, Republic of; 2. Research and Development Center, EM-TECH, Anyang, Gyeonggi-do, Korea, Republic of*

EP-05. Design of longitudinal air gap slim speakers used for flat TV. *P. Sun¹ and S. Hwang¹*. *Mechanical Engineering College, Pusan National University, Busan, Busan, Korea, Republic of*

EP-06. Phase Instability of Magnetic Ground State in Antiperovskite Mn_3ZnN : Giant Magnetovolume Effects Related to Magnetic Structure. *T. Hamada¹ and K. Takenaka¹*. *Department of Crystalline Materials Science, Nagoya University, Nagoya, Aichi, Japan*

EP-07. Development of Magnetostrictive Inkjet Head for Liquid Droplet Formation. *J. Yoo¹ and Y. Park²*. *Corporate R&D Center, LG Chem, LTD., Daejeon, Korea, Republic of; 2. Mechatronics Engineering, Chungnam National University, Daejeon, Korea, Republic of*

EP-08. Design and Performance of Giant Magnetostrictive Fast Steering Mirror. *H. Wang¹, Y. Yang¹, T. Zhang¹, J. Liu¹, J. Wang¹ and C. Jiang¹*. *School of Materials Science and Engineering, Beihang University, Beijing, China*

EP-09. Strain-sensor based on magneto-acoustic resonance. *T. Huber^{1,2}, B. Bergmair^{1,2}, F. Bruckner¹, C. Vogler¹ and D. Suess¹*. *Inst. of Solid State Physics, Vienna University of Technology, Vienna, Austria; 2. Inst. of Analysis and Scientific Computing, Vienna University of Technology, Vienna, Vienna, Austria*

EP-10. A magnetoelectric energy harvester with the magnetic coupling to enhance the output performance. *X. Bai^{1,2}, Y. Wen^{1,2}, J. Yang^{1,2}, P. Li^{1,2}, J. Qiu^{1,2} and Y. Zhu^{1,2}*. *The Key Laboratory for Optoelectronic Technology & Systems, Ministry of Education, Chongqing, China; 2. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*

EP-11. Optical transmission modulation by disk-shaped ferromagnetic particles. *E.A. Vitol¹, V.G. Yefremenko¹, S. Jain¹, J. Pearson¹, E.A. Rozhkova², S.D. Bader^{1,2} and V. Novosad¹*. *Materials Science Division, Argonne National Laboratory, Argonne, IL; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

EP-12. Visible photoluminescence enhancement effect of TiO₂ nanotube arrays by high magnetic field annealing. *M. Yang^{1,2}, W. Liu¹ and J. Sun²*. *Department of Material Science and Engineering and Laboratory of Advanced Materials, Tsinghua University, Beijing, Beijing, China; 2. Department of Physics and State Key Lab of Low-Dimensional Quantum Physics, Tsinghua University, Beijing, Beijing, China*

EP-13. Preparation and Photocatalytic Properties of reusable hybrid core-shell $CoFe_2O_4$ -ZnO nanospheres. *A. Wilson¹ and S.R. Mishra¹*. *Physics, The University of Memphis, Memphis, TN*

EP-14. Improved Formulation for Magneto-optic Device Characterization. *J. Tioh¹, R.J. Weber¹ and M. Mina¹*. *Ames, IA*

EP-15. Low Power Field Generation for Magneto-Optic Fiber-Based Interferometric Switches. *J.W. Pritchard¹, M. Mina¹, R.J. Weber¹ and S. Oster¹*. *Electrical Engineering, Iowa State University, Ames, IA*

WEDNESDAY
MORNING
8:00

SAGUARO BALLROOM

**Session EQ
SPIN WAVES
(Poster Session)**
Ondrej Hovorka, Chair

EQ-01. Parametric excitation of eigenmodes in microscopic magnetic dots. *H. Ulrichs¹, V.E. Demidov¹, S.O. Demokritov¹ and S. Urazhdin²*. *University of Muenster, Muenster, Germany; 2. Emory University, Atlanta, GA*

EQ-02. Interchanging extended modes in permalloy antidot arrays by incorporation of Co nanodisks. *G. Duerr¹, M. Madami², S. Neusser¹, S. Tacchi², G. Gubbiotti^{2,3}, G. Carlotti² and D. Grundler¹*. *Physik-Department E10, Technische Universität München, Garching b. München, Germany; 2. CNISM, Unità di Perugia-Dipartimento di Fisica, Perugia, Italy; 3. Istituto Officina dei Materiali del CNR (CNR-IOM), Unità di Perugia, c/o Dipartimento di Fisica, Perugia, Italy*

- EQ-03. Pulse width modulation in pulse inductive microwave magnetometry measurements of spin waves.** *J. Kwon¹, S.S. Mukherjee¹, M. Jamali¹, M. Hayashi² and H. Yang¹*. *ECE, National University of Singapore, Singapore, Singapore; 2. National Institute of Materials Science, Tsukuba, Japan*
- EQ-04. Dynamic Behavior of 2-Dimensional Magnonic Crystals fabricated using ‘Self-Aligned Lithography Process’** *S. Jain¹ and A.O. Adeyeye¹*. *Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*
- EQ-05. Spin waves micromagnetic modelling induced by spin-torque nano-oscillators.** *D. Aurelio¹, L. Torres¹ and E. Martinez¹*. *University of Salamanca, Salamanca, Spain*
- EQ-06. Temperature dependence of normal modes of ferrimagnets.** *F. Schlickeiser¹, S. Wienholdt¹, U. Atxitia², D. Hinzke¹, O. Chubykalo-Fesenko² and U. Nowak¹*. *University of Konstanz, Konstanz, Germany; 2. Institute of material science, Madrid, Spain*
- EQ-07. Extending the frequency range of phase-resolved, x-ray detected ferromagnetic resonance.** *P. Warnicke¹, R. Knut², E. Wahlström³, W.E. Bailey⁴, O. Karis² and D.A. Arena¹*. *NSLS, Brookhaven National Lab, Upton, NY; 2. Dept. of Physics, Uppsala University, Uppsala, Sweden; 3. Dept. of Physics, Norwegian University of Science and Technology, Trondheim, Norway; 4. Dept. of Applied Physics, Columbia University, New York, NY*
- EQ-08. Time-resolved measurement of spin-wave spectra in [Co(t)/Pt(7Å)]_n multilayers.** *S. Pal¹, B. Rana¹, S. Saha¹, R. Mandal¹, O. Hellwig², J. Romero-Vivas³, S. Mamica³, J.W. Klos³, M. Mruczkiewicz³, M. Krawczyk³ and A. Barman¹*. *Department of Material Sciences, S. N. Bose National Centre for Basic Sciences, Kolkata, India; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA; 3. Surface Physics Division, A. Mickiewicz University, Poznan, Poland*
- EQ-09. Spin-wave dynamics in a double point-contact device.** *V. Puliafito¹, G. Consolo² and B. Azzerboni¹*. *Department of Matter Physics and Electronic Engineering, University of Messina, Messina, Italy; 2. Department of Sciences for Engineering and Architecture, University of Messina, Messina, Italy*
- EQ-10. Localization vs dispersion of spin waves in 3D magnetic nanostructures.** *M. Dvornik¹ and V.V. Kruglyak¹*. *School of Physics, University of Exeter, Exeter, Devon, United Kingdom*
- EQ-11. Formation of Bright Solitons from Surface Spin Waves.** *Z. Wang¹, M. Wu¹ and B.A. Kalinikos²*. *Department of Physics, Colorado State University, Fort Collins, CO; 2. St. Petersburg Electrotechnical University, St. Petersburg, Russian Federation*

- EQ-12. Two-Dimensional Propagation of the Spin Wave Packet Excited by the Inverse Faraday Effect.** *Y. Terui^{1,2}, T. Satoh^{1,2}, T. Shimura¹, K. Kuroda¹, R. Moriya¹, K. Ando³ and E. Saitoh^{3,4}*. *1. Institute of Industrial Science, The University of Tokyo, Tokyo, Japan; 2. PRESTO, Japan Science and Technology Agency, Tokyo, Japan; 3. Institute for Materials Research, Tohoku University, Sendai, Japan; 4. CREST, Japan Science and Technology Agency, Tokyo, Japan*
- EQ-13. Electric field control of surface spin waves.** *R. Stamps² and V. Gunawan¹*. *1. School of Physics, University of Western Australia, Crawley, WA, Australia; 2. University of Glasgow, Glasgow, United Kingdom*
- EQ-14. Spin wave propagation in magnetic wires.** *H.G. Bauer¹, C.H. Back¹ and G. Woltersdorf¹*. *Physics, University of Regensburg, Regensburg, Bavaria, Germany*
- EQ-15. Tailoring of the spin wave spectra of planar magnonic crystals using metallic overlayers.** *M. Sokolovskyy¹, S. Mamica¹, J.W. Klos¹ and M. Krawczyk¹*. *Physics Faculty, Adam Mickiewicz University, Poznan, Poland*

WEDNESDAY
MORNING
8:00

SAGUARO BALLROOM

Session ER
MAGNETIC FLUIDS AND SEPARATIONS AND
BIOMAGNETISM
(Poster Session)
Thompson Mefford, Chair

- ER-01. Near infrared spectroscopic evaluation of cellular activities under strong static and time-varying magnetic fields.** *Y. Mizukawa¹, M. Iwasaka¹, S. Kurita² and N. Owada²*. *1. Chiba University, Chiba, Japan; 2. ABI, Nagareyama, Japan*
- ER-02. Magnetic field effect on growth, As uptake and total amyolytic activity on mesquite (*Prosopis juliflora* x *P. velutina*) seeds.** *E. Flores Tavizón¹, N.S. Mokgalaka-Matlala², J.T. Elizalde Galindo³, H. Castillo-Michelle⁴, J.R. Peralta-Videa⁴ and J.L. Gardea-Torresdey⁴*. *1. Civil Engineering and Environmental, Universidad Autónoma de Ciudad Juárez, Cd. Juárez, Chihuahua, Mexico; 2. Chemistry, Tshwane University of Technology, Pretoria, South Africa; 3. Physics and Mathematics, Universidad Autónoma de Ciudad Juárez, Cd. Juárez, Chihuahua, Mexico; 4. Chemistry, University of Texas at El Paso, El Paso, TX*

- ER-03. Development of autonomous magnetic micro-systems for the manipulation of biological species.** *F. Dumas-Bouchiat*¹, L. Zanini^{1,2}, Y. Zang¹, G. Ciuta¹, G. Reyne², J. Pivetal³, O. Osman³, M. Fré né a-Robin³, N. Haddour³, N.M. Dempsey¹ and D. Givord¹. *Institut Néel, Grenoble, France; 2. G2Elab, INP de Grenoble, Grenoble, France; 3. Laboratoire Ampère, Lyon, France*
- ER-04. Magneto-optical cellular chip model for intracellular orientational-dynamic-activity detection.** *Y. Miyashita*¹, M. Iwasaka¹, S. Kurita² and N. Owada². *1. Chiba University, Chiba, Japan; 2. ABI, Nagareyama, Japan*
- ER-05. Subacute Exposure to a 50 Hz Magnetic Field Affects Prenatal and Neonatal Mice's Motor Incoordination.** *L. Sakhnini*¹ and A. Al-Ansari². *1. Physics, University of Bahrain, Sakhir, Bahrain; 2. Physiology, College of Medicine, Arabian Gulf University, Manama, Bahrain*
- ER-06. Effect of 10-T magnetic fields on structural colors in guanine crystals of fish scales.** *M. Iwasaka*¹, Y. Miyashita¹, M. Kudo¹, S. Kurita² and N. Owada². *1. Chiba University, Chiba, Japan; 2. ABI, Nagareyama, Japan*
- ER-07. Rheological, Optical, and Thermal Characterization of Temperature-Induced Transitions in Liquid Crystal Ferrogels.** *H. Diestra-Cruz*¹, C. Rinaldi¹ and A. Acevedo¹. *1. Chemical Engineering, University of Puerto Rico at Mayaguez, Mayaguez*
- ER-08. The temperature-dependent magneto-viscoelastic characteristic of a MR fluid in magnetic field.** *Y. Enokizono*¹, T. Todaka¹ and M. Enokizono¹. *1. Faculty of Engineering, Oita University, Oita, Japan*
- ER-09. Ferromagnetic resonance of ferrolyotropic liquid crystals and ferrofluids.** *F.R. Arantes*¹, D.R. Cornejo¹ and C.A. Ramos². *1. Condensed Matter Physics, Institute of Physics, University of São Paulo, Sao Paulo, Sao Paulo, Brazil; 2. Centro Atómico Bariloche, San Carlos de Bariloche, Río Negro, Argentina*
- ER-10. Rotating ferrofluid flow under a uniform rotating magnetic field in a spherical cavity.** *I.G. Torres-Díaz*¹, C. Rinaldi¹, S. Khushrushahi² and M. Zahn². *1. Department of Chemical Engineering, University of Puerto Rico, Mayaguez Campus, Mayaguez; 2. Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA*
- ER-11. Diamagnetic Particle Focusing in Ferrofluids Using Single Magnets.** *L. Liang*¹ and X. Xuan¹. *1. Mechanical Engineering, Clemson University, Clemson, SC*
- ER-12. Time-dependent dynamic behavior of light diffraction in Ferrofluid.** *M. Chung*¹, S. Chou² and C. Fu¹. *1. Physics, Physics, Taipei, Taiwan; 2. Engineering Science and Ocean Engineering, Engineering Science and Ocean Engineering, Taipei, Taiwan*

- ER-13. Magnetic Properties and Microstructures of Mesoporous Silica-Iron Oxide Core-shell composite for applications in Magnetic Dye separations.** *W. Hao*^{1,2}, Y. Xi¹, T. Wang¹ and X. Wang². *1. Beihang University, Beijing, China; 2. University of Wollongong, Wollongong, NSW, Australia*
- ER-14. Gradient magnetic-field-flow fractionation of dissolved oxygen and carbon dioxide gasses.** *M. Iwasaka*¹, S. Kurita² and N. Owada². *1. Chiba University, Chiba, Japan; 2. ABI, Nagareyama, Japan*
- ER-15. Magnetorheological Effect of MR Elastomers under Normal Pressure.** *X. Dong*¹, N. Ma², M. Qi¹, J. Li², R. Chen¹ and J. Ou^{2,3}. *1. School of Materials Science and Engineering, Dalian University of Technology, Dalian, Liaoning, China; 2. School of Civil Engineering, Dalian University of Technology, Dalian, Liaoning, China; 3. School of Civil Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China*

WEDNESDAY
MORNING
8:00

SAGUARO BALLROOM

Session ES
MAGNETIC PARTICLES FOR
HYPERTHERMIA, DRUG DELIVERY AND
SEPARATION
(Poster Session)
Daniela Petti, Chair

- ES-01. Physical Parameters to Enhance AC Heating Characteristics of Superpara- and Ferri-Magnetic Nanoparticles for Local Hyperthermia.** *M. Jeun*¹, S. Lee¹, H. Oh¹, Y. Kim², K. Park², S. Paek³, Y. Takemura⁴, K. Chung⁵, J. Kwak⁶ and S. Bae¹. *1. Biomagnetics Laboratory (BML), Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Ophthalmology, Seoul National University College of Medicine, Seoul, Korea, Republic of; 3. Neurosurgery, Ischemic/Hypoxic Disease Institute, Cancer Research Institute, Seoul National University College of Medicine, Seoul, Korea, Republic of; 4. Electrical and Computer Engineering, Yokohama National University, Yokohama, Japan; 5. Nuri Vista Co. Ltd, Seoul, Korea, Republic of; 6. Physiology and Biophysics, Inha University College of Medicine, Incheon, Korea, Republic of*

- ES-02. Cytotoxicity of selol-loaded magnetic nanocapsules against neoplastic cell lines under AC magnetic field activation.** P.C. Morais¹, A. Falqueiro^{2,3}, F. Primo², D. Jardim², M. Siqueira-Moura^{2,3}, E. Mosiniewicz-Szablewska⁴, P. Suchocki^{5,6} and A. Tedesco^{2,1}. *Instituto de Física, Universidade de Brasília, Brasília, DF, Brazil; 2. Departamento de Química, Universidade de São Paulo, Ribeirão Preto, SP, Brazil; 3. Departamento de Ciências Farmacêuticas, Universidade de São Paulo, Ribeirão Preto, SP, Brazil; 4. Institute of Physics, Polish Academy of Sciences, Warsaw, Poland; 5. Department of Drugs Analysis, Warsaw Medical University, Warsaw, Poland; 6. Department of Pharmaceutical Chemistry, Drug Institute, Warsaw, Poland*
- ES-03. Monitoring iron oxide nanoparticle surface temperature during AMF heating using thermoresponsive-fluorescent polymers.** L. Polo-Corrales¹ and C. Rinaldi¹. *Department of Chemical Engineering, University of Puerto Rico, Mayaguez, Mayaguez*
- ES-04. Physical Limits of Pure Superparamagnetic Fe₃O₄ Nanoparticles for a Local Hyperthermia Agent in Nanomedicine.** M. Jeun¹, S. Lee¹, H. Oh¹, A. Tomitaka², Y. Takemura², K. Chung³, Y. Kim⁴, K. Kang⁵, J. Kwak⁶ and S. Bae¹. *Biomagnetics Laboratory (BML), Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Electrical and Computer Engineering, Yokohama National University, Yokohama, Japan; 3. Nuri Vista Co. Ltd, Seoul, Korea, Republic of; 4. Radiology, Seoul National University Hospital, Seoul, Korea, Republic of; 5. Nuclear Medicine, Seoul National University College of Medicine & Cancer Research Institute, Seoul, Korea, Republic of; 6. Physiology and Biophysics, Inha University College of Medicine, Incheon, Korea, Republic of*
- ES-05. Development, characterization and in vitro trials of CIAIPE-magnetic nanoemulsion to Hyperthermia and Photodynamic Therapies on human stem cells and glioblastoma as biological models.** L.B. de Paula¹, F.L. Primo¹, D.R. Jardim¹, P.C. Morais² and A.C. Tedesco¹. *Nanotechnology, São Paulo University, Ribeirão Preto, São Paulo, Brazil; 2. Institute of Physics, Brasília University, Brasília, Goiás, Brazil*
- ES-06. Size dependent RF heating of cobalt ferrite magnetic nanoparticles.** K.L. McNerny¹, K.N. Collier¹, A.H. Habib¹ and M.E. McHenry^{1,2}. *Materials Science and Engineering, Carnegie Mellon, Pittsburgh, PA; 2. Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA*
- ES-07. Magnetic properties and thermal response of magnetite nanoparticles under dynamical conditions of external magnetic field application.** A. Bollero¹, F.J. Teran¹, C. Casado¹, J.F. Cunado², M. Morales³, G. Salas¹, A. Villanueva^{1,4}, M. Calero⁴, P. Acedo⁴, J. Camarero^{1,2} and R. Miranda^{1,2}. *IMDEA Nanoscience, Instituto Madrileño de Estudios Avanzados en Nanociencia, Madrid, Spain; 2. Dpto. Física de la Materia Condensada, Universidad Autónoma de Madrid, Madrid, Spain; 3. Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain; 4. Dpto. Biología, Universidad Autónoma de Madrid, Madrid, Spain*

- ES-08. Size- and Phase-controlled synthesis of cobalt nanoparticles for potential biomedical applications.** C.M. Osorio-Cantillo¹, O.J. Perales-Perez^{2,1}, A.N. Santiago-Miranda³ and Y. Xin⁴. *Chemistry, University of Puerto Rico, Mayaguez; 2. Materials Science & Engineering, University of Puerto Rico, Mayaguez; 3. Chemical Engineering, University of Puerto Rico, Mayaguez; 4. Magnet Science & Technology, National High Magnetic Field Laboratory, Tallahassee, FL*
- ES-09. Specific relaxation properties of superparamagnetic nanoparticles for multifunctional MRI/hyperthermia application.** M. Yang^{1,2}, Y. Chiu¹, W. Hsieh², C. Lai¹ and M. Tung². *1. material science and engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Industrial Technology Research Institute, Hsinchu, Taiwan*
- ES-10. Folate-Conjugated Magnetic Chitosan Nanoparticles for Dual Targeting Delivery of Doxorubicin for Cancer Therapy.** J. Chen¹, J. Yang¹, K. Wei² and Y. Lu^{1,2}. *1. Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan, Taiwan; 2. Department of Neurosurgery, Chang Gung Memorial Hospital, Taoyuan, Taiwan*
- ES-11. Silicon Oxide Magnetic Nanoparticles for Targeted Delivery of Tissue Plasminogen Activator.** J. Chen¹, P. Yang¹, Y. Lu^{1,2} and Y. Ma³. *1. Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan, Taiwan; 2. Department of Neurosurgery, Chang Gung Memorial Hospital, Taoyuan, Taiwan; 3. Department of Physiology and Pharmacology, Chang Gung University, Taoyuan, Taiwan*
- ES-12. Ferrofluid based control release drug delivery system for imaging and therapeutic applications.** S.H. Naik¹, M.D. Shultz^{2,3} and E.E. Carpenter¹. *1. Chemistry, Virginia Commonwealth University, Richmond, VA; 2. Biochemistry and Molecular Biology, Virginia Commonwealth University, Richmond, VA; 3. Chemistry, Virginia Tech, Blacksburg, VA*
- ES-13. Fabrication of Fe@mSiO₂ Nanowires with Large Remanence and Low Cytotoxicity for Targeted Drug Delivery.** M. Song¹, H. Bi^{1,2} and Y. Zhang¹. *1. College of Chemistry and Chemical Engineering, Anhui University, Hefei, Anhui, China; 2. Department of Medicine, Columbia University, New York, NY*
- ES-14. Magnetically Active Polymeric Filter for Circulating Tumor Cell Separation.** N. Kataeva¹, C. Binder¹, L. Breth¹ and H. Brueckl¹. *AIT Austrian Institute of Technology, Vienna, Austria*
- ES-15. Isolation of DNA using biofunctional superparamagnetic nanoparticles.** J.H. Min¹, M. Woo³, H. Yoon¹, J.H. Wu², C. Lim³ and Y.K. Kim¹. *1. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Korea, Republic of; 3. Department of Laboratory Medicine, College of Medicine, Korea University Guro Hospital, Seoul, Korea, Republic of*

WEDNESDAY
MORNING
8:00

SAGUARO BALLROOM

Session ET
ANISOTROPIC MAGNETIC
NANOSTRUCTURES
(Poster Session)
Jinbo Yang, Chair

- ET-01. Synthesis and of Cobalt Carbide Permanent Magnetic Nanoparticles through use of the chloride and hydroxide anion in a Polyol Process.** Z.J. Huba¹ and E.E. Carpenter¹. *Chemistry, Virginia Commonwealth University, Richmond, VA*
- ET-02. Exceptionally High Coercive Fields of Mn_xGa Films Enhanced by Nanoscale Structural Disorder.** S. Bennett¹, T. Nummy², T. Cardinal² and D. Heiman². *1. Mechanical Engineering, Northeastern University, Boston, MA; 2. Physics, Northeastern University, Boston, MA*
- ET-03. Exchange coupling in hard/soft-magnetic multilayer films with non-magnetic spacer layers.** W. Cui¹, W. Liu¹, W. Gong¹, X. Liu¹, S. Guo¹, Y. Zhang¹, Z. Wang¹ and Z. Zhang¹. *Shenyang National Laboratory for Materials Science and International Centre for Materials Physics, Institute of Metal Research, Chinese Academy of Sciences, Shenyang, Liaoning, China*
- ET-04. Demagnetizing factors and demagnetizing fields of ellipsoidal magnetic nanoparticles with core/shell structures.** L.O. Massa¹, M.R. Guassi¹ and Q. Fanyao^{1,2}. *1. Institute of Physics, University of Brasilia, Brasilia, Federal District, Brazil; 2. International Center for Condensed Matter Physics, University of Brasilia, Brasilia, Federal District, Brazil*
- ET-05. Variation of easy magnetization in (001) textured FePt-FeB graded films.** J. Tsai¹, J. Huang¹, C. Lin¹ and L. Chen¹. *Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*
- ET-06. Field annealing studies of Co/Pd multilayers.** E. Yang^{1,2}, M. Moneck^{1,2} and J. Zhu^{1,2}. *1. Electrical and Computer Engineering, Carnegie Mellon, Pittsburgh, PA; 2. Data Storage Systems Center, Carnegie Mellon University, Pittsburgh, PA*
- ET-07. Magnetic transition in epitaxial Fe-Rh-Pd films.** P.R. LeClair¹, H. Sato¹, N. Pachauri¹, S. Keshavarz¹, H. Lee¹ and G.J. Mankey¹. *University of Alabama, Tuscaloosa, AL*
- ET-08. Influence of strain on the AFM>FM phase transition in epitaxial FeRh films.** C. Bordel^{1,2}, D.W. Cooke¹, J. Juraszek², S. Moyerman³, E.E. Fullerton³ and F. Hellman¹. *1. Physics, University of California at Berkeley, Berkeley, CA; 2. Physics, University of Rouen, St Etienne du Rouvray, France; 3. Physics, University of California at San Diego, San Diego, CA*

- ET-09. Thickness Effect and Phase Transition in Epitaxial FeRh Thin Films.** K. Cher^{1,2}, T. Zhou¹ and J. Chen². *1. Data Storage Institute, Singapore, Singapore; 2. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore*
- ET-10. Analysis on eddy current losses of cylindrical linear oscillatory actuator with Halbach permanent magnet array mover.** K. Ko¹, Y. Park¹ and S. Jang¹. *Electrical Engineering, Chungnam National University, Daejeon, Korea, Republic of*
- ET-11. A study of hybrid bonded magnets of Sm-Co and Sr-ferrite using mixture design.** P. Sharma¹. *School of Physics and Materials Science, Thapar University, Patiala, India*
- ET-12. High performance anisotropic NdFeB magnets prepared by dual-alloy die-upsetting.** X. Tang^{1,2}, R. Chen^{1,2}, W. Yin^{1,2}, M. Lin^{1,2}, D. Lee^{1,2} and A. Yan^{1,2}. *Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences, Ningbo, China*
- ET-13. Magnetic properties of mechanical milled GdCo₅ nanocrystalline powders and its dependence on temperature.** E.S. Lara Pérez¹, J.T. Elizalde Galindo¹, J.R. Farias Mancilla¹ and J.A. Matutes Aquino². *1. Physics and Mathematics, Universidad Autónoma de Ciudad Juárez, Cd. Juárez, Chihuahua, Mexico; 2. Centro de Investigación en Materiales Avanzados, Chihuahua, Chihuahua, Mexico*
- ET-14. Magneto-optic spatial light modulators with nano-scaled magnetic pixels for holographic three-dimensional display.** Y. Takeru¹, E. Yu¹, N. Kazuki¹, T. Hiroyuki¹, A.V. Baryshev¹ and I. Mitsuteru¹. *engineering, Toyohashi University of Technology, Toyohashi, Japan*

WEDNESDAY
MORNING
8:00

SAGUARO BALLROOM

Session EU
MULTIFERROIC MATERIALS II
(Poster Session)
William Ratcliff, Chair

- EU-01. Size-dependent magnetic properties of YCrO₃ nanoparticles.** C. Lin¹, B. Lin¹, M. Chen², G. Chen¹, G. Jhang¹ and C. Wu¹. *1. Institute of Nanotechnology and Department of Mechanical Engineering, Southern Taiwan University, Tainan, Taiwan; 2. Department of Electro-optical Engineering, Southern Taiwan University, Tainan, Taiwan*

EU-02. Short-Range Coupling between Electric and Magnetic Clusters of Ho_{0.8}La_{0.2}Mn₂O₅ Multiferroics. C.P. Wu¹, H. Chou¹, S.R. Yah¹ and Y.H. Chen¹. *Physics, Natl Sun Yat-Sen University, Kaohsiung, Taiwan*

EU-03. Multiferroic heterostructure consisting of PZT thin films grown on amorphous ferromagnetic metallic glass substrates. B. Hu¹, Y. Chen¹, A. Yang¹, S. Gillette¹, T. Fitchorov¹, A. Geiler¹, A. Daigle¹, Z. Wang², D. Viehland², C. Vittoria¹ and V. Harris¹. *Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Materials Science and Engineering, Virginia Tech, Blacksburg, VA*

EU-04. Magnetic properties and ferroelectric domain dynamics in multiferroic YMnO₃ single crystals and films. X. Wang¹, Y. Du¹, D. Chen¹, Z. Cheng¹ and S. Dou¹. *Institute for Superconducting and Electronic Materials (ISEM), University of Wollongong, North Wollongong, NSW, Australia*

EU-05. Evolution of the Magnetic Phase Diagram of Multiferroic MnWO₄ at High Magnetic Fields. I. Urcelay-Olabarria¹, V. Skumryev², E. Ressouche¹, J.L. Garcia-Muñoz³, A.M. Balbashov⁴, V.Y. Ivanov⁵ and A.A. Mukhin⁵. *1. Institut Laue Langevin, 38042 Grenoble, Cedex 9, France; 2. Institut Català de Recerca i Estudis Avançats (ICREA), E-08193 Bellaterra, Spain; 3. Instituto de Ciencia de Materiales de Barcelona, CSIC, E-08193 Bellaterra, Spain; 4. Moscow Power Engineering Institute, 105835 Moscow, Russian Federation; 5. Prokhorov General Physics Institute of the Russian Acad. Sci., 119991 Moscow, Russian Federation*

EU-06. Low-Temperature Heat Transport in the Quasi-Two-Dimensional Multiferroic CuFeO₂. X. Wang¹, C. Fan¹, Z. Zhao¹, W. Ke¹, X. Liu¹ and X. Sun¹. *Hefei National Laboratory for Physical Sciences at Microscale, University of Science and Technology of China, Hefei, Anhui, China*

EU-07. A novel multiglass state in multiferroic YbFe₂O₄. Y. Sun¹, Y. Liu¹, F. Ye², S. Chi², Y. Ren³, T. Zou¹, F. Wang¹ and L. Yan¹. *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Neutron Scattering Science Division, Oak Ridge National Laboratory, Oak Ridge, TN; 3. X-ray Science Division, Argonne National Laboratory, Argonne, IL*

EU-08. Multiferroic response of nanocrystalline Lithium Niobate. C. Diaz-Moreno¹, R. Farias¹, A. Hurtado-Macias², J. Elizalde-Galindo¹ and J. Hernandez-Paz¹. *1. Physics and Mathematics, Universidad Autonoma de Ciudad Juarez, Ciudad Juarez, Chihuahua, Mexico; 2. Nanostructured Materials, Advanced Materials Research Center, Chihuahua, Chihuahua, Mexico*

EU-09. Density functional modeling for a perovskite SrTi_{1-x}M_xO₃ system with M = Fe, Co and x = 0.0-0.5. J. Florez^{1,2}, S. Ong¹, G. Ceder¹, G. Dionne^{1,3} and C. Ross². *1. Materials Science and Engineering Department, Massachusetts Institute of Technology, Cambridge, MA; 2. Departamento de Física, Universidad Técnica Federico Santa María, Valparaíso, Valparaíso, Chile; 3. Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA*

EU-10. Study of the low-temperature properties of multiferroic YbMn_{1-x}Ga_xO₃ single crystals. N. Abramov¹, V. Chichkov¹, S.E. Lofland² and Y. Mukovskii¹. *1. National Research and Technological University, Moscow, Russian Federation; 2. Rowan University, Glassboro, NJ*

EU-11. Magnetic and dielectric properties of layered perovskite Gd₂Ti₂O₇ thin film epitaxially stabilized on a perovskite single crystal. T. Ukita¹, Y. Hirose^{1,2}, S. Ohno¹, K. Hatabayashi¹, T. Fukumura¹ and T. Hasegawa^{1,2}. *1. Department of Chemistry, The university of Tokyo, Tokyo, Tokyo, Japan; 2. Transparent Functional Materials group, Kanagawa Academy of Science and Technology (KAST), Kawasaki, Kanagawa, Japan*

EU-12. Withdrawn

EU-13. Multiferroic properties in Heusler/perovskite layered structures. K. Kobayashi¹, T. Miyawaki¹, K. Ueda¹ and H. Asano¹. *1. Graduate School of Engineering, Nagoya University, Nagoya, Japan*

EU-14. Novel Low Magnetization NiCr RF Magnetic Films for Multiferroic Heterostructures with Strong Magnetoelectric Coupling. Z. Zhou¹, S. Beguhn¹, M. Liu¹, S. Li^{1,2}, S. Rand¹, J. Lou¹, X. Yang¹ and N. Sun¹. *1. ECE department, Northeastern University, Boston, MA; 2. Physics department, Fujian University, Fuzhou, Fujian, China*

EU-15. Structure and Magnetoelectronic Properties of Small Nd_{0.6}Ca_{0.4}MnO₃ Nanocrystals. L.A. Pozhar¹ and K. Khan¹. *1. Department of Physics, University of Idaho, Moscow, ID*

WEDNESDAY
MORNING
8:00

SAGUARO BALLROOM

Session EV
METAL SPINTRONICS: SEEBECK, PUMPING
AND SPIN VALVES
(Poster Session)

Dan Park, Chair

- EV-01. Magnetization Precession Cone Angles in Permalloy Rectangles for Spin Pumping Experiments.** *N.F. Kuhlmann¹, A. Vogel¹ and G. Meier¹. Institute of Applied Physics, University of Hamburg, Hamburg, Germany*
- EV-02. Material dependence of the spin pumping in metallic bilayer films.** *T. Yoshino¹, K. Ando¹, K. Harii¹, H. Nakayama¹, Y. Kajiwara¹ and E. Saitoh^{1,2}. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. The Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Japan*
- EV-03. Unidirectional anisotropy in the spin pumping voltage in YIG/Pt bilayers.** *L.H. Vilela-Leão¹, C. Salvador¹, A. Azevedo¹ and S.M. Rezende¹. Departamento de Física, UFPE, Recife, Pernambuco, Brazil*
- EV-04. Spin Seebeck Effect in Permalloy grown on Gold.** *P.B. Jayathilaka¹, H.F. Kirby¹, D.D. Belyea¹ and C.W. Miller¹. Physics, University of South Florida, Tampa, FL*
- EV-05. Spin Seebeck Effect in Gd₃Ga₅O₁₂/Y₃Fe₅O₁₂/Pt structures.** *S. Kim^{1,2}, S. Park², B. Min³, Y. Jo², K. Lee¹ and K. Shin³. 1. Korea University, Seoul, Korea, Republic of; 2. Korea Basic Science Institute, Daejeon, Korea, Republic of; 3. Korea Institute of Science and Technology, Seoul, Korea, Republic of*
- EV-06. Spin current injection by spin Seebeck and spin pumping effects in YIG/Pt structures.** *A. Azevedo¹, G.L. da Silva¹, L.H. Vilela-Leão¹ and S.M. Rezende¹. Departamento de Física, UFPE, Recife, PE, Brazil*
- EV-07. Barrier thickness dependence of the Magneto Seebeck effect in magnetic tunnel junctions: Ab initio studies.** *M. Czerner¹ and C. Heiliger¹. 1. Physikalisches Institut, Justus Liebig University, Giessen, Germany*
- EV-08. Thermal spin injection in metallic non-local spin valves.** *F. Casanova^{1,2}, A. Sharoni³, M. Erekhinsky⁴ and I.K. Schuller⁴. 1. CIC nanoGUNE, Donostia-San Sebastian, Basque Country, Spain; 2. IKERBASQUE (Basque foundation for science), Bilbao, Basque Country, Spain; 3. Physics, Bar Ilan University, Ramat Gan, Israel; 4. Physics, University of California, San Diego, La Jolla, CA*

- EV-09. Effects of interface spin-orbit coupling on electrical control of magnetization.** *L. Xu¹ and S. Zhang¹. University of Arizona, Tucson, AZ*
- EV-10. Detection of a loop current created by a pure spin current.** *T. Nomura¹, S. Nonoguchi¹, Y. Ando¹ and T. Kimura^{1,2}. INAMORI FRC, Kyushu University, Fukuoka, Japan; 2. CREST, Tokyo, Japan*
- EV-11. Generation of giant spin current using multi-terminal nonlocal spin injections.** *S. Nonoguchi¹, T. Nomura¹, Y. Ando¹ and T. Kimura^{1,2}. INAMORI FRC, Kyushu University, Fukuoka, Japan; 2. CREST, Japan Science and Technology Agency, Tokyo, Japan*
- EV-12. Thermal Effect of Direct Current on Microstructured Current-in-plane Spin Valves.** *C. Kuo¹, C. Chao¹, L. Horng¹, M. Tsunoda², M. Takahashi² and J. Wu¹. Department of Physics, National Changhua University of Education, Changhua, Taiwan; 2. Department of Electronic Engineering, Tohoku University, Sendai, Japan*
- EV-13. Observation and effect of magnetic domains in lateral spin valves.** *J. Mennig¹, F. Matthes¹, D.E. Bürgler¹ and C.M. Schneider¹. Peter Grünberg Institute (PGI-6), Forschungszentrum Jülich GmbH, Jülich, Germany*
- EV-14. Point Contact Andreev Reflection from Erbium - the role of external magnetic field and the sign of the spin polarisation.** *P.S. Stamenov¹. School of Physics and CRANN, Trinity College, Dublin 2, Ireland*
- EV-15. Theoretical study of point-contact Andreev reflection spectroscopy for ferromagnetic-metal / multi-band superconductor junctions.** *H. Ohtori^{1,2} and H. Imamura². Institute of Applied Physics, Univ. of Tsukuba, Tsukuba, Japan; 2. NRI, AIST, Tsukuba, Japan*

WEDNESDAY
MORNING
8:00

SAGUARO BALLROOM

Session EW
SEMICONDUCTOR SPIN TRANSPORT:
KONDO AND SPIN-ORBIT
(Poster Session)
M. Shiraishi, Chair

EW-01. The effect of transverse magnetic anisotropy on spin-polarized transport through nanomagnetic systems in the Kondo regime. *M. Misiorny*¹, *I. Weymann*¹ and *J. Barnas*^{1,2}. *Faculty of Physics, Adam Mickiewicz University, Poznan, Poland; 2. Institute of Molecular Physics, Polish Academy of Sciences, Poznan, Poland*

EW-02. Spin-bias modulated Kondo effect in an interacting quantum dot. *Y. Li*^{1,2}, *M. Jalil*^{1,3} and *S.G. Tan*³. *Electrical and Computer Engineering, National University of Singapore, Singapore; 2. Physics, Hangzhou Dianzi University, Hangzhou, China; 3. Data Storage Institute, Singapore, Singapore*

EW-03. Robust spin current in the time-dependent Rashba system. *C. Ho*^{1,2}, *M. Jalil*¹ and *S. Tan*³. *Electrical and Computer Engineering, National University of Singapore, Singapore; 2. Data Storage Institute, Agency for Science, Technology and Research (A*STAR), Singapore, Singapore*

EW-04. Spin-Bias Induced Field Effect Transistor Utilizing Rashba Spin Orbit Coupling. *M. Ma*¹ and *M. Jalil*^{1,2}. *Electrical and Computer Engineering Department, Computational Nanoelectronics & Nanodevices Laboratory, National University of Singapore, Singapore, Singapore; 2. Electrical and Computer Engineering Department, Information Storage Materials Laboratory, National University of Singapore, Singapore, Singapore*

EW-05. Tunable Energy Bands and Spin Filtering in Two-dimensional Superlattices with Spin-orbit Interaction. *R. Zhang*¹, *D. Qi*¹, *J. Li*¹, *Q. Hu*¹, *R. Peng*¹, *R. Huang*¹ and *M. Wang*¹. *National Laboratory of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, China*

EW-06. Spin stability and magnetic screening of a magnetic impurity in four-terminal Landauer setup with Rashba spin-orbit coupling. *Y. Su*¹, *C. Chen*¹ and *C. Chang*^{1,2}. *Department of Physics, National Taiwan University, Taipei, Taiwan; 2. Center for Quantum Science and Engineering, National Taiwan University, Taipei, Taiwan*

EW-07. Observation of gate-controlled spin-orbit interaction using ferromagnetic detector. *Y. Park*^{1,2}, *H. Jang*¹, *H. Koo*¹, *H. Kim*¹, *J. Chang*¹, *S. Han*¹ and *H. Choi*². *Korea Institute of Science and Technology, Seoul, Korea, Republic of; 2. Yonsei University, Seoul, Korea, Republic of*

EW-08. Diffusive spin dynamics and torque in a ferromagnetic two-dimensional electron gas. *X. Wang*¹ and *A. Manchon*¹. *KAUST, Thuwal, Saudi Arabia*

EW-09. Evolution of the anomalous conductance plateau in an asymmetrically biased InAs/In_{0.52}Al_{0.48}As quantum point contact in the presence of lateral spin-orbit coupling. *P. Das*¹, *K.B. Chetry*², *N. Bhandari*¹, *J. Wan*¹, *M. Cahay*¹, *R.S. Newrock*² and *S.T. Herbert*³. *School of Electronics and Computing Systems, University of Cincinnati, Cincinnati, OH; 2. Physics Department, University of Cincinnati, Cincinnati, OH; 3. Department of Physics, Xavier University, Cincinnati, OH*

EW-10. Spin-current switch based on vertical asymmetric double quantum dots containing single manganese. *Q. Fanyao*^{1,2}, *L. Villegas-Lelovsky*³, *M.R. Guassi*¹, *V. Lopez-Richard*⁴ and *G.E. Marques*⁴. *Institute of Physics, University of Brasilia, Brasilia, Federal District, Brazil; 2. International Center for Condensed Matter Physics, University of Brasilia, Brasilia, Federal District, Brazil; 3. Institute of Physics, Federal University of Uberlandia, Uberlandia, Minas Gerais, Brazil; 4. Department of Physics, Federal University of Sao Carlos, Sao Carlos, Sao Paulo, Brazil*

EW-11. Charge Carrier-Mediated Ferromagnetism in FeSb₂-xSnxSe₄. *H. Djieutedjeu*¹, *N. Takas*¹, *J. Makongo*¹, *X. Zhou*², *P. Poudeu Poudeu*¹ and *C. Uher*². *Chemistry/AMRI, University of New Orleans, New Orleans, LA; 2. Physics, University of Michigan Ann Arbor, Ann Arbor, MI*

WEDNESDAY
AFTERNOON
1:30

GRAND CANYON 6

Session FA
SYMPOSIUM ON ADVANCES IN
BIOMEDICAL IMAGING

Kannan Krishnan, Co-Chair
John Moreland, Co-Chair

1:30

FA-01. Magnetic Particle Imaging: Fundamentals, Current Status and Tracers. (Invited) *B. Gleich*¹. *Philips Technologie GmbH Innovative Technologies, Research Laboratories, Hamburg, Germany*

2:06

FA-02. Hardware and Image Reconstruction Methods for X-space MPI. (Invited) *S. Conolly*^{1,2} and *P.W. Goodwill*¹. *Bioengineering, UC Berkeley, Berkeley, CA; 2. Electrical Engineering and Computer Sciences, UC Berkeley, Berkeley, CA*

2:42

- FA-03. Tracer Design and Optimization for MPI. (Invited)** R. Ferguson¹, A.P. Khandhar¹, P.W. Goodwill², L.R. Croft², S.M. Conolly² and K.M. Krishnan¹. *1. Materials Science & Engineering, University of Washington, Seattle, WA; 2. Bioengineering, University of California, Berkeley, Berkeley, CA*

3:18

- FA-04. Magnetic Particle Imaging, Reconstruction and Particle Dynamics. (Invited)** J. Weizenecker¹. *1. Karlsruhe University of Applied Sciences, Karlsruhe, Germany*

3:54

- FA-05. The Use of Magnetic Nanoparticles in Thermal Therapy Monitoring and Screening. (Invited)** J. Weaver¹. *1. Radiology, Dartmouth Medical School, Hanover, NH*

WEDNESDAY
AFTERNOON
1:30

GRAND CANYON 7

Session FB

SPINTRONICS: SEEBECK, PUMPING, HALL AND SPIN-VALVE

Yi Ji, Chair

1:30

- FB-01. Thermal spin current from a ferromagnet to silicon by Seebeck spin tunneling. (Invited)** R. Jansen¹. *1. National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

2:06

- FB-02. Measuring the Spin Seebeck Effect Using Micromachined Thermal Platforms.** A.D. Avery¹, R. Sultan¹, D. Bassett¹, M.R. Pufall² and B.L. Zink¹. *1. Physics, University of Denver, Denver, CO; 2. NIST, Boulder, CO*

2:18

- FB-03. Large spin-dependent Seebeck coefficient and tunneling magneto thermo power of CoFeB/MgO/CoFeB magnetic tunnel junctions.** N. Liebing¹, S. Serrano Guisan¹, K. Rott², G. Reiss², J. Langer³, B. Ocker³ and H. Schumacher¹. *1. Physikalisches-Technischen Bundesanstalt, Braunschweig, Germany; 2. Department of Physics, University of Bielefeld, Bielefeld, Germany; 3. Singulus AG, Kahl am Main, Germany*

2:30

- FB-04. Ab initio calculations of spin caloritronics in magnetic tunnel junctions.** M. Czerner¹, M. Bachmann¹ and C. Heiliger¹. *1. Physikalisches Institut, Justus Liebig University, Giessen, Germany*

2:42

- FB-05. Spin pumping efficiency at magnetic insulator (YIG)/Au interfaces.** C. Burrowes¹, B. Heinrich¹, B. Kardasz¹, E. Montoya¹, E. Girt¹, Y. Song², Y. Sun² and M. Wu². *1. Physics Department, Simon Fraser University, Burnaby, BC, Canada; 2. Department of Physics, Colorado State University, Fort Collins, CO*

2:54

- FB-06. Scaling behavior of the spin pumping effect in ferromagnet/platinum bilayers.** F.D. Czeschka¹, L. Dreher², M.S. Brandt², M. Althammer¹, I. Imort³, G. Reiss³, A. Thomas³, W. Schoch⁴, H. Huebl¹, R. Gross¹ and S.T. Goennenwein¹. *1. Walther-Meissner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 2. Walter Schottky Institut, Technische Universität München, Garching, Germany; 3. Fakultät für Physik, Universität Bielefeld, Bielefeld, Germany; 4. Institut für Quantenmaterie, Universität Ulm, Ulm, Germany*

3:06

- FB-07. Spin transport in Au films: an investigation by spin pumping.** E.A. Montoya¹, B. Kardasz¹, G. Woltersdorf², W. Huttema¹, C. Burrowes¹, E. Girt¹ and B. Heinrich¹. *1. Department of Physics, Simon Fraser University, Burnaby, BC, Canada; 2. Department of Physics, Universität Regensburg, Regensburg, Germany*

3:18

- FB-08. Magnetic monopole in spin pumping systems.** A. Takeuchi¹ and G. Tatara¹. *1. Department of Physics, Tokyo Metropolitan University, Hachioji, Tokyo, Japan*

3:30

- FB-09. Control of magnetic noise by spin current generated by the spin Hall effect.** S. Urazhdin¹, V.E. Demidov², E.R. Edwards², S.O. Demokritov², M.D. Stiles³ and R.D. McMichael³. *1. Physics, Emory University, Atlanta, GA; 2. Institute for Applied Physics and Center for Nonlinear Science, University of Muenster, Muenster, Germany; 3. Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD*

3:42

- FB-10. Extrinsic Spin Hall Effects in Cu-based Alloys.** Y. Niimi¹, Y. Kawanishi¹, D. Wei¹, C. Deranlot², A. Fert² and Y. Otani^{1,3}. *1. ISSP, University of Tokyo, Chiba, Japan; 2. CNRS-Thales, Palaiseau, France; 3. RIKEN-ASI, Saitama, Japan*

3:54

FB-11. Large Gilbert damping modification by pure spin current in a non local spin valve. *J. Adam*¹, *A. Slachter*¹, *F.L. Bakker*¹, *J. Flipse*¹, *F.K. Dejene*¹ and *B.J. van Wees*¹. *Physics of nanodevices, University of Groningen, Groningen, Netherlands*

4:06

FB-12. Enhanced spin accumulation in multiterminal lateral spin valves. *H. Idzuchi*^{1,2}, *Y. Fukuma*² and *Y. Otani*^{1,2}. *ISSP, Univ. of Tokyo, Kashiwa, Japan; 2. ASI, RIKEN, Wako, Japan*

4:18

FB-13. Large regular and inverted spin signals in break-junction-based nonlocal spin valves. *S. Chen*¹, *H. Zou*¹, *S. Chui*¹ and *Y. Ji*¹. *Dept. of Physics, University of Delaware, Newark, DE*

WEDNESDAY
AFTERNOON
1:30

GRAND CANYON 8

Session FC
SPINTRONICS EFFECTS
Andrii Chumak, Chair

1:30

FC-01. Direct Detection of Magnon Spin Transport by the Inverse Spin Hall Effect. *A.V. Chumak*¹, *B.M. Jungfleisch*¹, *A.A. Serga*¹, *R. Nebel*¹ and *B. Hillebrands*¹. *Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany*

1:42

FC-02. Angular dependence of CPP magnetoresistance. *T. Qu*¹ and *R.H. Victora*². *1. Physics, University of Minnesota, Minneapolis, MN; 2. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

1:54

FC-03. An enhancement of magnetoresistance by ultrathin Zn wustite layer. *Y. Fujii*¹, *M. Hara*¹, *H. Yuasa*¹, *S. Murakami*¹ and *H. Fukuzawa*¹. *Toshiba Corporation, Kawasaki, Kanagawa, Japan*

2:06

FC-04. Inverse interface Cr magnetization at the CrO₂/RuO₂ interface: The origin for unexpected small GMR effects. *K. Zafar*¹, *P. Audehm*¹, *G. Schuetz*¹, *E.J. Goering*¹, *M. Pathak*², *K.B. Chetry*², *P.R. LeClair*² and *A. Gupta*². *1. Schuetz, Max-Planck-Institute for Intelligent Systems, Stuttgart, BW, Germany; 2. Mint Center, University of Alabama, Tuscaloosa, AL*

2:18

FC-05. The Rashba effect in Co/Pd multilayer nanowires. *Narayanapillai*¹, *M. Jamali*¹ and *H. Yang*¹. *Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

2:30

FC-06. Anomalous Hall effect in perpendicularly CoFeB/Pt multilayers. *T. Zhu*¹ and *T. Zuo*¹. *State Key Lab for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China*

2:42

FC-07. Interface characterization of all-Heusler CPP-GMR multilayer structures. *R. Knut*¹, *O. Mryasov*², *P. Warnicke*³, *P. Svedlindh*⁴, *S. Granroth*⁵, *D. Arena*³, *M. Björk*¹, *R. Bejhed*⁴ and *O. Karis*¹. *1. Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden; 2. MINT Center and Department of Physica, University of Alabama, Tuscaloosa, AL; 3. NSLS, Brookhaven National Lab, Upton, NY; 4. Department of Engineering Sciences, Uppsala University, Uppsala, Sweden; 5. Department of Physics and Astronomy, Turku University, Turku, Finland*

2:54

FC-08. Linear Magnetoresistance Effects in CVD Grown Graphene Devices. *A.L. Friedman*¹, *J.T. Robinson*², *K. Perkins*², *J.C. Culbertson*² and *P.M. Campbell*². *1. Materials Science and Technology, US Naval Research Lab, Washington, DC; 2. Electronics Science and Technology, US Naval Research Lab, Washington, DC*

3:06

FC-09. Simultaneous study of magnetization reversal and magnetoresistive properties in spin-valve structures. *P. Perna*¹, *C. Rodrigo*^{1,2}, *M. Muñoz*^{3,4}, *J.L. Prieto*⁴, *A. Bollero*¹, *J.F. Cuñado*^{1,2}, *M. Romera*⁴, *J. Akerman*⁴, *E. Jimenez*^{1,2}, *N. Mikuszeit*^{1,2}, *V. Cros*⁵, *J. Camarero*^{1,2} and *R. Miranda*^{1,2}. *1. IMDEA Nanociencia, Madrid, Madrid, Spain; 2. Departamento de Física de la Materia Condensada, Universidad Autónoma de Madrid, Madrid, Spain; 3. Instituto de Física Aplicada, CSIC, Madrid, Spain; 4. ISOM, Universidad Politécnica de Madrid, Madrid, Spain; 5. Unite Mixte de Physique CNRS/Thales, Palaiseau, France*

3:18

FC-10. Demonstration of Spin Transfer Torque Programmable Magneto Resistance based Magnetic Quantum Cellular Automata logic. *A. Lyle*¹, *J. Harms*¹, *A. Klemm*¹, *A. Letsch*¹, *D. Martens*¹ and *J. Wang*¹. *Electrical Engineering, University of Minnesota, Minneapolis, MN*

3:30

- FC-11. Impact of field-induced exchange anisotropy on the magnetoimpedance effect in FeMn/Metglas ribbons bilayer structures.** *N.J. Laurita¹, A. Chattervedi¹, P. Jayathilaka¹, M.H. Phan¹, H.S. Srikanth¹ and C.W. Miller¹*. *Physics, University of South Florida, Tampa, FL*

3:42

- FC-12. Electrical and magnetic characterisation of thin film ϵ -Fe_{1-x}Co_xSi grown by molecular beam epitaxy.** *N.A. Porter¹ and C.H. Marrows¹*. *Condensed Matter, University of Leeds, Leeds, West Yorkshire, United Kingdom*

3:54

- FC-13. Spatially Resolved Remote Sensing of Giant Magnetoresistance Using an Infra-Red Microscope.** *C.S. Kelley¹, S.M. Thompson¹, P. Dumas² and S. LeFrancois²*. *Department of Physics, University of York, York, United Kingdom; 2. SMIS Beamline, SOLEIL Synchrotron, Paris, France*

4:06

- FC-14. Extrinsic anomalous Hall effect in paramagnetic nickel-copper alloy thin films.** *Y. Li¹, D. Hou¹ and X. Jin¹*. *Surface physics laboratory and Physics department, Fudan University, Shanghai, China*

4:18

- FC-15. Ultra-sensitive measurement of magnetisation dependent chemical potential in ferromagnetic materials.** *C. Ciccarelli¹, A. Irvine¹, J. Wunderlich², R. Campion³, B. Gallagher³ and A. Ferguson¹*. *1. University of Cambridge, Cambridge, United Kingdom; 2. Hitachi Cambridge Laboratory, Cambridge, United Kingdom; 3. School of Physics and Astronomy, University of Nottingham, Nottingham, United Kingdom*

WEDNESDAY
AFTERNOON
1:30

GRAND CANYON 9-11

Session FD MAGNETIC DYNAMICS II

Tim Mewes, Chair

1:30

- FD-01. Damping and Demagnetisation in Rare Earth Doped Permalloy.** *M. Ellis¹, T.A. Ostler¹ and R.W. Chantrell¹*. *Physics, University of York, York, North Yorkshire, United Kingdom*

1:42

- FD-02. Two-Soliton State in a Parametrically Driven Magnetic Wire.** *D. Laroze^{1,2}, M.G. Clerc³, S. Coulibaly⁴, D. Urzagasti² and H. Pleiner¹*. *1. Max Planck Institute for Polymer Research, Mainz, Germany; 2. Instituto de Alta Investigacion, Universidad de Tarapaca, Arica, Chile; 3. Departamento de Fisica, FCFM, Universidad de Chile, Santiago de Chile, Chile; 4. Laboratoire de Physique des Lasers, Atomes et Molecules, Universite des Sciences et Technologies de Lille, Villeneuve d'Ascq, France*

1:54

- FD-03. Dynamic response of one-dimensional magnonic crystals consisting of alternating width nanowires.** *J. Ding¹, M.P. Kostylev² and A.O. Adeyeye¹*. *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. School of Physics, University of Western Australia, Crawley, WA, Australia*

2:06

- FD-04. Static and Dynamic Behavior of Binary Magnonic Crystals.** *A. Adekunle^{1,2}, J. Ding¹ and M.P. Kostylev³*. *1. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. Advanced Materials for Micro- and Nano- Systems, Singapore-MIT Alliance, Singapore, Singapore; 3. School of Physics, University of Western Australia, Crawley, WA, Australia*

2:18

- FD-05. Dynamic dipolar coupling of edge modes in a pair of nanoscale ferromagnetic discs.** *P.S. Keatley¹, P. Gangmei¹, M. Dvornik¹, R.J. Hicken¹, J. Grollier² and C. Ulysse³*. *1. School of Physics, University of Exeter, Exeter, United Kingdom; 2. Unité Mixte de Physique CNRS/Thales and Université Paris Sud 11, CNRS, Palaiseau, France; 3. Laboratoire de Photonique et de Nanostructures, CNRS PHYNANO team, Marcoussis, France*

2:30

- FD-06. Accelerated Langevin simulations for calculating rare switching events using Forward Flux Sampling.** *C. Vogler¹, F. Bruckner¹, B. Bergmair¹, T. Huber¹, J. Fidler¹ and D. Suess¹*. *Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria*

2:42

- FD-07. Band-Structure-Dependent Demagnetization in the Heusler Alloy Co₂Mn_{1-x}Fe_xSi.** *D. Steil¹, S. Alebrand¹, T. Roth¹, M. Krauss¹, T. Kubota², M. Oogane², Y. Ando², H. Schneider¹, M. Aeschlimann¹ and M. Cinchetti¹*. *1. Department of Physics and Research Center OPTIMAS, University of Kaiserslautern, Kaiserslautern, Germany; 2. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Japan*

2:54

FD-08. Jump-Noise Process Driven Magnetization Dynamics And Random Switching Of Magnetization. Z. Liu¹, A. Lee¹, G. Bertotti², C. Serpico³ and I. Mayergoyz⁴. *1. Department of Electrical and Computer Engineering, University of Maryland College Park, College Park, MD; 2. Istituto Nazionale di Ricerca Metrologica (INRiM), Torino, Italy; 3. Dipartimento di Ingegneria Elettrica, Università di Napoli "Federico II", Napoli, Italy; 4. Department of Electrical and Computer Engineering, UMACS and AppEl Center, University of Maryland College Park, College Park, MD*

3:06

FD-09. Magnetization dynamics of superparamagnetic nanodots: The Magnetic Molecular Dynamics approach. D. Beaujouan^{1,2}, P. Thibaudeau¹ and C. Barreateau². *1. DAM, CEA, Monts, France; 2. IRAMIS, CEA, Gif sur Yvette, France*

3:18

FD-10. Charge and spin currents due to spin motive force: Spin diffusion effect. H. Lee¹, K. Kim¹, J. Moon² and K. Lee². *1. Department of Physics, Pohang University of Science and Technology, Pohang, Korea, Republic of; 2. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of*

3:30

FD-11. Linear and nonlinear magnetization dynamics in magnetic nano-dots. (Invited) V.E. Demidov¹ and S.O. Demokritov¹. *Institute for Applied Physics, University of Muenster, Muenster, Germany*

4:06

FD-12. Elastically driven ferromagnetic resonance in ferromagnetic/ferroelectric hybrid structures. M. Weiler¹, L. Dreher², C. Heeg¹, H. Huebl¹, R. Gross¹, M.S. Brandt² and S.T. Goennenwein¹. *1. Walther-Meissner-Institut, Bayerische Akademie der Wissenschaften, Garching, Germany; 2. Walter Schottky Institut, Technische Universität München, Garching, Germany*

4:18

FD-13. Spin motive force in the presence of Rashba spin-orbit coupling. K. Kim¹, J. Moon², K. Lee² and H. Lee¹. *1. Department of Physics, POSTECH, Pohang, Kyungbuk, Korea, Republic of; 2. Department of Material Science and Engineering, Korea University, Seoul, Korea, Republic of*

WEDNESDAY
AFTERNOON
1:30

GRAND CANYON 2-3

**Session FE
MAGNETOELECTRONIC MATERIALS I**

Gerhard Fecher, Chair

1:30

FE-01. Fe/BaTiO₃ interface: band alignment and chemical properties. A.V. Zenkevich¹, R. Mantovan², M. Fanciulli^{2,3}, M.N. Minnekaev¹, Y.A. Matveyev¹, Y.Y. Lebedinskii¹, S. Thiess⁴ and W. Drube¹. *1. NRNU, Moscow Engineering Physics Institute, Moscow, Russian Federation; 2. CNR-IMM MDM Laboratory, Agrate Brianza (MB), Italy; 3. Dipartimento di Scienza dei Materiali, Università di Milano Bicocca, Milano, Italy; 4. Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany*

1:42

FE-02. Direct and Converse Magnetolectric Coupling Coefficients in Multiferroics: Are They Equal to Each Other? J. Lou¹, G.N. Pellegrini¹, L. Ming² and N. Sun¹. *1. Electrical and Computer Engineering, Northeastern University, Boston, MA; 2. Center for Nanoscale Materials, Argonne National Laboratory, Argonne, IL*

1:54

FE-03. Planar Magnetization Control in Patterned Single Domain Nanostructures. J.L. Hockel¹, T. Wu¹, A. Bur¹, K. Wetzlar¹, C. Hsu¹ and G.P. Carman¹. *Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA*

2:06

FE-04. 90 degree-coupling and high blocking temperature in Co_{0.9}Fe_{0.1}/Cr-NOL interface. N. Shimomura¹, K. Sawada^{1,2}, T. Nozaki¹, M. Doi³ and M. Sashishi¹. *1. Tohoku University, Sendai, Japan; 2. Toshiba Corporation, Kawasaki, Japan; 3. Tohoku Gakuin University, Tagajo, Japan*

2:18

FE-05. Influence of Cr₂O₃-AFM layer deposition conditions for the AFM/FM interface. T. Ashida¹, N. Shimomura¹, M. Belmoubarik¹, T. Nozaki¹ and M. Sashishi¹. *1. Electronic Engineering, Tohoku University, Sendai, Miyagiken, Japan*

2:30

FE-06. Electric field control of magnetization reversal induced by charge accumulation in nanostructures with perpendicular anisotropy. W. Lin¹, N. Vernier¹, G. Agnus¹ and D. Ravelosona¹. *1. Institut d'Electronique Fondamentale, Université Paris-Sud, Orsay, France*

2:42

- FE-07. Strain effect induced by a piezoelectric substrate on the magnetization of an amorphous Terbium-Cobalt magnetostrictive film.** *C. Meyer*¹, *N. Chaban*² and *S. Pignard*^{2,1}. *Institut Néel, CNRS-Université Joseph Fourier, Grenoble, France; 2. LMGP, CNRS-Grenoble Institute of Technology, Grenoble, France*

2:54

- FE-08. The properties of magnetoelectric transport in La_{1.2}Ca_{1.8}Mn₂O₇ ceramics.** *S. Chen*¹, *C. Yang*¹, *K. Bä rmer*² and *I. Medvedeva*^{3,1}. *1. Faculty of Physics and Electronic Technology, Hubei University, Wuhan, China; 2. Department of Physics, University of Göttingen, Göttingen, Germany; 3. Institute of Metal Physics, Ural Division of the Russian Academy of Sciences, Ekaterinburg, Russian Federation*

3:06

- FE-09. Enhanced magnetoelectric effect of multilayered ceramic composites of ferroelectric and ferrimagnetic Phases.** *J. Nam*¹, *J. Kim*¹, *D. Patil*², *K. Kim*², *J. Cho*¹ and *B. Kim*¹. *1. Center for Electronic Component Research, Korea Institute of Ceramic Engineering and Technology, Seoul, Korea, Republic of; 2. Department of Physics and Astronomy, Seoul National University, Seoul, Korea, Republic of*

3:18

- FE-10. Enhanced magnetoelectric effect in composite of FeGa alloy, piezoelectric ceramic and FeCuNbSiB ribbon.** *C. Lu*^{1,2}, *P. Li*^{1,2} and *Y. Wen*^{1,2,1}. *The Key Laboratory for Optoelectronic Technology & Systems, Ministry of Education, Chongqing, China; 2. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*

3:30

- FE-11. A magnetostrictive/piezoelectric cylindrical composite transducer for electromagnetic field energy scavenging around AC current wire.** *J. Zhang*^{1,2}, *P. Li*^{1,2}, *Y. Wen*^{1,2}, *A. Yang*^{1,2} and *W. He*^{1,2,1}. *The Key Laboratory for Optoelectronic Technology & Systems, Ministry of Education, Chongqing, China; 2. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*

3:42

- FE-12. Epitaxial Fe/MgO/Fe tunnelling junctions on BaTiO₃(001).** *G. Radaelli*¹, *S. Brivio*¹, *C. Rinaldi*¹ and *R. Bertacco*^{1,1}. *LNES Centre - Polo regionale di Como - Politecnico di Milano, Como, Italy*

3:54

- FE-13. Converse magneto-electric effect dependence with CoFeB composition in ferromagnetic/piezoelectric composites.** *G. Lebedev*^{1,2}, *B. Viala*², *T. Lafont*¹, *D. Zakharov*^{1,2}, *O. Cugat*¹ and *J. Delamare*^{1,1}. *G2Elab, Grenoble Electrical Engineering Lab, CNRS-UJF-INPG, St Martin d'Hères, France; 2. CEA, LETI, MINATEC Campus, Grenoble, France*

4:06

- FE-14. Shifting the Operating Frequency and the Resonant Frequency of Magnetoelectric Sensors.** *A. Edelstein*¹, *J. Petrie*¹, *D. Viehland*², *D. Gray*², *S. Mandal*³, *G. Sreenivasulu*³ and *G. Srinivasan*^{3,1}. *US Army Research Laboratory, Adelphi, MD; 2. Tech University Virginia, Blacksburg, VA; 3. Oakland University, Rochester, MI*

4:18

- FE-15. Fabrication of Bottom Free Magnetic Tunnel Junctions for High Sensitive Magnetic Field Sensor Devices.** *K. Fujiwara*¹, *M. Oogane*¹, *S. Yokota*¹, *T. Nishikawa*², *H. Naganuma*¹ and *Y. Ando*^{1,1}. *Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. LC Business Department, Konicaminolta Opto, Inc., Tokyo, Japan*

WEDNESDAY
AFTERNOON
1:30

GRAND CANYON 4-5

Session FF
NANOPARTICLE SYNTHESIS II
Chris Binns, Chair

1:30

- FF-01. Chaining of Iron Oxide Nanoparticles in Structural Silk Elastin-Like Polymer.** *J. Shih*¹, *W. Chiou*¹, *A. Cresce*¹, *R. Briber*¹, *C. Dennis*², *J. Borchers*², *A. Jackson*², *C. Gruettner*³ and *J. Cappello*^{4,1}. *University of Maryland, College Park, MD; 2. National Institute of Standards and Technology, Gaithersburg, MD; 3. Micromod Partikeltechnologie, Rostock-Warnemuende, Germany; 4. Protein Polymer Technologies, Inc, La Jolla, CA*

1:42

- FF-02. Structural and magnetic properties of planar nanowire arrays of Co grown on oxidized vicinal silicon (111) templates.** *S.K. Arora*¹, *B.J. O'Dowd*¹, *C. Nistor*², *T. Balashov*², *B. Ballesteros*², *A.L. Rizzini*², *J.J. Kavich*², *S.S. Dhesi*³, *P. Gambardella*^{2,4} and *I.V. Shvets*^{1,1}. *Centre for Adaptive Nanostructures and Nanodevices (CRANN), School of Physics, Trinity College Dublin, Dublin, Dublin, Ireland; 2. Catalan Institute of Nanotechnology (ICN-CIN2), Barcelona, Spain; 3. Diamond Light Source, Oxfordshire, United Kingdom; 4. ICREA and Universitat Autònoma de Barcelona, Barcelona, Spain*

1:54

- FF-03. Direct release of synthetic antiferromagnetic nanoparticles fabricated by defect-free thermal imprinting.** *W. Zhang¹ and K.M. Krishnan¹. Materials Science and Engineering, University of Washington, Seattle, WA*

2:06

- FF-04. Direct Synthesis of SmCo Nanoparticles with High Magnetocrystalline Anisotropy.** *S. He¹, Y. Jing¹ and J. Wang¹. The Center for Micromagnetics and Information Technologies, Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

2:18

- FF-05. Structure and Magnetic Properties of Co-W Clusters produced by Inert Gas Condensation.** *F. Golkar¹, M.J. Kramer², Y. Zhang², R.W. McCallum², R. Skomski^{3,4}, D.J. Sellmyer^{3,4} and J.E. Shield^{1,4}. 1. Mechanical and Materials Engineering, Univ Nebraska-Lincoln, Lincoln, NE; 2. Ames Laboratory, Ames, IA; 3. Physics & Astronomy, Univ Nebraska-Lincoln, Lincoln, NE; 4. Nebraska Center for Materials and Nanoscience, Univ Nebraska-Lincoln, Lincoln, NE*

2:30

- FF-06. Magnetism of dilute Co(Hf) and Co(Pt) nanoclusters.** *B. Balasubramanian¹, R. Skomski¹, B. Das¹, P. Manchanda², X. Li¹, S.R. Valloppilly¹, A. Kashyap² and D.J. Sellmyer¹. Nebraska Center for Materials and Nanoscience, University of Nebraska, Lincoln, NE; 2. LMN Institute of Information Technology, Jaipur, Rajasthan, India*

2:42

- FF-07. Sinter-Free Phase Conversion and Scanning Transmission Electron Microscopy of FePt Nanoparticle Monolayers.** *A.C. Johnston-Peck¹, G. Scarel², J. Wang¹, G.N. Parsons² and J.B. Tracy¹. 1. Department of Materials Science and Engineering, North Carolina State University, Raleigh, NC; 2. Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC*

2:54

- FF-08. Self-assembly of Fe nanocluster arrays on templated surfaces.** *O. Lübben¹, S.A. Krasnikov¹, A.B. Preobrajenski², B.E. Murphy¹ and I.V. Shvets¹. 1. Physics, Trinity College Dublin, Dublin, Ireland; 2. MAX-Lab, Lund, Sweden*

3:06

- FF-09. Initial oxidation induced strain effects in Fe/Fe oxide core-shell nanoparticles.** *A. Pratt^{1,2}, R. Kröger², A. Shah³, C. Woffinden², S.P. Tear² and C. Binns⁴. 1. York Institute for Materials Research, University of York, York, United Kingdom; 2. Department of Physics, University of York, York, United Kingdom; 3. Department of Materials Science, University of Illinois at Urbana-Champaign, Urbana, IL; 4. Department of Physics and Astronomy, University of Leicester, Leicester, United Kingdom*

3:18

- FF-10. Post-synthesis thermal annealings of maghemite nanoparticles embedded in a refractory matrix.** *C. Vichery¹, I. Maurin¹, J. Boilot¹ and T. Gacoin¹. Physique de la Matière Condensée, CNRS/Ecole Polytechnique, Palaiseau, France*

3:30

- FF-11. Carbon-Encapsulated Magnetic Ni, Co and Fe Nanoparticles inserted into an activated porous carbon matrix.** *M. Fernandez Garcia¹, P. Gorria², J. Greneche³, J. Chaboy⁵, A. Fuertes⁴ and J. Blanco². 1. IFIMUP and Institute of Nanoscience and Nanotechnology, Porto, Portugal; 2. Departamento de Fisica, Universidad de Oviedo, Oviedo, Spain; 3. Physique de letat Condensé UMR CNRS-6087, Université du Maine, Le Mans, France; 4. National Institute of Carbon (CSIC), Oviedo, Spain; 5. Instituto de Ciencia de Materiales de Aragon (ICMA), CSIC-Universidad de Zaragoza, Zaragoza, Spain*

3:42

- FF-12. Recovering γ -Fe₂O₃ nanoparticle disordered surface spins with a copper coating.** *R.D. Desautels¹, J.W. Freeland², H. Ouyang³ and J. van Lierop¹. 1. Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 3. Material Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

WEDNESDAY
AFTERNOON
1:30

GRAND CANYON 12-13

Session FG

PATTERNED AND MICROWAVE RECORDING

Hong-Sik Jung, Chair

1:30

- FG-01. Magnetization Reversal in Graded Anisotropy Co/Pd Nanodots.** *D.A. Gilbert¹, P.K. Greene¹, C. Lai² and K. Liu¹. Physics, University of California, Davis, CA; 2. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

1:42

- FG-02. Origin of magnetic switching field distribution in bit patterned media based on pre-patterned substrates.** *B. Pfau^{1,2}, C.M. Guenther^{1,2}, E. Guehrs¹, T. Hauet³, H. Yang³, L. Vinh³, X. Xu³, D. Yaney³, R. Rick⁴, S. Eisebitt^{1,2} and O. Hellwig³. 1. Institut für Optik und Atomare Physik, Technical University Berlin, Berlin, Germany; 2. Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany; 3. San Jose Research Center, Hitachi GST, San Jose, CA; 4. Stanford Synchrotron Radiation Laboratory, SLAC, Menlo Park, CA*

1:54

FG-03. Nucleation and domain-wall depinning regimes in Co/Pd multilayer nanodots. *J.W. Lau¹, R.C. Boling² and X. Liu¹. NIST, Gaithersburg, MD; 2. Harvard University, Cambridge, MA*

2:06

FG-04. Micromagnetic Specifications for Hexagonal Array Bit-patterned Recording at 3.5 Tbits/in² *Y. Wang¹, Y. Dong¹ and R.H. Victora¹. Electrical and Computer Engineering Department, University of Minnesota, Minneapolis, MN*

2:18

FG-05. Composite structures for bit patterned media. *N. Eibagi¹, J. Kan¹, M. Lubarda¹, M. Pechan², V. Lomakin¹ and E.E. Fullerton¹. Center for Magnetic Recording Research, UC San Diego, La Jolla, CA; 2. Department of Physics, Miami University, Oxford, OH*

2:30

FG-06. Effects of lateral straggling of ions on patterned media fabricated by nitrogen ion implantation. *T. Hinoue¹, K. Ito¹, Y. Hirayama¹ and Y. Hosoe¹. Central Research Laboratory, Hitachi Ltd., Odawara, Japan*

2:42

FG-07. Effect of media deposition angle on bit patterned media performance. *N. Thiyagarajah¹, H. Duan², Y. Chen³, T. Huang³, S. Leong³, J. Yang² and V. Ng¹. Department of Electrical and Computer Engineering, National Univ Singapore, Singapore, Singapore; 2. Institute of Materials Research and Engineering, Singapore, Singapore; 3. Data Storage Institute, Singapore, Singapore*

2:54

FG-08. Large-area hard magnetic L1₀-FePt nanopatterns by nanoimprint lithography. *T. Bublath¹ and D. Goll². Max-Planck-Institute for Intelligent Systems, Stuttgart, Germany; 2. Aalen University, Materials Research Institute, Aalen, Germany*

3:06

FG-09. Switching behavior of Co/Pt multilayer nanodots under microwave assistance. *S. Okamoto¹, N. Kikuchi¹, J. Li¹, O. Kitakami¹, T. Shimatsu² and H. Aoi². IMRAM, Tohoku University, Sendai, Japan; 2. RIEC, Tohoku University, Sendai, Japan*

3:18

FG-10. Demonstration of Microwave Assisted Magnetic Reversal in Perpendicular Media. *C.T. Boone¹, J.A. Katine¹, E.E. Marinero¹, S. Pisana¹ and B.D. Terris¹. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

3:30

FG-11. Damping Constant in Perpendicular Recording Media. *L. Lu¹, M. Kabatek¹, M. Wu¹, M. Mallary², G. Bertero², K. Srinivasan² and R. Acharya². Department of Physics, Colorado State University, Fort Collins, CO; 2. Western Digital Technologies, San Jose, CA*

3:42

FG-12. Directed Self Assembly of Gold Nanoparticles for Bit Pattern Media Applications. *K. Tan¹, M. Asbahi¹, F. Wang¹, H. Duan¹, N. Thiyagarajah², S. Leong¹, V. Ng² and J.K. Yang¹. Institute of Materials Research and Engineering, Singapore, Singapore; 2. Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National Univ Singapore, Singapore, Singapore*

3:54

FG-13. Simplified Two-Dimensional Partial Response Maximum Likelihood Detection Method Using *A Priori* Information for Bit Patterned Media Recording. *G. Kong¹ and S. Choi¹. Yonsei University, Seoul, Korea, Republic of*

4:06

FG-14. Write Synchronization for Bit-Patterned-Media Recording System. *Y. Lin¹, K. Chan¹, S. Zhang¹, K. Cai¹ and M. Chua¹. Data Storage Institute, Singapore, Singapore*

4:18

FG-15. Refilling and smoothing of amorphous carbon on patterned media with gas cluster ion beams. *N. Toyoda¹, K. Naito¹ and I. Yamada¹. Graduate school of engineering, University of Hyogo, Himeji, Hyogo, Japan*

WEDNESDAY
AFTERNOON
1:30

GRAND CANYON 1

Session FH
MODELING
Gino Hrkac, Chair

1:30

FH-01. Accurate evaluation of exchange fields in finite element micromagnetic solvers. *R. Chang¹, S. Li¹, M.V. Lubarda¹, M.A. Escobar¹ and V. Lomakin¹. Center for Magnetic Recording Research, Department of Electrical and Computer Engineering, University of California, San Diego, La Jolla, CA*

1:42

FH-02. Ultra high-performance micromagnetics: Fast methods and massive parallelization. *S. Li¹, R. Chang¹, M.A. Escobar¹, M.V. Lubarda¹ and V. Lomakin¹. CMRR and Dept. of ECE, University of California, San Diego, La Jolla, CA*

1:54

FH-03. TEM studies and micromagnetic simulations of the FePt L10/A1 phase graded media. *B. Dymerska¹, J. Lee¹, V. Alexandrakis², D. Niarchos², D. Suess¹ and J. Fidler¹. Institute of Solid State Physics, Vienna University of Technology, Vienna, Austria; 2. IMS, NCSR Demokritos, Athens, Greece*

2:06

FH-04. Micromagnetic simulation studies using Nmag. (Invited) *H. Fangohr¹, T. Fischbacher¹, M. Franchin¹, D. Chernyshenko¹, M. Albert¹ and A. Knittel¹. School of Engineering Sciences, University of Southampton, Southampton, United Kingdom*

2:42

FH-05. Principle calculation of coercivity of magnetic nanostructures at finite temperatures. *D. Suess¹, T. Schrefl¹, F. Bruckner¹, C. Vogler¹, B. Bergmair¹, T. Huber¹, J. Lee¹ and J. Fidler¹. Institut of Solid State Physics, Vienna, Austria*

2:54

FH-06. Annihilation and switching fields of magnetic vortices in nanodots with out-of-plane uniaxial anisotropy. *E.R. Novais¹, S. Allende², D. Altbir², P. Landeros³, F. Garcia⁴ and A.P. Guimaraes¹. CBPF, Rio de Janeiro, RJ, Brazil; 2. Physics Department, USACH, Santiago, Chile; 3. Physics Department, UTFSM, Valparaiso, Chile; 4. LNLs, Campinas, Brazil*

3:06

FH-07. Dynamics of normal modes of dipolar-coupled vortex gyration in two magnetic nanodisks. *K. Lee¹, H. Jung¹, D. Han¹ and S. Kim¹. Research Center for Spin Dynamics & Spin-Wave Devices, Nanospinics Laboratory, and Research Institute of Advanced Materials, Department of Materials Science and Engineering, Seoul Natl Univ, Seoul, Korea, Republic of*

3:18

FH-08. Spin-Lattice Dynamics Model for Magnon-Phonon Heat Transfer on the Million Atom Scale. *P. Ma¹ and S.L. Dudarev¹. Culham Centre for Fusion Energy, Oxfordshire, United Kingdom*

3:30

FH-09. Rate-dependent hysteresis losses in magnetic nanoparticle assemblies. *O. Hovorka¹, F. Burrows¹, R.L. Evans¹ and R.W. Chantrell¹. Department of Physics, York University, York, United Kingdom*

3:42

FH-10. Compact modeling of Perpendicular-Anisotropy CoFeB/MgO Magnetic Tunnel Junction for logic and memory design. *W. Zhao^{1,2}, Y. Zhang^{1,2}, Y. Lakys^{1,2}, J. Klein^{1,2}, J. Kim^{1,2}, D. Ravelosona^{1,2} and C. Chappert^{1,2}. IEF, Univ. Paris-Sud II, Orsay, France; 2. UMR8622, CNRS, Orsay, France*

3:54

FH-11. Monte Carlo Simulations of Landau-Lifshitz Dynamics Driven by a Jump-Noise Process. *A.W. Lee¹, Z. Liu¹, C. Serpico², G. Bertotti³ and I.D. Mayergoyz⁴. 1. Department of Electrical and Computer Engineering, University of Maryland, College Park, MD; 2. Dipartimento di Ingegneria Elettrica, Università di Napoli Federico II, Napoli, Italy; 3. INRiM, Torino, Italy; 4. Department of Electrical and Computer Engineering, UMIACS and AppEl Center, University of Maryland, College Park, MD*

4:06

FH-12. Micromagnetic modeling of particulate tape media with increasing perpendicular orientation ratios. *G. Alighieri¹ and P. Jubert¹. IBM Research - Almaden, San Jose, CA*

4:18

FH-13. Temperature effect in polycrystalline exchange-biased bilayers : A Monte Carlo study. *M. Adeline¹, L. Denis¹ and P. Renaud¹. Groupe de Physique des Matériaux UMR CNRS 6634, St Etienne du Rouvray, France*

WEDNESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

**Session FP
MAGNETIC TUNNEL JUNCTION III: MgO,
OTHER
(Poster Session)
JiJun Sun, Chair**

FP-01. Almost identical oscillations in tunneling resistances as a function of barrier thickness for parallel and antiparallel configurations in fully epitaxial magnetic tunnel junctions with a MgO barrier. *Y. Honda¹, S. Hirata¹, H. Liu¹, K. Matsuda¹, T. Uemura¹ and M. Yamamoto¹. Division of Electronics for Informatics, Hokkaido University, Sapporo, 060-0814, Japan*

FP-02. Spin polarized transport in (100) textured Fe/MgO/Fe tunnel junctions. *A. Duluard¹, B. Negulescu², C. Tiusan¹, C. Bellouard¹, M. Hehn¹, Y. Lu¹, G. Lengaigne¹ and D. Lacour¹. Institut Jean Lamour - UMR CNRS 7198, Vandoeuvre-Les-Nancy Cedex, France; 2. LEMA, UMR 6157 CNRS-CEA, Tours, France*

- FP-03. RF amplification property in a current-field driven spin transistor.** K. Konishi¹, D.K. Dixit², A. Turapurkar², T. Nozaki³, H. Kubota³, A. Fukushima³, S. Yuasa³ and Y. Suzuki¹. *1. Engineering Science, Osaka University, Osaka, Japan; 2. Indian Institute of Technology, Mumbai, India; 3. Nanospintronics research center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*
- FP-04. Spin-dependent tunneling spectroscopy in MgO double barrier magnetic tunnel junctions.** G. Yu^{1,3}, H. Kurt², J. Feng², K. Xu¹, J. Coey² and X. Han³. *1. Platform for Characterization and Test, Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences, Suzhou 215125, China; 2. CRANN and School of Physics, Trinity College, Dublin 2, Ireland; 3. Beijing National Laboratory for Condensed Matter Physics, Institute of physics, Beijing 100190, China*
- FP-05. Magnetoresistance modulated by quantum well states in MgO-based magnetic tunnel junctions with Cu interlayers.** J. Zhang¹, X. Han¹ and X. Zhang². *1. Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Center for Nanophase Materials Sciences and Computer Science and Mathematics Division, Oak Ridge National Laboratory, Oak Ridge, TN*
- FP-06. Magnon excitation and temperature-dependent transport properties in magnetic tunnel junctions with Heusler compound electrodes.** V. Drewello¹, D. Ebke¹, M. Schäfers¹, G. Reiss¹ and A. Thomas¹. *1. Thin Films and Physics of Nanostructures, Bielefeld University, Bielefeld, Germany*
- FP-07. Local magnetism and electron transport properties of magnetic tunnel junctions using non-equilibrium Co₂FeSn Heusler alloy prepared by atomically controlled alternated deposition.** M. Tanaka¹, Y. Ishikawa¹, Y. Wada¹, S. Hori¹, A. Murata¹, Y. Yamanishi¹, K. Mibu¹, K. Kondou², S. Kasai² and T. Ono³. *1. Dept. of Engineering Physics, Electronics and Mechanics, Nagoya Institute of Technology, Nagoya, Aichi, Japan; 2. Magnetic Materials Center, National Institute for Materials Science, Tsukuba, Ibaraki, Japan; 3. Institute for Chemical Research, Kyoto University, Uji, Kyoto, Japan*
- FP-08. Tunnel magnetoresistance effect in magnetic tunnel junctions with (110)-oriented epitaxial Co₂FeAl_{0.5}Si_{0.5} Heusler electrodes.** N. Tezuka¹, L. Jiang¹ and S. Sugimoto¹. *1. Tohoku univ, Sendai, Japan*
- FP-09. Temperature-dependent tunneling interlayer exchange coupling in epitaxial (001) NiO|Fe₃O₄ | MgO| Fe₃O₄ exchange biased nano-structures.** H. Wu¹, O. Mryasov² and I. Shvets¹. *1. Physics, Trinity College Dublin, Dublin, Ireland; 2. Department of Physics and Astronomy and MINT Center, The University of Alabama, Tuscaloosa, AL*

- FP-10. Effect of oxygen supplied to ferromagnetic layers of magnetic tunnel junction.** S. Joo^{1,2}, K. Jung^{1,2}, D. Kim¹, T. Kim¹, B. Lee³, K. Rhie¹ and K. Shin². *1. Display and Semiconductor Physics, Korea University, Chungnam, Korea, Republic of; 2. Spintronic Device Reseach Center, KIST, Seoul, Korea, Republic of; 3. Physics, Inha University, Incheon, Korea, Republic of*
- FP-11. First-principle studies of Interlayer Exchange Coupling in Co|SrTiO₃|Co Magnetic Tunnel Junctions.** H. Yang¹, B. Belhadji¹, J. Velev² and M. Chshiev¹. *1. SPINTEC, UMR CEA/CNRS/UJF-Grenoble 1/Grenoble-INP, INAC, Grenoble, France; 2. Dept. of Physics, Institute of Functional Materials, University of Puerto Rico, San Juan*
- FP-12. Annealing temperature dependence of structural and magnetic properties of CoFe₂/CoFe₂O₄ bilayers for spin-filter devices.** L. Jiang^{1,2}, N. Tezuka¹, S. Sugimoto¹ and Y. Ando². *1. Department of Materials Science, Graduate School of Engineering, Tohoku University, Sendai, Japan; 2. Department of Applied Physics, Graduate School of Engineering, Tohoku University, Sendai, Japan*
- FP-13. Towards Room Temperature Spin Filtering in Isostructural Oxide Tunnel Junctions.** J.M. Iwata¹, F.J. Wong¹, E. Arenholz² and Y. Suzuki¹. *1. Materials Science & Engineering, Univ California Berkeley, Berkeley, CA; 2. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA*
- FP-14. Spin Transport in Ferromagnet/Semiconductor/Ferromagnet Structures with Cubic Dresselhaus Spin-Orbit-Interaction.** K. Kondo¹. *1. Laboratory of Quantum Electronics, Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan*
- FP-15. Transport properties of (Ge,Mn)Te/GeTe/EuS/GeTe quasimagnetic tunnel junctions grown by molecular beam epitaxy.** H. Asada¹, Y. Fukuma², M. Joumura¹, H. Nishihata¹, S. Senba³, N. Matsumoto³, T. Koyanagi¹ and K. Kishimoto¹. *1. Department of Electronic Devices Engineering, Yamaguchi University, Ube, Japan; 2. Advanced Science Institute, RIKEN, Wako, Japan; 3. Department of Electrical Engineering, Ube National College of Technology, Ube, Japan*

WEDNESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session FQ
MRAM AND MgO MAGNETIC TUNNEL
JUNCTIONS
(Poster Session)
Fred Mancoff, Chair

FQ-01. Magnetoresistive Random Access Memory Testing for Automotive Industry. C. Filote^{1,2}, V. Ursu¹ and C. Ciufudean¹. *Electrical Engineering and Computer Science, Stefan cel Mare University of Suceava, Suceava, Romania; 2. Germaro Electronics, Suceava, Romania*

FQ-02. The MTJ with NiFeB/Fe Free layer for Magnetic Logic. H. Honjo¹, R. Nebashi¹, S. Fukami², N. Ishiwata², S. Miura¹, N. Sakimura¹, T. Sugibayashi¹, N. Kasai² and H. Ohno^{2,3}. *Green Innovation Research Laboratories, NEC, Tsukuba, Japan; 2. Center of Spintronics Integrated Systems, Tohoku University, Sendai, Japan; 3. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

FQ-03. Selective Etching of Magneto Resistive Structures Using Cl₂/Ar Chemistry in Inductively Coupled Plasma. A. Lentsch¹, A. Lyle¹, A. Klemm¹, D. Martens¹ and J. Wang¹. *Electrical Engineering, University of Minnesota, Minneapolis, MN*

FQ-04. Quaternary memory device fabricated from a single-layer Fe film. T. Yoo¹, S. Khym¹, H. Lee¹, S. Lee¹, S. Lee¹, X. Liu² and J.K. Furdyna². *Department of Physics, Korea University, Seoul, Korea, Republic of; 2. Department of Physics, University of Notre Dame, Notre Dame, IN*

FQ-05. Multi-step Ion Beam Etching of Sub-30 nm Scale Magnetic Tunnel Junctions for Reducing Leakage Path and MgO Barrier Damage. S. Chun¹, D. Kim¹, J. Kwon¹, B. Kim¹, S. Choi¹ and S. Lee^{1,2}. *Department of Electronic Engineering, Hanyang university, Seoul, Korea, Democratic People's Republic of; 2. Institute of Nano Science and Technology, Hanyang University, Seoul, Korea, Democratic People's Republic of*

FQ-06. Micromagnetic Modelling of L₁₀-FePt/Ag/L₁₀-FePt Pseudo Spin Valves. P. Ho^{1,3}, R. Evans², R. Chantrell², G. Han³, G. Chow¹ and J. Chen¹. *National University of Singapore, Singapore, Singapore; 2. University of York, York, United Kingdom; 3. Data Storage Institute, Singapore, Singapore*

FQ-07. Numerical Study on Current-Induced Magnetization Switching of Ferromagnetically Coupled Synthetic Free Layers. S. Lee¹ and K. Lee¹. *Dept. of Mater. Sci. & Eng., Korea University, Seoul, Korea, Republic of*

FQ-08. Electric-field dependence of switching probability for dynamic magnetization switching in a few atomic layers of FeCo. Y. Shiota¹, S. Murakami^{1,2}, B. Frederic¹, T. Nozaki^{1,2}, T. Shinjo¹ and Y. Suzuki^{1,2}. *Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 2. CREST-JST, Kawaguchi, Saitama, Japan*

FQ-09. Eigenmode Analysis and Thermal Stability of Magnetic Tunnel Junctions with Synthetic Antiferromagnet Free Layers. D. Markó^{1,2}, T. Devolder^{1,2}, K. Miura^{3,4}, K. Ito^{3,4}, J. Kim^{1,2}, C. Chappert^{1,2}, S. Ikeda^{4,5} and H. Ohno^{4,5}. *Université Paris-Sud 11, Orsay, France; 2. Institut d'Electronique Fondamentale, CNRS UMR 8622, Orsay, France; 3. Advanced Research Laboratory, Hitachi, Ltd., Tokyo, Japan; 4. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 5. Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan*

FQ-10. Annealing effect on the perpendicular magnetic junctions with CoFeB and CoFeB/TbCoFe layers. G. Feng¹, A. Castillo¹, P.J. Chen¹ and R.D. Shull¹. *National Institute of Standards and Technology, Gaithersburg, MD*

FQ-11. Perpendicular Magnetic Anisotropy in [Co/Pt] multilayers and [Co/Pt]-based magnetic tunnel junctions. M. Bersweiler¹, K. Dumesnil¹, M. Hehn¹, D. Lacour¹ and G. Lengaigne¹. *Institut Jean Lamour, Vandoeuvre les Nancy, France*

FQ-12. Effect of Electron beam Rapid Thermal Annealing on the TMR of CoFeB/MgO/NiFe Magnetic Tunnel Junctions. G.K. Rajan¹, S. Ramaswamy¹, C. Gopalakrishnan¹ and J.D. Thiruvadigal². *Nanotechnology Research Center, SRM University, Chennai, Tamil Nadu, India; 2. Dept of Nanoscience and Nanotechnology, SRM University, Chennai, Tamil Nadu, India*

FQ-13. Fast evolution of perpendicular magnetic anisotropy and magnetoresistance during thermal annealing in CoFeB/MgO/CoFeB tunnel junctions. W. Wang¹, S. Hageman¹, M. Li¹, A.X. Chen¹, S. Huang¹, X. Kou², X. Fan², J.Q. Xiao² and C. Chien¹. *Physics and Astronomy, The Johns Hopkins University, Baltimore, MD; 2. Physics and Astronomy, University of Delaware, Newark, DE*

FQ-14. Annealing stability of perpendicular anisotropy CoFeB/MgO magnetic tunnel junctions with various junction sizes. H. Gan¹, S. Ikeda^{1,2}, M. Yamanouchi¹, H. Sato¹, K. Miura^{3,1}, K. Mizunuma², R. Koizumi², F. Matsukura^{1,2} and H. Ohno^{1,2}. *Center for Spintronics Integrated Systems (CSIS), Tohoku University, Sendai, Japan; 2. Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 3. Central Research Laboratory, Hitachi, Ltd., Tokyo, Japan*

FQ-15. Chiral magnetization configurations in magnetic nanostructures in the presence of Dzyaloshinskii-Moriya interactions. *N. Grisewood¹, J. Eves¹, T. Usher² and H. Braun¹. School of Physics, University College Dublin, Dublin, Ireland; 2. Dept of Physics, California State University, San Bernardino, CA*

WEDNESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session FR
MAGNETIC MICROSCOPY II
(Poster Session)

Charudatta Phatak, Chair

FR-01. Kondo properties of magnetic molecular nanostructures. *M. Rashidi¹, S. Mullegger¹, M. Fattinger¹ and R. Koch¹. Solid State Physics, Johannes Kepler University, Linz, Austria*

FR-02. Spectroscopic defect analysis with ferromagnetic resonance force microscopy. *H. Chia^{1,2}, L.M. Belova³ and R.D. McMichael¹. 1. Center for Nanoscale Science and Technology, NIST, Gaithersburg, MD; 2. Maryland Nanocenter, University of Maryland, College Park, MD; 3. Department of Materials Science and Engineering, Royal Institute of Technology, Stockholm, Sweden*

FR-03. Micromagnetic Studies on Resolution Limits of MFM Tips with Different Magnetic Anisotropy. *H. Li¹, D. Wei¹ and S.N. Piramanayagam². 1. Department of Materials Science and Engineering, Tsinghua University, Beijing, China; 2. Data Storage Institute, Agency for Science, Technology and Research, Singapore, Singapore*

FR-04. Restoration the Domain Structure from Magnetic Force Microscopy Imaging. *D. Wu¹, Y. Lou¹, F. Wei¹ and D. Wei². 1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Research Institute of Magnetic Materials, Lanzhou University, Lanzhou, Gansu, China; 2. Laboratory of Advanced Materials, Department of Materials Science and Engineering, Tsinghua University, Beijing, China*

FR-05. Spin wave detection by scanning magnetic resonance microscopy using radio frequency probes. *T. An^{1,2}, K. Harii¹ and E. Saitoh¹. 1. The Institute for Materials Research, Tohoku University, Sendai, Japan; 2. PREST, Japan Science and Technology Agency, Tokyo, Japan*

FR-06. Calculate the stray field of the sample from magnetic force microscopy image. *Y. Ge¹, W. Dongping¹, L. Zhenghua¹, L. Yuanfu¹, B. Jianmin¹, F. Wei¹ and W. Dan². 1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, Gansu, China; 2. Materials Science and Engineering, Tsinghua University, Beijing, China*

FR-07. Faraday Effect in CoFe₂O₄ Nanoparticle Arrays. *R.A. Booth¹, T. Wen¹, K. Krycka^{2,1} and S.A. Majetich¹. 1. Physics, Carnegie Mellon, Pittsburgh, PA; 2. NCSR, National Institute of Standards and Technology, Gaithersburg, MD*

FR-08. Magneto-optical Kerr effect measurements on highly ordered ferromagnetic nanomagnet arrays. *S. Pathak¹ and M. Sharma¹. 1. Centre for Applied Research in Electronics, Indian Institute of Technology Delhi, New Delhi, Delhi, India*

FR-09. Single particle detection with a NMR micro capillary probe. *Y. Nakashima^{1,2}, M. Boss¹, G. Zabow^{1,3}, R. Usselman¹, S.E. Russek¹ and J. Moreland¹. 1. NIST, Boulder, CO; 2. Kyushu University, Fukuoka, Japan; 3. National Institutes of Health, Bethesda, MD*

FR-10. Synchronous Imaging of Low-Frequency Magnetization Dynamics in Micron-Sized Elements Using Scanning Transmission X-Ray Microscopy (STXM). *C. Cheng¹, K. Kaznatcheev² and W.E. Bailey¹. 1. Applied Physics and Applied Mathematics, Columbia University, New York, NY; 2. NSLS II, Brookhaven National Lab, Upton, NY*

FR-11. Threshold photoemission magnetic circular dichroism of perpendicularly magnetized Ni films on Cu(001): theory and experiment. *M. Kronseder¹, J. Minár², J. Braun², S. Günther¹, G. Woltersdorf¹, H. Ebert² and C.H. Back¹. 1. Physics, University of Regensburg, Regensburg, Germany; 2. Physical Chemistry, Ludwig-Maximilians Universität, Munich, Germany*

FR-12. Magnetic x-ray microspectroscopy and characterization of magnetic structures in ultrathin Co/Ni multilayer with perpendicular magnetic anisotropy. *F. Macià¹, P. Warnicke², D. Bedau¹, M. Im³, P. Fischer³, D.A. Arena² and A.D. Kent¹. 1. Physics, NYU, New York, NY; 2. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY; 3. Center for X-ray Optics, Lawrence Berkeley National Laboratory, Berkeley, CA*

FR-13. Evidence for Spin Flop Transition in Josephson Junctions with a Synthetic Antiferromagnetic Layer. *B. McMorran^{1,2}, J. Borchers³, T. Ginley⁴, B.J. Kirby³, B.B. Maranville³ and J. Unguris¹. 1. Center for Nanoscale Science and Technology, NIST, Gaithersburg, MD; 2. Department of Physics, University of Oregon, Eugene, OR; 3. NIST Center for Neutron Research, NIST, Gaithersburg, MD; 4. Department of Physics, Juniata College, Huntingdon, PA*

FR-14. A study of the perpendicular magnetic microstructure of L10 FePt epitaxial film using electron holography. *J. Park¹, W. Lee¹, J. Yoo² and J. Yang²*. *Materials Science and Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of; 2. Measurement and Analysis Team, National Nanofab Center, Daejeon, Korea, Republic of*

FR-15. Time Resolved Imaging of Fast Magnetic Processes in Transmission Electron Microscopy. *R. Beacham¹, D. McGrouther¹, A. Mac Raighne¹, D. Maneuski¹, S. McVitie¹ and V. O'Shea¹*. *School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

WEDNESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session FS
MATERIALS MEASUREMENTS
(Poster Session)

Kazushi Ishiyama, Chair

FS-01. A model-assisted technique for characterization of in-plane magnetic anisotropy. *B. Fan¹ and C. Lo¹*. *Center for NDE and Ames Laboratory, Iowa State University, Ames, IA*

FS-02. Single-core fluxgate gradiometer with simultaneous gradient and homogeneous feedback operation. *M. Janosek¹, P. Ripka¹, F. Ludwig² and M. Schilling²*. *1. Dpt. of Measurement, Czech Technical University in Prague, FEE, Praha 6, Czech Republic; 2. Institut für Elektrische Messtechnik und Grundlagen der Elektrotechnik, TU Braunschweig, Braunschweig, Germany*

FS-03. A Wavelet Approach for the Identification of Surface Cracks Using Current Injection Perturbation. *A. Adly¹ and S. Abd-El-Hafiz²*. *1. Elect. Power & Machines Dept., Cairo University, Giza, Egypt; 2. Engineering Mathematics Dept., Cairo University, Giza, Egypt*

FS-04. Development of microscopic magnetometry with reflection objective using magneto-optic Kerr effect. *Y. Kondo¹, K. Yamakawa¹, Y. Nakamura², S. Ishio² and J. Ariake¹*. *1. Akita Industrial Technology Center, Akita, Japan; 2. Faculty of Engineering and Resource Science, Akita University, Akita, Japan*

FS-05. Detection of wall thinning in insulated steel using pulsed eddy current with reduced lift-off effect. *C.S. Angani¹, D.G. Park¹, K. Matte^{1,2}, L. Pasupuleti^{1,2}, C. Kim² and Y.M. Cheong¹*. *1. Nuclear material research division, Korea Atomic Energy Research Institute, Taejeon, Korea, Republic of; 2. Materials Science and Engineering, Chungnam National University, Daejeon, Korea, Republic of*

FS-06. Hard X-ray Photoelectron Spectroscopy (HAXPES) with Variable Photon Polarization: Linear and Circular Magnetic Dichroism. *G.H. Fecher¹, G. Stryganyuk¹, A. Gloskovski¹, B. Balke¹, S. Ouardi¹, X. Kozina¹, C. Felser¹, E. Ikenaga² and K. Kobayashi³*. *1. Johannes Gutenberg - University, Mainz, Germany; 2. SPring 8, Japan Synchrotron Radiation Research Institute, Hyogo, Japan; 3. SPring 8, National Institute for Materials Science, Hyogo, Japan*

FS-07. Magnetostriction Measurement of a GMR Film covered by a shield layer on practical substrates. *K. Okita^{1,3}, K. Ishiyama² and H. Miura³*. *1. Tohoku Steel Co., Ltd., Miyagi, Japan; 2. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan; 3. Department of Nanomechanics, Tohoku University, Sendai, Japan*

FS-08. A 1MHz susceptometer with constant excitation field. *J. Tafur-Bermúdez¹, C. Rinaldi² and E.J. Juan¹*. *1. Department of Electrical and Computer engineering, University of Puerto Rico at Mayaguez, Mayaguez, Puerto Rico; 2. Department of Chemical Engineering, University of Puerto Rico at Mayaguez, Mayaguez, Puerto Rico*

FS-09. Rotational losses up to the kHz range in Soft Magnetic Composites (SMC). *d. Olivier¹, C. Appino¹, F. Fiorillo¹, C. Ragusa², M. Lécrivain³, L. Rocchino¹, H. Ben Ahmed³, M. Gabsi³, F. Mazaleyra³ and M. LoBue³*. *1. INRIM, Torino, Italy; 2. Dipartimento di Ingegneria Elettrica, Politecnico di Torino, Torino, Italy; 3. SATIE, Cachan, France*

FS-10. Analysis of Effective Permeability Behaviors of the Magnetic Hollow Fibers Filled in Composite. *B. Nam¹, S. Cho², J. Kim² and K. Kim¹*. *1. Department of Physics, Yeungnam University, Gyeongsan, Korea, Republic of; 2. Department of Metallurgical and Materials Engineering, Hanyang University, Ansan, Korea, Republic of*

FS-11. Magnetic anisotropy and domain structure of rapidly solidified amorphous submicron wires and nanowires. *T. Óvári¹ and H. Chiriac¹*. *1. National Institute of Research and Development for Technical Physics, Iasi, Romania*

FS-12. Soft Magnetic Properties and High-Frequency Performance of FeCo-SiO₂ Thin Films. *G. Lu¹, H. Zhang¹, X. Tang¹, Y. Li¹ and Z. Zhong¹*. *1. State Key Laboratory of Electronic Thin films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

FS-13. Electromagnetic Wave Absorption Properties of Fe-filled Carbon Nanocapsules at GHz Frequencies. *R. Yang¹, W. Liang¹, J. Liou¹ and G. Hwang²*. *1. Department of Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 2. Nano-Powder and Thin Film Technology Center, Industrial Technology Research Institute, Tainan, Taiwan*

- FS-14. On the road to custom-designed epitaxial thin films by controlled magnetic anisotropy symmetry breaking.** E. Jimenez¹, N. Mikuszeit¹, A. Bollero², P. Perna², C. Rodrigo¹, C. Clavero^{3,4}, J.M. García-Martín³, A. Cebollada³, J. Camarero^{1,2} and R. Miranda^{1,2,1}. *Universidad Autónoma de Madrid, Madrid, Spain; 2. IMDEA-Nanociencia, Madrid, Madrid, Spain; 3. IMM, CNM-CSIC, Tres Cantos, Madrid, Spain; 4. Department of Appl. Science, College of William & Mary, Williamsburg, VA*
- FS-15. New Magnetic NDT Technology: A Moving Magnet Hysteresis Comparator.** I.J. Garshelis¹, G. Crevecoeur² and L. Dupré^{2,1}. *Magnova, Inc., Pittsfield, MA; 2. Dept. Electrical Energy, Systems and Automation, Ghent University, B-9000 Gent, Belgium*

WEDNESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session FT
FERRITE MATERIALS AND HIGH
FREQUENCY DEVICES II
(Poster Session)

Zbigniew Celinski, Chair

- FT-01. Dielectric and magnetic properties of $Y_3-xTb_xFe_5O_{12}$ ferrimagnets.** Y. Siao¹, X. Qi¹, C. Lin² and J. Huang^{3,1}. *Materials Science and Engineering, National Cheng Kung University, Tainan, Taiwan; 2. Institute of Nanotechnology and Department of Mechanical, Southern Taiwan University, Tainan, Taiwan; 3. Department of Physics, National Cheng Kung University, Tainan, Taiwan*
- FT-02. Temperature dependence of magnetic behavior in very fine grained, spark plasma sintered NiCuZn Ferrites.** B. Ahmadi¹, K. Zehani¹, M. LoBue¹, V. Loyau¹ and F. Mazaleyrat¹. *ENS Cachan, Université paris sud, SATIE Laboratory, Cachan, France*
- FT-03. Polycrystalline magnetic garnet films composed of weakly coupled nano-scale crystallites for piezo electrically-driven magneto-optic spatial light modulators.** S. Mito¹, H. Takagi¹, A.V. Baryshev¹ and M. Inoue¹. *Toyohashi University of Technology, Toyohashi, Japan*
- FT-04. Magnetic Polymer Nanocomposites with Tunable Microwave and RF Properties.** K. Stojak¹, S. Pal¹, M.H. Phan¹, H. Srikanth¹, C. Morales², J. Dewdney², J. Wang² and T. Weller^{2,1}. *Department of Physics, University of South Florida, Tampa, FL; 2. Department of Electrical Engineering, University of South Florida, Tampa, FL*

- FT-05. Iron (Fe) based microstrip Phase Shifter; Optimization of Phase shift.** B.K. Kuanr^{1,2}, T. Fal², R. Camley² and Z. Celinski^{2,1}. *Department of Physics & Electronics, Zakir Husain College (University of Delhi), Jawaharlal Nehru Marg, Delhi, India; 2. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO*
- FT-06. Measurement of Damping factor α of Single Crystal Garnet by Broadband FMR.** S. Takeda¹, T. Hotchi², S. Motomura² and H. Suzuki^{2,1}. *Magnotech, Ltd., Kumagaya, Japan; 2. KEYCOM Corp., Tokyo, Japan*
- FT-07. Reconfigurable coplanar waveguides embedded with sputtered Fe/MgO multilayer.** K. Noda¹, K. Ito¹, J. Zhou¹, A. Md Nor², T. Tanaka¹ and K. Matsuyama^{1,1}. *Faculty of Information Science and Electrical Engineering, Kyushu University, Fukuoka, Fukuoka, Japan; 2. Department of Physics, Malaya University, Kuala Lumpur, Malaysia*
- FT-08. Fast switching of a bistable microwave ferrite resonator using electrical field.** Y.K. Fetisov¹, A.B. Ustinov² and G. Srinivasan^{3,1}. *Physics, Moscow Institute of Radio Engineering, Electronics and Automation, Moscow, Russian Federation; 2. St. Petersburg Electrotechnical University, St. Petersburg, Russian Federation; 3. Physics, Oakland University, Rochester, MI*
- FT-09. Highly Sensitive Broadband RF/Microwave Magnetic Measurement System with Lock-in Detection.** S. Beguhn¹, Z. Zhou¹, S. Rand¹, X. Yang¹, J. Lou¹ and N. Sun^{1,1}. *ECE, Northeastern University, Boston, MA*
- FT-10. Reflection of mm waves at antiresonance in 3D magnetic opal nanocomposite structures.** G. Makeeva¹, O. Golovanov², A. Rinkevich³ and M. Pardavi-Horvath^{4,1}. *Radioengineering, Penza State University, Penza, Russian Federation; 2. Mathematics, Penza State University, Penza, Russian Federation; 3. Institute of Metal Physics of the Ural Branch of the RAS, Ekaterinburg, Russian Federation; 4. SEAS ECE, The George Washington University, Washington, DC*
- FT-11. Growth of High-Quality Yttrium Iron Garnet Thin Films on Metallic Electrodes.** Y. Sun¹, Y. Song¹ and M. Wu^{1,1}. *Department of Physics, Colorado State University, Fort Collins, CO*
- FT-12. The absorption property of single crystal LuBiG garnet film in terahertz band.** Q. Yang¹, H. Zhang¹ and Q. Wen^{1,1}. *University of Electronic Science and Technology of China, Chengdu, China*
- FT-13. The effect of MgO(111) interlayer on the interface phase stability and structure of BaFe12O19/SiC(0001).** V.K. Lazarov^{1,3}, Z. Cai², K. Yoshida³, P.J. Hasnip¹ and K.S. Ziemer^{2,1}. *Physics, University of York, York, United Kingdom; 2. Chemical Engineering, Northeastern University, Boston, MA; 3. York-JOEL Nanocentre, University of York, York, United Kingdom*

FT-14. Synthesis and Magnetic Characterization of Al doped Sr-Ferrite Nanoparticles. H. Luo¹, S.R. Mishra¹, N.V. Vuong² and J.P. Liu². *1. Physics, The University of Memphis, Memphis, TN; 2. Physics, University of Texas, Arlington, TX*

FT-15. Growth Habit modification of Barium Ferrite Thin Films. W. Zhang¹, F. Li¹, B. Peng¹ and W. Zhang¹. *1. School of microelectronics and solid-state electronics, Chengdu, China*

WEDNESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session FU
ULTRA-THIN FILMS AND SURFACE
EFFECTS II
(Poster Session)

Sean Langridge, Chair

FU-01. Crystal structure of Co thin films epitaxially grown on hcp- and fcc-single-crystal underlayers. K. Kobayashi¹, M. Ohtake¹ and M. Futamoto¹. *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan*

FU-02. Perpendicular magnetic anisotropy of Ni/Cu(001) films with surface passivation. K. Lee¹, Y. Shih¹, W. Shen¹, C. Tsai¹, D. Wei², Y. Chan², H. Chang² and W. Pan¹. *1. Physics, National Chung Cheng University, Chia-Yi, Taiwan; 2. National Synchrotron Radiation Center, Hsin-Chu, Taiwan*

FU-03. Thickness-dependent magnetic domain structures in epitaxial FePd films. J. Kim^{1,2}, J. Choi³, H. Kim^{3,4}, H. Kim³, S. Cho¹ and J. Kim¹. *1. Metallurgy and Materials Engineering, Hanyang University, Ansan, Korea, Republic of; 2. Research Institute of Engineering and Technology, Hanyang University, Ansan, Korea, Republic of; 3. Spin Device Center, Korea Institute of Science and Technology, Seoul, Korea, Republic of; 4. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of*

FU-04. Comparison of the perpendicular magnetic anisotropy between the top and bottom Ta-CoFeB-MgO structures by x-ray photoelectron spectroscopy. C. Cheng¹, H. Chen¹, C. Shiue¹, Y. Lin², Y. Li² and G. Chern¹. *1. Taiwan SPIN Research Center and Department of Physics, National Chung Cheng University, Chiayi 62102, Taiwan; 2. Department of Chemical Engineering, National Chung Cheng University, Chiayi 62102, Taiwan*

FU-05. Ferromagnetic resonance probed annealing effects on magnetic anisotropy of perpendicular CoFeB/MgO bilayer. Y. Chen^{1,2}, G. Chern³, W. Wu² and J.G. Lin¹. *1. Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan; 2. Department of Mechanical Engineering, National Taiwan University, Taipei, Taiwan; 3. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan*

FU-06. Promotion of L10 ordered phase of FePd films with CoFeB interlayer. M.I. Khan¹, N. Inami¹, H. Naganuma¹, M. Oogane¹ and Y. Ando¹. *1. Applied Physics, Tohoku University, Sendai, Japan*

FU-07. Study of surface effects on CoCu nanogranular alloys by ferromagnetic resonance. A. Garcia Prieto¹, M. Fdez-Gubieda², L. Lezama³ and I. Orue⁴. *1. Fisica Aplicada I, Universidad del Pais Vasco UPV/EHU, Bilbao, Spain; 2. Electricidad y Electronica, Universidad del Pais Vasco UPV/EHU, Bilbao, Spain; 3. Quimica inorganica, Universidad del Pais Vasco UPV/EHU, Bilbao, Spain; 4. SGIker, Universidad del Pais Vasco UPV/EHU, Bilbao, Spain*

FU-08. Modification of magnetic anisotropy in NiFe thin films by buffer layers. E. Arac¹, A. Winter¹ and D. Atkinson¹. *1. Physics Department, Durham University, Durham, United Kingdom*

FU-09. Investigation of the local structural properties of Fe₅₀Pt_{50-x}Rh_x magnetic thin films using extended x-ray absorption fine structure (EXAFS). D. Xu^{1,2}, C. Sun¹, S. Han³, J. Chen², S.M. Heald¹ and G. Chow². *1. Advanced Photon Source, Argonne Nat'l Lab, Argonne, IL; 2. Department of Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 3. Department of Physics Education, Chonbuk National University, Jeonju, Korea, Republic of*

FU-10. Magnetic and Transport Properties of Ni-Mn-In Based Thin Films. I. Dubenko¹, T. Samanta¹, N. Ali¹, A. Sokolov², L. Zhang² and E. Kirianov³. *1. Physics, Southern Illinois University at Carbondale, Carbondale, IL; 2. Physics & Astronomy, UNL, Lincoln, NE; 3. Lincoln South-West High School, Lincoln, NE*

FU-11. Interface magnetism of iron on sulfur passivated GaAs(001). B. Kardasz¹, B. Heinrich¹, C. Burrowes¹ and S.P. Watkins¹. *1. Physics, Simon Fraser University, Burnaby, BC, Canada*

FU-12. Surface Morphologies and Magnetic Properties of Fe and Co Magnetic Thin Films on Polyethylene Naphthalate Organic Substrates. H. Kaiju^{1,2}, T. Abe¹, K. Kondo¹ and A. Ishibashi¹. *1. Research Institute for Electronic Science, Hokkaido University, Sapporo, Hokkaido, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Saitama, Japan*

FU-13. surface spin slips in thin holmium films. F.H. Sales¹, A.L. Dantas² and A.S. Carriç o³. *1. Physics, IFMA, São Luis, Maranhão, Brazil; 2. Physics, UERN, Natal, Rio Grande do Norte, Brazil; 3. Physics, UFRN, Natal, Rio Grande do Norte, Brazil*

- FU-14. Analysis of ion irradiated amorphous ribbon by secondary ion mass spectrometry and permeability spectra.** *H. Song¹ and D. Park¹*. *Korea Atomic Energy Research Institute, Daejeon, Korea, Republic of*
- FU-15. Modified Square-wave approximation and Non-zero intercept in Kittel's scaling law for Nanostructured 180° Stripe-domains.** *G. Zhao^{1,2}, H. Zhang², L. Chen³, Y. Feng⁴ and J. Ding⁴*. *1. Sichuan Normal University, Chengdu, Sichuan, China; 2. University of Electronic Science and Technology of China, Chengdu, China; 3. Nanyang Technological University, Singapore, Singapore; 4. National University of Singapore, Singapore, Singapore*

WEDNESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session FV
MAGNETOCALORIC PROPERTIES III
(Poster Session)

Manh-Huong Phan, Chair

- FV-01. SSEEC: an integrated collaborative approach to magnetic cooling and magnetocaloric materials.** *K.G. Sandeman¹*. *Department of Physics, Imperial College London, London, United Kingdom*
- FV-02. Doping Effects of B and H on Magnetic properties and magnetocaloric Effects in R(FeSi)13 Magnetic Refrigerants.** *R. Zeng¹ and P. Shamba¹*. *University of Wollongong, Wollongong, NSW, Australia*
- FV-03. Reduction of hysteresis loss and large magnetocaloric effect in the C- and H-doped La(Fe,Si)₁₃ compounds around room temperature.** *H. Zhang¹, B. Shen¹, Z. Xu¹, X. Zheng¹, J. Shen², F. Hu¹, J. Sun¹ and Y. Long³*. *1. State Key Laboratory for Magnetism, Institute of Physics, Chinese Academy of Sciences, Beijing, China; 2. Key laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China; 3. School of Materials Science and Engineering, University of Science and Technology of Beijing, Beijing, China*
- FV-04. Magnetocaloric effect in La_{0.5}Pr_{0.5}Fe_{11.5}Si_{1.5} compounds with a combined addition of Co and C.** *J. Shen¹ and J. Zhao²*. *1. Key Laboratory of Cryogenics, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, China; 2. College of Applied Science, Beijing University of Technology, Beijing, China*

- FV-05. Effect of carbon and annealing on microstructure and magnetocaloric effect of LaFe_{11.6}Si_{1.4}C_x.** *C.S. Teixeira^{1,2}, M. Krautz¹, K.P. Skokov¹, J. Liu¹, J.D. Moore¹, P.A. Wendhausen² and O. Gutfleisch¹*. *1. Institute for Metallic Materials, Leibniz Institute for Solid State and Materials Research, Dresden, Germany; 2. LABMAT–Materials Laboratory, Federal University of Santa Catarina, Florianópolis, Brazil*
- FV-06. Systematic study of the phase transition and magnetic properties in La-Fe-Si-C compounds.** *S. Fu¹, Y. Long¹, Y. Chang¹, R. Ye¹, X. Yi¹ and X. Liu¹*. *Materials Science and Engineering, University of Science and Technology Beijing, Beijing, China*
- FV-07. Novel La(Fe,Si)₁₃-based composites for energy efficient magnetic cooling.** *J. Lyubina¹, U. Hannemann¹, M.P. Ryan¹ and L.F. Cohen¹*. *Imperial College London, London, United Kingdom*
- FV-08. Abnormal behavior of magnetic entropy change on Ba_{2-x}La_xFeMoO₆ compound.** *K. Kim¹, M. Lee¹, Y. Jang¹, B. Kang² and S. Yu¹*. *1. Physics, Chungbuk National University, Cheongju, Chungbuk, Korea, Republic of; 2. Nano Science & Mechanical Engineering, Kunkuk University, Chungju, Chungbuk, Korea, Republic of*
- FV-09. Structure, magnetic, and magnetocaloric properties of amorphous and crystalline La_{0.4}Ca_{0.6}MnO_{3+δ} nanoparticles.** *P.J. Lampen¹, A. Puri¹, M. Phan¹ and H. Srikanth¹*. *Physics, University of South Florida, Tampa, FL*
- FV-10. Enhanced magnetocaloric effect of monovalent elements doped Pr_{0.5}Sr_{0.3}M_{0.2}MnO₃(M=Li, Na, K and Ag) perovskite manganites.** *P. Zhang¹, H. Ge¹ and H. Yang¹*. *Materials of Science and Engineering, China Jiliang University, Hangzhou, Zhejiang, China*
- FV-11. Structural, magnetic, transport and magnetocaloric properties of metamagnetic DyMn_{0.5}Co_{0.5}O₃.** *C. Ganeshraj¹ and N. Santhosh P.¹*. *Physics, Indian Institute of Technology Madras, Chennai, Tamilnadu, India*
- FV-12. Large reversible magnetocaloric effect in TmTiO₃ single crystal.** *Y. Su¹, Y. Sui¹, J. Cheng^{1,2}, X. Wang¹, Y. Wang¹, X. Liu³ and J. Tang⁴*. *1. Center for Condensed Matter Science and Technology, Department of Physics, Harbin Institute of Technology, Harbin, China; 2. Texas Materials Institute, University of Texas at Austin, Austin, TX; 3. State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, College of Chemistry, Jilin University, Changchun, China; 4. Department of Physics and Astronom, University of Wyoming, Laramie, WY*
- FV-13. Designed metamagnetism in Mn-based orthorhombic structures.** *Z. Gercsi¹ and K. Sandeman¹*. *Physics Department, University College London, London, United Kingdom*

FW-14. Phase evolution and magnetocaloric effect of melt-spun $Mn_3Sn_{2-x}M_x$ ($M = B, C; x = 0-0.5$) ribbons. X.G. Zhao^{2,1}, E. Lee², C. Hsieh², C. Shih², W. Chang² and Z. Zhang¹. *Shenyang National Laboratory for Materials Science and International Center for Materials Physics, Institute of Metal Research, Chinese academy of Sciences, Shenyang, Liaoning, China; 2. Department of Physics, National Chung Cheng University, Chia-Yi, Taiwan*

FW-15. Effects of Si-doping and Applied Pressure upon Tb₅(SixGe_{1-x})₄: an X-ray Magnetic Spectroscopy Study. C. Yang¹, Y. Tseng¹, D. Haskel², Y. Mudryk³, V. Pecharsky³ and K. Gschneidner Jr.³. *1. Materials Science & Engineering, National Chiao-Tung University, Hsin-Chu, Taiwan; 2. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 3. Division of Materials Science & Engineering, Ames Laboratory, Ames, IA*

WEDNESDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session FW
DOMAIN WALL DEVICES I
(Poster Session)

Geoffrey Beach, Co-Chair
Mathias Kläui, Co-Chair

FW-01. Transverse domain wall chirality sensing based on stray field-induced switching of triangular elements. S.R. Bowden¹, R.D. McMichael¹ and J. Unguris¹. *Center for Nanoscale Science and Technology, National Institute of Standards and Technology, Gaithersburg, MD*

FW-02. Control of domain wall velocity by strain modulation in GaMnAsP. E. De Ranieri¹, P. Roy¹ and J. Wunderlich^{1,2}. *1. Hitachi Cambridge Laboratory, Cambridge, United Kingdom; 2. Institute of Physics ASCR, Prague, Czech Republic*

FW-03. Current-driven Motion of Multiple Magnetic Domains along Parallel-aligned Magnetic Nanowires with Perpendicular Magnetic Anisotropy. Y. Miyamoto¹, M. Okuda¹, E. Miyashita¹ and N. Hayashi¹. *Science & Technology Research Labs., NHK (Japan Broadcasting Corporation), Tokyo, Japan*

FW-04. Realization of a memristor by current induced domain wall motion in a micro-/nanostructured GMR device. J. Münchenberger¹, G. Reiss¹ and A. Thomas¹. *Thin Films and Physics of Nanostructures, Bielefeld University, Bielefeld, North Rhine-Westphalia, Germany*

FW-05. Simulation study of magnetic quantum dots shift register with uniform magnetic clock field. H. Nomura¹, S. Miura¹, Y. Imanaga¹ and R. Nakatani¹. *Osaka University, Suita City, Japan*

FW-06. Analytical and numerical characterization of domain wall motion in magnetic nanostrips exhibiting crystallographic defects. G. Consolo¹, E. Martinez², C. Currò³ and G. Valenti¹. *1. Department of Sciences for Engineering and Architecture, University of Messina, Italy, Messina, Italy; 2. Department of Applied Physics, University of Salamanca, Salamanca, Spain; 3. Department of Mathematics, University of Messina, Messina, Italy*

FW-07. Current-induced domain wall motion in a multilayered nanowire for achieving high density bit. T. Komine¹, A. Ooba¹ and R. Sugita¹. *Department of Media and Telecommunications Engineering, Ibaraki University, Hitachi, Ibaraki, Japan*

FW-08. Magnetic behaviour of $Fe_{0.2}Ni_{0.8}$ films coupled to planar nanowire array of Fe. S.K. Arora¹, B.J. O'Dowd¹ and I.V. Shvets¹. *Centre for Adaptive Nanostructures and Nanodevices (CRANN), School of Physics, Trinity College Dublin, Dublin, Dublin, Ireland*

FW-09. Ultra low propagation fields in Ta-CoFeB-MgO ultrathin films with perpendicular anisotropy. S. Ahn^{1,3}, N. Nguyen¹, G. Agnus¹, N. Vernier¹, O. Berthold² and D. Ravelosona¹. *1. Institut d'Electronique Fondamentale, Orsay, France; 2. Singulus technology AG, Kahl am Main, Germany*

FW-10. Geometric dependence of static and kinetic pinning of domain walls on ferromagnetic nanowires. S. Ahn^{1,3}, K. Moon¹, D. Kim² and S. Choe¹. *1. Physics, Seoul National University, Seoul, Korea, Republic of; 2. Physics, Chungbuk National University, Cheongju, Korea, Republic of; 3. Nanospintronics, Institut d'Electronique Fondamentale, Orsay, France*

FW-11. Manipulating Ultra-Cold Atoms with a Reconfigurable Nanomagnetic System. T.J. Hayward¹, P.W. Fry², M.R. Gibbs¹, T. Schrefl³, D.A. Allwood¹, K.J. Weatherill⁴, A.D. West⁴, C.S. Adams⁴ and I.G. Hughes⁴. *1. Department of Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 2. Nanoscience and Technology Centre, University of Sheffield, Sheffield, United Kingdom; 3. St Pölten University of Applied Sciences, St Pölten, Austria; 4. Atomic and Molecular Physics Group, University of Durham, Durham, United Kingdom*

FW-12. Magnetic properties of single three-dimensional cobalt nanowires grown by focused-electron-beam-deposition. A. Fernandez-Pacheco¹, L.E. Serrano², D. Petit¹, L. O'Brien¹, R.M. Ibarra², J.M. De Teresa^{2,3} and R.P. Cowburn¹. *1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 2. Instituto de Ciencia de Materiales de Aragon, Universidad de Zaragoza-CSIC, Zaragoza, Spain; 3. Instituto de Nanociencia de Aragon, Universidad de Zaragoza, Zaragoza, Spain*

FW-13. Controlled domain wall depinning in four terminal devices. L. O'Brien¹, A. Beguivin¹, D. Petit¹, A. Fernandez-Pacheco¹ and R.P. Cowburn¹. *Thin Film Magnetism, University of Cambridge, Cambridge, United Kingdom*

FW-14. Inter-nanowire domain wall interactions in nanowires with perpendicular magnetic anisotropy. S. Noh¹, Y. Miyamoto², M. Okuda², N. Hayashi² and Y.K. Kim¹. *1. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Imaging & Storage Devices Research Division, NHK Science and Technology Research Laboratories, Tokyo, Japan*

FW-15. The influence of the Rashba field on the current-induced domain wall dynamics: A micromagnetic analysis. E. Martinez¹. *1. Fisica Aplicada, Universidad de Salamanca, Salamanca, Spain*

THURSDAY
MORNING
8:30

GRAND CANYON 6

Session GA
SYMPOSIUM ON SPIN PUMPING

Bret Heinrich, Chair

8:30

GA-01. Spin pumping in layered and continuous magnetic systems. *(Invited)* Y. Tserkovnyak¹, A. Brataas² and G.E. Bauer³. *1. Department of Physics and Astronomy, UCLA, Los Angeles, CA; 2. Department of Physics, Norwegian University of Science and Technology, Trondheim, Norway; 3. Institute for Materials Research, Tohoku University, Sendai, Japan*

9:06

GA-02. Experimental comparison of spin-pumping parameters at polycrystalline FM/NM interfaces. *(Invited)* A. Ghosh², U. Ebels², S. Auffret² and W.E. Bailey¹. *1. Materials Science Program, Dept of Applied Physics and Applied Mathematics, Columbia University, New York, NY; 2. SPINTEC, Grenoble, Isère, France*

9:42

GA-03. Spin pumping and the inverse spin Hall effect in magnetic multilayers. *(Invited)* G. Woltersdorf¹, A. Gangwar¹, M. Althammer², S.B. Goennenwein² and C.H. Back¹. *1. Physics, University of Regensburg, Regensburg, Germany; 2. Walter Meissner Institute, Garching, Germany*

10:18

GA-04. Time-Resolved Spin Pumping by Sub-Micron Wavelength Magnons from a Magnetic Insulator. *(Invited)* A.A. Serga¹, A.V. Chumak¹, M.B. Jungfleisch¹, C.W. Sandweg¹, B. Hillebrands¹, A.D. Karenowska², Y. Kajiwara³ and E. Saitoh³. *1. Fachbereich Physik and Forschungszentrum OPTIMAS, Technische Universität Kaiserslautern, Kaiserslautern, Germany; 2. Department of Physics, Clarendon Laboratory, University of Oxford, Oxford, United Kingdom; 3. Institute for Materials Research, Tohoku University, Sendai, Japan*

10:54

GA-05. Long-distance Spin Precession in Non-local Lateral Spin Valves with Giant Spin Accumulation. *(Invited)* Y. Otani^{1,2}, Y. Fukuma² and H. Idzuchi^{1,2}. *1. ISSP University of Tokyo, Kashiwa, Japan; 2. RIKEN ASI, Wako, Japan*

THURSDAY
MORNING
8:30

GRAND CANYON 7

Session GB
SPINTRONICS: Ge, GaAs, DIAMOND
Saroj Dash, Chair

8:30

GB-01. Epitaxial Fe/MgO/Ge spin-photodiodes for integrated detection of light helicity at room temperature. C. Rinaldi¹, M. Cantoni¹, D. Petti¹, R. Bertacco¹, N. Caffrey² and S. Sanvito². *1. CNISM and L-NESS - Physics Department, Politecnico di Milano, Milan, Italy; 2. School of Physics and CRANN, Trinity College, Dublin, Ireland*

8:42

GB-02. Spin accumulation in Fe/MgO/Ge heterostructures. A.T. Hanbicki¹, S.F. Cheng¹, R. Goswami², O.J. van 't Erve¹ and B.T. Jonker¹. *1. Naval Research Laboratory, Washington, DC; 2. SAIC, Washington, DC*

8:54

GB-03. Electrical creation of spin accumulation in p-type Ge with an epitaxial Fe/MgO tunnel contact. H. Saito¹, S. Watanabe^{1,2}, Y. Mineno¹, S. Sandeep¹, R. Jansen¹, S. Yuasa¹ and K. Ando¹. *1. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan; 2. Tsukuba Univ., Tsukuba, Japan*

9:06

GB-04. A quantum memory intrinsic to single nitrogen–vacancy centers in diamond. (Invited) *G. Fuchs*^{1,2}, *G. Burkard*³, *P. Klimov*¹ and *D. Awschalom*¹. *1. Center for Spintronics and Quantum Computation, University of California - Santa Barbara, Santa Barbara, CA; 2. Applied & Engineering Physics, Cornell University, Ithaca, NY; 3. Physics, University of Konstanz, Konstanz, Germany*

9:42

GB-05. Electrically tunable spin injector free from the impedance mismatch problem. *K. Ando*¹, *H. Kurebayashi*², *T. Trypiniotis*² and *E. Saitoh*¹. *1. Institute for Materials Research, Tohoku University, Sendai, Japan; 2. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom*

9:54

GB-06. Efficient room-temperature spin detector based on GaNAs. *Y. Puttison*¹, *X.J. Wang*^{1,2}, *I.A. Buyanova*¹, *C.W. Tu*³ and *W.M. Chen*¹. *1. Linköping University, Linköping, Sweden; 2. Shanghai Institute of Technical Physics, Shanghai, China; 3. University of California, La Jolla, CA*

10:06

GB-07. Probability current and spin-currents in solids. *F. Bottegoni*¹, *H. Drouhin*¹, *G. Fishman*² and *J. Wegrowe*¹. *1. LSI, CNRS and CEA/DSM/IRAMIS, Ecole Polytechnique, Palaiseau, 91128, France; 2. IEF, CNRS, Université Paris-Sud 11, Orsay, 91405, France*

10:18

GB-08. Spin Hall effects in Fe/In_xGa_{1-x}As heterostructures. *C. Geppert*¹, *Q.O. Hu*², *E.S. Garlid*¹, *M.K. Chan*¹, *K. Christie*¹, *C.J. Palmström*² and *P. Crowell*¹. *1. University of Minnesota, Minneapolis, MN; 2. University of California, Santa Barbara, CA*

10:30

GB-09. Experimental Demonstration of Ballistic Spin Detection. *C. Shen*¹, *T. Trypiniotis*¹ and *C. Barnes*¹. *1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom*

10:42

GB-10. Spin accumulation and decoherence mechanisms at a single Co/Al₂O₃/GaAs interface. *J. Peiro*¹, *J. Lebreton*¹, *H. Jaffrès*¹, *C. Deranlot*¹, *S. Collin*¹, *A. Lemaître*² and *J. George*¹. *1. Unité Mixte de Physique CNRS/Thales, Palaiseau, Ile de France, France; 2. CNRS-Laboratoire de Photonique et Nanostructures, Marcoussis, Ile de France, France*

10:54

GB-11. Electrical Detection of Spin Accumulation in GaAs using MgO tunnel barrier at room temperature. *S.H. Shim*^{1,2}, *J. Chang*¹, *K. Kim*¹, *H. Kim*¹ and *Y. Lee*². *1. Spin Device Research Center, Korea Institute of Science and Technology, Seoul, Korea, Republic of; 2. Department of Physics, Korea University, Seoul, Korea, Republic of*

11:06

GB-12. Non-local electrical detection of Hanle signals in Co₂MnSi/Co₅₀Fe₅₀/n-GaAs Schottky tunnel junctions. *T. Akiho*¹, *T. Uemura*¹, *M. Harada*¹, *K. Matsuda*¹ and *M. Yamamoto*¹. *1. Hokkaido University, Sapporo, Japan*

11:18

GB-13. Quantum dot based current spin polarization amplifier. *I. Weymann*¹, *S. Csonka*² and *G. Zarand*². *1. Department of Physics, Adam Mickiewicz University, Poznan, Poland; 2. Department of Physics, Budapest University of Technology and Economics, Budapest, Hungary*

THURSDAY
MORNING
8:30

GRAND CANYON 8

Session GC

SPIN TRANSFER TORQUE SWITCHING II

Michael Coey, Chair

8:30

GC-01. Ultrafast precessional spin-transfer switching in MRAM cells with a perpendicular polarizer. *M. Marins de Castro*¹, *R. Sousa*¹, *S. Bandiera*¹, *C. Ducruet*², *S. Auffret*¹, *C. Papusoi*¹, *L. Prejbeanu*², *U. Ebels*¹, *C. Portemont*², *B. Rodmacq*¹, *L. Vila*³ and *B. Dieny*¹. *1. SPINTEC, UMR CEA / CNRS / UJF-Grenoble 1 / Grenoble-INP, INAC, Grenoble, France; 2. Crocus Technology, Grenoble, France; 3. SP2M/NM, CEA/Grenoble, INAC, Grenoble, France*

8:42

GC-02. Time domain studies of spin-torque ballistic precessional switching in Tb doped samples. *O. Lee*¹, *D.C. Ralph*^{1,2} and *R.A. Buhrman*¹. *1. Cornell University, Ithaca, NY; 2. Kavli Institute at Cornell, Ithaca, NY*

8:54

GC-03. Asymmetric delay dependence in ultrafast nanomagnet dynamics excited by oppositely polarized picosecond spin torque impulses. *L. Ye¹, S. Garzon², R.A. Webb¹ and T.M. Crawford¹. 1. Physics, University of South Carolina, Columbia, SC; 2. San Jose Research Center, Hitachi Global Storage Technologies, San Jose, CA*

9:06

GC-04. Spin-transfer switching and dynamics in nonlocal spin valves with sustained injection currents. *H. Zou¹, S. Chen¹ and Y. Ji¹. Physics & Astronomy, Univ Delaware, Newark, DE*

9:18

GC-05. High Voltage Pulse Measurements of Spin Torque Excited Microwave Emission and Switching in Magnetic Tunnel Junctions. *H. Tseng¹, Y. Li¹, J.A. Katine², P.G. Gowtham¹, D.C. Ralph¹ and R.A. Buhrman¹. 1. Cornell University, Ithaca, NY; 2. Hitachi Global Storage Technologies, San Jose, CA*

9:30

GC-06. Magnetic moment switching induced by spin torque from the spin Hall effect. *L. Liu¹, O.J. Lee¹, T.J. Gudmundsen¹, D.C. Ralph¹ and R.A. Buhrman¹. 1. Cornell Univ, Ithaca, NY*

9:42

GC-07. Spin-orbit mediated Torque in Rashba systems. *F. Freimuth¹, Y. Mokrousov¹ and S. Blugel¹. 1. IAS-1 and PGI-1, Forschungszentrum Juelich GmbH, Juelich, Germany*

9:54

GC-08. *Ab initio* investigation of the influence of the magnetic material in magnetic tunnel junctions on the bias dependence of the spin-transfer torque. *C. Franz¹, M. Czerner¹ and C. Heiliger¹. 1. Physikalisches Institut, Justus-Liebig-Universitaet, Giessen, Germany*

10:06

GC-09. Spin-transfer torque in magnetic junctions with ferromagnetic insulators. *J. Inoue¹. 1. Nagoya University, Nagoya, Japan*

10:18

GC-10. Effects of the Valence Band of Insulator Layer in Spin Transfer Torque of Magnetic Tunneling Junctions. *C. You¹, J. Han² and H. Lee². 1. Department of Physics, Inha Univ, Incheon, Korea, Republic of; 2. PCTP and Department of Physics, POSTECH, Pohang, Korea, Republic of*

10:30

GC-11. Spin Torque Switching Phase Diagram of a Two-Dot System With Pulsed Hard Axis Field. *J.D. Harms¹, A.P. Lyle¹, A. Klemm¹, A. Lentsch¹, D. Martens¹ and J. Wang¹. 1. Electrical and Computer Engineering, Large Lakes Observatory, Minneapolis, MN*

10:42

GC-12. Withdrawn

10:54

GC-13. Separation of spin-torque, Oersted field, and Joule heating effects on the domain-wall depinning in V-shaped nanowires. *R. Frömter¹, S. Hankemeier¹, B. Beyersdorff¹ and H. Oepen¹. Institut für Angewandte Physik, Universität Hamburg, Hamburg, Germany*

11:06

GC-14. Investigation of lower current (4.2×10^6 A/cm²) driven domain walls in TbFeCo nanowires. *H. Awano¹, D. Ngo¹ and K. Ikeda¹. 1. Toyota Technological Institute, Nagoya, Japan*

11:18

GC-15. Measurements of Nanoscale Domain Wall Flexing in a Ferromagnetic Thin Film. *A.L. Balk¹, M.E. Nowakowski², M.J. Wilson¹, D.W. Rench¹, P. Schiffer¹, D.D. Awschalom² and N. Samarth¹. 1. Physics, Penn State University, University Park, PA; 2. Physics, University of California, Santa Barbara, CA*

THURSDAY
MORNING
8:30

GRAND CANYON 9-11

**Session GD
NOVEL MEMORY AND ENERGY
HARVESTING DEVICES**

Sanjukta Bhanja, Chair

8:30

GD-01. Electrical Input Structures for Nanomagnetic Logic Devices. *J. Kiermaier¹, S. Breitzkreutz¹, G. Csaba², D. Schmitt-Landsiedel¹ and M. Becherer¹. 1. Lehrstuhl für Technische Elektronik, Technische Universität München, Munich, Germany; 2. Center for Nano Science and Technology, University of Notre Dame, Notre Dame, IN*

8:42

GD-02. Clocking Nanomagnet Logic Devices by Domain Walls.

G. Csaba¹, J. Kiermaier³, M. Becherer³, S. Breitkreutz³, X. Ju², P. Lugli², D. Schmitt-Landsiedel³ and W. Porod¹. *Center for Nano Science and Technology, University of Notre Dame, Notre Dame, IN; 2. Institute for Nanoelectronics, Technical University of Munich, Munich, Germany; 3. Institute for Technical Electronics, Technical University of Munich, Munich, Germany*

8:54

GD-03. Ultra Low Power Processor using Perpendicular-STT-MRAM/SRAM based Hybrid Cache toward Next Generation Normally-off Computers. K. Nomura¹, K. Abe¹, H. Yoda¹ and S. Fujita¹. *Toshiba Corporation, Kawasaki, Japan*

9:06

GD-04. Design of a 270ps-Access 7T-2MTJ-Cell Nonvolatile Ternary Content-Addressable Memory. S. Matsunaga¹, A. Katsumata², M. Natsui^{1,2}, T. Endoh^{1,2}, H. Ohno^{1,2} and T. Hanyu^{1,2}. *Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan; 2. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

9:18

GD-05. A Hybrid Magnetic/CMOS Process Design Kit for the Design of Low-power Non-volatile Logic Circuits. G. Di Pendina^{2,1}, G. Prenat¹, B. Dieny¹ and K. Torik². *CEA, CNRS, UJF, INPG; CEA/INAC, Spintec, Grenoble, France; 2. CNRS, CMP, Grenoble, France*

9:30

GD-06. Diffraction grating nanomanufactured from magnetic nanoparticles. J.R. Henderson¹, A. Netz¹, B. Terry¹ and T.M. Crawford¹. *Physics and Astronomy, University of South Carolina, Columbia, SC*

9:42

GD-07. 50%-Transistor-Less Standby-Power-Free 6-input LUT Circuit Using Redundant MTJ-Based Nonvolatile Logic-in-Memory Architecture. D. Suzuki¹, M. Natsui¹, T. Endoh¹, H. Ohno¹ and T. Hanyu¹. *Center for Spintronics Integrated Systems, Tohoku University, Sendai, Japan*

9:54

GD-08. MTJ-Based Optimal V_{th} -Tuning Technique for a Process-Variation-Aware VLSI processor. M. Natsui¹, K. Yong Kun¹ and T. Hanyu¹. *Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

10:06

GD-09. Delayed Switching applied to Memristor Neural Networks.

F.Z. Wang¹, L. Chua³, N. Helian², X. Yang¹, S. Wu¹ and G. Lim¹. *1. School of Computing, University of Kent, Canterbury, United Kingdom; 2. School of Computer Science, University of Hertfordshire, Hatfield, United Kingdom; 3. University of California, Berkeley, CA*

10:18

GD-10. The direct conversion of heat to electricity using magnetic materials with phase transformations. (Invited) R. James¹.

Aerospace Engineering and Mechanics, University of Minnesota, Minneapolis, MN

10:54

GD-11. Order-to-order Magnetic Phase Transitions for Thermal Energy Harvesting. K.P. Wetzlar¹, C. Hsu¹ and G. Carman¹.

Mechanical Engineering, UCLA, Los Angeles, CA

11:06

GD-12. Macro-scale vibrational energy harvesting device using iron-gallium alloy (Galferol). T. Ueno¹ and S. Yamada¹.

Kanazawa University, Kanazawa, Japan

11:18

GD-13. Alternating magnetic field energy harvesting of a single wire based on Lorentz force effect. W. He^{1,2}, P. Li^{1,2}, Y. Wen^{1,2},

J. Qiu^{1,2} and J. Zhang^{1,2}. *1. The Key Laboratory for Optoelectronic Technology & Systems, Ministry of Education, Chongqing, China; 2. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*

THURSDAY
MORNING
8:30

GRAND CANYON 2-3

Session GE
CORRELATED SYSTEMS
Vladimir Antropov, Chair

8:30

GE-01. Spin dynamics in the multiferroic materials. (Invited) F. Ye¹, J. Haraldsen¹, F.S. Randy¹, B. Lorenz², C. Chu² and T. Kimura³. *1. Oak Ridge National Laboratory, Oak Ridge, TN; 2. University of Houston, Houston, TX; 3. Osaka University, Osaka, Japan*

9:06

GE-02. Crystal field excitations in CeCu₂Ge₂: Revisited employing a single crystal and inelastic neutron scattering.

M. Loewenhaupt¹, E. Faulhaber², A. Schneidewind², M. Deppe³ and K. Hradil⁴. *1. IFP, Dresden, Germany; 2. Helmholtz-Zentrum Berlin, Berlin, Germany; 3. MPI-CPfS, Dresden, Germany; 4. IPC, Goettingen, Germany*

9:18

GE-03. Direct Elucidation of the Effect of Building Defects on the Physical Properties of alpha-TmAlB₄; an AlB₂-type analogous “tiling” compound.

T. Mori¹, I. Kuzmych-lanchuk¹, K. Yubuta², T. Shishido², S. Okada³, K. Kudou⁴ and Y. Grin⁵. *1. National Institute for Materials Science (NIMS), Tsukuba, Japan; 2. Tohoku University, Sendai, Japan; 3. Kokushikan University, Tokyo, Japan; 4. Kanagawa University, Yokohama, Japan; 5. Max Planck Institute for Chemical Physics of Solids, Dresden, Germany*

9:30

GE-04. Exchange coupling revisited.

V. Antropov¹, L. Ke¹ and M. van Schilfgaarde². *1. Ames Laboratory, Ames, IA; 2. School of Materials, Arizona State University, Tempe, AZ*

9:42

GE-05. Electronic structural changes across the metamagnetic transition in FeRh via hard x-ray photoemission.

A.X. Gray^{1,2}, D.W. Cooke³, P. Krüger⁴, C. Bordel^{3,5}, A.M. Kaiser^{1,2}, S. Moyerman⁶, E.E. Fullerton⁶, S. Ueda⁷, Y. Yamashita⁷, A. Gloskovskii⁸, C.M. Schneider⁹, W. Drube⁸, K. Kobayashi⁷, F. Hellman^{3,2} and C.S. Fadley^{1,2}. *1. Department of Physics, University of California-Davis, Davis, CA; 2. Materials Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Department of Physics, University of California, Berkeley, Berkeley, CA; 4. ICB, UMR 5209, CNRS-Université de Bourgogne, Dijon Cedex, France; 5. GPM, UMR CNRS 6634, Université de Rouen, St. Etienne du Rouvray, France; 6. Center for Magnetic Recording Research, University of California, San Diego, La Jolla, CA; 7. NIMS Beamline Station at SPring-8, National Institute for Materials Science, Sayo, Hyogo, Japan; 8. DESY Photon Science, Deutsches Elektronen-Synchrotron, Hamburg, Germany; 9. Peter-Grünberg-Institut PGI-6, Forschungszentrum Jülich GmbH, Jülich, Germany*

9:54

GE-06. Lifshitz Transition with Interactions in High Magnetic Fields: Application to CeIn₃.

P.U. Schlottmann¹. *1. Department of Physics, Florida State University, Tallahassee, FL*

10:06

GE-07. The metamagnetic transition in FeRh is also an electronic transition.

M.A. de Vries¹, M. Loving², M. McLaren³, A.P. Mihai¹, R. Fan⁴, C.J. Kinane⁴, S. Langridge⁴, D.A. Arena⁵, D. Heiman⁶ and C.H. Marrows¹. *1. School of Physics and Astronomy, University of Leeds, Leeds, West Yorkshire, United Kingdom; 2. Department of Chemical Engineering, Northeastern University, Boston, MA; 3. School of process, Environmental and Materials Engineering, University of Leeds, Leeds, United Kingdom; 4. ISIS, Science and Technologies facilities council, Harwell, United Kingdom; 5. National Synchrotron Lightsource, Brookhaven lab, Upton, NY; 6. Department of Physics, Northeastern University, Boston, MA*

10:18

GE-08. Quantum-Mechanical Ising Models.

R. Skomski¹ and D.J. Sellmyer¹. *1. Physics and Astronomy, Univ Nebraska, Lincoln, NE*

10:30

GE-09. Optical properties of ferrimagnetic NiFe₂O₄ thin films.

Q.C. Sun¹, D. Mazumdar², J. Ma², A. Gupta² and J.L. Musfeldt¹. *1. Chemistry, University of Tennessee, Knoxville, TN; 2. MINT center, University of Alabama, Tuscaloosa, AL*

10:42

GE-10. Inelastic Neutron Scattering Study of UPd₂Sn.

N. Magnani^{1,2}, K. Gofryk^{1,3}, E. Colineau¹, J. Griveau¹, D.T. Adroja⁴, K.A. McEwen⁵, D. Kaczorowski⁶ and R. Caciuffo¹. *1. Institute for Transuranium Elements, European Commission, Joint Research Centre, Karlsruhe, Germany; 2. Lawrence Berkeley National Laboratory, Berkeley, CA; 3. Los Alamos National Laboratory, Los Alamos, NM; 4. ISIS Facility, Rutherford Appleton Laboratory, Chilton, United Kingdom; 5. Department of Physics and Astronomy and London Centre for Nanotechnology, University College London, London, United Kingdom; 6. Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wroclaw, Poland*

10:54

GE-11. Electronic Structure of PrCuSi and LaCuSi: Comparisons with Experiment.

S. Elgazzar¹, A. Strydom¹ and P. Oppeneer². *1. Johannesburg Univ., Auckland Park, South Africa; 2. Uppsala University, Uppsala, Sweden*

11:06

GE-12. Electronic Structure of ferrimagnetic NiFe₂O₄ using the screened Hybrid Functional Method.

H. Sims^{1,2}, D. Mazumdar¹, W.H. Butler^{1,2} and A. Gupta¹. *1. MINT Center, University of Alabama, Tuscaloosa, AL; 2. Department of Physics, University of Alabama, Tuscaloosa, AL*

11:18

GE-13. Why does Si doping enhance the Curie temperature of Gd₅(SixGe_{1-x})₄ giant magnetocaloric compounds? *Y. Tseng*¹, N. Souza-Neto², D. Paudyal^{3,4}, Y. Mudryk^{3,4}, V.K. Pecharsky^{3,4}, K.A. Gschneidner, Jr.^{3,4} and D. Haskel². *1. Materials Science & Engineering, National Chiao-Tung University, Hsin-Chu, Taiwan; 2. Advanced Photon Source, Argonne National Laboratory, Argonne, IL; 3. Materials and Engineering Physics Program, Ames Laboratory, Ames, IA; 4. Materials Science and Engineering, Iowa State University, Ames, IA*

THURSDAY
MORNING
8:30

GRAND CANYON 4-5

Session GF
EXCHANGE BIAS I
Bernhard Dieny, Chair

8:30

GF-01. nm-sized magnetic domains observed by small angle neutron scattering in DyFe₂/YFe₂ exchange coupled superlattices. *K. Dumesnil*¹, C. Dufour¹, M.R. Fitzsimmons², J.A. Borchers³, K.L. Krycka³, M. Laver⁴ and J. Won². *1. Institut Jean Lamour, Vandoeuvre les Nancy, France; 2. Los Alamos National Laboratory, Los Alamos, NM; 3. NIST center for neutron research, Gaithersburg, MD; 4. Paul Scherrer Institut, Villigen, Switzerland*

8:42

GF-02. The formation mechanism of 360° domain walls in exchange-biased ferromagnetic films. *A. Kohn*¹, J.S. Dean², G. Hrkac², D.A. Allwood², A. Kovacs³, A. Zeltser⁴, M.J. Carey⁴ and T. Schreff⁵. *1. Department of Materials Engineering and the Ilse Katz Institute for Nanoscale Science and Technology, Ben-Gurion University of the Negev, Be'er-Sheva, Israel; 2. Department of Engineering Materials, University of Sheffield, Sheffield, United Kingdom; 3. Department of Materials, University of Oxford, Oxford, United Kingdom; 4. Hitachi Global Storage Technologies, San Jose, CA; 5. St. Poelten University of Applied Science, St. Poelten, Austria*

8:54

GF-03. Towards tailoring magnetic properties in exchange-biased FM/AFM systems. *E. Jimenez*¹, J. Camarero^{1,2}, N. Mikuszeit¹, P. Perna², F.J. Teran², A. Bollero², J. Sort^{3,4}, J. Nogués^{3,5}, J.M. García-Martín^{6,7}, A. Hoffmann⁸, B. Dieny⁹ and R. Miranda^{1,2}. *1. Universidad Autónoma de Madrid, Madrid, Spain; 2. IMDEA-Nanociencia, Madrid, Madrid, Spain; 3. ICREA, Bellaterra, Barcelona, Spain; 4. Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain; 5. ICN-CSIC, Bellaterra, Barcelona, Spain; 6. IMM-CSIC, Tres Cantos, Madrid, Spain; 7. CNM, Tres Cantos, Madrid, Spain; 8. Argonne National Lab. CNM-MSD, Illinois, IL; 9. SPINTEC, CEA/CNRS/UJF, Grenoble, France*

9:06

GF-04. Exchange bias and domain evolution at 10 nm scales. (Invited) *H.J. Hug*^{1,2}, M.A. Marion¹, S. Romer¹, S. Oezer² and N. Joshi². *1. NanoScale Materials Science, EMPA, Duebendorf, Switzerland; 2. Physics, University of Basel, Basel, Switzerland*

9:42

GF-05. Exchange Biased Nanostructures. (Invited) *I.K. Schuller*¹, R. Morales², M. Velez³, O. Petravic⁴, I.V. Roshchin⁵, X. Batlle⁶, J.M. Alameda³, M. Kovylyna⁶, M. Erekhinsky¹, J.E. Villegas⁷, A. Labarta⁶, A. Porat⁸ and S. Bar-Ad⁸. *1. Physics, UCSD, La Jolla, CA; 2. U of the Basque Country and IKERBASQUE Basque Foundation for Science, Bilbao, Spain; 3. University of Oviedo-CINN, Oviedo, Spain; 4. Ruhr University, Bochum, Germany; 5. Texas A & M, College Station, TX; 6. University of Barcelona, Barcelona, Catalonia, Spain; 7. Unité Mixte de Physique CNRS/Thales, Palaiseau, France; 8. Tel Aviv University, Tel Aviv, Israel*

10:18

GF-06. The origin and evolution of positive exchange bias in Co/CoO nanostructures with in plane uniaxial anisotropy. *A.K. Suszka*¹, O. Idigoras¹ and A. Berger¹. *1. Nanomagnetism Group, CIC Nanogune, Donostia-San Sebastian, Spain*

10:30

GF-07. Distribution of blocking temperatures in exchange biased multiferroic-based heterostructures. *S. Chenattukuzhiyil*¹, J. Allibe², C. Carretero², C. Deranlot², E. Jacquet², M. Bibes², A. Barthélemy², H. Bea¹ and V. Baltz¹. *1. Spintec, Grenoble Cedex 9, France; 2. UMR CNRS/Thales, Palaiseau, France*

10:42

GF-08. Tuning the isothermally-induced exchange-bias in perpendicularly coupled ferromagnetic [Pt/Co]/NiFe multilayers. A. Bollero¹, V. Baltz², L.D. Buda-Prejbeanu², P. Perna¹, J. Sort³, J. Nogués⁴, B. Rodmacq², J. Camarero^{1,5}, R. Miranda^{1,5} and B. Dieny². *1. IMDEA Nanoscience, Instituto Madrileño de Estudios Avanzados en Nanociencia, Madrid, Spain; 2. SPINTEC, UMR-8191 CNRS/CEA-INAC/UJF-Grenoble 1/Grenoble-INP, Grenoble, France; 3. Institució Catalana de Recerca i Estudis Avançats (ICREA) and Departament de Física, Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain; 4. Institució Catalana de Recerca i Estudis Avançats (ICREA) and Institut Català de Nanotecnologia, Bellaterra, Barcelona, Spain; 5. Departamento de Física de la Materia Condensada and Instituto "Nicolás Cabrera", Universidad Autónoma de Madrid, Madrid, Spain*

10:54

GF-09. Switching process and large positive exchange-bias in TbFe/(Co/Pt) \times 5. M.A. Marioni¹, S. Romer¹, N.R. Joshi², S. Oezer², K. Thorwarth¹, L. Castaldi⁴, M. Parlinska-Wojtan¹, T.V. Ashworth³, H. Rohrmann⁴ and H.J. Hug^{1,2}. *1. EMPA, Duebendorf, Switzerland; 2. University of Basel, Basel, Switzerland; 3. Nanoscan AG, Duebendorf, Switzerland; 4. OC Oerlikon Balzers AG, Balzers, Liechtenstein*

11:06

GF-10. L₁₀Cr₅₀Pt₅₀ phase formation and magnetic properties. R. Zhang^{1,2}, R. Skomski^{1,2}, P. Manchanda³, A. Kashyap³, S. Liou^{1,2} and D.J. Sellmyer^{1,2}. *1. Physics & Astronomy, Univ. of Nebraska-Lincoln, Lincoln, NE; 2. Nebraska Center for Materials and Nanoscience, Lincoln, NE; 3. LNM Institute of Information Technology, Jaipur, Rajasthan, India*

11:18

GF-11. The Origin of Training in Polycrystalline Exchange Bias Systems. B. Kaeswurm¹ and K. O'Grady¹. *1. Department of Physics, The University of York, York, United Kingdom*

THURSDAY
MORNING
8:30

GRAND CANYON 12-13

**Session GG
BORIDES II**
Jeffrey Shields, Chair

8:30

GG-01. Characterisation and Modelling of Interfaces in Nd-Fe-B Permanent Magnets. (Invited) T.G. Woodcock¹, G. Hrkač², T. Schrefl³ and O. Gutfleisch¹. *1. IFW Dresden, Dresden, Germany; 2. University of Sheffield, Sheffield, United Kingdom; 3. St. Pölten University of Applied Sciences, St Pölten, Austria*

9:06

GG-02. Studies of sintered MRE-Fe-B magnets by DyF₃ addition or diffusion treatment (MRE=Nd+Y+Dy). W. Tang¹, Y. Wu¹, K.W. Dennis¹, N.T. Oster¹, M.J. Kramer¹, I.E. Anderson¹ and R.W. McCallum¹. *Ames Lab of DOE, Ames, IA*

9:18

GG-03. Coercivity enhancement in nanocrystalline NdFeB hot pressed magnets by diffusion of DyF₃. S. Sawatzki¹, M. Mohr¹, J. Thielsch¹, L. Schultz¹ and O. Gutfleisch¹. *IFW Dresden, Institute for Metallic Materials, Dresden, Germany*

9:30

GG-04. Effects of Ag additions on melt-spun RE₂Fe₁₄B microstructure and texture. N. Oster¹, D.T. Cavanaugh², K.W. Dennis², M.J. Kramer^{1,2}, R.W. McCallum^{1,2} and I.E. Anderson^{1,2}. *1. Materials Science & Engineering, Iowa State University, Ames, IA; 2. Ames Laboratory USDOE, Ames, IA*

9:42

GG-05. Single-crystal and textured polycrystalline Nd₂Fe₁₄B flakes with a submicron thickness. B. Cui^{1,2}, L. Zheng³, W. Li², M. Marinescu¹, J. Liu¹ and G.C. Hadjipanayis². *1. Electron Energy Corporation, Landisville, PA; 2. Department of Physics and Astronomy, University of Delaware, Newark, DE*

9:54

GG-06. Synthesis and Characterization of Nd_{4+x}Fe₇₂Co₃Ga₂B_{17-x} Nanocomposite Ribbons. M. Daniil², M. Brandes³ and M.A. Willard¹. *1. Magnetic Materials and Nanostructures Section, U. S. Naval Research Laboratory, Washington, DC; 2. Department of Physics, George Washington University, Washington, DC; 3. Department of Materials Science and Engineering, The Ohio State University, Columbus, OH*

10:06

GG-07. Magnetic microstructural uniformity of die-upset Nd-Fe-B magnets. Y. Fang^{1,2}, X. Yin¹, R. Zhao², S. Valloppilly¹, W. Li², M. Zhu² and S. Liou¹. *1. Department of Physics and Astronomy and Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE; 2. Division of Functional Materials, Central Iron and Steel Research Institute, Beijing, China*

10:18

GG-08. Phase and Microstructural Evolution Study of Nd-Fe-B Sintered Magnet during the Post-sintering Annealing. T. Kim¹, S. Lee¹, S. Namkung² and T. Jang². *1. Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Hybrid Engineering, Sunmoon University, Asan, Korea, Republic of*

10:30

GG-09. FORC Studies of Permanent Magnets. G. Zimanyi¹, T. Schrefl², T. Shoji³, M. Winklhofer⁴ and M. Yano³. *1. Department of Physics, University of California, Davis, CA; 2. University of Applied Sciences, St. Polten, Austria; 3. Toyota Motor Corp., Toyota City, Japan; 4. Department of Geophysics, University of Munich, Munich, Germany*

10:42

GG-10. Coercivity and microstructure of Nd-Fe-B textured polycrystalline thin films. W. Cui¹, Y. Takahashi¹ and K. Hono¹. *Magnetic Materials Unit, National Institution For Materials Science, Tsukuba, Ibaraki, Japan*

10:54

GG-11. High performance hard magnetic materials for MEMS. (Invited) N. Dempsey¹, F. Dumas-Bouchiat¹, Y. Zhang¹, G. Ciuta¹, L.F. Zanini^{1,2} and D. Givord¹. *1. Institut Neel - CNRS/UJF, Grenoble, France; 2. G2Elab - Grenoble INP/UJF/CNRS, St Martin d'Hères, France*

THURSDAY
MORNING
8:30

GRAND CANYON 1

Session GH

MAGNETIC NANOSTRUCTURES AND DEVICES FOR BIOMEDICAL APPLICATIONS

Olga Kazakova, Chair

8:30

GH-01. A Fully Automated IVD System Based on MTJ Arrays and Superparamagnetic Particles. J. Lian¹, Y. Gao¹ and S. Shi¹. *1. Institute of Physics and Chemistry, Beijing, China*

8:42

GH-02. On-chip platform based on magnetic tunnel junctions for bead magnetorelaxometry. M. Donolato¹, D. Petti¹, E. Sogne¹, B.T. Dalslet², M. Cantoni¹, J. Cao³, F. Cardoso³, S. Cardoso³, P.P. Freitas³, M.F. Hansen² and R. Bertacco¹. *1. Centro LNESS - Dipartimento di Fisica, Politecnico di Milano, Como, Italy; 2. Department of Micro- and Nanotechnology, Technical University of Denmark, Kongens Lyngby, Denmark; 3. INESC MN, Lisboa, Portugal*

8:54

GH-03. Magneto-resistive biosensor for lateral flow immunoassays. S.C. Freitas^{1,2}, F.A. Cardoso¹, P.P. Freitas^{1,2}, C. Marquina^{3,4}, D. Saurel⁵, J. Marzo⁵, D. Serrate^{4,5}, J.M. deTeresa^{3,4} and M.R. Ibarra^{4,5}. *1. Microsystems and Nanotechnologies, INESC-MN, Lisbon, Portugal; 2. Physics Department, IST, Lisbon, Portugal; 3. Instituto de Ciencia de Materiales de Aragón ICMA, CSIC-Universidad de Zaragoza, Zaragoza, Spain; 4. Departamento de Física de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain; 5. Instituto de Nanociencia de Aragón (INA), Universidad de Zaragoza, Zaragoza, Spain*

9:06

GH-04. Detection and Susceptibility Measurements of a Single Dynal Bead. L. Di Michelle^{1,2}, C. Shelly¹, P. de Marco^{1,2}, P. See¹, A. Manzin³ and O. Kazakova¹. *1. NPL, Teddington, Middlesex, United Kingdom; 2. Università degli Studi dell'Aquila, L'Aquila, Italy; 3. INRIM, Torino, Italy*

9:18

GH-05. Magneto-mechanical resonant detection of superparamagnetic microbeads trapped by magnetic domain walls. E. Rapoport¹ and G.S. Beach¹. *1. Materials Science and Engineering, MIT, Cambridge, MA*

9:30

GH-06. Domain walls arrays on PDMS substrate for magnetic particles actuation. M. Donolato¹ and P. Vavassori¹. *1. CIC Nanogune, San Sebastian, Spain*

9:42

GH-07. Magnetic Domain Wall Conduits for Single Cell Application. A.M. Torti¹, M. Donolato³, N. Kotesha², M. Deryabina², P. Vavassori³, M.F. Hansen² and R. Bertacco¹. *1. L-NESS - dipartimento di Fisica, Politecnico di Milano, Milano, Italy; 2. Department of Micro and Nanotechnology, DTU Nanotech, Lyngby, Denmark; 3. CIC nanoGUNE consolider, Donostia San Sebastian, Spain*

9:54

GH-08. Synthesis of magnetic-optical Ni-Au core-shell nanowires and observation of cellular responses. *I. Jeon*^{1,3}, *M. Cho*¹, *J. Cho*², *B. An*¹, *J. Wu*³, *R. Kringel*⁴, *D.S. Choi*⁴ and *Y.K. Kim*^{1,3,1}. *Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Korea Electronics Technology Institute, Seongnam, Gyeonggi, Korea, Republic of; 3. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Korea, Republic of; 4. Department of Chemical and Materials Engineering, University of Idaho, Moscow, ID*

10:06

GH-09. Disrupting Fe₃O₄ Nanocube Magnetic Cross-Talk With FePt Inclusions. *K. Krycka*¹, *C. Lai*², *B.J. Kirby*¹ and *J.A. Borchers*^{1,1}. *NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, MD; 2. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*

10:18

GH-10. Innovative biomagnetic imaging sensors for breast cancer: a model-based study. *Y. Deng*¹. *Electrical Engineering, Bioengineering, University of Colorado Denver, Denver, CO*

10:30

GH-11. Magnetic Anisotropy and its Role in Magnetic Particle Imaging. *E.A. Olson*^{1,2}, *C. Gruettner*³ and *C. Dennis*^{1,1}. *NIST, Gaithersburg, MD; 2. University of Virginia, Charlottesville, VA; 3. Micromod Partikeltechnologie, GmbH, Rostock, Germany*

10:42

GH-12. Potential bimodal, luminescent and magnetic, imaging probes based on Polyol-made Zn_{1-x}MnxS nanoparticles. *M. Giraud*¹, *M. Gaceur*¹, *M. Hemadi*¹, *N. Menguy*², *J. Von Bardeleben*³, *M. Boissière*⁴ and *S. Ammar*^{1,1}. *Chemistry, University Paris Diderot, Paris Cedex 13, France; 2. IMPMC, Université Pierre et Marie Curie, ICGP, CNRS UMR-8104, Paris, France; 3. INSP, Université Pierre et Marie Curie, CNRS UMR- 7588, Paris, France; 4. ERRMECe EA1391, Institut des Matériaux, Université de Cergy-Pontoise et Marie Curie, CNRS UMR- 7588, Cergy, France*

10:54

GH-13. Enhancing cancer therapeutics using size-optimized magnetic fluid hyperthermia. *A. Khandhar*¹, *R.M. Ferguson*¹, *J.A. Simon*² and *K.M. Krishnan*^{1,1}. *Materials Science & Engineering, University of Washington, Seattle, WA; 2. Division of Clinical Research, Fred Hutchinson Cancer Research Center, Seattle, WA*

11:06

GH-14. Magnetically-driven spinning nanowires as effective materials for eradicating living cells. *D. Choi*¹, *J. Park*¹, *X. Hopkins*¹, *R. Kringel*¹, *I. Jeon*² and *Y.K. Kim*^{2,1}. *Chemical & Materials Engineering, University of Idaho at Moscow, Moscow, ID; 2. Materials Science & Engineering, Korea University, Seoul, Korea, Republic of*

11:18

GH-15. FePt magnetic capsules and their applications to magnetically guided drug delivery system. *T. Fuchigami*¹, *R. Kawamura*¹, *Y. Kitamoto*¹, *M. Nakagawa*² and *Y. Namiki*^{3,1}. *Department of Innovative and Engineered Materials, Tokyo Institute of Technology, Yokohama, Japan; 2. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan; 3. Institute of Clinical Medicine and Research, The Jikei University School of Medicine, Kashiwa, Japan*

THURSDAY
MORNING
8:00

SAGUARO BALLROOM

Session GP
HYSTERESIS AND MAGNETIC MODELING
(Poster Session)
Alberto Guimaraes, Chair

GP-01. Effect of rounded corners on the magnetic properties of pyramidal-shaped shell structures. *A. Knittel*¹, *M. Franchin*¹, *F. Nasirpour*², *S.J. Bending*³ and *H. Fangohr*^{1,1}. *School of Engineering Sciences, University of Southampton, Southampton, United Kingdom; 2. Department of Materials Engineering, Sahand University of Technology, Tabriz, Iran, Islamic Republic of; 3. Department of Physics, University of Bath, Bath, United Kingdom*

GP-02. Modeling the effects of nanosized precipitates on magnetic hysteresis and Barkhausen effect signal. *C. Lo*^{1,1}. *Center for NDE and Ames Laboratory, Iowa State University, Ames, IA*

GP-03. Dynamic Hysteresis Modeling of Silicon Steel Having Nonuniform Magnetic Property. *R. Mitsuoka*¹, *T. Mifune*¹ and *T. Matsuo*^{1,1}. *Department of Electrical Engineering, Kyoto University, Kyoto, Japan*

GP-04. An Efficient Vector Preisach Hysteresis Model Based on a Novel Rotational Operator. *A. Sutor*¹, *J. Kallwies*¹ and *R. Lerch*^{1,1}. *Chair of Sensor Technology, University Erlangen-Nuremberg, Erlangen, Germany*

GP-05. Permanent Magnet Online Magnetization Performances Analysis of a Flux Mnemonic Double Salient Motor Using an Improved Hysteresis Model. X. Zhu¹, L. Quan¹, H. Li¹ and Y. Chen¹. *School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*

GP-06. Description of Materials with Two-Magnetic-Phase Behavior in Jiles-Atherton Theory of Hysteresis. A. Raghunathan¹, Y. Melikhov², J. Snyder² and D. Jiles³. *1. JFWTC, GE Global Research, Bangalore, KA, India; 2. Wolfson Centre for Magnetics, Cardiff University, Cardiff, United Kingdom; 3. Electrical and Computer Engineering, Iowa State University, Ames, IA*

GP-07. Effect of size distribution on properties of magnetic nanoparticles. X. Han^{1,2}, J. Du¹ and J. Liu^{2,1}. *Magnetic Materials and Advanced Devices, Ningbo Institute of Material Technology and Engineering, Ningbo, Zhejiang, China; 2. Department of Physics, University of Texas at Arlington, Arlington, TX*

GP-08. Hysteresis and entropy changes in itinerant electron. N.A. de Oliveira¹, L.G. de Medeiros Jr² and A. Troper³. *1. Instituto de Física, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil; 2. INFES, Universidade Federal Fluminense, Santo Antonio de Padua, Rio de Janeiro, Brazil; 3. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Rio de Janeiro, Brazil*

GP-09. Approach to a limiting cycle in thermally relaxing media. K. Ivo¹ and C. Chang¹. *Department of Physics, National Taiwan University, Taipei, Taiwan*

GP-10. Influence of noise color on stochastic resonance in hysteretic systems. M. Dimian¹, O. Manu¹ and P. Andrei². *1. Electrical Engineering and Computer Science, Stefan cel Mare University, Suceava, Romania; 2. Electrical and Computer Engineering, Florida State, Tallahassee, FL*

GP-11. Extended Finite Element Method and the Application in Electromagnetic Field. N. Duan¹, S. Wang¹, J. Qiu¹, W. Xu¹, J. Zhu², Y. Guo² and Z. Lin². *1. Xi'an Jiaotong University, Xi'an, China; 2. University of Technology, Sydney, Sydney, NSW, Australia*

GP-12. Multiple 360° DW switching in thin ferromagnetic nanorings in an applied circular field. K. Aidala¹, A. Goldman¹, A.S. Licht¹, Y. Li¹, N.R. Pradhan^{1,2} and M.T. Tuominen². *1. Physics, Mount Holyoke College, South Hadley, MA; 2. Physics, University of Massachusetts, Amherst, MA*

GP-13. Comparison of Parameter Determination Techniques for Jiles-Atherton Theory of Hysteresis. Y. Melikhov¹, A. Raghunathan² and D. Jiles³. *1. Wolfson Centre for Magnetics, Cardiff University, Cardiff, Wales, United Kingdom; 2. JFWTC, GE Global Research, Bangalore, KA, India; 3. Electrical and Computer Engineering, Iowa State University, Ames, IA*

GP-14. Micromagnetic study of magnetization processes in permalloy antidot arrays. L. Torres², D. Gonzalez³, O. Alejos³, K.J. Merazzo¹, M. Vazquez¹ and R. Perez¹. *1. ICMM-CSIC, Madrid, Madrid, Spain; 2. Universidad de Salamanca, Salamanca, Salamanca, Spain; 3. Dpto. Electricidad y Electrónica, Universidad de Valladolid, Valladolid, Valladolid, Spain*

GP-15. Magnetization Process Modeling for Silicon Steel Using Simplified Domain-Structure Model. M. Sudo¹ and T. Matsuo¹. *Electrical Engineering, Kyoto University, Kyoto, Japan*

THURSDAY
MORNING
8:00

SAGUARO BALLROOM

Session GQ FERROMAGNETIC SEMICONDUCTOR OXIDES

(Poster Session)

Jacek Furdyna, Chair

GQ-01. Ferromagnetic spin ordering in Co doped amorphous InGaZnO by hydrogen mediation. S. Lee¹, W. Kim¹, S. Seo², Y. Cho¹, J. Bae³, H. Koinuma^{1,4} and S. Jeong¹. *1. Department of Cogno-Mechatronics Engineering, Pusan National University, Miryang, Gyeongsangnam-do, Korea, Republic of; 2. Department of Nanomaterials Engineering, Pusan National University, Miryang, Gyeongsangnam-do, Korea, Republic of; 3. Korea Basic Science Institute, Busan, Korea, Republic of; 4. Graduate School of Frontier Science, The University of Tokyo, Kashiwa, Chiba, Japan*

GQ-02. Practical limits for detection of ferromagnetism using high sensitivity magnetometry. L.M. Pereira^{1,2}, J.P. Araujo¹, M.J. Van Bael³, K. Temst² and A. Vantomme². *1. IFIMUP and IN-Institute of Nanoscience and Nanotechnology, University of Porto, Porto, Portugal; 2. IKS - Nuclear and Radiation Physics and INPAC, K. U. Leuven, Leuven, Belgium; 3. Laboratory of Solid-State Physics and Magnetism and INPAC, K. U. Leuven, Leuven, Belgium*

GQ-03. Room temperature ferromagnetism in monoclinic Mn-doped ZrO₂ thin films. H. Nguyen¹, C. Park¹, A. Raghavender¹, O. Ciftja², N.S. Bingham³, M. Phan³ and H. Srikanth³. *1. Physics & Astronomy, Seoul National University, Seoul, Korea, Republic of; 2. Physics, Prairie View A&M University, Prairie View, TX; 3. Physic, University of South Florida, Tampa, FL*

GQ-04. Structural and Magnetic Investigations of DMS SnO₂:Co Thin Films Grown by RF Sputtering. G.M. Stoian¹, P.A. Stampe², R.J. Kennedy², Y. Xin³, E. Lochner¹ and S. von Molnár¹. *1. Physics, Florida State Univ, Tallahassee, FL; 2. Physics, Florida A & M University, Tallahassee, FL; 3. National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL*

GQ-05. Ion irradiation as a controllable approach to study the defect-induced ferromagnetism. S. Zhou¹, K. Potzger¹, Z. Yang², M. Helm¹ and J. Fassbender¹. *1. Institute of Ion Beam Physics and Materials Research, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences, Hefei, Anhui, China*

GQ-06. Charge-transfer induced ferromagnetism in a nanostructured ZnO-Al system: An x-ray absorption near edge structure study. S. Chen¹, J. Garitaonandia^{1,2} and K. Suzuki¹. *1. Materials Engineering, Monash University, Clayton, VIC, Australia; 2. Zientzia eta Teknologia Fakultatea, Euskal Herriko Unibertsitatea, Bilbao, Spain*

GQ-07. Iron doped Zirconia as Dilute Magnetic Semiconductor. D. Sangalli¹, E. Cianci¹, A. Lamperti¹ and A. Debernardi¹. *1. Laboratorio MDM, IMM-CNR, Agrate Brianza, (MB), Italy*

GQ-08. The spin ordering in ZnCoO by hydrogen mediation and its applications. S. Jeong¹, S. Lee¹, Y. Cho¹, J. Shin², W. Kim¹, S. Kim², C. Cho² and H. Koinuma^{1,3}. *1. Department of Cogno-Mechatronics Engineering, Pusan National University, Miryang, Korea, Republic of; 2. Department of Nano fusion technology, Pusan National University, Miryang, Korea, Republic of; 3. Graduate School of Frontier Science, The University of Tokyo, Kashiwa, Chiba, Japan*

GQ-09. Magnetic and transport properties of Al-doped TiO₂ thin films. X. Wang^{1,2}, Y. Song¹, Y. Sui¹, Z. Liu¹, P. Liu² and J. Tang². *1. Harbin Institute of Technology, Harbin, China; 2. Department of Physics & Astronomy, University of Wyoming, Laramie, WY*

GQ-10. Size, Surface Structure and Doping Effects on Ferromagnetism in SnO₂. G.A. Alanko¹, A. Thurber¹ and A. Punnoose¹. *1. Physics, Boise State University, Boise, ID*

GQ-11. Unusual crystallite expansion and modification of ferromagnetism due to aging in pure and doped ZnO nanoparticles. A.P. Thurber¹, G.L. Beausoleil¹, K.N. Dodge¹ and A. Punnoose¹. *1. Physics, Boise State University, Boise, ID*

GQ-12. Carrier-mediated Interaction of Magnetic Moments in Oxygen Vacancy Controlled Epitaxial Mn doped ZnO Thin Films. D. Mukherjee¹, P. Mukherjee¹, H. Srikanth¹ and S. Witanachchi¹. *1. Department of Physics and Center for Integrated Functional Materials (CIFM), University of South Florida, Tampa, FL*

GQ-13. Ferromagnetic and ferroelectric properties of Cu-doped ZnO. X. Huang¹, T. Heng¹, K. Zeng² and J. Ding¹. *1. Materials Science and Engineering, National University of Singapore, Singapore, Singapore; 2. Mechanical Engineering, National University of Singapore, Singapore, Singapore*

GQ-14. Room Temperature Spontaneous Magnetization in Undoped ZnO Nanoparticles. D. Ortega^{1,2}, S.J. Chen³, K. Suzuki³ and J.S. Garitaonandia⁴. *1. Physics and Astronomy, University College London, London, Greater London, United Kingdom; 2. The Davy-Faraday Research Laboratory, The Royal Institution of Great Britain, London, United Kingdom; 3. Department of Materials Engineering, Monash University, Melbourne, VIC, Australia; 4. Fisika Aplikatua II, Euskal Herriko Unibertsitatea, Bilbao, Bizkaia, Spain*

GQ-15. Ab initio calculation of ferromagnetism in Ti:ZnO with a corrected-band-gap scheme. B. Shao¹, H. Liu² and X. Zuo¹. *1. College of Information Technical Science, Nankai University, Tianjin, China; 2. Office of International Academic Exchanges, Nankai University, Tianjin, China*

THURSDAY
MORNING
8:00

SAGUARO BALLROOM

Session GR
RARE-EARTH ALLOY NANOSTRUCTURES
(Poster Session)
Narayan Poudyal, Chair

GR-01. Fine grained NdFeB magnets prepared by low temperature pre-sintering and subsequent hot pressing. R. Chen^{1,2}, X. Tang^{1,2}, C. Yan^{1,2}, W. Yin^{1,2}, M. Lin^{1,2}, D. Lee^{1,2} and A. Yan^{1,2}. *1. Key Laboratory of Magnetic Materials and Devices, Ningbo Institute of Material Technology and Engineering, Ningbo, China; 2. Zhejiang Province Key Laboratory of Magnetic Materials and Application Technology, Ningbo Institute of Material Technology and Engineering, Ningbo, China*

GR-02. Novel Sm-Fe-N Nanoflakes Produced by Surfactant-Assisted High Energy Ball Milling. N. Gunduz Akdogan¹, L. Zheng^{1,2}, W. Li¹ and G.C. Hadjipanayis¹. *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. School of Electromechanical Engineering, Hebei University of Engineering, Handan, China*

GR-03. Effect of milling time on magnetic properties and structures of bulk Sm-Co/(Fe, Co) nanocomposite magnets. Y. Shen^{1,5}, M. Huang^{2,5}, Z. Turgut^{2,5}, M. Lucas^{3,5}, E. Michel^{4,5} and J. Horwath⁵. *1. UDRI, University of Dayton, Dayton, OH; 2. UES Inc., Dayton, OH; 3. UTC Inc., Dayton, OH; 4. Wright State University, Dayton, OH; 5. AFRL, Wright-Patterson Air Force Base, Dayton, OH*

GR-04. The mixing of Fe/Co and its effect on the exchange interaction in SmCo₅/α-Fe nano-composite: a first-principles study. X. Liu¹ and Z. Altounian¹. *1. physics department, McGill University, Montreal, QC, Canada*

GR-05. Temperature effect on dipolar and exchange interactions for $\text{SmCo}_5 + \text{Fe}_{65}\text{Co}_{35}$ nanocomposite powders. L.P. Muñoz Ortega¹, J.T. Elizalde Galindo¹, C.R. Santillan Rodriguez² and J.A. Matutes Aquino². *Physics and Mathematics, Universidad Autónoma de Ciudad Juárez, Cd. Juárez, Chihuahua, Mexico; 2. Centro de Investigación en Materiales Avanzados, Chihuahua, Chihuahua, Mexico*

GR-06. Highly coercive and textured SmCo_5 nanoflakes prepared by surfactant assisted high energy ball milling. S.K. Pal¹, J. Thielsch¹, L. Schultz¹ and O. Gutfleisch¹. *Institute of Metallic Materials, Leibniz IFW Dresden, Dresden, Germany*

GR-07. Structure and magnetic properties of magnetic field annealed $\text{Nd}_2\text{Fe}_{14}\text{B}/\alpha\text{-Fe}$ composite magnets. X. Zhang¹, Y. Liu¹, Q. Ma¹, Q. Zhang¹ and L. Xu¹. *School of Mathematics, Physics and Biological Engineering, Inner Mongolia University of Science and Technology, Baotou, Inner Mongolia, China*

GR-08. Influence of in situ precipitated $\alpha\text{-Fe}$ atoms on structure and magnetic properties of $\text{NdFeB}/\alpha\text{-Fe}$ nanocomposite magnets based NdFeB melt-spun. J. Nie¹, J. Liu¹, J. Du¹, D. Lee¹, W. Li^{1,2} and A. Yan¹. *Ningbo Institute of Material Technology & Engineering, CAS, Ningbo, China; 2. Division of Functional Materials, Central Iron and Steel Research Institute, Beijing, China*

GR-09. Synthesis, microstructure and magnetic properties of low Nd content $\text{Fe}_{90}\text{Nd}_{5}\text{B}_{3.5}\text{M}_{1.5}$ ($\text{M} = \text{Hf, Ti}$ and Ta) alloys. Z. Zeqiang¹, S. Parmanand², Y. Kunio² and M. Akihiro². *Graduate School, Tohoku University, 980-8577, Sendai, Japan; 2. Institute for Materials Research, Tohoku University, 980-8577, Sendai, Japan*

GR-10. Hexagonal nanorods in disproportionated $\text{Sm}_2\text{Fe}_{17}$ and $\text{Nd}(\text{Fe},\text{Mo})_{12}$ alloys. Z. Lin¹, J. Han¹, M. Xing¹, S. Liu¹, J. Yang¹ and Y. Yang¹. *Peking University, Beijing, China*

GR-11. Melt spun and suction cast Nd-Fe-Co-B-Nb hard magnets with high Nd contents. X. Cui¹, Z. Liu¹ and D. Zeng¹. *School of Material Science and Engineering, South China University of Technology, Guangzhou, China*

GR-12. Structure and magnetic properties of nanocrystalline $\text{Sm}_2\text{Co}_{17}/\text{Co}$ magnet prepared by SPS. D. Zhang^{1,2}, W. Geng¹, M. Yue¹, W. Liu¹, J. Zhang¹ and Y. Qiang². *College of Science and Engineering, Beijing university of technology, Beijing, China; 2. Physics Department, University of Idaho, Moscow, ID*

GR-13. Magnetic excitations in rare earth based nanosystems. K. Dumesnil¹, C. Dufour¹, S. Petit² and A. Bataille². *Institut Jean Lamour, Vandoeuvre les Nancy, France; 2. Laboratoire Léon Brillouin, Saclay, France*

GR-14. Microstructure and magnetic properties of the FePt film on a membrane of anodized aluminium oxide. C. Chang¹, S. Chen^{1,2} and Y. Yao². *Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan*

GR-15. Effects of Ta spacer layers on the thermal stability, microstructures and magnetic properties of FePt films on $\text{Si}(100)$. S. Chen^{1,2}, Y. Yao² and C. Yu³. *Institute of Physics, Academia Sinica, Taipei, Taiwan; 2. Institute of Applied Science and Engineering, Fu Jen University, Taipei, Taiwan; 3. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan*

THURSDAY
MORNING
8:00

SAGUARO BALLROOM

Session GS
SPINTRONIC EFFECTS AND DOMAIN WALLS
(Poster Session)
Vasil Tiberkevich, Chair

GS-01. Oscillatory interlayer exchange coupling in CPP-GMR trilayer with $\text{Co}_2\text{Fe}(\text{Al}_{0.5}\text{Si}_{0.5})$ Heusler alloy layers and a Ag spacer. T.M. Nakatani¹, T. Furubayashi¹ and K. Hono¹. *National Institute for Materials Science, Tsukuba, Japan*

GS-02. Observation of anomalous Hall-Effect in perpendicular magnetized Mn_{3-x}Ga thin films. D. Ebke¹, M. Glas¹, S. Fabretti¹, P. Thomas¹ and G. Reiss¹. *Thin Films and Physics of Nanostructures, Bielefeld University, Bielefeld, Germany*

GS-03. Determination of Magnetoresistance of Single Domain Wall in Perpendicularly Magnetized TbFeCo Wire. S. Li¹, T. Amagai¹, X. Liu^{1,2} and A. Morisako^{1,2}. *Information Engineering, Faculty of Engineering, Shinshu University, Nagano, Japan; 2. Spin Device Technology Center, Faculty of Engineering, Shinshu University, Nagano, Japan*

GS-04. Anomalous Hall Effect in Co-based Heusler Compounds Co_2FeAl and Co_2FeSi . I. Imort¹, G. Reiss¹ and A. Thomas¹. *University Bielefeld, Bielefeld, Germany*

GS-05. Magnetic and Transport Properties of Perpendicularly Magnetized Co/Pd Nano-wires. X. Liu¹ and A.O. Adeyeye¹. *Electrical and Computer Engineering, Information Storage Materials Laboratory, Singapore, Singapore*

GS-06. Magnetization and magnetoresistance First-Order-Reversal-Curves in spin-valves. L. Alonso¹, L.C. Nagamine¹ and D.R. Cornejo¹. *Physics of Materials Dept., University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil*

- GS-07. Observation of Anomalous Hall effect in Cu-Py-crossed structure with in-plane magnetization.** D. Chen¹, Y. Yao², Y. Chiu³ and S. Lee³. *1. Department of Material Science and Engineering, National Cjiao Tung University, Hsinchu, Taiwan; 2. Graduate Institute of Applied Science and Engineering, Fu Jen Catholic University, New Taipei, Taiwan; 3. Institute of Physics, Academia Sinica, Taipei, Taiwan*
- GS-08. Effect of different compositions of CoFeB spin polarizer on magnetoresistance and switching property of Co/Pd multilayers with PMA.** T. Tahmasebi^{1,2}, S. Piramanayagam¹, R. Sbiaa¹, H. Tan¹ and T. Chong³. *1. Data Storage Institute (DSI), Data Storage Institute (DSI), A*STAR (Agency for Science, Technology and Research), 5, Engineering Drive 1, Singapore, Singapore; 2. Electrical and Computer Engineering Department, National University of Singapore, NUS, Singapore, Singapore; 3. Singapore University of Technology and Design (SUTD), Singapore, Singapore*
- GS-09. Magnetotransport properties of ferromagnetic semiconductor superlattices based on GaMnAs.** S. Chung¹, S. Lee¹, H. Lee¹, T. Yoo¹, S. Lee¹, X. Liu² and J.K. Furdyna². *1. Department of physics, kroea university, Seoul, Korea, Republic of; 2. Department of physics, University of Notre Dame, Notre Dame, IN*
- GS-10. Effect of inserting a permalloy film in current-perpendicular-to-plane Co-HfO₂ granular film device.** S. Regunathan¹ and V. Ng¹. *1. Information Storage Materials Laboratory, Electrical and Computer Engineering Department, National Univ Singapore, Singapore, Singapore*
- GS-11. Enhanced junction magnetoresistance in La_{0.7}Sr_{0.3}MnO₃/ZnO:Fe,Al carrier induced dilute magnetic semiconductor heterojunctions.** T.K. Nath¹, S. Chattopadhyay¹ and J. Panda¹. *1. Physics and Meteorology, Indian Institute of Technology Kharagpur, Kharagpur, West Bengal, India*
- GS-12. Temperature Dependence of Spin Polarization in Co/Ni Determined from Current Induced DW Motion.** K. Ueda¹, T. Koyama¹, D. Chiba^{1,2}, Y. Nakatani³ and T. Ono¹. *1. Institute for Chemical Research, Kyoto Uni., Uji, Kyoto, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Saitama, Japan; 3. University of Electro-Communications, Chofu, Tokyo, Japan*
- GS-13. Direct Imaging of Non-Adiabatic Spin Torque Effects on Vortex Core Orbits.** S. Pollard¹, L. Huang¹, K.S. Buchanan², D.A. Arena³ and Y. Zhu¹. *1. Condensed Matter Physics and Materials Science, Brookhaven National Laboratory, Upton, NY; 2. Department of Physics, Colorado State University, Fort Collins, CO; 3. National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY*
- GS-14. Spinmotive force as a universal probe of domain-wall dynamics.** O. Tretiakov¹, Y. Liu¹ and A. Abanov¹. *1. Physics, Texas A&M University, College Station, TX*

- GS-15. Magnetic ripple dynamics under spin current.** Y. Togawa^{1,4}, K. Takayanagi¹, Y. Nakatani², S. Mori^{3,4} and K. Harada³. *1. Nanoscience and Nanotechnology Research Center, Osaka Prefecture University, Sakai, Osaka, Japan; 2. Graduate School of Informatics and Engineering, University of Electro-Communications, Choufu, Tokyo, Japan; 3. Department of Materials Science, Osaka Prefecture University, Sakai, Osaka, Japan; 4. CREST, Japan Science and Technology Corporation (JST), Chiyoda, Tokyo, Japan*

THURSDAY
MORNING
8:00

SAGUARO BALLROOM

Session GT
MAGNETOELECTRONIC MATERIALS II
(Poster Session)

Jing Lou, Chair

- GT-01. E-field tuning microwave frequency performance of nanocomposite Co₂FeSi/PZN-PT magnetoelectric coupling structure.** S. Li¹, M. Liu^{2,3}, J. Lou², J. Qiu¹, J. Lin¹, X. Cai¹, F. Xu⁴, N. Sun² and J. Duh⁵. *1. Physics, Fujian Normal University, Fuzhou, Fujian, China; 2. Electrical and Computer Engineering, Northeastern University, Boston, MA; 3. Center for Nanoscale materials, Argonne National Laboratory, Argonne, IL; 4. Materials Science and Technology, Nanjing University of Science and Technology, Nanjing, Jiangsu, China; 5. Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan*
- GT-02. Epitaxial BaTiO₃-Mn_{0.4}Zn_{0.87}Fe₂O₄ magnetodielectric nanocomposite films.** F. Bai^{1,2} and H. Zhang¹. *1. State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China; 2. Department of Materials Science and Engineering, Virginia Tech, Blacksburg, VA*
- GT-03. Electrical control of reversible and permanent magnetization reorientation for magnetoelectric memory devices.** T. Wu¹, A. Bur¹, K. Wong², P.K. Amiri², K.L. Wang² and G.P. Carman¹. *1. Mechanical and Aerospace Engineering, UCLA, Los Angeles, CA; 2. Electrical Engineering, UCLA, Los Angeles, CA*
- GT-04. Highly Self-biased magnetoelectric response in magnetostrictive/piezoelectric composite with two different ferromagnetic materials.** L. Chen¹, P. Li¹, Y. Wen¹, J. Qiu¹ and P. Wang¹. *1. College of Optoelectronic Engineering, Chongqing University, Chongqing, China*

- GT-05. Dimension-dependent frequency multiplying behavior in magnetoelectric laminate devices.** W. Zhang¹, G. Yin¹, J. Bai¹, J. Cao¹, D. Wei², X. Liu³ and F. Wei¹. *1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, Gansu, China; 2. Lab of Advanced Materials, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China; 3. Department of Information Engineering, Shinshu University, Nagano, Japan*
- GT-06. Magnetolectric effect in AlN/CoFe bi-layer thin film composites.** N.B. Simhachalam¹ and L. Malkinski¹. *Advanced Materials Research Institute, University of New Orleans, New Orleans, LA*
- GT-07. High Magnetolectric Tuning Effect in Polymer-Based Laminates of Epoxy-Bonded Terfenol-D Pseudo-1-3 Magnetostrictive Composite and PVDF Piezoelectric Polymer under Resonance Drive.** Y. Duan^{1,2}, C. Leung² and S. Or². *1. College of Civil Engineering and Architecture, Zhejiang University, Hangzhou, China; 2. Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, China*
- GT-08. Magneto-Electric Effects on A Single Slab of Sr Z-type Hexa-Ferrite at Room Temperature.** K. Ebnabbasi¹, Y. Chen¹, A. Geiler¹, V. Harris¹ and C. Vittoria¹. *Northeastern University, Boston, MA*
- GT-09. Electric field modulation of magnetism and electroresistance in magnetoelectric heterostructures.** S. Chen^{1,2}, Q. Ye¹, F. Liu¹, S. Li^{1,3}, Z. Huang¹ and D. Wang². *1. Department of Physics, Fujian Normal University, Fuzhou, Fujian, China; 2. Department of Physics, Nanjing University, Nanjing, Jiangsu, China; 3. Department of Electrical and Computer Engineering, Northeastern University, Boston, MA*
- GT-10. Electrical and magnetic properties of La-doped Bi₂FeCrO₆ synthesized by high pressure sintering.** F. Bai¹, L. Shi¹ and H. Zhang¹. *State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*
- GT-11. Effects of local structural distortion on electric polarization and magnetization in BiFeO₃ with Pr, Ba co-doping.** G. Cheng¹, Z. Jiang¹, J. Du¹ and X. Wu¹. *Lab of Solid State Microstructures and Department of Physics, Nanjing University, Nanjing, Jiangsu, China*
- GT-12. Effect of reduced particle size on the magnetic and dielectric properties of chemically synthesized multiferroic DyFeO₃ Nanocrystals.** A. Jaiswal¹, R. Das¹, T. Maity¹ and P. Poddar¹. *Physical Chemistry Div., National Chemical Laboratory, Pune, India*
- GT-13. Electric field control of magnetic anisotropy in Fe/BaTiO₃** V. Gorige¹, Y. Shirahata¹, M. Itoh¹ and T. Taniyama¹. *Materials and Structures Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

- GT-14. LI₀ ordered Fe₅₀Pt₅₀ and Co-based superlattices as perpendicular magnetic electrodes for tunnel junctions.** Z. Kugler¹, G. Reiss¹ and A. Thomas¹. *Thin Films and Physics of Nanostructures, Bielefeld University, Bielefeld, NRW, Germany*
- GT-15. Comprehensive analysis on the magnetolectric response of magnetostrictive/piezoelectric laminate transducers.** Y. Wen¹, P. Li¹, J. Yang¹, D. Wang¹ and J. Qiu¹. *Optoelectric Eng Dept, Chongqing Univ., Chongqing, China*

THURSDAY
MORNING
8:00

SAGUARO BALLROOM

Session GU
CONTINUOUS RECORDING MEDIA
(Poster Session)

Hans-Juergen Richter, Chair

- GU-01. Microstructure and Pinning Site Study of Highly (0001) Textured Sm(Co,Cu)₅ Thin Films Grown on Ru Underlayer.** H. Zhao¹, H. Wang¹, X. Liu¹ and J. Wang¹. *MINT Center, Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*
- GU-02. Effects of oxide additives on inter-grain coupling.** H. Hou¹, J. Liao¹, L. Wang¹, C. Lai¹, R. Chen², C. Chiu², H. Lin³ and F. Chang³. *1. Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. China Steel Corporation, Kaohsiung, Taiwan; 3. National Synchrotron Radiation Research Center, Hsinchu, Taiwan*
- GU-03. Relationship between magnetic viscosity, reptation and adjacent track interference in advanced exchange-coupled perpendicular recording media.** K. Srinivasan¹ and E. Roddick¹. *Western Digital, San Jose, CA*
- GU-04. Switching Phase Diagrams of ECC media Using Two-Particle Model.** K. Zhang¹, Z. Han¹, D. Wei¹ and K. Gao². *1. Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China; 2. Advance Technology Development, Seagate Technology, Bloomington, MN*
- GU-05. Ferro-Magnetic Resonance with Coupling Mode for Magnetic Nano-Column Assembly.** D. Hasegawa¹ and S. Saito². *1. Waseda Institute for Advanced Study, Waseda University, Tokyo, Tokyo, Japan; 2. Department of Electronic Engineering, Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan*

GU-06. Quantitative Evaluation of Intergranular Exchange Field for Granular Media by Ferromagnetic Resonance. S. Hinata¹, S. Saito¹, D. Hasegawa² and M. Takahashi¹. *Electronic Engineering, Tohoku Univ., Sendai, Miyagi, Japan; 2. Waseda Institute for Advanced Study, Waseda Univ., Shinjuku-ku, Tokyo, Japan*

GU-07. Magnetic anisotropy of $L1_0$ type FePt-X (X=C, SiO₂ and TiO₂) granular media. Y. Inaba^{1,2}, T. Shimatsu¹, D. Inoue^{1,2}, K. Kudo^{1,3}, H. Aoi¹, S. Okamoto⁴ and O. Kitakami⁴. *RIEC, Tohoku University, Sendai, Japan; 2. Fuji Electric Co., Ltd., Matsumoto, Japan; 3. Tanaka Kikinzoku Kogyo K.K., Tsukuba, Japan; 4. IMRAM, Tohoku University, Sendai, Japan*

GU-08. Magnetic studies of FePt(001) films with graded anisotropy deposited on glass substrates. F. Yuan¹, J. Hsu¹, Y. Lin², P. Kuo² and J.K. Mei³. *1. Physics, National Taiwan University, Taipei, Taiwan; 2. Materials Science & Engineering, National Tawian University, Taipei, Taiwan; 3. Department and Institute of Electrical Engineering, Minghsin University of Science and Technology, Hsin-Chu, Taiwan*

GU-09. Grain segregation and thermal stability for thin $L1_0$ -FePt-C granular media. K. Kudo^{1,2}, Y. Inaba^{1,3}, D. Inoue^{1,3}, H. Aoi¹ and T. Shimatsu¹. *RIEC, Tohoku University, Sendai, Japan; 2. Tanaka Kikinzoku Kogyo K.K., Tsukuba, Japan; 3. Fuji Electric Co., Ltd., Matsumoto, Japan*

GU-10. Fabrication of Ultra Thin $L1_0$ -FePt Based Exchange Coupled Composite Media. H. Zhao^{1,2}, H. Wang¹ and J. Wang¹. *MINT center, Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

GU-11. Magnetic Properties and Magnetization reversal process of $L1_0$ FePt/Fe bilayers magnetic thin films. L. Liu¹, W. Sheng¹, L. Zhang¹, J. Bai¹, B. Ma², F. Wei¹ and J. Lu³. *1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, Gansu, China; 2. State Key Laboratory for Advanced Photonic Materials and Devices, and Department of Optical Science and Engineering, Fudan University, Shanghai, China; 3. Center for Geo-environment Science, Faculty of Engineering and Resource Science, Akita University, Akita, Japan*

GU-12. Structural and magnetic properties of $L1_0$ -FePt/[Co/Pt]N exchange coupled media. H. Guo¹, J. Liao¹, B. Ma¹, Z. Zhang¹ and Q. Jin¹. *Department of Optical Science and Engineering, Fudan University, Shanghai, Shanghai, China*

GU-13. Influence of the reversible and irreversible magnetization changes in reversal processes. I. Bodale¹ and A. Stancu¹. *Alexandru Ioan Cuza University, Iasi, Romania*

GU-14. Capped $L1_0$ -ordered FePt granular media for reducing surface roughness. I. Takekuma¹, H. Nemoto¹, H. Matsumoto¹, S. Ito¹, J. Sayama¹, A. Hirotsume¹ and Y. Hirayama¹. *Central Research Lab., Hitachi, Ltd., Odawara, Kanagawa, Japan*

GU-15. Effect of annealing temperature on microstructure and magnetism of FePt/TaO_x bilayer. G. Li¹, C. Leung², Y. Chen³, K. Lin³ and P. Pong¹. *1. Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong, Hong Kong; 2. Department of Applied Physics, Hong Kong Polytechnic University, Hong Kong, Hong Kong; 3. Department of Materials Science and Engineering, National Chung Hsing University, Taichung, Taiwan*

THURSDAY
MORNING
8:00

SAGUARO BALLROOM

Session GV
CRYSTALLINE ALLOYS I
(Poster Session)
Akimitsu Morisako, Chair

GV-01. Multiple phase-transformation and resultant magnetic properties in Fe₃Pt thin films. S. Hsiao^{1,2}, S. Chen¹ and H. Lee². *1. National Synchrotron Radiation Research Center, Hsinchu, Taiwan; 2. Materials science and engineering, Feng Chia University, Taichung, Taiwan*

GV-02. High frequency Magnetic properties and microstructure of NiZn/Co₂Z composite ferrite material. Z. Zheng¹, Z.H. Wu¹, J.L. Jun¹, L.W. Wing¹ and W.L. Guo¹. *State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, China*

GV-03. Effect of attrition time on the microwave permeability of magnetic Fe-Si-Al flakes. M. Han¹, J. Qin¹, D. Liang¹ and L. Deng¹. *State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

GV-04. Cation Distribution in Nickel Manganese oxide. S. Cheng^{1,2}, J. Line¹, K. Kuo³ and G. Chern³. *1. Center for Condensed Matter and Sciences, National Taiwan University, Taipei, 10617 Taiwan (R.O.C), Taiwan; 2. Department of Materials Science and Engineering, National Taiwan University, Taipei, 10617, Taiwan; 3. Department of Physics, National Chung Cheng University, Chiayi, 621, Taiwan*

GV-05. Preparation and characterization of metastable bcc-Co thin films on GaAs substrates with different orientations. Y. Nonaka¹, M. Ohtake¹, M. Futamoto¹, H. Ohashi², M. Sakamoto² and N. Inaba². *1. Faculty of Science and Engineering, Chuo University, Tokyo, Japan; 2. Department of Electrical and Electronic Engineering, Yamagata University, Yamagata, Japan*

GV-06. Magnetic properties of the FeCo films deposited onto various underlayer. X. Liu¹ and A. Morisako¹. *Department of Information Engineering, Shinshu University, Nagano, Japan*

GV-07. Electromagnetic and Microwave Absorption Properties of Magnetic Stainless Steel Powder in 2-18 GHz. R. Yang¹, W. Liang², C. Lou³ and J. Lin³. *1. Department of Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 2. Department of Aeronautics and Astronautics, National Cheng Kung University, Tainan, Taiwan; 3. Department of Fiber and Composite Materials, Feng Chia University, Taichung, Taiwan*

GV-08. Unusual magnetization characteristics in Fe-Ni films with graded composition. L. Malkinski¹, A.L. Fogel², S. Min¹ and R. Eskandari¹. *1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA; 2. Department of Engineering and Technology, Western Washington University, Bellingham, WA*

GV-09. The Microstructures and Magnetostriction of Fe-Ga-Al Alloys. Y. Zhou^{1,2}, X. Wang¹ and B. Wang³. *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Wollongong, NSW, Australia; 2. School of Science, Tianjin University of Commerce, Tianjin, China; 3. Research center of Magnetic Technique and Magnetic Materials, Hebei University of Technology, Tianjin, China*

GV-10. Microstructures and magnetic properties of Bi-substituted NiCuZn ferrite. L. Jia¹, H. Zhang¹, X. Wu¹ and B. Liu¹. *University of Electronic Science and Technology of China, Chengdu, China*

GV-11. Preparation and structural characterization of Fe thin films epitaxially grown on Cu(100) single-crystal underlayers. K. Shimamoto¹, M. Ohtake¹ and M. Futamoto¹. *Faculty of Science and Engineering, Tokyo, Japan*

GV-12. Analysis of magnetic anisotropy of FeCoAlON thin films by the domain structures. Y. Lou¹, G. Yin¹, F. Zheng¹, J. Bai¹, D. Wu¹, D. Wei², X. Liu³ and F. Wei¹. *Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, Gansu, China; 2. Lab of Advanced Materials, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China; 3. Department of Information Engineering, Shinshu University, Nagano, Japan*

GV-13. Morphology and its effect on magnetization of Fe₃O₄ nanoparticles. K.L. López Maldonado¹, J.T. Elizalde Galindo¹, E. Flores Tavizón², J.R. Farias Mancilla¹, P. De la Presa³ and J.A. Matutes Aquino⁴. *1. Physics and Mathematics, Universidad Autónoma de Ciudad Juárez, Ciudad Juárez, Chihuahua, Mexico; 2. Civil Engineering and Environmental, Universidad Autónoma de Ciudad Juárez, Ciudad Juárez, Chihuahua, Mexico; 3. Instituto de Magnetismo Aplicado - UCM-ADIF-CSIC, Madrid, Las Rozas, Spain; 4. Centro de Investigación en Materiales Avanzados, Chihuahua, Chihuahua, Mexico*

GV-14. Synthesis of Iron Oxide Nanoparticles Using an Electrolysis Method. J. Lee¹, J. Cheon¹, S. Cho¹, J. Kim^{1,2} and J. Kim¹. *1. Metallurgy and Materials Engineering, Hanyang university, Ansan, Korea, Republic of; 2. Research Institute of Engineering and Technology, Hanyang university, Ansan, Korea, Republic of*

GV-15. A study on structure and magnetic properties of Mg-Cu-Zn ferrite synthesized by co-precipitation method. H. Zhou¹, Z. Wang¹ and L. Ni¹. *1. tianjin university, Tianjin, tianjin, China*

THURSDAY
MORNING
8:00

SAGUARO BALLROOM

Session GW
SPIN TRANSFER TORQUE OSCILLATORS II
(Poster Session)
Yizheng Wu, Chair

GW-01. Control of spin-wave emission characteristics of spin-torque nano-oscillators. V.E. Demidov¹, S. Urazhdin² and S.O. Demokritov¹. *1. Institute for Applied Physics, University of Muenster, Muenster, Germany; 2. Department of Physics, Emory University, Atlanta, GA*

GW-02. Microwave oscillations in Serially Coupled Spin Transfer Nano-Oscillators. J. Park¹, B. Min¹, S. Park², K. Lee³ and K. Shin¹. *1. Spin Device Research Center, Korea Institute of Science and Technology, Seoul, Korea, Republic of; 2. Division of Materials Science, Korea Basic Science Institute, Daejeon, Korea, Republic of; 3. Department of Materials Science, Korea University, Seoul, Korea, Republic of*

GW-03. Direct evidence of high power and low critical current spin torque oscillation from in-plane right angle magnetic tunnel junction. Y. Zhang¹, H. Zhang¹, A. Lyle¹, P. Crowell² and J. Wang¹. *1. Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Department of Physics, University of Minnesota, Minneapolis, MN*

GW-04. Variation of Spin Torque Nanocontact Oscillators with Field Sign and Direction. M. Pufall¹, W.H. Rippard¹ and S. Russek¹. *Electromagnetics Division, NIST, Boulder, CO*

GW-05. 1/f and white frequency noise in a synchronized spin torque oscillator pair. A. Eklund¹, S. Bonetti¹, S.R. Sani¹, J. Persson¹, S. Mohseni¹, B. Malm¹ and J. Åkerman^{1,2}. *1. School of Information and Communication Technology, KTH Royal Institute of Technology, Kista, Sweden; 2. Department of Physics, University of Gothenburg, Gothenburg, Sweden*

GW-06. Current-induced Precession of Composite Free Layer with Interlayer Exchange Coupling in MTJ. R. Sugano^{1,4}, M. Ichimura^{1,4}, S. Takahashi^{2,4} and S. Maekawa^{3,4}. *1. CRL, Hitachi, Ltd., Hatoyama, Saitama, Japan; 2. IMR, Tohoku Univ., Sendai, Japan; 3. ASRC, JAEA, Tokai, Ibaraki, Japan; 4. JST-CREST, Chiyoda, Tokyo, Japan*

GW-07. Finite-element modeling of the electrical properties of magnetic nanocontact devices. S. Petit-Watelot¹, R. M. Otxoa¹, M. Manfrini^{2,3}, J. Kim¹, A. Vansteenkiste⁴, B. Van de Wiele⁵ and T. Devolder¹. *1. Institut d'Electronique Fondamentale, Univ. Paris-Sud, and UMR 8622, CNRS, 91405 Orsay, France; 2. IMEC, Leuven, Belgium; 3. Physics and Astronomy department, K.U. Leuven, Leuven, Belgium; 4. Department of Solid State Science, Ghent University, B-9000 Ghent, Belgium; 5. Department of Electrical Energy, Systems and Automation, Ghent University, B-9000 Ghent, Belgium*

GW-08. Noise-Induced Synchronization of Spin Torque Nano Oscillators. K. Nakada¹, S. Yakata^{1,2} and T. Kimura^{1,2}. *1. INAMORI FRC, Kyushu University, Fukuoka, Japan; 2. CREST, Japan Science and Technology, Tokyo, Japan*

GW-09. Giant magnetoresistance and spin-transfer in spin-valves with CoFe/Pd multilayers. A.M. Deac^{1,2}, W.H. Rippard² and M. Pufall². *1. Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland; 2. National Institute of Standards and Technology, Boulder, CO*

GW-10. Delay detection of frequency modulation of spin-torque oscillator for read head application. T. Nagasawa¹, H. Suto¹, K. Kudo¹, T. Yang¹, K. Mizushima¹ and R. Sato¹. *1. Frontier Research Laboratory, Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

GW-11. Analysis of thermally-induced synchronization between magnetization regimes in spin-transfer nano-oscillators. M. d'Aquino¹, C. Serpico², R. Bonin³, G. Bertotti⁴ and I.D. Mayergoyz⁵. *1. Dipartimento per le Tecnologie, Università di Napoli "Parthenope", Napoli, Italy; 2. Dipartimento di Ingegneria Elettrica, Università di Napoli Federico II, Napoli, Italy; 3. Politecnico di Torino - sede di Verres, Aosta, Italy; 4. Istituto Nazionale di Ricerca Metrologica, Torino, Italy; 5. ECE Dept. and UMIACS, University of Maryland, College Park, MD*

GW-12. Spin-transfer-torque switching in spin-valve structures with perpendicular, canted, and in-plane magnetic anisotropies. H. Seinige¹, U. Roy², F. Ferdousi², J. Mantey², M. Tsou¹ and S.K. Banerjee². *1. Physics Department, University of Texas at Austin, Austin, TX; 2. Microelectronics Research Center, University of Texas at Austin, Austin, TX*

GW-13. Dynamic role of coupled edge solitons in vortex-core magnetization reversals. K. Lee¹ and S. Kim¹. *1. Research Center for Spin Dynamics & Spin-Wave Devices, Nanospinics Laboratory, and Research Institute of Advanced Materials, Department of Materials Science and Engineering, Seoul Natl Univ, Seoul, Korea, Republic of*

GW-14. Spin-transfer-driven spin waves in perpendicular spin valve nanopillar. W. Lin¹, H. Zhang², Y. Liu² and S. Mangin¹. *1. Institut Jean Lamour, Nancy-Université, Vandoeuvre-lès-Nancy, France; 2. Department of Physics and Shanghai Key Laboratory of Special Artificial Microstructure Materials and Technology, Tongji University, Shanghai, China*

GW-15. Spin-transfer-torque reversal in perpendicular anisotropy spin valves with composite free layers. I. Yuliev¹, M. Lubarda¹, S. Mangin², V. Lomakin¹ and E.E. Fullerton¹. *1. Center for Magnetic Recording Research, UC San Diego, La Jolla, CA; 2. Institut Jean Lamour, Nancy Université/CNRS, Nancy, France*

THURSDAY
AFTERNOON
1:30

GRAND CANYON 6

Session HA
SYMPOSIUM ON ARTIFICIAL SPIN ICE:
DISCOVERING FRUSTRATION AND
EMERGENT MONOPOLES WITH
NANOMAGNETS

John Cumings, Co-Chair
Laura Heyderman, Co-Chair

1:30

HA-01. Frustration by design: Artificial Frustrated Magnets. (Invited) P. Schiffer¹, A. Balk¹, J. Bartell¹, V. Crespi¹, K. Kohli¹, X. Ke², P. Lammert¹, J. Li¹, C. Nisoli³, N. Samarth¹ and S. Zhang¹. *1. Penn State, University Park, PA; 2. Oak Ridge National Laboratory, Oak Ridge, TN; 3. Los Alamos National Laboratory, Los Alamos, NM*

2:06

HA-02. Dynamics in Finite Two-Dimensional Square Spin Ices. (Invited) R. Stamps¹. *1. School of Physics and Astronomy, University of Glasgow, Glasgow, United Kingdom*

2:42

HA-03. Real and effective thermal equilibrium states in artificial square spin ice. (Invited) J. Morgan¹, J. Akerman^{1,2}, A. Stein³, M. Evans¹, S. Langridge⁴ and C. Marrows¹. *1. School of Physics and Astronomy, University of Leeds, Leeds, West Yorkshire, United Kingdom; 2. Instituto de Sistemas Optoelectrónicos y Microtecnología (ISOM), Universidad Politécnica de Madrid, Madrid, Spain; 3. Center for Functional Nanomaterials, Brookhaven National Laboratory, Upton, NY; 4. ISIS, STFC Rutherford Appleton Laboratory, Didcot, Oxfordshire, United Kingdom*

3:18

HA-04. Dynamics and Thermodynamics of Artificial Spin Ices, and the Role of Monopoles. (Invited) G. Möller¹ and R. Moessner². *1. Cavendish Laboratory, University of Cambridge, Cambridge, United Kingdom; 2. Max Planck Institute for the Physics of Complex Systems, Dresden, Germany*

3:54

HA-05. Emergent magnetic monopoles, Dirac strings and avalanches in artificial kagome spin ice. (Invited) H. Braun¹, L.J. Heyderman², E. Mengotti², A. Fraile Rodriguez², F. Nolting² and R. Hügli¹. *1. Physics, University College Dublin, Dublin, Ireland; 2. Paul Scherrer Institute, Villigen PSI, Switzerland*

THURSDAY
AFTERNOON
1:30

GRAND CANYON 7

Session HB
SPINTRONICS: SI AND GRAPHENE
Aubrey Hanbicki, Chair

1:30

HB-01. Spin transport and spin injection into turbostratic graphene. S. Schweitzer¹, A. Patra¹, Y. Hernandez², J. Heidler³, M. Eltschka^{1,3}, X. Feng², K. Müllen² and M. Kläui^{3,4}. *1. FB Physik, University of Konstanz, Konstanz, Germany; 2. Max Planck Institute for Polymer Research, Mainz, Germany; 3. SwissFEL, Paul Scherrer Institut & Laboratory for Nanomagnetism and Spin Dynamics, Ecole Polytechnique Fédérale de Lausanne, Villigen PSI & Lausanne, Switzerland; 4. Institut für Physik, Johannes Gutenberg-Universität Mainz, Mainz, Germany*

1:42

HB-02. Universal Kondo effect in bilayer graphene. K. Gopinadhan^{1,2}, Y.J. Shin^{1,2} and H. Yang^{1,2}. *1. Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore; 2. NUSNNI-Nanocore, National University of Singapore, Singapore, Singapore*

1:54

HB-03. Demonstration of nonlinear interaction between spin and charge in graphene. I.J. Vera-Marun¹, V. Ranjan¹ and B.J. van Wees¹. *1. Physics of Nanodevices, Zernike Institute for Advanced Materials, University of Groningen, Groningen, Netherlands*

2:06

HB-04. Bias dependence of spin transport in graphite spin valves using Cu/Si interfaces. S. Parui¹, J.v. Ploeg¹ and T. Banerjee¹. *1. Physics of Nanodevices Group., University of Groningen, Groningen, Netherlands*

2:18

HB-05. Magnetic Anisotropy of Iron on Strained Graphene. H. Choi¹ and Y. Chung¹. *1. Material Science & Engineering, Hanyang University, Seoul, Korea, Republic of*

2:30

HB-06. Spin-pumping-induced spin transport in p-type Si at room temperature. E. Shikoh¹, K. Ando², E. Saitoh^{2,3}, T. Shinjo¹ and M. Shiraishi^{1,4}. *1. Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 2. IMR, Tohoku University, Sendai, Japan; 3. CREST, JST, Sanbancho, Tokyo, Japan; 4. PRESTO, JST, Sanbancho, Tokyo, Japan*

2:42

HB-07. Spin transport in graphene. (Invited) B. Ozyilmaz¹. *1. Physics Department, NanoCore, Graphene Research Center, National University of Singapore, Singapore, Singapore*

3:18

HB-08. Comparing nonlocal and three terminal Hanle experiments in Silicon. O. van 't Erve¹, C.H. Li¹, A.T. Hanbicki¹, P.E. Thompson¹ and B.T. Jonker¹. *1. Naval Research Laboratory, Washington, DC*

3:30

HB-09. Non-local spin transport in highly-doped Si under a dc electric current. M. Kameno¹, E. Shikoh¹, T. Shinjo¹, Y. Suzuki¹, M. Shiraishi¹, T. Sasaki², T. Oikawa², K. Noguchi² and T. Suzuki³. *1. Engineering Science, Osaka University, Toyonaka, Osaka, Japan; 2. TDK Corporation, Nagano, Japan; 3. AIT, Akita, Japan*

3:42

HB-10. Analysis of the Hanle effect in Si MOS inversion channels at 300 K. Y. Takamura¹ and S. Sugahara^{1,2}. *1. Imaging Science and Engineering Laboratory, Tokyo Institute of Technology, Yokohama, Japan; 2. CREST, Japan Science and Technology Agency, Kawaguchi, Japan*

3:54

HB-11. Spin injection and detection in CoFe/AlOx/SOI junctions investigated by Hanle effect measurements. T. Inokuchi¹, M. Ishikawa¹, H. Sugiyama¹, Y. Saito¹ and N. Tezuka². *1. Toshiba Corporation, Kawasaki, Japan; 2. Tohoku University, Sendai, Japan*

4:06

HB-12. Efficient spin injection into silicon using SiO₂/ferromagnet tunnel contact, demonstrating weak temperature dependence. *A. Dankert¹ and S.P. Dash¹. Chalmers University of Technology, Göteborg, Sweden*

4:18

HB-13. Local spin transport with spin precession in highly doped Si. *T. Sasaki¹, T. Oikawa¹, T. Suzuki², M. Shiraishi³, Y. Suzuki³, H. Koike¹ and K. Noguchi¹. 1. SQ Research Center, TDK corporation, Saku, Nagano, Japan; 2. Akita Industrial Technology Center, Akita, Akita, Japan; 3. Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan*

THURSDAY
AFTERNOON
1:30

GRAND CANYON 8

Session HC
SPIN TRANSFER TORQUE OSCILLATORS III
Ilya Krivorotov, Chair

1:30

HC-01. Self-modulation in a perpendicular free layer spin torque nano oscillator. *S. Mohseni², S. Sani², Y. Pogoryelov^{1,2}, P.K. Muduli¹, J. Persson², S. Bonetti² and J. Akerman^{1,2}. 1. Physics Department, University of Gothenburg, Gothenburg, Sweden; 2. Materials Physics, Royal Institute of Technology (KTH), Kista, Sweden*

1:42

HC-02. Injection locking at zero field in spin-valves composed by two free layers and perpendicular polarizers. *G. Finocchio¹, M. Carpentieri², T. Moriyama³, B. Azzarboni¹, R. Buhrman³ and D. Ralph³. 1. Fisica della Materia e Ingegneria Elettronica, University of Messina, Messina, Italy; 2. University of Calabria, Cosenza, Italy; 3. Cornell University, Ithaca, NY*

1:54

HC-03. Frequency-Tunable Perpendicular Spin Torque Oscillator. *C.H. Sim^{1,2}, M. Moneck¹ and J. Zhu¹. 1. Data Storage Systems Center, Carnegie Mellon Univ, Pittsburgh, PA; 2. A*STAR, Data Storage Institute, Singapore, Singapore*

2:06

HC-04. Influence of Dynamical Dipolar Coupling on Spin-Torque-Induced Excitations in a Magnetic Tunnel Junction Nanopillar. *K. Kudo¹, T. Nagasawa¹, H. Suto¹, T. Yang¹, K. Mizushima¹ and R. Sato¹. 1. Corporate Research & Development Center, Toshiba Corporation, Kawasaki, Japan*

2:18

HC-05. Temperature Dependence of Spin-Transfer Torque Evaluated by Spin-Torque Diode Measurement. *K. Ando¹, S. Ishibashi¹, S. Miwa¹, T. Seki², T. Nozaki¹, H. Kubota², A. Fukushima², S. Yuasa² and Y. Suzuki^{1,2}. 1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Nanospintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

2:30

HC-06. Temperature Dependence of Magnetic Excitations in MgO-based spin torque oscillators. *J.F. Sierra¹, M. Quinsat², I. Joumard¹, U. Ebels¹, M. Cyrille², B. Dieny¹ and J.A. Katine³. 1. SPINTEC, UMR CEA/CNRS/UJF-Grenoble 1/Grenoble-INP, INAC, Grenoble, France; 2. CEA/LETI, MINATEC, DRT/LETI/DIHS, Grenoble, France; 3. Hitachi Global Storage Technologies, San José, CA*

2:42

HC-07. Noise characterization of the spin-torque diode in CoFeB/MgO magnetic tunnel junctions with large rectification sensitivity. *S. Miwa¹, S. Ishibashi¹, H. Tomita¹, K. Ando¹, T. Saruya², T. Seki², T. Nozaki², H. Kubota², K. Yakushiji², A. Fukushima², S. Yuasa² and Y. Suzuki¹. 1. Graduate School of Engineering Science, Osaka University, Toyonaka, Japan; 2. Spintronics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan*

2:54

HC-08. Spin-transfer-driven parametric resonance in magnetic multilayers. *H. Seinige¹, C. Wang¹, T. Staudacher¹ and M. Tsai¹. 1. Physics, University of Texas at Austin, Austin, TX*

3:06

HC-09. Curious interplay between in-plane and out-of-plane anisotropies in Pt/Permalloy bilayers. *P. Weinberger¹. 1. Center for Computational Nanoscience, Vienna, Austria*

3:18

HC-10. Planar approximation for the frequencies of spin transfer oscillators. *Y.B. Bazaliy^{1,2} and F. Arammash³. 1. Physics and Astronomy, University of South Carolina, Columbia, SC; 2. Institute of Magnetism, Kyiv, Ukraine; 3. Department of Physics and Engineering Department, Benedict College, Columbia, SC*

3:30

HC-11. Linear and Autonomous Magnetization Dynamics in Spin-Torque Auto-Oscillators: a Lagrangian approach. *G. Consolo*¹, *G. Gubbiotti*^{2,3}, *L. Giovannini*⁴ and *R. Zivieri*⁴. *1. Department of Sciences for Engineering and Architecture, University of Messina, Italy, Messina, Italy; 2. Department of Physics, CNISM Unità di Perugia, University of Perugia, Perugia, Italy; 3. Department of Physics, Istituto Officina dei Materiali del CNR (CNR-IOM), Unità di Perugia, Perugia, Italy; 4. Department of Physics, CNISM Unità di Ferrara, University of Ferrara, Ferrara, Italy*

3:42

HC-12. Linewidth of higher harmonics in Spin Torque Oscillators. *M. Quinsat*^{1,2}, *J. Sierra*², *D. Gusakova*², *V. Tiberkevich*³, *A. Slavin*³, *U. Ebels*², *M. Cyrille*¹, *L. Buda-Prejbeanu*² and *J. Katine*⁴. *1. CEA-LETI, Grenoble, France; 2. SPINTEC, Grenoble, France; 3. Physics, Oakland University, Rochester, MI; 4. Hitachi Global Storage, San Jose, CA*

3:54

HC-13. Spin-torque induced rf-oscillation in half-metallic Co₂MnSi-based CPP-GMR devices. *Y. Sakuraba*¹, *R. Okura*¹, *T. Seki*¹, *M. Mizuguchi*¹ and *K. Takanashi*¹. *1. Institute for Materials Research, Tohoku University, Sendai, Miyagi, Japan*

4:06

HC-14. Reduced nonlinear phase noise and large amplitude microwave emission from Co₂Fe(Ga_{0.5}Ge_{0.5}) Heusler alloy based pseudo spin valve nanopillars. *J. Sinha*¹, *M. Hayashi*¹, *M. Drapeko*¹, *Y.K. Takahashi*¹, *T. Taniguchi*¹, *S. Mitani*¹ and *K. Hono*¹. *1. National Institute for Materials Science, Tsukuba, Japan*

4:18

HC-15. Spin-transfer induced large power coherent microwave generation in NCMR device at a multi-domain state. *Y. Okutomi*¹, *Y. Kozono*¹, *K. Miyake*¹, *S. Hashimoto*², *H. Iwasaki*² and *M. Sahashi*¹. *1. Graduate school of engineering, Tohoku University, Sendai Miyagi, Japan; 2. TOSHIBA R&D Center, Kawasaki, Japan*

THURSDAY
AFTERNOON
1:30

GRAND CANYON 9-11

**Session HD
MULTIFERROIC MATERIALS III**

Nian Sun, Chair

1:30

HD-01. The structure of the multiferroic BaTiO₃/Fe(001) interface. *H.L. Meyerheim*¹, *F. Klimenta*¹, *A. Ernst*¹, *K. Mohseni*¹, *S. Ostanin*¹, *M. Fechner*¹, *S.S. Parihar*¹, *I.V. Maznichenko*², *I. Mertig*^{1,2} and *J. Kirschner*¹. *1. MPI Halle, D-06120 Halle, Germany; 2. Institut f. Physik, MLU Halle, D-06099 Halle, Germany*

1:42

HD-02. Strain-driven Anisotropy in Multiferroic Composites Observed with Soft X-ray Techniques. *R.V. Chopdekar*¹, *V.K. Malik*², *A. Fraile Rodríguez*³, *L. Le Guyader*¹, *A. Scholl*⁴, *Y. Takamura*⁵, *C. Bernhard*², *F. Nolting*¹ and *L.J. Heyderman*¹. *1. Paul Scherrer Institute, Villigen PSI, Switzerland; 2. Department of Physics, University of Fribourg, Fribourg, Switzerland; 3. Department of Fundamental Physics and Institute for Nanoscience and Nanotechnology, University of Barcelona, Barcelona, Spain; 4. Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, CA; 5. Department of Chemical Engineering and Materials Science, University of California, Davis, CA*

1:54

HD-03. Recurrent Electric-Field Writing of Magnetic Domain Patterns. *T. Lahtinen*¹, *K. Franke*¹ and *S. van Dijken*¹. *1. Department of Applied Physics, Aalto University, Espoo, Finland*

2:06

HD-04. Neutron Diffraction Investigations of Magnetism in BiFeO₃ Epitaxial Films. (Invited) *W. Ratcliff*¹, *D. Kan*², *W. Chen*¹, *S. Watson*¹, *S. Chi*¹, *R. Erwin*¹, *G.J. McIntyre*³, *S.C. Capelli*³ and *I. Takeuchi*². *1. NCNR, Gaithersburg, MD; 2. Materials Science and Engineering, University of Maryland, College Park, MD; 3. Institute Laue-Langevin, Grenoble, France*

2:42

HD-05. Neutron Diffraction, Magnetic and Magnetoelectric Study of Single Crystal $Mn_{0.9}Co_{0.1}WO_4$ Multiferroics. *I. Urcelay-Olabarria*¹, J.L. Garcia a-Muñ oz², V. Skumryev³, E. Ressouche¹, A.M. Balbashov⁴, A.A. Mukhin⁵, V.Y. Ivanov⁵, G.P. Vorob'ev⁶, Y.F. Popov⁶ and A.M. Kadomtseva⁶. *1. Institut Laue Langevin, 38042 Grenoble, Cedex 9, France; 2. Instituto de Ciencia de Materiales de Barcelona, CSIC, E-08193 Bellaterra, Spain; 3. Institut Català de Recerca i Estudis Avançats (ICREA), E-08193 Barcelona, Spain; 4. Moscow Power Engineering Institute, 105835 Moscow, Russian Federation; 5. Prokhorov General Physics Institute of the Russian Acad. Sci., 119991 Moscow, Russian Federation; 6. M.V. Lomonosov Moscow State University, 119992 Moscow, Russian Federation*

2:54

HD-06. Multiferroic Effects in W-Type Hexagonal Ferrites. *Y. Sun*¹, *Y. Song*¹, *Z. Wang*¹ and *M. Wu*¹. *Department of Physics, Colorado State University, Fort Collins, CO*

3:06

HD-07. Electric Field Control of Magnetic Domains in $BiFeO_3$ thin films. *K. Kothapalli*^{1,2}, *A. Varatharajan*¹, *T. Gao*¹, *P.A. Kienzle*², *. Takeuchi*¹ and *W. Ratcliff II*². *1. Department of Materials Science & Engineering, University of Maryland, College Park, MD; 2. NIST Center for Neutron Research, NIST, Gaithersburg, MD*

3:18

HD-08. Nonvolatile resistive switching in $Au/BiFeO_3$ rectifying junction. *Y. Shuai*^{1,2}, *S. Zhou*¹, *C. Wu*², *W. Zhang*², *D. Bü rger*¹, *S. Slesazek*³, *T. Mikolajick*³, *M. Helm*¹ and *H. Schmidt*¹. *1. Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany; 2. State Key Laboratory of Electronic Thin Films and Integrated Devices, Chengdu, China; 3. Namlab gGmbH, Dresden, Germany*

3:30

HD-09. Electric and thermal control of spin polarization in trilayered GMR structure. *T. Taniyama*¹, *T. Naito*¹ and *M. Itoh*¹. *1. Tokyo Institute of Technology, Yokohama, Japan*

3:42

HD-10. Giant converse magnetoelectric effect in $Na_{0.5}Bi_{0.5}TiO_3$ - $CoFe_2O_4$ lead-free multiferroic composites. *N.B. Simhachalam*¹ and *L. Malkinski*¹. *1. Advanced Materials Research Institute, University of New Orleans, New Orleans, LA*

3:54

HD-11. Chemical doping and magnetic fields effects on the multiferroic phases of single-crystalline $Co_xMn_{1-x}WO_4$ *K. Liang*¹, *R.P. Chaudhury*¹, *Y.Q. Wang*¹, *Y.Y. Sun*¹, *B. Lorenz*¹, *F. Ye*², *J.A. Fernandez-Baca*^{2,3}, *H.A. Mook*² and *C.W. Chu*^{1,4}. *1. TCSUH and Physics, University of Houston, Houston, TX; 2. Neutron Scattering Science Division, Oak Ridge National Laboratory, Oak Ridge, TN; 3. Physics and Astronomy, University of Tennessee, Knoxville, TN; 4. Lawrence Berkeley National Laboratory, Berkeley, CA*

4:06

HD-12. Magnetic anisotropy in composite $CoFe_2O_4$ - $BiFeO_3$ ultrathin films grown by pulsed-electron deposition. *R. Comes*¹, *M. Khokhlov*², *H. Liu*¹, *J. Lu*¹ and *S.A. Wolf*¹. *1. Materials Science and Engineering, University of Virginia, Charlottesville, VA; 2. Guilford College, Greensboro, NC*

4:18

HD-13. Magnetic phase competition in $Dy_{0.5}Y_{0.5}MnO_3$. *O. Vajk*¹, *Y. Wang*¹, *J. Gunasekera*¹, *K. Tarwater*¹ and *T. Heitmann*². *1. Physics and Astronomy, University of Missouri, Columbia, MO; 2. The Missouri Research Reactor, University of Missouri, Columbia, MO*

THURSDAY
AFTERNOON
1:30

GRAND CANYON 2-3

Session HE DOMAIN WALL DEVICES II

Geoffrey Beach, Co-Chair
Mathias Kläui, Co-Chair

1:30

HE-01. Current-driven domain wall motion in Co/Ni nano-wire with perpendicular magnetic anisotropy. *(Invited) T. Ono*¹. *1. Kyoto University, Uji, Japan*

2:06

HE-02. Spin Hall Effect-driven Spin Torque in Magnetic Textures. *A. Manchon*¹ and *K. Lee*². *1. Materials Science and Eng., KAUST, Thuwal, Saudi Arabia; 2. Materials Science and Eng., Korea University, Seoul, Korea, Republic of*

2:18

HE-03. Spin orbit field assisted current driven domain wall motion in perpendicularly magnetized ultrathin CoFeB/MgO nanowires. *M. Hayashi¹, S. Fukami², T. Suzuki³, M. Yamanouchi², J. Sinha¹, N. Ishiwata², Y. Nakatani⁴, S. Mitani¹ and H. Ohno^{2,5}* *1. National Institute for Materials Science, Tsukuba, Japan; 2. CSIS, Tohoku University, Sendai, Japan; 3. Renesas Electronics Corporation, Sagami-hara, Japan; 4. University of Electro-Communications, Chofu, Japan; 5. RIEC, Tohoku University, Sendai, Japan*

2:30

HE-04. Low Energy Magnetic Domain Wall Logic in Short, Narrow Ferromagnetic Wires with Tunnel Junction Readout. *J. Currivan^{1,3}, M.A. Baldo³ and C.A. Ross²* *1. Physics, Harvard University, Cambridge, MA; 2. Materials Science and Engineering, MIT, Cambridge, MA; 3. Electrical Engineering and Computer Science, MIT, Cambridge, MA*

2:42

HE-05. Behavior of 360 Degree Domain Walls Driven by Simultaneous AC and DC Current. *M. Mascaró¹, Y. Jang¹ and C.A. Ross¹* *1. Materials Science and Engineering, MIT, Cambridge, MA*

2:54

HE-06. Domain wall induced localised nanowire reversal. *L. O'Brien¹, A. Beguivin¹, D. Read², D. Petit¹, A. Fernandez-Pacheco¹ and R.P. Cowburn¹* *1. Thin Film Magnetism, University of Cambridge, Cambridge, United Kingdom; 2. EXSS, Imperial College London, London, United Kingdom*

3:06

HE-07. Currentless Domain Wall Motion Along Biased Ferromagnet/Semiconductor Heterostructure. *X. Duan¹, V.A. Stephanovich², Y.G. Semenov¹ and K. Kim¹* *1. ECE, NC State University, Raleigh, NC; 2. Institute of Physics, Opole University, Opole, Poland*

3:18

HE-08. Current-induced domain wall motion in magnetic stripes adjacent to conductive layers with strong spin-orbit interactions. (Invited) *A.V. Khvalkovskiy¹, D. Apalkov¹, V. Nikitin¹, M. Krounbi¹, K.A. Zvezdin², A. Anane³, J. Grollier³, V. Cros³ and A. Fert³* *1. Grandis, Inc., Milpitas, CA; 2. A.M. Prokhorov General Physics Institute, RAS, Moscow, Russian Federation; 3. Unité Mixte de Physique CNRS/Thales and Université Paris Sud 11, Palaiseau, France*

3:54

HE-09. Current-induced domain wall motion by perpendicular injection in MgO-based magnetic tunnel junctions. *J. Grollier¹, A. Chanthbouala¹, R. Matsumoto¹, V. Cros¹, A. Anane¹, A. Fert¹, A. Khvalkovskiy¹, K.A. Zvezdin³, A. Fukushima² and S. Yuasa²* *1. Unité Mixte CNRS/Thales, Palaiseau, France; 2. National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan; 3. Istituto P.M., Torino, Italy*

4:06

HE-10. Influence of a transverse magnetic field on current-induced domain-walls motion in Pt/Co/AlOx trilayers. *E. Jué¹, A. Hrabec², O. Boulle¹, I. Miron¹, S. Auffret¹, B. Rodmacq¹, S. Bandiera¹, S. Pizzini², J. Vogel², A. Schuhl² and G. Gaudin¹* *1. SPINTEC, CEA-INAC / CNRS / UJF-Grenoble 1 / Grenoble-INP, Grenoble, France; 2. Institut Néel, CNRS/UJF, Grenoble, France*

4:18

HE-11. Voltage control domain wall pinning through hybrid piezoelectric-magneto-resistive nanodevice. *N. Lei¹, T. Devolder¹, G. Agnus¹, P. Lecoeur¹, D. Ravelosona¹ and C. Chappert¹* *1. Paris Sud University, Orsay, France*

THURSDAY
AFTERNOON
1:30

GRAND CANYON 4-5

Session HF EXCHANGE BIAS II

Hao Zeng, Chair

1:30

HF-01. Asymmetric Stochasticity of Magnetization Reversal Dynamics in Exchange-Biased IrMn/CoFe Film. *H. Lee¹, K. Ryu², C. You³, K. Jeon¹, S. Parkin², S. Yang² and S. Shin¹* *1. Department of physics, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea, Republic of; 2. IBM Research Division, Almaden Research Center, San Jose, CA; 3. Department of Physics, Inha University, Incheon, Korea, Republic of*

1:42

HF-02. Exchange bias stability in GMR sensors for automotive applications. *W. Raberg¹, T. Bever¹, K. Pruegl² and J. Zimmer¹* *1. Infineon Technologies AG, 85579 Neubiberg, Germany; 2. Infineon Technologies AG, 93049 Regensburg, Germany*

1:54

HF-03. Magnetization reversal of epitaxial Fe/IrMn exchange biased bilayers under a domain-wall nucleation model. *W. Zhang*¹ and *K.M. Krishnan*¹. *Materials Science and Engineering, University of Washington, Seattle, WA*

2:06

HF-04. New Magnetic State and Origin of Uncompensated Magnetization in FeF₂. *I.V. Roshchin*^{1,2}, *K.E. Badgley*¹, *K.D. Belashchenko*³, *M. Zhernenkov*⁴, *M.R. Fitzsimmons*⁴, *M. Erekhinsky*⁵ and *I.K. Schuller*⁵. *1. Department of Physics and Astronomy, Texas A&M University, College Station, TX; 2. Material Science and Engineering Program, Texas A&M University, College Station, TX; 3. Department of Physics, University of Nebraska-Lincoln, Lincoln, NE; 4. Los Alamos Neutron Science Center, Los Alamos National Laboratory, Los Alamos, NM; 5. Department of Physics, University of California - San Diego, La Jolla, CA*

2:18

HF-05. Investigation of structural and magnetic properties in Cr₂Te₃ single crystal. *H. Lu*¹, *S. Lim*¹, *J. Bi*¹ and *K. Teo*¹. *Electrical and Computer Engineering Department, National University of Singapore, Singapore, Singapore*

2:30

HF-06. Logarithmic scaling law of the exchange bias training effect in perpendicular and longitudinal bilayers. *Z. Shi*¹, *Y. Chen*², *S. Zhou*^{1,2} and *S. Mangin*³. *1. Department of Physics, Tongji University, Shanghai, Shanghai, China; 2. Surface Physics State Laboratory and Department of Physics, Fudan University, Shanghai, Shanghai, China; 3. Inst Jean Lamour, F-54506 Vandoeuvre Les Nancy, Nancy University, Nancy, France*

2:42

HF-07. Interface roughness induced asymmetric magnetic property in sputter-deposited Co/CoO/Co exchange biased trilayers. *J. Wang*¹, *J. Shi*¹ and *Y. Nakamura*¹. *1. Department of Metallurgy and Ceramics Science, Tokyo Institute of Technology, 2-12-1, Oh-okayama, Meguro-ku, Tokyo 152-8552, Japan*

2:54

HF-08. Electron Spin Alignment in Nickel- and Cobalt-Oxide Nanopolymers, and Possible Physical Mechanisms of Exchange Bias Development/Loss. *L.A. Pozhar*¹. *1. Department of Physics, University of Idaho, Moscow, ID*

3:06

HF-09. The role of magnetic interactions in Exchange Bias properties of MnFe₂O₄ Ferrofluid Nanoparticles. *F. Gomes da Silva*^{1,2}, *R. Aquino*², *J. Depeyrot*², *F.A. Tourinho*², *R. Perzynski*¹, *V.I. Stepanov*³ and *Y.L. Raikher*³. *1. Physics, Universite Pierre et Marie Curie, Paris, France; 2. Physics, Universidade de Brasilia, Brasilia, DF, Brazil; 3. Physics, Inst. of Continuous Media, Mechanics Ural Branch of RAS, Perm, Russian Federation*

3:18

HF-10. Observation of multiple magnetic transitions in nanosize layered α -Ni(OH)₂. *J.D. Rall*¹ and *M.S. Seehra*¹. *1. Department of Physics, West Virginia University, Morgantown, WV*

3:30

HF-11. Charge Order Suppression, Emergence of Ferromagnetism and Absence of Exchange Bias Effect in Bi_{0.25}Ca_{0.75}MnO₃ Nanoparticles: EPR and Magnetization Studies. *G. Singh*¹ and *S.V. Bhat*¹. *1. Physics, Indian Institute of Science, Bangalore, Karnataka, India*

THURSDAY
AFTERNOON
1:30

GRAND CANYON 12-13

Session HG APPLIED PERMANENT MAGNETISM

Yaqiao Wu, Chair

1:30

HG-01. Atomic Scale Investigation of the Interface in the Alnico Spinodal Structure. *Y.Q. Wu*¹, *M.J. Kramer*^{1,2}, *S.M. Long*^{1,2}, *K.W. Dennis*¹, *R.W. McCallum*^{1,2} and *I.E. Anderson*^{1,2}. *1. The Ames Laboratory of USDOE, Iowa State University, Ames, IA; 2. Department of Materials Science and Engineering, Iowa State University, Ames, IA*

1:42

HG-02. Magnetic Hardening of Ce₂Fe₁₄B. *J.F. Herbst*¹, *M.S. Meyer*¹ and *F.E. Pinkerton*¹. *1. Chemical Sciences and Materials Systems Laboratory, GM R&D Center, Warren, MI*

1:54

HG-03. Properties of HDDR NdFeB recycled powders prepared from sintered magnets. *E.A. Périgo*¹, *S.C. da Silva*², *R.V. Martin*¹, *H. Takiishi*² and *F.J. Landgraf*¹. *1. Institute for Technological Research, São Paulo, Brazil; 2. Nuclear and Energy Research Institute, São Paulo, Brazil*

2:06

HG-04. Effect of pressure rate on the texture of NdFeB nanocrystalline magnets. *C. Rong*¹, *Y. Wu*², *D. Wang*¹, *Y. Zhang*², *N. Poudyal*¹, *M. Kramer*² and *J. Liu*². *1. Department of Physics, University of Texas at Arlington, Arlington, TX; 2. Ames Laboratory of USDOE, Iowa State University, Ames, IA*

2:18

HG-05. Magnetic properties of isotropic Sm-Fe-N magnets produced by compression shearing method. *T. Saito*¹ and *H. Kitazima*¹. *Chiba Institute of Technology, Chiba, Japan*

2:30

HG-06. Effect of surfactant molecular weight on particle morphology of SmCo5 prepared by high energy ball milling. *C.A. Crouse*^{1,2}, *E. Michel*^{1,3}, *Y. Shen*^{4,1}, *J.C. Horwath*¹, *Z. Turgut*^{1,2} and *M.S. Lucas*^{1,5}. *1. Air Force Research Laboratory, Wright Patterson Air Force Base, OH; 2. UES Inc., Dayton, OH; 3. Wright State University, Dayton, OH; 4. University of Dayton Research Institute, Dayton, OH; 5. UTC Inc., Dayton, OH*

2:42

HG-07. Controlled reversal of Co/Pt dots for nanomagnetic logic applications. *S. Breitzkreutz*¹, *J. Kiermaier*¹, *S. Karthik*², *G. Csaba*², *D. Schmitt-Landsiedel*¹ and *M. Becherer*¹. *1. Lehrstuhl für Technische Elektronik, Technische Universität München, Munich, Germany; 2. Center for Nano Science and Technology, University of Notre Dame, Notre Dame, IN*

2:54

HG-08. Effect of magnetic fields on melt-spun Nd2Fe14B/Fe ribbons. *V.V. Nguyen*¹, *C. Rong*¹, *Y. Ding*² and *P.J. Liu*¹. *1. Physics, University of Texas at Arlington, Arlington, TX; 2. School of Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA*

3:06

HG-09. TEM studies of sintered NdFeB magnet prepared by cyclic sintering. *J. Kim*¹, *S. Kim*¹, *S. Song*¹ and *Y. Kim*¹. *1. Division of Materials Science and Engineering, Hanyang University, Seoul, Korea, Republic of*

3:18

HG-10. Crystallographic alignment evolution and magnetic properties of Nd-Fe-B nanoflakes prepared by surfactant-assisted ball milling. *M. Yue*¹, *R. Pan*¹, *R. Liu*¹, *W. Liu*¹, *D. Zhang*¹, *J. Zhang*¹, *X. Zhang*², *Z. Guo*³ and *W. Li*³. *1. College of Materials Science and Engineering, Beijing University of Technology, Beijing, China; 2. School of Mathematics, Physics, and Biological Engineering, Inner Mongolia University of Science and Technology, Baotou, China; 3. Division of Functional Materials, Central Iron and Steel Research Institute, Beijing, China*

3:30

HG-11. Effect of Particle Size on the Coercivity of R-Fe-B (R=Nd, Pr) Nanoparticles Prepared by Surfactant-Assisted Ball Milling. *N. Gunduz Akdogan*¹, *D. Neil*¹, *W. Li*¹, *D. Niarchos*² and *G.C. Hadjipanayis*¹. *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. Institute of Materials Science, NCSR "Demokritos" Ag. Paraskevi, Athens, Greece*

3:42

HG-12. Dynamic Modeling and Decoupling Control for Helical Movement of Linear and Rotary Permanent Magnet Actuator. *P. Jin*¹, *H. Lin*¹ and *S. Fang*¹. *1. School of Electrical Engineering, Southeast University, Nanjing, Jiangsu, China*

3:54

HG-13. Anomalous behavior of high-frequency ferromagnetic resonance caused by spin-reorientation phenomenon. *A. Namai*^{1,3}, *M. Nakajima*², *T. Suemoto*² and *S. Ohkoshi*^{1,3}. *1. Department of Chemistry, The University of Tokyo, Tokyo, Japan; 2. Institute for Solid State Physics, the University of Tokyo, Kashiwa, Japan; 3. CREST, JST, Tokyo, Japan*

4:06

HG-14. Combined effects of chromium and carbon on phase formation and magnetic behavior of melt-spun Sm-Co magnets. *X. Jiang*¹ and *J. Shield*¹. *1. Mechanical and Materials Engineering, University of Nebraska-Lincoln, Lincoln, NE*

4:18

HG-15. Effect of buffer and capping layers on the mechanical and magnetic properties of Nd-Fe-B films. *Y. Zhang*¹, *D. Givord*¹ and *N.M. Dempsey*¹. *1. Institut Néel - CNRS, Grenoble, France*

THURSDAY
AFTERNOON
1:30

GRAND CANYON 1

Session HH
CRYSTALLINE ALLOYS II
Masaaki Futamoto, Chair

1:30

HH-01. Potential of sub-micron-sized Fe-Co alloy particles for Antenna Application. *D. Kodama*¹, *R. Kasuya*², *S. Kozo*³, *K. Tohji*⁴ and *J. Balachandran*⁵. *1. DOWA Electronics Materials Co., Ltd, Okayama, Japan; 2. Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan; 3. National Institute of Advanced Industrial Science and Technology, Nagoya, Japan; 4. Graduate School of Environmental Studies, Tohoku University, Sendai, Japan; 5. Material Science, The University of Shiga Prefecture, Hikone, Japan*

1:42

HH-02. Nanostructure and oxygen distribution in Co-Fe electrodeposited films for magnetic field sensors. *S. Elhalawaty*¹, *R. Carpenter*¹, *J. George*² and *S. Brankovic*². *1. Arizona State University, Tempe, AZ; 2. University of Houston, Houston, TX*

1:54

HH-03. Crystalline and stress anisotropy dependent magnetic behavior in Co-base nanowire arrays.L.G. Vivas¹, P. Rodríguez¹, M. Vázquez¹, V. Vega², J. García², W.O. Rosa² and V.M. Prida². *1. Institute of Materials Science of Madrid, CSIC, 28049 Madrid, Spain, Madrid, Spain; 2. Department of Physics, Fac. Sciences, Universidad de Oviedo, 30004, Spain, Oviedo, Spain*

2:06

HH-04. Microwave permeability of Fe/Al flakes fabricated by ball milling and jet milling.Y. Yang¹, Y. Yang¹, X. Huang¹ and J. Ding¹. *1. Materials Science & Engineering, National University of Singapore, Singapore, Singapore*

2:18

HH-05. Structural and magnetic properties of MgCexFe2-xO4 nanoferrites. P.S. Mkwae¹, T. Moyo¹ and J.Z. Msomi². *1. Physics, University of KwaZulu-Natal, Durban, KwaZulu-Natal, South Africa; 2. Physics, University of Free state, Phuthaditjhaba, Free state, South Africa*

2:30

HH-06. Electronic structure and magnetic properties of stoichiometric and non-stoichiometric NiFe2O4. G.H. Jaffari¹, A.K. Rumaiz², J. Woicik³ and S.I. Shah¹. *1. Physics and Astronomy, University of Delaware, Newark, DE; 2. National Synchrotron Light Source, Brookhaven National Laboratory, National Synchrotron Light Source, Brookhaven National Laboratory, Upton, NY; 3. National Institute of Standard and Technology, 3. National Institute of Standard and Technology, Gaithersburg, MD*

2:42

HH-07. Bulk nanocomposite using self-forming core/shell nanoparticles and its magnetic properties for high-frequency applications. T. Suetsuna¹, K. Harada¹, T. Takahashi¹ and S. Suenaga¹. *1. Functional Materials Laboratory, Toshiba Corporation, Kawasaki, Japan*

2:54

HH-08. Magnetism in Amorphous and Crystalline FexSi1-x Thin Films. J. Karel¹, C. Bordel², Y. Zhang³, R. Wu³, S. Heald⁴ and F. Hellman^{2,1}. *1. Materials Science and Engineering, University of California, Berkeley, Berkeley, CA; 2. Physics, University of California, Berkeley, Berkeley, CA; 3. Physics and Astronomy, University of California, Irvine, Irvine, CA; 4. Advanced Photon Source, Argonne National Laboratory, Argonne, IL*

3:06

HH-09. Effect of P Addition on Nanocrystallization and High Temperature Magnetic Properties of Low B and Nb Containing FeCo Nanocomposites.R.K. Roy¹, S. Shen², S.J. Kernion² and M.E. McHenry². *1. Material Science and Technology Division, National Metallurgical Laboratory, Jamshedpur, Jharkhand, India; 2. Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA*

3:18

HH-10. Effect of External Magnetic Field on the Morphology and Magnetic Property of Nickel Nanoparticles.A. Sjö², M. Bagheri², T. Yadavalli¹, S. Ramaswamy¹, C. Gopalakrishnan¹ and J.D. Thiruvadigal². *1. Nanotechnology Research Center, SRM University, Chennai, Tamil Nadu, India; 2. Dept of Nanoscience and Nanotechnology, SRM University, Chennai, Tamil Nadu, India*

3:30

HH-11. Exchange Bias Studies in Core/Shell and Hollow Nanoparticles. H. Khurshid¹, W. Li¹, E. Devlin² and G. Hadjipanayis¹. *1. Physics and Astronomy, Univ Delaware, Newark, DE; 2. Institute of Materials Science, "Demokritos" Agia Paraskevi, Athens, Greece*

3:42

HH-12. Magnetization reversal and magnetic anisotropy in Fe90-xX10(X=Pt and Pd) nanowires and nanotubes. N. Ahmad¹, J. Chen¹, D. Shi¹ and X. Han¹. *1. Institute of Physics, Beijing, China*

3:54

HH-13. High Temperature XRD Determination of the BCC-FCC Transformation Temperature in (Fe₇₀Ni₃₀)₈₈Zr₇B₄Cu₁ Nanocomposites. J.J. Ipus¹, P. Herre², P. Ohodnicki³ and M.E. McHenry¹. *1. Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA; 2. Institute for Metallic Materials, IFW Dresden, Dresden, Germany; 3. National Energy Technology Laboratory, US Department of Energy, Pittsburgh, PA*

4:06

HH-14. Ferromagnetic Resonance Studies of Fe Thin Films with Dilute Heavy Rare-earth Impurities.L. Sun¹, Y. Wang¹, Y. Zhai^{1,2}, M. Yang², J. Du² and H. Zhai². *1. Physics Department, Southeast University, Nanjing, 211189, China; 2. National Laboratory of Solid Microstructures, Nanjing University, Nanjing, 210093, China*

4:18

HH-15. Effects of compositional variation on the magnetic properties of CoFe/Au nanobarcodes. S. Yoon¹, I. Jeon^{1,2}, B. Kim¹, S. Kim¹ and Y.K. Kim¹. *1. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Korea, Republic of*

THURSDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session HP
ACTUATORS, ENERGY TRANSFER AND
OTHER APPLICATIONS
(Poster Session)

Mani Mina, Chair

HP-01. A Novel Linear and Rotary Halbach Permanent Magnet Actuator with Two Degrees-of-freedom. H. Lin¹, P. Jin¹ and S. Fang¹. *1. School of Electrical Engineering, Southeast University, Nanjing, China*

HP-02. Optimization of Constant-Frequency Double-Rotor Generator for Minimizing Harmonics. M. Wang¹, J. Zhang¹ and M. Cheng¹. *1. Southeast University, Nanjing, China*

HP-03. Analytical Magnetic Torque Calculations and Experimental Testing of Radial Flux Permanent Magnet Type Eddy Current Brakes. J. Choi¹, S. Lee² and S. Jang¹. *1. Chungnam National University, Dae-jeon, Korea, Republic of; 2. Gwangju R&D Center, Korea Institute of Industrial Technology, Gwangju, Korea, Republic of*

HP-04. Fabrication of a Fully Magnetic Impeller for Improvement of the Magnetic Properties of Blood Pump. S. Kim¹, J. Shin¹, S. Hashi¹, K. Ishiyama¹, M. Ozaki² and S. Matsumura². *1. Research Institute of Electrical Communication, Tohoku Univ, Sendai, Japan; 2. I & P Co.Ltd, Oosaki, Japan*

HP-05. High Reliability Linear Drive Device for Artificial Hearts. J. Ji¹, W. Zhao¹ and G. Liu¹. *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*

HP-06. Magnetic Navigation System for the Efficient Helical and Translational Motions of a Microrobot in the Human Body Utilizing Rotating Magnetic Field and Magnetic Gradient. S. Jeon¹, G. Jang¹, H. Choi², S. Park² and J. Park². *1. Dept. of Mechanical Engineering, PREM Lab., Hanyang University, Seoul, Korea, Republic of; 2. Dept. of Mechanical Engineering, Chonnam National University, Gwangju, Korea, Republic of*

HP-07. Magnetic Energy Coupling System based on MEMS Coils. X. Li^{1,2}, Q. Yuan², J. Liu² and H. Zhang². *1. School of Electronics and Information Engineering, Beijing Jiaotong University, Beijing, China; 2. Institute of Microelectronics, Peking University, Beijing, China*

HP-08. Resonant Magnetic Coupling Power Transmission System with Circular Spiral Coils for Implantable Medical Devices. J. Wang^{1,2}, S. Ho¹, W. Fu¹ and M. Sun². *1. Department of Electrical Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong; 2. Department of Neurological Surgery, University of Pittsburgh, Pittsburgh, PA*

HP-09. Magnetic Microwires Detection for Security Applications. V. Petrucha¹ and P. Kaspar¹. *1. Department of Measurement, FEE, Czech Technical University in Prague, Prague, Czech Republic*

HP-10. Spectral properties of emf induced by periodic magnetization reversal of arrays of coupled magnetic glass-covered microwires. V. Rodionova^{1,2}, M. Ilyn¹, M. Ipatov¹, V. Zhukova¹, N. Perov³, J. Gonzalez¹ and A. Zhukov^{1,4}. *1. Materials Physics, University of the Basque Country, San Sebastian, Spain; 2. Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation; 3. Department of Physics, M.V. Lomonosov Moscow State University, Moscow, Russian Federation; 4. IKERBASQUE, Basque Foundation for Science, Bilbao, Spain*

HP-11. Graphene oxide added carbonyl iron microsphere system and its magnetorheology under applied magnetic fields. W. Zhang¹ and H. Choi¹. *1. Department of Polymer Science and Engineering, Inha Univ, Incheon, Korea, Republic of*

HP-12. The Role of Eddy Current Losses and Particle Size on AC Magnetic Field Induced Reflow in Solder/Magnetic Nanoparticle Nanocomposites. A.H. Habib¹, S. Xu¹, M.G. Ondeck¹, R. Swaminathan² and M.E. McHenry¹. *1. Materials Sc. and Engg., Carnegie Mellon Univ, Pittsburgh, PA; 2. Intel Corp., Chandler, AZ*

HP-13. Creation of magnetic lens effect employing Gd-Ba-Cu-O bulk superconductor in very high magnetic field. S. Choi¹, Z. Zhang², S. Matsumoto², T. Kiyoshi² and S. Lee³. *1. Busan Center, Korea Basic Science Institute, Busan, Korea, Republic of; 2. Superconducting Materials Center, National Institute for Materials Science, Tsukuba, Japan; 3. Department of electrical engineering, Kyungpook National University, Daegu, Korea, Republic of*

HP-14. A high temperature superconducting axial flux generator. M. Trapanese¹. *1. Dipartimento di Ingegneria Elettrica, Elettronica e delle Telecomunicazioni, Università di Palermo, Palermo, Italy*

HP-15. Enhancing and broadening absorption properties of frequency selective surfaces absorbers using FeCoB-based thin film. W. Ren¹, Y. Nie¹, X. Xiong¹ and Z. Liao¹. *1. Department of Electronic Science & Technology, Huazhong University of Science and Technology, Wuhan, China*

THURSDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session HQ
PATTERNED FILMS II
(Poster Session)
Steve McVitie, Chair

HQ-01. Ferromagnetic Resonance Spectroscopy of Bi-Component Antidot Nanostructures. *J. Ding¹, D. Tripathy¹ and A.O. Adeyeye^{1,2}*. *1. Department of Electrical and Computer Engineering, National Univ Singapore, Singapore, Singapore; 2. Advanced Materials for Micro- and Nano- Systems, Singapore-MIT Alliance, Singapore, Singapore*

HQ-02. Dry-etching damage to magnetic anisotropy of Co-Pt dot arrays characterized using anomalous Hall effect. *T. Shimatsu¹, H. Kataoka^{1,2}, K. Mitsuzuka¹, H. Aoi¹, N. Kikuchi³ and O. Kitakami³*. *1. RIEC, Tohoku University, Sendai, Miyagi, Japan; 2. Fuji Electric Co., Ltd, Matsumoto, Nagano, Japan; 3. IMRAM, Tohoku University, Sendai, Miyagi, Japan*

HQ-03. Field and current induced asymmetric domain wall motion in GMR spin-valve stripe with a circular ring. *K. Jaegwan¹, S. Yoon¹, Y. Jang¹ and B. Cho¹*. *1. Department of Nanobio Materials and Electronics, GIST, Gwangju, Korea, Republic of*

HQ-04. Magnetic and Transport Properties of [Co/Pd]4/Au/[Co/Pd]2 Pseudo Spin Valve Nano-wires. *X. Liu¹ and A.O. Adeyeye¹*. *1. Electrical and Computer Engineering, Information Storage Materials Laboratory, Singapore, Singapore*

HQ-05. Manipulation of magnetic reversal behavior in Ni₈₁Fe₁₉ nanoelliptical arrays by tuning shape anisotropy and magnetostatic interactions. *Y. Wang^{1,2}, W.H. Shi¹, H.X. Wei², D. Atkinson³, B.S. Zhang¹ and X.F. Han²*. *1. Nanofabrication facility, Suzhou institute of Nano-tech and Nano-bionics, Chinese Academy of Science, Suzhou, Jiangsu, China; 2. Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Science, Beijing, Beijing, China; 3. Physics Department, Durham University, Durham, Durham, United Kingdom*

HQ-06. Switching field and microstructure in individual Co/Pt nanosized dots. *N. Kikuchi¹, Y. Murayama¹, T. Yamaku¹, S. Okamoto¹, O. Kitakami¹, Y. Murakami¹ and D. Shindo¹*. *1. IMRAM Tohoku University, Sendai, Japan*

HQ-07. Moment correlations dominated by indirect or distant interactions in an ordered nanomagnet array. *S. Zhang¹, J. Li¹, J. Bartell¹, X. Ke², C. Nisoli³, P.E. Lammert¹, V.H. Crespi¹ and P. Schiffer¹*. *1. Department of Physics and Materials Research Institute, Pennsylvania State University, University Park, PA; 2. Neutron Scattering Science Division, Oak Ridge National Laboratory, Oak Ridge, TN; 3. Theoretical Division and Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM*

HQ-08. Magnetic properties of double vortices stabilized in isosceles triangular ferromagnetic dots. *M. Miyata^{1,2}, S. Yakata^{1,3}, H. Wada² and T. Kimura^{1,3}*. *1. INAMORI FRC, Kyushu university, Fukuoka, Japan; 2. Physics, Kyushu University, Fukuoka, Japan; 3. CREST, Japan Science and Technology Agency, Tokyo, Japan*

HQ-09. Magnetization processes in rectangular vs rhombic planar arrays of magnetic bars. *G.N. Kakazei^{1,2}, Y.G. Pogorelov¹, J.M. Teixeira¹, A. Hierro-Rodriguez³, F. Valdes-Bango³, M. Velez³, J.M. Alameda³, J.I. Martin³, J.O. Ventura¹ and J.B. Sousa¹*. *1. IFIMUP-IN/Department of Physics, University of Porto, Porto, Portugal; 2. Institute of Magnetism NAS of Ukraine, Kiev, Ukraine; 3. Departamento de Física, Universidad de Oviedo - CINN, Oviedo, Spain*

HQ-10. Magnetostatically tunable magneto resistance response for a MTJ nanomagnet in one dimensional array. *A. Lentsch¹, A. Lyle¹, J. Harms¹, T. Klein¹ and J. Wang¹*. *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN*

HQ-11. Exchange-coupled Fe/FePt network. *J. Hsiao¹, Y. Huang¹, I. Liu¹, L. Wang¹, J. Liao¹, D.A. Gilbert², K. Liu² and C. Lai¹*. *1. Materials Science and Engineering, National Tsing-Hua University, Hsinchu, Taiwan; 2. Physics, University of California, Davis, California, CA*

HQ-12. Nanowire stray field detection using patterned magneto-resistive elements. *M.T. Bryan¹, N.A. Porter², J.S. Claydon², M.A. Bashir¹, G. Burnell², C.H. Marrows², T. Schrefl^{1,3} and D.A. Allwood¹*. *1. Materials Science and Engineering, University of Sheffield, Sheffield, South Yorkshire, United Kingdom; 2. School of Physics and Astronomy, University of Leeds, Leeds, United Kingdom; 3. St. Poelten University of Applied Sciences, St. Poelten, Austria*

HQ-13. Magnetic Properties of Antiferromagnetically Coupled Antidots of Co/Pd Multilayers. *S.N. Piramanayagam¹, M. Ranjbar^{1,2}, H. Tan¹, A. Poh¹, R. Sbiaa¹ and T. Chong^{1,2}*. *1. A*STAR (Agency for Science, Technology and Research), Data Storage Institute, Singapore, Singapore; 2. ECE, National University of Singapore, Singapore, Singapore*

HQ-14. Switching Behavior of Lithographically Fabricated Nanomagnets for Logic Applications. P. Li¹, G. Csaba¹, V. Sankar¹, X.S. Hu², M.T. Niemier², W. Porod¹ and G.H. Bernstein¹. *1. Department of Electrical Engineering, University of Notre Dame, Notre Dame, IN; 2. Department of Computer Science and Engineering, University of Notre Dame, Notre Dame, IN*

HQ-15. Characterization of multi-layer magnetic structures via magneto-mechanical interactions. T.M. Wallis¹, D. Bouma¹, S. Lim¹, A. Imtiaz¹, J. Moreland¹ and P. Kabos¹. *N. I. S. T., Boulder, CO*

THURSDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session HR
SPIN TRANSFER TORQUE SWITCHING III
(Poster Session)
Di Wu, Chair

HR-01. Observation of spin-torque-driven switching failures in the time-domain. R. Heindl¹, W.H. Rippard¹ and S.E. Russek¹. *National Institute of Standards and Technology, Boulder, CO*

HR-02. Thermal Relaxation Rates of Magnetic Nanoparticles in the Presence of Magnetic Fields and Spin-Transfer Effects. W.H. Rippard¹, R. Heindl¹, M. Pufall¹ and S. Russek¹. *NIST, Boulder, CO*

HR-03. Spin-Polarized Current-induced new direction of exchange bias in exchange coupled ferromagnetic/antiferromagnetic bilayers. X. Tang¹, H. Zhang¹, H. Su¹, Y. Jing¹ and Z. Zhong¹. *State Key Laboratory of Electronic Thin Films and Integrated Devices, University of Electronic Science and Technology of China, Chengdu, Sichuan, China*

HR-04. Spin Torque in Ferromagnetic Insulators. Y. Yuan¹ and A. Manchon¹. *Physical Science and Engineering, KAUST, Thuwal, Makkah, Saudi Arabia*

HR-05. Precessional Spin Transfer Switching under 200 ps in In-plane MgO MTJ. H. Zhao¹, B. Glass², P.K. Amiri³, A. Lyle¹, Y. Zhang¹, Y. Chen⁴, G. Rowlands⁴, P. Upadhyaya³, Z. Zhang⁵, J.A. Katine⁶, J. Langer⁷, K. Galatsis³, H. Jiang⁵, K.L. Wang³, I.N. Krivorotov⁴ and J. Wang^{1,2}. *1. Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN; 2. Physics and Astronomy, University of Minnesota, Minneapolis, MN; 3. Electrical Engineering, University of California, Los Angeles, Los Angeles, CA; 4. Physics and Astronomy, University of California, Irvine, Irvine, CA; 5. Physics and Astronomy, University of California, Los Angeles, Los Angeles, CA; 6. Hitachi Global Storage Technologies, San Jose, CA; 7. Singulus Technologies, 63796 Kahl/ Main, Germany*

HR-06. Wideband RF signal to trigger fast switching processes in magnetic tunnel junctions. M. Carpentieri¹, M. Ricci², P. Burrascano², L. Torres³ and G. Finocchio⁴. *1. University of Calabria, Rende, Italy; 2. University of Perugia, Terni, Italy; 3. University of Salamanca, Salamanca, Spain; 4. University of Messina, Messina, Italy*

HR-07. Using Co/Ni multilayers for designing perpendicular spin torque switching. M. Arora¹, C. Burrowes¹, W. Huttema¹, C. Eylich¹, B. Kardasz¹, E. Montoya¹, E. Girt¹, B. Heinrich¹, D. Broun¹ and O. Myrasov². *1. Physics, Simon Fraser University, Burnaby, BC, Canada; 2. Physics, University of Alabama, Tuscaloosa, AL*

HR-08. Spin-transfer switching of magnetic tunnel junctions using a conductive atomic force microscope with pulsed current. J. Lee¹, C. Lee^{1,2}, L. Ye¹, D. Yang³, J. Wu⁴, J. Su⁵ and T. Wu^{2,6}. *1. Taiwan SPIN Research Center, National Yunlin University of Science and Technology, Douliou, Taiwan; 2. Graduate School of Materials Science, National Yunlin University of Science and Technology, Douliou, Taiwan; 3. Graduate School of Optoelectronics, National Yunlin University of Science and Technology, Douliou, Taiwan; 4. Department of Physics, National Changhua University of Education, Changhua, Taiwan; 5. Department of Electrical Engineering, National Yunlin University of Science and Technology, Douliou, Taiwan; 6. Graduate School of Information Technology, Overseas Chinese University, Taichung, Taiwan*

HR-09. Spin transfer switching characteristics in [Co/Pd]_m/Cu/[Co/Pd]_n pseudo spin-valve nanopillars with perpendicular anisotropy. N. Thiyagarajah¹ and S. Bae¹. *Biomagnetics Laboratory, Department of Electrical and Computer Engineering, National University of Singapore, Singapore, Singapore*

HR-10. Domain Wall Motion Cell with Perpendicular Anisotropy Wire and In-plane MTJ. H. Honjo¹, F. Shunsuke², R. Nebashi¹, N. Ishiwata², S. Miura¹, S. Noboru¹, S. Tadahiko¹, N. Kasai² and O. Hideo^{2,3}. *1. Green Innovation Research Laboratories, NEC, Tsukuba, Japan; 2. Center of Spintronics Integrated Systems, Tohoku University, Sendai, Japan; 3. Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*

HR-11. Current driven nucleation of domain walls in cylindrical nanowires. *M. Franchin*¹, G. Ashton², M. Albert¹, D. Chernyshenko¹, T. Fischbacher¹, A. Prabhakar³ and H. Fangohr¹. *1. School of Engineering Sciences, University of Southampton, Southampton, Hampshire, United Kingdom; 2. School of Physics and Astronomy, University of Southampton, Southampton, Hampshire, United Kingdom; 3. Department of Electrical Engineering, IIT Madras, Chennai, Tamil Nadu, India*

HR-12. Spin-transfer-torque efficiency in MgO/Co/Pt nanowires with perpendicular magnetic anisotropy. *J. Lee*^{1,2}, K. Kim¹, G. Gim¹, K. Shin² and S. Choe¹. *1. Department of physics, Seoul National University, Seoul, Korea, Republic of; 2. Center for Spintronics Research, Korea Institute of Science and Technology, Seoul, Korea, Republic of*

HR-13. Increase of spin-transfer torque threshold current density in coupled vortex domain walls. *S. Lepadatu*¹, A.P. Mihai¹, J.S. Claydon¹, F. Maccherozzi², S.S. Dhesi², C.J. Kinane³, S. Langridge³ and C.H. Marrows¹. *1. School of Physics and Astronomy, The University of Leeds, Leeds, United Kingdom; 2. Diamond Light Source, Didcot, United Kingdom; 3. ISIS, Rutherford Appleton Laboratory, Didcot, United Kingdom*

HR-14. Current-Induced Spin Torque due to Large Rashba Spin-Orbit Coupling. *W. Kim*¹, A. Manchon² and K. Lee¹. *Dept. of Mater. Sci. & Eng., Korea University, Seoul, Korea, Republic of; 2. Div. of Phys. Sci. & Eng., KAUST, Thuwal, Saudi Arabia*

HR-15. Efficient switching of the domain-wall magnetization by current pulses: a new type of magnetic memory. *O. Tretiakov*¹, Y. Liu¹ and A. Abanov¹. *Texas A&M Univ, College Station, TX*

THURSDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session HS
BIOMEDICAL APPLICATIONS
(Poster Session)
Shoogo Ueno, Chair

HS-01. A Highly Sensitive Integrated Micro-Device for Rapid Detection of Bacteria in Food. *C. Gooneratne*¹, C. Liang¹, I. Giouroudi² and J. Kosel¹. *1. King Abdullah University of Science and Technology, Thuwal, Saudi Arabia; 2. Vienna University of Technology, Vienna, Austria*

HS-02. A new biodection method using magnetic particles and magnetoresistive sensors. *F. Li*¹, I. Giouroudi², A. Useinov¹ and J. Kosel¹. *1. Division of Physical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal(Jeddah), Saudi Arabia; 2. Institute of Sensor and Actuator Systems, Vienna University of Technology, Vienna, Austria*

HS-03. Homogenous magnetic markers immunoassay measurements by Half Bridge SV-GMR Needle Probe. *R. Haraszczuk*¹, S. Yamada¹, M. Kakikawa¹ and T. Ueno¹. *1. Kanazawa University, Kanazawa, Japan*

HS-04. Comparison of Specific Absorption Rate (SAR) Induced in Brain Tissues of Child and Adult Using Mobile Phone. *M. Lu*¹ and S. Ueno². *1. Institute of Biophysics and Biomedical Engineering, Faculty of Sciences, University of Lisbon, Lisbon, Portugal; 2. Department of Applied Quantum Physics, Graduate School of Engineering, Kyushu University, Fukuoka, Japan*

HS-05. Developments in Deep Brain Stimulation using Time Dependent Magnetic Fields. *L.J. Crowther*¹, C.I. Nlebedim¹ and D.C. Jiles¹. *1. Electrical and Computer Engineering, Iowa State University, Ames, IA*

HS-06. Transcranial Magnetic Stimulation of Deep Brain Regions by Consideration of Conventional Coils. *M. Lu*¹ and S. Ueno². *1. Institute of Biophysics and Biomedical Engineering, Faculty of Sciences, University of Lisbon, Lisbon, Portugal; 2. Department of Applied Quantum Physics, Graduate School of Engineering, Kyushu University, Fukuoka, Japan*

HS-07. Effects of Low-Frequency Repetitive Transcranial Magnetic Stimulation on Event Related Potential P300. *T. Torii*¹, A. Sato¹, M. Iwahashi¹ and K. Iramina². *1. Department of Medical Engineering, Junshin Gakuen University, Fukuoka, Japan; 2. Graduate School of Systems Life Science, Kyushu University, Fukuoka, Japan*

HS-08. Electromagnetic characteristics of eccentric figure-eight coil for transcranial magnetic stimulation: A numerical study. *T. Kato*¹, M. Sekino^{1,2}, T. Matsuzaki^{2,3}, A. Nishikawa^{2,4}, Y. Saitoh² and H. Ohsaki¹. *1. The University of Tokyo, Kashiwa, Japan; 2. Osaka University, Suita, Japan; 3. Teijin Pharma Limited, Tokyo, Japan; 4. Shinshu University, Ueda, Japan*

HS-09. Analysis of EEG and ECG at an Acupoint PC9 (Zhongchong) during Pulsed Magnetic Field Stimulus. *S. Kim*¹, J. Lee¹, D. Hwang¹ and H. Lee¹. *1. Oriental Biomedical Engineering, Sangji University, Wonju-si Gangwon-do, Korea, Republic of*

HS-10. Reliability of the Power Spectral Density in Frequency Domain Analysis for Photoplethysmography under Pulsed Magnetic Field Stimulation. *J. Lee*¹, S. Kim¹, H. Lee¹, S. Kim¹ and D. Hwang¹. *1. Oriental Biomedical Engineering, Sangji University, Wonju-si Gangwon-do, Korea, Republic of*

HS-11. The application of magnetic resonance perfusion imaging in the estimation of brain function using SVD method. *Y. Li*¹, D. Ma¹, R. He², L. Rao³, G. Xu¹, X. Shen¹ and W. Yan¹. *1. Province-Ministry Joint Key Laboratory of Electromagnetic Field and Electrical Apparatus Reliability, Hebei University of Technology, Tianjin, China; 2. University of Texas at Houston, Houston, TX; 3. The Methodist Hospital Research Institute, The Methodist Hospital, Houston, TX*

- HS-12. Transportation of superparamagnetic chains aggregation on solid plate.** Z. Wei¹, C. Lee¹, S. Tsai¹ and M. Lai². *1. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan*
- HS-13. Field evolution of magnetic droplet lattice under influence of magnetic dot array.** C. Lee¹, S. Yang¹ and M. Lai². *1. Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; 2. Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan*
- HS-14. Numerical study of self-assembly of magnetic nanoparticles.** D.S. Chernyshenko¹, J. Selmes¹, A. Forrester¹, M. Franchin¹ and H. Fangohr¹. *1. School of Engineering, University of Southampton, Southampton, United Kingdom*
- HS-15. Clustering and Fragmentation Dynamics of Magnetic Nanoparticle Suspensions at Different Timescales.** M. Gupta¹ and M. Sharma¹. *1. Centre for Applied Research in Electronics, Indian Institute of Technology Delhi, New Delhi, Delhi, India*

THURSDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session HT
NANOPARTICLE CHARACTERIZATION II
(Poster Session)
Natalie Huls, Chair

- HT-01. Investigation of cation distribution in single crystalline $\text{Fe}_3\text{Mn}_x\text{O}_4$ microspheres based on Mössbauer spectroscopy.** Y. Li¹, T. Kouh¹, I. Shim¹ and C. Kim¹. *1. Department of Physics, Kookmin University, Seoul, Korea, Republic of*
- HT-02. Bentonite/iron oxide composites studied by NMR and Mössbauer spectroscopy.** P. Kristan¹, V. Chlan¹, H. Stepankova¹, K. Kouril¹, R. Reznicek¹, K. Polakova^{2,3}, V. Prochazka², J. Cuda^{2,3} and I. Medrik^{2,3}. *1. Faculty of Mathematics and Physics, Charles University in Prague, Prague 8, Czech Republic; 2. Centre for Nanomaterial Research, Faculty of Science, Palacky University, Olomouc, Czech Republic; 3. Regional Centre of Advanced Technologies and Materials, Departments of Physical Chemistry and Experimental Physics, Faculty of Science, Palacky University, Olomouc, Czech Republic*

- HT-03. Self consistent measurement and removal of the dipolar interaction field in magnetic particle assemblies and the determination of their intrinsic switching field distribution.** J.M. Martinez Huerta¹, J. De La Torre Medina¹, L. Piraux² and A. Encinas Oropesa^{1,3}. *1. Instituto de Física, Universidad Autónoma de San Luis Potosí, San Luis Potosí, San Luis Potosí, Mexico; 2. Institute of Condensed Matter and Nanosciences, Université Catholique de Louvain, Louvain-la-Neuve, Belgium; 3. Division de Materiales Avanzados, Instituto Potosino de Investigacion Cientifica y Tecnologica A. C., San Luis Potosí, San Luis Potosí, Mexico*
- HT-04. Effect of particle size and Cu doping on the magnetism of CeO₂ nanoparticles.** S. Suri¹, V. Singh¹ and M.S. Seehra¹. *1. Physics, West Virginia University, Morgantown, WV*
- HT-05. Correlation between magnetic ordering and electric polarization in nanosized $\text{YMn}_{1-x}\text{Fe}_x\text{O}_3$ ceramics.** T. Han¹, P. Wu¹, Y. Shih¹ and C. Lin². *1. Department of Applied Physics, National University of Kaohsiung, Kaohsiung, Taiwan; 2. Department of Mechanical Engineering and Institute of Nanotechnology, Southern Taiwan University, Tainan, Taiwan*
- HT-06. Enhanced magnetization in of $\text{V}_x\text{Fe}_{3-x}\text{O}_4$ Nanoparticles.** V.L. Pool¹, M.T. Klem^{2,3}, C.L. Chorney^{2,3}, E.A. Arenholz⁴ and Y.U. Idzerda¹. *1. Department of Physics, Montana State University, Bozeman, MT; 2. Chemistry, Montana Tech, Butte, MT; 3. Center for Advanced Supramolecular and Nano Systems, Montana Tech, Butte, MT; 4. Advanced Light Source, Lawrence Berkeley National Labs, Berkeley, CA*
- HT-07. Electromagnetic Characteristics of Surface Modified Iron Nanowires at X-band Frequencies.** W. Liang¹, R. Yang², W. Lin³, Z. Jian³, C. Tsay⁴, S. Wu³, H. Lin³, S. Choi¹ and C. Lin⁴. *1. Department of Aeronautics and Astronautics, National Cheng Kung University, Tainan, Taiwan; 2. Department of Aerospace and Systems Engineering, Feng Chia University, Taichung, Taiwan; 3. Department of Materials Engineering, Tatung University, Taipei, Taiwan; 4. Department of Materials Science and Engineering, Feng Chia University, Taichung, Taiwan*
- HT-08. Size effect of Fe nanoparticles on high frequency dynamics for highly dense self-organized assembly.** H. Kura¹, T. Ogawa¹, R. Tate¹, K. Hata² and M. Takahashi¹. *1. Department of Electronic Engineering, Graduated School of Engineering, Tohoku University, Sendai, Miyagi, Japan; 2. Osaka Branch, SAMUSUNG Yokohama Research Institute, Minoo, Osaka, Japan*
- HT-09. High frequency study of core-shell and uncoated Fe_3O_4 nanoparticles.** B.K. Kuan¹, V. Veerakumar², A.V. Kuan³, S.R. Mishra⁴, R.E. Camley¹ and Z. Celinski¹. *1. Department of Physics, University of Colorado at Colorado Springs, Colorado Springs, CO; 2. Seagate Technology, 7801 Computer Ave, Bloomington, MN 55435, MN; 3. Physics Department, Shaheed Rajguru College of Applied Science for Women (Delhi University), Jhilmil Colony, Delhi, India; 4. Department of Physics, University of Memphis, Memphis, TN*

HT-10. Ultrafast magnetization dynamics of Core/Shell CoPt nanoparticles. H. Kesserwan¹, V. Halté¹, T. Kim² and J. Bigot¹. *1. Institut de Physique et Chimie des Matériaux de Strasbourg, CNRS - Université de Strasbourg, Strasbourg, France; 2. Department of Physics, Ewha Womans University, Seoul, Korea, Republic of*

HT-11. Cobalt-driven enhancement of the magnetism of magnetoferritin-based nanoparticles. E. Skoropata¹, P. Ceci², O. Kasyutich³ and J. van Lierop¹. *1. Physics & Astronomy, University of Manitoba, Winnipeg, MB, Canada; 2. CNR Institute of Molecular Biology and Pathology, University of Rome, Rome, Italy; 3. HH Wills Physics Laboratory, University of Bristol, Bristol, United Kingdom*

HT-12. Magnetic Properties of Self-Assembled (In, Mn)As Nanodots: Effects of Dot Density and Size Distribution. F. Xu¹, P. Huang², J. Huang², W. Lee², T. Chin² and S. Li³. *1. Department of Materials Science and Engineering, Nanjing University of Science and Technology, Nanjing, Jiangsu, China; 2. National Tsinghua University, Hsinchu, Taiwan; 3. Fujian Normal University, Fuzhou, China*

HT-13. Derivation of the Moment Weighted Blocking Temperature Distribution in the Nanoparticle Systems from Magnetization Measurements. T. Lee¹, S. Kim¹, B. Suh², Z. Jang¹ and K. Kim³. *1. Physics, Kookim univ., Seoul, Seoul, Korea, Republic of; 2. Physics, The Catholic University of Korea, Bucheon, Gyunggido, Korea, Republic of; 3. Biotechnology & Bioinformatics, Korea University, Jochiwon, Chungchungnamdo, Korea, Republic of*

HT-14. Fe₃O₄ nanoparticles sedimentation in water solution under gradient magnetic fields. I. Medvedeva¹, S. Zhakov¹, I. Byzov¹, M. Uimin¹, A. Yermakov¹, A. Mysik¹, V. Tsurin¹, N. Shchegoleva¹ and K. Bä rner². *1. Institute of Metal Physics, RAS, Ekaterinburg, Russian Federation; 2. Dep. Phys., University of Göttingen, Göttingen, Germany*

HT-15. Magnetic NiFe/Au barcode nanowires with self-powered motions. I. Jeon^{1,2}, S. Yoon¹, B. Kim¹, J. Lee¹, B. An¹, J. Wu² and Y.K. Kim^{1,2}. *1. Department of Materials Science and Engineering, Korea University, Seoul, Korea, Republic of; 2. Pioneer Research Center for Biomedical Nanocrystals, Korea University, Seoul, Korea, Republic of*

THURSDAY
AFTERNOON
1:00

SAGUARO BALLROOM

**Session HU
SUPERCONDUCTIVITY
(Poster Session)
Mark Lumsden, Chair**

HU-01. Effect of Fe composition on the superconducting properties (T_c, H_{c2} and H_{irr}) of Fe_xSe_{1/2}Te_{1/2} (x=0.95, 1.00, 1.05 and 1.10). S. Sudesh¹, S. Rani¹, S. Das³, R. Rawat², C. Bernhard³ and G.D. Varma¹. *1. Physics, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India; 2. UGC-DAE C.S.R., Indore, M.P., India; 3. Physics, University of Fribourg, Fribourg, Switzerland*

HU-02. Quasiparticle relaxation across the multiple superconducting gaps in the electron-doped BaFe_{1.85}Co_{0.15}As₂. Y. Ren¹, Y. Gong¹, T. Nosach¹, J. Li², J.J. Tu², L.J. Li³, G.H. Cao³ and Z.A. Xu³. *1. Physics & Physics, Hunter College of the City University of New York, New York, NY; 2. Physics, City College of New York, New York, NY; 3. Physics, Zhejiang University, Hangzhou, Zhejiang, China*

HU-03. Magnetic characterizations of a EuCo₂As₂ single crystal. J. Ballinger¹, L.E. Wenger¹, Y.K. Vohra¹ and A.S. Sefat². *1. Physics, University of Alabama at Birmingham, Birmingham, AL; 2. Oak Ridge National Laboratory, Oak Ridge, TN*

HU-04. Angular dependence of transport, magnetic and flux pinning potential of Ba(Fe_{1-x}Co_x)₂As₂ superconducting single crystals. M. Shahbazi¹, X. Wang¹, K. Choi², Y. Ma² and S. Dou¹. *1. Institute for Superconducting and Electronic Materials, Wollongong, NSW, Australia; 2. sogang university, seoul, Korea, Republic of*

HU-05. London penetration depth measurements of Fe_{1+y}(Te_{1-x}Se_x) single crystals at ultra low temperatures. A. Diaconu¹, J. Hu², T. Liu², B. Qian², Z. Mao² and L. Spinu¹. *1. Department of Physics / AMRI, University of New Orleans, New Orleans, LA; 2. Department of Physics and Engineering Physics, Tulane University, New Orleans, LA*

HU-06. A Mössbauer study of magnetic ordering and lattice dynamics in the iron-pnictide high-T_c superconductor: K_{0.80}Fe_{1.76}Se_{2.00}. D. Ryan¹, W.N. Rowan-Weetaluktuk¹, R. Hu², S.L. Bud'ko² and P.C. Canfield². *1. Physics, McGill University, Montreal, QC, Canada; 2. Physics and Astronomy, Iowa State University, Ames, IA*

HU-07. Evidence for intrinsic superconductivity at T_{c1} in PrOs₄Sb₁₂
B. Andraka¹. *1. Physics, University of Florida, Gainesville, FL*

HU-08. Current densities of nano-SiC doped MgB₂/Fe wires by combined ex situ/in situ process. W. Li¹, R. Zeng¹, S. Zhou¹ and S. Dou¹. *1. Institute for Superconducting and Electronic Materials, University of Wollongong, Fairy Meadow, NSW, Australia*

HU-09. Hysteresis of the Phase Diagram in the Ferromagnet-Superconductor Hybrids. *A.E. Ozmetin¹, K. Kim², H. Lee², D.D. Rathnayaka², I.F. Lyuksyutov² and D.G. Naugle²*. *Department of Electrical and Electronics Engineering, Melikah University, Kayseri, Turkey; 2. Department of Physics, Texas A&M University, College Station, TX*

HU-10. Magneto-optical Visualization of Flux Distribution in Fe-based Superconducting Materials. *Z.W. Lin¹, J.G. Zhu¹, Y.G. Guo¹ and T.H. Johansen²*. *1. Faculty of Engineering and Information Technology, University of Technology, Sydney, Sydney, NSW, Australia; 2. Department of Physics, University of Oslo, Blindern, Norway*

HU-11. Transport measurements of lateral MgB₂/Fe/MgB₂ junctions. *S.M. Fabretti¹, P. Thomas¹, M. Schäfers¹ and A. Thomas¹*. *Physics, University, Bielefeld, NRW, Germany*

HU-12. Effect of Boron substitution on the superconductivity of MgCnI₃. *A. Kumar^{1,2}, R. Jha¹, R. Tandon² and V. Awana¹*. *Quantum Phenomena and Application, National Physical Laboratory, New Delhi, Delhi, India; 2. Physics and Astrophysics, University of Delhi, New Delhi, Delhi, India*

HU-13. Magnetic and Superconducting Properties of Spin-Fluctuation-Limited Superconducting nanoporous VNx nanowires. *R. Zeng¹*. *University of Wollongong, Wollongong, NSW, Australia*

HU-14. Magnetism and superconductivity in the Heusler alloy Pd₂YbPb. *Y.-. Oner¹*. *Department of Physics, Istanbul Technical University, Istanbul, Turkey*

HU-15. Annealing Effects on Superconductivity and Magnetism in Fe_{1+y}Te_{1-x}S_x Single Crystals. *Z. Zhang¹, Z. Yang², L. Li¹, L. Pi¹, S. Tan¹ and Y. Zhang¹*. *High Magnetic Field Laboratory, Univ. of Sci. & Tech. of China, Hefei, Anhui, China; 2. Key Laboratory of Materials Physics, Institute of Solid State Physics, Hefei, Anhui, China*

THURSDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session HV
MICROMAGNETIC MODELING II
(Poster Session)
Xiaobin Wang, Chair

HV-01. Fast Magnetic Field Analysis by specialized multigrid method for laminated iron core. *R. Nagahama¹ and S. Wakao¹*. *Waseda University, Tokyo, Japan*

HV-02. A Tie-plate Core Loss Minimization of 24 MVA Power Transformer using Finite Element Analysis with an Optimization Method. *P. Shin¹, Y. Kim¹ and C. Koh²*. *1. Electrical Engineering, Hongik University, Jochiwon, Chungnam, Korea, Republic of; 2. Electrical Engineering, Chung Bul National University, Cheongju, Korea, Republic of*

HV-03. Two-Phase Flow of Magnetic Nanofluids Driven by Surface and Body Force Densities Due to Total and External Fields Incorporating with Level-set Method. *G. Jeong¹, Y. Kim², S. Choi³, S. Lee¹ and H. Lee¹*. *1. School of Electrical Eng. and Computer Science, Kyungpook National University, Daegu, Korea, Republic of; 2. Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA; 3. Korea Basic Science Institute, Busan, Korea, Republic of*

HV-04. Semargl: An Advanced Tool for Analysis of the Output from Micromagnetic Simulations. *M. Dvornik¹ and V.V. Kruglyak¹*. *School of Physics, University of Exeter, Exeter, Devon, United Kingdom*

HV-05. Computing the demagnetising tensor for finite difference micromagnetic simulations via numerical integration. *D.S. Chernyshenko¹, M. Franchin¹ and H. Fangohr¹*. *School of Engineering, University of Southampton, Southampton, United Kingdom*

HV-06. A precise description of the magneto-optical Kerr effect. *R. Dost¹, B. Paul², D.A. Allwood¹ and I.G. Hughes²*. *1. Materials Science and Engineering, University of Sheffield, Sheffield, United Kingdom; 2. Physics, Durham University, Durham, United Kingdom*

HV-07. Cyclical Magnetic Field Flow Fractionation. *T.O. Tasci¹, W.P. Johnson² and B.K. Gale³*. *1. Bioengineering, University of Utah, Salt Lake City, UT; 2. Geology and Geophysics, University of Utah, Salt Lake City, UT; 3. Mechanical Engineering, University of Utah, Salt Lake City, UT*

HV-08. Effect of the surface layer on the magnetic behavior of nanoparticles. *F.R. Arantes¹ and D.R. Cornejo¹*. *Condensed Matter Physics, Institut of Physics, University of São Paulo, Sao Paulo, Sao Paulo, Brazil*

HV-09. Vortex dynamics simulation in two- and three-dimensional superconducting samples. *D. Velasco¹*. *CIMAV, Chihuahua, Chihuahua, Mexico*

HV-10. An efficient wavelet transform based algorithm for fast computation of the 3D demagnetizing field in micromagnetic simulations. *A. Kazmi¹ and M.A. Sohail¹*. *National University of Computer and Emerging Sciences, Lahore, Pakistan*

HV-11. Micromagnetic modeling of one-dimensional assemblies of magnetite nanocrystals. *M. Charilaou¹, M. Winklhofer¹ and A.U. Gehring¹*. *ETH Zurich, Zurich, Switzerland*

- HV-12. Semi-implicit integration scheme for Landau–Lifshitz–Gilbert–Slonczewski equation.** A. Giordano¹, G. Finocchio¹, L. Torres², M. Carpentieri³ and B. Azzerboni¹. *University of Messina, Messina, Italy; 2. Universidad de Salamanca, Salamanca, Spain; 3. University of Calabria, Cosenza, Italy*
- HV-13. Study on Micro-magnetic Simulation of Magnetic State of TbFeCo/Anodized Aluminum Oxide Film.** F. Jin¹, X. Yang², W. Cheng² and Y. Li². *1. Faculty of Mechanical & Electronic Information, China University of Geosciences, Wuhan, Hubei, China; 2. Department of Electronic Science & Technology, Huazhong University of Science & Technology, Wuhan, Hubei, China*
- HV-14. Controlling the core-to-core distance of vortex pairs in exchange biased iron elliptical nanoelements.** T.R. Moura¹, F.F. Oliveira¹, G.O. Rebouças³, A.L. Dantas² and A.S. Carriço¹. *1. Department of Physics, Universidade Federal do Rio Grande do Norte, Natal, RN, Brazil; 2. Department of Physics, Universidade do Estado do Rio Grande do Norte, Mossoró, RN, Brazil; 3. Department of Physics, Universidade Federal Rural do Semi-Árido, Angicos, RN, Brazil*
- HV-15. Geometric Structure, Electronic Structure, and Spin Transition of Several Fe^{II} Spin-crossover Molecules.** T.V. Nguyen¹ and N.A. Tuan¹. *1. Faculty of Physics, Hanoi University of Science, Vietnam National University, Hanoi, Viet Nam*

THURSDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session HW
**TRANSFORMERS, MOTORS, INDUCTORS
AND LEVITATION III**
(Poster Session)

Ichiro Sasada, Chair

- HW-01. The optimization of dual-axis closed-loop fluxgate technology in precision current sensor.** Z. Bo¹ and Y. Xiaoguang¹. *1. Electrical engineering, Tianjin, China*
- HW-02. Optimized Secondary Overhang Design of Linear Induction Motor using Coupling 3D Finite Element Method and Electromagnetic Field Theory.** S. Jang¹, J. Jeong¹, Y. Park¹, K. Ko¹ and D. You². *1. Electrical Engineering, Chungnam National University, Daejeon, Korea, Republic of; 2. Fire Safety Engineering, Chungnam Cheongyang College, Cheongyang-Gun, Korea, Republic of*

- HW-03. Magnetic Properties and High-Frequency Characteristics of FeCoAlO Gradient Thin Films.** F. Zheng¹, F. Luo¹, Y. Lou¹, J. Bai¹, D. Wei², X. Liu³ and F. Wei¹. *1. Key Laboratory for Magnetism and Magnetic Materials of the Ministry of Education, Lanzhou University, Lanzhou, Gansu, China; 2. Lab of Advanced Materials, Dept. of Materials Science and Engineering, Tsinghua University, Beijing, China; 3. Department of Information Engineering, Shinshu University, Nagano, Japan*
- HW-04. Development of a Hybrid Magnet Array for an Active Maglev Control System.** W. Ko¹, C.H. Ham², K. Lin³ and Y. Joo⁴. *1. Electrical Engineering, Kyungwon University, Seongnam, Kyunggi, Korea, Republic of; 2. Mechatronics Engineering, Southern Polytechnic State University, Marietta, GA; 3. Mechanical, Materials, and Aerospace, University of Central Florida, Orlando, FL; 4. Corresponding author, Kunsan Nat'l University, Kunsan, Jeonbuk, Korea, Republic of*
- HW-05. 3D Analysis of Behavior of Magnetic Flux Density on Transformer Core Joints.** S. Mousavi¹ and G. Engdahl¹. *1. KTH, Stockholm, Sweden*
- HW-06. Optimization of Active Electromagnetic Suspension Systems Using Particle Swarm Evolutionary Computation Approach.** A. Adly¹ and S. Abd-El-Hafiz². *1. Elect. Power & Machines Dept., Cairo University, Giza, Egypt; 2. Engineering Mathematics Dept., Cairo University, Giza, Egypt*
- HW-07. A New Fault-tolerant Permanent-magnet Machine for Electric Vehicle Applications.** Q. Chen¹, G. Liu¹, W. Gong¹, Q. Li¹ and W. Zhao¹. *1. School of Electrical and Information Engineering, Jiangsu University, Zhenjiang, China*
- HW-08. Offline and Online modeling of flux linkage characteristics of SRM Using RBF neural networks.** C. Jun¹, Z. Deng¹, S. Xiong¹ and Y. Wu¹. *1. College of automation, Nanjing University of Aeronautics and Astronautics, Nanjing, China*

THURSDAY
AFTERNOON
1:00

SAGUARO BALLROOM

Session HX
MAGNETO-OPTICS AND MEMS II
(Poster Session)

Charles Krafft, Chair

- HX-01. Microscopic Magneto-Optic Kerr Effect Spectroscopy in Ni₂Fe₂₅ and Fe Ferromagnetic Thin Films on Organic Substrates.** K. Kondo¹, H. Kaiju^{1,2} and A. Ishibashi¹. *1. Laboratory of Quantum Electronics, Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan; 2. PRESTO, Japan Science and Technology Agency, Kawaguchi, Japan*

- HX-02. Superprism phenomenon in two-dimensional magnetophotonic crystals: experiment and numerical simulation.** S. Baek¹, A.V. Baryshev^{1,2} and M. Inoue¹. *Toyohashi University of Technology, Toyohashi, Aichi, Japan; 2. Ioffe Physico-Technical Institute, St. Petersburg, Russian Federation*
- HX-03. Magneto-optical Spectroscopy Characterization of Barium Hexagonal Ferrite Thin Films Grown by MOD Technique.** E. Liskova¹, S. Visnovsky¹, J. Pistora², I. Harward³, Y. Nie^{3,4} and Z. Celinski³. *1. Physics, Charles University, Praha 2, Czech Republic; 2. Physics, Technical University Ostrava, Ostrava, Czech Republic; 3. Center for Magnetism and Magnetic Nanostructures, University of Colorado, Colorado Springs, CO; 4. Electronic Science and Technology, University of Science and Technology, Wuhan, Hubei, China*
- HX-04. Giant magnetorefractive effect in the optimally doped thin manganite films.** A. Teletin¹, Y.P. Sukhorukov¹ and A. Granovsky². *1. Institute of Metal Physics RAS, Ekaterinburg, Russian Federation; 2. Moscow State University, Moscow, Russian Federation*
- HX-05. Fabrication of scrolled magnetic thin film patterns.** S. Min¹, J. Lim², J. Gaffney¹, K. Kinttle³, J.B. Wiley² and L. Malkinski¹. *1. Advanced Materials Research Institute (AMRI), The University of New Orleans, New Orleans, LA; 2. Department of Chemistry, University of New Orleans, New Orleans, LA; 3. Department of Electrical Engineering, Penn State Harrisburg, Middletown, PA*
- HX-06. Epitaxial Fe_{1-x}Ga_x / GaAs Structures via Electrochemistry for Spintronics and MEMS Applications.** K. Reddy¹, J. Park³, S. Na³, M. Maqableh², A. Flatau³ and B. Stadler^{1,2}. *1. Chemical Engineering and Materials Science, University of Minnesota - Twin Cities, Minneapolis, MN; 2. Electrical and Computer Engineering, University of Minnesota - Twin Cities, Minneapolis, MN; 3. Aerospace Engineering, University of Maryland, College Park, MD*
- HX-07. Lateral RF MEMS Capacitive Switch Based on ALD Dielectrics for 35GHz Radar Application.** X. He¹. *1. School of Applied Sciences, Harbin University of Science and Technology, Harbin, China*

- A -

Aas C.J. (DD-01)	120
Abanov A. (CU-07)	109
Abanov A. (GS-14)	238
Abanov A. (HR-15)	270
Abd-El-Hafiz S. (FS-03)	204
Abd-El-Hafiz S. (HW-06)	279
Abe K. (DD-15)	122
Abe K. (GD-03)	220
Abe T. (FU-12)	209
Abo G.S. (BH-05)	64
Abo G.S. (BH-06)	64
Abo G.S. (CE-03)	89
Abraham D. (AF-01)	26
Abraham D.D. (AF-07)	27
Abraham D.W. (DA-03)	115
Abraham D.W. (EF-08)	159
Abramov N. (EU-10)	177
Abrudan R. (AG-08)	30
Abrudan R. (AH-03)	31
Acedo P. (ES-07)	172
Acevedo A. (ER-07)	170
Acharya R. (EA-02)	147
Acharya R. (FG-11)	195
Ackland K. (AQ-05)	35
Acremann Y. (ED-02)	153
Adam J. (FB-11)	184
Adams C.S. (FW-11)	213
Adari R. (BS-09)	73
Adari R.R. (BQ-09)	69
Adekunle A. (FD-04)	187
Adeline M. (FH-13)	197
Adenwalla S. (AW-06)	47
Adenwalla S. (EG-08)	162
Adeyeye A. (DS-12)	138
Adeyeye A.O. (DS-06)	138
Adeyeye A.O. (EQ-04)	168
Adeyeye A.O. (FD-03)	187
Adeyeye A.O. (GS-05)	237
Adeyeye A.O. (HQ-01)	266
Adeyeye A.O. (HQ-04)	266
Adly A. (AU-07)	43
Adly A. (FS-03)	204
Adly A. (HW-06)	279
Adroja D.T. (GE-10)	223
Aeschlimann M. (CS-13)	105
Aeschlimann M. (ED-09)	155
Aeschlimann M. (ED-11)	155
Aeschlimann M. (FD-07)	187
Afansiev D. (ED-03)	154
Afonso C.R. (CW-15)	114
Afsar M.N. (BC-13)	54
Agnus G. (DA-04)	115
Agnus G. (FE-06)	189
Agnus G. (FW-09)	213
Agnus G. (HE-11)	257
Agrawal A. (DG-11)	128
Ahad F. (DS-01)	137
Ahmad A. (EE-05)	156
Ahmad E. (CD-06)	88
Ahmad N. (BP-03)	66
Ahmad N. (HH-12)	263
Ahmadi B. (FT-02)	206
Ahn J. (BV-08)	79
Ahn S. (AD-11)	23
Ahn S. (DA-04)	115
Ahn S. (FW-09)	213
Ahn S. (FW-10)	213
Ahn W. (BH-05)	64
Ahn W. (BH-06)	64
Aibin M. (AQ-02)	35
Aidala K. (GP-12)	232
Aikoh K. (CW-10)	114
Aimon N. (BT-09)	75
Ajan A. (EA-02)	147
Akdogan O. (AE-12)	25
Akemeier D. (AA-04)	18
Åkerman J. (AD-04)	22
Åkerman J. (AD-05)	22
Åkerman J. (AD-06)	22
Åkerman J. (CF-08)	92
Åkerman J. (DT-07)	140
Åkerman J. (EB-06)	149
Åkerman J. (EB-10)	149
Åkerman J. (EB-11)	150
Åkerman J. (FC-09)	185
Åkerman J. (GW-05)	245
Åkerman J. (HA-03)	247
Åkerman J. (HC-01)	250
Akihiro M. (GR-09)	236
Akiho T. (GB-12)	217
Akimov A.V. (AC-10)	21
Alaan U.S. (AQ-15)	37
Alagarsamy P. (CF-04)	91
Alam M.T. (AH-11)	32
Alameda J.M. (GF-05)	225
Alameda J.M. (HQ-09)	267
Alanko G.A. (GQ-10)	234
Al-Ansari A. (ER-05)	170
Al-Azri M. (BQ-05)	68
Albert M. (FH-04)	196
Albert M. (HR-11)	270
Albertini F. (AU-12)	44
Albertini F. (CF-01)	91
Albertini F. (DH-13)	131
Albino Oliveira de Aguiar J. (BC-12)	54
Albon C. (AA-04)	18
Albrecht M. (AC-06)	20
Albrecht M. (CD-08)	88
Albrecht M. (CS-01)	104
Alebrand S. (CS-13)	105
Alebrand S. (ED-11)	155
Alebrand S. (FD-07)	187
Alejos O. (GP-14)	233
Alexander P. (DH-10)	130
Alexander, Jr. M.D. (BH-09)	65
Alexandrakis V. (FH-03)	196
Alfadhel A.H. (DV-04)	143
Algarabel P. (DH-13)	131
Ali N. (CT-15)	108
Ali N. (FU-10)	209
Alighieri G. (FH-12)	197
Allard L.F. (AS-15)	40
Allende S. (FH-06)	196
Allibe J. (GF-07)	225
Allwood D.A. (DC-01)	118
Allwood D.A. (DC-13)	120
Allwood D.A. (DG-09)	128
Allwood D.A. (EP-02)	166
Allwood D.A. (FW-11)	213
Allwood D.A. (GF-02)	224
Allwood D.A. (HQ-12)	267
Allwood D.A. (HV-06)	277
Alonso L. (GS-06)	237
Altbir D. (DR-15)	137
Altbir D. (FH-06)	196
Althammer M. (FB-06)	183
Althammer M. (GA-03)	214
Altounian Z. (CV-01)	110
Altounian Z. (GR-04)	235
Alzate J. (EG-10)	163
Alzate J.G. (DB-03)	116
Alzate J.G. (EG-11)	163

Amado J.D. (EH-11)	165
Amagai T. (GS-03)	237
Amaladass E. (AW-10)	48
Ambaye H. (AS-15)	40
Ambrose M. (BG-10)	63
Ambrose M. (DT-02)	139
Amiri P. (EG-10)	163
Amiri P.K. (AF-12)	27
Amiri P.K. (BB-09)	51
Amiri P.K. (BH-15)	66
Amiri P.K. (GT-03)	239
Amiri P.K. (HR-05)	269
Ammar S. (GH-12)	230
An B. (GH-08)	230
An B. (HT-15)	274
An T. (CD-11)	89
An T. (FR-05)	202
Anane A. (HE-08)	256
Anane A. (HE-09)	257
Anderson I.E. (CT-13)	107
Anderson I.E. (GG-02)	227
Anderson I.E. (GG-04)	227
Anderson I.E. (HG-01)	259
Ando K. (AF-10)	27
Ando K. (CC-02)	85
Ando K. (EB-05)	149
Ando K. (EB-08)	149
Ando K. (EQ-12)	169
Ando K. (EV-02)	178
Ando K. (GB-03)	215
Ando K. (GB-05)	216
Ando K. (HB-06)	249
Ando K. (HC-05)	251
Ando K. (HC-07)	251
Ando Y. (AA-03)	17
Ando Y. (BB-07)	51
Ando Y. (BR-08)	71
Ando Y. (BS-01)	72
Ando Y. (BS-02)	72
Ando Y. (BT-07)	75
Ando Y. (CC-08)	86
Ando Y. (DD-13)	121
Ando Y. (DE-02)	122
Ando Y. (DE-10)	123
Ando Y. (EG-13)	163
Ando Y. (EV-10)	179
Ando Y. (EV-11)	179
Ando Y. (FD-07)	187
Ando Y. (FE-15)	191
Ando Y. (FP-12)	199
Ando Y. (FU-06)	209
Andraka B. (HU-07)	275
Andrei P. (GP-10)	232
Andrieu S. (CC-01)	85
Andrieu S. (EF-04)	159
Andrieu S. (EF-05)	159
Androutopoulos M. (BP-05)	66
Angani C.S. (FS-05)	204
Anh L.D. (DF-11)	126
Anh Nguyen T.N. (AD-04)	22
Anisimov M.A. (CQ-11)	101
Ansalone D.P. (DS-04)	137
Antropov V. (CT-11)	107
Antropov V. (GE-04)	222
Aoi H. (AT-12)	42
Aoi H. (DD-04)	120
Aoi H. (FG-09)	194
Aoi H. (GU-07)	242
Aoi H. (GU-09)	242
Aoi H. (HQ-02)	266
Aoki M. (CC-07)	86
Aoshima K. (BB-12)	52
Apalkov D. (BB-01)	50
Apalkov D. (BB-02)	50
Apalkov D. (BB-11)	51
Apalkov D. (HE-08)	256
Appino C. (FS-09)	205
Apunnoose A. (AP-07)	33
Aquino R. (HF-09)	258
Arac E. (EF-03)	159
Arac E. (FU-08)	209
Araidai M. (CC-08)	86
Arammash F. (HC-10)	251
Arantes F.R. (ER-09)	170
Arantes F.R. (HV-08)	277
Araujo J.P. (CE-09)	90
Araujo J.P. (DF-13)	126
Araujo J.P. (EE-14)	158
Araujo J.P. (EG-05)	162
Araujo J.P. (GQ-02)	233
Arena D. (AG-07)	29
Arena D. (FC-07)	185
Arena D.A. (AG-04)	29
Arena D.A. (BD-02)	55
Arena D.A. (CC-03)	85
Arena D.A. (EF-11)	160
Arena D.A. (EQ-07)	168
Arena D.A. (FR-12)	203
Arena D.A. (GE-07)	223
Arena D.A. (GS-13)	238
Arenholz E. (AG-02)	28
Arenholz E. (BE-08)	58
Arenholz E. (BE-11)	58
Arenholz E. (FP-13)	199
Arenholz E.A. (HT-06)	273
Ariake J. (DQ-06)	134
Ariake J. (FS-04)	204
Arnaudias J.I. (DG-08)	128
Arnold Z. (AU-12)	44
Arnold Z. (BE-02)	57
Arnold Z. (DH-13)	131
Arora M. (BF-04)	60
Arora M. (HR-07)	269
Arora S.K. (FF-02)	191
Arora S.K. (FW-08)	213
Arrott A.S. (BD-10)	56
Asada H. (FP-15)	199
Asano H. (BE-04)	57
Asano H. (EU-13)	177
Asano K. (AU-02)	43
Asbahi M. (AT-15)	42
Asbahi M. (FG-12)	195
Ashida T. (FE-05)	189
Ashton G. (HR-11)	270
Ashworth T.V. (DG-06)	128
Ashworth T.V. (GF-09)	226
Astefanoaci I. (DR-07)	136
Atac D. (BG-08)	63
Atkinson D. (EF-03)	159
Atkinson D. (FU-08)	209
Atkinson D. (HQ-05)	266
Atxitia U. (AH-03)	31
Atxitia U. (ED-03)	154
Atxitia U. (ED-04)	154
Atxitia U. (EQ-06)	168
Au Y. (CD-06)	88
Audehm P. (FC-04)	184
Auffret S. (AF-03)	26
Auffret S. (DA-05)	115
Auffret S. (GA-02)	214
Auffret S. (GC-01)	217
Auffret S. (HE-10)	257
Auge A. (AA-04)	18
Aurelio D. (EQ-05)	168

Ausserlechner U. (CH-05)	96
Auyeung R. (DF-12)	126
Avanesyan G. (DC-04)	118
Avery A.D. (FB-02)	182
Awana V. (AR-07)	38
Awana V. (HU-12)	276
Awana V.S. (CU-08)	109
Awano H. (GC-14)	219
Awschalom D. (GB-04)	216
Awschalom D.D. (GC-15)	219
Ayala-Valenzuela O.E. (CP-01)	97
Azevedo A. (DB-07)	117
Azevedo A. (EV-03)	178
Azevedo A. (EV-06)	178
Azuma D. (CB-02)	83
Azzerboni B. (AW-08)	48
Azzerboni B. (EB-13)	150
Azzerboni B. (EQ-09)	168
Azzerboni B. (HC-02)	250
Azzerboni B. (HV-12)	278

- B -

Baba Y. (BS-01)	72
Baba Y. (BS-02)	72
Bachmann M. (EG-01)	161
Bachmann M. (FB-04)	183
Back C. (BS-07)	73
Back C.H. (BD-04)	55
Back C.H. (EQ-14)	169
Back C.H. (FR-11)	203
Back C.H. (GA-03)	214
Backes D. (AF-02)	26
Backes D. (AF-05)	26
Bader S.D. (BG-06)	62
Bader S.D. (EP-11)	167
Badgley K.E. (HF-04)	258
Bae J. (GQ-01)	233
Bae S. (AD-02)	22
Bae S. (ES-01)	171
Bae S. (ES-04)	172
Bae S. (HR-09)	269
Bae Y. (BR-14)	71
Back S. (HX-02)	280
Bagheri M. (HH-10)	263
Bai D. (AS-14)	40
Bai D. (BF-11)	61
Bai D. (DG-07)	128
Bai F. (GT-02)	239
Bai F. (GT-10)	240
Bai J. (AT-14)	42
Bai J. (DW-02)	145
Bai J. (GT-05)	240
Bai J. (GU-11)	242
Bai J. (GV-12)	244
Bai J. (HW-03)	279
Bai X. (EP-10)	166
Bai Y. (ED-12)	155
Bailey W.E. (EQ-07)	168
Bailey W.E. (FR-10)	203
Bailey W.E. (GA-02)	214
Bain J.A. (EA-03)	147
Bain J.A. (EE-07)	156
Bakas T. (BP-05)	66
Bakker F.L. (FB-11)	184
Balachandran J. (HH-01)	261
Balamurugan B. (AE-06)	24
Balashov T. (FF-02)	191
Balalubramanian B. (AE-02)	24
Balalubramanian B. (CW-13)	114
Balalubramanian B. (FF-06)	192
Balashov A.M. (ED-05)	154
Balashov A.M. (EU-05)	176
Balashov A.M. (HD-05)	254
Baldo M.A. (HE-04)	256
Balestriere P. (DF-05)	125
Balk A. (HA-01)	247
Balk A.L. (GC-15)	219
Balke B. (FS-06)	205
Ballesteros B. (FF-02)	191
Ballinger J. (HU-03)	275
Baltz V. (AW-15)	49
Baltz V. (GF-07)	225
Baltz V. (GF-08)	226
Bandiera S. (AF-03)	26
Bandiera S. (DA-05)	115
Bandiera S. (GC-01)	217
Bandiera S. (HE-10)	257
Bando Y. (BQ-07)	68
Banerjee D. (BQ-09)	69
Banerjee D. (BS-09)	73
Banerjee S.K. (GW-12)	246
Banerjee T. (HB-04)	249
Bao M. (BH-15)	66
Bao M. (DB-03)	116
Baolong S. (AQ-02)	35
Baoru B. (DP-03)	132
Bar-Ad S. (GF-05)	225
Baraduc C. (EB-03)	148
Barbosa A.G. (DR-10)	136
Barbosa G.C. (EH-11)	165
Barik S. (AG-12)	30
Barik S. (CP-14)	99
Barker J. (ED-03)	154
Barmak K. (AT-11)	42
Barmak K. (CF-06)	91
Barman A. (AC-13)	21
Barman A. (EQ-08)	168
Barman S. (AC-13)	21
Barnas J. (EW-01)	180
Bärner K. (FE-08)	190
Bärner K. (HT-14)	274
Barnes C. (BS-12)	73
Barnes C. (GB-09)	216
Barón-González A. (AG-08)	30
Barraud C. (AB-03)	18
Barreteau C. (FD-09)	188
Bartell J. (HA-01)	247
Bartell J. (HQ-07)	267
Barthélémy A. (AG-05)	29
Barthélémy A. (CA-05)	82
Barthélémy A. (GF-07)	225
Barthelemy M. (CS-01)	104
Bartolomé F. (BE-05)	57
Bartolomé J. (BE-05)	57
Barua R. (CE-05)	90
Baruth A. (DE-07)	123
Baryshev A. (AH-02)	31
Baryshev A.V. (AH-01)	31
Baryshev A.V. (BT-14)	76
Baryshev A.V. (ET-14)	175
Baryshev A.V. (FT-03)	206
Baryshev A.V. (HX-02)	280
Bashir M.A. (HQ-12)	267
Basith M.A. (EE-02)	156
Bassett D. (FB-02)	182
Basso V. (CG-09)	94
Bataille A. (GR-13)	236
Batallan F. (AD-07)	23
Batchuluun T. (CW-10)	114
Battle X. (GF-05)	225
Battachio M. (ED-04)	154
Bauer C. (BU-01)	76
Bauer C.A. (CG-10)	94

Bauer G.E. (GA-01)	214
Bauer H.G. (EQ-14)	169
Bauer U. (EF-07)	159
Bauer U. (EG-09)	162
Bayani H. (AV-02)	45
Bayer M. (AC-10)	21
Bayreuther G. (BS-07)	73
Bazaliy Y.B. (HC-10)	251
Bea H. (GF-07)	225
Beach G.S. (DC-11)	119
Beach G.S. (EG-09)	162
Beach G.S. (GH-05)	229
Beacham R. (FR-15)	204
Beath A.D. (DT-09)	140
Beaujouan D. (FD-09)	188
Beausoleil G.L. (AP-10)	34
Beausoleil G.L. (GQ-11)	234
Becherer M. (GD-01)	219
Becherer M. (GD-02)	220
Becherer M. (HG-07)	260
Bedau D. (AF-02)	26
Bedau D. (AF-05)	26
Bedau D. (BB-04)	50
Bedau D. (DA-02)	115
Bedau D. (FR-12)	203
Beguhn S. (EU-14)	177
Beguhn S. (FT-09)	207
Beguivin A. (FW-13)	213
Beguivin A. (HE-06)	256
Bejhed R. (FC-07)	185
Belashchenko K.D. (HF-04)	258
Belemuk A. (AE-11)	25
Belhadji B. (FP-11)	199
Bellouard C. (EG-02)	161
Bellouard C. (FP-02)	197
Belmeguenai M. (CS-08)	105
Belmeguenai M. (DE-08)	123
Belmoubarik M. (FE-05)	189
Belova L.M. (DB-06)	117
Belova L.M. (FR-02)	202
Belyea D.D. (BU-01)	76
Belyea D.D. (CG-07)	94
Belyea D.D. (CG-10)	94
Belyea D.D. (EV-04)	178
Ben Ahmed H. (FS-09)	205
Benatmane N. (AD-06)	22
Bendersky L. (CT-13)	107
Bendersky L. (DH-03)	129
Bending S.J. (GP-01)	231
Bennett L.H. (CG-02)	93
Bennett S. (ET-02)	174
Bergenti I. (AB-08)	19
Berger A. (BF-10)	61
Berger A. (EE-13)	157
Berger A. (GF-06)	225
Berger A.J. (DG-02)	127
Bergmair B. (CH-01)	95
Bergmair B. (EP-09)	166
Bergmair B. (FD-06)	187
Bergmair B. (FH-05)	196
Berling D. (CS-08)	105
Berloff N.G. (CD-10)	88
Bernhard C. (CP-08)	98
Bernhard C. (HD-02)	253
Bernhard C. (HU-01)	275
Bernstein G.H. (HQ-14)	268
Béron F. (AD-07)	23
Béron F. (EC-12)	152
Bersweiler M. (FQ-11)	201
Bertacco R. (FE-12)	190
Bertacco R. (GB-01)	215
Bertacco R. (GH-02)	229
Bertacco R. (GH-07)	229
Bertero G. (EA-02)	147
Bertero G. (FG-11)	195
Berthold O. (AD-11)	23
Berthold O. (FW-09)	213
Bertotti G. (CS-04)	104
Bertotti G. (DS-04)	137
Bertotti G. (FD-08)	188
Bertotti G. (FH-11)	197
Bertotti G. (GW-11)	246
Bertran F. (CC-01)	85
Bertran F. (EF-05)	159
Bessonov V. (DS-13)	138
Bever T. (HF-02)	257
Beye M. (ED-02)	153
Beyersdorff B. (GC-13)	219
Bhalla mudri V.P. (DG-02)	127
Bhandari N. (EW-09)	181
Bhanja S. (EP-01)	165
Bhanja S. (EP-03)	166
Bhat S.V. (HF-11)	259
Bhatia C.S. (BS-13)	74
Bi H. (AP-08)	34
Bi H. (DW-07)	145
Bi H. (DW-12)	146
Bi H. (ES-13)	173
Bi J. (BQ-03)	68
Bi J. (HF-05)	258
Bi L. (AH-07)	32
Bi L. (AU-05)	43
Bi X. (AF-06)	26
Bibes M. (CA-05)	82
Bibes M. (GF-07)	225
Biegalski M.D. (AG-03)	29
Bigot J. (CS-01)	104
Bigot J. (DB-11)	117
Bigot J. (ED-08)	154
Bigot J. (HT-10)	274
Binder C. (ES-14)	173
Binek C. (BU-09)	77
Binek C. (CG-12)	94
Bingham N. (CP-11)	99
Bingham N.S. (AG-06)	29
Bingham N.S. (AG-09)	30
Bingham N.S. (CQ-06)	100
Bingham N.S. (GQ-03)	233
Binns C. (FF-09)	192
Birowska M. (DF-08)	125
Bisig A. (AW-10)	48
Bisig A. (DC-02)	118
Bitla Y. (CP-10)	98
Björk M. (FC-07)	185
Blake A.J. (CE-06)	90
Blanco J. (FF-11)	193
Blanco J.M. (EC-11)	152
Blasco J. (AG-08)	30
Blázquez J.S. (CG-06)	94
Blon T. (CE-01)	89
Blugel S. (GC-07)	218
Bo Z. (HW-01)	278
Bocklage L. (AW-09)	48
Bocklage L. (BD-01)	54
Bocklage L. (BD-03)	55
Bocklage L. (DS-08)	138
Bodale I. (GU-13)	242
Bohra M. (BT-10)	75
Bohra M. (BT-13)	75
Boillot J. (FF-10)	193
Boissière M. (GH-12)	230
Bokor J. (AH-11)	32
Bokor J. (CD-01)	87
Boling R.C. (FG-03)	194

Bollero A. (ES-07)	172
Bollero A. (FC-09)	185
Bollero A. (FS-14)	206
Bollero A. (GF-03)	225
Bollero A. (GF-08)	226
Bombeck M. (AC-10)	21
Bonanni A. (DF-10)	126
Bonanni V. (CF-08)	92
Bonell F. (CC-01)	85
Bonell F. (EG-07)	162
Bonell F. (EG-12)	163
Bonetti S. (EB-11)	150
Bonetti S. (GW-05)	245
Bonetti S. (HC-01)	250
Bonilla C.M. (BE-05)	57
Bonin R. (GW-11)	246
Bonville P. (BC-12)	54
Boone C. (BF-09)	60
Boone C.T. (AC-12)	21
Boone C.T. (FG-10)	194
Booth R.A. (AU-13)	44
Booth R.A. (EE-07)	156
Booth R.A. (FR-07)	203
Borchers J. (FF-01)	191
Borchers J. (FR-13)	203
Borchers J.A. (AG-01)	28
Borchers J.A. (AW-06)	47
Borchers J.A. (GF-01)	224
Borchers J.A. (GH-09)	230
Bordel C. (ET-08)	174
Bordel C. (GE-05)	222
Bordel C. (HH-08)	262
Borkowski B.E. (BV-01)	78
Bortolotti P. (DC-04)	118
Bortolotti P. (EB-05)	149
Boschker J.E. (EE-08)	157
Bose S.K. (BG-08)	63
Boss M. (FR-09)	203
Bosu S. (DE-05)	123
Botello M.E. (CP-01)	97
Bottauscio O. (DR-01)	135
Bottegoni F. (GB-07)	216
Botters B. (DS-12)	138
Bougeard D. (BS-07)	73
Boukhalov D.W. (BE-12)	58
Bouille O. (HE-10)	257
Bouma D. (HQ-15)	268
Bouzehouane K. (AB-03)	18
Bouzehouane K. (EB-02)	148
Bouziane K. (BQ-05)	68
Bouziane K. (CD-07)	88
Bovensiepen U. (CS-12)	105
Bowden S.R. (FW-01)	212
Bowman R.M. (EC-09)	152
Boyes E.D. (AA-02)	17
Boyrac C. (BE-14)	59
Bozovic I. (AR-05)	37
Bozovic I. (CP-08)	98
Brandes M. (GG-06)	227
Brandt M.S. (FB-06)	183
Brandt M.S. (FD-12)	188
Brandt R. (AC-06)	20
Brandt R. (CD-01)	87
Brandt R. (CD-08)	88
Brankovic S. (HH-02)	261
Brataas A. (GA-01)	214
Braun H. (FQ-15)	202
Braun H. (HA-05)	248
Braun J. (FR-11)	203
Breitkreutz S. (GD-01)	219
Breitkreutz S. (GD-02)	220
Breitkreutz S. (HG-07)	260
Breth L. (CH-11)	96
Breth L. (ES-14)	173
Brewe D.L. (CF-03)	91
Briber R. (FF-01)	191
Britel M. (CD-07)	88
Brivio S. (FE-12)	190
Brombacher C. (AC-06)	20
Bromberg D. (BB-10)	51
Brooks M.D. (DH-05)	129
Brousseau A. (DW-06)	145
Broun D. (HR-07)	269
Brown S. (AF-07)	27
Brown S.L. (DA-03)	115
Brown S.L. (EH-01)	163
Browning N.D. (AG-01)	28
Brück E. (CG-01)	93
Brückl H. (CH-11)	96
Bruckner F. (CH-01)	95
Bruckner F. (EP-09)	166
Bruckner F. (FD-06)	187
Bruckner F. (FH-05)	196
Brueckl H. (ES-14)	173
Brüggenmann C. (AC-10)	21
Brunel D. (AB-08)	19
Bryan M.T. (DC-01)	118
Bryan M.T. (HQ-12)	267
Bublat T. (FG-08)	194
Buchanan K.S. (AQ-06)	36
Buchanan K.S. (BD-02)	55
Buchanan K.S. (BD-06)	55
Buchanan K.S. (GS-13)	238
Buda-Prejbeanu L. (HC-12)	252
Buda-Prejbeanu L.D. (AC-11)	21
Buda-Prejbeanu L.D. (GF-08)	226
Budko S.L. (HU-06)	275
Budrikis Z.* (BC-03)	53
Budrikis Z. (DT-07)	140
Buechner B. (EC-04)	151
Buhrman R. (EG-04)	161
Buhrman R. (HC-02)	250
Buhrman R.A. (DA-01)	115
Buhrman R.A. (EB-09)	149
Buhrman R.A. (GC-02)	217
Buhrman R.A. (GC-05)	218
Buhrman R.A. (GC-06)	218
Bunce C. (AW-03)	47
Bur A. (BH-15)	66
Bur A. (DB-03)	116
Bur A. (FE-03)	189
Bur A. (GT-03)	239
Bürger D. (BQ-10)	69
Bürger D. (HD-08)	254
Burgess J. (BD-09)	56
Bürgler D.E. (EV-13)	179
Burkard G. (GB-04)	216
Burn D.M. (EF-03)	159
Burnell G. (HQ-12)	267
Burns P.S. (CS-03)	104
Burrascano P. (HR-06)	269
Burrola L.A. (BU-11)	77
Burrowes C. (BF-04)	60
Burrowes C. (FB-05)	183
Burrowes C. (FB-07)	183
Burrowes C. (FU-11)	209
Burrowes C. (HR-07)	269
Burrows F. (FH-09)	196
Bursik J. (CQ-14)	101
Butler W.H. (CW-03)	113
Butler W.H. (GE-12)	223
Butta M. (DV-14)	144
Büttner F. (ED-01)	153
Butz T. (BE-11)	58

Buyanova I.A. (GB-06)	216
Bykovetz N. (CR-08)	103
Byzov I. (HT-14)	274

- C -

Caballero-Flores R. (CG-06)	94
Caciuffo R. (GE-10)	223
Cadogan J.M. (DT-09)	140
Cadogan S. (BC-12)	54
Caffrey N. (GB-01)	215
Cahay M. (EW-09)	181
Cai K. (FG-14)	195
Cai W. (BP-14)	67
Cai W. (BV-07)	79
Cai X. (GT-01)	239
Cai Z. (FT-13)	207
Calero M. (ES-07)	172
Calmels L. (CC-01)	85
Calmels L. (EF-04)	159
Calo V.M. (AW-11)	48
Calvo I. (BE-05)	57
Camarero J. (ES-07)	172
Camarero J. (FC-09)	185
Camarero J. (FS-14)	206
Camarero J. (GF-03)	225
Camarero J. (GF-08)	226
Camley R. (DB-04)	116
Camley R. (FT-05)	207
Camley R.E. (HT-09)	273
Campbell P.M. (FC-08)	185
Campbell S.J. (AU-08)	44
Campbell S.J. (CT-14)	107
Campion R. (FC-15)	186
Canfield P.C. (HU-06)	275
Cantoni M. (GB-01)	215
Cantoni M. (GH-02)	229
Cao G. (BC-09)	53
Cao G.H. (HU-02)	275
Cao J. (GH-02)	229
Cao J. (GT-05)	240
Cao R. (AV-10)	46
Cao Y. (DS-11)	138
Cao Y. (EH-03)	164
Capelli S.C. (HD-04)	253
Cappello J. (FF-01)	191
Cardinal T. (ET-02)	174
Cardoso F. (GH-02)	229
Cardoso F.A. (GH-03)	229
Cardoso S. (EG-05)	162
Cardoso S. (GH-02)	229
Carey M.J. (GF-02)	224
Carlotti G. (DS-12)	138
Carlotti G. (EB-11)	150
Carlotti G. (EE-05)	156
Carlotti G. (EQ-02)	167
Carlton D. (AH-11)	32
Carman G. (BH-15)	66
Carman G. (GD-11)	221
Carman G.P. (CG-13)	95
Carman G.P. (DB-03)	116
Carman G.P. (FE-03)	189
Carman G.P. (GT-03)	239
Carpenter E.E. (AP-01)	33
Carpenter E.E. (DP-14)	133
Carpenter E.E. (DW-09)	145
Carpenter E.E. (ES-12)	173
Carpenter E.E. (ET-01)	174
Carpenter R. (HH-02)	261
Carpentieri M. (HC-02)	250
Carpentieri M. (HR-06)	269
Carpentieri M. (HV-12)	278

Carretero C. (GF-07)	225
Carrey J. (CE-01)	89
Carricho A.S. (CS-15)	105
Carricho A.S. (DR-09)	136
Carricho A.S. (FU-13)	209
Carricho A.S. (HV-14)	278
Cartier M. (CC-10)	86
Carva K. (ED-04)	154
Carvalho A.M. (BU-03)	76
Carvalho A.M. (CG-03)	93
Casado C. (ES-07)	172
Casanova F. (EV-08)	178
Casoli F. (CF-01)	91
Casoli F. (DH-13)	131
Caspers C. (CC-13)	87
Castaldi L. (GF-09)	226
Castan C. (BE-05)	57
Castano F. (AD-07)	23
Castillo A. (FQ-10)	201
Castillo-Michelle H. (ER-02)	169
Cavanaugh D.T. (GG-04)	227
Cazayous M. (CA-05)	82
Cebollada A. (FS-14)	206
Ceci P. (HT-11)	274
Ceder G. (EU-09)	177
Cedergren K. (CH-04)	95
Celinski Z. (AH-04)	31
Celinski Z. (BH-03)	64
Celinski Z. (BH-14)	65
Celinski Z. (DB-04)	116
Celinski Z. (DV-13)	144
Celinski Z. (FT-05)	207
Celinski Z. (HT-09)	273
Celinski Z. (HX-03)	280
Chabalko M.J. (EA-03)	147
Chaban N. (FE-07)	190
Chaboy J. (FF-11)	193
Chadov S. (AA-05)	18
Chan D. (DV-07)	143
Chan K. (AT-04)	41
Chan K. (CF-11)	92
Chan K. (FG-14)	195
Chan M.K. (GB-08)	216
Chan N. (DV-07)	143
Chan W. (EH-09)	164
Chan W. (EH-10)	165
Chan W. (EH-13)	165
Chan Y. (BR-04)	70
Chan Y. (FU-02)	208
Chandrasekaran S. (AT-03)	41
Chang C. (BR-11)	71
Chang C. (BS-05)	73
Chang C. (CB-08)	84
Chang C. (DF-01)	124
Chang C. (DW-11)	146
Chang C. (EH-09)	164
Chang C. (EH-10)	165
Chang C. (EH-13)	165
Chang C. (EW-06)	180
Chang C. (GP-09)	232
Chang C. (GR-14)	237
Chang F. (GU-02)	241
Chang H. (AQ-04)	35
Chang H. (BR-04)	70
Chang H. (CT-04)	106
Chang H. (CV-14)	112
Chang H. (FU-02)	208
Chang H.W. (BT-06)	75
Chang H.W. (BW-04)	80
Chang H.W. (CV-09)	111
Chang H.W. (CW-08)	113
Chang J. (EW-07)	180

Chang J. (GB-11)	217
Chang L.V. (DQ-10)	134
Chang R. (AW-13)	48
Chang R. (BF-01)	59
Chang R. (CF-09)	92
Chang R. (FH-01)	195
Chang R. (FH-02)	196
Chang W. (AQ-04)	35
Chang W. (CT-04)	106
Chang W. (CV-14)	112
Chang W. (FV-14)	212
Chang W.C. (BT-06)	75
Chang W.C. (BW-04)	80
Chang W.C. (CW-09)	111
Chang W.C. (CW-08)	113
Chang Y. (BT-08)	75
Chang Y. (CC-11)	86
Chang Y. (DU-05)	141
Chang Y. (EH-09)	164
Chang Y. (EH-10)	165
Chang Y. (EH-13)	165
Chang Y. (FV-06)	211
Chanthbouala A. (CS-05)	104
Chanthbouala A. (HE-09)	257
Chantrell R. (FQ-06)	200
Chantrell R.W. (AH-03)	31
Chantrell R.W. (BF-10)	61
Chantrell R.W. (CE-08)	90
Chantrell R.W. (CF-07)	92
Chantrell R.W. (DD-01)	120
Chantrell R.W. (ED-03)	154
Chantrell R.W. (FD-01)	186
Chantrell R.W. (FH-09)	196
Chao C. (BW-05)	80
Chao C. (EV-12)	179
Chappert C. (CD-02)	87
Chappert C. (DA-04)	115
Chappert C. (FH-10)	197
Chappert C. (FQ-09)	201
Chappert C. (HE-11)	257
Charilaou M. (BC-06)	53
Charilaou M. (HV-11)	277
Chaturvedi A. (FC-11)	186
Chattopadhyay S. (GS-11)	238
Chaturvedi A. (CG-05)	93
Chaturvedi A. (DV-01)	142
Chau K. (AV-06)	45
Chau K. (AV-10)	46
Chaudhury R.P. (HD-11)	255
Chaudret B. (CE-01)	89
Che S. (BV-07)	79
Che S. (CQ-10)	101
Cheglakov G. (AA-02)	17
Chen . (BT-04)	75
Chen A.X. (FQ-13)	201
Chen B. (BV-06)	78
Chen B. (CV-08)	111
Chen C. (AH-12)	32
Chen C. (BR-11)	71
Chen C. (EW-06)	180
Chen C.H. (BV-04)	78
Chen D. (AE-05)	24
Chen D. (AP-12)	34
Chen D. (DW-15)	146
Chen D. (EU-04)	176
Chen D. (GS-07)	238
Chen D.Y. (DP-06)	132
Chen E. (BB-01)	50
Chen E. (BB-02)	50
Chen E. (BB-11)	51
Chen G. (AP-15)	35
Chen G. (BQ-06)	68

Chen G. (EU-01)	175
Chen H. (FU-04)	208
Chen J. (AT-10)	42
Chen J. (AV-15)	46
Chen J. (BP-02)	66
Chen J. (BP-10)	67
Chen J. (BU-12)	77
Chen J. (CF-03)	91
Chen J. (CT-07)	107
Chen J. (DD-06)	121
Chen J. (DT-04)	139
Chen J. (ES-10)	173
Chen J. (ES-11)	173
Chen J. (ET-09)	175
Chen J. (FQ-06)	200
Chen J. (FU-09)	209
Chen J. (HH-12)	263
Chen L. (BC-08)	53
Chen L. (CQ-09)	100
Chen L. (CW-04)	113
Chen L. (DF-06)	125
Chen L. (DV-02)	143
Chen L. (ET-05)	174
Chen L. (FU-15)	210
Chen L. (GT-04)	239
Chen M. (AP-15)	35
Chen M. (EU-01)	175
Chen N. (CU-13)	109
Chen P.J. (FQ-10)	201
Chen Q. (DU-08)	141
Chen Q. (HW-07)	279
Chen R. (CV-08)	111
Chen R. (CW-11)	114
Chen R. (ER-15)	171
Chen R. (ET-12)	175
Chen R. (GR-01)	235
Chen R. (GU-02)	241
Chen S. (BU-11)	67
Chen S. (CW-05)	113
Chen S. (DP-01)	131
Chen S. (FB-13)	184
Chen S. (FE-08)	190
Chen S. (GC-04)	218
Chen S. (GQ-06)	234
Chen S. (GR-14)	237
Chen S. (GR-15)	237
Chen S. (GT-09)	240
Chen S. (GV-01)	243
Chen S.J. (GQ-14)	235
Chen T. (BD-05)	55
Chen T. (BT-02)	74
Chen W. (HD-04)	253
Chen W.M. (GB-06)	216
Chen X. (AE-05)	24
Chen X. (CU-04)	108
Chen X. (DF-01)	124
Chen X. (DW-13)	146
Chen Y. (AF-12)	27
Chen Y. (AP-05)	33
Chen Y. (BB-05)	50
Chen Y. (BH-07)	64
Chen Y. (CP-12)	99
Chen Y. (CW-06)	113
Chen Y. (DQ-08)	134
Chen Y. (DV-03)	143
Chen Y. (EE-03)	156
Chen Y. (EU-03)	176
Chen Y. (FG-07)	194
Chen Y. (FU-05)	209
Chen Y. (GP-05)	232
Chen Y. (GT-08)	240
Chen Y. (GU-15)	243

Chen Y. (HF-06)	.258
Chen Y. (HR-05)	.269
Chen Y.H. (EU-02)	.176
Chen Y.J. (BB-09)	.51
Chen Z. (CW-01)	.112
Chenattukuzhiyil S. (GF-07)	.225
Cheng C. (DW-04)	.145
Cheng C. (DW-05)	.145
Cheng C. (FR-10)	.203
Cheng C. (FU-04)	.208
Cheng G. (BT-15)	.76
Cheng G. (GT-11)	.240
Cheng J. (FV-12)	.211
Cheng M. (AV-05)	.45
Cheng M. (AV-10)	.46
Cheng M. (BV-10)	.79
Cheng M. (DU-06)	.141
Cheng M. (HP-02)	.264
Cheng S. (GV-04)	.243
Cheng S.F. (GB-02)	.215
Cheng W. (HV-13)	.278
Cheng X. (DR-06)	.136
Cheng Z. (EU-04)	.176
Cheon J. (GV-14)	.245
Cheong S.W. (AG-06)	.29
Cheong S.W. (AG-09)	.30
Cheong Y.M. (FS-05)	.204
Cher K. (AD-12)	.23
Cher K. (ET-09)	.175
Cherepov S. (BH-15)	.66
Cherepov S. (DB-03)	.116
Cherepov S. (EG-11)	.163
Chérif M. (BQ-05)	.68
Cherif S. (CD-07)	.88
Cherif S. (CS-08)	.105
Cherif S. (DE-08)	.123
Cherif S. (DH-14)	.131
Cherkaoui M. (CD-07)	.88
Chern G. (DW-04)	.145
Chern G. (DW-05)	.145
Chern G. (FU-04)	.208
Chern G. (FU-05)	.209
Chern G. (GV-04)	.243
Chern T. (DU-07)	.141
Chernyshenko D. (FH-04)	.196
Chernyshenko D. (HR-11)	.270
Chernyshenko D.S. (HS-14)	.272
Chernyshenko D.S. (HV-05)	.277
Chernyshov A. (EA-02)	.147
Chess J. (CU-11)	.109
Chetry K.B. (EW-09)	.181
Chetry K.B. (FC-04)	.184
Chetvertukhin A. (AH-02)	.31
Chetvertukhin A. (AH-05)	.31
Chi S. (EU-07)	.176
Chi S. (HD-04)	.253
Chia C. (EA-04)	.147
Chia H. (DB-06)	.117
Chia H. (FR-02)	.202
Chiang D. (BP-11)	.67
Chiang M. (BR-04)	.70
Chiba D. (BD-08)	.56
Chiba D. (DC-09)	.119
Chiba D. (GS-12)	.238
Chiba S. (DQ-01)	.133
Chichkov V. (EU-10)	.177
Chien C. (FQ-13)	.201
Chien T. (EC-03)	.151
Chikamatsu A. (DE-13)	.124
Childress J. (AA-01)	.17
Chin T. (HT-12)	.274
Chinh H.D. (AG-06)	.29
Chinnasamy C. (AP-03)	.33
Chinnasamy C. (BH-01)	.63
Chiou W. (FF-01)	.191
Chipara M. (AE-06)	.24
Chiriari H. (CB-11)	.84
Chiriari H. (DH-09)	.130
Chiriari H. (EC-06)	.151
Chiriari H. (FS-11)	.205
Chiu C. (GU-02)	.241
Chiu Y. (DS-01)	.137
Chiu Y. (ES-09)	.173
Chiu Y. (GS-07)	.238
Chlan V. (HT-02)	.272
Chmaisssem O. (AG-11)	.30
Cho B. (DV-11)	.144
Cho B. (EE-01)	.155
Cho B. (HQ-03)	.266
Cho B.K. (BG-04)	.62
Cho C. (GQ-08)	.234
Cho H. (BR-14)	.71
Cho J. (FE-09)	.190
Cho J. (GH-08)	.230
Cho M. (GH-08)	.230
Cho S. (BQ-08)	.69
Cho S. (BQ-13)	.69
Cho S. (BS-11)	.73
Cho S. (FS-10)	.205
Cho S. (FU-03)	.208
Cho S. (GV-14)	.245
Cho Y. (GQ-01)	.233
Cho Y. (GQ-08)	.234
Choe G. (BF-02)	.59
Choe S. (AW-02)	.47
Choe S. (FW-10)	.213
Choe S. (HR-12)	.270
Choi D. (GH-14)	.231
Choi D.S. (GH-08)	.230
Choi H. (AP-06)	.33
Choi H. (AR-06)	.38
Choi H. (AW-07)	.47
Choi H. (BT-09)	.75
Choi H. (CP-04)	.98
Choi H. (CP-15)	.99
Choi H. (CR-07)	.102
Choi H. (EG-06)	.162
Choi H. (EW-07)	.180
Choi H. (HB-05)	.249
Choi H. (HP-06)	.264
Choi H. (HP-11)	.265
Choi J. (AV-07)	.45
Choi J. (AV-09)	.46
Choi J. (BV-03)	.78
Choi J. (DU-11)	.142
Choi J. (FU-03)	.208
Choi J. (HP-03)	.264
Choi K. (AP-14)	.34
Choi K. (HU-04)	.275
Choi S. (FG-13)	.195
Choi S. (FQ-05)	.200
Choi S. (HP-13)	.265
Choi S. (HT-07)	.273
Choi S. (HV-03)	.277
Choi Y. (BD-01)	.54
Choi Y. (DC-05)	.119
Chong T. (DQ-07)	.134
Chong T. (GS-08)	.238
Chong T. (HQ-13)	.267
Chopdekar R.V. (HD-02)	.253
Chorney C.L. (HT-06)	.273
Chou H. (BQ-14)	.69
Chou H. (BT-10)	.75
Chou H. (BT-13)	.75

Chou H. (EU-02)	.176
Chou S. (ER-12)	.170
Chow G. (CF-03)	.91
Chow G. (DD-06)	.121
Chow G. (FQ-06)	.200
Chow G. (FU-09)	.209
Christen H.M. (AG-03)	.29
Christianson A. (BG-03)	.62
Christie K. (GB-08)	.216
Christou G. (CE-06)	.90
Chshiev M. (BE-12)	.58
Chshiev M. (CC-05)	.85
Chshiev M. (FP-11)	.199
Chu C. (GE-01)	.221
Chu C.W. (HD-11)	.255
Chu H. (EH-09)	.164
Chu H. (EH-10)	.165
Chu H. (EH-13)	.165
Chua L. (GD-09)	.221
Chua M. (FG-14)	.195
Chuang P. (BS-15)	.74
Chuang P. (BT-02)	.74
Chubykalo-Fesenko O. (AH-03)	.31
Chubykalo-Fesenko O. (ED-03)	.154
Chubykalo-Fesenko O. (ED-04)	.154
Chubykalo-Fesenko O. (EE-10)	.157
Chubykalo-Fesenko O. (EQ-06)	.168
Chudnovsky E. (BG-07)	.62
Chui S. (AE-11)	.25
Chui S. (FB-13)	.184
Chumak A.V. (EE-10)	.157
Chumak A.V. (FC-01)	.184
Chumak A.V. (GA-04)	.215
Chun B. (AD-09)	.23
Chun S. (FQ-05)	.200
Chung K. (AD-02)	.22
Chung K. (ES-01)	.171
Chung K. (ES-04)	.172
Chung M. (ER-12)	.170
Chung P. (AT-05)	.41
Chung P. (AT-06)	.41
Chung P. (AT-07)	.41
Chung P. (AT-08)	.41
Chung S. (GS-09)	.238
Chung Y. (HB-05)	.249
Cianci E. (GQ-07)	.234
Ciccarelli C. (FC-15)	.186
Ciftija O. (GQ-03)	.233
Cimpoesu D. (DR-08)	.136
Cimpoesu D. (DS-05)	.137
Cinal M. (EF-07)	.159
Cinchetti M. (CS-13)	.105
Cinchetti M. (ED-09)	.155
Cinchetti M. (ED-11)	.155
Cinchetti M. (FD-07)	.187
Cinti F. (CR-13)	.103
Ciorga M. (BS-07)	.73
Ciria M. (DG-08)	.128
Ciudad D. (CC-03)	.85
Ciufudean C. (FQ-01)	.200
Ciuta G. (ER-03)	.170
Ciuta G. (GG-11)	.228
Clark A.E. (DH-04)	.129
Clavero C. (AH-08)	.32
Clavero C. (FS-14)	.206
Claydon J.S. (EF-11)	.160
Claydon J.S. (HQ-12)	.267
Claydon J.S. (HR-13)	.270
Clerc M.G. (FD-02)	.187
Cobas Acosta R. (BC-12)	.54
Cocco S. (DE-15)	.124
Codjovi E. (BR-13)	.71
Coelho A.A. (BU-03)	.76
Coelho A.A. (CG-03)	.93
Coey J. (DP-05)	.132
Coey J. (FP-04)	.198
Coey J.D. (BP-02)	.66
Coey J.M. (AQ-05)	.35
Coey M. (BP-09)	.67
Coey M. (EE-12)	.157
Coffey D. (DG-08)	.128
Cohen L.F. (FV-07)	.211
Cohen S.R. (AB-01)	.18
Coisson M. (DS-15)	.139
Colineau E. (GE-10)	.223
Collier K.N. (ES-06)	.172
Collier N. (AW-11)	.48
Collin S. (GB-10)	.216
Colson D. (CA-05)	.82
Comes R. (HD-12)	.255
Conde A. (CG-06)	.94
Conolly S. (FA-02)	.181
Conolly S.M. (FA-03)	.182
Conraux Y. (EB-03)	.148
Consolo G. (EB-11)	.150
Consolo G. (EB-13)	.150
Consolo G. (EQ-09)	.168
Consolo G. (FW-06)	.213
Consolo G. (HC-11)	.252
Cooke D.W. (ET-08)	.174
Cooke D.W. (GE-05)	.222
Cornejo D.R. (ER-09)	.170
Cornejo D.R. (GS-06)	.237
Cornejo D.R. (HV-08)	.277
Corodeanu S. (CB-11)	.84
Corwin F. (DW-09)	.145
Costache M.V. (DA-05)	.115
Cottam M.G. (DS-03)	.137
Coulibaly S. (FD-02)	.187
Coussens N. (EC-10)	.152
Couture P. (AQ-01)	.35
Cowburn R.P. (AD-01)	.22
Cowburn R.P. (FW-12)	.213
Cowburn R.P. (FW-13)	.213
Cowburn R.P. (HE-06)	.256
Crawford T.M. (GC-03)	.218
Crawford T.M. (GD-06)	.220
Cresce A. (FF-01)	.191
Crespi V. (HA-01)	.247
Crespi V.H. (HQ-07)	.267
Crevecoeur G. (FS-15)	.206
Croft L.R. (FA-03)	.182
Cros V. (CS-05)	.104
Cros V. (DB-02)	.116
Cros V. (DC-04)	.118
Cros V. (EB-02)	.148
Cros V. (EB-05)	.149
Cros V. (FC-09)	.185
Cros V. (HE-08)	.256
Cros V. (HE-09)	.257
Crouse C.A. (HG-06)	.260
Crowell P. (BB-03)	.50
Crowell P. (BD-05)	.55
Crowell P. (GB-08)	.216
Crowell P. (GW-03)	.245
Crowther L.J. (HS-05)	.271
Csaba G. (GD-01)	.219
Csaba G. (GD-02)	.220
Csaba G. (HG-07)	.260
Csaba G. (HQ-14)	.268
Csonka S. (GB-13)	.217
Cuccoli A. (CR-13)	.103
Cuda J. (HT-02)	.272
Cugat O. (DH-02)	.129

Cugat O. (FE-13)	191
Cui B. (AE-07)	25
Cui B. (GG-05)	227
Cui W. (CV-02)	110
Cui W. (ET-03)	174
Cui W. (GG-10)	228
Cui X. (GR-11)	236
Cui Y. (AR-14)	38
Cui Y. (DD-14)	122
Cui Y. (EB-09)	149
Culbertson J.C. (FC-08)	185
Cummings J. (AW-14)	48
Cummings J. (BC-04)	53
Cummings J. (DH-10)	130
Cunado J.F. (ES-07)	172
Cuñado J.F. (FC-09)	185
Curcic M. (AW-10)	48
Curcic M. (BD-04)	55
Curiale J. (DC-06)	119
Curland N. (AS-10)	40
Curri van J. (EE-01)	155
Curri van J. (HE-04)	256
Curro C. (FW-06)	213
Cyrille M. (CC-10)	86
Cyrille M. (HC-06)	251
Cyrille M. (HC-12)	252
Czerner M. (EG-01)	161
Czerner M. (EV-07)	178
Czerner M. (FB-04)	183
Czerner M. (GC-08)	218
Czeschka F.D. (FB-06)	183
Czoschke P.J. (AS-11)	40

- D -

d'Acapito F. (DF-10)	126
D'Addato S. (CF-01)	91
d'Aquino M. (DS-04)	137
d'Aquino M. (GW-11)	246
da Silva G.L. (EV-06)	178
Da Silva M. (CC-09)	86
da Silva S.C. (HG-03)	259
Dabrowski B. (AG-11)	30
Dabrowski D. (BE-14)	59
Dabrowski M. (EF-07)	159
Dai X. (DF-01)	124
Daigle A. (EU-03)	176
Daigle A.P. (BH-07)	64
Dalslet B.T. (GH-02)	229
Damodaran S. (AQ-08)	36
Dan W. (FR-06)	203
Daniil M. (AE-13)	25
Daniil M. (BE-01)	56
Daniil M. (GG-06)	227
Danilovic D.S. (BE-15)	59
Danilovic D.S. (BR-07)	70
Dankert A. (HB-12)	250
Dannangoda C. (DP-11)	133
Dantas A.L. (CS-15)	105
Dantas A.L. (DR-09)	136
Dantas A.L. (FU-13)	209
Dantas A.L. (HV-14)	278
Das B. (AE-02)	24
Das B. (CW-13)	114
Das B. (FF-06)	192
Das D. (DH-01)	129
Das G. (CP-13)	99
Das P. (EW-09)	181
Das R. (GT-12)	240
Das S. (CP-08)	98
Das S. (HU-01)	275
Dasari K. (BQ-12)	69

Dash S.P. (BS-03)	72
Dash S.P. (HB-12)	250
Dastagir T. (BP-06)	66
Dastagir T. (EH-03)	164
Daunheimer S. (BC-04)	53
Davino D. (AU-07)	43
Davison T. (CD-06)	88
De Cooman B.C. (DG-01)	127
De Graef M. (BC-02)	52
de Jong J.A. (ED-05)	154
de Jong M. (AB-06)	19
de Jong M.P. (AB-02)	18
de Jong M.P. (BG-08)	63
de Jong M.P. (BS-06)	73
de Jong S. (ED-02)	153
De la Presa P. (GV-13)	244
De La Torre Medina J. (HT-03)	273
de Loubens G. (DB-02)	116
De Loubens G. (DC-04)	118
de Marco P. (GH-04)	229
de Medeiros Jr L.G. (GP-08)	232
de Mestier N. (EB-03)	148
de Miguel R. (CE-06)	90
de Oliveira L. (AU-14)	44
de Oliveira L.S. (EC-12)	152
de Oliveira N.A. (GP-08)	232
de Paula L.B. (ES-05)	172
De Ranieri E. (FW-02)	212
de Sousa R. (CA-05)	82
De Teresa J.M. (FW-12)	213
de Vries M. (EF-11)	160
de Vries M.A. (EF-10)	160
de Vries M.A. (GE-07)	223
Deac A.M. (GW-09)	246
Dean J. (DC-01)	118
Dean J.S. (GF-02)	224
Debernardi A. (GQ-07)	234
Decad G. (EH-01)	163
Dechang Z. (BU-06)	77
Decleny A. (BQ-05)	68
Decorde N. (DP-05)	132
Dede M. (EC-05)	151
Dejene F.K. (FB-11)	184
Delamare J. (DH-02)	129
Delamare J. (FE-13)	191
Della Torre E. (CG-02)	93
Dell'Angela M. (ED-02)	153
Demidov V.E. (CD-10)	88
Demidov V.E. (DB-08)	117
Demidov V.E. (DB-10)	117
Demidov V.E. (DS-13)	138
Demidov V.E. (EQ-01)	167
Demidov V.E. (FB-09)	183
Demidov V.E. (FD-11)	188
Demidov V.E. (GW-01)	245
Demishev S.V. (CQ-11)	101
Demokritov S.O. (CD-10)	88
Demokritov S.O. (DB-08)	117
Demokritov S.O. (DB-10)	117
Demokritov S.O. (DS-13)	138
Demokritov S.O. (EQ-01)	167
Demokritov S.O. (FB-09)	183
Demokritov S.O. (FD-11)	188
Demokritov S.O. (GW-01)	245
Dempsey N. (GG-11)	228
Dempsey N.M. (ER-03)	170
Dempsey N.M. (HG-15)	261
Deng L. (GV-03)	243
Deng Y. (GH-10)	230
Deng Z. (HW-08)	279
Denis L. (FH-13)	197
Dennis C. (FF-01)	191

Dennis C. (GH-11)	230
Dennis K.W. (CT-13)	107
Dennis K.W. (GG-02)	227
Dennis K.W. (GG-04)	227
Dennis K.W. (HG-01)	259
Dent P. (XA-02)	146
Depeyrot J. (HF-09)	258
Deppe M. (GE-02)	222
Deranlot C. (AB-03)	18
Deranlot C. (FB-10)	183
Deranlot C. (GB-10)	216
Deranlot C. (GF-07)	225
Deryabina M. (GH-07)	229
Desautels R.D. (FF-12)	193
deTeresa J.M. (GH-03)	229
Devi A. (AG-12)	30
Devillers T. (DF-10)	126
Devishili A. (AD-07)	23
Devlin E. (HH-11)	263
Devolder T. (BD-07)	55
Devolder T. (CD-02)	87
Devolder T. (DA-04)	115
Devolder T. (DF-05)	125
Devolder T. (EB-02)	148
Devolder T. (FQ-09)	201
Devolder T. (GW-07)	246
Devolder T. (HE-11)	257
Dewdney J. (FT-04)	206
Dhagat P. (EC-10)	152
Dhagat P. (EF-09)	160
Dhesi S.S. (FF-02)	191
Dhesi S.S. (HR-13)	270
di Bona A. (CF-01)	91
Di Michelle L. (GH-04)	229
Di Pendina G. (GD-05)	220
Diaconu A. (HU-05)	275
Diao Z. (BD-09)	56
Diao Z. (DP-05)	132
Diaz-Moreno C. (EU-08)	176
Diény B. (AC-11)	21
Diény B. (AF-03)	26
Diény B. (CC-05)	85
Diény B. (EB-03)	148
Diény B. (GC-01)	217
Diény B. (GD-05)	220
Diény B. (GF-03)	225
Diény B. (GF-08)	226
Diény B. (HC-06)	251
Diestra-Cruz H. (ER-07)	170
Dietl T. (DF-08)	125
Dietl T. (DF-10)	126
Diez-Ferrer J.L. (DG-08)	128
Diez-Jimenez E. (EH-07)	164
Dimian M. (GP-10)	232
Dimopoulos T. (CH-11)	96
Ding J. (DQ-08)	134
Ding J. (DQ-09)	134
Ding J. (DS-06)	138
Ding J. (FD-03)	187
Ding J. (FD-04)	187
Ding J. (FU-15)	210
Ding J. (GQ-13)	234
Ding J. (HH-04)	262
Ding J. (HQ-01)	266
Ding J. (CF-09)	92
Ding Y. (HG-08)	260
Dionne G. (EU-09)	177
Dionne G.F. (AU-05)	43
Dionne G.F. (BH-12)	65
Dixit D.K. (FP-03)	198
Djiteutedjeu H. (EW-11)	181
Dluzewski P. (DF-07)	125

Dmytriev O. (CD-06)	88
Do B. (EB-08)	149
Dobrowolska M. (DF-09)	125
Dodge K.N. (GQ-11)	234
Doerr M. (DH-13)	131
Dogan F. (AW-11)	48
Dogan F. (DR-14)	137
Doganay H. (CC-13)	87
Doi M. (AS-02)	39
Doi M. (DP-04)	132
Doi M. (FE-04)	189
Dolgova T. (AH-02)	31
Dolgova T. (AH-05)	31
Dong K. (DD-06)	121
Dong Q. (DT-04)	139
Dong X. (ER-15)	171
Dong Y. (AQ-03)	35
Dong Y. (FG-04)	194
Dongping W. (FR-06)	203
Donolato M. (GH-02)	229
Donolato M. (GH-06)	229
Donolato M. (GH-07)	229
Dost R. (DG-09)	128
Devolder T. (HV-06)	277
Dou S. (EU-04)	176
Dou S. (HU-04)	275
Dou S. (HU-08)	275
Dou S.X. (AU-08)	44
Dou S.X. (CT-14)	107
Doyle M.M. (BH-09)	65
Drapeko M. (HC-14)	252
Dreher L. (FB-06)	183
Dreher L. (FD-12)	188
Drewello V. (FP-06)	198
Driskill-Smith A. (BB-01)	50
Driskill-Smith A. (BB-02)	50
Driskill-Smith A. (BB-11)	51
Drouet M. (BQ-05)	68
Drouhin H. (GB-07)	216
Drube W. (CC-13)	87
Drube W. (EC-01)	150
Drube W. (FE-01)	189
Drube W. (GE-05)	222
Drube W.W. (BS-04)	72
Du H. (BU-10)	77
Du J. (AP-13)	34
Du J. (BT-15)	76
Du J. (CW-01)	112
Du J. (GP-07)	232
Du J. (GR-08)	236
Du J. (GT-11)	240
Du J. (HH-14)	263
Diez-Jimenez E. (EH-07)	164
Du Y. (AP-12)	34
Du Y. (EU-04)	176
Duan H. (AT-15)	42
Duan H. (CH-02)	95
Duan H. (EE-03)	156
Duan H. (FG-07)	194
Duan H. (FG-12)	195
Duan N. (GP-11)	232
Duan X. (HE-07)	256
Duan Y. (CH-07)	96
Duan Y. (GT-07)	240
Duan Z. (AC-12)	21
Ding Q. (EG-10)	163
Dubenko I. (CT-15)	108
Dubenko I. (FU-10)	209
Dubut J.P. (EH-11)	165
Duc Anh L. (DF-03)	125
Duc Dung D. (BQ-08)	69
Duc Dung D. (BQ-13)	69
Duc Dung D. (BS-11)	73

Duch E.A. (EH-01)	163
Ducharme S. (EG-08)	162
Ducruet C. (AF-03)	26
Ducruet C. (GC-01)	217
Dudarev S.L. (FH-08)	196
Dudzik E. (AG-08)	30
Duerr G. (EQ-02)	167
Dufour C. (CC-09)	86
Dufour C. (GF-01)	224
Dufour C. (GR-13)	236
Dugay J. (CE-01)	89
Duh J. (GT-01)	239
Duluard A. (EG-02)	161
Duluard A. (FP-02)	197
Dumas P. (FC-13)	186
Dumas R. (AD-06)	22
Dumas R.K. (AD-04)	22
Dumas R.K. (AD-05)	22
Dumas R.K. (CF-08)	92
Dumas-Bouchiat F. (ER-03)	170
Dumas-Bouchiat F. (GG-11)	228
Dumesnil K. (CC-09)	86
Dumesnil K. (FQ-11)	201
Dumesnil K. (GF-01)	224
Dumesnil K. (GR-13)	236
Dumitru I. (DR-07)	136
Dunne L. (BR-05)	70
Dunne L. (EF-02)	158
Dunne P. (EE-12)	157
Dunya H. (BE-14)	59
DuPre E. (BH-07)	64
Dupré L. (FS-15)	206
Dürr H. (ED-02)	153
Dussaux A. (EB-02)	148
Dussaux A. (EB-05)	149
Dvornik M. (CD-04)	87
Dvornik M. (EQ-10)	168
Dvornik M. (FD-05)	187
Dvornik M. (HV-04)	277
Dymerska B. (FH-03)	196
Dziawa P. (DF-05)	125
Dzyapko O. (CD-10)	88
Dzyapko O. (DB-10)	117

- E -

e Silva F.C. (DP-15)	133
Eason K. (AF-08)	27
Eason K. (CF-11)	92
Ebels U. (GA-02)	214
Ebels U. (GC-01)	217
Ebels U. (HC-06)	251
Ebels U. (HC-12)	252
Ebert H. (FR-11)	203
Ebke D. (EG-01)	161
Ebke D. (FP-06)	198
Ebke D. (GS-02)	237
Ebnabbasi K. (GT-08)	240
Edelstein A. (FE-14)	191
Edwards E.R. (FB-09)	183
Egawa G. (DG-04)	127
Eginligil M. (CE-04)	89
Eibagi N. (FG-05)	194
Eigler D.M. (AC-04)	20
Eimer S. (DA-04)	115
Eisebitt S. (ED-01)	153
Eisebitt S. (FG-02)	193
Ekiert T.F. (BH-09)	65
Eklund A. (EB-10)	149
Eklund A. (GW-05)	245
El Moussaoui S. (ED-03)	154
Elgazzar S. (GE-11)	223

Elhalawaty S. (HH-02)	261
El-Hilo M. (CE-08)	90
Elidrissi M. (CF-11)	92
Elidrissi Moulay R. (AT-04)	41
Eliseev A. (AH-09)	32
Elizalde Galindo J.T. (ER-02)	169
Elizalde Galindo J.T. (ET-13)	175
Elizalde Galindo J.T. (GR-05)	236
Elizalde Galindo J.T. (GV-13)	244
Elizalde-Galindo J. (EU-08)	176
Ellis M. (FD-01)	186
Eloi J. (CE-02)	89
Eltschka M. (HB-01)	248
El-zain M. (BQ-05)	68
Emori S. (DC-11)	119
Encinas Oropesa A. (HT-03)	273
Enders A. (BG-09)	63
Enders A. (BR-15)	72
Endo Y. (BH-04)	64
Endoh T. (GD-04)	220
Endoh T. (GD-07)	220
Endres B. (BS-07)	73
Engdahl G. (HW-05)	279
Enokizono M. (BV-01)	78
Enokizono M. (CB-12)	84
Enokizono M. (EC-13)	152
Enokizono M. (ER-08)	170
Enokizono Y. (ER-08)	170
Erbe A. (AW-03)	47
Erekhinsky M. (EV-08)	178
Erekhinsky M. (GF-05)	225
Erekhinsky M. (HF-04)	258
Erickson M. (BD-05)	55
Ernst A. (HD-01)	253
Erwin R. (HD-04)	253
Eschenlohr A. (ED-02)	153
Escobar M.A. (BF-01)	59
Escobar M.A. (CF-09)	92
Escobar M.A. (FH-01)	195
Escobar M.A. (FH-02)	196
Escrig J. (DR-15)	137
Eslandari R. (GV-08)	244
Esquinazi P. (BE-11)	58
Essert S. (ED-10)	155
Etzkorn M. (AC-04)	20
Evans M. (HA-03)	247
Evans R. (AH-03)	31
Evans R. (ED-03)	154
Evans R. (FQ-06)	200
Evans R.F. (CF-07)	92
Evans R.L. (FH-09)	196
Evarts E.R. (EE-07)	156
Eves J. (FQ-15)	202
Eyrich C. (BF-04)	60
Eyrich C. (HR-07)	269

- F -

Fabbrici S. (AU-12)	44
Fabbrici S. (DH-13)	131
Fabretti S. (GS-02)	237
Fabretti S.M. (HU-11)	276
Fadley C.S. (CC-13)	87
Fadley C.S. (GE-05)	222
Fahlman M. (AB-06)	19
Faina B. (DF-10)	126
Fainman Y. (CF-09)	92
Fal T. (FT-05)	207
Faleev S. (BE-03)	57
Faleev S. (BW-14)	81
Faleev S. (CR-11)	103
Fallahi V. (AD-06)	22

Falqueiro A. (ES-02)	172
Fan B. (FS-01)	204
Fan C. (BC-08)	53
Fan C. (EU-06)	176
Fan K. (CH-07)	96
Fan R. (EF-11)	160
Fan R. (GE-07)	223
Fan X. (DW-13)	146
Fan X. (FQ-13)	201
Fan Y. (EG-03)	161
Fanciulli M. (BS-04)	72
Fanciulli M. (FE-01)	189
Fang D. (DB-10)	117
Fang S. (AV-14)	46
Fang S. (DU-04)	141
Fang S. (HG-12)	261
Fang S. (HP-01)	264
Fang Y. (AD-04)	22
Fang Y. (AD-06)	22
Fang Y. (CF-08)	92
Fang Y. (GG-07)	228
Fang Z. (DF-01)	124
Fangohr H. (FH-04)	196
Fangohr H. (GP-01)	231
Fangohr H. (HR-11)	270
Fangohr H. (HS-14)	272
Fangohr H. (HV-05)	277
Fanyao Q. (ET-04)	174
Fanyao Q. (EW-10)	181
Farghaly A.A. (AP-01)	33
Farias Mancilla J.R. (ET-13)	175
Farias Mancilla J.R. (GV-13)	244
Farias R. (EU-08)	176
Farle M. (AC-12)	21
Fassbender J. (AW-03)	47
Fassbender J. (BD-03)	55
Fassbender J. (GQ-05)	234
Fattinger M. (FR-01)	202
Faulhaber E. (GE-02)	222
Faurie D. (DH-14)	131
Fazzini P.F. (CE-01)	89
Fdez-Gubieda M. (FU-07)	209
Fecher G. (EC-01)	150
Fecher G.H. (AA-05)	18
Fecher G.H. (FS-06)	205
Fechner M. (HD-01)	253
Fedyanin A. (AH-02)	31
Fedyanin A. (AH-05)	31
Fedyanin A. (AH-09)	32
Feeser C. (BQ-11)	69
Felner I. (CQ-03)	100
Felser C. (AA-05)	18
Felser C. (EC-01)	150
Felser C. (FS-06)	205
Feng C. (AE-08)	25
Feng C. (BC-09)	53
Feng G. (DP-05)	132
Feng G. (FQ-10)	201
Feng J. (BP-02)	66
Feng J. (BP-09)	67
Feng J. (CV-02)	110
Feng J. (FP-04)	198
Feng W. (BQ-08)	69
Feng W. (BQ-13)	69
Feng X. (CV-13)	112
Feng X. (DF-01)	124
Feng X. (HB-01)	248
Feng Y. (BP-10)	67
Feng Y. (FU-15)	210
Ferdousi F. (GW-12)	246
Ferguson A. (FC-15)	186
Ferguson A.J. (DB-10)	117

Ferguson R. (FA-03)	182
Ferguson R.M. (GH-13)	230
Fernandez Garcia M. (FF-11)	193
Fernandez-Baca J. (BG-03)	62
Fernandez-Baca J.A. (HD-11)	255
Fernandez-de-Castro J. (AS-10)	40
Fernandez-de-Castro J. (AT-02)	41
Fernández-García M.P. (EG-05)	162
Fernandez-Pacheco A. (AD-01)	22
Fernandez-Pacheco A. (FW-12)	213
Fernandez-Pacheco A. (FW-13)	213
Fernandez-Pacheco A. (HE-06)	256
Ferre J. (AW-15)	49
Ferreira R.A. (AD-08)	23
Ferriani P. (EF-01)	158
Fert A. (AB-03)	18
Fert A. (CS-05)	104
Fert A. (DC-04)	118
Fert A. (EB-05)	149
Fert A. (FB-10)	183
Fert A. (HE-08)	256
Fert A. (HE-09)	257
Fetisov Y.K. (FT-08)	207
Feyerherm R. (AG-08)	30
Fidler J. (AG-12)	48
Fidler J. (FD-06)	187
Fidler J. (FH-03)	196
Fidler J. (FH-05)	196
Figueroa A.I. (BE-05)	57
Filho R.P. (EH-11)	165
Filote C. (FQ-01)	200
Finocchio G. (AW-08)	48
Finocchio G. (HC-02)	250
Finocchio G. (HR-06)	269
Finocchio G. (HV-12)	278
Fiorillo F. (FS-09)	205
Fischbacher T. (FH-04)	196
Fischbacher T. (HR-11)	270
Fischer P. (BD-01)	54
Fischer P. (BD-03)	55
Fischer P. (BD-06)	55
Fischer P. (DC-05)	119
Fischer P. (FR-12)	203
Fishman G. (GB-07)	216
Fitchorov T. (EU-03)	176
Fitzsimmons M. (AD-03)	22
Fitzsimmons M.R. (AG-05)	29
Fitzsimmons M.R. (EG-06)	162
Fitzsimmons M.R. (GF-01)	224
Fitzsimmons M.R. (HF-04)	258
Flatau A. (DH-08)	130
Flatau A. (HX-06)	280
Flatté M. (BR-03)	70
Flatté M.E. (BR-02)	70
Fleet L. (BR-14)	71
Fleet L.R. (AA-02)	17
Fleet L.R. (BS-08)	73
Flewett S. (ED-01)	153
Flipse J. (FB-11)	184
Flores Tavizón E. (ER-02)	169
Flores Tavizón E. (GV-13)	244
Flores-Zuñiga H. (AU-15)	44
Florez J. (EU-09)	177
Florez J.M. (BW-02)	80
Florez S.H. (BF-09)	60
Fogel A.L. (GV-08)	244
Fognini A. (ED-02)	153
Föhlisch A. (ED-02)	153
Folven E. (AG-03)	29
Folven E.* (EE-08)	157
Fontana R. (EH-01)	163
Forget A. (CA-05)	82

Forrester A. (HS-14)	272
Fortin D.C. (BD-09)	56
Fraile Rodriguez A. (HA-05)	248
Fraile Rodriguez A. (HD-02)	253
Franchin M. (FH-04)	196
Franchin M. (GP-01)	231
Franchin M. (HR-11)	270
Franchin M. (HS-14)	272
Franchin M. (HV-05)	277
Franco Jr A. (DP-15)	133
Franco V. (CG-06)	94
Francoeur B. (AQ-01)	35
Franke K. (HD-03)	253
Franken J.H. (DC-10)	119
Franz C. (GC-08)	218
Frederic B. (FQ-08)	201
Freeland J.W. (AG-05)	29
Freeland J.W. (EC-03)	151
Freeland J.W. (FF-12)	193
Freeman M.R. (BD-09)	56
Freimuth F. (GC-07)	218
Freitas P.P. (AD-08)	23
Freitas P.P. (EG-05)	162
Freitas P.P. (GH-02)	229
Freitas P.P. (GH-03)	229
Freitas S.C. (AD-08)	23
Freitas S.C. (GH-03)	229
Fréna-Robin M. (ER-03)	170
Friedman A.L. (FC-08)	185
From M. (BF-04)	60
Frömter R. (ED-01)	153
Frömter R. (GC-13)	219
Frontera C. (AG-08)	30
Frontera C. (AG-10)	30
Fry P.W. (FW-11)	213
Fu C. (ER-12)	170
Fu S. (FV-06)	211
Fu W. (AV-06)	45
Fu W. (HP-08)	265
Fuchigami T. (GH-15)	231
Fuchs G. (GB-04)	216
Fuertes A. (FF-11)	193
Fuji Y. (FC-03)	184
Fujita S. (GD-03)	220
Fujizawa K. (FE-15)	191
Fukami S. (FQ-02)	200
Fukami S. (HE-03)	256
Fukatani N. (BE-04)	57
Fuke H.N. (AS-05)	39
Fukuma Y. (AC-13)	21
Fukuma Y. (FB-12)	184
Fukuma Y. (FP-15)	199
Fukuma Y. (GA-05)	215
Fukumura T. (DE-13)	124
Fukumura T. (EU-11)	177
Fukunaga H. (CV-04)	110
Fukunaga H. (CW-07)	113
Fukunaga H. (CW-12)	114
Fukushima A. (AF-10)	27
Fukushima A. (CC-02)	85
Fukushima A. (CS-05)	104
Fukushima A. (EB-05)	149
Fukushima A. (EB-08)	149
Fukushima A. (FP-03)	198
Fukushima A. (HC-05)	251
Fukushima A. (HC-07)	251
Fukushima A. (HE-09)	257
Fukuzawa H. (FC-03)	184
Fullerton E. (EF-05)	159
Fullerton E.E. (AF-09)	27
Fullerton E.E. (AW-13)	48
Fullerton E.E. (BB-04)	50

Fullerton E.E. (CF-09)	92
Fullerton E.E. (DA-02)	115
Fullerton E.E. (ET-08)	174
Fullerton E.E. (FG-05)	194
Fullerton E.E. (GE-05)	222
Fullerton E.E. (GW-15)	247
Funabashi N. (BB-12)	52
Furdyna J.K. (AC-10)	21
Furdyna J.K. (DF-09)	125
Furdyna J.K. (FQ-04)	200
Furdyna J.K. (GS-09)	238
Furomoto Y. (AT-13)	42
Furomoto Y. (DQ-13)	135
Furomoto Y. (DQ-14)	135
Furubayashi T. (AS-03)	39
Furubayashi T. (GS-01)	237
Futamoto M. (AS-06)	39
Futamoto M. (DD-05)	120
Futamoto M. (DG-05)	127
Futamoto M. (FU-01)	208
Futamoto M. (GV-05)	243
Futamoto M. (GV-11)	244

- G -

Gabsi M. (FS-09)	205
Gaceur M. (GH-12)	230
Gacoin T. (FF-10)	193
Gaffney J. (HX-05)	280
Gaidis M.C. (AF-07)	27
Gaidis M.C. (DA-03)	115
Gainopoulos G. (DD-11)	121
Gajek M. (AF-07)	27
Gajek M.J. (EF-08)	159
Galatsis K. (AF-12)	27
Galatsis K. (EG-11)	163
Galatsis K. (HR-05)	269
Galbati M. (AB-03)	18
Gale B.K. (HV-07)	277
Galkiewicz A. (BD-05)	55
Gallagher B. (FC-15)	186
Gallagher W.J. (AF-07)	27
Gallagher W.J. (DA-03)	115
Gallagher W.J. (EH-01)	163
Gallais Y. (CA-05)	82
Galstyan E. (DP-11)	133
Gama S. (CG-03)	93
Gambardella P. (DA-05)	115
Gambardella P. (FF-02)	191
Gan H. (FQ-14)	201
Ganeshraj C. (FV-11)	211
Gang L. (AV-11)	46
Gang T. (BG-08)	63
Gangmei P. (AS-11)	40
Gangmei P. (FD-05)	187
Ganguly S. (BQ-09)	69
Ganguly S. (BS-09)	73
Gangwar A. (GA-03)	214
Ganss F. (AC-06)	20
Ganss F. (CD-08)	88
Gao J. (AR-10)	38
Gao J. (BS-14)	74
Gao J. (CQ-04)	100
Gao J. (CQ-12)	101
Gao J. (CR-02)	102
Gao J. (CR-04)	102
Gao K. (GU-04)	241
Gao T. (CT-13)	107
Gao T. (HD-07)	254
Gao W. (CQ-07)	100
Gao X. (CV-10)	111
Gao Y. (GH-01)	228

Garbovskiy Y. (AH-04)	31
Garbs F. (CD-09)	88
Garcia C. (AU-15)	44
Garcia C. (BW-02)	80
Garcia C.G. (CE-06)	90
Garcia F. (DR-10)	136
Garcia F. (FH-06)	196
Garcia J. (HH-03)	262
Garcia L.M. (BE-05)	57
Garcia Prieto A. (FU-07)	209
Garcia-Flores A.F. (CP-06)	98
García-Martín J.M. (FS-14)	206
García-Martín J.M. (GF-03)	225
García-Muñoz J. (AG-08)	30
García-Muñoz J. (AG-10)	30
García-Muñoz J.L. (EU-05)	176
García-Muñoz J.L. (HD-05)	254
García-Santiago A. (BG-07)	62
Gardea-Torresley J.L. (ER-02)	169
Gardner A. (BH-03)	64
Gardner A. (BH-14)	65
Garello K. (DA-05)	115
Garitaonandia J. (GQ-06)	234
Garitaonandia J.S. (GQ-14)	235
Garlid E.S. (GB-08)	216
Garshelis I.J. (FS-15)	206
Garzon S. (GC-03)	218
Gaudin G. (DA-05)	115
Gaudin G. (HE-10)	257
Gazzadi G. (CF-01)	91
Ge H. (CV-13)	112
Ge H. (FV-10)	211
Ge J. (BT-15)	76
Ge J. (CW-01)	112
Ge Y. (FR-06)	203
Gedanken A. (CQ-02)	100
Gehring A.U. (BC-06)	53
Gehring A.U. (HV-11)	277
Geihufe J. (ED-01)	153
Geiler A. (BH-07)	64
Geiler A. (EU-03)	176
Geiler A. (GT-08)	240
Geiler A.L. (DV-03)	143
Geng D. (BU-08)	77
Geng W. (CU-03)	108
Geng W. (GR-12)	236
George J. (GB-10)	216
George J. (HH-02)	261
George T.A. (AE-03)	24
George T.A. (AE-06)	24
Geppert C. (GB-08)	216
Ger T. (DV-06)	143
Gerasimova N. (ED-02)	153
Gercsi Z. (FV-13)	211
Gerhardt T. (BD-03)	55
Gessesse S. (CH-08)	96
Ghasemi A. (DP-07)	132
Ghasemi A. (DP-08)	132
Ghosh A. (GA-02)	214
Gianchandani Y. (DV-04)	143
Gibbs M.R. (FW-11)	213
Gienuz R. (DS-13)	138
Gilbert D. (AC-06)	20
Gilbert D. (DD-09)	121
Gilbert D.A. (FG-01)	193
Gilbert D.A. (HQ-11)	267
Gillette S. (EU-03)	176
Gillette S.M. (DV-03)	143
Jim G. (AW-02)	47
Gim G. (HR-12)	270
Gimbert F. (EF-04)	159
Ginley T. (FR-13)	203

Giordano A. (HV-12)	278
Giouroudi I. (CH-08)	96
Giouroudi I. (CH-09)	96
Giouroudi I. (HS-01)	270
Giouroudi I. (HS-02)	270
Giovannini L. (CD-03)	87
Giovannini L. (EE-05)	156
Giovannini L. (HC-11)	252
Giraud M. (GH-12)	230
Girt E. (BF-04)	60
Girt E. (FB-05)	183
Girt E. (FB-07)	183
Girt E. (HR-07)	269
Giustiniani A. (AU-07)	43
Givord D. (ER-03)	170
Givord D. (GG-11)	228
Givord D. (HG-15)	261
Glas M. (GS-02)	237
Glass B. (BB-09)	51
Glass B. (HR-05)	269
Glatzel P. (EC-02)	151
Gleich B. (FA-01)	181
Gloskovskii A. (FS-06)	205
Gloskovskii A. (CC-13)	87
Gloskovskii A. (EC-01)	150
Gloskovskii A. (GE-05)	222
Glushchenko A. (AH-04)	31
Glushkov V.V. (CQ-11)	101
Gnäupel-Herold T. (EC-07)	151
Goennenwein S.B. (GA-03)	214
Goennenwein S.T. (FB-06)	183
Goennenwein S.T. (FD-12)	188
Goering E. (DG-10)	128
Goering E.J. (FC-04)	184
Gofryk K. (GE-10)	223
Gokce A. (CC-12)	86
Goldman A. (GP-12)	232
Golkar F. (AE-04)	24
Golkar F. (FF-05)	192
Goll D. (FG-08)	194
Golovanov O. (FT-10)	207
Gomes A.M. (AU-14)	44
Gomes da Silva F. (HF-09)	258
Gomez-Polo C. (CB-13)	84
Gong W. (CV-02)	110
Gong W. (DU-08)	141
Gong W. (ET-03)	174
Gong W. (HW-07)	279
Gong Y. (CS-06)	104
Gong Y. (HU-02)	275
Gonzalez D. (GP-14)	233
Gonzalez J. (HP-10)	265
Gonzalez J.M. (EE-10)	157
Goodwill P.W. (FA-02)	181
Goodwill P.W. (FA-03)	182
Gooneratne C. (HS-01)	270
Gopala Pillai S.R. (DE-12)	123
Gopalakrishnan C. (FQ-12)	201
Gopalakrishnan C. (HH-10)	263
Gopalakrishnan J. (CP-06)	98
Gopinadhan K. (BS-13)	74
Gopinadhan K. (HB-02)	248
Gopman D.B. (BB-04)	50
Góra L. (EC-02)	151
Gorige V. (GT-13)	240
Gorria P. (FF-11)	193
Goswami R. (GB-02)	215
Goto R. (CV-07)	111
Goto T. (AH-01)	31
Gottwald M. (EF-05)	159
Goumri-Said S. (BQ-15)	69
Goumri-Said S. (BR-06)	70

Gourdon O. (BU-15)	77
Gowtham P.G. (GC-05)	218
Gozar A. (AR-05)	37
Gozar A. (CP-08)	98
Grabias A. (EC-15)	153
Granado E. (CP-06)	98
Granovsky A. (HX-04)	280
Granroth S. (FC-07)	185
Granz S.D. (AT-11)	42
Granz S.D. (EE-07)	156
Gray A.X. (CC-13)	87
Gray A.X. (GE-05)	222
Gray D. (FE-14)	191
Graziosi P. (AB-08)	19
Greaves S. (AT-09)	42
Greaves S.J. (AT-12)	42
Green M.A. (BG-02)	62
Greene P. (AD-03)	22
Greene P.K. (FG-01)	193
Greneche J. (BH-01)	63
Greneche J. (FF-11)	193
Grepstad J.K. (AG-03)	29
Grepstad J.K. (EE-08)	157
Grijalva C. (BU-11)	77
Grimsditch M. (EE-13)	157
Grin Y. (GE-03)	222
Grisewood N. (FQ-15)	202
Griveau J. (GE-10)	223
Groessinger R. (CU-10)	109
Grois A. (DF-10)	126
Grollier J. (CS-05)	104
Grollier J. (DB-02)	116
Grollier J. (DC-04)	118
Grollier J. (EB-02)	148
Grollier J. (EB-05)	149
Grollier J. (FD-05)	187
Grollier J. (HE-08)	256
Grollier J. (HE-09)	257
Groot F. (AS-15)	40
Gross R. (FB-06)	183
Gross R. (FD-12)	188
Grosz A. (CH-10)	96
Grosz A. (CH-12)	97
Grübel G. (ED-01)	153
Gruettner C. (FF-01)	191
Gruettner C. (GH-11)	230
Grundler D. (DS-12)	138
Grundler D. (EQ-02)	167
Grunin A. (AH-09)	32
Grünzweig C. (DG-01)	127
Grutter A. (AG-02)	28
Grutter A.J. (AQ-15)	37
Gschneidner Jr. K.A. (BE-05)	57
Gschneidner Jr. K. (FV-15)	212
Gschneidner Jr. K.A. (BE-07)	57
Gschneidner Jr. K.A. (BE-09)	58
Gschneidner, Jr. K.A. (GE-13)	224
Gu M. (AG-01)	28
Gu S. (CG-02)	93
Guan Y. (CF-11)	92
Guassi M.R. (ET-04)	174
Guassi M.R. (EW-10)	181
Gubbins M.A. (AS-11)	40
Gubbiotti G. (DS-12)	138
Gubbiotti G. (EB-11)	150
Gubbiotti G. (EE-05)	156
Gubbiotti G. (EQ-02)	167
Gubbiotti G. (HC-11)	252
Gudmundsen T.J. (DA-01)	115
Gudmundsen T.J. (GC-06)	218
Guehrs E. (FG-02)	193
Guenther C.M. (FG-02)	193
Guillot M. (BE-06)	57
Guillot M. (BH-01)	63
Guillot M. (CG-08)	94
Guimaraes A.O. (CG-03)	93
Guimaraes A.P. (DR-10)	136
Guimaraes A.P. (FH-06)	196
Gulec A. (BE-14)	59
Gunasekera J. (HD-13)	255
Gunawan V. (EQ-13)	169
Gunduz Akdogan N. (GR-02)	235
Gunduz Akdogan N. (HG-11)	260
Günther S. (FR-11)	203
Guo E. (CR-04)	102
Guo Guo L. (AV-11)	46
Guo H. (BC-09)	53
Guo H. (GU-12)	242
Guo J. (AV-14)	46
Guo J. (CW-03)	113
Guo S. (AE-05)	24
Guo S. (BV-06)	78
Guo S. (CV-02)	110
Guo S. (CV-05)	110
Guo S. (CV-08)	111
Guo S. (CV-13)	112
Guo S. (ET-03)	174
Guo W.L. (GV-02)	243
Guo Y. (AV-15)	46
Guo Y. (GP-11)	232
Guo Y.G. (HU-10)	276
Guo Z. (AQ-13)	36
Guo Z. (DP-02)	131
Guo Z. (HG-10)	260
Gupta A. (BE-14)	59
Gupta A. (CH-02)	95
Gupta A. (CR-11)	103
Gupta A. (FC-04)	184
Gupta A. (GE-09)	223
Gupta A. (GE-12)	223
Gupta M. (HS-15)	272
Gupta S. (BB-06)	51
Gusakova D. (HC-12)	252
Guslienko K.Y. (EE-06)	156
Guslienko K.Y. (EE-10)	157
Gutfleisch O. (CG-04)	93
Gutfleisch O. (CV-06)	110
Gutfleisch O. (FV-05)	211
Gutfleisch O. (GG-01)	227
Gutfleisch O. (GG-03)	227
Gutfleisch O. (GR-06)	236
Güth K. (CV-06)	110
Gutt C. (ED-01)	153
Guyader L. (ED-03)	154
Gyawali P. (BW-11)	81

- H -

Habib A.H. (ES-06)	172
Habib A.H. (HP-12)	265
Hadano M. (AR-09)	38
Haddour N. (ER-03)	170
Hadjipanayis G. (DD-11)	121
Hadjipanayis G. (HH-11)	263
Hadjipanayis G.C. (AE-02)	24
Hadjipanayis G.C. (AE-07)	25
Hadjipanayis G.C. (AE-12)	25
Hadjipanayis G.C. (CT-01)	106
Hadjipanayis G.C. (GG-05)	227
Hadjipanayis G.C. (GR-02)	235
Hadjipanayis G.C. (HG-11)	260
Hageman S. (FQ-13)	201
Hai P.N. (DF-11)	126
Hälté V. (HT-10)	274

Ham C.H. (HW-04)	279
Hamada T. (EP-06)	166
Hamaya K. (BS-01)	72
Hamaya K. (BS-02)	72
Hamaya K. (BW-07)	81
Hamida Y. (BE-15)	59
Hamida Y. (BR-07)	70
Hammel P. (DG-02)	127
Han B. (CV-13)	112
Han D. (BD-01)	54
Han D. (DB-05)	116
Han D. (DC-05)	119
Han D. (DG-07)	128
Han D. (FH-07)	196
Han G. (AS-01)	39
Han G. (AS-07)	39
Han G. (FQ-06)	200
Han J. (CT-09)	107
Han J. (CW-14)	114
Han J. (GC-10)	218
Han J. (GR-10)	236
Han K. (AP-09)	34
Han M. (DW-03)	145
Han M. (GV-03)	243
Han S. (AW-05)	47
Han S. (CF-03)	91
Han S. (EW-07)	180
Han S. (FU-09)	209
Han T. (AP-15)	35
Han T. (HT-05)	273
Han X. (AP-13)	34
Han X. (BP-02)	66
Han X. (BT-07)	75
Han X. (FP-04)	198
Han X. (FP-05)	198
Han X. (GP-07)	232
Han X. (HH-12)	263
Han X.F. (CC-03)	85
Han X.F. (HQ-05)	266
Han Z. (GU-04)	241
Hanbicki A. (EG-03)	161
Hanbicki A.T. (GB-02)	215
Hanbicki A.T. (HB-08)	249
Hankemeier S. (GC-13)	219
Hannemann U. (FV-07)	211
Hansen B. (CD-01)	87
Hansen M.F. (GH-02)	229
Hansen M.F. (GH-07)	229
Hanson H.A. (EC-07)	151
Hanyu T. (GD-04)	220
Hanyu T. (GD-07)	220
Hanyu T. (GD-08)	220
Hao H. (BR-01)	70
Hao H. (DV-03)	143
Hao W. (ER-13)	171
Hao Y. (DH-11)	130
Hara M. (FC-03)	184
Harada K. (BW-09)	81
Harada K. (GS-15)	239
Harada K. (HH-07)	262
Harada M. (GB-12)	217
Haraldsen J. (GE-01)	221
Haraszczuk R. (HS-03)	271
Harii K. (CD-11)	89
Harii K. (EV-02)	178
Harii K. (FR-05)	202
Harmon N. (BR-03)	70
Harmon S. (EH-04)	164
Harms J. (BB-09)	51
Harms J. (FC-10)	185
Harms J. (HQ-10)	267
Harms J.D. (GC-11)	219
Harris V. (BH-01)	63
Harris V. (EU-03)	176
Harris V. (GT-08)	240
Harris V.G. (AP-05)	33
Harris V.G. (BH-07)	64
Harris V.G. (DV-03)	143
Harteneck B.D. (CD-01)	87
Harward I. (BH-03)	64
Harward I. (BH-14)	65
Harward I. (DB-04)	116
Harward I. (DV-13)	144
Harward I. (HX-03)	280
Hase N. (DE-03)	122
Hase T.P. (EF-03)	159
Hasegawa D. (GU-05)	241
Hasegawa D. (GU-06)	242
Hasegawa R. (CB-02)	83
Hasegawa T. (DE-13)	124
Hasegawa T. (DQ-02)	133
Hasegawa T. (DQ-06)	134
Hasegawa T. (EU-11)	177
Hashi S. (DV-05)	143
Hashi S. (HP-04)	264
Hashimoto N. (BW-07)	81
Hashimoto S. (AS-05)	39
Hashimoto S. (HC-15)	252
Hashimoto Y. (BB-12)	52
Haskel D. (FV-15)	212
Haskel D. (GE-13)	224
Hasnip P.J. (DE-10)	123
Hasnip P.J. (FT-13)	207
Hassdenteufel A. (CS-13)	105
Hassdenteufel A. (ED-11)	155
Hassen E. (CC-10)	86
Hata K. (HT-08)	273
Hatabayashi K. (EU-11)	177
Hathaway K.B. (DH-04)	129
Hauet T. (CC-01)	85
Hauet T. (EF-04)	159
Hauet T. (EF-05)	159
Hauet T. (FG-02)	193
Hawaldar R. (ED-01)	153
Hawkins A.R. (CD-01)	87
Haworth M.D. (BV-04)	78
Hayakawa J. (BB-13)	52
Hayakawa J. (CC-06)	86
Hayashi M. (AS-03)	39
Hayashi M. (DS-10)	138
Hayashi M. (EQ-03)	168
Hayashi M. (HC-14)	252
Hayashi M. (HE-03)	256
Hayashi N. (DR-03)	135
Hayashi N. (FW-03)	212
Hayashi N. (FW-14)	214
Hayward T.J. (DC-13)	120
Hayward T.J. (EP-02)	166
Hayward T.J. (FW-11)	213
He C. (AG-01)	28
He K. (AW-14)	48
He K. (BP-10)	67
He K. (DF-01)	124
He M. (AQ-02)	35
He R. (HS-11)	271
He S. (FF-04)	192
He W. (DV-10)	144
He W. (FE-11)	190
He W. (GD-13)	221
He X. (HX-07)	280
He Y. (EH-09)	164
He Y. (EH-10)	165
He Y. (EH-13)	165
Heald S. (HH-08)	262

Heald S.M. (CF-03)	91
Heald S.M. (FU-09)	209
Heczko O. (DH-12)	130
Hedwig P. (AA-04)	18
Hee J. (CR-03)	102
Heeg C. (FD-12)	188
Heer R. (CH-11)	96
Hehn M. (CC-09)	86
Hehn M. (DC-06)	119
Hehn M. (EG-02)	161
Hehn M. (FP-02)	197
Hehn M. (FQ-11)	201
Heidger S.L. (BV-04)	78
Heidler J. (AW-10)	48
Heidler J. (DC-02)	118
Heidler J. (HB-01)	248
Heiliger C. (EG-01)	161
Heiliger C. (EV-07)	178
Heiliger C. (FB-04)	183
Heiliger C. (GC-08)	218
Heiman D. (CE-05)	90
Heiman D. (ET-02)	174
Heiman D. (GE-07)	223
Heindl R. (HR-01)	268
Heindl R. (HR-02)	268
Heinonen O. (BC-02)	52
Heinonen O. (EB-06)	149
Heinrich A.J. (AC-04)	20
Heinrich B. (BF-04)	60
Heinrich B. (FB-05)	183
Heinrich B. (FB-07)	183
Heinrich B. (FU-11)	209
Heinrich B. (HR-07)	269
Heinze S. (DG-03)	127
Heinze S. (EF-01)	158
Heitmann T. (HD-13)	255
Hejtmanek J. (CQ-14)	101
Hejtmanek J. (CQ-15)	101
Hejtmanek J. (DT-14)	140
Helian N. (GD-09)	221
Hellman F. (ET-08)	174
Hellman F. (GE-05)	222
Hellman F. (HH-08)	262
Hellwig O. (EA-05)	147
Hellwig O. (EQ-08)	168
Hellwig O. (FG-02)	193
Helm M. (BQ-10)	69
Helm M. (GQ-05)	234
Helm M. (HD-08)	254
Hemadi M. (GH-12)	230
Henderson J.R. (GD-06)	220
Hendren W.R. (EC-09)	152
Henrich V.E. (AG-04)	29
Hentschel T. (DE-09)	123
Herbert S.T. (EW-09)	181
Herbst J.F. (HG-02)	259
Heremans J.P. (BA-05)	49
Herfort J. (DE-09)	123
Hergert P. (EH-01)	163
Hernandez E.P. (DB-07)	117
Hernandez J. (BG-07)	62
Hernandez J. (CS-02)	104
Hernandez Y. (HB-01)	248
Hernandez-Minguez A. (CS-02)	104
Hernandez-Paz J. (EU-08)	176
Herng T. (GQ-13)	234
Herr J. (AP-03)	33
Herre P. (HH-13)	263
Herrero J. (AG-08)	30
Herrero-Albillos J. (BE-05)	57
Herrero-de-Vicente J. (EH-07)	164
Herrero-Martin J. (AG-10)	30
Herrmann C. (AB-09)	19
Heyderman L.J. (AW-10)	48
Heyderman L.J. (DC-02)	118
Heyderman L.J. (ED-03)	154
Heyderman L.J. (HA-05)	248
Heyderman L.J. (HD-02)	253
Hicken R.J. (AS-11)	40
Hicken R.J. (FD-05)	187
Hideo O. (HR-10)	269
Hiebert W.K. (BD-09)	56
Hierro-Rodriguez A. (HQ-09)	267
Hilger A. (DG-01)	127
Hill C. (EC-09)	152
Hill M.P. (CT-15)	108
Hille M. (ED-01)	153
Hillebrands B. (EE-10)	157
Hillebrands B. (FC-01)	184
Hillebrands B. (GA-04)	215
Hinata S. (GU-06)	242
Hindmarch A.T. (CC-03)	85
Hinoue T. (FG-06)	194
Hinzke D. (DC-08)	119
Hinzke D. (ED-06)	154
Hinzke D. (EQ-06)	168
Hirata S. (FP-01)	197
Hirayama Y. (FG-06)	194
Hirayama Y. (GU-14)	242
Hirohata A. (AA-02)	17
Hirohata A. (BR-14)	71
Hirohata A. (BS-08)	73
Hirohata A. (CU-01)	108
Hirohata A. (DE-10)	123
Hirosawa S. (CV-12)	111
Hirosawa S. (CV-15)	112
Hirose Y. (DE-13)	124
Hirose Y. (EU-11)	177
Hirotsune A. (GU-14)	242
Hiryuki T. (ET-14)	175
Ho C. (EW-03)	180
Ho H. (CF-02)	91
Ho K. (CT-12)	107
Ho P. (FQ-06)	200
Ho S. (AV-06)	45
Ho S. (HP-08)	265
Hoang T.H. (AG-06)	29
Hoarau C. (EB-03)	148
Hockel J.L. (DB-03)	116
Hockel J.L. (FE-03)	189
Hoehne R. (BE-11)	58
Hoelzel M. (CT-14)	107
Hoff B.W. (BV-04)	78
Hoffmann A. (GF-03)	225
Hofmann M. (CT-14)	107
Holmes S.N. (EF-13)	160
Honda N. (DQ-06)	134
Honda Y. (DE-01)	122
Honda Y. (FP-01)	197
Hong J. (AV-04)	45
Hong J. (BC-11)	54
Hong J. (CH-13)	97
Hong S. (AR-03)	37
Hong S. (CP-04)	98
Hong Y. (BE-03)	57
Hong Y. (BH-05)	64
Hong Y. (BH-06)	64
Hong Y. (CE-03)	89
Hongya Y. (BU-06)	77
Honjo H. (FQ-02)	200
Honjo H. (HR-10)	269
Hono K. (AS-03)	39
Hono K. (BS-10)	73
Hono K. (BW-14)	81

Hono K. (CF-04)	91
Hono K. (CV-15)	112
Hono K. (DE-03)	122
Hono K. (GG-10)	228
Hono K. (GS-01)	237
Hono K. (HC-14)	252
Hopkins X. (GH-14)	231
Hori S. (FP-07)	198
Hornig L. (BW-05)	80
Hornig L. (CS-10)	105
Hornig L. (EV-12)	179
Horwath J. (CG-10)	94
Horwath J. (GR-03)	235
Horwath J.C. (BV-04)	78
Horwath J.C. (CB-07)	84
Horwath J.C. (HG-06)	260
Hoser A. (CR-08)	103
Hoshi Y. (BS-01)	72
Hoshi Y. (BS-02)	72
Hosni M. (DW-06)	145
Hosoda M. (DD-13)	121
Hosoe Y. (FG-06)	194
Hotchi T. (FT-06)	207
Hou D. (FC-14)	186
Hou H. (BF-07)	60
Hou H. (DD-09)	121
Hou H. (GU-02)	241
Hou Y. (EE-04)	156
Hou Z. (DR-13)	136
Hovorka O. (BF-10)	61
Hovorka O. (FH-09)	196
Höwler M. (BQ-10)	69
Hrabec A. (HE-10)	257
Hradil K. (GE-02)	222
Hrkac G. (BF-06)	60
Hrkac G. (CD-02)	87
Hrkac G. (GF-02)	224
Hrkac G. (GG-01)	227
Hsiao J. (DD-09)	121
Hsiao J. (DQ-04)	134
Hsiao J. (HQ-11)	267
Hsiao S. (CW-05)	113
Hsiao S. (GV-01)	243
Hsiao S.N. (DD-12)	121
Hsieh C. (AQ-04)	35
Hsieh C. (CT-04)	106
Hsieh C. (CV-14)	112
Hsieh C. (FV-14)	212
Hsieh C.C. (CV-09)	111
Hsieh W. (ES-09)	173
Hsu C. (BQ-14)	69
Hsu C. (CG-13)	95
Hsu C. (EH-09)	164
Hsu C. (EH-10)	165
Hsu C. (EH-13)	165
Hsu C. (FE-03)	189
Hsu C. (GD-11)	221
Hsu C. (HS-15)	74
Hsu J. (AQ-10)	36
Hsu J. (BP-08)	67
Hsu J. (BW-03)	80
Hsu J. (CW-09)	113
Hsu J. (DD-12)	121
Hsu J. (GU-08)	242
Hsu P. (AR-11)	38
Hsu Y. (BR-04)	70
Hu B. (EU-03)	176
Hu C. (BT-02)	74
Hu C. (DS-09)	138
Hu F. (BU-12)	77
Hu F. (CQ-07)	100
Hu F. (CQ-09)	100
Hu F. (FV-03)	210
Hu G. (AF-04)	26
Hu G. (AF-07)	27
Hu G. (DA-03)	115
Hu J. (AD-12)	23
Hu J. (AT-10)	42
Hu J. (EA-04)	147
Hu J. (HU-05)	275
Hu M. (BV-09)	79
Hu M. (BV-11)	79
Hu Q. (EW-05)	180
Hu Q.O. (GB-08)	216
Hu R. (HU-06)	275
Hu X.S. (HQ-14)	268
Hua W. (DU-06)	141
Huai Y. (EB-01)	148
Huang C. (CW-09)	113
Huang C. (DU-05)	141
Huang J. (CT-02)	106
Huang J. (CW-04)	113
Huang J. (ET-05)	174
Huang J. (FT-01)	206
Huang J. (HT-12)	274
Huang K. (DC-09)	119
Huang L. (AT-10)	42
Huang L. (BD-02)	55
Huang L. (BV-09)	79
Huang L. (BV-11)	79
Huang L. (GS-13)	238
Huang M. (GR-03)	235
Huang P. (CF-10)	92
Huang P. (EG-04)	161
Huang P. (HT-12)	274
Huang P.Y. (DA-01)	115
Hrkac G. (AE-05)	24
Huang Q. (AQ-07)	36
Huang R. (EW-05)	180
Hrkac G. (EE-11)	157
Huang S. (FQ-13)	201
Huang T. (DU-07)	141
Huang T. (EE-03)	156
Huang T. (FG-07)	194
Huang W. (DH-11)	130
Huang W. (DH-15)	131
Huang X. (DQ-09)	134
Huang X. (GQ-13)	234
Huang X. (HH-04)	262
Huang Y. (AQ-04)	35
Huang Y. (BW-01)	80
Huang Y. (CS-10)	105
Huang Y. (CV-10)	111
Huang Y. (DD-09)	121
Huang Y. (DQ-04)	134
Huang Y. (HQ-11)	267
Huang Z. (EF-13)	160
Huang Z. (GT-09)	240
Huba Z.J. (AP-01)	33
Huba Z.J. (ET-01)	174
Huber. (CQ-15)	101
Huber T. (CH-01)	95
Huber T. (EP-09)	166
Huber T. (FD-06)	187
Huber T. (FH-05)	196
Hübner W. (ED-12)	155
Huebl H. (FB-06)	183
Huebl H. (FD-12)	188
Hug H.J. (DG-06)	128
Hug H.J. (GF-04)	225
Hug H.J. (GF-09)	226
Hughes I.G. (DG-09)	128
Hughes I.G. (EP-02)	166
Hughes I.G. (FW-11)	213

Hughes I.G. (HV-06)	277
Hügli R. (HA-05)	248
Huh Y. (CW-13)	114
Huh Y. (DE-14)	124
Huhtinen H. (BQ-04)	68
Huhtinen H. (BQ-12)	69
Huhtinen H. (BT-12)	75
Hung D. (DS-01)	137
Hung L. (AH-10)	32
Hunter D.D. (DH-03)	129
Hunter T. (BH-14)	65
Hurben M. (AS-10)	40
Hurtado-Macias A. (EU-08)	176
Huskens J. (BG-08)	63
Husstedt H. (CH-05)	96
Huth J. (CB-05)	83
Huttema W. (BF-04)	60
Huttema W. (FB-07)	183
Huttema W. (HR-07)	269
Hutten A. (AA-04)	18
Hwang D. (HS-09)	271
Hwang D. (HS-10)	271
Hwang G. (FS-13)	205
Hwang S. (EP-04)	166
Hwang S. (EP-05)	166
Hwang Y. (BQ-08)	69
Hyde R. (CP-11)	99
Hyun S. (AR-01)	37

- I -

Ibarra M. (EC-02)	151
Ibarra M.R. (GH-03)	229
Ibarra R.M. (FW-12)	213
Ichimura M. (BB-13)	52
Ichimura M. (GW-06)	246
Idgoras O. (GF-06)	225
Idzerda Y.U. (BE-08)	58
Idzerda Y.U. (CS-03)	104
Idzerda Y.U. (HT-06)	273
Idzikowski B. (BU-02)	76
Idzuchi H. (FB-12)	184
Idzuchi H. (GA-05)	215
Iihama S. (DD-13)	121
Ikeda K. (GC-14)	219
Ikeda S. (BB-13)	52
Ikeda S. (EF-09)	160
Ikeda S. (FQ-09)	201
Ikeda S. (FQ-14)	201
Ikeda Y. (BF-02)	59
Ikeda Y. (BF-05)	60
Ikeda Y. (BF-06)	60
Ikenaga E. (FS-06)	205
Ilic R. (EE-13)	157
Ilyn M. (EE-10)	157
Ilyn M. (HP-10)	265
Im M. (BD-01)	54
Im M. (BD-03)	55
Im M. (BD-06)	55
Im M. (DC-05)	119
Im M. (FR-12)	203
Imamura H. (BB-08)	51
Imamura H. (EB-08)	149
Imamura H. (EV-15)	179
Imanaga Y. (FW-05)	212
Imort I. (FB-06)	183
Imort I. (GS-04)	237
Imtiaz A. (HQ-15)	268
Inaba N. (AS-06)	39
Inaba N. (GV-05)	243
Inaba Y. (DD-04)	120
Inaba Y. (GU-07)	242

Inaba Y. (GU-09)	242
Inagaki T. (CT-10)	107
Inami N. (BB-07)	51
Inami N. (FU-06)	209
Inokuchi T. (HB-11)	249
Inoue D. (DD-04)	120
Inoue D. (GU-07)	242
Inoue D. (GU-09)	242
Inoue J. (GC-09)	218
Inoue M. (AH-01)	31
Inoue M. (AH-02)	31
Inoue M. (BT-14)	76
Inoue M. (FT-03)	206
Inoue M. (HX-02)	280
Inoue T. (BF-13)	61
Inturi V.R. (AQ-06)	36
Ipatov M. (DV-12)	144
Ipatov M. (EC-11)	152
Ipatov M. (HP-10)	265
Ipus J.J. (AQ-14)	36
Ipus J.J. (CG-11)	94
Ipus J.J. (HH-13)	263
Iramina K. (HS-07)	271
Irvine A. (FC-15)	186
Ise K. (AS-13)	40
Ishibashi A. (FU-12)	209
Ishibashi A. (HX-01)	279
Ishibashi S. (CC-02)	85
Ishibashi S. (HC-05)	251
Ishibashi S. (HC-07)	251
Ishibashi T. (BB-12)	52
Ishida N. (DQ-15)	135
Ishigami R. (CW-10)	114
Ishikawa K. (BQ-07)	68
Ishikawa M. (HB-11)	249
Ishikawa Y. (FP-07)	198
Ishio S. (DQ-02)	133
Ishio S. (DQ-06)	134
Ishio S. (FS-04)	204
Ishiwata N. (FQ-02)	200
Ishiwata N. (HE-03)	256
Ishiwata N. (HR-10)	269
Ishiyama K. (DV-05)	143
Ishiyama K. (FS-07)	205
Ishiyama K. (HP-04)	264
Isowaki Y. (DQ-05)	134
Ito E. (BR-14)	71
Ito K. (FG-06)	194
Ito K. (FQ-09)	201
Ito K. (FT-07)	207
Ito R. (DG-04)	127
Ito S. (GU-14)	242
Itoh A. (AH-03)	31
Itoh A. (ED-03)	154
Itoh M. (BS-10)	73
Itoh M. (GT-13)	240
Itoh M. (HD-09)	254
Ivanov B. (ED-03)	154
Ivanov V.Y. (EU-05)	176
Ivanov V.Y. (HD-05)	254
Ivo K. (GP-09)	232
Iwahashi M. (HS-07)	271
Iwama H. (DP-04)	132
Iwasaka M. (ER-01)	169
Iwasaka M. (ER-04)	170
Iwasaka M. (ER-06)	170
Iwasaka M. (ER-14)	171
Iwasaki H. (AS-05)	39
Iwasaki H. (HC-15)	252
Iwase A. (CW-10)	114
Iwata J.M. (AQ-15)	37
Iwata J.M. (FP-13)	199

Iwata S. (DQ-03)	134
Iyer K.K. (CT-06)	106

- J -

Jackson A. (FF-01)	191
Jacquet E. (AB-03)	225
Jacquet E. (GF-07)	225
Jadwisnyczak W.M. (BQ-04)	68
Jadwisnyczak W.M. (BQ-06)	68
Jadwisnyczak W.M. (BQ-12)	69
Jaegwan K. (HQ-03)	266
Jaffari G.H. (HH-06)	262
Jaffrès H. (GB-10)	216
Jagoo Z. (DW-10)	146
Jaime M. (CP-01)	97
Jain S. (EP-11)	167
Jain S. (EQ-04)	168
Jaiswal A. (GT-12)	240
Jakiela R. (DF-10)	126
Jalil M. (DR-05)	136
Jalil M. (EW-02)	180
Jalil M. (EW-03)	180
Jalil M. (EW-04)	180
Jalli J. (CE-03)	89
Jamali M. (AW-01)	47
Jamali M. (DB-13)	118
Jamali M. (DS-10)	138
Jamali M. (EQ-03)	168
Jamali M. (FC-05)	185
Jamali M. (GC-10)	221
Jamet J. (AW-15)	49
Jammalamadaka S.N. (BS-13)	74
Jander A. (EC-10)	152
Jander A. (EF-09)	160
Jang G. (DU-12)	142
Jang G. (HP-06)	264
Jang H. (EW-07)	180
Jang S. (AV-07)	45
Jang S. (AV-09)	46
Jang S. (BV-03)	78
Jang S. (BV-08)	79
Jang S. (DU-11)	142
Jang S. (ET-10)	175
Jang S. (HP-03)	264
Jang S. (HW-02)	278
Jang T. (CV-03)	110
Jang T. (GG-08)	228
Jang Y. (DV-11)	144
Jang Y. (EE-01)	155
Jang Y. (FV-08)	211
Jang Y. (HE-05)	256
Jang Y. (HQ-03)	266
Jang Z. (AP-09)	34
Jang Z. (HT-13)	274
Jani S. (AQ-08)	36
Jankovsk? O. (CQ-15)	101
Janosek M. (FS-02)	204
Jansen R. (BS-03)	72
Jansen R. (FB-01)	182
Jansen R. (GB-03)	215
Jantz M. (BH-08)	64
Jardim D. (ES-02)	172
Jardim D.R. (ES-05)	172
Jayaraman T.V. (DH-01)	129
Jayathilaka P. (FC-11)	186
Jayathilaka P.B. (BU-01)	76
Jayathilaka P.B. (EV-04)	178
Jen S. (AU-01)	43
Jen S.U. (BT-06)	75
Jen S.U. (BW-04)	80
Jenichen B. (DE-09)	123

Jensen K.L. (BW-10)	81
Jeon I. (GH-08)	230
Jeon I. (GH-14)	231
Jeon I. (HH-15)	264
Jeon I. (HT-15)	274
Jeon K. (HF-01)	257
Jeon S. (HP-06)	264
Jeong D. (BD-01)	54
Jeong G. (HV-03)	277
Jeong J. (HW-02)	278
Jeong S. (GQ-01)	233
Jeong S. (GQ-08)	234
Jeun M. (ES-01)	171
Jeun M. (ES-04)	172
Jha R. (CU-08)	109
Jha R. (HU-12)	276
Jhang G. (AP-15)	35
Jhang G. (EU-01)	175
Jhon M.S. (AT-05)	41
Jhon M.S. (AT-06)	41
Jhon M.S. (AT-07)	41
Jhon M.S. (AT-08)	41
Jhon Y. (AT-07)	41
Ji A. (EC-14)	152
Ji J. (HP-05)	264
Ji M. (CT-12)	107
Ji N. (AS-15)	40
Ji N. (CT-08)	107
Ji R. (EA-04)	147
Ji Y. (FB-13)	184
Ji Y. (GC-04)	218
Jia L. (GV-10)	244
Jia T. (AR-02)	37
Jia Y. (AQ-11)	36
Jian Z. (HT-07)	273
Jiang C. (AH-13)	33
Jiang C. (AU-11)	44
Jiang C. (BE-10)	58
Jiang C. (DH-06)	130
Jiang C. (DH-07)	130
Jiang C. (EP-08)	166
Jiang H. (AF-12)	27
Jiang H. (CE-05)	90
Jiang H. (EB-01)	148
Jiang H. (HR-05)	269
Jiang H.W. (BB-09)	51
Jiang J. (AD-02)	22
Jiang J. (AU-08)	77
Jiang J.S. (BG-06)	62
Jiang L. (BV-07)	79
Jiang L. (CQ-10)	101
Jiang L. (DV-03)	143
Jiang L. (FP-08)	198
Jiang L. (FP-12)	199
Jiang P. (AU-05)	43
Jiang W. (BC-07)	53
Jiang X. (DW-03)	145
Jiang Y. (HG-14)	261
Jiang Y. (BS-14)	74
Jiang Z. (GT-11)	240
Jianmin B. (FR-06)	203
Jiles D. (GP-06)	232
Jiles D. (GP-13)	232
Jiles D.C. (AG-13)	30
Jayaraman T.V. (DV-09)	143
Jiles D.C. (DV-15)	144
Jiles D.C. (HS-05)	171
Jayathilaka P.B. (EV-04)	185
Jimenez E. (FC-09)	206
Jimenez E. (FS-14)	206
Jimenez E. (GF-03)	225
Jimenez-Villacorta F. (BE-01)	56
Jimenez-Villacorta F. (CE-05)	90

Jimenez-Villacorta F. (CR-14)	103
Jin F. (AV-11)	46
Jin F. (HV-13)	278
Jin L. (BP-04)	66
Jin P. (AV-14)	46
Jin P. (DU-04)	141
Jin P. (HG-12)	261
Jin P. (HP-01)	264
Jin Q. (BP-13)	67
Jin Q. (GU-12)	242
Jin X. (FC-14)	186
Jin Y. (CG-02)	93
Jin Z. (AS-02)	39
Jing Y. (FF-04)	192
Jing Y. (HR-03)	268
JingJing L. (DP-03)	132
Jirak Z. (CQ-14)	101
Jirák Z. (CQ-15)	101
Jlirak Z. (DT-14)	140
Jo Y. (EV-05)	178
Johansen T.H. (HU-10)	276
Johnson T.A. (CR-12)	103
Johnson W.P. (HV-07)	277
Johnston-Peck A.C. (FF-07)	192
Jones N.J. (AQ-14)	36
Jones N.J. (CH-03)	95
Jonker B.T. (EG-03)	161
Jonker B.T. (GB-02)	215
Jonker B.T. (HB-08)	249
Joo S. (FP-10)	199
Joo Y. (HW-04)	279
Jordan-Sweet J. (AF-04)	26
Joseph E.A. (EH-01)	163
Joshi N. (GF-04)	225
Joshi N.R. (DG-06)	128
Joshi N.R. (GF-09)	226
Jou . (BT-04)	75
Joumard I. (HC-06)	251
Joumura M. (FP-15)	199
Joy P.A. (DH-01)	129
Ju G. (DD-06)	121
Ju G.A. (BF-10)	61
Ju X. (GD-02)	220
Juan D. (DP-03)	132
Juan E.J. (FS-08)	205
Jubert P. (FH-12)	197
Jué E. (HE-10)	257
Juhin A. (EC-02)	151
Jun C. (HW-08)	279
Jun J.L. (GV-02)	243
Jun M. (DU-02)	141
Jun M. (DU-09)	142
Jung D. (AP-09)	34
Jung H. (BD-01)	54
Jung H. (BF-02)	59
Jung H. (DC-05)	119
Jung H. (FH-07)	196
Jung J. (AP-14)	34
Jung J. (AS-02)	39
Jung J. (AV-04)	45
Jung K. (FP-10)	199
Jung T. (DU-14)	142
Jung Y. (CP-15)	99
Jungfleisch B.M. (FC-01)	184
Jungfleisch M.B. (GA-04)	215
Jungwirth T. (DF-05)	125
Junyang C. (BP-03)	66
Juraszek J. (ET-08)	174

- K -

Kabatek M. (FG-11)	195
--------------------	-----

Kabos P. (HQ-15)	268
Kaczorowski D. (GE-10)	223
Kadam R.H. (DP-07)	132
Kadomtseva A.M. (HD-05)	254
Kadowaki H. (BC-01)	52
Kaewurm B. (GF-11)	226
Kaewrawang A. (AS-04)	39
Kai Y. (EC-13)	152
Kaiju H. (FU-12)	209
Kaiju H. (HX-01)	279
Kaiser A.M. (CC-13)	87
Kaiser A.M. (GE-05)	222
Kaiser C. (AC-01)	20
Kaiser C. (AC-09)	21
Kajiwara Y. (CD-11)	89
Kajiwara Y. (EV-02)	178
Kajiwara Y. (GA-04)	215
Kakazei G.N. (CE-10)	90
Kakazei G.N. (EE-10)	157
Kakazei G.N. (HQ-09)	267
Kakikawa M. (HS-03)	271
Kalashnikova A.M. (ED-03)	154
Kalashnikova A.M. (ED-05)	154
Kalidhindi B. R. V. (BT-01)	74
Kalinikos B.A. (EQ-11)	168
Kalitsov A. (BS-13)	74
Kalitsov A. (CE-04)	89
Kallwies J. (EC-08)	151
Kallwies J. (GP-04)	231
Kaltenbacher M. (CH-05)	96
Kamarad J. (AU-12)	44
Kamarad J. (BE-02)	57
Kamarád J. (CR-05)	102
Kamarad J. (DH-13)	131
Kamata Y. (DQ-05)	134
Kamenev K.V. (CR-05)	102
Kameno M. (HB-09)	249
Kamerbeck A.M. (AB-04)	19
Kamikawatoko T. (CW-12)	114
Kammerer M. (BD-04)	55
Kan D. (HD-04)	253
Kan J. (FG-05)	194
Kan J.J. (AF-09)	27
Kanai Y. (AT-04)	41
Kanai Y. (AT-09)	42
Kanai Y. (AT-12)	42
Kanai Y. (AT-13)	42
Kanazawa K. (BQ-07)	68
Kanbara R. (DQ-03)	134
Kaneko N. (AR-09)	38
Kaneko U.F. (CP-06)	98
Kang B. (CP-02)	98
Kang B. (FV-08)	211
Kang B.Y. (BG-04)	62
Kang K. (DU-12)	142
Kang K. (ES-04)	172
Kang S. (CW-03)	113
Kang S.H. (AF-09)	27
Kang W. (CP-02)	98
Kanipthoth V. (AQ-08)	36
Kanoun M. (BR-06)	70
Kanoun M.B. (BQ-15)	69
Kao C. (AG-07)	29
Kapusta C. (EC-02)	151
Karbol Trojet W. (DH-14)	131
Karci O. (EC-05)	151
Kardasz B. (FB-05)	183
Kardasz B. (FB-07)	183
Kardasz B. (FU-11)	209
Kardasz B. (HR-07)	269
Kardjilov N. (DG-01)	127
Karel J. (HH-08)	262

Karenowska A.D. (GA-04)	215
Karis O. (BF-04)	60
Karis O. (CR-11)	103
Karis O. (EQ-07)	168
Karis O. (FC-07)	185
Karki B.R. (EF-06)	159
Karthik S. (HG-07)	260
Karunaratne D.K. (EP-01)	165
Kasahara K. (BS-01)	72
Kasahara K. (BS-02)	72
Kasai N. (FQ-02)	200
Kasai N. (HR-10)	269
Kasai S. (BD-08)	56
Kasai S. (FP-07)	198
Kashyap A. (AC-05)	20
Kashyap A. (AF-15)	28
Kashyap A. (BR-15)	72
Kashyap A. (CT-01)	106
Kashyap A. (FF-06)	192
Kashyap A. (GF-10)	226
Kaspar P. (HP-09)	265
Kaspar T. (BC-07)	53
Kaster B. (DE-07)	123
Kastil J. (AU-12)	44
Kasugai D. (CT-10)	107
Kasuya R. (HH-01)	261
Kasyutich O. (HT-11)	274
Kataev V. (CE-06)	90
Kataeva N. (ES-14)	173
Kataoka H. (HQ-02)	266
Katane J. (BB-09)	51
Katane J. (EA-05)	147
Katane J. (EB-01)	148
Katane J. (EG-11)	163
Katane J. (HC-12)	252
Katane J.A. (AF-12)	27
Katane J.A. (BB-04)	50
Katane J.A. (BB-05)	50
Katane J.A. (DA-02)	115
Katane J.A. (EB-07)	149
Katane J.A. (EG-10)	163
Katane J.A. (FG-10)	194
Katane J.A. (GC-05)	218
Katane J.A. (HC-06)	251
Katane J.A. (HR-05)	269
Kato A. (AT-13)	42
Kato A. (CU-05)	108
Kato A. (DQ-13)	135
Kato A. (DQ-14)	135
Kato T. (DQ-03)	134
Kato T. (HS-08)	271
Katsnelson M. (BG-11)	63
Katsumata A. (GD-04)	220
Kaul S.N. (CP-10)	98
Kavich J.J. (FF-02)	191
Kawakami R. (BB-01)	50
Kawamura R. (GH-15)	231
Kawanishi Y. (FB-10)	183
Kaya S. (BQ-06)	68
Kazakova O. (CH-04)	95
Kazakova O. (CH-14)	97
Kazakova O. (GH-04)	229
Kazmi A. (HV-10)	277
Kaznatcheev K. (FR-10)	203
Kazuki N. (ET-14)	175
Ke L. (CT-11)	107
Ke L. (GE-04)	222
Ke W. (BC-08)	53
Ke W. (EU-06)	176
Ke X. (HA-01)	247
Ke X. (HQ-07)	267
Keatley P.S. (AS-11)	40

Keatley P.S. (FD-05)	187
Kelley C.S. (FC-13)	186
Kelly B.G. (BH-09)	65
Kennedy R.J. (GQ-04)	233
Kennedy S.J. (AU-08)	44
Kennedy S.J. (CT-14)	107
Kent A. (EF-05)	159
Kent A.D. (AF-02)	26
Kent A.D. (AF-05)	26
Kent A.D. (BB-04)	50
Kent A.D. (BR-02)	70
Kent A.D. (DA-02)	115
Kent A.D. (FR-12)	203
Kernion S.J. (CB-05)	83
Kernion S.J. (CB-06)	83
Kernion S.J. (CB-09)	84
Kernion S.J. (HH-09)	263
Keshavarz S. (ET-07)	174
Kesserwan H. (HT-10)	274
Ketterson J.B. (AR-14)	38
Keylin V. (CB-05)	83
Khalili Amiri P. (BB-05)	50
Khalili Amiri P. (DB-03)	116
Khalili Amiri P. (EB-01)	148
Khalili Amiri P. (EB-07)	149
Khalili Amiri P. (EG-11)	163
Khan K. (EU-15)	177
Khan M.I. (FU-06)	209
Khandhar A. (GH-13)	230
Khandhar A.P. (FA-03)	182
Kharel P. (DE-14)	124
Kharel P.R. (CU-02)	108
Khiem N.V. (DT-05)	139
Khitun A. (DB-03)	116
Khitun A.G. (BH-15)	66
Khivintsev Y. (DB-04)	116
Khizroev S. (DQ-10)	134
Khlobystov A.N. (CE-06)	90
Khokhlov M. (HD-12)	255
Khovaylo V.V. (CG-04)	93
Khurshid H. (HH-11)	263
Khushrushahi S. (ER-10)	170
Khvalkovskiy A. (BB-01)	50
Khvalkovskiy A. (BB-02)	50
Khvalkovskiy A. (BB-11)	51
Khvalkovskiy A. (DC-04)	118
Khvalkovskiy A. (HE-09)	257
Khvalkovskiy A.V. (HE-08)	256
Khym S. (FQ-04)	200
Kienzle P.A. (HD-07)	254
Kiermaier J. (GD-01)	219
Kiermaier J. (GD-02)	220
Kiermaier J. (HG-07)	260
Kikitsu A. (DQ-05)	134
Kikuchi H. (BB-12)	52
Kikuchi N. (CS-11)	105
Kikuchi N. (FG-09)	194
Kikuchi N. (HQ-02)	266
Kikuchi N. (HQ-06)	266
Killiani G. (DC-02)	118
Kim B. (CP-15)	99
Kim B. (FE-09)	190
Kim B. (FQ-05)	200
Kim B. (HH-15)	264
Kim B. (HT-15)	274
Kim C. (AR-01)	37
Kim C. (CE-03)	89
Kim C. (CP-07)	98
Kim C. (DT-01)	139
Kim C. (DW-08)	145
Kim C. (FS-05)	204
Kim C. (HT-01)	272

Kim D. (AD-09)	23
Kim D. (AU-05)	43
Kim D. (AV-04)	45
Kim D. (AW-05)	47
Kim D. (AW-07)	47
Kim D. (BT-09)	75
Kim D. (CP-02)	98
Kim D. (DT-03)	139
Kim D. (FP-10)	199
Kim D. (FQ-05)	200
Kim D. (FW-10)	213
Kim G. (DQ-11)	134
Kim H. (DF-12)	126
Kim H. (DU-02)	141
Kim H. (EW-07)	180
Kim H. (FU-03)	208
Kim H. (GB-11)	217
Kim I. (AR-03)	37
Kim J. (AP-09)	34
Kim J. (BD-07)	55
Kim J. (CD-02)	87
Kim J. (DA-04)	115
Kim J. (DB-11)	117
Kim J. (DF-05)	125
Kim J. (EB-02)	148
Kim J. (EH-12)	165
Kim J. (FE-09)	190
Kim J. (FH-10)	197
Kim J. (FQ-09)	201
Kim J. (FS-10)	205
Kim J. (FU-03)	208
Kim J. (GV-14)	245
Kim J. (GW-07)	246
Kim J. (HG-09)	260
Kim K. (AV-07)	45
Kim K. (AW-02)	47
Kim K. (CP-15)	99
Kim K. (EG-06)	162
Kim K. (FD-10)	188
Kim K. (FD-13)	188
Kim K. (FE-09)	190
Kim K. (FS-10)	205
Kim K. (FV-08)	211
Kim K. (GB-11)	217
Kim K. (HE-07)	256
Kim K. (HR-12)	270
Kim K. (HT-13)	274
Kim K. (HU-09)	276
Kim M. (CU-06)	109
Kim S. (AD-09)	23
Kim S. (AW-12)	48
Kim S. (BD-01)	54
Kim S. (CB-01)	83
Kim S. (CH-13)	97
Kim S. (CP-07)	98
Kim S. (CS-14)	105
Kim S. (DB-05)	116
Kim S. (DC-05)	119
Kim S. (DV-05)	143
Kim S. (EV-05)	178
Kim S. (FH-07)	196
Kim S. (GQ-08)	234
Kim S. (GW-13)	246
Kim S. (HG-09)	260
Kim S. (HH-15)	264
Kim S. (HP-04)	264
Kim S. (HS-09)	271
Kim S. (HS-10)	271
Kim S. (HT-13)	274
Kim T. (BR-14)	71
Kim T. (CV-03)	110
Kim T. (FP-10)	199
Kim T. (GG-08)	228
Kim T. (HT-10)	274
Kim W. (GQ-01)	233
Kim W. (GQ-08)	234
Kim W. (HR-14)	270
Kim Y. (ES-01)	171
Kim Y. (ES-04)	172
Kim Y. (HG-09)	260
Kim Y. (HV-02)	277
Kim Y. (HV-03)	277
Kim Y.K. (AD-09)	23
Kim Y.K. (AP-11)	34
Kim Y.K. (DR-03)	135
Kim Y.K. (ES-15)	173
Kim Y.K. (FW-14)	214
Kim Y.K. (GH-08)	230
Kim Y.K. (GH-14)	231
Kim Y.K. (HH-15)	264
Kim Y.K. (HT-15)	274
Kimel A. (AH-03)	31
Kimel A. (ED-03)	154
Kimel A.V. (ED-05)	154
Kimminau K.F. (AW-04)	47
Kimura H. (CQ-13)	101
Kimura T. (BW-07)	81
Kimura T. (EV-10)	179
Kimura T. (EV-11)	179
Kimura T. (GE-01)	221
Kimura T. (GW-08)	246
Kimura T. (HQ-08)	267
Kimura Y. (CV-12)	111
Kinane C. (EF-11)	160
Kinane C.J. (GE-07)	223
Kinane C.J. (HR-13)	270
Kinttle K. (HX-05)	280
Kirby B.J. (AD-03)	22
Kirby B.J. (AG-01)	28
Kirby B.J. (BF-07)	60
Kirby B.J. (CF-08)	92
Kirby B.J. (DF-09)	125
Kirby B.J. (FR-13)	203
Kirby B.J. (GH-09)	230
Kirby H.F. (EV-04)	178
Kirby R.D. (BG-09)	63
Kirianov E. (FU-10)	209
Kirilyuk A. (AH-03)	31
Kirilyuk A. (BG-11)	63
Kirilyuk A. (ED-03)	154
Kirilyuk A. (ED-05)	154
Kirilyuk A. (ED-07)	154
Kirino F. (DD-05)	120
Kirschner J. (AD-13)	23
Kirschner J. (EF-07)	159
Kirschner J. (EG-09)	162
Kirschner J. (HD-01)	253
Kis A. (CR-15)	103
Kishimoto K. (FP-15)	199
Kita E. (BW-06)	80
Kita E. (EF-08)	159
Kitakami O. (CS-11)	105
Kitakami O. (DD-04)	120
Kitakami O. (FG-09)	194
Kitakami O. (GU-07)	242
Kitakami O. (HQ-02)	266
Kitakami O. (HQ-06)	266
Kitamoto Y. (GH-15)	231
Kitazima H. (HG-05)	260
Kiya T. (AS-13)	40
Kiya T. (DQ-01)	133
Kiya T. (DQ-06)	134
Kiyoshi T. (HP-13)	265
Kläui M. (AW-10)	48

Kläui M. (DC-02)	118
Kläui M. (HB-01)	248
Klein J. (CR-08)	103
Klein J. (DA-04)	115
Klein J. (FH-10)	197
Klein L. (AF-11)	27
Klein L. (CH-10)	96
Klein L. (CH-12)	97
Klein L. (EE-09)	157
Klein O. (DB-02)	116
Klein O. (DC-04)	118
Klein T. (HQ-10)	267
Klem M.T. (HT-06)	273
Klemm A. (FC-10)	185
Klemm A. (FQ-03)	200
Klemm A. (GC-11)	219
Klie R.F. (BE-14)	59
Klimenta F. (HD-01)	253
Klimov P. (GB-04)	216
Klos J. (DS-12)	138
Klos J.W. (EQ-08)	168
Klos J.W. (EQ-15)	169
Knipling K.E. (CG-06)	94
Knittel A. (FH-04)	196
Knittel A. (GP-01)	231
Knizek K. (CQ-14)	101
Knizek K. (CQ-15)	101
Knizek K. (DT-14)	140
Knobel M. (EC-12)	152
Knut R. (CR-11)	103
Knut R. (EQ-07)	168
Knut R. (FC-07)	185
Ko C. (BS-15)	74
Ko J. (CH-13)	97
Ko K. (AV-07)	45
Ko K. (BV-03)	78
Ko K. (BV-08)	79
Ko K. (ET-10)	175
Ko K. (HW-02)	278
Ko W. (HW-04)	279
Kobayashi H. (BQ-07)	68
Kobayashi H. (BS-08)	73
Kobayashi K. (BD-08)	56
Kobayashi K. (EU-13)	177
Kobayashi K. (FS-06)	205
Kobayashi K. (FU-01)	208
Kobayashi K. (GE-05)	222
Kobayashi M. (BW-09)	81
Kobayashi T. (DQ-15)	135
Kobs A. (ED-01)	153
Koch R. (FR-01)	202
Kodama D. (HH-01)	261
Koerner J. (EC-04)	151
Koh C. (HV-02)	277
Kohda M. (EF-12)	160
Kohli K. (HA-01)	247
Kohlstedt H. (BG-05)	62
Kohn A. (GF-02)	224
Koike H. (HB-13)	250
Koinuma H. (GQ-01)	233
Koinuma H. (GQ-08)	234
Koizumi R. (FQ-14)	201
Kolesnik S. (AG-11)	30
Kolesnik S. (BE-14)	59
Kolokoltsev O. (BH-13)	65
Kolokoltsev O. (CD-05)	88
Komine T. (FW-07)	213
Komineas S. (AW-08)	48
Kondo K. (FP-14)	199
Kondo K. (FU-12)	209
Kondo K. (HX-01)	279
Kondo T. (EB-12)	150
Kondo Y. (DQ-02)	133
Kondo Y. (DQ-06)	134
Kondo Y. (FS-04)	204
Kondou K. (FP-07)	198
Kong F. (CB-03)	83
Kong F. (CB-08)	84
Kong G. (FG-13)	195
Kong Y. (EA-03)	147
Konishi K. (FP-03)	198
Konoto M. (EB-05)	149
Konstantinov K. (CQ-13)	101
Koo H. (EW-07)	180
Koopmans B. (DC-10)	119
Kopevcwicz M. (EC-15)	153
Kopecek J. (DH-12)	130
Kordes M.E. (BQ-06)	68
Körner M. (AW-03)	47
Korolev K.A. (BC-13)	54
Kosel J. (CH-08)	96
Kosel J. (CH-09)	96
Kosel J. (DV-04)	143
Kosel J. (HS-01)	270
Kosel J. (HS-02)	270
Kostesha N. (GH-07)	229
Kostylev M.P. (DB-08)	117
Kostylev M.P. (DS-06)	138
Kostylev M.P. (FD-03)	187
Kostylev M.P. (FD-04)	187
Kosugi S. (CW-10)	114
Kota Y. (DD-02)	120
Kothapalli K. (HD-07)	254
Kothleitner G. (DF-10)	126
Kou B. (AV-12)	46
Kou C. (CS-10)	105
Kou X. (CC-12)	86
Kou X. (EC-14)	152
Kou X. (FQ-13)	201
Kouh T. (AR-01)	37
Kouh T. (HT-01)	272
Kouril K. (HT-02)	272
Kovac J. (BU-02)	76
Kovacs A. (GF-02)	224
Kovacs G. (BQ-10)	69
Kovintavavat P. (AS-09)	40
Kovylyna M. (GF-05)	225
Kowalski B.J. (DF-07)	125
Koyama T. (BW-09)	81
Koyama T. (DC-09)	119
Koyama T. (GS-12)	238
Koyanagi T. (FP-15)	199
Kozina X. (FS-06)	205
Kozlovskaya N.A. (CQ-11)	101
Kozlowski G. (DW-10)	146
Kozo S. (HH-01)	261
Kozono Y. (HC-15)	252
Krafft C. (AH-10)	32
Krafft C. (BH-02)	64
Krage E.S. (CW-13)	114
Krage E.S. (DE-14)	124
Kramer M. (HG-04)	259
Kramer M.J. (AE-04)	24
Kramer M.J. (CB-10)	84
Kramer M.J. (CT-13)	107
Kramer M.J. (FF-05)	192
Kramer M.J. (GG-02)	227
Kramer M.J. (GG-04)	227
Kramer M.J. (HG-01)	259
Krasnikov S.A. (FF-08)	192
Kratochvilova M. (AR-13)	38
Kratochvilova M. (CR-09)	103
Krauss M. (FD-07)	187
Krautz M. (FV-05)	211

Krawczyk M. (DS-12)	138
Krawczyk M. (EQ-08)	168
Krawczyk M. (EQ-15)	169
Kriegisch M. (CU-10)	109
Kringel R. (GH-08)	230
Kringel R. (GH-14)	231
Krishnan K.M. (EE-04)	156
Krishnan K.M. (FA-03)	182
Krishnan K.M. (FF-03)	192
Krishnan K.M. (GH-13)	230
Krishnan K.M. (HF-03)	258
Kristan P. (HT-02)	272
Krivorotov I. (BH-15)	66
Krivorotov I. (EB-01)	148
Krivorotov I.N. (AC-12)	21
Krivorotov I.N. (AF-12)	27
Krivorotov I.N. (BB-05)	50
Krivorotov I.N. (BB-09)	51
Krivorotov I.N. (EB-07)	149
Krivorotov I.N. (EG-10)	163
Krivorotov I.N. (EG-11)	163
Krivorotov I.N. (HR-05)	269
Krivosik P. (AT-02)	41
Krivosik P. (DB-04)	116
Kröger R. (FF-09)	192
Krone P. (AC-06)	20
Kronseider M. (FR-11)	203
Krounbi M. (BB-01)	50
Krounbi M. (BB-02)	50
Krounbi M. (BB-11)	51
Krounbi M. (HE-08)	256
Krüger P. (GE-05)	222
Kruglyak V.V. (CD-04)	87
Kruglyak V.V. (CD-06)	88
Kruglyak V.V. (EE-05)	156
Kruglyak V.V. (EQ-10)	168
Kruglyak V.V. (HV-04)	277
Krupskaya Y. (CE-06)	90
Krycka K. (FR-07)	203
Krycka K. (GH-09)	230
Krycka K.L. (BG-02)	62
Krycka K.L. (GF-01)	224
Kryder M.H. (AT-11)	42
Kryder M.H. (EE-07)	156
Ku C.S. (DD-12)	121
Ku T. (EE-11)	157
Kuang J. (DU-07)	141
Kuanr A.V. (HT-09)	273
Kuanr B.K. (FT-05)	207
Kuanr B.K. (HT-09)	273
Kubatkin S. (CH-04)	95
Kubetzka A. (EF-01)	158
Kübler J. (AA-05)	18
Kubota H. (AF-10)	27
Kubota H. (CC-02)	85
Kubota H. (EB-05)	149
Kubota H. (EB-08)	149
Kubota H. (FP-03)	198
Kubota H. (HC-05)	251
Kubota H. (HC-07)	251
Kubota M. (DD-13)	121
Kubota T. (AA-03)	17
Kubota T. (BR-08)	71
Kubota T. (CC-08)	86
Kubota T. (DD-13)	121
Kubota T. (FD-07)	187
Kuchin A.G. (BE-02)	57
Kudo K. (GU-07)	242
Kudo K. (GU-09)	242
Kudo K. (GW-10)	246
Kudo K. (HC-04)	250
Kudo M. (ER-06)	170

Kudou K. (GE-03)	222
Kuga K. (BB-12)	52
Kugler Z. (GT-14)	241
Kuhlmann N.F. (EV-01)	178
Kukreja R. (ED-02)	153
Kumah D. (AG-04)	29
Kumar A. (AR-07)	38
Kumar A. (CU-08)	109
Kumar A. (HU-12)	276
Kumar D. (AC-13)	21
Kumar D.N. (CP-05)	98
Kumar J. (CU-09)	109
Kumar P. (AQ-09)	36
Kumar P. (AR-15)	38
Kumar P. (DP-09)	132
Kumar P. (DT-12)	140
Kume K. (CW-10)	114
Kumta P.N. (BE-13)	58
Kunio Y. (GR-09)	236
Kunz A. (AW-04)	47
Kuo C. (BW-05)	80
Kuo C. (EV-12)	179
Kuo K. (DW-05)	145
Kuo K. (EE-11)	157
Kuo K. (GV-04)	243
Kuo P. (BP-08)	67
Kuo P. (DP-01)	131
Kuo P. (GU-08)	242
Küpferling M. (CG-09)	94
Kura H. (AP-04)	33
Kura H. (HT-08)	273
Kurahashi M. (BR-05)	70
Kurahashi M. (EF-02)	158
Kurebayashi H. (DB-10)	117
Kurebayashi H. (GB-05)	216
Kurian J. (BP-07)	67
Kurian J. (CQ-05)	100
Kurita S. (ER-01)	169
Kurita S. (ER-04)	170
Kurita S. (ER-06)	170
Kurita S. (ER-14)	171
Kuroda K. (EQ-12)	169
Kuroda S. (BQ-07)	68
Kurosaki Y. (CC-06)	86
Kurt H. (BP-09)	67
Kurt H. (FP-04)	198
Kuruva P. (DP-10)	132
Kusmartseva A.F. (CR-05)	102
Kutayiah A.R. (CS-06)	104
Kuwahara Y. (DD-15)	122
Kuzmych-Ianchuk I. (GE-03)	222
Kwak J. (ES-01)	171
Kwak J. (ES-04)	172
Kwon J. (AW-01)	47
Kwon J. (DB-13)	118
Kwon J. (DS-10)	138
Kwon J. (EP-04)	166
Kwon J. (EQ-03)	168
Kwon J. (FQ-05)	200
Kwon W. (DT-01)	139
Kypris O. (DV-09)	143
Kypris O. (DV-15)	144

- L -

La Torre A. (CE-06)	90
Labanowski D.E. (DG-02)	127
Labarta A. (GF-05)	225
Labouré E. (DW-06)	145
Lachaize S. (CE-01)	89
Lacoste B. (AC-11)	21
Lacour D. (CC-09)	86

Lacour D. (DC-06)	119
Lacour D. (EG-02)	161
Lacour D. (FP-02)	197
Lacour D. (FQ-11)	201
Lacroix L. (CE-01)	89
Lafont T. (DH-02)	129
Lafont T. (FE-13)	191
Lagae L. (BD-07)	55
Lahtinen T. (HD-03)	253
Lai C. (BF-07)	60
Lai C. (BW-01)	80
Lai C. (CW-02)	112
Lai C. (DC-09)	119
Lai C. (DD-08)	121
Lai C. (DD-09)	121
Lai C. (DQ-04)	134
Lai C. (ES-09)	173
Lai C. (FG-01)	193
Lai C. (GH-09)	230
Lai C. (GU-02)	241
Lai C. (HQ-11)	267
Lai M. (HS-12)	272
Lai M. (HS-13)	272
Lai P. (DV-07)	143
Lai Y. (EH-05)	164
LaJoie A.L. (CU-11)	109
Lakys Y. (FH-10)	197
Lam S. (XA-01)	146
Lambert C.H. (BB-04)	50
Lambert P.K. (DH-04)	129
Lambson B. (AH-11)	32
Lamichhane M. (CT-05)	106
Lammert P. (HA-01)	247
Lammert P.E. (HQ-07)	267
Lampen P.J. (AG-06)	29
Lampen P.J. (FV-09)	211
Lamperti A. (AD-11)	23
Lamperti A. (DE-15)	124
Lamperti A. (GQ-07)	234
Lamsal J. (CP-13)	99
Lan Z. (DW-03)	145
Landa M. (DH-12)	130
Landau L. (EE-09)	157
Landeros P. (DR-10)	136
Landeros P. (FH-06)	196
Landgraf F.J. (HG-03)	259
Landi G.T. (DS-07)	138
Lang G. (AH-10)	32
Lang G.S. (BH-02)	64
Langer J. (AF-02)	26
Langer J. (AF-05)	26
Langer J. (AF-12)	27
Langer J. (BB-05)	50
Langer J. (BB-09)	51
Langer J. (EB-01)	148
Langer J. (EB-07)	149
Langer J. (EG-10)	163
Langer J. (EG-11)	163
Langer J. (FB-03)	182
Langer J. (HR-05)	269
Langridge S. (BC-05)	53
Langridge S. (DT-07)	140
Langridge S. (EF-10)	160
Langridge S. (EF-11)	160
Langridge S. (GE-07)	223
Langridge S. (HA-03)	247
Langridge S. (HR-13)	270
Lara Pérez E.S. (ET-13)	175
Lara-Curzio E. (AS-15)	40
Lari L. (BQ-11)	69
Lari L. (DE-10)	123
Larozé D. (FD-02)	187

Larumbe S. (CB-13)	84
Latuch J. (EC-15)	153
Lau J.W. (FG-03)	194
Laughlin D.E. (AQ-14)	36
Laughlin D.E. (BF-12)	61
Laughlin D.E. (CF-02)	91
Laughlin D.E. (CH-03)	95
Laurenzi III M.A. (DP-14)	133
Laurita N. (DV-01)	142
Laurita N.J. (FC-11)	186
Lauter V. (AS-15)	40
Laver M. (GF-01)	224
Lavrijsen R. (AD-01)	22
Lazarov V.K. (AA-02)	17
Lazarov V.K. (BQ-11)	69
Lazarov V.K. (DE-10)	123
Lazarov V.K. (FT-13)	207
Lazo C. (DG-03)	127
Le G. (AT-02)	41
Le Guyader L. (HD-02)	253
Le Roy D. (BP-15)	67
Le Roy D. (BU-09)	77
Le T. (AB-02)	18
Le V. (BT-02)	74
Lebedev G. (DH-02)	129
Lebedev G. (FE-13)	191
Lebedinskii Y.Y. (BS-04)	72
Lebedinskii Y.Y. (FE-01)	189
Lebreton J. (GB-10)	216
LeClair P.R. (ET-07)	174
LeClair P.R. (FC-04)	184
Lecoeur P. (DA-04)	115
Lecoeur P. (HE-11)	257
Lécrivain M. (FS-09)	205
Lederman D. (CR-12)	103
Lee A. (CS-04)	104
Lee A. (FD-08)	188
Lee A.W. (FH-11)	197
Lee B. (BV-12)	79
Lee B. (DU-09)	142
Lee B. (DW-08)	145
Lee B. (FP-10)	199
Lee C. (AR-11)	38
Lee C. (BR-04)	70
Lee C. (BR-14)	71
Lee C. (BS-15)	74
Lee C. (BT-02)	74
Lee C. (CS-10)	105
Lee C. (EH-09)	164
Lee C. (EH-10)	165
Lee C. (EH-13)	165
Lee C. (HR-08)	269
Lee C. (HS-12)	272
Lee C. (HS-13)	272
Lee D. (BV-06)	78
Lee D. (CV-05)	110
Lee D. (CV-08)	111
Lee D. (CW-11)	114
Lee D. (DW-04)	145
Lee D. (ET-12)	175
Lee D. (GR-01)	235
Lee D. (GR-08)	236
Lee E. (FV-14)	212
Lee F.C. (EC-14)	152
Lee H. (BS-05)	73
Lee H. (BV-12)	79
Lee H. (BV-13)	79
Lee H. (CW-05)	113
Lee H. (ET-07)	174
Lee H. (FD-10)	188
Lee H. (FD-13)	188
Lee H. (FQ-04)	200

Lee H. (GC-10)	218
Lee H. (GS-09)	238
Lee H. (GV-01)	243
Lee H. (HF-01)	257
Lee H. (HS-09)	271
Lee H. (HS-10)	271
Lee H. (HU-09)	276
Lee H. (HV-03)	277
Lee I. (AR-01)	37
Lee I. (CP-07)	98
Lee I. (DT-01)	139
Lee J. (AD-01)	22
Lee J. (AG-07)	29
Lee J. (AP-11)	34
Lee J. (AR-03)	37
Lee J. (AW-02)	47
Lee J. (AW-12)	48
Lee J. (BH-05)	64
Lee J. (BH-06)	64
Lee J. (BV-12)	79
Lee J. (CE-03)	89
Lee J. (CS-14)	105
Lee J. (DC-05)	119
Lee J. (DQ-11)	134
Lee J. (DU-02)	141
Lee J. (DU-09)	142
Lee J. (EG-06)	162
Lee J. (FH-03)	196
Lee J. (FH-05)	196
Lee J. (GV-14)	245
Lee J. (HR-08)	269
Lee J. (HR-12)	270
Lee J. (HS-09)	271
Lee J. (HS-10)	271
Lee J. (HT-15)	274
Lee K. (AF-09)	27
Lee K. (BD-01)	54
Lee K. (DC-03)	118
Lee K. (DC-05)	119
Lee K. (DR-04)	136
Lee K. (EV-05)	178
Lee K. (FD-10)	188
Lee K. (FD-13)	188
Lee K. (FH-07)	196
Lee K. (FQ-07)	200
Lee K. (FU-02)	208
Lee K. (GW-02)	245
Lee K. (GW-13)	246
Lee K. (HE-02)	255
Lee K. (HR-14)	270
Lee M. (FV-08)	211
Lee N. (BR-14)	71
Lee N. (CP-02)	98
Lee O. (GC-02)	217
Lee O.J. (GC-06)	218
Lee S. (AV-04)	45
Lee S. (AV-07)	45
Lee S. (AW-05)	47
Lee S. (BV-08)	79
Lee S. (CH-13)	97
Lee S. (CV-03)	110
Lee S. (DS-01)	137
Lee S. (DU-11)	142
Lee S. (DV-11)	144
Lee S. (ES-01)	171
Lee S. (ES-04)	172
Lee S. (FQ-04)	200
Lee S. (FQ-05)	200
Lee S. (FQ-07)	200
Lee S. (GG-08)	228
Lee S. (GQ-01)	233
Lee S. (GQ-08)	234
Lee S. (GS-07)	238
Lee S. (GS-09)	238
Lee S. (HP-03)	264
Lee S. (HP-13)	265
Lee S. (HV-03)	277
Lee T. (AP-09)	34
Lee T. (HT-13)	274
Lee W. (BH-05)	64
Lee W. (BH-06)	64
Lee W. (FR-14)	204
Lee W. (HT-12)	274
Lee Y. (BQ-14)	69
Lee Y. (BV-08)	79
Lee Y. (CC-07)	86
Lee Y. (EH-12)	165
Lee Y. (GB-11)	217
Lefevre P. (CC-01)	85
Lefevre P. (EF-05)	159
Lefkidis G. (ED-12)	155
LeFrancois S. (FC-13)	186
Lei N. (DA-04)	115
Lei N. (HE-11)	257
Lei Z. (DV-07)	143
Leighton C. (BD-05)	55
Leighton C. (DE-07)	123
Leiner J. (DF-09)	125
Leitão D.C. (EE-14)	158
Lemaître A. (GB-10)	216
Leng Q. (AC-01)	20
Leng Q. (AC-09)	21
Lengaigne G. (CC-09)	86
Lengaigne G. (FP-02)	197
Lengaigne G. (FQ-11)	201
Lenk B. (CD-09)	88
Lenoir B. (CQ-15)	101
Lentsch A. (FQ-03)	200
Lentsch A. (GC-11)	219
Lentsch A. (HQ-10)	267
Leonard S. (CR-03)	102
Leong S. (AT-15)	42
Leong S. (EE-03)	156
Leong S. (FG-07)	194
Leong S. (FG-12)	195
Leonhardt A. (EC-04)	151
Lepadatu S. (HR-13)	270
Lerch R. (EC-08)	151
Lerch R. (GP-04)	231
Leslie C. (BC-07)	53
Lesnak M. (DV-13)	144
Lester E. (CE-06)	90
Letard J. (BR-13)	71
Letsch A. (FC-10)	185
Leung C. (CW-06)	113
Leung C. (DV-07)	143
Leung C. (GT-07)	240
Leung C. (GU-15)	243
Leutenantsmeyer J.C. (EG-01)	161
Lew W. (AS-07)	39
Lewis L.H. (AP-05)	33
Lewis L.H. (BE-01)	56
Lewis L.H. (CE-05)	90
Lewis L.H. (CR-14)	103
Lewis L.H. (EF-10)	160
Lewis L.H. (EF-11)	160
Lewis M. (BB-05)	50
Lewis M. (BH-15)	66
Lewis M. (DB-03)	116
Lewis M. (EG-11)	163
Lewis W. (CE-06)	90
Lezama L. (FU-07)	209
Lezec H. (DG-11)	128
Li B. (AE-08)	25

Li B. (BU-13)	77
Li B. (CH-09)	96
Li C.H. (CA-03)	82
Li C.H. (EG-03)	161
Li C.H. (HB-08)	249
Li D. (AV-01)	45
Li F. (AQ-13)	36
Li F. (FT-15)	208
Li F. (HS-02)	270
Li G. (CW-06)	113
Li G. (DE-04)	122
Li G. (DV-07)	143
Li G. (GU-15)	243
Li H. (AF-06)	26
Li H. (AF-14)	28
Li H. (AT-14)	42
Li H. (DD-06)	121
Li H. (DU-10)	142
Li H. (FR-03)	202
Li H. (GP-05)	232
Li J. (AH-06)	32
Li J. (AU-03)	43
Li J. (AV-06)	45
Li J. (BE-15)	59
Li J. (BR-07)	70
Li J. (BU-13)	77
Li J. (CS-07)	104
Li J. (EA-04)	147
Li J. (EF-07)	159
Li J. (ER-15)	171
Li J. (EW-05)	180
Li J. (FG-09)	194
Li J. (HA-01)	247
Li J. (HQ-07)	267
Li J. (HU-02)	275
Li K. (BE-15)	59
Li K. (BR-07)	70
Li K. (DF-01)	124
Li K. (ED-01)	153
Li L. (AV-12)	46
Li L. (CT-07)	107
Li L. (CW-09)	113
Li L. (DU-01)	141
Li L. (DV-07)	143
Li L. (HU-15)	276
Li L.J. (HU-02)	275
Li M. (FQ-13)	201
Li N. (AE-08)	25
Li N. (BR-09)	71
Li P. (BE-10)	58
Li P. (CH-15)	97
Li P. (DV-02)	143
Li P. (DV-10)	144
Li P. (EP-10)	166
Li P. (FE-10)	190
Li P. (FE-11)	190
Li P. (GD-13)	221
Li P. (GT-04)	239
Li P. (GT-15)	241
Li P. (HQ-14)	268
Li Q. (BU-05)	76
Li Q. (BV-02)	78
Li Q. (ED-13)	155
Li Q. (HW-07)	279
Li R. (CP-12)	99
Li S. (AQ-07)	36
Li S. (AW-13)	48
Li S. (BF-01)	59
Li S. (BF-11)	61
Li S. (CF-09)	92
Li S. (DG-07)	128
Li S. (EU-14)	177
Li S. (FH-01)	195
Li S. (FH-02)	196
Li S. (GS-03)	237
Li S. (GT-01)	239
Li S. (GT-09)	240
Li S. (HT-12)	274
Li S.F. (AU-13)	44
Li T. (DF-10)	126
Li W. (AE-07)	25
Li W. (AE-12)	25
Li W. (AP-13)	34
Li W. (DP-02)	131
Li W. (DQ-08)	134
Li W. (DQ-09)	134
Li W. (GG-05)	227
Li W. (GG-07)	228
Li W. (GR-02)	235
Li W. (GR-08)	236
Li W. (HG-10)	260
Li W. (HG-11)	260
Li W. (HH-11)	263
Li W. (HU-08)	275
Li W.L. (BW-04)	80
Li X. (AE-02)	24
Li X. (BU-09)	77
Li X. (BW-10)	81
Li X. (CW-13)	114
Li X. (FF-06)	192
Li X. (HP-07)	265
Li X.Z. (CU-02)	108
Li Y. (AH-12)	32
Li Y. (CH-02)	95
Li Y. (CU-13)	109
Li Y. (DU-13)	142
Li Y. (DW-15)	146
Li Y. (EG-04)	161
Li Y. (EW-02)	180
Li Y. (FC-14)	186
Li Y. (FS-12)	205
Li Y. (FU-04)	208
Li Y. (GC-05)	218
Li Y. (GP-12)	232
Li Y. (HS-11)	271
Li Y. (HT-01)	272
Li Y. (HV-13)	278
Li Z. (AS-14)	40
Li Z. (AT-14)	42
Li Z. (BF-11)	61
Li Z. (BG-09)	63
Li Z. (DG-04)	127
Li Z. (DG-07)	128
Lian G. (CU-04)	108
Lian J. (GH-01)	228
Liang C. (DV-04)	143
Liang C. (HS-01)	270
Liang D. (GV-03)	243
Liang K. (DU-05)	141
Liang K. (HD-11)	255
Liang L. (ER-11)	170
Liang W. (DW-11)	146
Liang W. (FS-13)	205
Liang W. (GV-07)	244
Liang W. (HT-07)	273
Liao J. (DD-09)	121
Liao J. (DQ-04)	134
Liao J. (GU-02)	241
Liao J. (GU-12)	242
Liao J. (HQ-11)	267
Liao W. (BS-15)	74
Liao X. (AP-12)	34
Liao Z. (AQ-07)	36
Liao Z. (BW-12)	81

Liao Z. (HP-15)	265
Liaw D. (EH-08)	164
Licht A.S. (GP-12)	232
Liddle S.T. (CE-06)	90
Liebing N. (FB-03)	182
Liew T. (BQ-03)	68
Lim C. (ES-15)	173
Lim G. (GD-09)	221
Lim J. (AH-04)	31
Lim J. (BW-08)	81
Lim J. (DW-08)	145
Lim J. (HX-05)	280
Lim S. (BQ-03)	68
Lim S. (HF-05)	258
Lim S. (HQ-15)	268
Lima P. (CC-10)	86
Lin B. (EU-01)	175
Lin C. (AP-15)	35
Lin C. (AU-06)	43
Lin C. (BE-15)	59
Lin C. (BQ-14)	69
Lin c. (CR-08)	103
Lin C. (CW-04)	113
Lin C. (DW-11)	146
Lin C. (ET-05)	174
Lin C. (EU-01)	175
Lin C. (FT-01)	206
Lin C. (HT-05)	273
Lin C. (HT-07)	273
Lin E. (AS-14)	40
Lin H. (AR-02)	37
Lin H. (BP-11)	67
Lin H. (BR-01)	70
Lin H. (BR-09)	71
Lin H. (DU-04)	141
Lin H. (GU-02)	241
Lin H. (HG-12)	261
Lin H. (HP-01)	264
Lin H. (HT-07)	273
Lin J. (BT-08)	75
Lin J. (GT-01)	239
Lin J. (GV-07)	244
Lin J.G. (FU-05)	209
Lin K. (CW-06)	113
Lin K. (GU-15)	243
Lin K. (HW-04)	279
Lin L. (DT-08)	140
Lin M. (CW-11)	114
Lin M. (ET-12)	175
Lin M. (GR-01)	235
Lin W. (AD-11)	23
Lin W. (CV-14)	112
Lin W. (DA-04)	115
Lin W. (EE-15)	158
Lin W. (FE-06)	189
Lin W. (GW-14)	247
Lin W. (HT-07)	273
Lin W.C. (CV-09)	111
Lin Y. (AU-06)	43
Lin Y. (BH-15)	66
Lin Y. (BP-08)	67
Lin Y. (BW-03)	80
Lin Y. (DD-12)	121
Lin Y. (FG-14)	195
Lin Y. (FU-04)	208
Lin Y. (GU-08)	242
Lin Z. (AV-15)	46
Lin Z. (CT-09)	107
Lin Z. (CW-14)	114
Lin Z. (GP-11)	232
Lin Z. (GR-10)	236
Lin Z.W. (HU-10)	276

Linares J. (BR-13)	71
Lindner J. (AC-12)	21
Line J. (GV-04)	243
Ling D. (AR-11)	38
Ling L. (CQ-10)	101
Ling X.S. (EC-07)	151
Liou J. (FS-13)	205
Liou S. (BP-15)	67
Liou S. (GF-10)	226
Liou S. (GG-07)	228
Liskova E. (DV-13)	144
Liskova E. (HX-03)	280
Litvinov D. (DP-11)	133
Litvinov D. (DQ-10)	134
Liu B. (AD-12)	23
Liu B. (GV-10)	244
Liu F. (AV-01)	45
Liu F. (BF-11)	61
Liu F. (DG-07)	128
Liu F. (GT-09)	240
Liu G. (DU-08)	141
Liu G. (HP-05)	264
Liu G. (HW-07)	279
Liu H. (AF-02)	26
Liu H. (AF-05)	26
Liu H. (AQ-06)	36
Liu H. (CU-12)	109
Liu H. (DA-02)	115
Liu H. (DE-01)	122
Liu H. (DE-04)	122
Liu H. (FP-01)	197
Liu H. (GQ-15)	235
Liu H. (HD-12)	255
Liu I. (DD-09)	121
Liu I. (HQ-11)	267
Liu J. (AH-13)	33
Liu J. (AP-03)	33
Liu J. (AP-13)	34
Liu J. (AU-11)	44
Liu J. (BE-10)	58
Liu J. (CB-10)	84
Liu J. (CG-04)	93
Liu J. (DH-06)	130
Liu J. (DH-07)	130
Liu J. (DT-08)	140
Liu J. (EP-08)	166
Liu J. (FV-05)	211
Liu J. (GG-05)	227
Liu J. (GP-07)	232
Liu J. (GR-08)	236
Liu J. (HG-04)	259
Liu J. (HP-07)	265
Liu J.P. (CT-05)	106
Liu J.P. (FT-14)	208
Liu K. (AC-06)	20
Liu K. (AD-03)	22
Liu K. (DD-09)	121
Liu K. (FG-01)	193
Liu K. (HQ-11)	267
Liu L. (CU-13)	109
Liu L. (DA-01)	115
Liu L. (DU-07)	141
Liu L. (EB-09)	149
Liu L. (GC-06)	218
Liu L. (GU-11)	242
Liu M. (AV-03)	45
Liu M. (DF-01)	124
Liu M. (EU-14)	177
Liu M. (GT-01)	239
Liu P. (GQ-09)	234
Liu P.J. (HG-08)	260
Liu R. (HG-10)	260

Liu S. (CW-05)	113
Liu S. (CW-14)	114
Liu S. (GR-10)	236
Liu T. (AR-02)	37
Liu T. (DP-02)	131
Liu T. (HU-05)	275
Liu W. (AU-10)	44
Liu W. (BP-14)	67
Liu W. (BV-05)	78
Liu W. (CT-02)	106
Liu W. (CU-03)	108
Liu W. (CV-02)	110
Liu W. (EP-12)	167
Liu W. (ET-03)	174
Liu W. (GR-12)	236
Liu W. (HG-10)	260
Liu X. (AC-10)	21
Liu X. (BT-11)	75
Liu X. (BU-08)	77
Liu X. (BV-14)	79
Liu X. (CV-01)	110
Liu X. (CV-05)	110
Liu X. (CV-08)	111
Liu X. (DF-09)	125
Liu X. (DP-08)	132
Liu X. (DU-03)	141
Liu X. (DU-13)	142
Liu X. (DW-02)	145
Liu X. (ET-03)	174
Liu X. (EU-06)	176
Liu X. (FG-03)	194
Liu X. (FQ-04)	200
Liu X. (FV-06)	211
Liu X. (FV-12)	211
Liu X. (GR-04)	235
Liu X. (GS-03)	237
Liu X. (GS-05)	237
Liu X. (GS-09)	238
Liu X. (GT-05)	240
Liu X. (GU-01)	241
Liu X. (GV-06)	244
Liu X. (GV-12)	244
Liu X. (HQ-04)	266
Liu X. (HW-03)	279
Liu Y. (AE-03)	24
Liu Y. (AG-05)	29
Liu Y. (AP-06)	33
Liu Y. (BG-06)	62
Liu Y. (BV-06)	78
Liu Y. (CT-01)	106
Liu Y. (CV-05)	110
Liu Y. (CV-08)	111
Liu Y. (DR-13)	136
Liu Y. (DW-03)	145
Liu Y. (DW-05)	145
Liu Y. (DW-15)	146
Liu Y. (EU-07)	176
Liu Y. (GR-07)	236
Liu Y. (GS-14)	238
Liu Y. (GW-14)	247
Liu Y. (HR-15)	270
Liu Z. (BU-04)	76
Liu Z. (CD-01)	87
Liu Z. (CS-04)	104
Liu Z. (CT-04)	106
Liu Z. (CV-09)	111
Liu Z. (CV-10)	111
Liu Z. (EA-04)	147
Liu Z. (FD-08)	188
Liu Z. (FH-11)	197
Liu Z. (GQ-09)	234
Liu Z. (GR-11)	236

Liu Z.W. (DP-06)	132
Lo C. (FS-01)	204
Lo C. (GP-02)	231
Lobanova I.I. (CQ-11)	101
LoBue M. (CG-09)	94
Lobue M. (DW-06)	145
LoBue M. (FS-09)	205
LoBue M. (FT-02)	206
Locatelli N. (DB-02)	116
Locatelli N. (DC-04)	118
Lochner E. (GQ-04)	233
Loewenhaupt M. (GE-02)	222
Löffler J.F. (BC-06)	53
Lofland S.E. (DH-03)	129
Lofland S.E. (EU-10)	177
Lograsso T.A. (DH-04)	129
Logvenov G. (AR-05)	37
Logvenov G. (CP-08)	98
Lomakin V. (AW-13)	48
Lomakin V. (BF-01)	59
Lomakin V. (CF-09)	92
Lomakin V. (FG-05)	194
Lomakin V. (FH-01)	195
Lomakin V. (FH-02)	196
Lomakin V. (GW-15)	247
Long G. (BC-09)	53
Long S.M. (HG-01)	259
Long Y. (FV-03)	210
Long Y. (FV-06)	211
Lopez Aguilar J.L. (DP-12)	133
Lopez M.G. (CE-06)	90
López Maldonado K.L. (GV-13)	244
Lopez-Diaz L. (EB-13)	150
Lopez-Richard V. (EW-10)	181
Lopusnik R. (AS-11)	40
Lopusnik R. (DV-13)	144
Lorenz B. (GE-01)	221
Lorenz B. (HD-11)	255
Losby J.E. (BD-09)	56
Löser W. (CT-06)	106
Lostao A. (CE-06)	90
Lostun M. (DH-09)	130
Lostun M. (EC-06)	151
Loth S. (AC-04)	20
Lottis D. (BB-01)	50
Lottis D. (BB-02)	50
Lottis D. (BB-11)	51
Lou C. (GV-07)	244
Lou J. (AV-03)	45
Lou J. (EU-14)	177
Lou J. (FE-02)	189
Lou J. (FT-09)	207
Lou J. (GT-01)	239
Lou Y. (DW-02)	145
Lou Y. (FR-04)	202
Lou Y. (GV-12)	244
Lou Y. (HW-03)	279
Lovejoy J. (DB-04)	116
Loving M. (EF-10)	160
Loving M. (EF-11)	160
Loving M. (GE-07)	223
Loyau V. (CG-09)	94
Loyau V. (DW-06)	145
Loyau V. (FT-02)	206
Lu C. (DV-10)	144
Lu C. (FE-10)	190
Lu G. (BP-04)	66
Lu G. (FS-12)	205
Lu H. (BQ-03)	68
Lu H. (HF-05)	258
Lu J. (DD-14)	122
Lu J. (GU-11)	242

Lu J. (HD-12)	255
Lu K. (DU-03)	141
Lu L. (AC-09)	21
Lu L. (BH-08)	64
Lu L. (FG-11)	195
Lu M. (HS-04)	271
Lu M. (HS-06)	271
Lu P. (AS-10)	40
Lü W. (CQ-07)	100
Lu X. (CE-04)	89
Lu Y. (ES-10)	173
Lu Y. (ES-11)	173
Lu Y. (FP-02)	197
Lu Z. (CW-03)	113
Lubarda M. (FG-05)	194
Lubarda M. (GW-15)	247
Lubarda M.V. (AW-13)	48
Lubarda M.V. (BF-01)	59
Lubarda M.V. (CF-09)	92
Lubarda M.V. (FH-01)	195
Lubarda M.V. (FH-02)	196
Lübben O. (FF-08)	192
Lucas M. (CG-10)	94
Lucas M. (GR-03)	235
Lucas M.S. (CB-07)	84
Lucas M.S. (HG-06)	260
Luches P. (CF-01)	91
Ludwig F. (FS-02)	204
Lue C. (BT-08)	75
Luepke G. (EG-03)	161
Luetkens H. (AR-05)	37
Lugli P. (GD-02)	220
Luis F. (CE-06)	90
Lukashov P. (DD-03)	120
Lukaszew A. (AH-08)	32
Lumsden M. (BG-01)	61
Lumsden M. (BG-03)	62
Lüning J. (ED-01)	153
Luo F. (DW-02)	145
Luo F. (HW-03)	279
Luo H. (FT-14)	208
Luo Y. (DU-10)	142
Luo Y. (EA-03)	147
Lupo P. (CF-01)	91
Lupu N. (CB-11)	84
Lupu N. (DH-09)	130
Lupu N. (EC-06)	151
Lutz C.P. (AC-04)	20
Luysberg M. (CC-13)	87
Lv B. (CP-03)	98
Lv X. (AU-10)	44
Lyberatos A. (CF-07)	92
Lyle A. (AF-12)	27
Lyle A. (BB-03)	50
Lyle A. (BB-09)	51
Lyle A. (FC-10)	185
Lyle A. (FQ-03)	200
Lyle A. (GW-03)	245
Lyle A. (HQ-10)	267
Lyle A. (HR-05)	269
Lyle A.P. (GC-11)	219
Lynn J.W. (BC-01)	52
Lyubina J. (FV-07)	211
Lyubutin I. (AP-15)	35
Lyuksyutov I.F. (HU-09)	276

- M -

M. H. Salem N. (CH-09)	96
M. Otxoa R. (BD-07)	55
M. Otxoa R. (GW-07)	246
M. Sahadevan A. (DB-13)	118

Ma B. (BP-13)	67
Ma B. (GU-11)	242
Ma B. (GU-12)	242
Ma D. (HS-11)	271
Ma J. (GE-09)	223
Ma M. (EW-04)	180
Ma N. (ER-15)	171
Ma P. (FH-08)	196
Ma Q. (GR-07)	236
Ma X. (AE-05)	24
Ma X. (AU-09)	44
Ma X. (CU-04)	108
Ma X. (DF-01)	124
Ma Y. (ES-11)	173
Ma Y. (HU-04)	275
Mac Raighne A. (FR-15)	204
Maccherozzi F. (EF-11)	160
Maccherozzi F. (HR-13)	270
Machida K. (BB-12)	52
Macià F. (BR-02)	70
Macià F. (CS-02)	104
Macià F. (FR-12)	203
Madami M. (DS-12)	138
Madami M. (EB-11)	150
Madami M. (EE-05)	156
Madami M. (EQ-02)	167
Maeda T. (DQ-05)	134
Maeda Y. (BS-02)	72
Maeda Y. (BW-07)	81
Maekawa S. (BA-03)	49
Maekawa S. (BB-13)	52
Maekawa S. (GW-06)	246
Magnani N. (BR-12)	71
Magnani N. (GE-10)	223
Mahato R.N. (CP-13)	99
Maity T. (GT-12)	240
Majetich S.A. (AU-13)	44
Majetich S.A. (EE-07)	156
Majetich S.A. (FR-07)	203
Majewski J.A. (DF-08)	125
Majkrzak C.F. (BG-02)	62
Majkrzak C.F. (EC-07)	151
Mak C. (DV-07)	143
Makarov D. (AW-12)	48
Makeeva G. (FT-10)	207
Makino A. (AQ-12)	36
Makino A. (CB-01)	83
Makino A. (CB-11)	84
Makongo J. (EW-11)	181
Malhotra S. (EA-02)	147
Malik S.K. (CP-13)	99
Malik S.K. (CT-07)	107
Malik V.K. (HD-02)	253
Malinowski G. (DC-06)	119
Malkinski L. (AH-04)	31
Malkinski L. (BW-08)	81
Malkinski L. (GT-06)	240
Malkinski L. (GV-08)	244
Malkinski L. (HD-10)	254
Malkinski L. (HX-05)	280
Mallory M. (FG-11)	195
Malm B. (GW-05)	245
Mamica S. (EQ-08)	168
Mamica S. (EQ-15)	169
Mamiya H. (DT-11)	140
Man Q. (AQ-03)	35
Manandhar P. (AF-02)	26
Manchanda P. (AF-15)	28
Manchanda P. (CT-01)	106
Manchanda P. (FF-06)	192
Manchanda P. (GF-10)	226
Manchon A. (AW-11)	48

Manchon A. (BQ-15)	69
Manchon A. (BR-06)	70
Manchon A. (CS-09)	105
Manchon A. (DC-03)	118
Manchon A. (DR-11)	136
Manchon A. (DR-14)	137
Manchon A. (ED-13)	155
Manchon A. (EW-08)	181
Manchon A. (HE-02)	255
Manchon A. (HR-04)	268
Manchon A. (HR-14)	270
Mancoff F.B. (EB-11)	150
Mandal R. (AC-13)	21
Mandal R. (EQ-08)	168
Mandal S. (FE-14)	191
Mandal S.K. (AB-04)	19
Maneuski D. (FR-15)	204
Manfrinetti P. (BE-09)	58
Manfrini M. (BD-07)	55
Manfrini M. (CD-02)	87
Manfrini M. (GW-07)	246
Mangin S. (BB-04)	50
Mangin S. (DA-02)	115
Mangin S. (EF-04)	159
Mangin S. (EF-05)	159
Mangin S. (GW-14)	247
Mangin S. (GW-15)	247
Mangin S. (HF-06)	258
Manivannan A. (BE-13)	58
Manke I. (DG-01)	127
Mankey G. (BE-03)	57
Mankey G.J. (CW-03)	113
Mankey G.J. (ET-07)	174
Mann A. (ED-04)	154
Manno M. (DE-07)	123
Mansanares A.M. (CG-03)	93
Mansell R. (AD-01)	22
Mantey J. (GW-12)	246
Mantovan R. (BS-04)	72
Mantovan R. (DE-15)	124
Mantovan R. (FE-01)	189
Manu O. (GP-10)	232
Manzin A. (CH-14)	97
Manzin A. (DR-01)	135
Manzin A. (GH-04)	229
Mao S. (AS-14)	40
Mao S. (BF-11)	61
Mao S. (DG-07)	128
Mao Z. (HU-05)	275
Maqableh M. (DH-08)	130
Maqableh M. (HX-06)	280
Marahrens M. (EG-01)	161
Maranville B.B. (AW-06)	47
Maranville B.B. (EC-07)	151
Maranville B.B. (FR-13)	203
Marcin J. (BU-02)	76
Mardahl P.J. (BV-04)	78
Mardana A. (EG-08)	162
Marinero E.E. (FG-10)	194
Marinescu M. (GG-05)	227
Marins de Castro M. (AC-11)	21
Marins de Castro M. (GC-01)	217
Marins de Castro Souza M. (AF-03)	26
Marion J.L. (BE-01)	56
Marion J.L. (CR-14)	103
Marioni M.A. (DG-06)	128
Marioni M.A. (GF-04)	225
Marioni M.A. (GF-09)	226
Markó D. (FQ-09)	201
Markus T.Z. (AB-01)	18
Marques G.E. (EW-10)	181
Marquina C. (GH-03)	229

Marrows C. (DT-07)	140
Marrows C. (EF-11)	160
Marrows C. (HA-03)	247
Marrows C.H. (BC-05)	53
Marrows C.H. (CC-03)	85
Marrows C.H. (EF-10)	160
Marrows C.H. (FC-12)	186
Marrows C.H. (GE-07)	223
Marrows C.H. (HQ-12)	267
Marrows C.H. (HR-13)	270
Marsh J. (DB-04)	116
Marshall M.J. (AG-04)	29
Martens D. (FC-10)	185
Martens D. (FG-03)	200
Martens D. (GC-11)	219
Martens M. (AW-09)	48
Martin J.I. (HQ-09)	267
Martin R.V. (HG-03)	259
Martin S. (EB-03)	148
Martinez E. (DS-02)	137
Martinez E. (EQ-05)	168
Martinez E. (FW-06)	213
Martinez E. (FW-15)	214
Martínez Huerta J.M. (HT-03)	273
Martins M.D. (DR-10)	136
Martirosyan K. (DP-11)	133
Marty K. (BG-03)	62
Maryako M. (CQ-15)	101
Marysko M. (CQ-14)	101
Marysko M. (DT-14)	140
Marzo J. (GH-03)	229
Masaaki T. (DF-11)	126
Masaki K. (BS-01)	72
Mascaro M. (HE-05)	256
Massa L.O. (EQ-04)	174
Masschelein P. (CQ-15)	101
Mathieu C. (AQ-06)	36
Matsuda K. (DE-01)	122
Matsuda K. (DE-04)	122
Matsuda K. (FP-01)	197
Matsuda K. (GB-12)	217
Matsui T. (CW-10)	114
Matsuki H. (AV-13)	46
Matsukura F. (EF-09)	160
Matsukura F. (FQ-14)	201
Matsumoto H. (AQ-12)	36
Matsumoto H. (GU-14)	242
Matsumoto N. (FP-15)	199
Matsumoto R. (CS-05)	104
Matsumoto R. (HE-09)	257
Matsumoto S. (DP-04)	132
Matsumoto S. (HP-13)	265
Matsumura S. (HP-04)	264
Matsunaga S. (GD-04)	220
Matsunuma S. (BF-13)	61
Matsuo T. (GP-03)	231
Matsuo T. (GP-15)	233
Matsuura M. (CV-07)	111
Matsuyama K. (AT-13)	42
Matsuyama K. (DQ-13)	135
Matsuyama K. (DQ-14)	135
Matsuyama K. (DS-11)	138
Matsuyama K. (FT-07)	207
Matsuyama T. (AW-09)	48
Matsuyama T. (DS-08)	138
Matsuzaki T. (HS-08)	271
Mattana R. (AB-03)	18
Matte K. (FS-05)	204
Matthes F. (EV-13)	179
Matutes Aquino J.A. (ET-13)	175
Matutes Aquino J.A. (GR-05)	236
Matutes Aquino J.A. (GV-13)	244

Matutes J.A. (BU-11)	77
Matutes J.A. (BW-13)	81
Matutes-Aquino J. (CP-01)	97
Matveyev Y.A. (BS-04)	72
Matveyev Y.A. (FE-01)	189
Maurin I. (FF-10)	193
Mayergoyz I. (AH-10)	32
Mayergoyz I. (EH-06)	164
Mayergoyz I. (FD-08)	188
Mayergoyz I.D. (BH-02)	64
Mayergoyz I.D. (CS-04)	104
Mayergoyz I.D. (DS-04)	137
Mayergoyz I.D. (FH-11)	197
Mayergoyz I.D. (GW-11)	246
Mazaleyrat F. (CG-09)	94
Mazaleyrat F. (DW-06)	145
Mazaleyrat F. (FS-09)	205
Mazaleyrat F. (FT-02)	206
Mazet T. (CG-08)	94
Maziewski A. (DS-13)	138
Maznichenko I.V. (HD-01)	253
Mazumdar D. (BE-14)	59
Mazumdar D. (CR-11)	103
Mazumdar D. (GE-09)	223
Mazumdar D. (GE-12)	223
McAuliffe R.D. (AW-04)	47
McAvoy P. (AH-10)	32
McAvoy P. (EH-06)	164
McCallum B. (CT-13)	107
McCallum R.W. (AE-04)	24
McCallum R.W. (FF-05)	192
McCallum R.W. (GG-02)	227
McCallum R.W. (GG-04)	227
McCallum R.W. (HG-01)	259
McClelland J.J. (DG-11)	128
McCloy J. (BC-07)	53
McCloy J.S. (BC-13)	54
McClure A. (BE-08)	58
McClure A. (CS-03)	104
McCord J. (AW-03)	47
McCord J. (BD-03)	55
McDaniel T. (CF-12)	92
McEwen K.A. (GE-10)	223
McGrouther D. (EE-02)	156
McGrouther D. (FR-15)	204
McHenry M.E. (AQ-14)	36
McHenry M.E. (CB-05)	83
McHenry M.E. (CB-06)	83
McHenry M.E. (CB-09)	84
McHenry M.E. (CH-03)	95
McHenry M.E. (ES-06)	172
McHenry M.E. (HH-09)	263
McHenry M.E. (HH-13)	263
McHenry M.E. (HP-12)	265
McHenry M.M. (CG-11)	94
McInnes E. (CE-06)	90
McIntyre G.J. (HD-04)	253
McLaren M. (GE-07)	223
McLaughlin B.M. (EC-14)	152
McMaster J. (CE-06)	90
McMichael R.D. (DB-06)	117
McMichael R.D. (FB-09)	183
McMichael R.D. (FR-02)	202
McMichael R.D. (FW-01)	212
McMorran B. (DG-11)	128
McMorran B. (FR-13)	203
McNerny K.L. (ES-06)	172
McVitie S. (AD-08)	23
McVitie S. (EE-02)	156
McVitie S. (FR-15)	204
Md Nor A. (AT-13)	42
Md Nor A. (DQ-13)	135
Md Nor A. (DQ-14)	135
Md Nor A. (FT-07)	207
Mead G. (AC-09)	21
Mebisout R.R. (BW-15)	82
Medrik I. (HT-02)	272
Medvedeva I. (FE-08)	190
Medvedeva I. (HT-14)	274
Meena R.S. (CU-08)	109
Meffre A. (CE-01)	89
Megrache A. (DW-06)	145
Mehta V.V. (AG-01)	28
Mehta V.V. (AQ-15)	37
Mei J.K. (BP-08)	67
Mei J.K. (GU-08)	242
Meier G. (AW-09)	48
Meier G. (BD-01)	54
Meier G. (BD-03)	55
Meier G. (DS-08)	138
Meier G. (EV-01)	178
Meingast A. (DF-10)	126
Melikhov Y. (DV-09)	143
Melikhov Y. (EC-09)	152
Melikhov Y. (GP-06)	232
Melikhov Y. (GP-13)	232
Melkov G.A. (DB-09)	117
Melkov G.A. (EE-06)	156
Melnikov A. (CS-12)	105
Men H. (CB-03)	83
Mendes A.G. (BU-03)	76
Mendes T. (CW-15)	114
Meng H. (AS-01)	39
Meng H. (CQ-01)	99
Meng Y.Y. (DP-06)	132
Mengotti E. (ED-03)	154
Mengotti E. (HA-05)	248
Menguy N. (GH-12)	230
Mennig J. (EV-13)	179
Mentink J. (ED-03)	154
Merazzo K.J. (GP-14)	233
Mertig I. (HD-01)	253
Mesler B.L. (BD-06)	55
Metaxas P.J. (AW-15)	49
Metushko V. (EE-13)	157
Mewes C. (AC-01)	20
Mewes C. (DR-02)	135
Mewes C.K. (AS-04)	39
Mewes T. (AC-01)	20
Mewes T. (AS-04)	39
Meyer C. (BR-10)	71
Meyer C. (DF-04)	125
Meyer C. (FE-07)	190
Meyer M.S. (HG-02)	259
Meyerheim H.L. (HD-01)	253
Mgaidi A. (DW-06)	145
Miaek M. (CR-05)	102
Mibu K. (FP-07)	198
Michalski S. (CG-12)	94
Michalski S.A. (BU-09)	77
Michel E. (CB-07)	84
Michel E. (CG-10)	94
Michel E. (GR-03)	235
Michel E. (HG-06)	260
Michlmayr T. (ED-02)	153
Mierczak L. (DV-09)	143
Mierczak L. (DV-15)	144
Mifune T. (GP-03)	231
Mihai A.P. (GE-07)	223
Mihai A.P. (HR-13)	270
Mikolajick T. (HD-08)	254
Mikuszeit N. (FC-09)	185
Mikuszeit N. (FS-14)	206
Mikuszeit N. (GF-03)	225

Miladinovic N. (AT-01)	41
Miles J.J. (BF-06)	60
Miller C.W. (BU-01)	76
Miller C.W. (CG-07)	94
Miller C.W. (CG-10)	94
Miller C.W. (EV-04)	178
Miller C.W. (FC-11)	186
Miller M.M. (DF-12)	126
Mills D.P. (CE-06)	90
Milowska K. (DF-08)	125
Min B. (AR-06)	38
Min B. (CP-15)	99
Min B. (EG-06)	162
Min B. (EV-05)	178
Min B. (GW-02)	245
Min J.H. (AP-11)	34
Min J.H. (ES-15)	173
Min S. (BW-08)	81
Min S. (GV-08)	244
Min S. (HX-05)	280
Mina M. (EP-14)	167
Mina M. (EP-15)	167
Minár J. (FR-11)	203
Mineno Y. (GB-03)	215
Ming L. (FE-02)	189
Minnekaev M.N. (FE-01)	189
Minter L. (AE-13)	25
Miranda R. (ES-07)	172
Miranda R. (FC-09)	185
Miranda R. (FS-14)	206
Miranda R. (GF-03)	225
Miranda R. (GF-08)	226
Miron I. (HE-10)	257
Miron M. (DA-05)	115
Mirre D.W. (BH-09)	65
Misawa T. (AV-13)	46
Misek M. (CR-09)	103
Mishra S.R. (CT-05)	106
Mishra S.R. (EP-13)	167
Mishra S.R. (FT-14)	208
Mishra S.R. (HT-09)	273
Misiorny M. (EW-01)	180
Misuraca J. (DF-06)	125
Mitani S. (CU-01)	108
Mitani S. (HC-14)	252
Mitani S. (HE-03)	256
Mito S. (BT-14)	76
Mito S. (FT-03)	206
Mitome M. (BQ-07)	68
Mitsuoka R. (GP-03)	231
Mitsuteru I. (ET-14)	175
Mitsuzuka K. (HQ-02)	266
Miura D. (DS-14)	138
Miura H. (FS-07)	205
Miura K. (AT-12)	42
Miura K. (BB-13)	52
Miura K. (BW-06)	80
Miura K. (FQ-09)	201
Miura K. (FQ-14)	201
Miura S. (FQ-02)	200
Miura S. (FW-05)	212
Miura S. (HR-10)	269
Miura Y. (DD-15)	122
Miura Y. (DE-01)	122
Miwa S. (HC-05)	251
Miwa S. (HC-07)	251
Miyake K. (HC-15)	252
Miyamoto Y. (DR-03)	135
Miyamoto Y. (FW-03)	212
Miyamoto Y. (FW-14)	214
Miyao M. (BS-01)	72
Miyao M. (BS-02)	72
Miyao M. (BW-07)	81
Miyashita E. (FW-03)	212
Miyashita Y. (ER-04)	170
Miyashita Y. (ER-06)	170
Miyata M. (HQ-08)	267
Miyawaki T. (BE-04)	57
Miyawaki T. (EU-13)	177
Miyazaki T. (AA-03)	17
Miyazaki T. (BR-08)	71
Miyazaki T. (CC-08)	86
Miyoshi H. (AE-09)	25
Miyoshi H. (CT-03)	106
Mizuguchi M. (HC-13)	252
Mizukami S. (AA-03)	17
Mizukami S. (BR-08)	71
Mizukami S. (CC-08)	86
Mizukami S. (DD-13)	121
Mizukawa Y. (ER-01)	169
Mizunuma K. (FQ-14)	201
Mizushima K. (GW-10)	246
Mizushima K. (HC-04)	250
Mkwae P.S. (HH-05)	262
Moch P. (CS-08)	105
Moch P. (DE-08)	123
Modest J. (BH-07)	64
Moessner R. (HA-04)	248
Mohanty J. (ED-01)	153
Mohr M. (GG-03)	227
Mohseni K. (HD-01)	253
Mohseni S. (AD-05)	22
Mohseni S. (AD-06)	22
Mohseni S. (EB-10)	149
Mohseni S. (GW-05)	245
Mohseni S. (HC-01)	250
Mohseni S.M. (AD-04)	22
Mokgalaka-Matlala N.S. (ER-02)	169
Mokrousov Y. (GC-07)	218
Möller G. (HA-04)	248
Mondal R. (CP-13)	99
Moneck M. (ET-06)	174
Moneck M. (HC-03)	250
Montaigne F. (CC-01)	85
Montaigne F. (CC-09)	86
Montaigne F. (DC-06)	119
Montaigne F. (EG-02)	161
Montoncello F. (CD-03)	87
Montoncello F. (EE-05)	156
Montoya E. (BF-04)	60
Montoya E. (FB-05)	183
Montoya E. (HR-07)	269
Montoya E.A. (FB-07)	183
Moopera J.S. (AB-04)	19
Moopera J.S. (EG-01)	161
Mook H.A. (HD-11)	255
Moon J. (DR-04)	136
Moon J. (FD-10)	188
Moon J. (FD-13)	188
Moon K. (BB-01)	50
Moon K. (BB-02)	50
Moon K. (BB-11)	51
Moon K. (FW-10)	213
Moore J.D. (CG-04)	93
Moore J.D. (FV-05)	211
Mor V. (AF-11)	27
Mor V. (CH-10)	96
Mor V. (CH-12)	97
Morais P.C. (ES-02)	172
Morais P.C. (ES-05)	172
Morales C. (FT-04)	206
Morales M. (ES-07)	172
Morales R. (GF-05)	225
Moreira Dos Santos A. (BG-03)	62

Moreland J. (FR-09)	203
Moreland J. (HQ-15)	268
Morellón L. (EC-02)	151
Moreno C.G. (CE-06)	90
Morenzoni E. (AR-05)	37
Morenzoni E. (CP-08)	98
Morgan C. (BR-10)	71
Morgan J. (DT-07)	140
Morgan J. (HA-03)	247
Morgan J.P. (BC-05)	53
Mori S. (BW-09)	81
Mori S. (GS-15)	239
Mori T. (GE-03)	222
Morimoto Y. (CV-11)	111
Morimoto Y. (CV-12)	111
Morisako A. (BT-11)	75
Morisako A. (DP-07)	132
Morisako A. (DP-08)	132
Morisako A. (GS-03)	237
Morisako A. (GV-06)	244
Morise H. (EB-12)	150
Morita T. (BB-07)	51
Moriya R. (EQ-12)	169
Moriyama T. (DA-01)	115
Moriyama T. (HC-02)	250
Moro F. (CE-06)	90
Morozkin A.V. (CP-13)	99
Morozkin A.V. (CT-07)	107
Morris D.H. (BB-10)	51
Morrison C. (BF-05)	60
Morrison C. (BF-06)	60
Mosendz O. (CF-05)	91
Mosendz O. (EA-01)	147
Mosendz O. (EA-05)	147
Moses A.J. (AG-13)	30
Mosiniewicz-Szablewska E. (ES-02)	172
Motl-Ziegler S. (DS-08)	138
Motomura S. (FT-06)	207
Mougini A. (AW-15)	49
Moura T.R. (HV-14)	278
Moura T.S. (DR-09)	136
Mousavi S. (HW-05)	279
Moutafis C. (AW-10)	48
Moutafis C. (DC-02)	118
Moyer J.A. (AG-04)	29
Moyerman S. (ET-08)	174
Moyerman S. (GE-05)	222
Moyo T. (HH-05)	262
Mruczkiewicz M. (EQ-08)	168
Mryasov O. (BW-14)	81
Mryasov O. (FC-07)	185
Mryasov O. (FP-09)	198
Mryasov O.N. (BE-03)	57
Mryasov O.N. (CR-11)	103
Msomi J.Z. (HH-05)	262
Mu M. (EC-14)	152
Mudryk Y. (BE-07)	57
Mudryk Y. (BE-09)	58
Mudryk Y. (FV-15)	212
Mudryk Y. (GE-13)	224
Muduli P.K. (EB-06)	149
Muduli P.K. (HC-01)	250
Muehl T. (EC-04)	151
Mueller B.Y. (ED-09)	155
Muenchenberger J. (DB-08)	117
Muenzenberger M.G. (ED-04)	154
Mukherjee A. (AB-04)	19
Mukherjee D. (CP-11)	99
Mukherjee D. (GQ-12)	234
Mukherjee K. (CT-06)	106
Mukherjee P. (CP-11)	99
Mukherjee P. (DV-01)	142
Mukherjee P. (GQ-12)	234
Mukherjee S. (CF-13)	92
Mukherjee S. (DB-13)	118
Mukherjee S.S. (DS-10)	138
Mukherjee S.S. (EQ-03)	168
Mukherjee T. (BU-09)	77
Mukherjee T. (CG-12)	94
Mukhin A.A. (EU-05)	176
Mukhin A.A. (HD-05)	254
Mukovskii Y. (EU-10)	177
Mukovskii Y.M. (CQ-03)	100
Mukovskii Y.M. (CQ-11)	101
Mulleger S. (FR-01)	202
Müllen K. (HB-01)	248
Muller D.A. (DA-01)	115
Müller K.H. (CG-04)	93
Müller L. (ED-01)	153
Müller M. (CC-13)	87
Mulley S. (EC-10)	152
Münchenberger J. (FW-04)	212
Muñoz M. (FC-09)	185
Muñoz Ortega L.P. (GR-05)	236
Muñoz Pérez S. (BC-12)	54
Münzenberg M. (AB-04)	19
Münzenberg M. (CD-09)	88
Münzenberg M. (EG-01)	161
Murakami S. (EG-07)	162
Murakami S. (EG-12)	163
Murakami S. (FC-03)	184
Murakami S. (FQ-08)	201
Murakami S. (FC-06)	266
Muraoka H. (AS-12)	40
Muraoka H. (AS-13)	40
Muraoka H. (AT-09)	42
Muraoka H. (AT-12)	42
Muraoka H. (BS-10)	73
Murapaka C. (AS-07)	39
Murata A. (FP-07)	198
Murata K. (DD-07)	121
Murayama Y. (HQ-06)	266
Murè E. (DC-10)	119
Murphy B.E. (FF-08)	192
Musfeldt J.L. (GE-09)	223
Myint L.M. (DQ-12)	135
Myoka M. (BW-06)	80
Myrasov O. (BF-04)	60
Myrasov O. (HR-07)	269
Mysik A. (HT-14)	274

- N -

Na S. (DH-08)	130
Na S. (HX-06)	280
Naaman R. (AB-01)	18
Nabaei V. (CH-14)	97
Nagahama R. (HV-01)	276
Nagai K. (DS-11)	138
Nagamine L.C. (GS-06)	237
Naganuma H. (AA-03)	17
Naganuma H. (BB-07)	51
Naganuma H. (BR-08)	71
Naganuma H. (BT-07)	75
Naganuma H. (CC-08)	86
Naganuma H. (DD-13)	121
Naganuma H. (DE-02)	122
Naganuma H. (EG-13)	163
Naganuma H. (FE-15)	191
Naganuma H. (FU-06)	209
Nagasawa T. (GW-10)	246
Nagasawa T. (HC-04)	250
Nagashima Y. (CV-12)	111
Naik S.H. (ES-12)	173

Naik V. (AG-12)	30
Nair H.S. (DT-10)	140
Naito K. (FG-15)	195
Naito T. (HD-09)	254
Nakada K. (GW-08)	246
Nakagawa M. (GH-15)	231
Nakagawa S. (BF-13)	61
Nakagawa S. (DD-07)	121
Nakahata Y. (BV-01)	78
Nakajima M. (HG-13)	261
Nakamura S. (EB-12)	150
Nakamura Y. (AT-12)	42
Nakamura Y. (BP-14)	67
Nakamura Y. (FS-04)	204
Nakamura Y. (HF-07)	258
Nakanishi Y. (CV-11)	111
Nakano K. (BD-08)	56
Nakano M. (CV-04)	110
Nakano M. (CW-07)	113
Nakano M. (CW-12)	114
Nakashima Y. (FR-09)	203
Nakatani R. (FW-05)	212
Nakatani T.M. (AS-03)	39
Nakatani T.M. (GS-01)	237
Nakatani Y. (BD-08)	56
Nakatani Y. (GS-12)	238
Nakatani Y. (GS-15)	239
Nakatani Y. (HE-03)	256
Nakayama H. (EV-02)	178
Nakayama T. (AA-02)	17
Naletov V. (DC-04)	118
Naletov V.V. (DB-02)	116
Nam B. (FS-10)	205
Nam C. (EE-01)	155
Nam Hai P. (DF-03)	125
Nam J. (FE-09)	190
Namai A. (AE-10)	25
Namai A. (HG-13)	261
Nambakkat L. (AQ-08)	36
Namiki Y. (GH-15)	231
Namkung S. (CV-03)	110
Namkung S. (GG-08)	228
Napolskii K. (AH-09)	32
Narayanapillai . (FC-05)	185
Narayanapillai K. (AW-01)	47
Nasirpour F. (GP-01)	231
Natali F. (DF-04)	125
Natarajathinam A. (BB-06)	51
Nath J. (DB-03)	116
Nath T.K. (GS-11)	238
Natsui M. (GD-04)	220
Natsui M. (GD-07)	220
Natsui M. (GD-08)	220
Naugle D.G. (HU-09)	276
Navarro-Quezada A. (DF-10)	126
Navas D. (AD-07)	23
Neb R. (FC-01)	184
Nebashi R. (FQ-02)	200
Nebashi R. (HR-10)	269
Negoita M. (DC-13)	120
Negulescu B. (EG-02)	161
Negulescu B. (FP-02)	197
Negusse E. (CC-03)	85
Nehra J. (AQ-08)	36
Neil D. (HG-11)	260
Nembach H. (AC-03)	20
Nembach H.T. (AC-02)	20
Nembach H.T. (BP-01)	66
Nembach H.T. (DB-12)	117
Nemoto H. (GU-14)	242
Netz A. (GD-06)	220
Neusser S. (DS-12)	138
Neusser S. (EQ-02)	167
Newrock R.S. (EW-09)	181
Ng V. (AT-15)	42
Ng V. (EE-03)	156
Ng V. (FG-07)	194
Ng V. (FG-12)	195
Ng V. (GS-10)	238
Ngo D. (GC-14)	219
Nguyen A. (AD-06)	22
Nguyen H. (CG-01)	93
Nguyen H. (GQ-03)	233
Nguyen H.M. (BT-02)	74
Nguyen H.T. (DS-03)	137
Nguyen M. (CT-12)	107
Nguyen N. (DA-04)	115
Nguyen N. (FW-09)	213
Nguyen T.V. (HV-15)	278
Nguyen V. (BT-02)	74
Nguyen V.V. (HG-08)	260
Ni L. (GV-15)	245
Ni S. (AP-12)	34
Niarchos D. (FH-03)	196
Niarchos D. (HG-11)	260
Niarchos D.G. (DD-11)	121
Nichols M. (AT-01)	41
Nie J. (AP-13)	34
Nie J. (GR-08)	236
Nie Y. (BH-03)	64
Nie Y. (HP-15)	265
Nie Y. (HX-03)	280
Niemier M.T. (HQ-14)	268
Nigam A.K. (BE-07)	57
Nigam A.K. (CP-13)	99
Niimi Y. (FB-10)	183
Nikitin V. (BB-01)	50
Nikitin V. (BB-02)	50
Nikitin V. (BB-11)	51
Nikitin V. (HE-08)	256
Nimori S. (DT-11)	140
Nirmala R. (BE-07)	57
Nirmala R. (CP-13)	99
Nirmala R. (CT-07)	107
Nirmala R. (DT-10)	140
Nishide A. (CC-06)	86
Nishihata H. (FP-15)	199
Nishikawa A. (HS-08)	271
Nishikawa T. (FE-15)	191
Nishimura M. (BB-07)	51
Nishimura M. (EH-12)	165
Nishio Y. (BQ-07)	68
Nishio-Hamane D. (CT-03)	106
Nishio-Hamane D. (CU-15)	110
Nishiuchi T. (CV-12)	111
Nishiuchi T. (CV-15)	112
Nisoli C. (HA-01)	247
Nisoli C. (HQ-07)	267
Nistor C. (FF-02)	191
Nitta J. (EF-12)	160
Nlebedim C.I. (AG-13)	30
Nlebedim C.I. (DV-15)	144
Nlebedim C.I. (HS-05)	271
Noboru S. (HR-10)	269
Noda K. (FT-07)	207
Noguchi K. (HB-09)	249
Noguchi K. (HB-13)	250
Nogués J. (CF-08)	92
Nogués J. (GF-03)	225
Nogués J. (GF-08)	226
Noh M. (DU-15)	142
Noh S. (DR-03)	135
Noh S. (FW-14)	214
Nolas G.S. (CG-05)	93

Nolle D. (DG-10)	128
Nolting F. (ED-03)	154
Nolting F. (HA-05)	248
Nolting F. (HD-02)	253
Nomura H. (FW-05)	212
Nomura K. (GD-03)	220
Nomura T. (EV-10)	179
Nomura T. (EV-11)	179
Nonaka Y. (GV-05)	243
Nonoguchi S. (EV-10)	179
Nonoguchi S. (EV-11)	179
Nordman C. (CC-12)	86
Nosach T. (HU-02)	275
Noske M. (AW-10)	48
Noske M. (BD-04)	55
Novais E.R. (DR-10)	136
Novais E.R. (FH-06)	196
Novak R.L. (AW-15)	49
Novak V. (DF-05)	125
Novosad V. (EP-11)	167
Nowak E.R. (CC-12)	86
Nowak J. (AF-07)	27
Nowak J. (DA-03)	115
Nowak U. (CF-07)	92
Nowak U. (DC-08)	119
Nowak U. (ED-06)	154
Nowak U. (EQ-06)	168
Nowakowski M.E. (GC-15)	219
Nowik-Boltyk P. (CD-10)	88
Nozaki T. (CC-02)	85
Nozaki T. (CC-04)	85
Nozaki T. (EG-07)	162
Nozaki T. (EG-12)	163
Nozaki T. (FE-04)	189
Nozaki T. (FE-05)	189
Nozaki T. (FP-03)	198
Nozaki T. (FQ-08)	201
Nozaki T. (HC-05)	251
Nozaki T. (HC-07)	251
Nozaki Y. (DQ-15)	135
Nozawa N. (CV-12)	111
Nozawa N. (CV-15)	112
Nummy T. (ET-02)	174
Nurgazizov N.I. (CE-10)	90

- O -

O'Brien L. (FW-12)	213
O'Brien L. (FW-13)	213
O'Brien L. (HE-06)	256
O'Dowd B.J. (FF-02)	191
O'Dowd B.J. (FW-08)	213
O'Grady K. (CU-01)	108
O'Grady K. (GF-11)	226
O'Shea V. (FR-15)	204
O'Sullivan E.J. (DA-03)	115
O'Sullivan E.J. (EH-01)	163
Oates D.E. (BH-12)	65
Obi O. (BH-10)	65
Obradors X. (BC-12)	54
Ochiai T. (AF-13)	27
Ochiai T. (CC-07)	86
Ocker B. (FB-03)	182
Oe T. (AR-09)	38
Oepen H. (GC-13)	219
Oepen H.P. (ED-01)	153
Oezer S. (GF-04)	225
Oezer S. (GF-09)	226
Ogawa T. (AE-01)	24
Ogawa T. (AP-04)	33
Ogawa T. (HT-08)	273
Ogrin F.Y. (EE-05)	156

Oh H. (ES-01)	171
Oh H. (ES-04)	172
Oh S. (AP-14)	34
Oh S. (AW-05)	47
Ohashi H. (AS-06)	39
Ohashi H. (GV-05)	243
Ohba Y. (AA-02)	17
Ohdaira Y. (EG-13)	163
Ohkoshi S. (AE-10)	25
Ohkoshi S. (HG-13)	261
Ohkubo T. (CV-15)	112
Ohldag H. (BE-11)	58
Ohno H. (BB-13)	52
Ohno H. (EF-09)	160
Ohno H. (FQ-02)	200
Ohno H. (FQ-09)	201
Ohno H. (FQ-14)	201
Ohno H. (GD-04)	220
Ohno H. (GD-07)	220
Ohno H. (HE-03)	256
Ohno S. (EU-11)	177
Ohno Y. (BS-08)	73
Ohnuma M. (CB-04)	83
Ohodnicki Jr. P.R. (CB-06)	83
Ohodnicki P. (HH-13)	263
Ohsaki H. (HS-08)	271
Ohsawa Y. (AS-12)	40
Ohsawa Y. (AS-13)	40
Ohshima N. (BD-08)	56
Ohtake M. (AS-06)	39
Ohtake M. (DD-05)	120
Ohtake M. (DG-05)	127
Ohtake M. (FU-01)	208
Ohtake M. (GV-05)	243
Ohtake M. (GV-11)	244
Ohtori H. (EV-15)	179
Oikawa T. (HB-09)	249
Oikawa T. (HB-13)	250
Okada S. (GE-03)	222
Okamoto K. (AQ-12)	36
Okamoto S. (CS-11)	105
Okamoto S. (DD-04)	120
Okamoto S. (FG-09)	194
Okamoto S. (GU-07)	242
Okamoto S. (HQ-06)	266
Okamoto Y. (AT-12)	42
Oki S. (BW-07)	81
Okita K. (FS-07)	205
Okuda M. (CE-02)	89
Okuda M. (DR-03)	135
Okuda M. (FW-03)	212
Okuda M. (FW-14)	214
Okura R. (HC-13)	252
Okutomi Y. (HC-15)	252
Oliveira L. (BT-05)	75
Oliveira L.L. (CS-15)	105
Olivetti E.S. (DS-15)	139
Oliveira F.F. (DR-09)	136
Oliveira F.F. (HV-14)	278
Olivier d. (FS-09)	205
Olson D.V. (AW-04)	47
Olson E.A. (GH-11)	230
Omrani A.A. (CR-15)	103
Ondeck C.L. (CH-03)	95
Ondeck M.G. (HP-12)	265
Oner Y. (BE-06)	57
Oner Y.-. (HU-14)	276
Ong A. (BB-01)	50
Ong C. (AQ-07)	36
Ong S. (EU-09)	177
Ono T. (BD-08)	56
Ono T. (DC-09)	119

Ono T. (FP-07)	198
Ono T. (GS-12)	238
Ono T. (HE-01)	255
Ooba A. (FW-07)	213
Oogane M. (AA-03)	17
Oogane M. (BB-07)	51
Oogane M. (BR-08)	71
Oogane M. (CC-08)	86
Oogane M. (DD-13)	121
Oogane M. (DE-02)	122
Oogane M. (DE-10)	123
Oogane M. (EG-13)	163
Oogane M. (FD-07)	187
Oogane M. (FE-15)	191
Oogane M. (FU-06)	209
Oppeneer P. (ED-04)	154
Oppeneer P. (GE-11)	223
Or S. (AU-10)	44
Or S. (BU-08)	77
Or S. (CH-07)	96
Or S. (GT-07)	240
Oral A. (EC-05)	151
Ordóñez-Romero C. (BH-13)	65
Ordóñez-Romero C.L. (CD-05)	88
Ortega D. (GQ-14)	235
Orue I. (FU-07)	209
Osawa H. (AT-12)	42
Osborn W. (DH-03)	129
Osman O. (ER-03)	170
Osofsky M. (DF-12)	126
Osofsky M.S. (BW-10)	81
Osorio-Cantillo C.M. (ES-08)	173
Ostanin S. (HD-01)	253
Oster N. (GG-04)	227
Oster N.T. (GG-02)	227
Oster S. (EP-15)	167
Ostler T.A. (AH-03)	31
Ostler T.A. (ED-03)	154
Ostler T.A. (FD-01)	186
Oszwaldowski R. (BQ-02)	68
Otani Y. (AC-13)	21
Otani Y. (FB-10)	183
Otani Y. (FB-12)	184
Otani Y. (GA-05)	215
Otxoa R.M. (EB-02)	148
Ou J. (ER-15)	171
Ou Z. (CG-01)	93
Ouardi S. (FS-06)	205
Ouchi S. (DD-05)	120
Ouyang H. (FF-12)	193
Ouyang Z.W. (CT-07)	107
Óvári T. (EC-06)	151
Óvári T. (FS-11)	205
Owada N. (ER-01)	169
Owada N. (ER-04)	170
Owada N. (ER-06)	170
Owada N. (ER-14)	171
Ozaki M. (HP-04)	264
Ozaki S. (DD-15)	122
Ozatay O. (AW-08)	48
Ozawa A. (AR-09)	38
Ozawa A. (CT-10)	107
Ozdemir M. (BE-14)	59
Ozer S. (DG-06)	128
Ozmetin A.E. (HU-09)	276
Ozyilmaz B. (HB-07)	249

- P -

Pachauri N. (AC-01)	20
Pachauri N. (ET-07)	174
Padilla J. (AG-08)	30

Padilla-Pantoja J. (AG-10)	30
Paek S. (ES-01)	171
Pai J. (AH-12)	32
Pai R. (AP-03)	33
Pakala M. (AC-01)	20
Pakala M. (AC-09)	21
Pal S. (AC-13)	21
Pal S. (EQ-08)	168
Pal S. (FT-04)	206
Pal S.K. (GR-06)	236
Palai R. (BQ-04)	68
Palai R. (BQ-12)	69
Palai R. (BT-12)	75
Palmstrom C.J. (GB-08)	216
Pan M. (BC-02)	52
Pan M. (CV-13)	112
Pan P. (DU-07)	141
Pan R. (HG-10)	260
Pan T. (DG-07)	128
Pan W. (FU-02)	208
Panagiotopoulos I. (BP-05)	66
Panchal V. (CH-04)	95
Panda J. (GS-11)	238
Paniago R. (DP-12)	133
Panke J. (CD-09)	88
Panov A.V. (DT-06)	139
Paoluzi A. (AU-12)	44
Paoluzi A. (DH-13)	131
Paperno E. (CH-10)	96
Paperno E. (CH-12)	97
Papusoi C. (EA-02)	147
Papusoi C. (GC-01)	217
Pardavi-Horvath M. (FT-10)	207
Parihar S.S. (HD-01)	253
Park C. (BV-12)	79
Park C. (BV-13)	79
Park C. (GQ-03)	233
Park D. (FU-14)	210
Park D.G. (FS-05)	204
Park J. (BE-03)	57
Park J. (BH-05)	64
Park J. (BH-06)	64
Park J. (CE-03)	89
Park J. (DH-08)	130
Park J. (FR-14)	204
Park J. (GH-14)	231
Park J. (GW-02)	245
Park J. (HP-06)	264
Park J. (HX-06)	280
Park K. (ES-01)	171
Park S. (BH-05)	64
Park S. (BH-06)	64
Park S. (CP-15)	99
Park S. (CV-03)	110
Park S. (EG-06)	162
Park S. (EV-05)	178
Park S. (GW-02)	245
Park S. (HP-06)	264
Park Y. (BV-03)	78
Park Y. (DU-15)	142
Park Y. (EP-07)	166
Park Y. (ET-10)	175
Park Y. (EW-07)	180
Park Y. (HW-02)	278
Parkin S. (HF-01)	257
Parlinska-Wojtan M. (GF-09)	226
Parmanand S. (GR-09)	236
Parsons G.N. (FF-07)	192
Parsons P.E. (EC-14)	152
Parui S. (HB-04)	249
Pasko A. (CG-09)	94
Pasquale M. (AV-03)	45

Pasquale M. (DS-15)	139
Pastor J. (CB-13)	84
Pasupuleti L. (FS-05)	204
Pathak M. (FC-04)	184
Pathak S. (FR-08)	203
Paticopoulos S.C. (CG-06)	94
Patil D. (FE-09)	190
Patil T. (BQ-09)	69
Patil T. (BS-09)	73
Patra A. (HB-01)	248
Paudyal D. (BE-05)	57
Paudyal D. (BE-07)	57
Paudyal D. (BE-09)	58
Paudyal D. (GE-13)	224
Paul B. (DG-09)	128
Paul B. (HV-06)	277
Paul Boncour V. (CG-08)	94
Paulauskas T. (BE-14)	59
Paulose P.L. (CT-06)	106
Pearson J. (EP-11)	167
Pearson J.E. (BG-06)	62
Pechan M. (DE-07)	123
Pechan M. (FG-05)	194
Pecharsky V. (FV-15)	212
Pecharsky V.K. (BE-05)	57
Pecharsky V.K. (BE-07)	57
Pecharsky V.K. (BE-09)	58
Pecharsky V.K. (GE-13)	224
Pegg I.L. (BW-11)	81
Peiro J. (GB-10)	216
Pellegrini G.N. (FE-02)	189
Peng B. (CP-12)	99
Peng B. (FT-15)	208
Peng R. (EW-05)	180
Peng Y. (DD-06)	121
Perales-Perez O.J. (ES-08)	173
Peralta-Videa J.R. (ER-02)	169
Pereira A. (DR-15)	137
Pereira A.M. (CE-09)	90
Pereira A.M. (EE-14)	158
Pereira L.M.* (DF-13)	126
Pereira L.M. (GQ-02)	233
Peretzki P. (EG-01)	161
Perez F.A. (CR-12)	103
Perez R. (GP-14)	233
Perez-Diaz J. (EH-07)	164
Pérez-Landazábal J. (CB-13)	84
Pérrigo A. (CW-15)	114
Pérrigo E.A. (HG-03)	259
Perkins K. (FC-08)	185
Perna P. (FC-09)	185
Perna P. (FS-14)	206
Perna P. (GF-03)	225
Perna P. (GF-08)	226
Perov N. (HP-10)	265
Persson J. (EB-10)	149
Persson J. (GW-05)	245
Persson J. (HC-01)	250
Perzynski R. (HF-09)	258
Petculescu G. (DH-04)	129
Peters L. (BG-11)	63
Petford-Long A. (BC-02)	52
Petit D. (FW-12)	213
Petit D. (FW-13)	213
Petit D. (HE-06)	256
Petit D.C. (AD-01)	22
Petit S. (GR-13)	236
Petit-Watelot S. (BD-07)	55
Petit-Watelot S. (EB-02)	148
Petit-Watelot S. (GW-07)	246
Petracic O. (GF-05)	225
Petrie J. (FE-14)	191
Petroff F. (AB-03)	118
Petrova O. (BC-04)	53
Petrova R. (AD-08)	23
Petrucha V. (HP-09)	265
Petti D. (GB-01)	215
Petti D. (GH-02)	229
Petukhov A.G. (BQ-02)	68
Pfannes H.D. (DP-12)	133
Pfau B. (ED-01)	153
Pfau B. (FG-02)	193
Phan L.T. (DT-05)	139
Phan M. (CP-11)	99
Phan M. (DV-01)	142
Phan M. (FV-09)	211
Phan M. (GQ-03)	233
Phan M.H. (AG-06)	29
Phan M.H. (AG-09)	30
Phan M.H. (CG-05)	93
Phan M.H. (CQ-06)	100
Phan M.H. (FC-11)	186
Phan M.H. (FT-04)	206
Phan T. (CQ-08)	100
Phan T.L. (CQ-06)	100
Phatak C. (BC-02)	52
Philip J. (BW-11)	81
Phuc N.X. (DT-05)	139
Pi L. (CQ-10)	101
Pi L. (HU-15)	276
Piao H. (AW-05)	47
Piao H. (AW-07)	47
Pierre D. (CC-09)	86
Pignard S. (FE-07)	190
Pileggi L. (BB-10)	51
Ping J. (DP-03)	132
Pinkerton F.E. (HG-02)	259
Pintea A. (DH-09)	130
Pique A. (DF-12)	126
Piramanayagam S. (GS-08)	238
Piramanayagam S.N. (BF-08)	60
Piramanayagam S.N. (DQ-07)	134
Piramanayagam S.N. (FR-03)	202
Piramanayagam S.N. (HQ-13)	267
Piroux L. (HT-03)	273
Pires A.S. (DT-15)	140
Pires M.M. (CG-03)	93
Pirota K.R. (AD-07)	23
Pirota K.R. (BT-05)	75
Pirota K.R. (EC-12)	152
Pisana S. (CF-05)	91
Pisana S. (EA-01)	147
Pisana S. (EA-05)	147
Pisana S. (FG-10)	194
Pisarev R.V. (ED-05)	154
Pistora J. (DV-13)	144
Pistora J. (HX-03)	280
Pivetal J. (ER-03)	170
Pizzini S. (HE-10)	257
Plank N. (DF-04)	125
Pleiner H. (FD-02)	187
Ploeg J.v. (HB-04)	249
Poddar P. (GT-12)	240
Pogorelov Y.G. (CE-10)	90
Pogorelov Y.G. (HQ-09)	267
Pogoryelov Y. (HC-01)	250
Poh A. (HQ-13)	267
Polakova K. (HT-02)	272
Politi P. (BC-03)	53
Politi P. (DT-07)	140
Pollard S. (GS-13)	238
Pollard S.D. (BD-02)	55
Polo-Corralles L. (ES-03)	172
Pong P. (CW-06)	113

Pong P. (DV-07)	143
Pong P. (GU-15)	243
Pool V.L. (HT-06)	273
Popov Y.F. (HD-05)	254
Porat A. (GF-05)	225
Porod W. (GD-02)	220
Porod W. (HQ-14)	268
Porro J. (EE-13)	157
Portemont C. (AF-03)	26
Portemont C. (GC-01)	217
Porter N.A. (FC-12)	186
Porter N.A. (HQ-12)	267
Pospisil J. (AR-12)	38
Pospisil J. (AR-13)	38
Postolache P. (BP-05)	66
Potzger K. (GQ-05)	234
Poudeu Poudeu P. (EW-11)	181
Poudyal N. (CB-10)	84
Poudyal N. (HG-04)	259
Powell S.P. (EA-03)	147
Pozhar L.A. (BQ-01)	68
Pozhar L.A. (DP-13)	133
Pozhar L.A. (EU-15)	177
Pozhar L.A. (HF-08)	258
Prabhakar A. (HR-11)	270
Pradhan A.K. (AP-02)	33
Pradhan N.R. (GP-12)	232
Pradheesh R. (DT-10)	140
Pramanik T. (BQ-09)	69
Pramanik T. (BS-09)	73
Pratt A. (BR-05)	70
Pratt A. (EF-02)	158
Pratt A. (FF-09)	192
Prattella A. (AW-08)	48
Prchal J. (AR-12)	38
Prejbeanu L. (AF-03)	26
Prejbeanu L. (GC-01)	217
Prenat G. (GD-05)	220
Preobrajenski A.B. (FF-08)	192
Pressesky J.L. (BF-10)	61
Prezioso M. (AB-08)	19
Prida V.M. (HH-03)	262
Prieto J.L. (FC-09)	185
Primo F. (ES-02)	172
Primo E.L. (ES-05)	172
Pritchard J.W. (EP-15)	167
Prochazka V. (HT-02)	272
Proenca M.P. (CE-09)	90
Prokleaka J. (CR-05)	102
Prokleska J. (AR-13)	38
Prokleska J. (CR-09)	103
Prokscha T. (AR-05)	37
Prokscha T. (CP-08)	98
Provenzano V. (BU-15)	77
Provenzano V. (CG-02)	93
Provino A. (BE-09)	58
Pruegl K. (HF-02)	257
Przybylski M. (AD-13)	23
Przybylski M. (EF-07)	159
Przybylski M. (EG-09)	162
Pufall M. (GW-04)	245
Pufall M. (GW-09)	246
Pufall M. (HR-02)	268
Pufall M.R. (FB-02)	182
Puig T. (BC-12)	54
Puliafito V. (EQ-09)	168
Punnoose A. (AP-10)	34
Punnoose A. (CU-11)	109
Punnoose A. (GQ-10)	234
Punnoose A. (GQ-11)	234
Pupaichitkul C. (AS-09)	40
Puri A. (FV-09)	211
Putri W.B. (CP-02)	98
Puttisong Y. (GB-06)	216

- Q -

Qadri S.B. (DF-12)	126
Qi D. (EW-05)	180
Qi M. (ER-15)	171
Qi X. (AA-05)	18
Qi X. (AP-15)	35
Qi X. (DF-01)	124
Qi X. (FT-01)	206
Qian B. (HU-05)	275
Qiang Y. (BH-08)	64
Qiang Y. (CT-02)	106
Qiang Y. (CU-03)	108
Qiang Y. (GR-12)	236
Qiao L. (BV-07)	79
Qiao L. (CQ-10)	101
Qiao Q. (BE-14)	59
Qin J. (GV-03)	243
Qiu G. (BH-11)	65
Qiu J. (CH-15)	97
Qiu J. (DV-02)	143
Qiu J. (EP-10)	166
Qiu J. (GD-13)	221
Qiu J. (GP-11)	232
Qiu J. (GT-01)	239
Qiu J. (GT-04)	239
Qiu J. (GT-15)	241
Qiu W. (BU-04)	76
Qiu W.Q. (DP-06)	132
Qu T. (FC-02)	184
Quan L. (GP-05)	232
Quinsat M. (HC-06)	251
Quinsat M. (HC-12)	252
Quintaes F.O. (EH-11)	165
Quitmann C. (AW-03)	47
Qureshi N. (BH-13)	65
Qureshi N. (CD-05)	88

- R -

Raabe J. (AW-03)	47
Raabe J. (ED-02)	153
Raberg W. (HF-02)	257
Radaelli G. (FE-12)	190
Radhakrishnan R. (CF-11)	92
Radu F. (AG-08)	30
Radu F. (AH-03)	31
Radu I. (AH-03)	31
Raghavender A. (GQ-03)	233
Raghunathan A. (GP-06)	232
Raghunathan A. (GP-13)	232
Ragusa C. (FS-09)	205
Rahman M. (BB-09)	51
Rahman T. (DQ-08)	134
Raikher Y.L. (HF-09)	258
Rajan G.K. (FQ-12)	201
Rajaram S. (EP-03)	166
Rakshit R. (AB-08)	19
Rall J.D. (CU-09)	109
Rall J.D. (HF-10)	259
Ralph D. (EG-04)	161
Ralph D. (HC-02)	250
Ralph D.C. (DA-01)	115
Ralph D.C. (EB-09)	149
Ralph D.C. (GC-02)	217
Ralph D.C. (GC-05)	218
Ralph D.C. (GC-06)	218
Ramachandran Thankalekshmi R. (DR-12)	136

Raman K.V. (AB-04)	19
Ramanathan M. (AG-12)	30
Ramanathan M. (CP-14)	99
Ramaswamy S. (FQ-12)	201
Ramaswamy S. (HH-10)	263
Ramesh R. (AG-07)	29
Ramos C.A. (ER-09)	170
Ramsperger U. (ED-02)	153
Rana B. (AC-13)	21
Rana B. (EQ-08)	168
Rand S. (EU-14)	177
Rand S. (FT-09)	207
Randy F.S. (GE-01)	221
Rani S. (HU-01)	275
Ranjan V. (HB-03)	248
Ranjbar M. (BF-08)	60
Ranjbar M. (DQ-07)	134
Ranjbar M. (HQ-13)	267
Rao G.H. (CT-07)	107
Rao K.V. (CU-08)	109
Rao L. (HS-11)	271
Rapoport E. (GH-05)	229
Rashidi M. (FR-01)	202
Rasing T. (AH-03)	31
Rasing T. (ED-03)	154
Rasing T. (ED-05)	154
Rastogi A.C. (DR-12)	136
Ratcliff II W. (HD-07)	254
Ratcliff W. (HD-04)	253
Rathnayaka D.D. (HU-09)	276
Ratner M.A. (AB-09)	19
Ravelosona D. (AD-11)	23
Ravelosona D. (DA-04)	115
Ravelosona D. (DF-05)	125
Ravelosona D. (FE-06)	189
Ravelosona D. (FH-10)	197
Ravelosona D. (FW-09)	213
Ravelosona D. (HE-11)	257
Rawat R. (HU-01)	275
Razavi F.S. (CR-06)	102
Razdolski I. (ED-05)	154
Read D. (HE-06)	256
Read J. (EG-04)	161
Rebello A. (AG-12)	30
Rebouças G.G. (DR-09)	136
Rebouças G.O. (HV-14)	278
Rebrov E. (DW-10)	146
Reckers N. (AC-12)	21
Reddy K. (DH-08)	130
Reddy K. (HX-06)	280
Redjai Sani S. (EB-10)	149
Redlin H. (ED-02)	153
Redon O. (CC-10)	86
Redondo C. (AD-07)	23
Regunathan S. (GS-10)	238
Reiner J. (CF-05)	91
Reiner J. (EA-01)	147
Reiner J. (EA-05)	147
Reiner J.W. (EE-09)	157
Reisman L. (BH-03)	64
Reiss G. (DB-08)	117
Reiss G. (EG-01)	161
Reiss G. (FB-03)	182
Reiss G. (FB-06)	183
Reiss G. (FP-06)	198
Reiss G. (FW-04)	212
Reiss G. (GS-02)	237
Reiss G. (GS-04)	237
Reiss G. (GT-14)	241
Ren P. (AV-01)	45
Ren W. (CU-10)	109
Ren W. (HP-15)	265
Ren W.J. (AU-03)	43
Ren W.J. (BU-13)	77
Ren Y. (EU-07)	176
Ren Y. (HU-02)	275
Ren Y.H. (CS-06)	104
Renaud P. (FH-13)	197
Rench D.W. (GC-15)	219
Respaud M. (CE-01)	89
Ressouche E. (EU-05)	176
Ressouche E. (HD-05)	254
Restorff J. (DH-05)	129
Restorff J.B. (DH-04)	129
Reszka A. (DF-07)	125
Rethfeld B. (ED-09)	155
Retterer S.T. (AG-03)	29
Retterer S.T. (EE-08)	157
Rettori A. (CR-13)	103
Reuther H. (BQ-10)	69
Reyne G. (ER-03)	170
Rezende S.M. (DB-07)	117
Rezende S.M. (EV-03)	178
Rezende S.M. (EV-06)	178
Reznicek R. (HT-02)	272
Rhee C. (DT-01)	139
Rhensius J. (AW-10)	48
Rhensius J. (DC-02)	118
Rhie K. (FP-10)	199
Ricci M. (HR-06)	269
Rice P.M. (AF-04)	26
Richter H. (CF-07)	92
Rick R. (FG-02)	193
Righi L. (DH-13)	131
Riminucci A. (AB-08)	19
Rinaldi C. (ER-07)	170
Rinaldi C. (ER-10)	170
Rinaldi C. (ES-03)	172
Rinaldi C. (FE-12)	190
Rinaldi C. (FS-08)	205
Rinaldi C. (GB-01)	215
Ringer S. (BS-07)	73
Rinkevich A. (FT-10)	207
Ripka P. (FS-02)	204
Rippard W.H. (GW-04)	245
Rippard W.H. (GW-09)	246
Rippard W.H. (HR-01)	268
Rippard W.H. (HR-02)	268
Ritzmann U. (DC-08)	119
Rizal C. (EF-06)	159
Rizzini A.L. (FF-02)	191
Robert S. (CC-09)	86
Robertazzi R.P. (DA-03)	115
Robinson J.T. (FC-08)	185
Rocchino L. (FS-09)	205
Roche S. (BE-12)	58
Roddick E. (GU-03)	241
Rode K. (DP-05)	132
Rodionova V. (EC-11)	152
Rodionova V. (HP-10)	265
Rodmacq B. (AW-15)	49
Rodmacq B. (DA-05)	115
Rodmacq B. (GC-01)	217
Rodmacq B. (GF-08)	226
Rodmacq B. (HE-10)	257
Rodrigo C. (FC-09)	185
Rodrigo C. (FS-14)	206
Rodriguez A.F. (CE-03)	89
Rodriguez E.E. (BG-02)	62
Rodriguez E.E. (BU-15)	77
Rodriguez P. (HH-03)	262
Rodríguez-Velamazán J.A. (BE-05)	57
Rogge J. (AA-04)	18
Rohart S. (AW-15)	49

Rohrmann H. (GF-09)	226
Rojas J. (BR-15)	72
Romankiw L.T. (EH-01)	163
Romer S. (DG-06)	128
Romer S. (GF-04)	225
Romer S. (GF-09)	226
Romera M. (FC-09)	185
Romero-Herreros A. (CE-03)	89
Romero-Vivas J. (EQ-08)	168
Rong C. (CB-10)	84
Rong C. (HG-04)	259
Rong C. (HG-08)	260
Ronnow H.M. (CR-15)	103
Rosa W.O. (HH-03)	262
Rose V. (EC-03)	151
Roshchin I.V. (GF-05)	225
Roshchin I.V. (HF-04)	258
Ross C. (BT-09)	75
Ross C. (EU-09)	177
Ross C.A. (AD-07)	23
Ross C.A. (AU-05)	43
Ross C.A. (BW-02)	80
Ross C.A. (EE-01)	155
Ross C.A. (HE-04)	256
Ross C.A. (HE-05)	256
Roth T. (ED-09)	155
Roth T. (FD-07)	187
Rott K. (DB-08)	117
Rott K. (FB-03)	182
Roussigné Y. (BQ-05)	68
Roussigne Y. (CD-07)	88
Roussigné Y. (DH-14)	131
Rovezzi M. (DF-10)	126
Rovillain P. (CA-05)	82
Rowan-Weetaluktuk W.N. (HU-06)	275
Rowlands G. (AF-12)	27
Rowlands G. (BB-09)	51
Rowlands G. (HR-05)	269
Rowlands G.E. (BB-05)	50
Rowlands G.E. (EB-07)	149
Rowlands G.E. (EG-10)	163
Roy D. (AQ-09)	36
Roy D. (DP-09)	132
Roy P. (FW-02)	212
Roy R.K. (CB-09)	84
Roy R.K. (HH-09)	263
Roy U. (GW-12)	246
Rozenberg E. (CQ-02)	100
Rozenberg E. (CQ-03)	100
Rozhkova E.A. (EP-11)	167
Ruchhoeft P. (DQ-10)	134
Ruck B. (DF-04)	125
Rudajeva A. (CR-09)	103
Rufinus J. (CU-14)	109
Rumaiz A.K. (HH-06)	262
Ruotolo A. (EB-02)	148
Rusnak M. (AR-12)	38
Russek S. (HR-02)	245
Russek S. (HR-02)	268
Russek S.E. (AC-08)	21
Russek S.E. (FR-09)	203
Russek S.E. (HR-01)	268
Ryan D. (DT-09)	140
Ryan D. (HU-06)	275
Ryan M.P. (FV-07)	211
Ryu K. (HF-01)	257
Rzchowski M.S. (CC-11)	86
Sabirianov R.F. (DD-03)	120
Sacuto A. (CA-05)	82
Sadhana K. (DP-10)	132
Sadowski J. (DF-07)	125
Saemma G. (BF-13)	61
Sáenz R.J. (BW-13)	81
Sagar J. (AA-02)	17
Sagar J. (CU-01)	108
Sagawa M. (CV-07)	111
Saha D. (BQ-09)	69
Saha D. (BS-09)	73
Saha S. (EQ-08)	168
Sahadevan A.M. (BS-13)	74
Saharan L. (BF-06)	60
Saharan L. (CD-02)	87
Sahashi M. (AS-02)	39
Sahashi M. (AS-05)	39
Sahashi M. (FE-04)	189
Sahashi M. (FE-05)	189
Sahashi M. (HC-15)	252
Sahota P. (BR-15)	72
Sahota P.K. (AF-15)	28
Sahota P.K. (CT-01)	106
Sahu K.K. (BC-06)	53
Saïdaoui H.B. (DR-11)	136
Saipriya S. (BP-07)	67
Saito H. (BS-03)	72
Saito H. (DG-04)	127
Saito H. (GB-03)	215
Saito K. (DB-05)	123
Saito S. (CB-02)	83
Saito S. (GU-05)	241
Saito S. (GU-06)	242
Saito T. (AE-09)	25
Saito T. (CT-03)	106
Saito T. (CU-15)	110
Saito T. (HG-05)	260
Saito Y. (HB-11)	249
Saitoh E. (BA-01)	49
Saitoh E. (CD-11)	89
Saitoh E. (DE-05)	123
Saitoh E. (EQ-12)	169
Saitoh E. (EV-02)	178
Saitoh E. (FR-05)	202
Saitoh E. (GA-04)	215
Saitoh E. (GB-05)	216
Saitoh E. (HB-06)	249
Saitoh Y. (HS-08)	271
Sakamoto M. (AS-06)	39
Sakamoto M. (GV-05)	243
Sakhnini L. (ER-05)	170
Sakimura N. (FQ-02)	200
Sakkaki F. (AV-02)	45
Sakuma A. (DD-02)	120
Sakuma A. (DS-14)	138
Sakuraba Y. (DE-05)	123
Sakuraba Y. (DE-06)	123
Sakuraba Y. (HC-13)	252
Salas G. (ES-07)	125
Sakurai S. (AE-10)	272
Russek S. (GW-04)	175
Salasyuk A.S. (AC-10)	21
Salazar A.O. (EH-11)	165
Salazar Mejia C. (AU-14)	44
Sales B. (BG-03)	62
Sales F.H. (FU-13)	209
Salicio O. (DE-15)	124
Salman Z. (CP-08)	98
Salvador C. (EV-03)	178
Sam D.K. (AW-06)	47
Samal D. (AR-15)	38
Samanta T. (CT-15)	108
Samanta T. (FU-10)	209
Samarth N. (GC-15)	219
Samarth N. (HA-01)	247

Sampathkumaran E.V. (CT-06)	106
Sanches Piaia M. (CS-01)	104
Sanchez Llamazares J.L. (AU-15)	44
Sanchez-Hanke C. (AS-15)	40
Sanchez-Valdes C.F. (AU-15)	44
Sandeep S. (GB-03)	215
Sandeman K. (FV-13)	211
Sandeman K.G. (FV-01)	210
Sanderink J. (AB-02)	18
Sandler G. (AS-10)	40
Sandler G. (AT-02)	41
Sandoval S.M. (CG-13)	95
Sandweg C.W. (GA-04)	215
Sang H. (EE-15)	158
Sangalli D. (GQ-07)	234
Sani S. (HC-01)	250
Sani S.R. (GW-05)	245
Sankar V. (BW-14)	81
Sankar V. (HQ-14)	268
Sankaranarayanan V. (DT-10)	140
Santamaria J. (AG-05)	29
Santhosh P. N. (FV-11)	211
Santiago-Miranda A.N. (ES-08)	173
Santillán C. (BU-11)	77
Santillán C.R. (BW-13)	81
Santillan Rodriguez C.R. (GR-05)	236
Santos A.D. (DS-07)	138
Santos T. (EA-01)	147
Santos T.S. (AG-07)	29
Santos T.S. (CG-07)	94
Sanvito S. (GB-01)	215
Sapan J.J. (AF-09)	27
Sapega V.F. (AC-10)	21
Sapkota K.R. (BW-11)	81
Sapoletova N. (AH-09)	32
Sarua A. (CE-02)	89
Saruya T. (CC-02)	85
Saruya T. (HC-07)	251
Saruyama H. (DD-13)	121
Sasada I. (DV-08)	143
Sasada I. (DV-14)	144
Sasada I. (EH-02)	164
Sasada I. (EH-12)	165
Sasaki T. (HB-09)	249
Sasaki T. (HB-13)	250
Sasso C.P. (CG-09)	94
Sasso C.P. (DS-15)	139
Sato A. (HS-07)	271
Sato D. (CC-06)	86
Sato F. (AV-13)	46
Sato H. (ET-07)	174
Sato H. (FQ-14)	201
Sato J. (DE-02)	122
Sato J. (DE-10)	123
Sato K. (DP-04)	132
Sato N. (BH-04)	64
Sato R. (GW-10)	246
Sato R. (HC-04)	250
Sato T. (AV-13)	46
Sato T. (BD-08)	56
Sato T.J. (BC-01)	52
Satoh T. (EQ-12)	169
Sato-Turtelli R. (CU-10)	109
Saurel D. (GH-03)	229
Sawada K. (FE-04)	189
Sawano K. (BS-01)	72
Sawano K. (BS-02)	72
Sawatzki S. (GG-03)	227
Sawicki M. (DF-10)	126
Sayama J. (GU-14)	242
Sbiaa R. (AF-08)	27
Sbiaa R. (DQ-07)	134

Sbiaa R. (GS-08)	238
Sbiaa R. (HQ-13)	267
Scarel G. (FF-07)	192
Schäfer R. (DG-01)	127
Schäfer S. (AC-01)	20
Schäfers M. (EG-01)	161
Schäfers M. (FP-06)	198
Schäfers M. (HU-11)	276
Schaffert S. (ED-01)	153
Schellekens S.J. (DC-10)	119
Scherbakov A.V. (AC-10)	21
Schiffner P. (GC-15)	219
Schiffner P. (HA-01)	247
Schiffner P. (HQ-07)	267
Schilling M. (FS-02)	204
Schlesinger T.E. (EA-03)	147
Schlickeiser F. (EQ-06)	168
Schlotter W. (ED-01)	153
Schlottmann P.U. (GE-06)	222
Schmalbuch K. (BR-10)	71
Schmidt H. (AC-06)	20
Schmidt H. (BQ-10)	69
Schmidt H. (CD-01)	87
Schmidt H. (CD-08)	88
Schmidt H. (HD-08)	254
Schmidt O.G. (AW-12)	48
Schmitt-Landsiedel D. (GD-01)	219
Schmitt-Landsiedel D. (GD-02)	220
Schmitt-Landsiedel D. (HG-07)	260
Schmitz D. (BE-05)	57
Schneider C.M. (BR-10)	71
Schneider C.M. (CC-13)	87
Schneider C.M. (EV-13)	179
Schneider C.M. (GE-05)	222
Schneider H. (ED-10)	155
Schneider H. (FD-07)	187
Schneider M.L. (CS-03)	104
Schneidewind A. (GE-02)	222
Schoch W. (FB-06)	183
Scholl A. (AG-03)	29
Scholl A. (EE-08)	157
Scholl A. (HD-02)	253
Schrefl T. (BF-06)	60
Schrefl T. (CD-02)	87
Schrefl T. (EP-02)	166
Schrefl T. (FH-05)	196
Schrefl T. (FW-11)	213
Schrefl T. (GF-02)	224
Schrefl T. (GG-01)	227
Schrefl T. (GG-09)	228
Schrefl T. (HQ-12)	267
Schröder S. (EF-01)	158
Schubert E. (BG-09)	63
Schuetz G. (BD-04)	55
Schuetz G. (FC-04)	184
Schuhl A. (DA-05)	115
Schuhl A. (HE-10)	257
Schuller I.K. (EV-08)	178
Schuller I.K. (GF-05)	225
Schuller I.K. (HF-04)	258
Schultz L. (CV-06)	110
Schultz L. (GG-03)	227
Schultz L. (GR-06)	236
Schultz M. (AF-11)	27
Schultz M. (CH-10)	96
Schultz M. (CH-12)	97
Schulz-Ritter H. (EC-01)	150
Schumacher H. (FB-03)	182
Schütz G. (AW-10)	48
Schütz G. (DC-02)	118
Schütz G. (DG-10)	128
Schwarzacher W. (CE-02)	89

Schweitzer S. (HB-01)	248
Schwingenschlogl U. (BQ-15)	69
Schwingenschlogl U. (BR-06)	70
Sechovsk? V. (CR-05)	102
Sechovsky V. (AR-13)	38
Sechovsky V. (CR-09)	103
Sedlak P. (DH-12)	130
Sedmidubsk? D. (CQ-15)	101
See P. (GH-04)	229
Seehra M. (CR-08)	103
Seehra M.S. (BE-13)	58
Seehra M.S. (CU-09)	109
Seehra M.S. (HF-10)	259
Seehra M.S. (HT-04)	273
Sefat A.S. (HU-03)	275
Sefrioui Z. (AG-05)	29
Seibt M. (EG-01)	161
Seiner H. (DH-12)	130
Seinige H. (GW-12)	246
Seinige H. (HC-08)	251
Seki T. (EF-12)	160
Seki T. (HC-05)	251
Seki T. (HC-07)	251
Seki T. (HC-13)	252
Sekiguchi K. (BD-08)	56
Sekino M. (HS-08)	271
Sellmyer D.J. (AC-05)	20
Sellmyer D.J. (AE-02)	24
Sellmyer D.J. (AE-03)	24
Sellmyer D.J. (AE-04)	24
Sellmyer D.J. (AE-06)	24
Sellmyer D.J. (AE-12)	25
Sellmyer D.J. (BG-09)	63
Sellmyer D.J. (BP-15)	67
Sellmyer D.J. (BR-15)	72
Sellmyer D.J. (BU-09)	77
Sellmyer D.J. (CG-12)	94
Sellmyer D.J. (CT-01)	106
Sellmyer D.J. (CU-02)	108
Sellmyer D.J. (CW-13)	114
Sellmyer D.J. (DE-14)	124
Sellmyer D.J. (FF-05)	192
Sellmyer D.J. (FF-06)	192
Sellmyer D.J. (GE-08)	223
Sellmyer D.J. (GF-10)	226
Sells D. (CE-06)	90
Selmes J. (HS-14)	272
Semenov Y.G. (HE-07)	256
Semiati L. (CB-07)	84
Senba S. (FP-15)	199
Seneor P. (AB-03)	18
Senn T. (AC-06)	20
Senn T. (CD-08)	88
Seo S. (GQ-01)	233
Seong W. (BH-05)	64
Seong W. (BH-06)	64
Seong W. (CP-02)	98
Sepehri-Amin H. (CV-15)	112
Sepehriar T. (BE-01)	56
Sepehriar T. (CR-14)	103
Serga A.A. (EE-10)	157
Serga A.A. (FC-01)	184
Serga A.A. (GA-04)	215
Serin V. (EF-04)	159
Serpico C. (CS-04)	104
Serpico C. (DS-04)	137
Serpico C. (EH-06)	164
Serpico C. (FD-08)	188
Serpico C. (FH-11)	197
Serpico C. (GW-11)	246
Serrano Guisan S. (FB-03)	182
Serrano L.E. (FW-12)	213

Serrate D. (DH-13)	131
Serrate D. (EF-01)	158
Serrate D. (GH-03)	229
Sethupathi K. (DT-10)	140
Shafiee S. (CF-11)	92
Shah A. (FF-09)	192
Shah S.I. (HH-06)	262
Shah V.R. (CU-02)	108
Shah V.R. (DE-14)	124
Shahbazi M. (HU-04)	275
Shamba P. (FV-02)	210
Shames A.I. (CQ-02)	100
Shames A.I. (CQ-03)	100
Shao B. (GQ-15)	235
Shao H. (CP-03)	98
Shapaeva T. (AH-05)	31
Shaposhnikov A. (AH-05)	31
Sharipova M. (AH-05)	31
Sharma M. (FR-08)	203
Sharma M. (HS-15)	272
Sharma P. (BW-03)	80
Sharma P. (CB-01)	83
Sharma P. (ET-11)	175
Sharma S. (BS-03)	72
Sharoni A. (EV-08)	178
Shaw J. (AC-03)	20
Shaw J. (BH-14)	65
Shaw J.M. (AC-02)	20
Shaw J.M. (BP-01)	66
Shaw J.M. (DB-12)	117
Shchegoleva N. (HT-14)	274
Shelly C. (GH-04)	229
Shen B. (AQ-03)	35
Shen B. (BU-05)	76
Shen B. (BU-12)	77
Shen B. (CB-03)	83
Shen B. (CB-08)	84
Shen B. (CO-07)	100
Shen B. (CQ-09)	100
Shen B. (DT-04)	139
Shen B. (FV-03)	210
Shen C. (BS-12)	73
Shen C. (GB-09)	216
Shen J. (AB-05)	19
Shen J. (BU-12)	77
Shen J. (CQ-07)	100
Shen J. (DT-04)	139
Shen J. (FV-03)	210
Shen J. (FV-04)	210
Shen K. (EE-11)	157
Shen S. (CB-09)	84
Shen S. (HH-09)	263
Shen W. (FU-02)	208
Shen X. (HS-11)	271
Shen Y. (GR-03)	235
Shen Y. (HG-06)	260
Sheng P. (CC-04)	85
Sheng S.S. (CT-07)	107
Sheng W. (GU-11)	242
Sheu S. (AH-12)	32
Shi D. (HH-12)	263
Shi F. (CC-11)	86
Shi J. (BP-14)	67
Shi J. (DQ-09)	134
Shi J. (DV-07)	143
Shi J. (HF-07)	258
Shi L. (AH-06)	32
Shi L. (GT-10)	240
Shi R. (AQ-11)	36
Shi S. (GH-01)	228
Shi W.H. (HQ-05)	266
Shi Z. (BF-02)	59

Shi Z. (HF-06)	258
Shibayama T. (AU-02)	43
Shida W. (BP-03)	66
Shield J. (HG-14)	261
Shield J.E. (AE-04)	24
Shield J.E. (AE-06)	24
Shield J.E. (CE-05)	90
Shield J.E. (FF-05)	192
Shigematsu K. (DE-13)	124
Shih C. (AQ-04)	35
Shih C. (CT-04)	106
Shih C. (FV-14)	212
Shih C.W. (BT-06)	75
Shih C.W. (BW-04)	80
Shih C.W. (CV-09)	111
Shih C.W. (CW-08)	113
Shih J. (FF-01)	191
Shih Y. (FU-02)	208
Shih Y. (HT-05)	273
Shikoh E. (HB-06)	249
Shikoh E. (HB-09)	249
Shim I. (AR-01)	37
Shim I. (HT-01)	272
Shim J. (AR-06)	38
Shim J. (AW-05)	47
Shim S.H. (GB-11)	217
Shima T. (DP-04)	132
Shimada M. (EH-12)	165
Shimamoto K. (GV-11)	244
Shimatsu T. (DD-04)	120
Shimatsu T. (FG-09)	194
Shimatsu T. (GU-07)	242
Shimatsu T. (GU-09)	242
Shimatsu T. (HQ-02)	266
Shimidzu N. (BB-12)	52
Shimizu T. (AU-02)	43
Shimoji H. (BV-01)	78
Shimomura N. (FE-04)	189
Shimomura N. (FE-05)	189
Shimura T. (EQ-12)	169
Shin H. (AV-09)	46
Shin I. (EG-06)	162
Shin J. (DV-05)	143
Shin J. (GQ-08)	234
Shin J. (HP-04)	264
Shin K. (AW-02)	47
Shin K. (EV-05)	178
Shin K. (FP-10)	199
Shin K. (GW-02)	245
Shin K. (HR-12)	270
Shin P. (HV-02)	277
Shin S. (DG-01)	127
Shin S. (HF-01)	257
Shin Y. (BQ-13)	69
Shin Y. (BS-11)	73
Shin Y.J. (HB-02)	248
Shinde V.S. (DP-07)	132
Shindo D. (HQ-06)	266
Shinjo T. (EG-07)	162
Shinjo T. (EG-12)	163
Shinjo T. (FQ-08)	201
Shinjo T. (HB-06)	249
Shinjo T. (HB-09)	249
Shintaku K. (DQ-01)	133
Shiokawa Y. (AS-02)	39
Shiota Y. (EG-07)	162
Shiota Y. (EG-12)	163
Shiota Y. (FQ-08)	201
Shirahata Y. (BS-10)	73
Shirahata Y. (GT-13)	240
Shirai M. (DD-15)	122
Shirai M. (DE-01)	122
Shiraishi M. (HB-06)	249
Shiraishi M. (HB-09)	249
Shiraishi M. (HB-13)	250
Shirsath S.E. (DP-07)	132
Shishido T. (GE-03)	222
Shiue C. (FU-04)	208
Shoji T. (CU-05)	108
Shoji T. (GG-09)	228
Shuai Y. (HD-08)	254
Shull R. (BU-15)	77
Shull R.D. (FQ-10)	201
Shultz M.D. (DW-09)	145
Shultz M.D. (ES-12)	173
Shunsuke F. (HR-10)	269
Shvets I. (BW-12)	81
Shvets I. (FP-09)	198
Shvets I.V. (DE-12)	123
Shvets I.V. (FF-02)	191
Shvets I.V. (FF-08)	192
Shvets I.V. (FW-08)	213
Shyu J. (CS-10)	105
Siadou N. (BP-05)	66
Siao Y. (AP-15)	35
Siao Y. (FT-01)	206
Siekman M.H. (BS-06)	73
Sierra B. (AD-07)	23
Sierra J. (HC-12)	252
Sierra J.F. (HC-06)	251
Sikora M. (EC-02)	151
Silva H.G. (CE-10)	90
Silva J.R. (EH-11)	165
Silva M.L. (CS-15)	105
Silva S.C. (CW-15)	114
Silva T. (AC-03)	20
Silva T.J. (AC-02)	20
Silva T.J. (BP-01)	66
Silva T.J. (DB-12)	117
Silva T.M. (DP-12)	133
Sim C.H. (HC-03)	250
Simhachalam N.B. (GT-06)	240
Simhachalam N.B. (HD-10)	254
Simón G. (EC-02)	151
Simon J.A. (GH-13)	230
Sims H. (GE-12)	223
Singamaneni S. (AP-10)	34
Singh A. (BB-06)	51
Singh G. (HF-11)	259
Singh H.K. (CR-06)	102
Singh M.P. (CR-06)	102
Singh R. (BP-07)	67
Singh R. (CQ-05)	100
Singh S.K. (CU-08)	109
Singh V. (BE-13)	58
Singh V. (HT-04)	273
Sinha J. (HC-14)	252
Sinha J. (HE-03)	256
Sinha S. (EH-03)	164
Sinova J. (CU-07)	109
Sinwani O. (CH-10)	96
Sipos B. (BG-03)	62
Siqueira-Moura M. (ES-02)	172
Siritarativat A. (AS-04)	39
Sirotkin E. (EE-05)	156
Siu Z. (DR-05)	136
Siussys A. (DF-07)	125
Sizeland J. (DE-10)	123
Sj A. (HH-10)	263
Skokov K.P. (CG-04)	93
Skokov K.P. (FV-05)	211
Skomski R. (AC-05)	20
Skomski R. (AE-02)	24
Skomski R. (AE-03)	24
Skomski R. (AE-04)	24
Skomski R. (AE-06)	24
Skomski R. (AE-12)	25
Skomski R. (AF-15)	28
Skomski R. (BC-10)	54
Skomski R. (BG-09)	63
Skomski R. (BP-15)	67
Skomski R. (BR-15)	72
Skomski R. (BU-09)	77
Skomski R. (CG-12)	94
Skomski R. (CT-01)	106
Skomski R. (CU-02)	108
Skomski R. (CW-13)	114
Skomski R. (DE-14)	124
Skomski R. (FF-05)	192
Skomski R. (FF-06)	192
Skomski R. (GE-08)	223
Skomski R. (GF-10)	226
Skoropata E. (HT-11)	274
Skorupa W. (BQ-10)	69
Skorvanek I. (BU-02)	76
Skumryev V. (EU-05)	176
Skumryev V. (HD-05)	254
Skuza J. (AH-08)	32
Slachter A. (FB-11)	184
Slavin A. (DB-01)	116
Slavin A. (EB-04)	148
Slavin A. (EB-13)	150
Slavin A. (HC-12)	252
Slavin A.N. (DB-09)	117
Slavin A.N. (EE-06)	156
Slesazek S. (HD-08)	254
Sliwa C. (DF-08)	125
Sluchanko N.E. (CQ-11)	101
Smith K. (EG-03)	161
Smith R. (AT-07)	41
Smith R. (AT-08)	41
Smith R.L. (BU-05)	41
Smith R.L. (AT-06)	41
Sniadecki Z. (BU-02)	76
Snoeck E. (EF-05)	159
Snyder J. (GP-06)	232
Snyder J.E. (AG-13)	30
Snyder J.E. (EC-09)	152
Snyman J.L. (BU-14)	77
Soares G. (EC-12)	152
Soffner M.E. (CG-03)	93
Sogne E. (GH-02)	229
Sohail M.A. (HV-10)	277
Sokalski V. (CH-03)	95
Sokalski V.M. (BF-12)	61
Sokolov A. (FU-10)	209
Sokolovsky M. (DS-12)	138
Sokolovskyy M. (EQ-15)	169
Solomon G.C. (AB-09)	19
Somaiah N. (DH-01)	129
Sominski E. (CQ-02)	100
Son J. (CH-13)	97
Son V. (BS-11)	73
Soneta K. (DG-05)	127
Song H. (EC-10)	152
Song H. (FU-14)	210
Song J. (AR-14)	38
Song J. (CU-06)	109
Song M. (ES-13)	173
Song S. (HG-09)	260
Song Y. (FB-05)	183
Song Y. (FT-11)	207
Song Y. (GQ-09)	234
Song Y. (HD-06)	254
Song Z. (DR-13)	136
Sorgenfrei F. (ED-02)	153

Sort J. (GF-03)	225
Sort J. (GF-08)	226
Souaille R. (EE-12)	157
Sousa C.T. (CE-09)	90
Sousa C.T. (EE-14)	158
Sousa J.B. (EE-14)	158
Sousa J.B. (EG-05)	162
Sousa J.B. (HQ-09)	267
Sousa R. (GC-01)	217
Sousa R.C. (AC-11)	21
Sousa R.C. (AF-03)	26
Souza-Neto N. (GE-13)	224
Sow C. (AR-15)	38
Sow C. (DT-12)	140
Speliotis T. (DD-11)	121
Spemann D. (BE-11)	58
Spinu L. (HU-05)	275
Sproll M. (BD-04)	55
Sprungmann D. (BG-05)	62
Sreenivasulu G. (FE-14)	191
Sreenivasulu K.V. (DP-09)	132
Srikanth H. (AG-06)	29
Srikanth H. (AG-09)	30
Srikanth H. (CG-05)	93
Srikanth H. (CP-11)	99
Srikanth H. (CQ-06)	100
Srikanth H. (DV-01)	142
Srikanth H. (FT-04)	206
Srikanth H. (FV-09)	211
Srikanth H. (GQ-03)	233
Srikanth H. (GQ-12)	234
Srikanth H.S. (FC-11)	186
Srinath S. (DP-10)	132
Srinivasan A. (BW-14)	81
Srinivasan G. (FE-14)	191
Srinivasan G. (FT-08)	207
Srinivasan K. (FG-11)	195
Srinivasan K. (GU-03)	241
Srinivasan P.R. (BT-01)	74
Srivastava A. (CR-03)	102
Stadler B. (DH-08)	130
Stadler B. (HX-06)	280
Stamatatos T. (CE-06)	90
Stamenov P. (DP-05)	132
Stamenov P.S. (EV-14)	179
Stamm C. (ED-02)	153
Stampe P.A. (GQ-04)	233
Stamps R. (BC-03)	53
Stamps R. (BG-10)	63
Stamps R. (DT-02)	139
Stamps R. (DT-07)	140
Stamps R. (EQ-13)	169
Stamps R. (HA-02)	247
Stamps R.L. (AW-15)	49
Stamps R.L. (DS-09)	138
Stancu A. (BP-05)	66
Stancu A. (BR-13)	71
Stancu A. (DR-07)	136
Stancu A. (DR-08)	136
Stancu A. (DS-05)	137
Stancu A. (GU-13)	242
Stapelheldt T. (DC-12)	119
Stärk M. (AW-10)	48
Stashkevich A. (CD-07)	88
Staudacher T. (HC-08)	251
Stearrett R. (CC-12)	86
Stefanoski S. (CG-05)	93
Stefanowicz W. (DF-10)	126
Steil D. (CS-13)	105
Steil D. (ED-11)	155
Steil D. (FD-07)	187
Stein A. (BC-05)	53

Stein A. (DT-07)	140
Stein A. (HA-03)	247
Stein F. (AW-09)	48
Stepankova H. (HT-02)	272
Stepanov V.I. (HF-09)	258
Stephanovich V.A. (HE-07)	256
Stickar P.G. (DG-06)	128
Stickler D. (ED-01)	153
Stiles M.D. (FB-09)	183
Stilp E. (CP-08)	98
Stipe B. (EA-05)	147
Stipe B.C. (EA-01)	147
Stock C. (BG-02)	62
Stöhr J. (ED-02)	153
Stoian G.M. (GQ-04)	233
Stojak K. (DV-01)	142
Stojak K. (FT-04)	206
Stoleriu L. (BP-05)	66
Stoll H. (AW-10)	48
Stoll H. (BD-04)	55
Stoll H. (DC-02)	118
Story T. (DF-07)	125
Strache T. (AW-03)	47
Strache T. (BD-03)	55
Strambini E. (BG-08)	63
Stroud D. (DG-02)	127
Strydom A. (GE-11)	223
Strydom A.M. (BU-14)	77
Stryganyuk G. (EC-01)	150
Stryganyuk G. (FS-06)	205
Studer A.J. (AU-08)	44
Stype B. (CF-05)	91
Su H. (BB-06)	51
Su H. (BS-15)	74
Su H. (DW-01)	144
Su H. (HR-03)	268
Su J. (HR-08)	269
Su Y. (BR-11)	71
Su Y. (EW-06)	180
Su Y. (FV-12)	211
Su Z. (AV-03)	45
Subias G. (AG-08)	30
Suchocki P. (ES-02)	172
Suchoski R. (DH-03)	129
Sudesh S. (HU-01)	275
Sudo M. (GP-15)	233
Suemoto T. (HG-13)	261
Suenaga S. (HH-07)	262
Suess D. (AW-12)	48
Suess D. (BF-07)	60
Suess D. (CH-01)	95
Suess D. (CH-11)	96
Suess D. (EP-09)	166
Suess D. (FD-06)	187
Suess D. (FH-03)	196
Suess D. (FH-05)	196
Suetsuna T. (HH-07)	262
Sugahara S. (HB-10)	249
Sugano R. (BB-13)	52
Sugano R. (GW-06)	246
Sugawara K. (DP-04)	132
Suggisetti P. (BQ-09)	69
Suggisetti P. (BS-09)	73
Sugibayashi T. (FQ-02)	200
Sugii T. (AF-13)	27
Sugii T. (CC-07)	86
Sugimoto N. (BE-04)	57
Sugimoto S. (AC-13)	21
Sugimoto S. (CV-07)	111
Sugimoto S. (FP-08)	198
Sugimoto S. (FP-12)	199
Sugita R. (FW-07)	213
Sugiyama H. (HB-11)	249
Suh B. (AP-09)	34
Suh B. (HT-13)	274
Sui Y. (FV-12)	211
Sui Y. (GQ-09)	234
Sukegawa H. (CU-01)	108
Sukhorukov Y.P. (HX-04)	280
Sultan M. (CS-12)	105
Sultan R. (FB-02)	182
Summers E. (DH-05)	129
Sun A. (CT-04)	106
Sun A. (CV-14)	112
Sun A. (CW-09)	113
Sun C. (BV-05)	78
Sun C. (CF-03)	91
Sun C. (FU-09)	209
Sun H. (AQ-03)	35
Sun H. (BV-05)	78
Sun J. (BU-12)	77
Sun J. (CQ-07)	100
Sun J. (CQ-09)	100
Sun J. (DA-03)	115
Sun J. (DT-04)	139
Sun J. (DW-12)	146
Sun J. (EP-12)	167
Sun J. (FV-03)	210
Sun J.Z. (AF-07)	27
Sun J.Z. (DA-02)	115
Sun K. (DW-03)	145
Sun L. (HH-14)	263
Sun M. (HP-08)	265
Sun N. (AV-03)	45
Sun N. (EU-14)	177
Sun N. (FE-02)	189
Sun N. (FT-09)	207
Sun N. (GT-01)	239
Sun N.X. (BH-10)	65
Sun P. (EP-04)	166
Sun P. (EP-05)	166
Sun Q.C. (GE-09)	223
Sun S. (BQ-14)	69
Sun T. (DP-01)	131
Sun W. (DP-02)	131
Sun X. (BC-08)	53
Sun X. (BR-05)	70
Sun X. (BV-10)	79
Sun X. (EF-02)	158
Sun X. (EU-06)	176
Sun Y. (DB-01)	116
Sun Y. (EU-07)	176
Sun Y. (FB-05)	183
Sun Y. (FT-11)	207
Sun Y. (HD-06)	254
Sun Y.Y. (HD-11)	255
Sun Z. (AF-14)	28
Sung N. (BG-04)	62
Sung S. (DU-12)	142
Supnithi P. (AS-09)	40
Supnithi P. (AT-03)	41
Supnithi P. (DQ-12)	135
Surawanitkun C. (AS-04)	39
Suri S. (HT-04)	273
Suszka A.K. (GF-06)	225
Suter A. (AR-05)	37
Suter A. (CP-08)	98
Suter R.M. (AU-13)	44
Suto H. (GW-10)	246
Suto H. (HC-04)	250
Sutor A. (EC-08)	151
Sutor A. (GP-04)	231
Suwa Y. (DV-05)	143
Suyama Y. (CS-11)	105

Suzuki D. (GD-07)	220
Suzuki H. (FT-06)	207
Suzuki K. (CU-05)	108
Suzuki K. (GQ-06)	234
Suzuki K. (GQ-14)	235
Suzuki T. (HB-09)	249
Suzuki T. (HB-13)	250
Suzuki T. (HE-03)	256
Suzuki Y. (AG-01)	28
Suzuki Y. (AG-02)	28
Suzuki Y. (AQ-15)	37
Suzuki Y. (AS-08)	40
Suzuki Y. (CC-02)	85
Suzuki Y. (CC-04)	85
Suzuki Y. (EG-07)	162
Suzuki Y. (EG-12)	163
Suzuki Y. (FP-03)	198
Suzuki Y. (FP-13)	199
Suzuki Y. (FQ-08)	201
Suzuki Y. (HB-09)	249
Suzuki Y. (HB-13)	250
Suzuki Y. (HC-05)	251
Suzuki Y. (HC-07)	251
Svedlindh P. (FC-07)	185
Swagten H.J. (DC-10)	119
Swaminathan R. (HP-12)	265
Swarup Raju M.P. (CP-05)	98
Swierczek K. (AG-11)	30
Sztenkiel D. (DF-10)	126
Szunyogh L. (DD-01)	120
- T -	
Tabata Y. (BC-01)	52
Tabor P. (EB-04)	148
Tacchi S. (DS-12)	138
Tacchi S. (EB-11)	150
Tacchi S. (EE-05)	156
Tacchi S. (EQ-02)	167
Tadahiko S. (HR-10)	269
Tafur-Bermúdez J. (FS-08)	205
Tahmasebi T. (GS-08)	238
Taira T. (DE-01)	122
Taira T. (DE-04)	122
Takagi H. (BT-14)	76
Takagi H. (FT-03)	206
Takagishi M. (AS-05)	39
Takahashi M. (AE-01)	24
Takahashi M. (AP-04)	33
Takahashi M. (AQ-12)	36
Takahashi M. (BW-05)	80
Takahashi M. (CB-02)	83
Takahashi M. (EV-12)	179
Takahashi M. (GU-06)	242
Takahashi M. (HT-08)	273
Takahashi S. (BF-13)	61
Takahashi S. (GW-06)	246
Takahashi T. (HH-07)	262
Takahashi Y. (BW-14)	81
Takahashi Y. (GG-10)	228
Takahashi Y.K. (BS-10)	73
Takahashi Y.K. (CF-04)	91
Takahashi Y.K. (DE-03)	122
Takahashi Y.K. (HC-14)	252
Takamura Y. (AG-01)	28
Takamura Y. (AG-03)	29
Takamura Y. (EE-08)	157
Takamura Y. (HB-10)	249
Takamura Y. (HD-02)	253
Takanashi K. (DE-05)	123
Takanashi K. (DE-06)	123
Takanashi K. (EF-12)	160
Takanashi K. (HC-13)	252
Takano H. (AP-04)	33
Takano K. (BF-05)	60
Takano K. (BF-06)	60
Takano K. (BF-09)	60
Takas N. (EW-11)	181
Takatsu H. (BC-01)	52
Takayanagi K. (BW-09)	81
Takayanagi K. (GS-15)	239
Takeda S. (FT-06)	207
Takeda T. (EH-12)	165
Takekuma I. (GU-14)	242
Takemura Y. (ES-01)	171
Takemura Y. (ES-04)	172
Takenaka K. (AR-09)	38
Takenaka K. (AU-02)	43
Takenaka K. (CT-10)	107
Takenaka K. (EP-06)	166
Takeru Y. (ET-14)	175
Takeuchi . (HD-07)	254
Takeuchi A. (FB-08)	183
Takeuchi I. (CT-13)	107
Takeuchi I. (DH-03)	129
Takeuchi I. (HD-04)	253
Takezawa M. (CV-11)	111
Takezawa M. (CV-12)	111
Takiishi H. (CW-15)	114
Takiishi H. (HG-03)	259
Takura T. (AV-13)	46
Taleb A. (CC-01)	85
Taleb A. (EF-05)	159
Tan H. (GS-08)	238
Tan H. (HQ-13)	267
Tan K. (AF-08)	27
Tan K. (FG-12)	195
Tan R. (CE-01)	89
Tan S. (DR-05)	136
Tan S. (EW-03)	180
Tan S. (HU-15)	276
Tan S.G. (EW-02)	180
Tanaka H. (BQ-04)	68
Tanaka H. (BQ-06)	68
Tanaka K. (DV-08)	143
Tanaka M. (DD-07)	121
Tanaka M. (DF-03)	125
Tanaka M. (FP-07)	198
Tanaka N. (BE-04)	57
Tanaka T. (AT-13)	42
Tanaka T. (DQ-13)	135
Tanaka T. (DQ-14)	135
Tanaka T. (DS-11)	138
Tanaka T. (FT-07)	207
Tanasa R. (BR-13)	71
Tanase M. (BC-02)	52
Tandon R. (AR-07)	38
Tandon R. (HU-12)	276
Tang J. (FV-12)	211
Tang J. (GQ-09)	234
Tang P. (BU-04)	76
Tang S. (CE-06)	90
Tang W. (GG-02)	227
Tang X. (BB-01)	50
Tang X. (BB-02)	50
Tang X. (BB-11)	51
Tang X. (BP-04)	66
Tang X. (CW-11)	114
Tang X. (DW-01)	144
Tang X. (ET-12)	175
Tang X. (FS-12)	205
Tang X. (GR-01)	235
Tang X. (HR-03)	268
Tang Y. (BT-08)	75

Taniguchi T. (BB-08)	.51
Taniguchi T. (EB-08)	.149
Taniguchi T. (HC-14)	.252
Taniyama T. (BS-10)	.73
Taniyama T. (GT-13)	.240
Taniyama T. (HD-09)	.254
Tarwater K. (HD-13)	.255
Tasci T.O. (HV-07)	.277
Tasiopoulos A. (CE-06)	.90
Tatara G. (FB-08)	.183
Tatay S. (AB-03)	.18
Tate R. (HT-08)	.273
Tavares P.B. (CE-09)	.90
Tchernyshyov O. (BC-04)	.53
te Velthuis S. (AG-05)	.29
te Velthuis S. (BG-06)	.62
Tear S.P. (FF-09)	.192
Techfeld E. (AH-11)	.32
Tedesco A. (ES-02)	.172
Tedesco A.C. (ES-05)	.172
Tedesco J.G. (CG-03)	.93
Teichert N. (AA-04)	.18
Teixeira C.S. (FV-05)	.211
Teixeira J.M. (EG-05)	.162
Teixeira J.M. (HQ-09)	.267
Tejada J. (BG-07)	.62
Tejada J. (CS-02)	.104
Telegin A. (HX-04)	.280
Telepinsky Y. (AF-11)	.27
Temst K. (GQ-02)	.233
Tenne D. (CU-11)	.109
Teo K. (AT-04)	.41
Teo K. (BQ-03)	.68
Teo K. (HF-05)	.258
Teran F.J. (ES-07)	.172
Teran F.J. (GF-03)	.225
Terris B.D. (BF-09)	.60
Terris B.D. (FG-10)	.194
Terry B. (GD-06)	.220
Terui Y. (EQ-12)	.169
Tezuka N. (CV-07)	.111
Tezuka N. (FP-08)	.198
Tezuka N. (FP-12)	.199
Tezuka N. (HB-11)	.249
Thakur . (AQ-10)	.36
Thakur A. (AQ-10)	.36
Thiaville A. (DC-06)	.119
Thibaudeau P. (FD-09)	.188
Thielsch J. (GG-03)	.227
Thielsch J. (GR-06)	.236
Thiess S. (BS-04)	.72
Thiess S. (EC-01)	.150
Thiess S. (FE-01)	.189
Thiet D. (BQ-13)	.69
Thirion C. (EB-03)	.148
Thiruvadigal J.D. (FQ-12)	.201
Thiruvadigal J.D. (HH-10)	.263
Thiyagarajah N. (AT-15)	.42
Thiyagarajah N. (EE-03)	.156
Thiyagarajah N. (FG-07)	.194
Thiyagarajah N. (FG-12)	.195
Thiyagarajah N. (HR-09)	.269
Thomas A. (EG-01)	.161
Thomas A. (FB-06)	.183
Thomas A. (FP-06)	.198
Thomas A. (FW-04)	.212
Thomas A. (GS-04)	.237
Thomas A. (GT-14)	.241
Thomas A. (HU-11)	.276
Thomas P. (GS-02)	.237
Thomas P. (HU-11)	.276
Thomas R. (CP-13)	.99
Thomas S.A. (CR-01)	.102
Thomé L. (BQ-05)	.68
Thompson P.E. (HB-08)	.249
Thompson S.M. (EF-13)	.160
Thompson S.M. (FC-13)	.186
Thomson T. (BF-05)	.60
Thomson T. (BF-06)	.60
Thorwarth K. (GF-09)	.226
Thota S. (CU-09)	.109
Thurber A. (AP-07)	.33
Thurber A. (AP-10)	.34
Thurber A. (CU-11)	.109
Thurber A. (GQ-10)	.234
Thurber A.P. (GQ-11)	.234
Tiberkevich V. (DB-01)	.116
Tiberkevich V. (EB-04)	.148
Tiberkevich V. (HC-12)	.252
Tiberkevich V.S. (DB-09)	.117
Tiberkevich V.S. (EE-06)	.156
Tioh J. (EP-14)	.167
Tite T. (BT-08)	.75
Tiusan C. (EG-02)	.161
Tiusan C. (FP-02)	.197
Tivakornasathorn K. (DF-09)	.125
Todaka T. (BV-01)	.78
Todaka T. (CB-12)	.84
Todaka T. (EC-13)	.152
Todaka T. (ER-08)	.170
Togawa Y. (BW-09)	.81
Togawa Y. (GS-15)	.239
Toh Y. (EA-04)	.147
Tohji K. (HH-01)	.261
Tohki A. (CW-10)	.114
Tolentino H. (AD-13)	.23
Tombros N. (CA-01)	.82
Tomioaka T. (DQ-02)	.133
Tomita H. (HC-07)	.251
Tomitaka A. (ES-04)	.172
Tong C. (BV-14)	.79
Tong C. (DU-01)	.141
Tommerre J. (AD-13)	.23
Toperverg B.P. (AD-07)	.23
Topp J. (DS-08)	.138
Topuria T. (AF-04)	.26
Torii T. (HS-07)	.271
Torki K. (GD-05)	.220
Torres J. (AD-07)	.23
Torres J. (DC-06)	.119
Torres L. (AW-08)	.48
Torres L. (EQ-05)	.168
Torres L. (GP-14)	.233
Torres L. (HR-06)	.269
Torres L. (HV-12)	.278
Torres-Díaz I.G. (ER-10)	.170
Torti A.M. (GH-07)	.229
Tourinho F.A. (HF-09)	.258
Townsend R. (EC-09)	.152
Toyoda N. (FG-15)	.195
Tracy J.B. (FF-07)	.192
Trampert A. (DE-09)	.123
Tran D. (BT-02)	.74
Tran D.H. (CP-02)	.98
Tran L. (AB-06)	.19
Tran T. (AB-02)	.18
Trapanese M. (AV-08)	.45
Trapanese M. (CR-10)	.103
Trapanese M. (HP-14)	.265
Tretiakov O. (CU-07)	.109
Tretiakov O. (GS-14)	.238
Tretiakov O. (HR-15)	.270
Treves D. (EA-02)	.147
Tripathy D. (HQ-01)	.266

Trodahl J. (DF-04)	.125
Troper A. (GP-08)	.232
Trouilloud P.L. (AF-07)	.27
Trouilloud P.L. (DA-03)	.115
Truong V. (CE-04)	.89
Trypiniotis T. (BS-12)	.73
Trypiniotis T. (GB-05)	.216
Trypiniotis T. (GB-09)	.216
Tsai C. (BW-03)	.80
Tsai C. (EH-08)	.164
Tsai C. (FU-02)	.208
Tsai C.S. (BH-11)	.65
Tsai J. (CW-04)	.113
Tsai J. (ET-05)	.174
Tsai S. (HS-12)	.272
Tsai T. (AU-01)	.43
Tsai C. (HT-07)	.273
Tsay D. (DU-07)	.141
Tseng H. (CH-02)	.95
Tseng H. (EG-04)	.161
Tseng H. (GC-05)	.218
Tseng Y. (FV-15)	.212
Tseng Y. (GE-13)	.224
Tserkovnyak Y. (GA-01)	.214
Tsindlekht M.I. (CQ-03)	.100
Tsoi G.M. (CR-01)	.102
Tsoi M. (GW-12)	.246
Tsoi M. (HC-08)	.251
Tsuchida Y. (EC-13)	.152
Tsujikawa M. (DD-15)	.122
Tsukada M. (CC-08)	.86
Tsukamoto A. (AH-03)	.31
Tsukamoto A. (ED-03)	.154
Tsunashima S. (DQ-03)	.134
Tsunoda K. (CC-07)	.86
Tsunoda M. (BW-05)	.80
Tsunoda M. (EV-12)	.179
Tsurin V. (HT-14)	.274
Tu C. (BT-03)	.74
Tu C. (BT-04)	.75
Tu C.W. (GB-06)	.216
Tu J.J. (HU-02)	.275
Tuan D. (BQ-08)	.69
Tuan D. (BQ-13)	.69
Tuan D. (BS-11)	.73
Tuan N.A. (HV-15)	.278
Tuggle A. (DR-02)	.135
Tulk C. (BG-03)	.62
Tuna F. (CE-06)	.90
Tung M. (ES-09)	.173
Tuominen M.T. (GP-12)	.232
Turapurkar A. (FP-03)	.198
Turgut Z. (CB-07)	.84
Turgut Z. (DW-10)	.146
Turgut Z. (GR-03)	.235
Turgut Z. (HG-06)	.260
Turner S. (EH-04)	.164
Tybell T. (AG-03)	.29
Tybell T. (EE-08)	.157
Tyberkevych V. (EB-13)	.150
Tyliszczak T. (AW-10)	.48
Tyliszczak T. (BE-11)	.58
Tyliszczak T. (DC-02)	.118
Tzalenchuk A. (CH-04)	.95
Ucar H. (AQ-14)	.36
Uchida H. (AH-02)	.31
Uchida K. (CD-11)	.89
Uchida K. (DE-05)	.123
Ueda K. (BE-04)	.57
Ueda K. (DC-09)	.119
Ueda K. (EU-13)	.177
Ueda K. (GS-12)	.238
Ueda S. (GE-05)	.222
Ueda Y. (EF-06)	.159
Uemura T. (DE-01)	.122
Uemura T. (DE-04)	.122
Uemura T. (FP-01)	.197
Uemura T. (GB-12)	.217
Ueno S. (CB-12)	.84
Ueno S. (HS-04)	.271
Ueno S. (HS-06)	.271
Ueno T. (GD-12)	.221
Ueno T. (HS-03)	.271
Uher C. (EW-11)	.181
Uhlirva K. (CR-09)	.103
Uimin M. (HT-14)	.274
Ukita T. (EU-11)	.177
Ulrichs H. (CD-09)	.88
Ulrichs H. (DS-13)	.138
Ulrichs H. (EQ-01)	.167
Ulysse C. (FD-05)	.187
Umetsu N. (DS-14)	.138
Une Y. (CV-07)	.111
Ungureanu M. (BE-11)	.58
Unguris J. (DG-11)	.128
Unguris J. (FR-13)	.203
Unguris J. (FW-01)	.212
Unruh K.M. (BH-09)	.65
Upadhyaya P. (AF-12)	.27
Upadhyaya P. (DB-03)	.116
Upadhyaya P. (EG-10)	.163
Upadhyaya P. (EG-11)	.163
Upadhyaya P. (HR-05)	.269
Urakawa D. (CW-07)	.113
Urano C. (AR-09)	.38
Urata A. (AQ-12)	.36
Urazhdin S. (DS-13)	.138
Urazhdin S. (EB-04)	.148
Urazhdin S. (EQ-01)	.167
Urazhdin S. (FB-09)	.183
Urazhdin S. (GW-01)	.245
Urceley-Olabarria I. (EU-05)	.176
Urceley-Olabarria I. (HD-05)	.254
Ursu V. (FQ-01)	.200
Urzagasti D. (FD-02)	.187
Useinov A. (HS-02)	.270
Usher T. (FQ-15)	.202
Usselman R. (FR-09)	.203
Usselman R.J. (AC-08)	.21
Ustinov A.B. (FT-08)	.207
Utz M. (BS-07)	.73
Uwatoko Y. (BG-03)	.62
- V -	
Vager Z. (AB-01)	.18
Vahaplar K. (ED-03)	.154
Vailionis A. (AG-02)	.28
Vajk O. (HD-13)	.255
Valdes-Bango F. (HQ-09)	.267
Valencia S. (AG-08)	.30
Valenti G. (FW-06)	.213
Valeri S. (CF-01)	.91
Valloppilly S. (BP-15)	.67
Valloppilly S. (GG-07)	.228
Valloppilly S.R. (AE-02)	.24
Valloppilly S.R. (FF-06)	.192
Van Bael M.J. (GQ-02)	.233
Van de Wiele B. (BD-07)	.55
Van de Wiele B. (EB-02)	.148
Van de Wiele B. (GW-07)	.246

van der Wiel W. (AB-06)	19
van der Wiel W.G. (AB-02)	18
van der Wiel W.G. (BG-08)	63
van der Wiel W.G. (BS-06)	73
van Dijken S. (HD-03)	253
van Dover R.B. (CH-02)	95
van Ek J. (BF-01)	59
van Elferen E. (DH-13)	131
van Lierop J. (DT-09)	140
van Lierop J. (FF-12)	193
van Lierop J. (HT-11)	274
Van Roy W. (BD-07)	55
van Schilfgaarde M. (CT-11)	107
van Schilfgaarde M. (GE-04)	222
van Slageren J. (CE-06)	90
van t Erve O. (HB-08)	249
van t Erve O.J. (GB-02)	215
Van Waeyenberge B. (AW-10)	48
Van Waeyenberge B. (BD-04)	55
Van Waeyenberge B. (DC-02)	118
van Wees B. (BA-04)	49
van Wees B.J. (FB-11)	184
van Wees B.J. (HB-03)	248
Vangelista S. (DE-15)	124
Vansteenkiste A. (BD-04)	55
Vansteenkiste A. (BD-07)	55
Vansteenkiste A. (EB-02)	148
Vansteenkiste A. (GW-07)	246
Vantomme A. (DF-13)	126
Vantomme A. (GQ-02)	233
Varaprasad B. (DE-03)	122
Varatharajan A. (HD-07)	254
Vargas J. (CR-03)	102
Vargas P. (BW-02)	80
Varma G.D. (CR-06)	102
Varma G.D. (HU-01)	275
Varrat F. (BR-13)	71
Vasquez Villalabeitia M. (CD-07)	88
Vaterlaus A. (ED-02)	153
Vavassori P. (EE-13)	157
Vavassori P. (GH-06)	229
Vavassori P. (HG-07)	229
Vaz C.F. (AG-04)	29
Vazquez M. (CE-09)	90
Vazquez M. (EE-14)	158
Vazquez M. (GP-14)	233
Vázquez M. (HH-03)	262
Vedmedenko E.Y. (CE-07)	90
Vedmedenko E.Y. (DC-12)	119
Veerakumar V. (HT-09)	273
Vega V. (HH-03)	262
Velasco D. (HV-09)	277
Velders A.H. (BG-08)	63
Velez J. (FP-11)	199
Velez M. (GF-05)	225
Velez M. (HQ-09)	267
Vélez S. (BG-07)	62
Velez S. (CS-02)	104
Vemuri S. (AT-07)	41
Vemuri S. (AT-08)	41
Venkatesan M. (AQ-05)	35
Venkatesan M. (BP-09)	67
Ventura J. (CE-09)	90
Ventura J. (EE-14)	158
Ventura J. (EG-05)	162
Ventura J.O. (HQ-09)	267
Vera-Marun I.J. (HB-03)	248
Verba R.V. (DB-09)	117
Verba R.V. (EE-06)	156
Vernier N. (DA-04)	115
Vernier N. (FE-06)	189
Vernier N. (FW-09)	213
Viala B. (CC-10)	86
Viala B. (DH-02)	129
Viala B. (FE-13)	191
Vichery C. (FF-10)	193
Victoria R.H. (CF-10)	92
Victoria R.H. (FC-02)	184
Victoria R.H. (FG-04)	194
Viehland D. (EU-03)	176
Viehland D. (FE-14)	191
Vijayan D. (CQ-05)	100
Vila L. (AF-03)	26
Vila L. (GC-01)	217
Vilela-Leão L.H. (EV-03)	178
Vilela-Leão L.H. (EV-06)	178
Villanueva A. (ES-07)	172
Villegas J.E. (GF-05)	225
Villegas-Lelovsky L. (EW-10)	181
Vinh L. (FG-02)	193
Visani C. (AG-05)	29
Visnovsky S. (DV-13)	144
Visnovsky S. (HX-03)	280
Visone C. (AU-07)	43
Visscher P.B. (BB-06)	51
Visscher P.B. (BD-11)	56
Vitol E.A. (EP-11)	167
Vitta S. (BT-01)	74
Vittoria C. (AP-05)	33
Vittoria C. (BH-07)	64
Vittoria C. (DV-03)	143
Vittoria C. (EU-03)	176
Vittoria C. (GT-08)	240
Vivas L.G. (HH-03)	262
Vödungbo B. (ED-01)	153
Vogel A. (BD-01)	54
Vogel A. (BD-03)	55
Vogel A. (DC-07)	119
Vogel A. (EV-01)	178
Vogel J. (HE-10)	257
Vogler C. (CH-01)	95
Vogler C. (EP-09)	166
Vogler C. (FD-06)	187
Vogler C. (FH-05)	196
Vohra Y.K. (CR-01)	102
Vohra Y.K. (HU-03)	275
Vomir M. (CS-01)	104
Vomir M. (DB-11)	117
Von Bardeleben J. (GH-12)	230
Von Bergmann K. (EF-01)	158
von Molnár S. (DF-06)	125
von Molnár S. (GQ-04)	233
Vonesch H. (ED-08)	154
Vorobev G.P. (HD-05)	254
Voyles P.M. (CC-11)	86
Vu D. (BT-02)	74
Vummethala S. (CP-05)	98
Vuong N.V. (CT-05)	106
Vuong N.V. (FT-14)	208

- W -

Wada H. (HQ-08)	267
Wada Y. (FP-07)	198
Wagner R. (BS-07)	73
Wahl U. (DF-13)	126
Wahlström E. (EQ-07)	168
Waintal X. (BE-12)	58
Wakamatsu S. (DP-04)	132
Wakao S. (HV-01)	276
Wallis T.M. (HQ-15)	268
Walowski J. (ED-04)	154
Walowski J. (EG-01)	161
Walsh M.J. (AA-02)	17

Walter M. (EG-01)	161
Wan C. (BQ-06)	68
Wan J. (EW-09)	181
Wan X. (AF-14)	28
Wang. (EE-11)	157
Wang B. (BV-02)	78
Wang B. (CF-06)	91
Wang B. (DH-11)	130
Wang B. (DH-15)	131
Wang B. (GV-09)	244
Wang C. (AS-07)	39
Wang C. (AU-09)	44
Wang C. (BR-04)	70
Wang C. (CT-12)	107
Wang C. (CV-14)	112
Wang C. (DU-05)	141
Wang C. (EB-09)	149
Wang C. (HC-08)	251
Wang C.R. (BT-06)	75
Wang C.R. (BW-04)	80
Wang C.R. (CW-08)	113
Wang D. (CB-10)	84
Wang D. (GT-09)	240
Wang D. (GT-15)	241
Wang D. (HG-04)	259
Wang F. (BR-02)	70
Wang F. (EU-07)	176
Wang F. (FG-12)	195
Wang F.Z. (GD-09)	221
Wang H. (DQ-08)	134
Wang H. (EP-08)	166
Wang H. (GU-01)	241
Wang H. (GU-10)	242
Wang J. (AF-12)	27
Wang J. (AH-13)	33
Wang J. (AQ-11)	36
Wang J. (AS-15)	40
Wang J. (AU-08)	44
Wang J. (AV-06)	45
Wang J. (BB-03)	50
Wang J. (BB-09)	51
Wang J. (BE-10)	58
Wang J. (BQ-04)	68
Wang J. (BW-10)	81
Wang J. (CQ-07)	100
Wang J. (CQ-09)	100
Wang J. (CQ-12)	101
Wang J. (CR-02)	102
Wang J. (CT-08)	107
Wang J. (CT-14)	107
Wang J. (DG-07)	128
Wang J. (DQ-08)	134
Wang J. (EB-01)	148
Wang J. (EP-08)	166
Wang J. (FC-10)	185
Wang J. (FF-04)	192
Wang J. (FF-07)	192
Wang J. (FQ-03)	200
Wang J. (FT-04)	206
Wang J. (GC-11)	219
Wang J. (GU-01)	241
Wang J. (GU-10)	242
Wang J. (GW-03)	245
Wang J. (HF-07)	258
Wang J. (HP-08)	265
Wang J. (HQ-10)	267
Wang J. (HR-05)	269
Wang K. (CA-04)	82
Wang K. (CT-13)	107
Wang K. (DH-03)	129
Wang K. (DT-08)	140
Wang K. (EB-01)	148
Wang K. (EG-10)	163
Wang K.L. (BB-05)	50
Wang K.L. (BB-09)	51
Wang K.L. (BH-15)	66
Wang K.L. (DB-03)	116
Wang K.L. (EB-07)	149
Wang K.L. (EG-11)	163
Wang K.L. (GT-03)	239
Wang K.L. (HR-05)	269
Wang L. (AR-10)	38
Wang L. (BV-02)	78
Wang L. (CQ-04)	100
Wang L. (CR-04)	102
Wang L. (CW-02)	112
Wang L. (DD-09)	121
Wang L. (DF-01)	124
Wang L. (DH-15)	131
Wang L. (DQ-04)	134
Wang L. (GU-02)	241
Wang L. (HQ-11)	267
Wang M. (AV-05)	45
Wang M. (EW-05)	180
Wang M. (HP-02)	264
Wang N. (EH-01)	163
Wang P. (BR-04)	70
Wang P. (GT-04)	239
Wang S. (GP-11)	232
Wang T. (BT-03)	74
Wang T. (BT-04)	75
Wang T. (ER-13)	171
Wang W. (BT-07)	75
Wang W. (FQ-13)	201
Wang X. (AF-06)	26
Wang X. (AP-12)	34
Wang X. (BC-08)	53
Wang X. (CQ-01)	99
Wang X. (CQ-13)	101
Wang X. (CS-09)	105
Wang X. (DR-11)	136
Wang X. (EC-07)	151
Wang X. (ER-13)	171
Wang X. (EU-04)	176
Wang X. (EU-06)	176
Wang X. (EW-08)	181
Wang X. (FV-12)	211
Wang X. (GQ-09)	234
Wang X. (GV-09)	244
Wang X. (HU-04)	275
Wang X.J. (GB-06)	216
Wang Y. (AT-14)	42
Wang Y. (AU-03)	43
Wang Y. (AV-01)	45
Wang Y. (DF-01)	124
Wang Y. (EE-11)	157
Wang Y. (FG-04)	194
Wang Y. (FV-12)	211
Wang Y. (HD-13)	255
Wang Y. (HH-14)	263
Wang Y. (HQ-05)	266
Wang Y.Q. (HD-11)	255
Wang Z. (AC-09)	21
Wang Z. (AQ-11)	36
Wang Z. (BU-13)	77
Wang Z. (BV-02)	78
Wang Z. (CV-02)	110
Wang Z.* (DB-01)	116
Wang Z. (DH-11)	130
Wang Z. (DH-15)	131
Wang Z. (EQ-11)	168
Wang Z. (ET-03)	174
Wang Z. (EU-03)	176
Wang Z. (GV-15)	245

Wang Z. (HD-06)	254
Wang Z.H. (AU-03)	43
Warnicke P. (EQ-07)	168
Warnicke P. (FC-07)	185
Warnicke P. (FR-12)	203
Warot B. (EF-04)	159
Warren C. (DW-09)	145
Watanabe S. (GB-03)	215
Watkins S.P. (FU-11)	209
Watson S. (HD-04)	253
Watts J.L. (AQ-15)	37
Watts S. (BB-01)	50
Watts S. (BB-11)	51
Watts S.M. (BB-02)	50
Weatherill K.J. (EP-02)	166
Weatherill K.J. (FW-11)	213
Weaver J. (FA-05)	182
Webb B.C. (EH-01)	163
Webb R.A. (GC-03)	218
Weber R.J. (EP-14)	167
Weber R.J. (EP-15)	167
Weddemann A. (AA-04)	18
Wegrowe J. (GB-07)	216
Wei A. (CQ-07)	100
Wei D. (AT-14)	42
Wei D. (BP-11)	67
Wei D. (BR-04)	70
Wei D. (DW-02)	145
Wei D. (FB-10)	183
Wei D. (FR-03)	202
Wei D. (FR-04)	202
Wei D. (FU-02)	208
Wei D. (GT-05)	240
Wei D. (GU-04)	241
Wei D. (GV-12)	244
Wei D. (HW-03)	279
Wei F. (AT-14)	42
Wei F. (DW-02)	145
Wei F. (FR-04)	202
Wei F. (FR-06)	203
Wei F. (GT-05)	240
Wei F. (GU-11)	242
Wei F. (GV-12)	244
Wei F. (HW-03)	279
Wei H.X. (HQ-05)	266
Wei J. (AU-09)	44
Wei J. (CU-04)	108
Wei K. (ES-10)	173
Wei Q. (AV-11)	46
Wei X. (AE-06)	24
Wei Z. (DV-06)	143
Wei Z. (HS-12)	272
Weides M.P. (BG-05)	62
Weigand M. (AW-10)	48
Weigand M. (BD-04)	55
Weigand M. (DG-10)	128
Weil R. (AW-15)	49
Weiler M. (FD-12)	188
Weinberger P. (HC-09)	251
Weir S.T. (CR-01)	102
Weizenecker J. (FA-04)	182
Weller D. (CF-05)	91
Weller D. (EA-01)	147
Weller D. (EA-05)	147
Weller T. (FT-04)	206
Wen Q. (FT-12)	207
Wen T. (EE-07)	156
Wen T. (FR-07)	203
Wen W. (DD-08)	121
Wen Y. (CH-15)	97
Wen Y. (DV-02)	143
Wen Y. (DV-10)	144
Wen Y. (EP-10)	166
Wen Y. (FE-10)	190
Wen Y. (FE-11)	190
Wen Y. (GD-13)	221
Wen Y. (GT-04)	239
Wen Y. (GT-15)	241
Wen Z.C. (CC-03)	85
Wendhausen P.A. (FV-05)	211
Weng L. (DH-11)	130
Weng L. (DH-15)	131
Wenger L.E. (CR-01)	102
Wenger L.E. (HU-03)	275
Weschke E. (BE-05)	57
Wessels B.W. (BQ-11)	69
West A.D. (EP-02)	166
West A.D. (FW-11)	213
Westerholt K. (BG-05)	62
Westerholt K. (DE-08)	123
Wetzlar K. (FE-03)	189
Wetzlar K.P. (CG-13)	95
Wetzlar K.P. (GD-11)	221
Weymann I. (EW-01)	180
Weymann I. (GB-13)	217
Wie C. (CP-02)	98
Wienholdt S. (ED-06)	154
Wienholdt S. (EQ-06)	168
Wiesendanger R. (DC-12)	119
Wiesendanger R. (EF-01)	158
Wieser R. (DC-12)	119
Wiley J. (AH-04)	31
Wiley J.B. (BW-08)	81
Wiley J.B. (CR-03)	102
Wiley J.B. (HX-05)	280
Willard M. (BE-01)	56
Willard M.A. (AE-13)	25
Willard M.A. (CG-06)	94
Willard M.A. (GG-06)	227
Wilson A. (EP-13)	167
Wilson M.J. (GC-15)	219
Wing L.W. (GV-02)	243
Winklhofer M. (GG-09)	228
Winklhofer M. (HV-11)	277
Winter A. (FU-08)	209
Wintz S. (AW-03)	47
Wintz S. (BD-03)	55
Wisniowski P. (EG-05)	162
Witanachchi S. (CP-11)	99
Witanachchi S. (GQ-12)	234
Woffinden C. (FF-09)	192
Wohlgenannt M. (BR-02)	70
Woicik J. (HH-06)	262
Wojciechowski K. (AG-11)	30
Wojek B.M. (AR-05)	37
Wojek B.M. (CP-08)	98
Wolf S.A. (DD-14)	122
Wolf S.A. (HD-12)	255
Woltersdorf G. (BD-04)	55
Woltersdorf G. (EQ-14)	169
Woltersdorf G. (FB-07)	183
Woltersdorf G. (FR-11)	203
Woltersdorf G. (GA-03)	214
Won J. (GF-01)	224
Wong C. (DV-07)	143
Wong F. (AG-02)	28
Wong F.J. (AG-01)	28
Wong F.J. (AQ-15)	37
Wong F.J. (FP-13)	199
Wong J. (AB-06)	19
Wong K. (DB-03)	116
Wong K. (GT-03)	239
Wong K.L. (BH-15)	66
Wong P.J. (BS-06)	73

Wong S. (DQ-07)	134
Woo M. (ES-15)	173
Woodcock T.G. (GG-01)	227
Worledge D. (AF-04)	26
Worledge D.C. (AF-01)	26
Worledge D.C. (AF-07)	27
Worledge D.C. (DA-03)	115
Worledge D.C. (EF-08)	159
Wrachtrup J. (CA-02)	82
Wu . (DE-12)	123
Wu C. (AP-15)	35
Wu C. (EU-01)	175
Wu C. (HD-08)	254
Wu C.P. (BT-10)	75
Wu C.P. (BT-13)	75
Wu C.P. (EU-02)	176
Wu D. (AB-07)	19
Wu D. (FR-04)	202
Wu D. (GV-12)	244
Wu H. (BW-12)	81
Wu H. (EH-03)	164
Wu H. (FP-09)	198
Wu J. (BQ-04)	68
Wu J. (BQ-12)	69
Wu J. (BU-12)	77
Wu J. (BW-05)	80
Wu J. (CS-10)	105
Wu J. (EF-13)	160
Wu J. (EV-12)	179
Wu J. (GH-08)	230
Wu J. (HR-08)	269
Wu J. (HT-15)	274
Wu J.H. (AP-11)	34
Wu J.H. (ES-15)	173
Wu K. (EH-03)	74
Wu M. (AC-09)	21
Wu M. (AE-05)	24
Wu M. (BH-08)	64
Wu M. (DB-01)	116
Wu M. (DW-11)	146
Wu M. (EQ-11)	168
Wu M. (FB-05)	183
Wu M. (FG-11)	195
Wu M. (FT-11)	207
Wu M. (HD-06)	254
Wu P. (HT-05)	273
Wu Q. (CV-13)	112
Wu R. (CU-04)	108
Wu R. (HH-08)	262
Wu S. (GD-09)	221
Wu S. (HT-07)	273
Wu T. (BH-15)	66
Wu T. (DB-03)	116
Wu T. (FE-03)	189
Wu T. (GT-03)	239
Wu T. (HR-08)	269
Wu W. (FU-05)	209
Wu X. (BT-15)	76
Wu X. (CP-03)	98
Wu X. (CU-05)	108
Wu X. (CW-01)	112
Wu X. (GT-11)	240
Wu X. (GV-10)	244
Wu Y. (AD-10)	23
Wu Y. (CT-13)	107
Wu Y. (EF-07)	159
Wu Y. (GG-02)	227
Wu Y. (HG-04)	259
Wu Y. (HW-08)	279
Wu Y.Q. (HG-01)	259
Wu Y.Y. (CT-07)	107
Wu Z. (AR-10)	38
Wu Z. (BS-14)	74
Wu Z. (CQ-04)	100
Wu Z. (CQ-12)	101
Wu Z. (CR-02)	102
Wu Z. (CR-04)	102
Wu Z.H. (GV-02)	243
Wunderlich J. (DF-05)	125
Wunderlich J. (FC-15)	186
Wunderlich J. (FW-02)	212
Wun-Fogle M. (DH-04)	129
Wun-Fogle M. (DH-05)	129
Wurth W. (ED-02)	153
Wuttig M. (DH-03)	129

- X -

Xi Y. (ER-13)	171
Xia N.M. (CT-07)	107
Xia Y. (AH-06)	32
Xia Y. (BU-10)	77
Xia Z.C. (CT-07)	107
Xiang H. (CC-11)	86
Xianghua H. (DP-03)	132
Xiao J. (BA-02)	49
Xiao J.Q. (CC-12)	86
Xiao J.Q. (DW-13)	146
Xiao J.Q. (EC-14)	152
Xiao J.Q. (FQ-13)	201
Xiaoguang Y. (HW-01)	278
Xiaohan M. (BV-15)	79
Xiaolin W. (BV-15)	79
Xichun Z. (BU-06)	77
Xie H. (AT-14)	42
Xie K. (EE-15)	158
Xie R. (CP-03)	98
Xie Y. (DT-08)	140
Xie Y. (DW-01)	144
Xie Z. (AB-01)	18
Xin Y. (ES-08)	173
Xin Y. (GQ-04)	233
Xing H. (BC-09)	53
Xing L. (BV-15)	79
Xing M. (CT-09)	107
Xing M. (CW-14)	114
Xing M. (GR-10)	236
Xing Q. (DH-04)	129
Xing Y. (BH-10)	65
Xingdu F. (AQ-02)	35
Xiong G. (BS-13)	74
Xiong P. (DF-06)	125
Xiong R. (CW-03)	113
Xiong S. (HW-08)	279
Xiong X. (HP-15)	265
Xiu F. (CA-04)	82
Xiu F. (DF-02)	124
Xiufeng H. (BP-03)	66
Xu B. (CS-07)	104
Xu B. (EA-04)	147
Xu D. (CF-03)	91
Xu D. (FU-09)	209
Xu F. (AQ-07)	36
Xu F. (GT-01)	239
Xu F. (HT-12)	274
Xu G. (HS-11)	271
Xu H. (DW-07)	145
Xu J. (BU-10)	77
Xu K. (FP-04)	198
Xu L. (ED-13)	155
Xu L. (EV-09)	179
Xu L. (GR-07)	236
Xu Q. (CT-09)	107
Xu Q. (DQ-03)	134

Xu S. (HP-12)	265
Xu W. (EH-03)	164
Xu W. (GP-11)	232
Xu X. (FG-02)	193
Xu Y. (CT-06)	106
Xu Y. (EF-13)	160
Xu Z. (BC-09)	53
Xu Z. (BU-12)	77
Xu Z. (FV-03)	210
Xu Z.A. (HU-02)	275
Xuan X. (ER-11)	170
Xue D. (AQ-04)	35
Xue L. (EB-09)	149
Xue Q. (DF-01)	124

- Y -

Yadav K. (CR-06)	102
Yadavalli T. (HH-10)	263
Yagi M. (CV-11)	111
Yah S.R. (EU-02)	176
Yahagi Y. (CD-01)	87
Yakata S. (GW-08)	246
Yakata S. (HQ-03)	267
Yakimova R. (CH-04)	95
Yakovlev D.R. (AC-10)	21
Yakushiji K. (AF-10)	27
Yakushiji K. (CC-02)	85
Yakushiji K. (EB-05)	149
Yakushiji K. (EB-08)	149
Yakushiji K. (HC-07)	251
Yamada I. (FG-15)	195
Yamada K. (BV-01)	78
Yamada M. (CC-06)	86
Yamada S. (BW-07)	81
Yamada S. (GD-12)	221
Yamada S. (HS-03)	271
Yamaguchi K. (CD-11)	89
Yamaguchi M. (BH-04)	64
Yamaguchi M. (BS-10)	73
Yamakawa K. (AS-12)	40
Yamakawa K. (AS-13)	40
Yamakawa K. (DQ-01)	133
Yamakawa K. (FS-04)	204
Yamaki M. (AQ-12)	36
Yamaku T. (HQ-06)	266
Yamamoto H. (CC-06)	86
Yamamoto I. (CV-04)	110
Yamamoto M. (DE-04)	122
Yamamoto M. (FP-01)	197
Yamamoto M. (GB-12)	217
Yamane H. (DQ-02)	133
Yamanishi Y. (FP-07)	198
Yamanouchi M. (EF-09)	160
Yamanouchi M. (FQ-14)	201
Yamanouchi M. (HE-03)	256
Yamasaki J. (CV-11)	111
Yamasaki J. (CV-12)	111
Yamashita F. (CW-12)	114
Yamashita M. (AT-12)	42
Yamashita T. (EA-02)	147
Yamashita Y. (GE-05)	222
Yamauchi Y. (BR-05)	70
Yamauchi Y. (EF-02)	158
Yan A. (AE-05)	24
Yan A. (AP-13)	34
Yan A. (BV-06)	78
Yan A. (CV-05)	110
Yan A. (CV-08)	111
Yan A. (CV-13)	112
Yan A. (CW-11)	114
Yan A. (ET-12)	175

Yan A. (GR-01)	235
Yan A. (GR-08)	236
Yan A.R. (CV-09)	111
Yan C. (BV-06)	78
Yan C. (CV-08)	111
Yan C. (GR-01)	235
Yan L. (EU-07)	176
Yan W. (AV-01)	45
Yan W. (BV-02)	78
Yan W. (DH-11)	130
Yan W. (DH-15)	131
Yan W. (HS-11)	271
Yan Z. (DT-08)	140
Yanagihara H. (BW-06)	80
Yanai T. (CV-04)	110
Yanai T. (CW-07)	113
Yanai T. (CW-12)	114
Yaney D. (FG-02)	193
Yang A. (DV-10)	144
Yang A. (EU-03)	176
Yang A. (FE-11)	190
Yang C. (FE-08)	190
Yang C. (FV-15)	212
Yang D. (HR-08)	269
Yang E. (CF-02)	91
Yang E. (ET-06)	174
Yang F. (AG-03)	29
Yang F. (AU-10)	44
Yang F. (DE-06)	123
Yang F. (DF-06)	125
Yang H. (AW-01)	47
Yang H. (BE-12)	58
Yang H. (BS-13)	74
Yang H. (BT-02)	74
Yang H. (CC-05)	85
Yang H. (CE-04)	89
Yang H. (DB-13)	118
Yang H. (DS-10)	138
Yang H. (EQ-03)	168
Yang H. (FC-05)	185
Yang H. (FG-02)	193
Yang H. (FP-11)	199
Yang H. (FV-10)	211
Yang H. (HB-02)	248
Yang J. (AE-05)	24
Yang J. (AT-15)	42
Yang J. (AU-06)	43
Yang J. (AU-09)	44
Yang J. (BU-10)	77
Yang J. (BU-13)	77
Yang J. (CH-15)	97
Yang J. (CT-09)	107
Yang J. (CU-04)	108
Yang J. (CW-14)	114
Yang J. (EE-03)	156
Yang J. (EP-10)	166
Yang J. (ES-10)	173
Yang J. (FG-07)	194
Yang J. (FR-14)	204
Yang J. (GR-10)	236
Yang J. (GT-15)	241
Yang J.K. (FG-12)	195
Yang K. (AH-08)	32
Yang M. (CW-01)	112
Yang M. (EP-12)	167
Yang M. (ES-09)	173
Yang M. (HH-14)	263
Yang P. (ES-11)	173
Yang Q. (FT-12)	207
Yang R. (DW-11)	146
Yang R. (FS-13)	205
Yang R. (GV-07)	244

Yang R. (HT-07)	273
Yang S. (EE-11)	157
Yang S. (HF-01)	257
Yang S. (HS-13)	272
Yang T. (GW-10)	246
Yang T. (HC-04)	250
Yang X. (AQ-13)	36
Yang X. (DF-06)	125
Yang X. (EU-14)	177
Yang X. (FT-09)	207
Yang X. (GD-09)	221
Yang X. (HV-13)	278
Yang Y. (AE-05)	24
Yang Y. (AU-09)	44
Yang Y. (CT-09)	107
Yang Y. (CU-04)	108
Yang Y. (CW-14)	114
Yang Y. (EP-08)	166
Yang Y. (GR-10)	236
Yang Y. (HH-04)	262
Yang Z. (CP-09)	98
Yang Z. (GQ-05)	234
Yang Z. (HU-15)	276
Yano M. (GG-09)	228
Yao C. (EH-09)	164
Yao C. (EH-10)	165
Yao C. (EH-13)	165
Yao Q. (BH-08)	64
Yao Q. (CQ-13)	101
Yao Y. (BP-11)	67
Yao Y. (BT-04)	75
Yao Y. (DU-05)	141
Yao Y. (GR-14)	237
Yao Y. (GR-15)	237
Yao Y. (GS-07)	238
Yar M.A. (EB-11)	150
Yasukawa Y. (BT-11)	75
Ye F. (EU-07)	176
Ye F. (GE-01)	221
Ye F. (HD-11)	255
Ye K. (CS-07)	104
Ye K. (EA-04)	147
Ye L. (GC-03)	218
Ye L. (HR-08)	269
Ye Q. (GT-09)	240
Ye R. (FV-06)	211
Ye Y. (DU-03)	141
Yeah Y.H. (BT-13)	75
Yefremenko V.G. (EP-11)	167
Yeh H.J. (BT-10)	75
Yelon W.B. (CP-13)	99
Yen. (BT-04)	75
Yen C. (EE-11)	157
Yermakov A. (HT-14)	274
Yi X. (FV-06)	211
Yildiz F. (AD-13)	23
Yildiz F. (EF-07)	159
Yilmaz D.M. (BG-08)	63
Yin G. (GT-05)	240
Yin G. (GV-12)	244
Yin W. (CW-11)	114
Yin W. (DD-14)	122
Yin W. (ET-12)	175
Yin W. (GR-01)	235
Yin X. (GG-07)	228
Ying Y. (CQ-10)	101
Yoda H. (GD-03)	220
Yokochi A. (EC-10)	152
Yokota S. (FE-15)	191
Yokoyama M. (CB-01)	83
Yong Kun K. (GD-08)	220
Yoo J. (EP-07)	166

Yoo J. (FR-14)	204
Yoo M. (CS-14)	105
Yoo M. (DC-05)	119
Yoo T. (FQ-04)	200
Yoo T. (GS-09)	238
Yoon H. (AP-11)	34
Yoon H. (ES-15)	173
Yoon S. (AP-09)	34
Yoon S. (DV-11)	144
Yoon S. (EE-01)	155
Yoon S. (HH-15)	264
Yoon S. (HQ-03)	266
Yoon S. (HT-15)	274
Yorinaga T. (AE-10)	25
Yoshida C. (AF-13)	27
Yoshida C. (CC-07)	86
Yoshida K. (AA-02)	17
Yoshida K. (BS-08)	73
Yoshida K. (FT-13)	207
Yoshida S. (AQ-12)	36
Yoshida Y. (EF-01)	158
Yoshihara T. (BE-04)	57
Yoshii S. (CU-15)	110
Yoshimura S. (DG-04)	127
Yoshino T. (EV-02)	178
You C. (AW-07)	47
You C. (EG-06)	162
You C. (GC-10)	218
You C. (HF-01)	257
You D. (HW-02)	278
Young A. (EE-08)	157
Young A.T. (AG-03)	29
Yozozu T. (EB-08)	149
Yu B. (DU-01)	141
Yu C. (GR-15)	237
Yu E. (ET-14)	175
Yu F. (AV-11)	46
Yu G. (AE-08)	25
Yu G. (FP-04)	198
Yu H. (BP-06)	66
Yu H. (BU-04)	76
Yu H. (BV-09)	79
Yu H. (BV-11)	79
Yu H. (CV-10)	111
Yu H. (EH-03)	164
Yu H.Y. (DP-06)	132
Yu L. (AP-08)	34
Yu P. (AG-07)	29
Yu R. (BP-14)	67
Yu S. (AW-05)	47
Yu S. (CQ-08)	100
Yu S. (DT-03)	139
Yu S. (FV-08)	211
Yu S.C. (CQ-06)	100
Yu S.C. (DT-05)	139
Yu T. (BT-07)	75
Yu T. (CV-13)	112
Yu W. (AS-11)	40
Yu Y. (BD-01)	54
Yu Y. (DC-05)	119
Yu Z. (DW-03)	145
Yuan B. (BV-11)	79
Yuan C.W. (CW-08)	113
Yuan F. (BP-08)	67
Yuan F. (BU-05)	76
Yuan F. (BW-03)	80
Yuan F. (CW-05)	113
Yuan F. (CW-09)	113
Yuan F. (DD-12)	121
Yuan F. (GU-08)	242
Yuan F.T. (BT-06)	75
Yuan F.T. (BW-04)	80

Yuan F.T. (CW-08)	113
Yuan H. (EA-02)	147
Yuan Q. (HP-07)	265
Yuan Y. (HR-04)	268
Yuan Z. (AD-12)	23
Yuanfu L. (FR-06)	203
Yuanyuan W. (BV-15)	79
Yuasa H. (FC-03)	184
Yuasa S. (AF-10)	27
Yuasa S. (BS-03)	72
Yuasa S. (CC-02)	85
Yuasa S. (CS-05)	104
Yuasa S. (EB-05)	149
Yuasa S. (EB-08)	149
Yuasa S. (FP-03)	198
Yuasa S. (GB-03)	215
Yuasa S. (HC-05)	251
Yuasa S. (HC-07)	251
Yuasa S. (HE-09)	257
Yubuta K. (GE-03)	222
Yue F. (AB-07)	19
Yue M. (BV-05)	78
Yue M. (CT-02)	106
Yue M. (CU-03)	108
Yue M. (GR-12)	236
Yue M. (HG-10)	260
Yuen T. (BE-15)	59
Yuen T. (BR-07)	70
Yulaev I. (GW-15)	247
Yun S. (AW-02)	47
Yun W. (AR-03)	37

- Z -

Zabel H. (BG-05)	62
Zabow G. (FR-09)	203
Zafar K. (FC-04)	184
Zagarodnii V. (DB-04)	116
Zahn M. (ER-10)	170
Zajdel P. (BG-02)	62
Zakharov D. (DH-02)	129
Zakharov D. (FE-13)	191
Zamanpour M. (AP-05)	33
Zang Y. (ER-03)	170
Zanini L. (ER-03)	170
Zanini L.F. (GG-11)	228
Zarand G. (GB-13)	217
Zarzucla R. (BG-07)	62
Zbarsky V. (EG-01)	161
Zeghuzi A. (EG-01)	161
Zehani K. (DW-06)	145
Zehani K. (FT-02)	206
Zeltser A. (GF-02)	224
Zeltzer G. (EA-05)	147
Zeng D. (AD-02)	22
Zeng D. (BU-04)	76
Zeng D. (CV-10)	111
Zeng D. (GR-11)	236
Zeng D.C. (DP-06)	132
Zeng H. (BC-09)	53
Zeng K. (GQ-13)	234
Zeng R. (AU-08)	44
Zeng R. (CT-14)	107
Zeng R. (DT-13)	140
Zeng R. (FV-02)	210
Zeng R. (HU-08)	275
Zeng R. (HU-13)	276
Zeng Z. (AF-12)	27
Zeng Z. (AR-02)	37
Zeng Z. (BR-01)	70
Zeng Z. (EB-01)	148
Zenkevich A.V. (BS-04)	72

Zenkevich A.V. (FE-01)	189
Zejiang Z. (GR-09)	236
Zermatten P. (DA-05)	115
Zha C. (CF-08)	92
Zhai H. (HH-14)	263
Zhai X. (AG-01)	28
Zhai Y. (EF-13)	160
Zhai Y. (HH-14)	263
Zhakov S. (HT-14)	274
Zhan W. (BP-02)	66
Zhan Y. (AB-06)	19
Zhang A. (CW-01)	112
Zhang B.S. (HQ-05)	266
Zhang C.L. (AG-06)	29
Zhang C.L. (AG-09)	30
Zhang D. (BV-05)	78
Zhang D. (CT-02)	106
Zhang D. (CU-03)	108
Zhang D. (GR-12)	236
Zhang D. (HG-10)	260
Zhang G. (ED-12)	155
Zhang H. (AH-13)	33
Zhang H. (BP-04)	66
Zhang H. (BU-04)	76
Zhang H. (DT-04)	139
Zhang H. (DW-01)	144
Zhang H. (FS-12)	205
Zhang H. (FT-12)	207
Zhang H. (FU-15)	210
Zhang H. (FV-03)	210
Zhang H. (GT-02)	239
Zhang H. (GT-10)	240
Zhang H. (GV-10)	244
Zhang H. (GW-03)	245
Zhang H. (GW-14)	247
Zhang H. (HP-07)	265
Zhang H. (HR-03)	268
Zhang J. (AP-07)	33
Zhang J. (AV-05)	45
Zhang J. (BT-02)	74
Zhang J. (BV-05)	78
Zhang J. (BV-10)	79
Zhang J. (CS-07)	104
Zhang J. (CT-02)	106
Zhang J. (CU-03)	108
Zhang J. (DF-01)	124
Zhang J. (DR-13)	136
Zhang J. (DU-10)	142
Zhang J. (DV-10)	144
Zhang J. (EA-04)	147
Zhang J. (FE-11)	190
Zhang J. (FP-05)	198
Zhang J. (GD-13)	221
Zhang J. (GR-12)	236
Zhang J. (HG-10)	260
Zhang J. (HP-02)	264
Zhang K. (AP-02)	33
Zhang K. (AT-14)	42
Zhang K. (GU-04)	241
Zhang L. (AV-12)	46
Zhang L. (CG-01)	93
Zhang L. (FU-10)	209
Zhang L. (GU-11)	242
Zhang M. (CB-08)	84
Zhang N. (BV-02)	78
Zhang P. (CQ-08)	100
Zhang P. (CV-13)	112
Zhang P. (DT-05)	139
Zhang P. (EE-15)	158
Zhang P. (FV-10)	211
Zhang Q. (BU-08)	77
Zhang Q. (GR-07)	236

Zhang R. (BG-09)	63
Zhang R. (CH-07)	96
Zhang R. (CT-01)	106
Zhang R. (EW-05)	180
Zhang R. (GF-10)	226
Zhang S. (AA-05)	18
Zhang S. (AC-07)	20
Zhang S. (CW-01)	112
Zhang S. (DF-01)	124
Zhang S. (ED-13)	155
Zhang S. (EV-09)	179
Zhang S. (FG-14)	195
Zhang S. (HA-01)	247
Zhang S. (HQ-07)	267
Zhang T. (AH-13)	33
Zhang T. (BE-10)	58
Zhang T. (EP-08)	166
Zhang W. (CE-04)	89
Zhang W. (CP-12)	99
Zhang W. (FF-03)	192
Zhang W. (FT-15)	208
Zhang W. (GT-05)	240
Zhang W. (HD-08)	254
Zhang W. (HF-03)	258
Zhang W. (HP-11)	265
Zhang X. (AH-06)	32
Zhang X. (AR-02)	37
Zhang X. (BR-08)	71
Zhang X. (CC-08)	86
Zhang X. (EE-15)	158
Zhang X. (FP-05)	198
Zhang X. (GR-07)	236
Zhang X. (HG-10)	260
Zhang X.H. (CS-06)	104
Zhang Y. (AE-04)	24
Zhang Y. (AF-12)	27
Zhang Y. (AR-04)	37
Zhang Y. (BB-03)	50
Zhang Y. (BU-13)	77
Zhang Y. (CB-10)	84
Zhang Y. (CB-11)	84
Zhang Y. (CQ-01)	99
Zhang Y. (CQ-08)	100
Zhang Y. (CQ-10)	101
Zhang Y. (CU-04)	108
Zhang Y. (CU-12)	109
Zhang Y. (CV-02)	110
Zhang Y. (CW-14)	114
Zhang Y. (DT-03)	139
Zhang Y. (DU-06)	141
Zhang Y. (ES-13)	173
Zhang Y. (ET-03)	174
Zhang Y. (FF-05)	192
Zhang Y. (FH-10)	197
Zhang Y. (GG-11)	228
Zhang Y. (GW-03)	245
Zhang Y. (HG-04)	259
Zhang Y. (HG-15)	261
Zhang Y. (HH-08)	262
Zhang Y. (HR-05)	269
Zhang Y. (HU-15)	276
Zhang Y.Q. (AU-03)	43
Zhang Z. (AU-10)	44
Zhang Z. (BP-13)	67
Zhang Z. (BU-08)	77
Zhang Z. (BU-13)	77
Zhang Z. (CQ-01)	99
Zhang Z. (CV-02)	110
Zhang Z. (DF-01)	124
Zhang Z. (ET-03)	174
Zhang Z. (FV-14)	212
Zhang Z. (GU-12)	242

Zhang Z. (HP-13)	265
Zhang Z. (HR-05)	269
Zhang Z. (HU-15)	276
Zhang Z.D. (AU-03)	43
Zhao G. (FU-15)	210
Zhao H. (AF-12)	27
Zhao H. (BB-03)	50
Zhao H. (BB-09)	51
Zhao H. (CQ-13)	101
Zhao H. (DQ-08)	134
Zhao H. (GU-01)	241
Zhao H. (GU-10)	242
Zhao H. (HR-05)	269
Zhao H.B. (EG-03)	161
Zhao J. (BH-15)	66
Zhao J. (BV-14)	79
Zhao J. (DF-06)	125
Zhao J. (DU-13)	142
Zhao J. (FV-04)	210
Zhao J.H. (CS-06)	104
Zhao L. (AV-01)	45
Zhao Q. (CG-02)	93
Zhao Q. (DU-01)	141
Zhao R. (GG-07)	228
Zhao W. (AV-10)	46
Zhao W. (DA-04)	115
Zhao W. (DU-08)	141
Zhao W. (FH-10)	197
Zhao W. (HP-05)	264
Zhao W. (HW-07)	279
Zhao X. (BC-08)	53
Zhao X. (CT-12)	107
Zhao X.G. (FV-14)	212
Zhao Y. (CH-07)	96
Zhao Y. (CQ-09)	100
Zhao Z. (AV-01)	45
Zhao Z. (BC-08)	53
Zhao Z. (EU-06)	176
Zhdanov A. (AH-05)	31
Zheng C. (EH-05)	164
Zheng F. (DW-02)	145
Zheng F. (GV-12)	244
Zheng F. (HW-03)	279
Zheng J. (BV-07)	79
Zheng J. (CQ-10)	101
Zheng L. (AE-07)	25
Zheng L. (GG-05)	227
Zheng L. (GR-02)	235
Zheng P. (BV-14)	79
Zheng P. (DU-01)	141
Zheng P. (DU-13)	142
Zheng X. (BR-01)	70
Zheng X. (BU-12)	77
Zheng X. (FV-03)	210
Zheng Y. (BB-09)	51
Zheng Z. (BU-04)	76
Zheng Z. (GV-02)	243
Zhenghua L. (FR-06)	203
Zhernenkov M. (AG-05)	29
Zhernenkov M. (HF-04)	258
Zhigang Z. (BU-06)	77
Zhiquan D. (BV-15)	79
Zhong G. (BR-09)	71
Zhong X. (BU-04)	76
Zhong X. (CV-10)	111
Zhong X.C. (DP-06)	132
Zhong Z. (BP-04)	66
Zhong Z. (DW-01)	144
Zhong Z. (FS-12)	205
Zhong Z. (HR-03)	268
Zhongwu L. (BU-06)	77
Zhou D. (AQ-13)	36

Zhou H. (GV-15)	245	Zhu R. (BD-11)	56
Zhou J. (FT-07)	207	Zhu S. (BV-10)	79
Zhou M. (AQ-13)	36	Zhu T. (FC-06)	185
Zhou S. (AH-06)	32	Zhu X. (AU-11)	44
Zhou S. (BQ-10)	69	Zhu X. (CU-13)	109
Zhou S. (BV-09)	79	Zhu X. (DH-06)	130
Zhou S. (BV-11)	79	Zhu X. (GP-05)	232
Zhou S. (CW-01)	112	Zhu Y. (AF-07)	27
Zhou S. (GQ-05)	234	Zhu Y. (BD-02)	55
Zhou S. (HD-08)	254	Zhu Y. (BH-11)	65
Zhou S. (HF-06)	258	Zhu Y. (BP-13)	67
Zhou S. (HU-08)	275	Zhu Y. (CQ-01)	99
Zhou T. (AD-12)	23	Zhu Y. (EP-10)	166
Zhou T. (ET-09)	175	Zhu Y. (GS-13)	238
Zhou X. (EW-11)	181	Zhuang Y. (BH-10)	65
Zhou Y. (CA-04)	82	Zhukov A. (EC-11)	152
Zhou Y. (EC-14)	152	Zhukov A. (HP-10)	265
Zhou Y. (GV-09)	244	Zhukov A.P. (DV-12)	144
Zhou Z. (EU-14)	177	Zhukova V. (DV-12)	144
Zhou Z. (FT-09)	207	Zhukova V. (EC-11)	152
Zhu F. (BF-09)	60	Zhukova V. (HP-10)	265
Zhu H. (EC-14)	152	Zi J. (AH-06)	32
Zhu J. (AV-15)	46	Ziemer K.S. (FT-13)	207
Zhu J. (BB-05)	50	Zimanyi G. (GG-09)	228
Zhu J. (BB-10)	51	Zimmer J. (HF-02)	257
Zhu J. (BF-03)	59	Zink B.L. (FB-02)	182
Zhu J. (BF-12)	61	Zivieri R. (HC-11)	252
Zhu J. (BH-15)	66	Zivotsky O. (DV-13)	144
Zhu J. (CF-02)	91	Zou C. (CP-12)	99
Zhu J. (CV-10)	111	Zou H. (FB-13)	184
Zhu J. (EG-10)	163	Zou H. (GC-04)	218
Zhu J. (EG-11)	163	Zou T. (EU-07)	176
Zhu J. (ET-06)	174	Zou W. (CW-01)	112
Zhu J. (GP-11)	232	Zuo T. (FC-06)	185
Zhu J. (HC-03)	250	Zuo X. (CU-12)	109
Zhu J.G. (HU-10)	276	Zuo X. (GQ-15)	235
Zhu L.Y. (BG-06)	62	Zutic I. (BQ-02)	68
Zhu M. (AQ-13)	36	Zvezdin K. (DC-04)	118
Zhu M. (GG-07)	228	Zvezdin K.A. (HE-08)	256
Zhu R. (BB-06)	51	Zvezdin K.A. (HE-09)	257

*student nominee